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# THE GARDENERS' MAGAZINE.

No. 3,036.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
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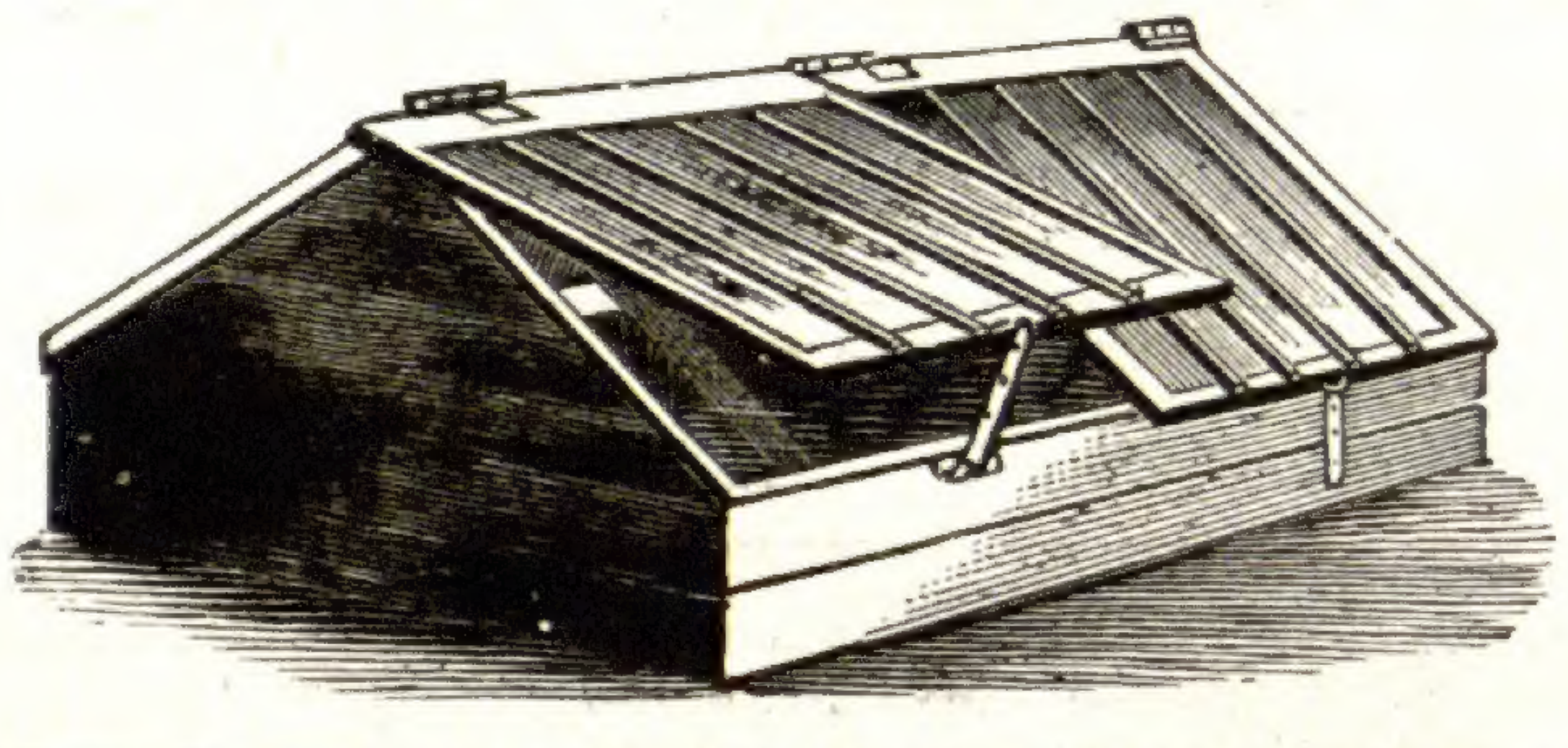

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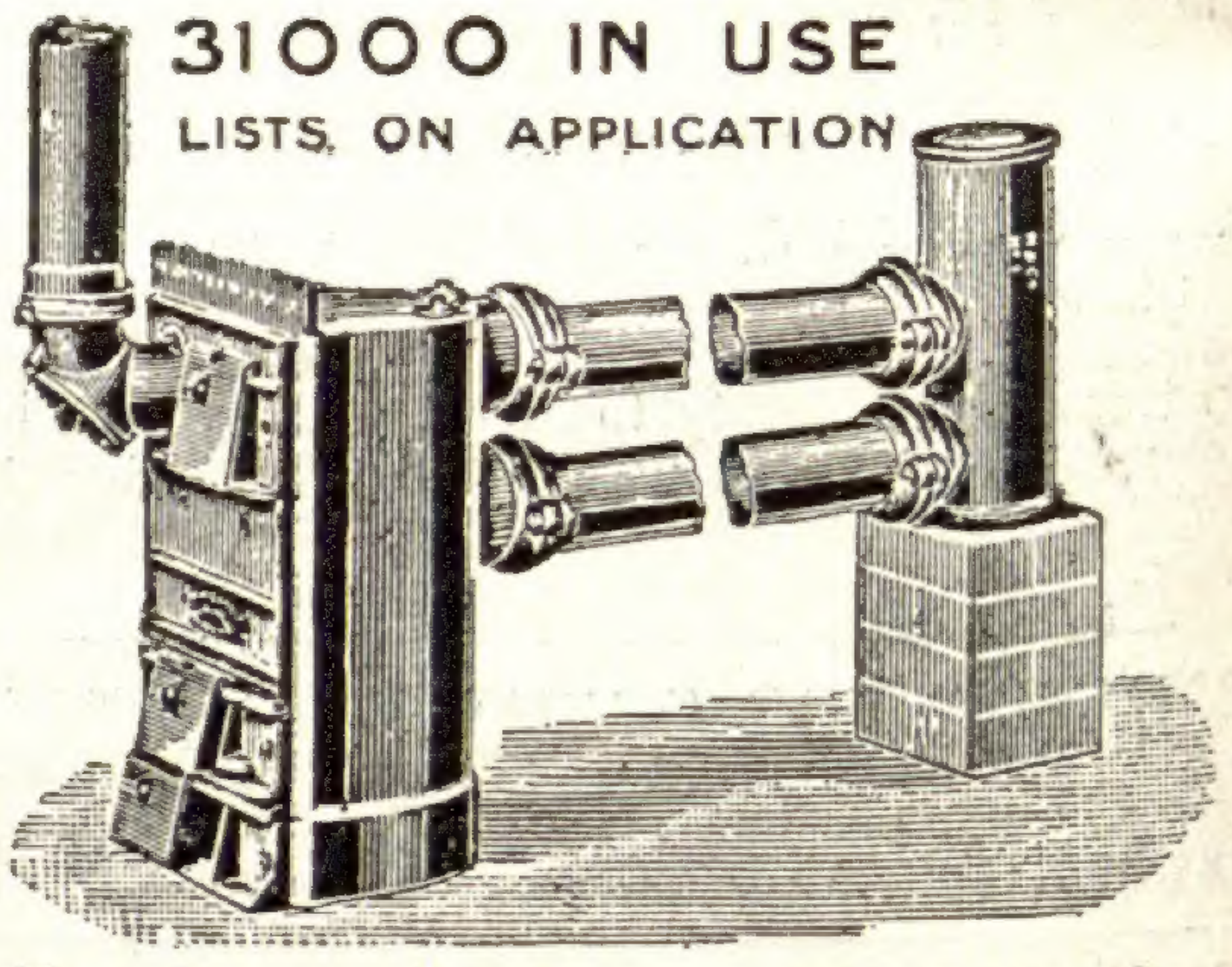

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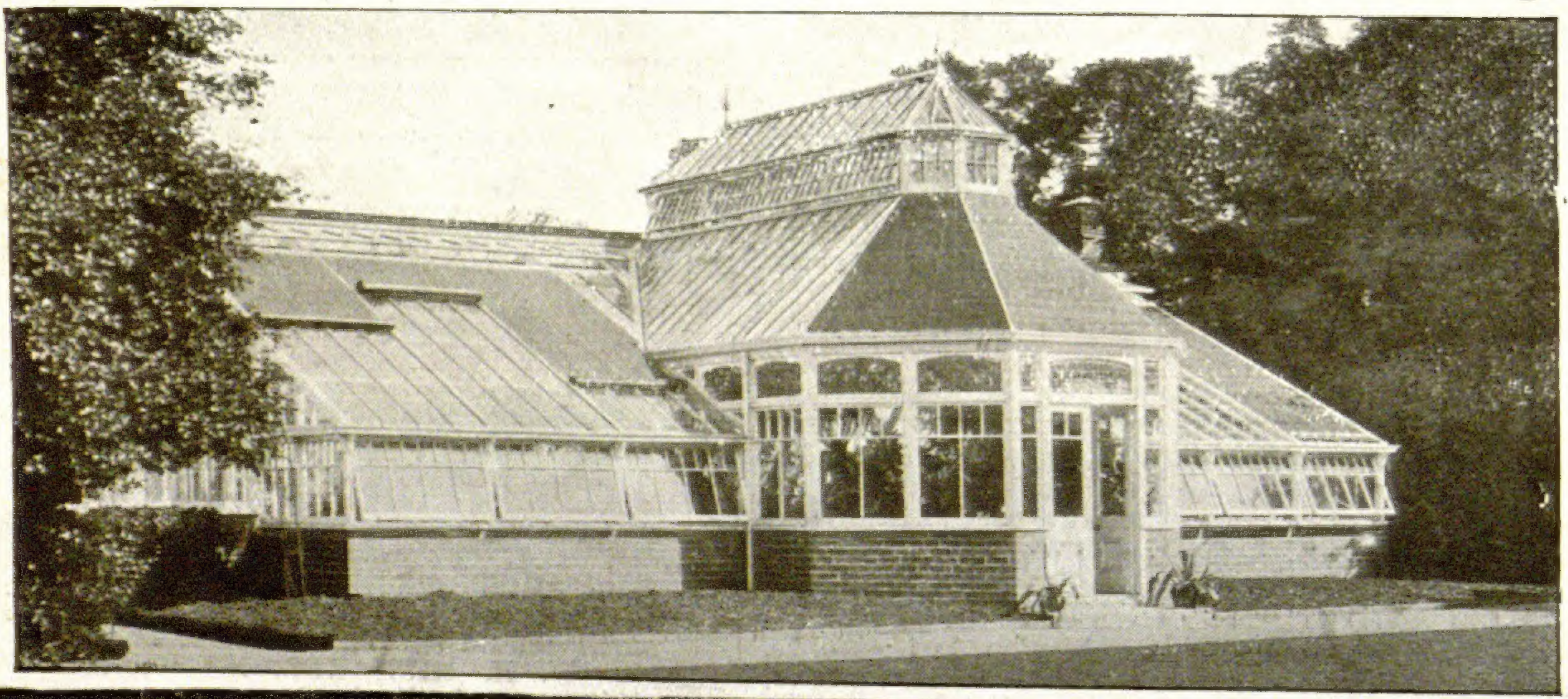

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VOL. LV.—No. 3,036. SATURDAY, JANUARY 6, 1912.

# THE GARDENERS' MAGAZINE.

## NOTE OF THE WEEK.

◆

### Effect of Grass on Fruit Trees.

For some years past it has been a debatable point among fruit growers whether the crops obtained from trees growing in surface cultivated soil are so far superior to those produced by trees occupying grass-covered areas as to justify the increased cost involved in keeping the ground free from weeds and maintaining the surface in a loose state. It is generally acknowledged that the finest fruit is produced by trees occupying ground that is regularly tilled, and it is also recognised that the most profitable market crops are obtained from plantations where the trees are free from competition with grass or other forms of plant life. Yet many who grow fruit have a liking for grass-grown orchards. It may be sentimental, or it may be a desire to obtain supplies with as little cost as possible. In some instances, the belief of those who regard the grass-grown orchard with favour is founded on the heavy crops of excellent fruit that are in many seasons produced by some orchard trees that have from their earliest years had their root run carpeted with grass. In the latter case there is some excuse for the opinion held with regard to the sufficiency of such trees, and we should certainly not advise those who have profitable grass orchards to break up the surface. The fact, however, is unquestionable that grass has an injurious effect upon fruit trees, especially in a young state, and that the best results are obtained when the surface soil is kept free from grass for some distance from the stem until at least the trees have become well established, and have made several years' growth. It would be, however, better were the soil tilled throughout. Recognising the injury done by grass, we have for many years consistently advocated surface cultivation as an essential detail of hardy fruit culture, and a great improvement has been effected as the result. We have on several occasions referred to the series of experiments that are being carried out at the Woburn Experimental Fruit Farm under the direction of the Duke of Bedford and Mr. Spencer Pickering for the purpose of determining with scientific accuracy the effect produced by grass upon fruit trees and the cause thereof. The report on these experiments, which forms a substantial volume, is now before us, and is a valuable contribution to pomological literature. There can be no question as to the subject being of great practical importance to fruit growers, but, as stated in the report, the bearing, which it has on the question of the conditions of growth of plants in general and of the process occurring in the soil, is of still greater importance. It is pointed out in the introduction that the general conclusion to which the earlier results led has been greatly strengthened, if not proved, by recent work. This conclusion was to the effect that the action of the grass was due to the existence of some substance which was actively inimical to the growth of the trees, though how such substance originated was a matter of conjecture. The general result, as so clearly shown in the report, of grassing the ground, either by sowing seeds or replacing the turf after the trees have been planted, is the arrest of growth, and the consequent stunting of the trees. The illustrations which form so useful a part of the report, fully support this conclusion. The first of the plates illustrates two rows of trees of Bramley's Seedling, one of which had the ground grassed over immediately after planting, and in the other case it remained in a state of tillage. The trees in the first row made a poor, stunted growth, and in the second row the trees present the appearance of having been placed under the conditions most favourable to a robust state of health. Somewhat similar results are shown in the fourth plate, in which are represented two rows of Cox's Orange Pippin. Unlike the Bramley's Seedling, the whole of the trees were given the advantage of a tilled surface until the end of their fourth year after they had been planted, and then a portion of them had the surface of the soil, as far as their roots extended, grassed over. The deleterious effect of the grass upon the trees was evident in the first season, and this became more apparent each season, until in the sixth year, when the majority of the trees were practically dead. We have on several occasions had an opportunity of seeing the experimental fruit plantations at Woburn, and are much impressed by the fidelity with which the results obtained are represented in the illustrations. Other apple trees, both standards and dwarfs, that have been similarly treated twelve years after planting, behaved in much the same manner, except that they did not show signs of such serious injury until the third or fourth year after the surface of the ground had been grassed. We learn from the report that some varieties of apples suffer less than others, but very little difference has in this respect been found between bush and standard trees. It has also been proved beyond all question that, not only do apple trees suffer from the injurious effects of grass, but those of cherries, pears,

MR. EDWARD A. BUNYARD.

and plums are affected in much the same way, and to a similar extent, but standards are less seriously injured than bush trees. With reference to the distance grass should be removed from the trees so as to have no effect upon them, it is very properly observed that much depends upon the nature and size of the trees, and also on the character of the soil. With newly-planted standard apple trees it was demonstrated that a considerable effect was produced when the grass was four feet away from the stems, and, on the other hand, keeping a space free from grass only six inches from the stems of newly-planted dwarf trees was found to have a beneficial effect. It has been proved by the experiments that the stronger growing grasses are more injurious than those of weak growth. In seeking for an explanation of the cause of the injurious effects of grass, the questions of soil aeration, a deficiency of moisture in the soil, an insufficiency of the food supply, the physical alteration in the soil, and soil bacteria, were fully investigated, but they all gave negative results. But in the course of the various series of experiments with trees grown in pots, evidence of a positive character was obtained as to the formation of a toxic substance during the growth of grass. It was found "that such trees, when watered with the leachings obtained from trays containing grass growing in sand, flourished more than when water alone was supplied; but when the trays were placed on the surface of the soil (or sand), in which the trees were growing, so that the washings from the grass reached the tree roots with practically no exposure to the air, they had a very deleterious effect, nearly, if not quite, as great as when the grass was grown above the roots of the trees in the ordinary way." The difference in the effect produced by the use of water that had passed through the grass-filled trays, and the drainings from similar trays placed on the surface of the soil, is explained by the rapid oxidisability of the toxic matter, and, as suggested by the authors of the report, is in full accordance with what has been established as to the behaviour of heated soils towards plants.

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**Mr. Edward A. Bunyard,** son of Mr. George Bunyard, V.M.H., entered business in 1896, the year in which the firm of Messrs. George Bunyard and Co., Lim., celebrated its centenary. As a member of this firm, he is keenly interested in all that relates to fruit culture, but in addition to being an excellent man of business, he has devoted considerable time to the compilation of an "Index to Illustrations of Apples" and an "Index to Illustrations of Pears," both of which have been published in the "Journal" of the Royal Horticultural Society. Mr. E. A. Bunyard is a collector of old books relating to fruits and fruit trees, and is now at work on a bibliography of the English works on these subjects. He is a keen student of Genetics, and at the Conference on Genetics held in London in 1906, he read a paper on "Xenia." In addition to his earlier education in England and study in the home nursery, Mr. E. A. Bunyard has lived in France for the express purpose of studying French nursery methods, becoming familiar with the language, and acquiring a knowledge of French pomological works. He has lectured before the Royal Horticultural Society and the Horticultural Club, and is a member of the R.H.S. Library Committee and of the Governing Body of the Gardeners' Royal Benevolent Institution. In local affairs Mr. Bunyard has been Guardian of the Poor for the parish of Allington since 1903. His chief hobby is music, and he acts as accompanist to the Maidstone Choral Union. Of this society he has been secretary since its institution in 1903, and it is in no small measure due to his skill that the society won the championship banner for Kentish societies, and in 1909 won the "Daily Telegraph" shield at the South London Musical Festival.

**The "Gardeners' Magazine" Almanack for** 1912 accompanies the present issue, and is free to subscribers. It will be found equally remarkable for its attractiveness and utility, the dates of exhibitions and meetings being as complete and accurate as it is possible to make them thus early in the year. We hope our readers will like the coloured illustration of Japanese irises and water-lilies on the almanack; it represents these popular and beautiful flowers in the water garden that forms so distinct and interesting a feature of the Royal Horticultural Society's gardens at Wisley.

**The New Rock Garden at Wisley.**—We may remind our readers that quite close to the charming spot mentioned above, a very fine rock garden is rapidly approaching completion, and is already becoming furnished with plants. This important feature extends over a large area, and is arranged on sloping ground, the lower margin being not far from the water garden. It represents with remarkable fidelity the lower slope of a mountain that has been found especially adapted to the growth and display of the finest of the plants that have their home in Alpine regions. Messrs. Pulham and Son, of Broxbourne, to whom the construction of the rock garden has been entrusted, have so cleverly designed and carried out the work that a far more suitable site for alpine and rock-loving plants has been secured than is provided at the base of a Swiss or Pyrenean Alp. The work is worthy of all praise, and when fully planted and well furnished with plants, it should add greatly to the reputation of the Messrs. Pulham and to the many attractions of a famous garden.

**Education in Forestry.**—During the past year, as our pages amply testify, questions relating to afforestation and education in forestry received a large share of attention. In a resolution relating to forestry passed at one of their earlier meetings, the Development Commissioners decided that their first grants should be made with the object of improving the facilities for obtaining a sound education in forestry. In 1888 a lecturer in forestry was appointed at the Edinburgh University, and since the appointment, a course of lectures has annually been delivered during the winter session. A few years since the Edinburgh and East of Scotland Agricultural College included in its curriculum a short course of lectures on elementary forestry for working foresters and others at the Agricultural College. Subsequently the Edinburgh University, appreciating the importance of forestry, instituted a B.Sc. degree in forestry, and appointed lecturers to give the special courses of lectures which the forestry student was required to take, such as forest botany, forest chemistry, and forest entomology. The demands made upon the resources of the department brought into prominence the fact that provision was required for (1) a forest garden, including an area for experimental formation of woods; (2) extensions of the present museum and the provision of laboratories; (3) additional lecturers on the University staff. In collaboration with the Edinburgh and East of Scotland Agricultural College, steps have been taken towards the attainment of these objects. The Development Commissioners were approached by the University court and the governors of the Agricultural College, and their applications were met by the Commissioners in a generous spirit. A sum of money has been promised annually for a period of years for the rent and upkeep of a forest garden and an area of experimental plantations. In addition, the Development Commissioners have granted the University a sum of £4,500 towards the erection of a new forestry building, provided a similar amount is provided by the University. A grant of £2,000 has been made towards the equipment of the museums and laboratories, and £500 annually for five years has been promised as a provision for the salaries of an additional lecturer and an assistant in the Forestry Department.

**Our Carnation Cover.**—The present issue goes forth with a somewhat unusual cover, and one that indicates the progress that is being made in reproduction by the three-colour process. The perpetual carnations are particularly good, and the varieties represented are Wanoka, crimson, the topmost flower; Baroness de Brienen, the highest flower on the right, a beautiful pink variety, which, like Lady Alington, the fine red variety on the left, was raised by Messrs. Stuart Low and Co., Bush Hill Park Nurseries, Enfield. The lowest flower, also a pink variety and of much merit, is Admiration. Messrs. Stuart Low and Co. have taken a very prominent part in popularising perpetual carnations, and by raising and introducing new varieties, the firm has shown great skill and enterprise, and thereby obtained much fame, both at home and abroad, in connection with these charming and useful flowers. On the back cover a rock garden scene is presented, and probably not one in ten of our readers will need to be told that the picture illustrates that portion of the rock garden at the Royal Gardens, Kew, so generally known as the Dripping Well.

**Hardy Plants and Flowers for Exhibition.** The National Hardy Plant Society has issued three model schedules, compiled with a view to help committees of horticultural societies in the task of providing suitable and useful classes for hardy herbaceous plants and flowers for either spring, summer, or autumn shows. The society lays particular stress upon the advisability of excluding liliums, gladioli, and other bulbous plants from the ordinary classes for collections of herbaceous flowers, and suggests that these subjects should have classes to themselves. The inclusion of flowering shrubs, or sub-shrubby subjects in any collection of herbaceous plants will of necessity disqualify on technical grounds. For example: a tree pæony is not herbaceous, though all other pæonies undoubtedly are. Quite rightly the society considers it undesirable that subjects which cannot be held to be generally hardy in British gardens be staged with herbaceous flowers, while it considers that perpetual or Malmaison carnations, roses, dahlias, must not be staged in exhibits of hardy herbaceous perennials. Excellent advice is that in wording a schedule the greatest care should be exercised to make clear the exact requirements and restrictions insisted upon. The word "kind" shall always be taken to mean "genus" or "family," as e.g., iris, pyrethrum, etc ; "species" to mean "wild type" and "variety" any form raised in gardens. There seems to be a little weakness in the description of "variety" because if this definition applies only to garden raised forms then it necessarily excludes wild varieties of a species.

# PROGRESS IN SWEET PEAS.

In penning a few notes on the progress of sweet peas, I do not think it necessary to make comparisons with varieties more than ten or twelve years old, for even in this short space of time, the progress and development has been so great that varieties holding high place are very seldom seen now, and certainly they are not worth growing with the grand varieties of to-day. I imagine a great many of our present sweet pea enthusiasts never knew the varieties introduced, say, fifteen years ago, which tends to show the rapid advance made, and how quickly one variety supersedes another. Just now it is a good variety indeed that can hold its position at the head of any colour class for more than two or three years.

The formation of the National Sweet Pea Society some eleven years ago has, without the slightest doubt, been one of the great factors in this development. But the greatest factor was the introduction at that time of some of the finest varieties in the old grandiflora type by Henry Eckford. Many will urge that it was the advent of Countess Spencer that caused such a boom in our favourite flower; this variety, no doubt, gave it a filip, but I firmly believe that without this change in form, the boom in sweet peas would still have been the same, for we were annually receiving distinct advances in all shades of colour, as well as in the size and substance of the blooms, and, what was more necessary for the development of any particular flower, the general public were just realising the utility of the flower from a decorative point of view, and the great pleasure that could be derived from the cultivation of a few rows or even clumps.

Not many years ago classes for sweet peas at summer shows were far from numerous, but now we have several classes at all the principal shows, arranged to suit growers of every description, and the sweet pea tent at many of them proves the centre of interest. The number of sweet peas exhibited would, I am sure, compare favourably with that of any other flower, so that the compilers of schedules have not only helped their own particular show, but also added to the popularity and progress of the sweet pea.

In reviewing varieties one has perforce to compare the present-day Spencer form with the grandiflora type, and, speaking generally, we may say there has been a wonderful all-round improvement. The size of the flower has considerably increased, which is a decided advantage (providing there is no loss in quality or colour); the length of stem of the Spencer form is greater than in the old type, which makes the spikes more useful as decorative subjects, and, of late, we have had varieties introduced that could hardly be surpassed for their brilliancy of colouring, notably in the orange, salmon, scarlet, and crimson shades, whilst in the softer colours, such as blue, pink, lavender, and mauve, we have varieties almost innumerable, many of them of most pleasing shades, and not a few of them having two or three distinct shades of colour in them, which greatly enhances their decorative value.

While making a few comparisons in the different colour classes, I do not infer that the varieties will be best at the present time, but that they will be among the best in their respective classes. One of the best crimsons that I remember of about fifteen years ago was a variety called Ignia; this was improved upon two or three times by further introductions from the Eckfords, King Edward VII. being probably the best in the grandiflora type, but even this fine variety is surpassed by such excellent varieties as Maud Holmes and Sunproof Crimson. The scarlet sweet pea is a much later introduction than the Crimson and Scarlet Gem (Eckford), the first real scarlet that I remember; this was superseded by the variety Queen Alexandra some three years later, a variety which has held its own longer than most, owing to the difficulty that has been experienced in breeding a really sunproof Scarlet Spencer form, but the last two years have seen a remarkable advance in this colour, for we now have several really first-class varieties to pick from, though, as might be expected, they are very much alike, and Scarlet Monarch, Scarlet Emperor, Red Star, George Stark Improved, and Doris Burt are all varieties that show a decided advance even on Queen Alexandra.

SWEET PEA HERCULES.

A beautiful variety raised by Messrs. Stark and Son; the flowers large, and the colour rich pink.

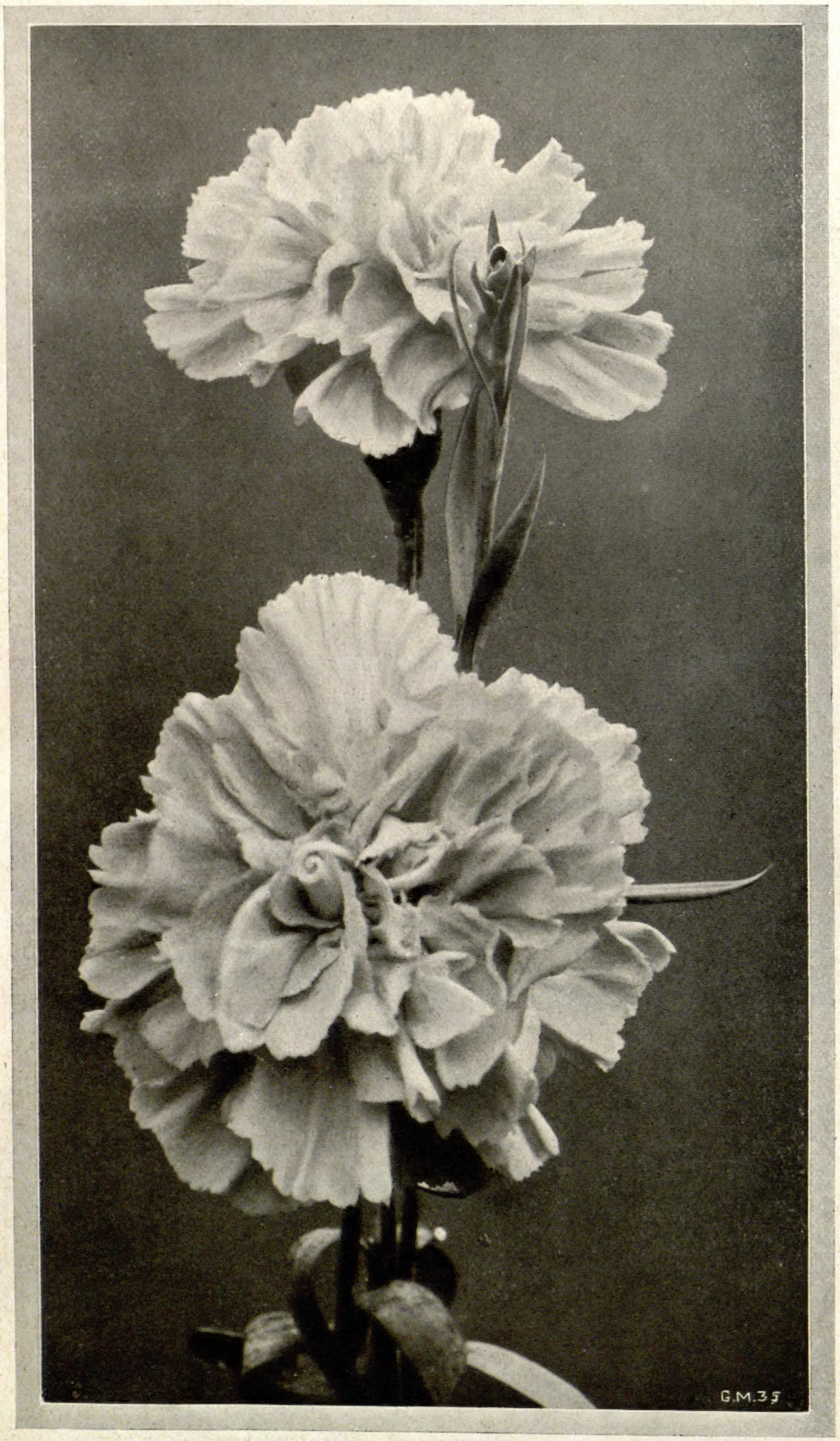
Among white varieties the advance made is not so pronounced Emily Henderson was a variety of the grandiflora type that stood for some considerable time, but was eventually superseded by Dorothy Eckford in 1902 or 1903, and though we have plenty of whites in the Spencer form, I do not think we have yet one of the quality and substance of Dorothy Eckford; Etta Dyke is excellent, but we want a flower with a better standard, or, at least, that will show itself off better, and with a little more substance. Dark Blue is the one colour that we have not yet been able to reproduce to stand the sun in the Spencer form, and though Jack Tar and Mrs. George Charles are very good, they do not compare favourably with Navy Blue or Lord Nelson, which were the best grandiflora varieties we had. The old Emily Eckford was a very distinct shade of blue, and very beautiful, and, though we have a Spencer variety under this name, I fail to see any great similarity between the colour of the two varieties. A waved form of the colour of Emily Eckford, and as good in form as Mrs. Hugh Dickson, would, indeed, be an acquisition. In light blues we are rather better off, the improvement being more marked. Anglian Blue and Zephyr are varieties that may be said to be first rate.

Looking back, Boreatton, and, later, Black Knight, impress me as being the best dark varieties in the old form; but here again they are entirely eclipsed by such varieties as Prince of Asturias, Black Knight Spencer, Tom Bolton, and others, while Arthur Green, Red Chief, and Colossus are distinct colours that have come in waved form, and all of which may be classed among the bronze or maroon shades.

The pink varieties, always popular from a decorative point of view, provide one of the most striking instances of progress. Princess Beatrice was probably the best and most widely grown sweet pea for a number of years, and I believe even now it is sent to the market, but I consider this variety superseded by Lovely and Prima Donna, both varieties of great merit, and they might have continued in popular favour for a long time but for the introduction of Countess Spencer. Since this introduction, we have had pink varieties almost too numerous to mention, some with white, cream, or lemon grounds, and Elfrida Pearson, Mrs. Hugh Dickson, and Doris Usher are good examples of progress in this direction. But if they were properly fixed, I believe the three best and distinct pink varieties in cultivation would be Audry Crier, Anglian Pink, and Marjorie Linzee, these being giants in size and quality. Hercules, herewith illustrated, is also noteworthy among pink varieties.

T. STEVENSON.

(To be continued.)



CARNATION BATH'S PREMIER.

A distinct and beautiful perpetual-flowering variety with rich yellow flowers, raised by Messrs. R. H. Bath, Lim.

## CARNATION BATH'S PREMIER.

Perpetual carnations with yellow flowers are so few in number that there was no occasion for surprise at the fine variety exhibited by Messrs. R. H. Bath, Lim., of Wisbech, under the name of Bath's Premier, at the meeting held by the Royal Horticultural Society, on December 5 last, should have received an Award of Merit from the Floral Committee, and obtained much attention from the visitors. Of its distinctness and value there can be no question, for the flowers are of high quality, and the colour is a soft, yet rich yellow. The form is admirably shown in the accompanying illustration of two of the flowers exhibited, and with regard to their quality it will suffice to say that the petals are of good substance, and the calyx perfect. In the illustration the blooms are represented of a size rather below the average. This valuable addition to the list of perpetual carnations has descended from the "Lawson" variety, and is similar in habit and style of flowering to that notable carnation.

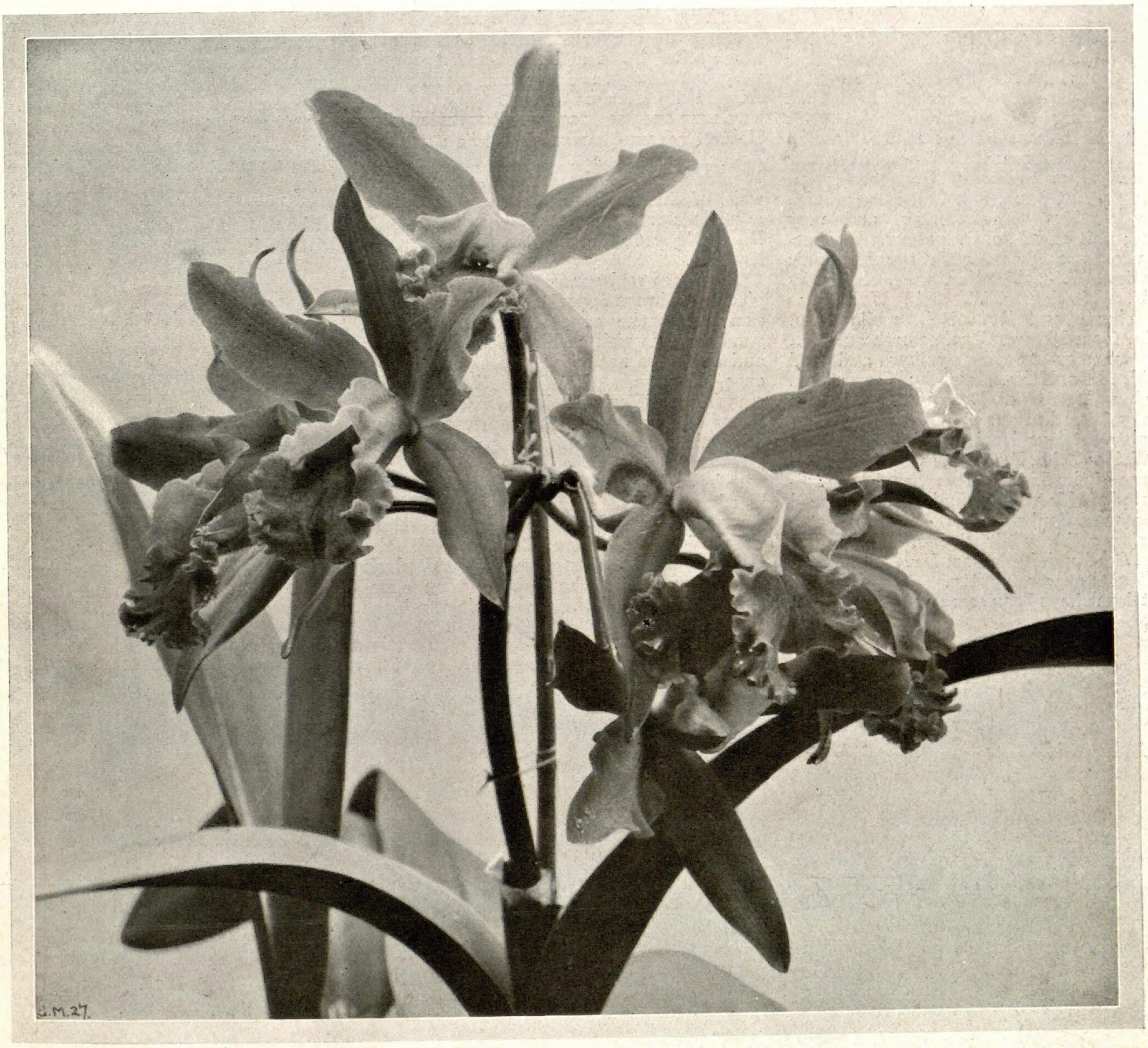
## GRAPE LADY HUTT.

I was much interested in the article on this grape which appeared on page 935 (December 16). I am interested in all matters pertaining to varieties of grapes, and in the case of Lady Hutt specially so, because I have added a vine to my collection, planting it last spring. And as I have not had any experience in the cultivation of the variety I should be grateful for some further information regarding the pruning. I have been assured that the best crops are obtained by close, hard pruning, and also that close pruning was not advisable. Perhaps some successful cultivators will give their experiences and explain their practice in the GARDENERS' MAGAZINE. I believe the vine to possess a fairly strong constitution. I only decided to put one in last Easter, and the vine got badly crushed in transit, consequently much sap was lost before I could get the new shoots forward; but notwithstanding all this, the young rod made during the summer is most satisfactory. The leaves die off gradually, and are throughout quite distinct from those of other varieties. Perhaps Mr. Hanson would kindly give a few more details regarding his system of pruning. G. B.

**Zephyranthes aurea.** — This charming bulbous plant, so well illustrated in the GARDENERS' MAGAZINE of December 16, attracted a very large share of attention when shown at the meeting of the Royal Horticultural Society on December 5. On looking at its beautiful golden blossoms one could not fail to be struck with their great general resemblance to those of a vallota; indeed, the relationship appeared so marked as to lead to the suggestion that it might be possible to obtain a hybrid between the two. So many very unlikely subjects have of late years proved amenable to the skill of the hybridist, that such a suggestion can scarcely be regarded as a fanciful one. Furthermore, the vallota has been successfully crossed with Cyrtanthus (or Gastronema) sanguinea, and this last, viewed superficially, appears to be more widely removed from the vallota than does the zephyranthes. —W. T.

## THE NEW ORCHIDS OF 1911.

There appears to be no diminution in the output of new orchids, and the work of the Royal Horticultural Society's Orchid Committee shows no decrease. This body meets at Westminster fortnightly, and, taking the year through, it is probable that more novelties came before it than before any other of the committees. It becomes increasingly difficult to rightly appraise the merits of varietal differences among orchids owing to the large number of varietal forms found in certain species, and also in some hybrids. It not seldom happens that a fine orchid comes before the committee, but fails to secure an award, and the exhibitor is at a loss to know why it failed. The reason usually is that the large collection of orchid paintings is at hand, and the flower on the plant exhibited has been compared with the paintings of varietal forms of the same species or hybrid, and found wanting.



LÆLIO-CATTLEYA PRINCE OF ORANGE.
A beautiful winter-flowering hybrid with bright yellow, ruby-lipped flowers. Awarded F.C.C., R.H.S., November 21, 1911. Lieut.-Colonel Sir George Holford (grower, Mr. Alexander), Westonbirt, Tetbury.

During 1911 thirty-eight First Class Certificates were awarded, and fifty-five Awards of Merit, though these figures may be subject to correction as the award fails if the exhibitor does not afford facilities for the painting of the plant's portrait. Curiously enough the certificates and awards are almost identical in number to those granted during the previous year. In every case a description has appeared in these pages, and a quite large number of the orchids honoured by the society have been figured; abridged descriptions and an alphabetical arrangement of these new orchids appear in "The Gardening Year Book for 1912." I think Messrs. Charlesworth and Co., head the list for number of honours as they have obtained nine First Class Certificates and ten Awards of Merit, while Mr. Alexander, orchid grower to Lieut-Colonel Sir G. Holford, Westonbirt, owns to seven First Class Certificates and three Awards of Merit.

Cypripediums arrive in large numbers for consideration and in some instances they show that the exhibitor has a very small knowledge of what constitutes advance or distinction in this genus. A great deal of improvement is being made in C. insigne by the use of C. i. Harefield Hall and other very fine varieties as parents, and, of course, there is of necessity a great family likeness among the newcomers. Winter-flowering cattleyas and lælio-cattleyas, with odontiodas, and brasso-cattleyas seem to be the most popular of orchids at present, though the finer hybrid odontoglossums are not far behind them.

Taking the cypripediums first, a few of those showing marked distinction were C. Draco Westonbirt var. and C. Lucifer, from Westonbirt; C. Charles Sladdin and C. Royal Sovereign, from Messrs. Sander and Sons, St. Albans, both very distinct and handsome; C. Sybil superba, from Mrs. Norman Cookson; the fine C. Elizabethæ var. Vogelsang, from M. Lambeau; C. Royal George, a beautiful hybrid, from Messrs. Armstrong and Brown, Tunbridge Wells, and now in the Westfield collection; and C. aureum Laekenense, from Mr. E. V. Low, Haywards Heath.

Odontiodas have become quite plentiful. and here Messrs. Charlesworth's O. Enterpe, the Westonbirt and the Gatton Park varieties of O. Bradshawiæ, M. Vuylstekes' O. Vuylestekæ Coronation, and O. V. Lady Colman, and Mr. D. Barri Crawshay's large-flowered O. Rosefieldiense Crawshayana are all considerable improvements, either in size, form, or colouring. The range of these showy bigeneric hybrids is steadily increasing as the result of the use of the various species and hybrids of odontoglossum as one parent, is seen. Oncidioda Cybele (Charlesworth), combines oncidium with cochlioda, and is therefore very interesting. New or rare oncidiums were O. Claesi from Gatton Park, and O. Mulleri from the St. Alban's firm, the latter a very distinct species.

The only dendrobium to pass muster was

D. Victoria Regina, the "blue" dendrobium, which was so finely shown from the Burford Lodge collection by Mr. W. H. White, on July 5. Epidendrum Laucheanum, the only other member of its genus to gain recognition, also came from Sir Trevor Lawrence's collection. Dià-cattleya Sanderæ (Sander) is a very interesting hybrid between Diacrium bicornutum and Cattleya Mendeli; Houlletia, Wallisi (Charlesworth), a rare species; and Trichopilia Lehmanni (Lawrence), are three very interesting additions. Very distinct and beautiful is Vanda cærulea Sanderæ in which a light shade of rose takes the place of the usual blue colouring. M. Lambeau's Miltonia Bleuana Laeken gives us the deepest colouring yet seen in this popular hybrid.

The important position occupied by læliocattleyas has been strengthened during the year. I must own to a great weakness for the yellow and orange-coloured hybrids that flower during the winter months, even though the blooms be not so fine in size and form as those that flower at other seasons. L.-c. Prince of Orange, figured in the present issue, is a first-class orchid, strong-growing, free-flowering, and very bright; this and L.-c. Cranstounæ Westonbirt var., are from Sir George Holford's collection. L.-c. Morningtoniæ, shown by Mr. F. Wellesley, of Westfield, Woking, is very chaste and beautiful, while L.-c. Sylvia, from Messrs. Charlesworth and Co., is a summer-flowering yellow and red hybrid. L.-c. Nella, shown by Messrs. Jas. Veitch and Sons, on December 19, is also a really fine addition.

Sophro-cattleya Doris, Cobbs' var., from Mr. Walter Cobb, Rusper, is very beautiful, and one of the finest of its race. Three trigeneric hybrids were brought forward, and the best was Sophro-lælio-cattleya Jeanette (Charlesworth), while S.-l.-c. Althæ and S.-l.v. Goodsoni, both from Mr. H. S. Goodson, Putney, were pretty.

Cattleyas have been scarcely so prominent as usual, and I think only one, C. Rhoda illuminata (Charlesworth) has gained a F.C.C. C. Mrs. Frederic Sassoon, from Westfield; and C. Mossiæ alba Queen Mary, from Messrs. Mansell and Hatcher, Leeds, are others that possess great beauty and distinction. No fewer than four new hybrid cymbidiums were shown, and three of them—C. Alexanderi (Holford), C. Gottianum (Sander), and C. Lawrenceanum (Pauwels), all own the comparatively new C. insigne as one parent. The fourth, C. Veitchi (Veitch), from C. Devonianum and C. Lowianum, is very distinct. These hybrids from Cymbidium insigne show perhaps more than anything else could how keen and quick raisers are to take advantage of any new orchid that is introduced for the production of new hybrids.

Many of the brasso-cattleyas are very much alike, but practically all of them are very beautiful, the large and wonderfully fringed lip always attracting attention. Two new ones call for special mention, i.e., B.-c. Digbyano-Mossiæ Holford's var., and B.-c. Senateur de Bast, the former from Westonbirt, and the latter from M. Pauwels, of Ghent. B.-c. Senateur de Bast is a particularly fine orchid derived from B.-c. Digbyano-Mossiæ and B.-c. Mrs. J. Leeman.

The grace and general beauty of odontoglossums always appeal to visitors to flower shows, but the expert requires size and good form as well as distinctive colouring, and these are not so easy to obtain as was once the vase, at least, it is becoming increasingly difficult to improve on the fine forms of O. crispum, O. Pescatorei, O. andentissimum, O. Lambeaueanium, etc., already in collections. The most striking new hybrid of the year in this class is O. Hardwoodi, that is itself surpassed in some measure by O. H. Shrubbery var. Both were raised by Messrs. Charlesworth, the colours, bright orange-yellow and dark red-brown, make the flowers very effective. Other good things include the large and dark-hued O. Black Prince, Dell variety, from Baron Schröder's collection; O. illustrissimum Queen Mary, a fine maroon, white-and-gold coloured flower, from Mr. W. Thompson, of Walton Grange, O. Jeanette, and the fine form of O. Ossulstoni named The Shrubbery var., from Messrs. Charlesworth and Co.; O. Rosefieldiense—a glorified O. Lambeauianum—from Mr. De Barri Crawshay; the mahogany-red and yellow O. Swieteni-color from Sir Trevor Lawrence; the beautiful O. crispum Aleyone shown at the last meeting of the year by Mr. J. Gurney Fowler; and two famous hybrids from Mr. W. R. Lee, Plumpton Hall, Manchester, namely, O. Thais and O. Chione, both of which gained the higher award on November 21. O. Thais, figured herewith, is of unrecorded parentage, but doubtful antecedency does not detract from the beauty of its blush, purple-blotched flowers.

There were obviously many beautiful orchids besides those mentioned, to which the hall-mark of the Royal Horticultural Society was attached, but those referred to have special claims to notice. One other also deserves mention, and it is the pure white Calanthe Cooksoniæ gigantea, shown by Mr. H. J. Chapman, gardener to Mrs. Norman Cookson, Oakwood, Wylam-on-Tyne, on November 8; it is the finest of the white calanthes.

CHAS. H. CURTIS.

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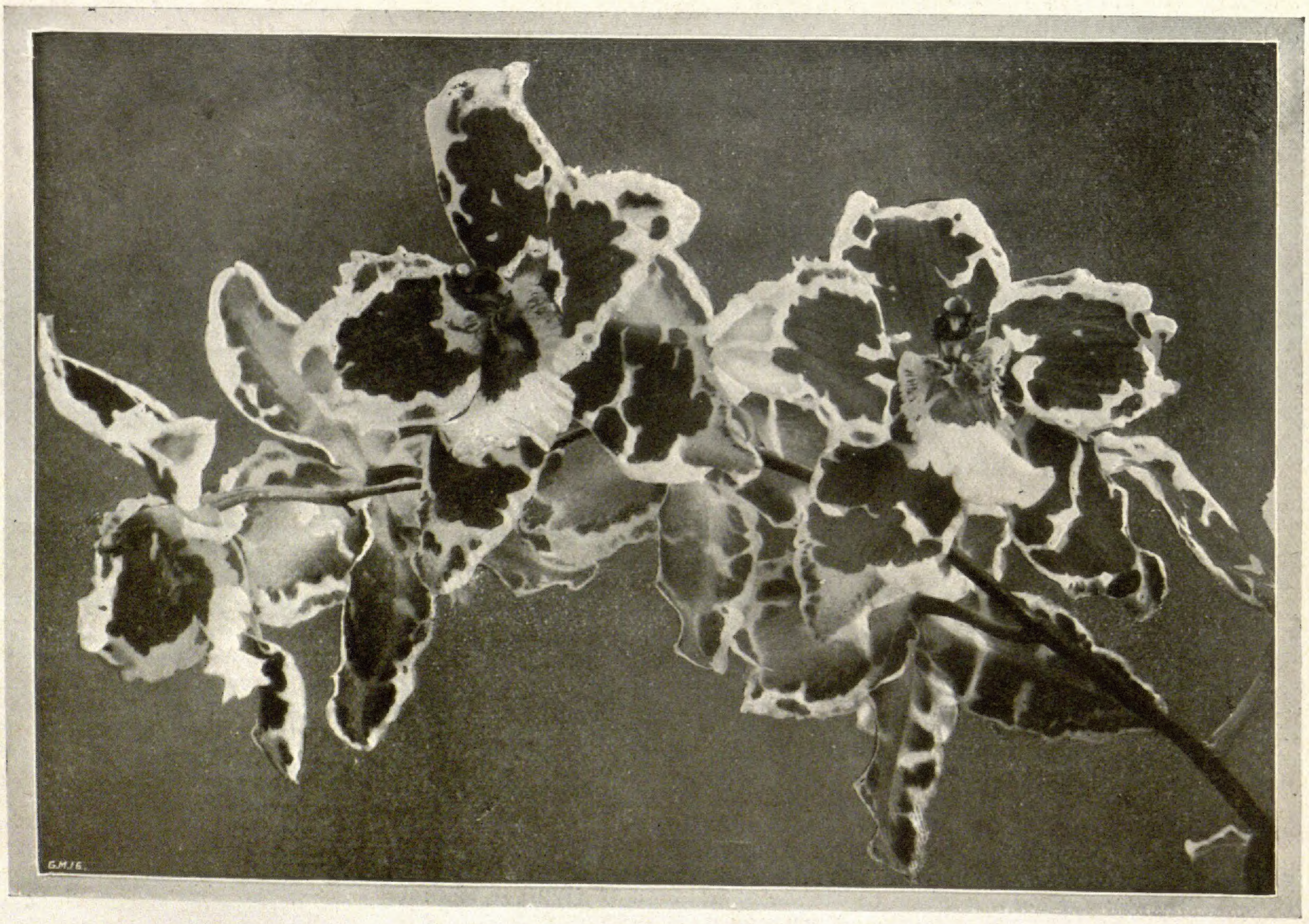
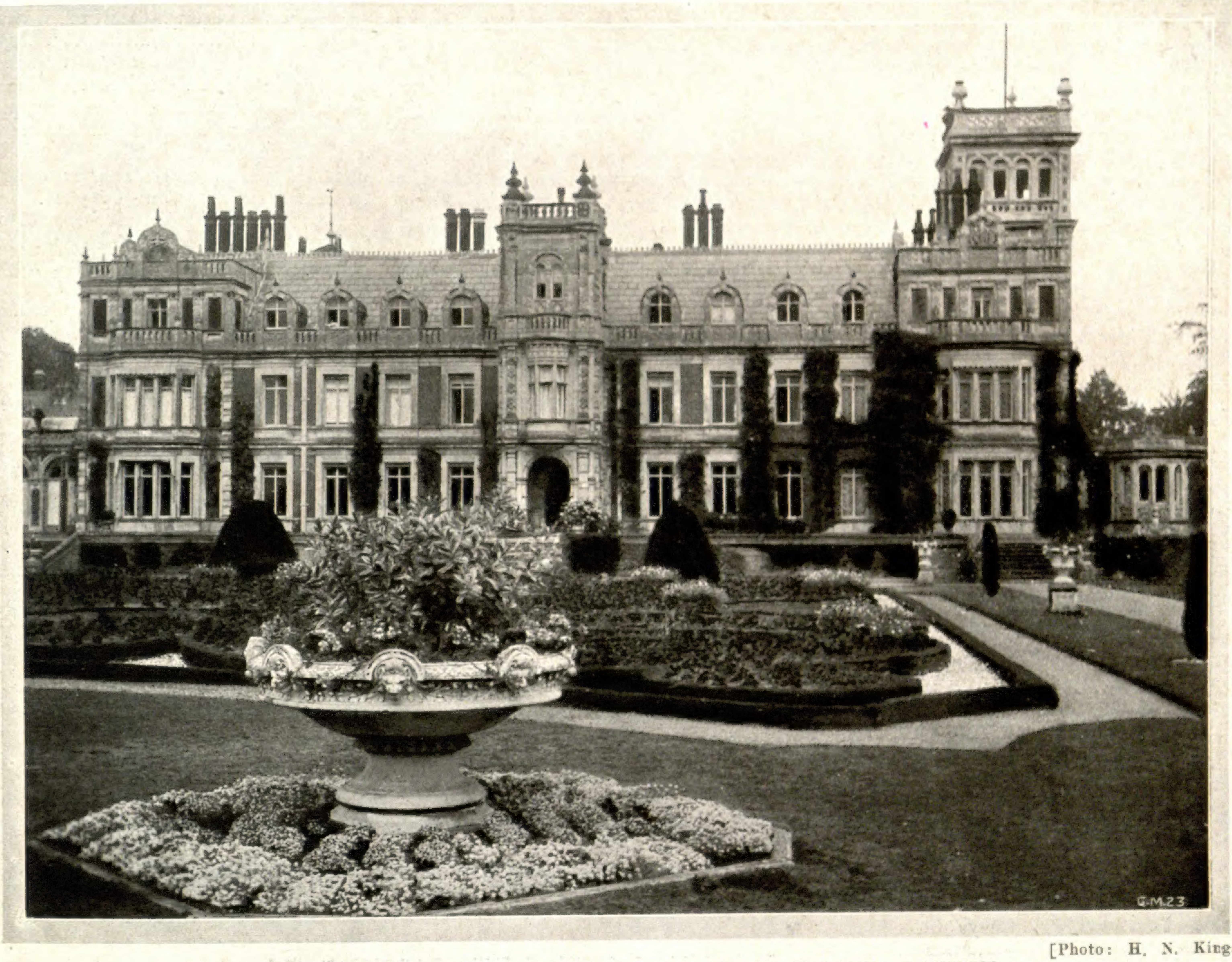
**Exacum macranthum.** — This showy member of the Gentian family, which has come so prominently forward within the last few years, seems to have no set period of flowering. The Messrs. Veitch showed it in fine condition at Olympia in the summer of 1911, and its rich purple-blue flowers formed one of the most conspicuous features of a group from the same exhibitors put up in the Horticultural Hall at the last meeting of the year 1911.—W. T.



ODONTOGLOSSUM THAIS.

A fine hybrid of unrecorded parentage; flowers blush, blotched with rose-purple. Awarded F.C.C., R.H.S., November 21, 1911. W. R. Lee, Esq., Plumpton Hall, Manchester.



[Photo: H. N. King.

SOMERLEYTON HALL: WEST FRONT WITH FLOWER GARDEN.

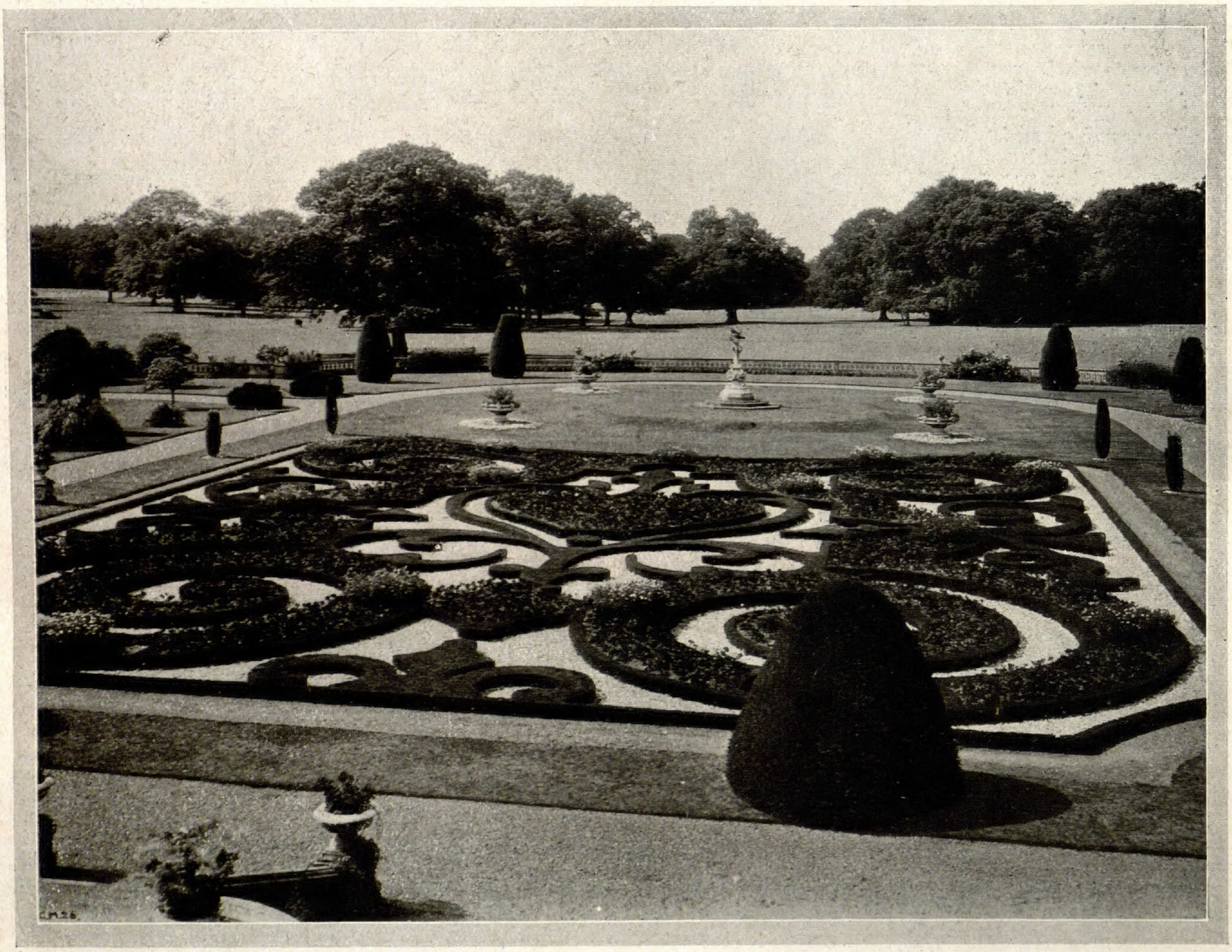
# SOMERLEYTON HALL.

Although great gardens are less numerous in the, according to Fuller, "sweet and civil county" of Suffolk than in the adjoining lands of the North Folk, there are within its boundaries many of first-rate importance, and chief among them by common consent are those of Somerleyton Hall, the East Anglian seat of Sir Saville Crossley, Bart. Equally remarkable for extent and beauty they form a delightful setting to the stately mansion which occupies a prominent position in one of the highest, as, indeed, in one of the most charming parts of the Lothing district, and afford many an object-lesson in garden management of immense value.

Somerleyton Hall is situate about eight miles to the west of Lowestoft, and may be readily reached from that town or from Yarmouth, by the branch of the Great Eastern Railway, which connects these two popular marine resorts. In commencing the journey to the Somerleyton Station at Yarmouth one is not particularly impressed by the scenery, for the country is for a short distance quite flat with several waterways and a vegetation that indicates a liberal degree of moisture in the soil. But as the train speeds onward the ground rises rapidly, the uniform level gives way to pleasant undulations, and the moisture-loving plants are replaced by arborescent vegetation, and in their season by waving fields of corn and by other farm crops that flourish in the district. The hall is about two miles from the station, and, as there is a continuous rise throughout, the estate must occupy a considerable elevation. What the altitude is cannot be stated from the information available at the time of writing, but it is sufficient to afford a series of widely-extending views of surpassing beauty from the mansion, the gardens, and the higher part of the park, which has an area of upwards of 300 acres, and is finely wooded. The characteristic features of the scenery of Suffolk are quaintly described by Reyce in his "Breviary" of the county, which was published in 1618, and, quaint as the description is, it gives an excellent idea of the general aspect of the country at the present day. "This county," writes Reyce, "delighting in a continuall evenes and plaines, is void of any great hills, high mountains, or steepe rocks. Notwithstanding the which it is not always so low or flat, but that it is severed and divided with little hills easy for ascent and pleasant ryvers watering the low valleys with a most beautiful prospect."

It may be of interest to recall the fact that Somerleyton is of considerable historic interest by mentioning that it was from an early period the principal seat of the Lords of the Island of Lothingland, and that in the course of its history it was in the possession of the Allens, FitzOsberts, Jemigans, and other East Anglian notabilities. In the year 1844 the estate became the property of Sir Morton Peto, who greatly improved the gardens, chief among the improvements being the erection of the magnificent winter garden, which, having regard to its area, elegance of design, and suitability for the cultivation of plants from temperate regions, has probably no superior in this country, and but few equals. The mansion, built from designs by John Thomas, an architect of distinction, and the sculptor of the statues in the present Houses of Parliament, is, as will be seen from a glance at the accompanying illustration, of handsome elevation and occupies a commanding position in the park. On the southern side of the mansion is a wide expanse of lawn that extends to the fine avenues of limes and elms which stretch away into the far distance, and form distinct features of much interest. On the west side, which we illustrate, is the formal flower garden that carries the mind back to the days of Nesfield, when closely-clipped box edgings and glistening spar entered so largely into the composition of flower garden schemes. On the north side is the winter garden, and beyond are spacious lawns richly furnished with rhododendrons and other shrubs, remarkable for the beauty of their flowers or foliage, and specimen coniferous and other trees. To the north-east are the maze, the pergola, and the kitchen garden and orchard, all of which features are of much interest.

One of the chief features of interest to horticulturists, and indeed to visitors generally, is the winter garden, which is light and elegant in design, and while in complete harmony with the architecture of the mansion, is admirably adapted to the various forms of plant life that find a home within its portals. In adaptability to plant growth it differs so appreciably from many of the architectural structures built in the early part of the last century as to give it added interest. The roof is formed with a series of curved ridges and a central dome which rises to a considerable height, and adds much to the appearance of the structure when seen from the pleasure grounds. Immediately under the dome is a handsome marble fountain and surrounding the base of the central figure and within the basin is a specimen of the graceful Woodwardia radicans that is probably unequalled. The specimen has a diameter of twenty-one feet, and is perfect in every way. The roots have the run of a bank formed with pieces of turf and raised above the surface of the water, and the fronds enjoy a shower bath from the fountain when playing. In the basin is growing a selection of the choicest of the nymphæas. The general effect in the centre of the structure is further enhanced by splendidly developed basket specimens of the elegant Nephrolepis exaltata suspended from the roof at intervals over the basin of the fountain.



[Photo: H. N. King.

FORMAL FLOWER GARDEN AS SEEN FROM ABOVE, SOMERLEYTON HALL.

From the fountain walks radiate in all directions, and in passing along these many are the noteworthy objects that come under notice. Huge camellias now bristling with flower buds, but soon to be bright with colour, are plentiful, and prove to demonstration that, although not regarded with the favour once shown them, they have no equals among conservatory shrubs for beautifying cool houses during the earlier months of the year. There is no occasion to give the names of varieties, for all the finest are represented, and there appeared to be no great difference in their vigour of growth or freedom of flowering. Associated with the camellias are specimen acacias, variegated forms of the New Zealand flax and tree ferns. Climbing the pillars and spreading freely over the roof trellis are many plants of scandent habit, of interest for their comparative rarity or exceptional development. Passion flowers, tacsonias, and tecomas are especially well represented. Fuchsias in variety are used with good effect, and some of them have occupied their present positions for so long a time as to have main stems of so large a size as to surprise those who have but few, if any, opportunities for seeing these flowers growing otherwise than under ordinary conditions. It was interesting to find that Madame Corneillson, which has been in cultivation for more than half a century, still one of the most highly appreciated of the fuchsias with a white corolla. Especially noteworthy also for its development is Bignonia chere, which has a main stem with a diameter of twelve inches, spreads over a large area of the roof trellis, and in its season produces a wealth of its bright orange-red flowers. Solanum jasminiflorum, one of the most elegant of white-flowered climbers suitable for the conservatory, does well in the winter garden, and is appreciated accordingly. The wall on the east side of the winter garden is more or less shaded, and this is clothed with Woodwardia radicans, aspleniums, and Asparagus deflexus, all of which make a vigorous growth, although the layer of peat in which they are growing has a thickness of only three inches.

Plants in great variety are also grown in pots for beautifying this structure, and prominent among these, when we were at Somerleyton a few weeks since, were the bush chrysanthemums, which made a rich display of colour. Prominent among the varieties was the white Felton's Favourite, which is a favourite also at Somerleyton.

Adjoining the winter garden is a palm house that was provided for species requiring the temperature of the plant stove. The house is fully furnished with a representative collection in the best possible condition, and it is a point of some interest that a lower temperature is maintained than is usually considered advisable for palms from tropical regions. Palms are in constant request for the adornment of the mansion, and Mr. Hanson finds that by growing them in a comparatively low temperature they suffer but little from adverse conditions when removed from the palm house. Connecting the two structures is a spacious corridor that was filled with Japanese chrysanthemums that had been grown under the conditions most favourable to the production of specimen blooms. The rich colour effect at once attracted attention, and the finely developed blooms were of interest as showing that while Mr.

Hanson no longer exhibits chrysanthemums, he is careful that his employers and their friends should still have an opportunity of seeing specimen blooms at home in the highest state of development.

Returning to the flower garden on the western side of the mansion, and enjoying for a short period the bright display of colour in the scroll beds, the eye commences to range over the fair prospect looking westwards, and the many objects of interest within this part of the pleasure grounds. Especially interesting are the shapely Irish yews that flank the fine breadth of velvety turf, the relatively large specimens of Abies orientalis nana, that may be seen on the far side of the illustration, the fine old sundial, the standard rhododendrons, all representing meritorious varieties. Alongside the southern part of the cross walk are the standard Portugal laurels that flank the northern portion. In a line with the southern front of the mansion is the fine avenue of elms, and in a line with the western boundary of the garden is the avenue of limes. Both avenues are formed with four rows of trees, and apart from the splendid development of the latter, they are of special interest as connecting links between the present and the Somerleyton of bygone days.

ENTRANCE TO KITCHEN GARDEN, SOMERLEYTON HALL. [Photo: H. N. King.

Proceeding in a northerly direction from the western flower garden are great masses of select varieties of the pontic rhododendron, that are growing in clay, and are in the most vigorous state of health, and promise to produce, as is usually the case, a glorious display of colour in their season of flowering. There are also in this part of the grounds numerous fine beds of choice hybrid rhododendrons, each containing one variety. Note was also made of an exceptionally fine specimen of the weeping green holly, which has a spread of twenty feet, and is so graceful as to render it difficult to imagine a specimen so perfect as to surpass it.

In the naturally arranged grounds to the north of the winter garden there is a remarkably fine selection of coniferous trees, all being in a robust state of health, and for the most part are of large size. The specimens of Wellingtonia gigantea are especially noteworthy, for they are perfect from base to apex, and are of the richest green. Very fine also are Abies Smithiana, A. brachyphylla, A. Albertiana, A. Parryana glauca, Picea cembra, P. insigne, Retinospora plumosa, Cupressus Lawsoniana aurea, a superb specimen rising to a height of thirty feet, and glowing with colour. Thuia gigantea aurea is hardly less rich in colour, Cedrus atlantica and C. Libani are also remarkable for their large size and rich colour, the strong soil being evidently as favourable to them as to the other conifers. Contiguous to the principal coniferous trees is a large bay, wherein is a rustic summer house with a broad border devoted to choice herbaceous plants, arranged in bold masses, and a central group of choice rhododendrons. This enclosure is reached through a pergola over which such rambling roses as Excelsa and Minehaha fling their slender growths in graceful profusion, and produce a glorious display of colour during the summer months. Not far distant is the maze, which forms so distinct a feature of the gardens, and enjoys a high degree of popularity with the visitors who come over from Lowestoft in their thousands during the summer months. To enable the general public to participate in the pleasure that a garden of the first-class is so well able to afford, Sir Saville Crossley very generously opens the gardens to the public on certain days during the summer months, and although a small charge is made for admission, the visitors number between 8,000 and 9,000 annually. The amount realised for admission is at the end of the season distributed among the local charitable institutions. The hedges of the maze are of yew, and are of greater breath than is usually the case, and the maze is entered by a handsome yew arch.

Another feature of interest is the pergola, which, unlike the majority of such structures, has a framework or iron, and affords a conclusive proof that the majority of plants suitable for clothing pergolas have not so strong an objection to coming into contact with iron as is generally supposed to be the case. However that may be, the whole of the plants are in the best possible state of health, and annually yield freely of their flowers. The dimensions are ideal for a garden of any considerable size, and with the hope that the figures may prove useful, they are given herewith. The length is 300ft., the height 9ft., and the width 9ft. The uprights supporting the framework are made of 1½in. T iron, and are placed 10ft. apart. They are connected together on either side with flat 1¼in. irons fixed at 7ft. above the ground level. The uprights are connected across the area with arches of flat iron of the same size as that used for the sides, and over these are fixed horizontally six iron rods ⅜in. in diameter. Thus is formed a framework that is practically indestructible, proof against the strongest winds, is light in appearance, and not injurious to the plants. Among the roses that have been utilised in clothing the pergola are Madame Abel Carriere, Minehaha, Dorothy Perkins, White Dorothy, Crimson Rambler, Longworth Rambler, and Fortune's Yellow, which grows with great vigour, and produces great masses of flowers. The small-flowered hybrid clematis have also been utilised with much success as also have the purple-leaved vine, and Polygonum baldschuanicum, which is annually pruned rather hard back, and thus kept well within bounds. At one end of the pergola the plants trained to the last pair of uprights are exposed to so strong a draught that there was a difficulty in furnishing them until Mr. Hanson tried the elegant Escallonia Langleyense, which has answered admirably, and presents a pleasing appearance.

[Photo: H. N. King.

VIEW IN THE WINTER GARDEN, SOMERLEYTON HALL.

On one side of the pergola there is a lawn, and on the other a broad border, the latter this year being effectively furnished with broad bands of red pentstemons, blue salvias, herbaceous phloxes, Calceolaria amplexicaulis, and white marguerites. Not far distant is a border 300ft. in length, wholly devoted to hardy perennials that bloom from the latter part of the summer until the autumn is well advanced. All the subjects were arranged in bold groups, and conspicuous among them were Artemesia lactiflora, Solidago Golden Wings, Helianthus sparsiflorus, and Asters Climax and Perry's Favourite.

Within recent years the kitchen garden has been considerably enlarged, and the additional wall space has been fully utilised for the production of choice fruits, such as the finest of the dessert pears. The soil is a strong loam, with clay at no great distance from the surface, and Mr. Hanson finds that he obtains the best results from both apple and pear trees on dwarfing stocks. The pears he necessarily grows on the quince, and in planting all the stations are carefully prepared with a view to preventing the roots striking down into the cold subsoil. Mr. Hanson does not regard with much favour single cordon pear trees, and now few remain, but cordons with six stems are most satisfactory. The apples are grown on the broad-leaved paradise, and as evidence that on a strong soil, this stock is fully able to produce a robust growth, it may be mentioned that one of the bush trees of Gascoyne's Scarlet measured 14ft. in height and 10ft. in diameter. Ribston Pippin bears well on young trees. Lord Burghley is considered one of the best late varieties. James Grieve is highly satisfactory, and Rival is regarded as one of the best of the apples raised by Mr. Charles Ross.

The glass structures devoted to fruits were built from designs by Sir Joseph Paxton, are spacious, and have ridge and furrow roofs, but whatever may be the drawback to this form of roof, as compared with the conventional form, Mr .Hanson does not allow it to interfere with crops of the highest excellence. They include peach and fig houses and vineries in considerable numbers, and the crops of Muscat of Alexandria and the various late kinds other than Muscats were so admirably finished as to indicate cultural skill of a high order. As recently mentioned in these pages, Mr. Hanson grows with much success that excellent late white grape Lady Hutt, and it may now be mentioned that the companion grape Appley Towers was represented by remarkably fine bunches. It is also worthy of note that Lady Downes is chiefly depended upon for late supplies of black grapes, and that the showy Alicante is not regarded with much favour.

In a run through the numerous structures devoted to the production of supplies of decorative plants, and cut flowers, it soon became evident that perpetual-flowering carnations are not less appreciated at Somerleyton than elsewhere. Several houses were devoted to them, and throughout the plants were in buxom health and producing a full quota of flowers. Malmaison carnations are also grown largely and well. Seldom is that attractive stove plant, Gesnera zebrina, grown with so much success as here, and the big bank of plants in one of the structures afforded a useful object-lesson, both as regards cultural methods and utility in decorations. Hardly a plant had a flower spike less than eighteen inches in length, and the finely-developed orange-red flowers presented a brilliant contrast to the large velvety foliage. Several houses were filled with the varieties of Begonia Gloire de Lorraine known as Mrs. Leopold de Rothschild and Turnford Hall, and of the first-named there must have been scores of plants growing in three-inch pots that were simply pyramids of flowers with a height of eighteen inches. GEORGE GORDON.

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## RAISING THE SOIL LEVEL OF FLOWER BEDS.

A practice which seems greatly on the increase is that of raising the soil of flower beds in a pincushion-like manner, with, in many cases, the result that the plants therein are absolutely starved. It is bad enough when carried out by those who make no profession of a knowledge of gardening and simply follow the example of their neighbours, but when one sees very pronounced examples of it in some of our public parks, it is, of course much worse.

Examples of this unnatural way of treating plants were plentiful enough during the past summer, for with everything arranged so that nearly all the water poured on them was wasted, failures were, as a matter of course, frequent. In a wet summer the folly of arranging beds in this way is not so pronounced, but in such a season as the last, it should be brought home to everyone. We all know how fond the beautiful flowering cannas are of liberal treatment, yet last summer I saw some completely starved, and looking as miserable as possible. This, too, was in an establishment that enjoys a great reputation. The beds had been freely watered, but nearly all the liquid ran on to the surrounding grass. On the other hand, in a far less extensive place, a splendid bed of the same kinds of cannas came under my notice. It was fashioned like a shallow saucer, with the result that not one drop of water was wasted, and the plants were in luxuriant health.

Last summer was, from its great heat and long-continued drought, a very trying one for many plants, but its effects would in many cases have been lessened had the soil of the beds been disposed in a more rational manner. Apart from any other consideration, this heaping up of the soil above the surrounding level causes a great deal of extra work during the summer months. K.

# NEW TREES AND SHRUBS OF 1911.

Omitting roses, which are dealt with by other writers, a notable feature of 1911 was the number of rhododendrons that received Awards of Merit from the Royal Horticultural Society. What is even more striking is the fact that, though the newer species from China have been greatly in evidence within the last few years, not one of these has been so honoured during the past season; in fact, eight of the nine plants honoured, are garden hybrids, and the remaining one is the Japanese Rhododendron (Azalea) sublanceolatum.

Though that enthusiastic lover of the rhododendron family, the late Mr. J. H. Mangles, of Valewood, Haslemere, passed away as long ago as August 24, 1884, the fruits of his labours among this beautiful class of plants are still apparent, for of the nine varieties referred to four were shown by his sister, Miss Mangles, of Seale, Surrey. Those in question are R. Glory of Littleworth, a superb member of the genus belonging to that section sometimes referred to as Azaleodendron. This group originated by the intercrossing of an evergreen and a deciduous member of the genus, the best known examples of which are those two old varieties, R. azaleoides or R. odoratum, and R. Smithi aureum. The characteristic weak-looking foliage of this race is evident in R. Glory of Littleworth, but the flowers, which are borne in large clusters, are very beautiful, being of a creamy-white tint, with a large blotch of brilliant orange on the upper part. R. Littleworth corallina has bell-shaped flowers, disposed in loose trusses. In colour the blossoms are pink, with a rosy tinge on the exterior, and of a thick wax-like texture. The large calyx shows traces of R. Thomsoni, but its parentage was not given. R. Dawn's Delight reminds one a good deal of the popular R. Pink Pearl, but it is earlier in flowering than that well-known kind. As early as April 1, the last to mention of the four hybrids shown by Miss Mangles was placed before the Floral Committee. This was R. Mrs. Kingsmill, a reported hybrid between R. Aucklandi and R. campylocarpum. The flowers of this variety are white, and borne in large trusses.

Messrs. John Waterer and Sons, of Bagshot, have given us so many beautiful varieties that one always looks for something good from them. At the Temple Show they received an Award of Merit for the variety R. Corona, a delightful flower of a carmine-pink shade. Though the flowers are rather small they show markedly the influence of R. Aucklandi. Other varieties to which awards were made are R. Loder's White, a beautiful pure white flower, whose parentage is somewhat doubtful. From its extreme floriferousness, even in a small state, it is already very popular in Cornish gardens. A hybrid between R. Thomsoni and R. Aucklandi, shown by Sir T. D. Llewellyn, was much admired. The flowers of this are of a rich red, with a softer tone in the centre.

At the Temple Show one naturally expects to see a grand bank of deciduous rhododendrons, or azaleas as they are popularly termed, put up by Messrs. Cuthbert, of Southgate. The variety A. Duchess of Portland, from this firm, a large and well-formed flower of a pale yellow or straw colour, flushed and tipped with red, gained an award, though personally I preferred another from the same exhibitors, namely, A. Prince of Orange, with fiery orange-coloured blossoms. The last rhododendron or azalea to be honoured during the year was R. sublanceolatum, a rather spare-growing plant with clear rose tinted flowers.

The only First Class Certificate awarded at the Temple Show to hardy trees or shrubs was given to Davidia involucrata, now fairly well known in this country. It is a deciduous tree, in appearance, somewhat suggestive of a lime, and the most conspicuous feature of the inflorescence are two large pure white bracts, which suspend the clusters of flowers. As Messrs. J. Veitch and Sons were, through the agency of Mr. E. H. Wilson, the first to introduce this most promising tree into the British Isles, it was only in accordance with the fitness of things that they should be the first to flower it here, though it has previously bloomed in France. The particular specimen that flowered at Coombe Wood was raised there from seed sown in 1901. There is a larger specimen brought home personally by Mr. Wilson, which, though it did not flower in the spring, bore several of the showy bracts towards the end of September.

[Photo: C. P. Raffil.

CYTISUS DALLEMOREI.

A handsome hybrid broom raised at Kew, of free growth, and bearing a profusion of rose-purple flowers.

Of the two First Class Certificates awarded during the year, the first was, as above stated, given to the Davidia, and on June 20, Philadelphus Lemoinei Virginal obtained the other. This is one of the many varieties raised and distributed by M. Lemoine, of Nancy, and it must, I consider, be looked upon as one of the finest of all the mock oranges. The flowers, which are borne in clusters, are about 2½ inches across, and pure white in colour. They are double, but the petals in the centre are shorter than those around the outside, thus forming a somewhat anemone-like bloom.

Beside the above, Awards of Merit were given to Veronica Silver Queen, a free, dense-growing, prettily variegated veronica of the speciosa section, and the following Chinese trees and shrubs: Fokienia Hodginsi, a new conifer, bearing a considerable resemblance to Libocedrus macrolepis; Cornus paucinervis, a small, upright-growing, freely-branched member of the Dogwood family, with flattened clusters of whitish flowers in August; Itea illicifolia, an evergreen shrub suggestive of a holly, but the flowers are very striking; they are small and of a greensh-white colour, but are borne in long, slender, closely-packed semi-pendulous racemes. Clerodendron Fargesi is in the way of Clerodendron trichotomum, but does not promise to make as large a specimen. The flowers of C. Fargesi are white, and protrude from a reddish calyx. After the flowers fade this deepens, and the fruit in the centre becomes of a bright turqoise blue colour. Some cut sprays from Kew were shown on October 24.

Of the different subjects named above the following seven were illustrated in the GARDENERS' MAGAZINE of 1911, and the illustrations being so lifelike, they give a far better idea than can be formed of the plants than from a long description. Rhododendron Duchess of Portland, June 3; Rhododendron Beauty of Littleworth, June 3; Philadelphus Lemoinei Virginal, June 24; Itea illicifolia, August 5; Cornus paucinervis, August 12; Clerodendron Fargesi, November 4; and Veronica Silver Queen, November 4.

As the result of Mr. E. H. Wilson's travels, Messrs. J. Veitch and Sons are this autumn distributing over a dozen novelties. When at Coombe Wood in the autumn I was particularly impressed with two of these, and these particular species received Awards of Merit when shown with many others at the Horticultural Hall on October 24 These two are Berberis verruculosa, one of the prettiest of evergreen berberris, and a decided acquisition to our hardy shrubs. It reaches a height of about a couple of feet, and is of dense habit, but the arching character of the shoots give it a graceful appearance. The leaves are ovate, spiny, shining above, and glaucous beneath. The flowers are yellow, and succeeded by purple fruits. Lonicera nitida, which also received an Award of Merit, is, for a member of this genus, very singular, yet it is a remarkably handsome little shrub. At a casual glance it is far more suggestive of a cotoneaster than a member of the honeysuckle family, both the minor branches and the leaves being disposed in the regular manner common to some of the cotoneasters. This lonicera is said to reach a height of 3 to 6ft. in height. It is of a somewhat erect, compact habit, the numerous shoots being thickly clothed with small ovate leathery leaves that have a brilliant gloss on the upper surface. The tiny creamy-white flowers are in no ways showy, but pleasantly fragrant.

Osmanthus Delavayi, shown at one of the spring meetings of the Royal Horticultural Society by Messrs. Paul and Son, is so distinct from the other member of the genus, and withal such a pretty shrub, that it merits at least a passing notice. It is a neat, compact growing evergreen, clothed with small boxlike leaves of a dark green colour. The white flowers are tubular in shape, with a widely expanded mouth nearly an inch across, and borne freely in clusters at the point of every shoot. Its hardiness in this country has yet to be proved.

Elscholtzia Stanntoni, a Chinese member of the Labiate family, was, I believe, shown for the first time from Aldenham Gardens, at the Horticultural Hall, on September 26. It is of a half-shrubby character, and as shown formed a bushy specimen about six feet high and four feet through. The pointed, sharply serrated leaves have a decided mint-like odour when bruised. The flowers, which are freely borne in terminal spikes, are of a peculiar, almost indescribable, magenta shade.

Many of the novelties of the last few years have already become very popular, particularly Berberis Wilsonæ, a pretty little species, very attractive in autumn; Buddleia variabilis, represented by several forms; Cotoneaster applanata, Cotoneaster humifusa, and Cotoneaster rugosa Henryi; Dimorphanthus mandchuricus, variegated leaved forms; the newer hydrangeas, Hypericum patulum Henryi, Ilex Perneyi, one of the prettiest of the hollies; Petrowskia atriplicifolia, so effective in a mass; Populus lasiocarpa, by far the largest-leaved poplar; Robinia Kelseyi, a large-flowered, small-growing member of the False Acacia family; and Viburnums Carlesi, V. Henryi, V. rhytidophyllum, and V. utile. The free-growing and profuse-flowering hybrid broom, Cytisus Dallimorei, that was raised in the Royal Gardens, Kew, a few years ago has during the past year fully justified the Award of Merit made in its favour by the Royal Horticultural Society in 1910. When in bloom its rose-purple flowers produce a fine effect.

Though not new, yet Elliottia racemosa is so rare that its claims to mention cannot be overlooked. It flowered at Kew last summer, perhaps for the first time, and certainly for the first time within recent years. It belongs to the order Ericaceæ, and forms a deciduous shrub, which bears erect racemes of pure white fragrant blossoms about an inch across at the end of July. Another old plant, which was comparatively unknown till 1910, when it was given an Award of Merit, namely, Symphoricarpus occidentalis, has this autumn been much admired as it is an ornamental subject much superior to the common Snowberry.

W. T.

**Sparmannia africana.** — Probably owing to the roasting they received the plants of the Sparmannia that were stood outside during the summer and early autumn are this season flowering with unusual freedom. The most striking feature of the flowers is the beautiful purple and yellow colours of the crowd of long brush-like stamens.—S. W.

## THE ROSE SEASON OF 1912.

### An Anticipation.

With the passing of Christmas, the rosarian, forgetting those things that are behind, looks forward to that which is to come. Plant life is stirring. He is told that "January brings the snow, and makes our feet and fingers glow," and he knows the old adage, "as the days lengthen the cold strengthens," but he also knows, and knows full well, that when the white pall is withdrawn, the first whiff of a spring atmosphere, so delicious, so invigorating, may be inhaled at any moment. A few weeks later the sight of a florist's shop window daintily dressed out with Flora's choicest gifts, fills him with delight. Those long-stalked Richmonds and Chatenays and the pearly-white Kaiserins, with their dark-green foliage, are irresistible, and, regardless of mud or motor, he crosses the street to gaze at and admire his loved ones. And standing there, entranced, he sighs to himself, "How beautiful, how beautiful!" Yes, the spring is coming, we know it by its herald, the Brimstone butterfly, and soon the lark's song will awaken our Queen to summon her subjects to her durbar.

At the close of his letter of greeting to the members of the National Rose Society in annual meeting assembled, Mr. Edward Mawley, from his sick-room, which one and all prays that he may speedily quit, wished us "A happy Christmas and a better rose season next year than that of 1911." We reciprocate that wish. But what are the prospects? As to the weather, that question lies in the cap of the gods, but, so far as man is concerned, never were the prospects more rosy.

In the first place, we shall be summoned to the greatest event of the year, to Flora's Court in the Royal Hospital Gardens, Chelsea, on May 22 to 30, there to see the very best that the horticultural skill of the present day can produce. The schedule of this great Royal International Horticultural Exhibition provides twenty-six classes for roses, and such classes that would have been impossible ten years ago. Let us glance at the description of some of them. In the section for roses in pots we find a "Group of roses, in a space not exceeding 500 square feet," "One hundred roses, polyantha-dwarf section, five varieties, 20 plants of each, in pots not exceeding 6in," "Twelve roses, distinct, sent out since January, 1909, as evidenced by the National Rose Society's lists, climbers excluded," "Six climbing roses," on the same conditions; "Thirty-six roses, distinct, standards, weeping varieties excluded," "Nine standard roses, distinct, weeping varieties." In the cut flower section we read of a "Group of roses in space not exceeding 100 square feet," "Twelve varieties of roses, nine flowers of each, with long stalks, in vases or long glasses."

Suitable classes for roses in pots, boxes, and vases are also provided for amateurs. Never before has there been promised such a wealth of roses at one exhibition, and we believe that the highest anticipations will be surpassed by the fulfilment.

The National Rose Society has also great anticipations. It is true the society does not yet provide an exhibition of roses in May, but it will undoubtedly in the near future. Indeed, if the society is to keep pace with the progress of the rose world, it must have a May show for roses grown under glass. We are, however, this year promised four shows instead of three. A summer show at Southampton is fixed for June 26. Here we shall expect to see the early flowering teas and hybrid teas, together with the Provence and Damask, alpina and altaica, sinica, and multiflora, lutea, and its hybrids. The Metropolitan exhibition of the society in the Botanic Gardens on July 9 will bring roses from all points of the compass, and on such a date a great show may be confidently anticipated. A few days later, July 19, the society will take a trip to the Emerald Isle, where we know a hearty welcome awaits the visitors. With the display of autumn-flowering roses in the Horticultural Hall, Vincent Square, on September 12, the National Rose Society will complete its programme.

At the Royal Horticultural Society's exhibition at Holland House, on July 2, roses will again occupy a prominent position, whilst rose shows in the provinces from early in June to well on in August will more than fill up vacant dates. A five months' series of rose shows! Can any other flower claim a longer exhibition season!

And what shall we see at these exhibitions? The serried ranks of specimen blooms will be there, but in reduced numbers, because every society that would keep pace with the times knows full well that to confine its classes to roses staged in regulation boxes tends to monotony, and the consequent slacking of public interest. The demand of the present day is for roses possessing colour, perfume, and freshness, regardless of size and form, and this will be supplied by more classes for free-flowering varieties set up in baskets, vases, and bunches, displayed with more grace and more skill. The hybrid perpetuals have all but passed away, teas are but echoes of the past, and whilst the so-called hybrid teas still hold the premiership, the position is being challenged by the annually increasing varieties of wichuraiana and pernetiana.

We are promised by the National Rose Society another Rose Conference on the lines of that successful one held last April. But more than this, for a project is afloat whereby the society will extend the right hand of fellowship across the dinner-table to rosarians beyong the seas, rosarians who may be expected to visit and assist at the International Exhibition. Mindful of our indebtedness to them for some of the very best and most popular roses of the day, it may, as we hope it will, be an opportunity for making the acquaintance of our brothers in the craft, and get to know them almost as well as we know their roses. In the comity of nations we once prided ourselves on preserving an attitude of "splendid isolation." Recently we have been informed on the best authority that such an attitude is no longer tenable, and one ventures to hope that, should the proposed offer of hospitality to American and Continental rosarians be accomplished, it will in a degree, however small, increase the spirit of universal fellowship and international peace.

JOSEPH H. PEMBERTON.

Havering.

**Pink Spiræas.** — These spiræas are by no means seen at their best when forced, especially if a considerable amount of heat is used, as the flowers are then, even at their best, of a poor tint. When brought on under glass in order to hasten their season of blooming, they should have all the light and sunshine possible, while a free circulation of air also tends to deepen the colour of the flowers. One reason, I think, why these have not made so much progress in popular favour as was at one time anticipated, is owing to the fact that many of them were forced, and their colour did not then give satisfaction. Planted out of doors in a moist spot fully exposed to the sun, the blossoms then acquire a very pleasing tint.—K.

## FORESTRY AS A PROFESSION

The interest in forestry matters which has been awakened within the last few years has led to the assumption in some quarters that forestry is likely to become at an early date a lucrative profession for an unlimited number of men. There does not, however, appear to be any good basis for this idea, for in the event of a large afforestation scheme being adopted, many years would be bound to pass in preliminary work, and until young plantations began to yield revenue the number of officers and workmen must necessarily be small.

Some idea of the number of forest officers required for a given area may be obtained from the "Forest Survey of Glen Mor" (Afforestation in Scotland), Vol. XXV. of "The Transactions of the Royal Scottish Arboricultural Society," 1911. In a carefully considered scheme it is suggested that, for a forest block of 15,000 acres, one head forester would at first be required, with three under foresters, and that in fifteen or twenty years' time, as planting continued and thinning began to be necessary, three head foresters would be required for the 15,000 acres. Thus, if it were possible to take a million acres in hand at once, roughly, 67 head foresters and 200 under foresters would be required, with, of course, a certain number of men who had been specially trained in surveying, valuation, finance, and various other items. From this it will be seen that if a million acres were taken in hand within the next ten years, a comparatively small number of trained foresters would be required, and it is probable that practical foresters are being trained quite fast enough for all immediate requirements. This idea would appear to be upheld from the reports issued from time to time concerning the School for Working Woodmen in the Forest of Dean. For about eight men leave the school annually, and most of them obtain situations, but if the school were extended so that a greater number of men might be taken, it is considered doubtful whether they would all be able to obtain situations when their time at the school expired.

It is quite probable that, in the event of an extensive planting scheme being commenced, a dearth of planters would be experienced rather than foresters, for, although we have been told that anyone can plant trees, the views of practical foresters do not coincide with those of people who sometimes make such statements. Again, forestry is work for country-bred men rather than town men, and although some town men might get accustomed to the life, a great many would never become acclimatised, for it has to be admitted that the work of a forest hand who is worth his salt is of an arduous nature, and if any doubt it, let him try three months' planting on a bleak hill-side, exposed to all the winds of heaven and all the storms that come, for in the event of a storm he has to work through it; there is no running to shelter. Likewise, after a town life, many men would not settle down well to isolated country conditions. On the other hand, the man who has been born to a country life, and has worked all his time in woodlands, is rarely eager to change his lot with any other man; the work and life have a fascination for him, and instances are known of families who for generations have lived and worked in and about forest areas for a low wage, yet the sons and daughters prefer to stay about the old home rather than go further afield for higher wages. This love of a forest life does not apply to forest workmen only, for head foresters are, as a rule, deeply attached to the life, apart from its being their means of subsistence, and those whom force of circumstances has caused to take up other branches of the profession or other professions, find their keenest pleasure in visiting the old haunts.

Taken on the whole, the life of a forester who has succeeded in obtaining a fairly well paid situation may be considered as a comfortable and enjoyable one; certainly much to be preferred to many so-called good appointments in our large cities. That a forester's profession is an easy one to learn is another matter, for during his early training he finds that he has to become acquainted with many things besides tree-planting and tree-cutting. He must also have plenty of grit and perseverance, otherwise he is liable to be disheartened by the work of his earlier years. The forester of the future will also have to obtain a good theoretical knowledge of his profession, and know something of the numerous side issues of forestry.

It may not be out of place to point out how forestry training is to be obtained in this country. For the well-to-do, forestry instruction may be obtained at several of the Universities. Oxford University, Cambridge University, the University College of North Wales, Bangor; Armstrong College, Newcastle-upon-Tyne; the University of Edinburgh; the Royal Agricultural College, Cirencester; the Glasgow and West of Scotland Agricultural College; the Edinburgh and East of Scotland College of Agriculture, and the Aberdeen and North of Scotland College of Agriculture all have Schools of Forestry. Full particulars of the courses at these places and the approximate cost may be found in "The Journal of the Board of Agriculture," Vol. XVI., No. 12, March, 1910, pp. 969-981. A practical forester usually serves an apprenticeship under some good forester; he then moves about from place to place for several years in order to gain experience, and gradually works up to be a head forester. He is able nowadays to obtain a certain amount of theoretical training, for courses of lectures for practical foresters are now to be had at Edinburgh, Aberdeen, and Newcastle, and a two-year course of instruction is obtainable at the Forest of Dean School. Full particulars of the latter school are to be found in "The Journal of the Board of Agriculture," Vol. XVIII., No. 6, September, 1911, pp. 498-500. At this school two afternoons a week are given up to lectures and the rest of the week to practical work. There would, however, appear to be a need for a twelvemonths' course on theoretical work for approved young foresters who have spent a number of years at practical work. Practical men are seriously handicapped, inasmuch that most, or sometimes all, of their study has to be done at night, after a hard day's work in the open air, extending over from nine to twelve hours, and they are therefore unable to do themselves justice. Yet if a man wishes to fit himself for the higher branches of his profession, it is the only course open to him, as he cannot afford a full University course, neither would it be to his advantage to leave practical work for the necessary length of time; but for the year he might very well lock his spade and axe away. Men are expected to know something of the theoretical side of their profession, and it is only right that they should do so, but it is very difficult to obtain the knowledge under existing circumstances, except for those who are most favourably placed. It would, however, only be possible for the better men to undertake such a course of training; men who had no wish to improve themselves would be better away. The youth who could look forward to a year of sound instruction from fully-qualified teachers would in the intervening years between school and college, endeavour to keep up and improve his education, so that he could take full advantage of his teaching, whereas at the present, with nothing definite to look forward to, it is to be feared that on arriving home after a tiring day's work, he is apt to neglect study for something more entertaining. The man, too, who had been through five or six years of practical work would be able to make better use of scientific or theoretical training than the youth who went straight to college from school and spent little or no time at practical work. To men who think that forestry means only the planting and cutting of trees, the lower ranks of the profession only are open, but to intelligent youths who are prepared to work and study hard with low wages for a number of years until they have mastered their work, forestry offers an honourable and comfortable livelihood, with improving prospects in view.

W. DALLIMORE.

## SEAWEED AS MANURE.

I was much interested in the article on "Seaweed as Manure," which appeared in the issue of November 4, page 827. I have assisted in the gathering of many tons of seaweed from the Lancashire coast in Morecambe Bay. The weed clung to the rocks, which were scattered over many acres of the foreshore, and was, of course, when gathered, quite fresh and very succulent. The seaweed was used during the autumn and winter months to mix with the manure daily collected from the stables. As the strawy manure was formed into a neat heap the seaweed was judiciously mixed with it, and at the end of about six weeks the whole heap was turned over. By the end of January the heap had sunk considerably and become very solid and much rotted. This manure was exceedingly good for asparagus and potatoes, but it was used for general garden crops, and as the soil in that particular garden and the neighbourhood was naturally light, the crops grown in quarters so manured "held out" very well, even in hot seasons. The seaweed was generally used in this way by the farmers and market gardeners also.

Mussels were there very plentiful, and were dug and ploughed in for potato crops, and I have never seen tubers with clearer skins than those produced in that district. Scarcely any other kind of manure was used in addition to the mussels.

GEO. GARNER.

**Begonia Gloire de Sceaux.**—This is, as a rule, at its best quite early in the new year, at which time many of the B. Socotrana hybrids are past their best. It forms a bold specimen with handsome bronzy-green leaves, and a profusion of bright rose-coloured flowers. Though grown now for many years, its merits are sometimes apt to be overlooked.—K.

**Hippeastrum aulicum.**—The hippeastrums, as a rule, flower during the spring months, but this species, in common with two or three others, is at its best in the autumn. It produces a particularly stout flower scape, while the blossoms themselves are red, veined with a deeper tint. Compared with the present-day garden varieties of hippeastrum, the segments of the flower of this species are pointed, and irregular in shape. For this reason it has been but little employed by the hybridist for the production of new varieties; but it is a showy plant, and for autumn flowering much can be said in its favour.—W.

# REVOLUTION IN VEGETABLE GROWING.

One has only to look back into the pages of history to find periods when vegetables played but a minor part in the bill of fare of British people; few crops were represented in the patches of cultivated ground that could hardly be called gardens, and little attention was paid to matters of cultivation. In fact, the early history of Great Britain is one of war more than anything else, but we learn how warriors brought back from the Continent and elsewhere plants of an edible character, and we all learnt at school the story of Sir Walter Raleigh, and the way he introduced the potato into this country. Probably in its early stages, vegetable culture was chiefly associated with monasteries and places of religious seclusion, but as the spirit of war declined, arts and education advanced, men began to realise that there were other objects in life besides killing each other, so little by little they turned their attention, amongst other things, to gardening.

Since then this utility aspect of horticulture—i.e., the growing of vegetables, has never looked back, and, though it has seen its ups and downs, there never was a time when it was so important as it is to-day, and its importance is likely to increase. At one period of its history vegetable growing was confined almost entirely to the gardens of the wealthy, except, perhaps, a few of the most common crops, but, as industries developed, and the consequent congregation of people came about in towns, there arose a demand for vegetables, which led to the establishment of market gardens. At first these market gardens were all on the outskirts of populous centres, as some are still, but the builder has laid his hand on many of them, and streets and houses occupy many sites on which crops once grew. If market gardeners have been compelled to retreat further into the country there is the railway for the conveyance of their produce, and the result of it all is that vegetable growing has grown to be an industry of great commercial importance.

Then there are the cottage gardeners and allotment-holders, thousands and thousands of them scattered all over the country. Men engaged in every conceivable occupation, who, in their spare time on small patches of ground, grow vegetables, partly for the purpose of supplying their domestic requirements, and partly because gardening appeals to them as a hobby that is interesting, health-giving, and profitable. No one I think will deny that the working-classes have played an important part in the development of vegetable growing. Think of it all then, how in the history of the nation and its people there has been a complete revolution in the culture of vegetables, which, in its way, is as marked as that which has taken place amongst fruit and flowers, and the march is still in an onward direction.

## The Kitchen Garden.

By right of custom, the kitchen garden attached to private establishments is surrounded by a high wall, furnished with trained fruit trees, pyramids, and bushes may skirt the walks, and monotony is avoided by the presence of herbaceous borders; but it is on those highly-cultivated quarters that the revolution in vegetable culture has largely taken place, for vegetable growing was an art in private gardens when market gardening was in its infancy and the cult of cottage gardens could hardly be called a cult at all. In short, the kitchen garden is the utility part of the establishment, and the gardener, while he supplies the drawing-room with flowers, must of necessity look after the needs of the cook. Not infrequently the spade-work in the kitchen garden is in the hands of an intelligent labourer, but it is the gardener who does the organising, and the way in which private establishments have helped so much in the revolution of vegetable culture is that gardeners have been the first to grow the new and improved varieties sent out by seedsmen, and by this means the reputations of what are now known as standard types has been largely built. In other words, the gardener is a bit of an experimentalist; he likes to try a few new things each season; if they are disappointing he discards them, but if they turn out well he makes known the fact, and so the new variety becomes established in cultivation. I fear there is a danger in these days of young gardeners confining themselves too much to glasshouse training, and treating vegetables and kitchen gardens too much as subsidiary branches; but, depend upon it, this is a mistake, as many have found out when they came to take over their first charge as head, and realised that they were wanting in knowledge of vegetable culture and the management of the kitchen garden.

## Vegetables in Commerce.

If you turn to your Dickens you will find how the great author described the rumbling of market carts over the cobbled streets of London in the early morning, bringing in amongst other things vegetables, and passing on their way the early stage coaches departing on their various journeys. Doubtless the vegetable traffic in those days was considered great, but, shades of Dickens, compare it with the present time, and realise the revolution in commercial vegetable growing. Market carts still rumble, but they are passed on the road by the motor lorry, the railway competes with the road traffic, and Covent Garden is the centre of gravity for vegetable produce from all parts of the country. While this great industry has been growing men have found out that certain soils and localities are suited particularly to the growth of certain crops, and consequently, as illustrations, we get early potatoes from the Channel Islands, cauliflower from Cornwall, asparagus from Worcester, spring cabbage from the favoured vale of Evesham, and so on, and so on. Speaking of the men, it would be difficult to find a more hard-headed set of individuals than the fraternity of market gardeners, who are not to a great extent experimentalists, but in the way of stocks and varieties they stick to those which have proved in experience to serve their commercial purposes. Nevertheless, the revolution in commercial vegetable growing is due more to good cultivation than anything, for the market gardener willingly invests his capital on manure to the tune of fifty tons to the acre, and knows that by doing so he will get a better return for his money than if he applied one quarter as much. It is said of the market gardener that he is wanting in matters of co-operation as regards the disposal of his produce, but be that as it may, as an individual he meets the demands of the times. It is not many years ago since the man in the street first discovered that he liked tomatoes, and now, apart from the acres of land that are covered with glass to supply the demand, the tomato is an important outdoor crop, and I know one grower this year who has had twenty-five acres of land devoted to tomatoes, and each plant had to be raised from seed, potted, planted, and staked. Surely this is revolution and enterprise, for the tomato was ever a fickle plant outdoors, but the illustration shows the type of man that market gardeners are, and they have played no little part in bringing the culture of vegetables up to its present standard.

## Allotments and Cottage Gardens.

No matter what small town, village, or hamlet you go into you will meet with individuals who were endowed by Nature with a taste for gardening and vegetable growing in particular, and for downright keenness the enthusiastic cottager or allotment-holder is hard to beat. "Fond of his garden!" said a labourer's wife to me one day, in reference to her husband. "I should think he is; in fact, I hardly see him, for he is up as soon as it is light, puts in an hour or two before he goes to work, and when he gets home at night it is garden again till bed time." A man would not do this if he did not love his garden, and it is this type of individual whose plot is the pride of the village, and puts to shame that of his less industrious neighbour. This is the man, too, who supports his village show, wins his share of the prizes, and it may be said of him that he has no connection with the community who lounge round public-house doors and air their superior knowledge at street corners. The keen cottager is also a learner; he is the most apt pupil of the County Council Instructor, and he demonstrates a truth which runs all throughout horticulture, that the man who really knows something about gardening is the man who always wants to know more. Local gardening societies and village shows are a great impetus to the keen cottager, who has learnt that, in order to get his scarlet runner beans a bit straighter and a trifle longer than those of his neighbour he must have a good variety. This may be a strain on his slender means, but he does not begrudge the money, and one day a seedsman showed me a letter that he had received from a labourer, accompanied by an illustration of a variety of scarlet runner cut from the seedman's catalogue. It ran as follows: "Dear Sir,—If you can guarantee those beans to be as good as this picture of them, send me half a pint." Comment is needless, except to say that the cottager is keen on getting the best stocks, and in one way or another he has played his little part in the revolution of vegetable culture. It is likely that he will do more in the future, for education authorities have now begun at the right end by teaching gardening in the elementary schools. An important part of this gardening is vegetable growing, and it is not too much to say that hundreds of lads—the cottagers and allotment-holders of the future—are being turned out with a better knowledge of the principles of horticulture of which successful cultivation is based, than their fathers ever had the chance of obtaining.

(To be continued.)

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**Acacia ovata.**—Of the immense number of acacias that are natives of the Australian continent, those that can be successfully flowered in a small state are comparatively few in number. This, however, is one of them, and a charming subject it is for the embellishment of the greenhouse early in the new year. It forms a freely-branched bushy specimen, the shoots clothed with small, roundish, ovate leaves of a deep green tint. The small globular flower heads are of a rich yellow colour. It is not at all exacting in its requirements, and may be stood out of doors during the summer.—S. W.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

COOL HOUSE.—To successfully cultivate the majority of orchidaceous plants we must have various houses heated to different temperatures and so constructed that the requirements of each section, either warm or cool, may be readily given. The cool department is one having sufficient heating apparatus to maintain a temperature of not less than 45 deg. during severe weather. During the summer months a moist atmosphere should be readily obtained. The house must be shaded by some means. A hot, dry atmosphere in this house is detrimental at any season of the year. At this season the temperature should be maintained, as nearly as possible, at the figures given, and the aim should be to keep a free, buoyant atmosphere by giving air on all occasions whenever the outside conditions permit. The amount of atmospheric moisture must be regulated by the amount of evaporation going on; on dull, wet days much less damping will suffice than on a clear, bright day. Cool orchids, although they require shade in the summer months, must at this season have all the light possible, and should be grown near the roof glass. A plant well exposed to the light will become robust and strong. Many inmates of this department will now be showing their flower spikes, notably the odontoglossums, both species and hybrids, and Masdevallia tovarensis. They should all receive the same cool airy treatment, receiving sufficient water to keep them plump. No attempt at forcing them into bloom should be made, but they should be allowed to come slowly and surely into flower, when their spikes will be stronger and the blooms much finer than they would have been if hurried in any way.

PESTS.—It is at this season that slugs and yellow thrips often make their appearance. The former soon discover the young, tender spikes and will devour them and ruin them. A careful look out for slugs must be carried out continually. In the case of yellow thrips the usual remedies of fumigation and sponging must be resorted to, and no relaxation must be allowed until the pest is eradicated. Thoroughness in all things is the sequel to all success in the cultivation of orchids. No cool orchid should be allowed to suffer either from an insufficiency of supply or an excess of moisture, one is as injurious as the other. When watering any plant see that it is properly soaked.

INTERMEDIATE, CATTLEYA, AND MEXICAN HOUSES.—These are practically all one, and the same thing, and at this season the occupants require the same management. During the summer it is a different matter, and it is then very useful if a compartment can be set aside for Mexican orchids, as they revel in the bright sunlight that would be most injurious to many of the cattleyas. The cattleya house must be so heated that the figures given below can readily be reached without unduly forcing the fires, as over-heated pipes are most harmful.

TEMPERATURE. — The temperature in the different houses should be maintained at this season, as nearly as possible at the following figures: Cool house, day, 55 deg.; night, 50 deg. Intermediate or cattleya house, day, 60 deg.; night, 57 deg. East Indian house, day, 65 to 70 deg.; night, 65 deg. General treatment at this season consists of paying close attention to the temperature and atmospheric conditions generally, and avoiding fluctuations as much as possible.—J. T. BARKER, West Hill Gardens.

## STOVE PLANTS.

CLEANLINESS.—In a well-ordered garden containing plant stoves there should be but few periods during the year when there is a scarcity of material, either of flowerng or foliage plants, for making a display; indeed, it is in such structures that one looks for a bright display at the dull season. At the same time an early opportunity should be taken to thoroughly examine and clean the houses and their occupants before a press of other work in the departments begins. In no part of the garden is cleanliness of greater importance than in the stove where the constant humidity and warmth necessary to the occupants has a tendency to encourage insect life and filth. If possible, remove the whole of the pot plants into an adjacent house while the woodwork and glass is being well scrubbed with hot soapy water; follow the scrubbing with a good syringing with tepid water to which is added a wine-glass of paraffin to each gallon; this must be kept well stirred during application. Any climbers there may be in the house should be removed from the rafters or pillars, and pruned where necessary, then cleansed and tied into position. Palms and other foliage plants should be sponged before again re-arranging them.

TEMPERATURE. — When cleaning is finished keep the temperature as low as is consistent with safety to the occupants at this season. Avoid exciting the plants into growth for a few weeks; when the days begin to lengthen will be time enough for this. A maximum of 70 deg. should not be exceeded, and the temperature may fall as low as 58 deg. on cold nights.

LOOKING AHEAD. — Note should be made of the plants that will be most in request in the coming season, and preparations made accordingly for propagating a sufficient number of each. Plants that have passed out of flower, such as poinsettias, Plumbago rosea, and other winter-flowering stove plants should have the water supply gradually lessened in order that they may rest before being restarted into growth for the production of cuttings. Avoid keeping resting plants of this character in too low a temperature; heavy losses often occur through

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this error when propagating time comes round.

SOIL.—Place under cover good supplies of the various soils needed for potting during February and onwards. Mellow loam with plenty of fibre is of inestimable value for plant-growing, and a good stack should now be dug from an old pasture for later use, that stacked last year being used this season. Oak or beech leaves should be collected in sufficient quantities, and kept apart from the general leaf heap to rot down for leaf-soil. Sphagnum moss should be gathered or purchased while the weather remains open. —H. T. Martin, Warren Wood Gardens.

### FRUITS UNDER GLASS.

MELONS.—Where it is desirable to grow early crops of melons, preparations must be made forthwith; thoroughly cleanse the house, giving the rafters, sashes, and glass a good scrub down with hot soapy water, afterwards giving the whole a good rinsing with hot water, applied forcibly with the garden engine. In many places the bottom heat required for growing melons is supplied by the means of hot-water pipes fixed in a chamber immediately underneath the melon bed, but where fermenting material is used to supply the necessary bottom heat, this should be brought into the house at once, using long strawy stable litter, to which should be added some oak or beech leaves. Make the bed very firm, treading down the material as the work of filling proceeds; allow the fermenting material to settle down for a few days before placing the soil upon it. Use good fibrous loam that has been cut and stacked for some time; this should be chopped up roughly, adding a little leaf-mould, old mortar, and wood ashes. The materials must be thoroughly mixed and made up into firm flattish mounds ready to receive the plants. Seeds should be sown thinly in five-inch pots, in a light compost, and plunged in a brisk bottom heat. Cover the pots with glass, and when the plants have made their first rough leaf, put them singly into three-inch pots. Some growers sow melon seeds singly in small pots, but we find that potting the seedlings induces a stronger and more robust growth. Carefully water the plants, and when they have fairly filled the pots with roots, place them in their fruiting quarters. Strong stakes should be placed in the mounds of soil, sufficiently long to reach the first wire of the trellis, and to these the plants should be trained with clean stems until they reach the trellis, after which the laterals should be allowed to grow. Maintain a night temperature of from 65 to 70 degrees, allowing a rise of 10 degrees with sun heat during the daytime; lightly spray the plants on all favourable occasions, and guard against a superabundance of atmospheric moisture.

PROPAGATION OF VINES.—The culture of pot vines is practised in many gardens, and no time should be lost in attending to their propagation from "eyes." Where possible, select the prunings from vines which were forced early last season, as the buds from these start readily into growth, and consequently make better plants than those that are selected from later houses; the cuttings should be made into 1½-inch lengths with the bud in the centre; a little of the bark should be cut away on the under side of the cutting to ensure early rooting. The "eyes" should be placed singly in three-inch pots, in a compost of loam and leaf-mould, with a little sand added, and started in a temperature ranging between 60 to 70 degrees; no bottom heat will be required if the necessary house temperature is maintained. The following varieties are well adapted for pot culture: Black Hamburgh, Foster's Seedling, Alnwick Seedling, Alicante, Black Morocco, Madresfield Court, and Grizzly Frontignan.

FRUITING POT VINES.—These will require careful attention both in watering, and maintaining the necessary bottom heat. Where this is supplied by means of hot-water pipes, built in a chamber immediately under the pots, it is much easier accomplished than where fermenting material has to be used. Syringe the rods daily when the weather permits. The buds will be pushing into growth, and a night temperature of from 55 to 60 degrees should be maintained, with a day temperature of 5 degrees higher. Frequently damp down the house to create a moist, genial atmosphere, and when the outside conditions will allow, give air to strengthen the young growths.—H. R. Farmer, Cardiff Castle Gardens.

### THE FLOWER GARDEN.

PREPARATION OF THE SOIL. — Too much stress cannot be laid upon the importance of soil preparation for whatever plants are to be grown, whether hardy perennials, annuals, or tender bedding plants. It is well to commence the work as soon as the ground is dry enough to be properly dealt with. Frosty weather affords a good opportunity for wheeling manure on to the beds or borders, and in addition to this, burnt refuse, wood ashes, and road-scrapings are excellent materials for incorporating with the more heavy and retentive soils. It is desirable to cultivate the land to a depth of at the least two feet, as that enables the plants to root down deeply and withstand a prolonged drought with comparative ease. Leave the surface as rough as possible, for the weather will soon crumble this down, and as the work proceeds apply a good dusting of lime and soot, which helps to destroy slugs and other pests.

PLANTS IN FRAMES.—The various subjects that are being wintered in cold frames, like border carnations, chrysanthemums, pentstemons, etc., should be well supplied with air during favourable weather, and be afforded adequate protection from frost at night. Remove decayed foliage, and water with especial care. Lobelia cardinalis will pass the winter safely in a cold frame, and while water must be given it sparingly, it should not become dust dry. Salvia patens succeeds under the same treatment.

TRANSPLANTING SHRUBS.—Where this work is not yet completed take advantage of favourable weather to finish the operation, so that the various specimens may become well established before the growing season commences. It is desirable to remove all specimens with a good ball of soil attached to the roots, and in the case of those coming direct from the nursery, use plenty of old potting soil around the roots when planting, particularly where the natural soil is heavy and retentive. When transplanting it is important to bear in mind the necessity of allowing each plant sufficient space to develop its natural habit of growth without overcrowding its neighbours. All specimens that need support should be securely staked and tied to hold them in an erect position.

RHODODENDRONS.—From now onwards rhododendrons and azaleas can be successfully transplanted. They will succeed in most soils where lime is absent, but a peaty or sandy loam suits them the best. Heavy retentive soils should have a liberal amount of peat incorporated with them. Established beds will be greatly benefited by a top-dressing of equal parts of peat, leaf-soil, and well-decayed manure. This not only encourages root action, but helps to feed and plump up the flower buds; as these subjects are surface-rooting, avoid digging among them or forking up the surface of the beds.—J. Gardner, Batsford Park Gardens.

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## THE ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION OF 1912.

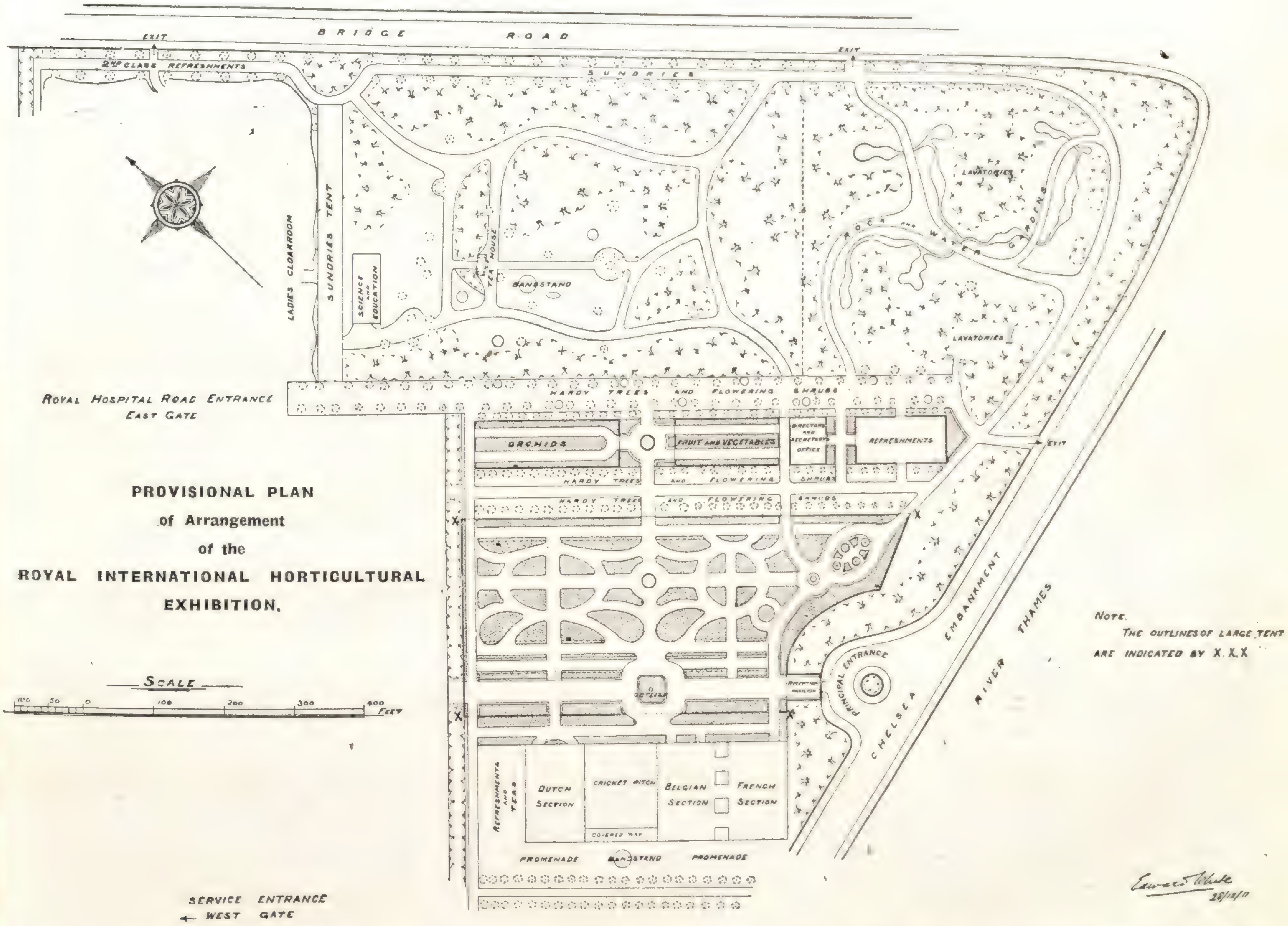
Nineteen weeks hence we shall all be wondering how that great exhibition will look, for which some of us have been hoping ever since we knew how to crock a pot or plant a potato. Twenty weeks hence we shall know whether, as a horticultural people, we have done the right thing at the right time; in short, the financial and horticultural success of the Royal International Horticultural Exhibition of 1912 will by then have been won or lost. It seems hardly possible that the exhibition can be aught else but a horticultural success, because the nurserymen, seedsmen, and sundriesmen will not lose the grand opportunity the occasion affords for the display of their best goods. What is greatly needed, however, is an assurance that the noble and wealthy owners of famous private gardens will exhibit freely, and that amateurs with fewer conveniences, but who so splendidly specialise in some plant or flower, will show well. Regarding the financial success of the great event this seems likely to depend largely on two things, and these are the amount of publicity given during the next few weeks, both at home and abroad, and then upon the weather during the eight days commencing Wednesday, May 22.

The place of exhibition is, as every horticulturist knows, the grounds attached to the Royal Hospital, Chelsea, including the famous Ranelagh Gardens, all of which are under the care of Mr. T. W. Turner, who was at one time general foreman at the Royal Horticultural Society's Gardens, Chiswick. The exhibition will occupy about twenty-four acres, and there is a long, broad, central avenue, and quite a large number of goodly trees about the place. The huge tents for the tender plants will, really, be big canvas covered structures after the character of those with which visitors to the great Ghent and other Continental shows are familiar. The largest tent will cover about 3½ acres; it will be 220 yards long and 45ft. high, and arranged in five spans, all well fitted with complete arrangements for ventilation. It was originally intended to cover in about five acres of ground, but a very large demand for space from Continental growers led to the acquisition of about three acres more ground, and so several large tents will be erected, with connecting corridor, for exhibits from abroad, and each country, notably France, Belgium, and Germany, will have one tent, and be permitted to provide the interior decorations, and subject to certain conditions, arrange their own displays. This feature should add materially to the interest of the exhibition, and will give it a strong international character.

During recent years the development of rock and water gardening has been so marked that designers are asking for much space at the exhibition. To meet their requirements the embankment end of the Ranelagh Gardens has been set aside, and a winding waterway, bridged in four or five places, will be provided. In the upper part of the Ranelagh Gardens and also along the west side of the covered area, hardy trees and shrubs will be displayed, and serve to show the progress made in these subjects, thanks to travellers and hybridists.

Horticultural sundries are to be arranged near the Bridge Road, all along the east side of the Ranelagh Gardens, while kiosks for the publishing and similar trades will occupy positions on either side of the old lime avenue, alternating with groups of trees and shrubs.

It need hardly be said that as complete arrangements as possible have been made for refreshments; one large tent will occupy a fairly central position, and a teahouse is to be provided in the Ranelagh Gardens. Garden architecture will find a place, and at least two large fountains are to be erected. A great feature of the exhibition will be its illumination at night, and the provision of excellent music during the whole of each day.


BRIDGE ROAD
EXIT
2ND CLASS REFRESHMENTS
SUNDRIES
LADIES CLOAKROOM
SUNDRIES TENT
SCIENCE AND EDUCATION
TEA HOUSE
BANDSTAND
ROCK AND WATER GARDENS
LAVATORIES
LAVATORIES
ROYAL HOSPITAL ROAD ENTRANCE
EAST GATE
HARDY TREES AND FLOWERING SHRUBS
ORCHIDS
FRUIT AND VEGETABLES
DIRECTORS AND SECRETARY'S OFFICE
REFRESHMENTS
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PRINCIPAL ENTRANCE
CHELSEA EMBANKMENT
RIVER THAMES
REFRESHMENTS AND TEAS
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FRENCH SECTION
PROMENADE
BANDSTAND
PROMENADE
SERVICE ENTRANCE
← WEST GATE
SCALE
100 50 0 100 200 300 400 FEET
NOTE.
THE OUTLINES OF LARGE TENT ARE INDICATED BY X. X. X
Edward White
28/12/11

**PROVISIONAL PLAN of Arrangement of the ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.**

To meet the heavy expenses of this great undertaking a guarantee fund of £16,000 has been raised, including £4,000 from the Royal Horticultural Society; and subscriptions have been received amounting to a very large sum. In this connection it is interesting to notice that the expenses of the great international horticultural exhibition of 1866 amounted to a little over £12,000, and resulted in a profit of £3,500. The admission charges for 1912 are very high for the earlier days of the exhibition, and have given rise to a good deal of adverse comment.

Their Majesties King George, Queen Mary, and Queen Alexandra have given their patronage to the exhibition, as also have many other members of the Royal family. This of itself ensures a large measure of success, while the King's promise to open the exhibition at noon on May 22 should, weather permitting, be sufficient to make that day a record one in the annals of British horticulture.

The management of the exhibition is vested in a Council of Directors. The Duke of Portland is president, and Sir Jeremiah Colman, Bart., treasurer, while Mr. J. Gurney Fowler and Mr. W. A. Bilney are respectively chairman and solicitor, with Mr. Edward White, hon. managing director; Mr. T. Geoffrey Henslow, secretary; and Mr. G. J. Ingram, financial secretary. The other directors are Sir Albert Rollit and Messrs. N. F. Barnes, E. Beckett, E. A. Bowles, W. Cuthbertson, C. R. Fielder, J. Green, F. J. Hanbury, A. G. Jackman, A. Kingsmill, H. B. May, C. G. A. Nix, George Paul, C. Harman Payne, R. Hooper Pearson, T. A. H. Rivers, N. A. Sherwood, A. W. Sutton, Harry J. Veitch, and R. Wallace. Mr. Harry J. Veitch is the only gentleman on the Board who had anything to do with the management of the exhibition of 1866. The offices are at 7, Victoria Street, Westminster, and from thence can be obtained the schedule of 428 classes. Applications for space for non-competitive exhibits must be sent in on or before January 13, and entries in the classes under the schedule should be sent on or before February 1. There is no stint of prizes, and cups and medals have been offered by traders, amateurs, and societies in a most generous fashion, and there is a cup offered by the King which ought to bring out a strenuous competition. At the moment a movement is on foot among County Committees which has in view the presentation of a cup from each county, or group of counties, and it is receiving very favourable consideration.

In addition to the exhibition of flowers, fruits, plants, vegetables, etc., one large tent is to be set apart for exhibits of a purely educational and scientific character, i.e., those of service in the identification of fungus, insect, and other garden pests. Demonstrations with the microscope are being arranged. The Science and Education Committee, with the Right Hon. A. H. Dyke Ackland as chairman, and Mr. F. J. Chittenden as secretary, have very properly limited their programme to the consideration of two important questions, i.e., Legislation at Home and Abroad for the Prevention and Suppression of Plant Pests, and the absorbing one of Horticultural Education. The Conference for the consideration of these questions will, it is believed, take place in one of the large rooms at the Hospital, and, by the way, visitors should, as far as is allowable, see the beautiful chapel at the Hospital, the Great Hall, and the Cloisters. The date and hour of the Conference have not yet been decided, but two days will be needed to fully discuss the questions raised.

Entertainments will be on a lavish scale, as British horticulture owes a great deal in this respect to Continental horticulture, and will endeavour to reduce that indebtedness on this occasion. Those who have been to Paris, Ghent, Haarlem, Hamburg, Turin, etc., during recent years know how splendidly has been the entertainment offered to judges and pressmen. Here is the opportunity to reciprocate, and surely no one knows better how to make the necessary arrangements than Sir Albert Rollit, who presides over the Entertainment Committee. It is probable that the National Rose Society will actually open the proceedings by giving a dinner at the Westminster Palace Hotel to the foreign rosarians on the eve of the exhibition. It is understood that Sir Trevor Lawrence, Bart., president of the Royal Horticultural Society, will invite the jury, etc., to luncheon at Burford Lodge, Dorking, and similar hospitality will be extended on another day at Gunnersbury Park, by Leopold de Rothschild, Esq. A full-dress banquet appears to be a prominent item, and it is believed the official luncheon to the judges, etc., will take place on the opening day in the Great Hall of the Royal Hospital—at least so rumour says.

Much more might be written concerning the great horticultural event of this year, but here is enough to indicate its greatness, and it may be hoped, to increase the desire that in every sense the function shall be worthy of the British nation, and particularly worthy of our horticultural traditions. What is wanted, it seems to me, is a great scheme of advertisement, to be started immediately, and in such a fashion that everyone who has the slightest interest in gardeners and gardening shall "talk up" the exhibition.

C.

## OBITUARY.

◆

### MRS. WILKINSON.

We regret to record the death of Mrs. Wilkinson, the wife of Mr. Wilkinson, of the Tyntesfield Gardens, Bristol, which occurred at Tyntesfield on December 27. Mr. Wilkinson has our deepest sympathy in the loss he has sustained.

The sad news reaches us just as we go to press of the death on January 2, of Mr. William Deal, Brooklands, Kelvedon. The deceased gentleman was a well-known nurseryman and seed grower, and of late years had ranked among our leading sweet pea growers. We understand that his son, Mr. Bertrand W. Deal, will carry on the business. To him and the other members of the family we tender sincere sympathy in their bereavement.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1911. December 24 to December 30. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | Temperature of the Air. At 9 a.m. Wet Bulb. | Temperature of the Air. Day Highest. | Temperature of the Air. Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Dec. 24—Sunday ...... | 1 36 | 51 | 50 | 52 | 30 |
| ,, 25—Monday ...... | 1 42 | 41 | 39 | 44 | 40 |
| ,, 26—Tuesday...... | — | 40 | 39 | 50 | 39 |
| ,, 27—Wednesday.. | 2 0 | 38 | 37 | 48 | 38 |
| ,, 28—Thursday.... | — | 48 | 48 | 51 | 37 |
| ,, 29—Friday........ | — | 47 | 46 | 49 | 47 |
| ,, 30—Saturday..... | 0 6 | 47 | 46 | 51 | 46 |
| Means ... | (total) 5 24 | 44 | 43 | 49 | 39 |

| Date. 1911. December 24 to December 30. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | Temperature of the Soil at 9 a.m. At 2 ft. deep. | Temperature of the Soil at 9 a.m. At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Dec. 24—Sunday ...... | 0·27 | 43 | 43 | 46 | 26 |
| ,, 25—Monday ...... | — | 42 | 43 | 46 | 31 |
| ,, 26 Tuesday...... | 0·22 | 41 | 43 | 46 | 30 |
| ,, 27—Wednesday . | 0·16 | 42 | 43 | 46 | 27 |
| ,, 28—Thursday.... | trace | 42 | 43 | 46 | 28 |
| ,, 29—Friday........ | — | 44 | 43 | 46 | 41 |
| ,, 30 Saturday .... | 0·01 | 45 | 44 | 46 | 42 |
| Means . | (total) 0·66 | 42 | 43 | 46 | 32 |

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

UNHEALTHY GOOSEBERRY TREES.—R. F., Berks: You have not been correctly advised as to the cause of the unsatisfactory condition of your gooseberry bushes. They are not suffering from a light attack of American gooseberry mildew, but the shoots were severely injured by aphis during the past summer. The tops of the shoots present much the same appearance as the same parts of shoots that have been infected by mildew, but if you closely examine them you will find that the surface has turned brown, whereas American mildew infected shoots have a brown covering which consists of the spawn of the fungus bearing the fruit receptacles and can be readily removed. We advise you to cut out all the weakly shoots of last year, and to prune the others far enough back to remove the whole of the aphis-injured wood and burn the prunings. A moderate dressing of partly decayed manure may be applied during the next few weeks with much advantage. As the soil rests upon gravel it is not surprising the growth should have been so checked by the drought during the summer as to have become a prey to green fly.

BIG ONIONS.—K. H. B., Yorkshire: Large onions that are obtained by sowing the seed under glass early in the year, bringing the young plants along in pots in cold frames, and bedding them out in the spring, are far from worthless for culinary purposes. Whether they would be more suitable for the purposes for which you require them than those of medium size, such as you have hitherto had, can only be determined by yourself. The keeping properties of onions depend in a large measure upon the bulbs having been properly ripened, and those raised from seed sown under glass reach maturity several weeks in advance of those obtained from sowings made in the open beds. Hence they keep well, and, as a proof thereof, we would mention that we have had bulbs weighing between two and three pounds that were ripened in August and were perfectly sound in April. Under ordinary culture you would not obtain onions of so large size.

ANNUALS FOR THE ROCK GARDEN.—W. W. H., Herts: It is necessary to exercise considerable care in the cultivation of annuals in the rock garden because of the risk of their overrunning the smaller-growing alpines, or of their flowers being too strong in colour to harmonise with the more delicate hues of the flowers of the Alps. As your rockery has been recently formed, and you are desirous of deferring the completion of the planting of perennials until early in the autumn, you might in the spring use a few annuals for filling spaces. Among the annuals that occur to us as useful for a rockery are Alyssum minimum, dwarf in growth, and bearing a profusion of sweet-scented white flowers; Calindrinia grandiflora, a rather free-growing plant that should be planted on a rather broad ledge where it will be fully exposed to the sun, the flowers are rose-coloured; Dimorphotheca aurantiaca, a free-branching plant, attaining a height of about twelve inches, and bearing freely and continuously throughout the summer elegant flowers of a brilliant orange hue, should have a sunny position; Inopsidium acaule, a compact growing plant, bearing purplish flowers; and Phacelia campanularia, a handsome species of rather dwarf growth, and producing a profusion of brilliant blue flowers.

CALADIUM CORMS.—J. S., Yorkshire: As we have stated in our answers to correspondents on several occasions, the best way of wintering these corms is to leave them undisturbed in the pots in which they were grown the previous season, and place the pots in the plant stove or other structure in which a temperature of about 65 degrees is maintained. The proper time for shaking them out of the old soil will depend upon the period at which you wish to start them into growth, but they should not be disturbed for some weeks hence.

MUSSEL SCALE. — Young Gardener, Essex: The pear trees from which you send us shoots are badly infested with mussel scale (Aspidestus conchiformis), and we would strongly advise you to take steps to eradicate the pest. This scale is not only injurious to the trees, but the insects spread over the fruits in the course of the summer, and give them a more or less objectionable appearance. Under the old methods of procedure, it has not been a very easy matter to eradicate the pest, especially in the case of old trees, but with the aid of the caustic winter wash, prepared in accordance with the formula recommended by Mr. Spencer Pickering, there is no great difficulty in clearing the trees of it. To make ten gallons of wash, take iron sulphate ½lb., libe ¼lb., caustic soda 2lb., paraffin 5 pints, and water to make ten gallons. To prepare the wash, dissolve the iron sulphate in about nine gallons of water, slake the lime with a small quantity of water, and sufficient to convert it into a milk of lime, strain this through a coarse sacking, and add to the iron sulphate solution. Then churn the paraffin into the mixture, and add the caustic soda, and on this being dissolved, the wash will be

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ready for use. Spray the trees at the end of this month, or early in February, and be careful to have the work thoroughly done. It will be advisable to wear a stout pair of leather gloves when spraying the trees to prevent injury to the hands.

SWEET PEAS IN FRAMES.—Amateur, Sussex: During such mild weather as that we are now experiencing it will be advisable to withdraw the lights from the frames during the daytime to fully expose the sweet peas to atmospheric influences to ensure a stout, short-jointed growth. When the lights are withdrawn take such measures as will prevent sparrows doing any damage to them.

PLANTING ROSES.—T. W., Dorset: The best month in which to plant roses is, as a rule, November, but when the planting is not done in that month there is no occasion to wait until the early days of spring when the weather is open, as is now the case. We suggest that instead of waiting until the middle of February, in accordance with the advice that has been given you, that you purchase and plant the roses at once. Should there be a change in the weather, and the soil be frozen when you receive the roses, place them in a cool shed, and allow them to remain in their packages for a few days. If they have to remain in the package for more than three or four days, remove the packing materials from about the branches and dip the lower part of the bundle into a tub of water for a short time to moisten the roots.

REPLANTING COREOPSIS GRANDIFLORA.—N. E. A., Limpsfield: You will probably lose a very large percentage of the plants if you move them to their flowering quarters now. If they are over-thick in the nursery bed, and liable to suffer from damping, lift half the stock—the alternate plants—and pot them up, placing them in a cold frame, and affording them abundance of air on all favourable occasions. Under such conditions they will make excellent stuff for planting out next spring, while those left in the bed, if filled round with light soil, should also better stand the winter. If you have abundance of cold frames you might pot up the lot, always remembering that a close atmosphere will defeat the end in view, and that the lights should be used chiefly for the purpose of shielding the plants from rain and snow, and severe frost, rather than for the encouragement of growth.

LAVENDER SWEET PEAS.—H. M. S., Gosport: You can make no mistake in growing Asta Ohn and Masterpiece, as both are excellent lavender coloured varieties, and the first-named is now practically fixed, whereas it was badly mixed when first sent out. Frank Dolby, Florence Nightingale, and Lavender George Herbert are other good lavender varieties, and the last-named, when at its best, is very difficult to beat.

CRIMSON RAMBLER ROSE.—R. F., Bude: This fine rose is not usually a success against a south wall, because during bright, hot weather, it suffers terribly from thrips and mildew in such a situation. Perhaps in your favoured climate, with a moist atmosphere, it would not be so subject to these attacks; nevertheless, we should advise you to grow the variety in a more open position. Dorothy Perkins and Lady Gay are both capital roses for weeping standards.

EDELWEISS.—M. S., Torquay: There is no occasion to visit Switzerland and make dangerous mountain ascents to obtain flowers of this distinct and interesting plant. It can be most successfully grown in this country, and many of our friends who give attention to alpines cultivate it, either on the rockery or in borders. The best results are obtained by growing it on a ledge of rockery where the roots will have the run of gritty soil, from which surplus water can readily escape. The Edelweiss can readily be raised from seed sown under glass early in the spring, and the seed is not expensive.

SHODDY.—S., Dewsbury: Shoddy manure, of which you have heard much during the short period you have been in the North, is the refuse of woollen rags that go first to the manufacturer to be torn up and again made into cloth. We have used shoddy with good effect in the cultivation of various kitchen garden crops, but we do not consider it equal to stable manure because it is somewhat slow acting. Shoddy manure varies considerably in the percentage of ammonia, ranging from 17 per cent. in the higher grade to about 3 per cent. in the lowest grade.

## CATALOGUES RECEIVED.

SUTTON AND SONS, READING.—As usual, the first of the new seed catalogues to arrive was the handsome one from Reading. It is an imposing book, volume almost, or over two hundred pages and well nigh a picture on every page. Needless to say, the get-up of the catalogue is first rate, as are the selections of seeds offered within it.

E. WEBB AND SONS, WORDSLEY, STOURBRIDGE, issue a very finely illustrated and capitally arranged catalogue of seeds, the illustrations representing the firm's specialities in flowers, vegetables and fruits, and, in many cases, the growing crops of these special selections.

JAMES VEITCH AND SONS, LIM., CHELSEA.—This firm maintains its reputation for a comprehensive and freely-illustrated catalogue, as well as for the merit of its specialities and the excellence of its seeds. With the seed catalogue come lists of chrysanthemums and specialities in herbaceous plants.

## FORTHCOMING ENGAGEMENTS.

MONDAY, JANUARY 8.—Royal Horticultural Society. Examination of Employees in Public Parks and Gardens, 10 a.m.

TUESDAY, JANUARY 9.—Royal Horticultural Society. Meeting of Floral Fruit and Orchid Committees, noon. Exhibition, 1—5 p.m. Scientific Committee, 4 p.m.

WEDNESDAY, JANUARY 10.—Croydon Chrysanthemum Society.—Annual Meeting.

THURSDAY, JANUARY 11.—Britsh Gardeners' Association (London Branch), Address by Mr. E. C. Cooper on "The Cultivation of Chrysanthemums."

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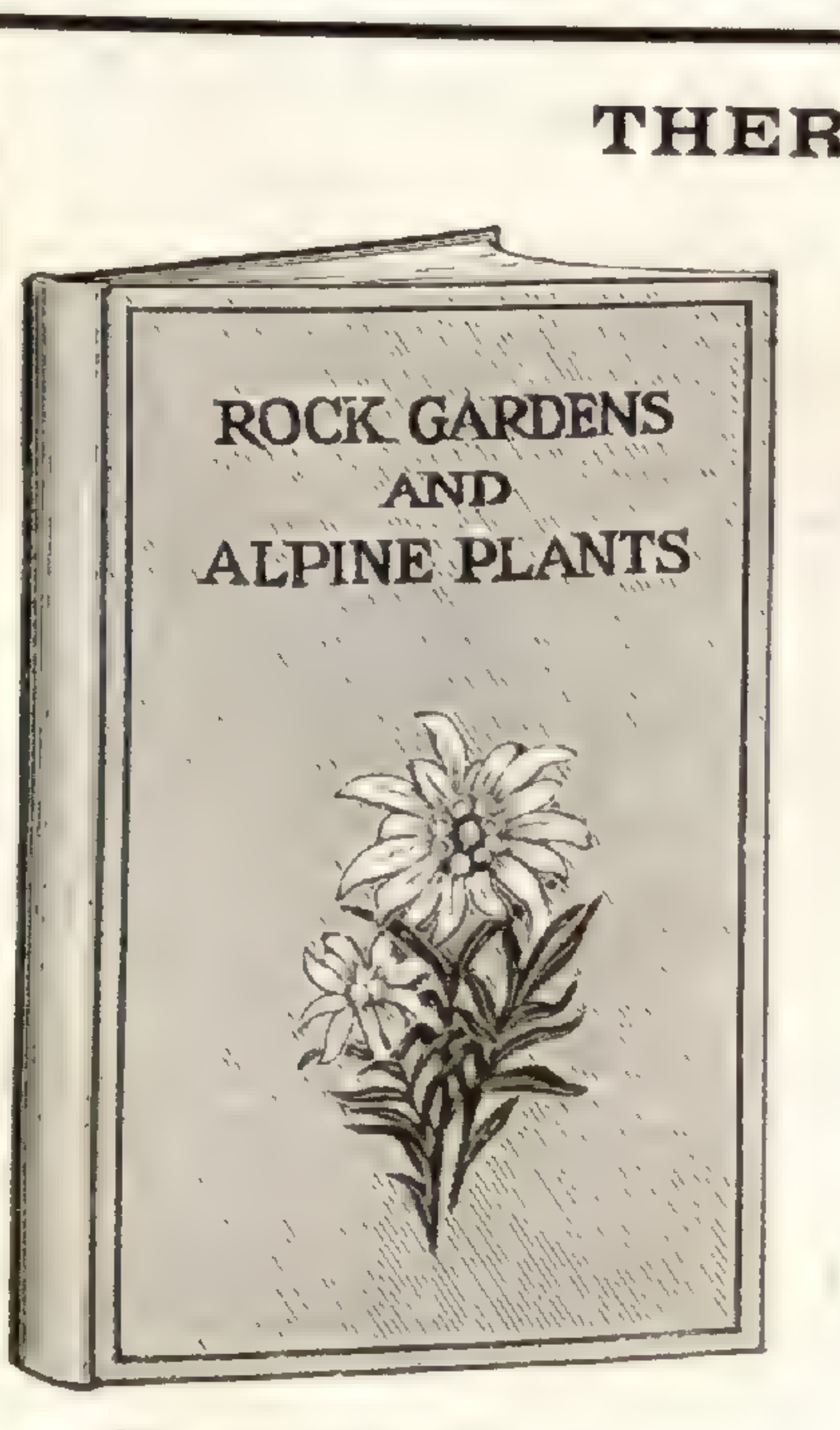

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A List of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.

## Situations Wanted.

GARDENER (Head Working), thoroughly experienced in all branches; excellent references; married; disengaged through establishment being given up. G. HALL Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working). — Mr. H. HEMSLEY, Rock Expert, Crawley, Sussex, would be pleased to highly recommend a thorough competent man in all branches of the profession; highest references; age 36; married. Address as above.

GARDENER (Head).—Lord Ashburton highly recommends his late Gardener; life experience in fruit, flower, vegetable culture, and landscape work; good manager; age 39; married, one child. GARRATT, 14, Kitchener Road, East Finchley, London, N.

GARDENER (Head Working) (Scotch) requires SITUATION where 2 or 3 are kept; 20 years' experience in all branches of gardening; 5 years present situation; married; age 36; 2 children; excellent testimonials. H. McCARTNEY, 14, Icklingham, nr. Mildenhall, Suffolk.

GARDENER (Head Working, where one or two kept); 10 years in present situation; 5 years as second; age 31; married when suited. A. GIBBS, The Gardens, Farrants, Bickley, Kent.

GARDENER (Head) seeks SITUATION where three or more are kept; practical experience in all branches; excellent references; age 31. Address, S. DOUGHTY, Overstone Park Gardens, Northants.

GARDENER (Head Working).—Mr. COLLEDGE, Gardener to the Earl of Darnley, highly recommends F. BISHOP as above; 4½ years as Foreman here. Cobham Hall Gardens, Gravesend, Kent.

GARDENER (Head Working), where several kept; three years present situation; leaving through estate being sold. CHEAL, Bridley Manor, Worplesdon, Surrey.

MR. H. BLAKE, Head Gardener to the Earl of Onslow, Clandon Park Gardens, Guildford, will be pleased to recommend strong, active YOUNG MAN; Inside and Out; age 19; can take duty.

GARDENER (Head Working).—H. ESSAM can confidently recommend his Foreman to Lady or Gentleman requiring the services of a thoroughly practical and reliable Head Gardener; age 31; married when suited; excellent references. Closes Hall, Gisburn, Clitheroe, Lancs. No circulars.

GARDENER (Single-handed, or where help is given; life experience, Inside and Out; good references, and can be well recommended; age 31; married, no family. W. WEST, The Lodge, Pyrford Court, Woking.

GARDENER (Single-handed, or where help is given); 12 years' practical experience; 4 years in last situation; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER (Single-handed or otherwise); 14 years' experience Inside and Out; good reference; age 32; married, two children; Midlands preferred. J. WORLOCK, Newtown, Buckland St. Mary, Chard, Somerset.

GARDENER (Single-handed or good Second); 4 years' good character; age 23; single; abstainer. Apply A. F. ROOKE, Houndean, Lewes, Sussex.

GARDENER (Single-handed); experienced; good reference; age 33; married, 1 child; disengaged. ARCHER, c.o. Gardener, Kingsbury House Gardens, Kingsbury, N.W.

GARDENER (Single-handed or with help); married, no family; 7 years present place; 10 years previous; left through death. C. LAWRENCE, The Highlands, Gipsy Hill, Upper Norwood, S.E.

GARDENER seeks SITUATION as Single-handed or good Second; 4½ and 1½ years' experience, Inside and Out; well recommended; age 23; married when suited. C. B., 9, Pope Road, Bromley, Kent.

GARDENER seeks SITUATION as LEADING MAN in Kitchen Garden, and would assist in Pleasure Grounds if required; age 32; married, one child; good references. KENCH, Brook House, Bollington, near Macclesfield.

SITUATION required as FOREMAN or HEAD: 20 years' practical experience in all branches; nine years present place; good testimonials; age 33. W. HURST, Hale Cliffe, Hale, Liverpool.

GARDENER.—Young Man as IMPROVER (inside, or Inside and Out); highest references; 2½ years last place; Bothy preferred. A. STEVENS, 21, Arnold Road, Woking.

GARDENER (Single-handed, or where help is given); life experience in all branches; highest references; thoroughly understands Oil Engine; age 40; strong and active; married; 3 in family, youngest 12½. E. STEVENS, 13, Connaught Road, Newbury, Berks.

GROWER; age 25; life experience in Chrysanthemums, Carnations, Bulbs, Ferns, Marguerites, Tomatoes, and Bedding Stuff; married when suited. E. DICKINSON, Shripney, Bognor, Sussex.

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**For JANUARY 13, 1912.**

*To the Advertisement Manager of "THE GARDENERS' MAGAZINE," 148 & 149, Aldersgate Street, London, E.C.*

**Please Repeat my Advertisement.**

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**THIS COUPON,** duly filled up, should be forwarded not later than Tuesday for the next issue.

# THE GARDENERS' MAGAZINE.

No. 3,037.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
SATURDAY, JAN. 13, 1912.
(10/6 per Ann. Post Free. To Foreign Countries, 15/-.) Twopence

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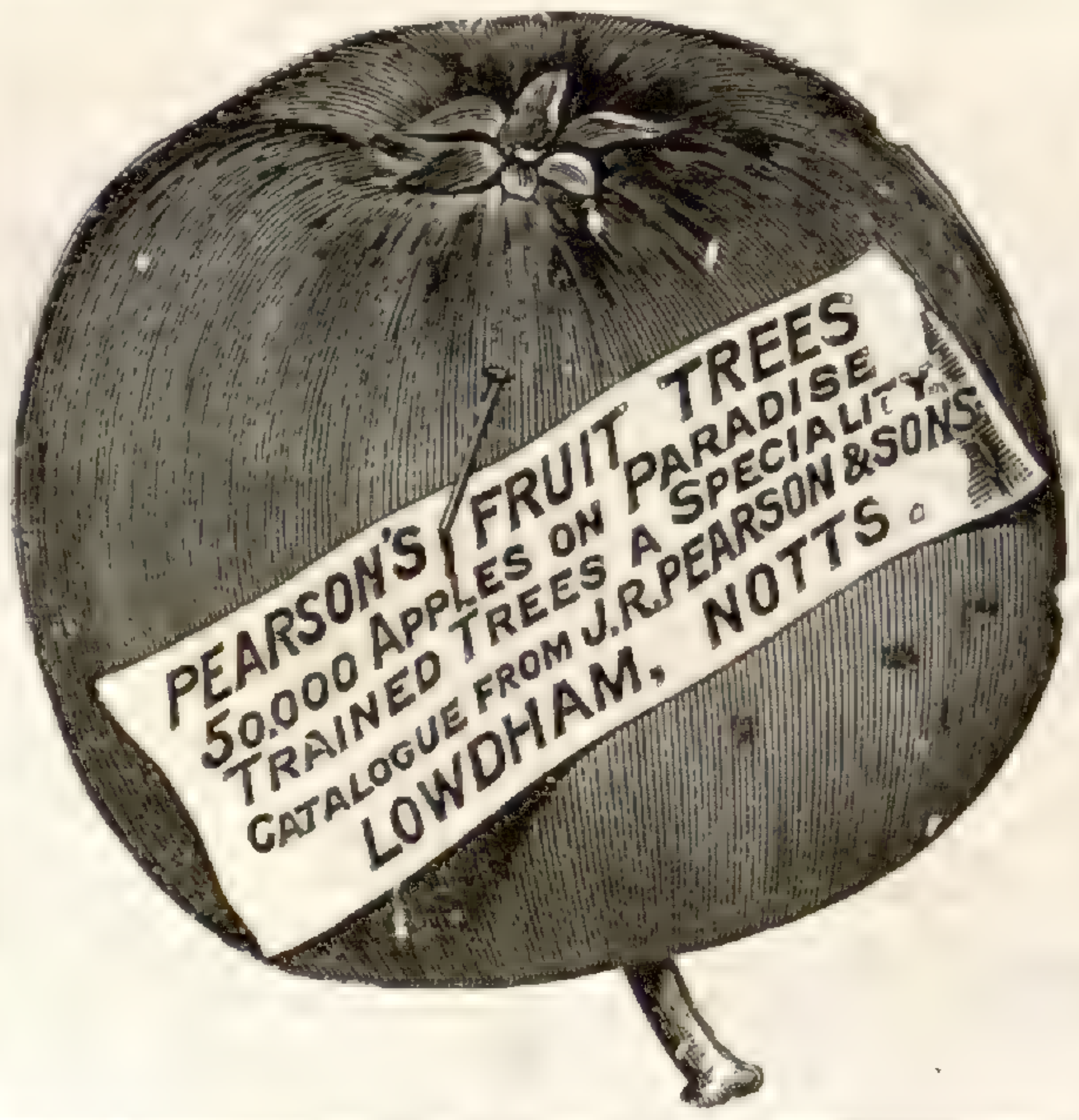
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The undersigned begs to announce to the Public that he is in a position to supply, wholesale or retail, **Burma Orchids** of 50 varieties at a moderate price. Further particulars on application.—**J. C. PRAZER, Orchid Collector, KALEWA, BURMA.**

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PITT'S IMPROVED LYON LEEK.—Two firsts, two seconds, two thirds, Glasgow National Exhibition. Testimonials on application. 1s. 6d., 2s. 6d. per packet. PITT, Eccles, Kelso.

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VOL. LV.—No. 3,037. SATURDAY, JANUARY 13, 1912.

# THE GARDENERS' MAGAZINE.

## NOTE OF THE WEEK.

◆

### Cross Fertilisation.

Nature, in the process of evolution and the development of species, has simultaneously devised many methods of maintaining the integrity of the latter when established by means of differences of structure of the reproductive apparatus, attractive or repulsive capacities in the stigmatic surfaces, different times of maturity, and so on, so that normally natural hybrids occur but rarely, and when they do occur are usually non-reproductive, the unnatural alliance going no further than the individual. Man, however, has by artificial cross-fertilisation, due to the removal of some of these obstacles, found it possible to combine not merely species, but even widely distinct genera, especially in the case of orchids, and since there is no such antagonism between varieties of a single species as exists between species and genera, despite the fact that "sports" may depart so widely from the normal specific type, as to differ therefrom more even than distinct species may do, cross fertilsation between such has contributed enormously to the floral wealth we possess. In other directions, too, fruits, vegetables, and foliage plants, and last, but by no means least, our cereal crops have benefited greatly by judicious alliances and combinations of qualities and constitutional differences, which has increased their yield, improved their flavour, or rendered greater their commercial and industrial value as the case might be. Non-sexual "sports," of course, have played probably an even more important rôle in what may be termed human selection as distinct from natural selection, since in the vast majority of cases, these form the starting point for the selective cultivator. Judicious crosses, however, between normal species, as in the wonderful case of the tuberous and other begonias, have had marvellous results, the original combination of two species resulting in a sportive capacity in the offspring of which the cultivator was not slow to reap the benefit, cross fertilisation between the offspring fortunately not being handicapped by infertility in this case, though the original parents were very distinct. Apart from the benefits to which we have adverted, it is a recognised fact that while, as we have said, Nature has barred to a very great extent cross fertilisation between species in their wild state, she has contrived innumerable methods of facilitating or even securing it between the individuals of a species as a means of strengthening the constitutions of the resulting offspring which self-fertilisation is apt in the long run to weaken. In-breeding tends to degeneration in all forms of organic life, animal or vegetable. New blood from time to time appears to be essential, and it is in this connection that the insect-world has been of incalculable service in vegetative evolution, not only by conveying the fertilising pollen from one individual to another, generally of the same species, but by some subtle powers of discrimination, choosing the more conspicuous or more brightly coloured and by such favouring of their reproduction, gradually improving their beauty until even before man came in as a more potent selective factor, the world was full of floral gems for him to begin his work upon. The proof that we owe so much to insect choice is seen in the fact that wherever Nature in her infinite versatility has evolved plants whose pollen is distributed by other means, by wind or water, the flowers are small and inconspicuous as seen in the great wind-fertilised family of the conifers, willows, etc., and in vallisneria as an aquatic. A further proof of the value of insect agency is undoubtedly seen in the fact that cryptogamic plants, bearing no obvious flowers at all, have, to all intents and purposes, stood still from the inconceivably remote period of the coal age, when they represented the great bulk of the world's vegetation. In time some of these contrived to vary in such a way that primitive flowers were evolved, the cycad was followed or accompanied by the conifer, and presently some inventive individuals developed flowers proper to suit dull environments, and we may then assume that the insect work began, and that more rapid strides were possible. Unfortunately, flowers are the most fugitive and transient parts of vegetation, and hence geologic records, which teach us all we know of these long past epochs, can tell us next to nothing about them, though rich in the remains of their flowerless predecessors, or even the solid residues of some primary flowering ones.

MR. J. COLLIER.

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**Mr. J. Collier,** whose portrait we have the pleasure of giving herewith, has for some three or four years occupied the position of head gardener at Gatton Park, the fine Surrey seat of Sir Jeremiah Colman, Bart., and during that period has given ample evidence of his great abilites in the management of the garden. Although best known to the general body of horticulturists for the success achieved in connection with the magnificent collection of orchids that has made the Gatton Park gardens famous far beyond the boundaries of the United Kingdom, he is not less at home with the many ornamental plants and the useful crops that have a place in an establishment of the first class. Therefore, the visitor to Gatton Park finds well-furnished and highly-kept fruit and kitchen gardens, glass structures devoted to fruits and miscellaneous plants in a condition that indicates cultural skill of a high order, and pleasure grounds of wondrous beauty as well as orchid houses filled with the choicest forms of these beautiful plants. Sir Jeremiah Colman is too keenly interested in horticulture to devote his attention wholly to one aspect of it, and as a consequence Mr. Collier has had full opportunities for the display of his varied ability.

The orchids are, of course, the predominant feature at Gatton Park, and it is therefore of interest to recall the fact that the fame they have so long enjoyed has been fully maintained since they have been under Mr. Collier's charge. During this period two gold medals have been awarded by the Royal Horticultural Society for collections of dendrobiums from Gatton Park. Last year the society's gold medal was awarded at the Temple Show for a general collection, and in 1910 the Sherwood Cup was won at the Temple Show, and a gold medal at Holland Park by collections which were greatly admired by visitors, and in our reports were referred to in highly appreciative terms. Before assuming charge of the Gatton Park gardens Mr. Collier was head gardener at Camden Court, Coventry, and at Manningham Thorpe, Bradford, and in both establishments orchids were strong features.

**Another £1,000 for Sweet Peas.**—Those who are interested in the cult of the sweet pea, whether owners of ducal or cottage gardens, will this year have sufficient encouragement to sustain their interest in their favourite flower. We have received information from various parts of the country to the effect that sweet peas will be more liberally encouraged by the various societies than has yet been the case, and now comes the announcement that Mr. Henry Eckford, of Wem, whose great work in connection with sweet peas is known to all, offers £1,000 in cash prizes to be competed for in the month of July. Mr. Eckford has very wisely so arranged this large amount that, while the prizes will be more than sufficient to secure an enormous competition, the various sections of cultivators will compete on equal terms. There are three classes, in each of which the first prize is £200, with fifty prizes of £1 each for the next best fifty bunches. In each of the other two classes the first prize is £100, and there are twenty-five prizes of £1 each for the next best twenty-five bunches. The first three classes are as follows: A, open to a lady or gentleman employing regularly one or more gardeners; B, open to professional gardeners; C, open to amateurs, i.e., a lady or gentleman not employing a gardener or only occasional help in the garden. In each of these classes the stipulation is "For the best bunch of sweet peas containing twelve stems of blooms, each stem a distinct variety." Class D is open to cottagers or single-handed jobbing gardeners, and all others whose rent does not exceed £16 per annum, and Class E is open to a girl or boy under 16 years of age, irrespective of status, who must grow the flowers without assistance. The show will be held at Wem, unless further notice is given, and the judging will take place on Thursday, July 18, and each competitor must send the bunch by parcels post to reach Wem on Wednesday, July 17. The conditions governing the competition are fully set forth in Mr. Eckford's catalogue, which has just been published.

**Natural Science at Oxford.**—It is interesting to observe that the natural sciences will receive a full share of attention at Oxford during the term which commences on the 22nd inst. Mr. Vaughan will lecture on Palæontology and evolution. Professor Vines, F.R.S., will give courses on botany for students of forestry and agriculture respectively, and a preliminary course for elementary students. Practical instruction at the Botanic Garden will be given by Dr. Church and Mr. Hiley. Professor Somerville, F.R.S., will lecture on the principles of agriculture and on forest botany, Mr. Curtler on the history and economics of agriculture, and Mr. Morison on agricultural chemistry.

**Royal International Horticultural Exhibition.**—We are asked to remind intending exhibitors that applications for space for non-competitive exhibits must reach the secretary, T. Geoffrey W. Henslow, Esq., 7, Victoria Street, Westminster, S.W., on or before January 15. Also that entries for the competitive classes must reach Mr. Henslow not later than February 1. A conference of horticulturists will be held, by the permission of the Mayor, in the Council Chamber, Town Hall, Preston, at 6 o'clock p.m. on Thursday, the 18th inst. His Worship the Mayor will preside, and E. White, Esq., and other gentlemen will address the meeting on the Royal International Horticultural Exhibition.

**Weather in December,** 1911.—With regard to the climatic conditions that obtained during the month, December proved in every way worthy of a record year. It was one of the mildest and wettest Decembers that has been experienced within the past quarter of a century, and the duration of sunshine recorded, if not quite equal to that of 1893 and 1909, was more than double the average for the past quarter of a century. In London the highest temperature was 55 degrees, the mean of the maximum readings 50.5 degrees, and the mean of the night minimum readings 40.8 degrees. There was no day on which the maximum temperature was less than 40 degrees; the lowest temperature was 30 degrees, and two frosts were recorded in the screen. The duration of sunshine at Westminster amounted to 28.6 hours or more than double the average. In the corresponding month for 1893 this amount was exceeded by 1.2 hours, and in 1909 by .80 hours. The rainfall for the month was at Westminster 3.9in., nearly twice the average, and .75in. greater than in any year since 1870. In the Royal Botanic Society's Gardens, Regent's Park, there were in December 21 rainy days, and 4.18in. of rain were registered.

**Education in Horticulture.**—The papers read by Mr. F. G. Drew and Mr. W. B. Little before the North of England Horticultural Society on "The Ideal Education of a Gardener" and "A National Diploma in Horticulture," respectively, have been published in pamphlet form (price 6d.) by the Horticultural Education Association, and may be obtained from the hon. secretary, The Grey House, Lyminge, Folkestone.

**The Importation of Bananas** of West Indian growth into the United Kingdom has assumed such large proportions that the North Western Railway Company has found it necessary to make special provisions at their Stalbridge Dock at Gorston for dealing with the cargoes of these fruits that are landed by the weekly service of steamers. The company has built and fitted up a banana warehouse, 400ft. long by 90ft. wide, and to facilitate the handling of the bananas some ingeniously constructed elevators have been provided for the landing of the fruit. By means of endless chains fitted with canvas pockets and worked by machinery, the bunches are conveyed from the hold of the vessel to the deck, thence to the quay and along the quay to the doors of the railway vans. For the conveyance of the bananas from the dock to various parts of England, the railway company has had built 500 insulated vans fitted with steam-heating appliances and vacuum brake pipes. What has been done by the London and North Western Railway is of interest as evidence that the railway companies are beginning to appreciate the importance of the fruit trade. With this evidence before us there is some justification for the hope that in the near future provisions will be made for the carriage on the railways of this country of home-grown fruit and vegetables in such manner as to ensure their reaching the consumer in the best possible condition.

**Memorial to Stephen Hales.**—Within the past few days a tablet, erected in the old parish church of St. Mary's Church, Teddington, has been dedicated to the memory of the Rev. Stephen Hales, a former vicar of the parish, who lived in the 18th century, and specially distinguished himself by his investigations in animal and plant physiology. For some years past a number of scientists, who appreciate the importance of Hales' investigations, have been endeavouring to discover his burial place in order to preserve his memory, but not until a short time since were they successful. The stone recording his death was found in the floor of the porch of the church, with nearly the whole of the lettering obliterated. The tablet has been placed on the wall of the west porch beneath the tower of the old church, and bears the following inscription "Beneath is the grave of Stephen Hales. The epitaph, now partly obliterated, but recovered from a record of 1795, is here inscribed by the piety of certain botanists, A.D. 1911. 'Here is interred the body of Stephen Hales, D.D., Clerk of the Closet to the Princess of Wales, who was minister of this parish 51 years. He died 14th January, 1761, in the 84th year of his age.'" Stephen Hales has been called the "father of physiology," and he well deserves this title in regard to both animals and plants. Mr. Francis Darwin describes his experiments in the blood pressure of animals as second only to Harvey's work on the circulation, and expresses his opinion that in the domain of plant physiology, he is equally great. That his investigations in connection with plant life were of far-reaching importance there can be no question, and there is full justification for considering him the founder of a knowledge of plant physiology and of a rational science of biology.

**The N.S.P.S. Floral Committee.**—The Floral Committee of the National Sweet Pea Society for 1912 is as follows: Mr. Robt. Bolton, Warton Carnforth; Commander Humphery, R.N., Caversham; Mr. George Herbert, Twyford; Mr. Andrew Ireland, Marks Tey; Mr. Thomas Jones, Ruabon; Mr. A. Malcolm, Duns; Mr. A. G. Stark, Great Ryburgh; and Mr. W. J. Unwin, Histon, Cambs.

**Sootfall of London.**—The results of the investigation which has been made by the "Lancet" as to the amount, quality, and effects of the soot falling in London, have been published, and from these it is calculated that the deposit falling annually upon the Administrative County of London, including the City, amounts, on the basis supplied by the soot gauge at the City station, to the enormous quantity of 75,050 tons. The investigations were made at four stations; two were situated in the S.W. district, near Westminster, one in the City area, and one at Sutton, Surrey. The collections were made each month through the year June-May, 1910-1911, and a soot gauge was installed at each station, which caught both soot and rain. Taking the City station as the basis of calculation as to the amount of soot falling annually upon the Administrative County of London, including the City, the deposit amounted to 75,050 tons. In this deposit there were present over 6,000 tons of ammonia, about 8,000 tons of sulphates, 3,000 tons of chlorine in chlorides. Taking the S.W. metropolitan station as a basis, the total deposit per year over the same area would average 53,820 tons, in which were present 4,000 tons of ammonia, about 5,000 tons of sulphates, and 4,000 tons of chlorine in chlorides. As pointed out by our contemporary, the soot gauge discloses in a striking manner the defects of the coal fire, but, having regard to the large deposit registered at the City station, it is reasonable to assume that the factory chimneys contribute more freely to the impurities of the atmosphere, and especially to the acids present, than is generally supposed to be the case.

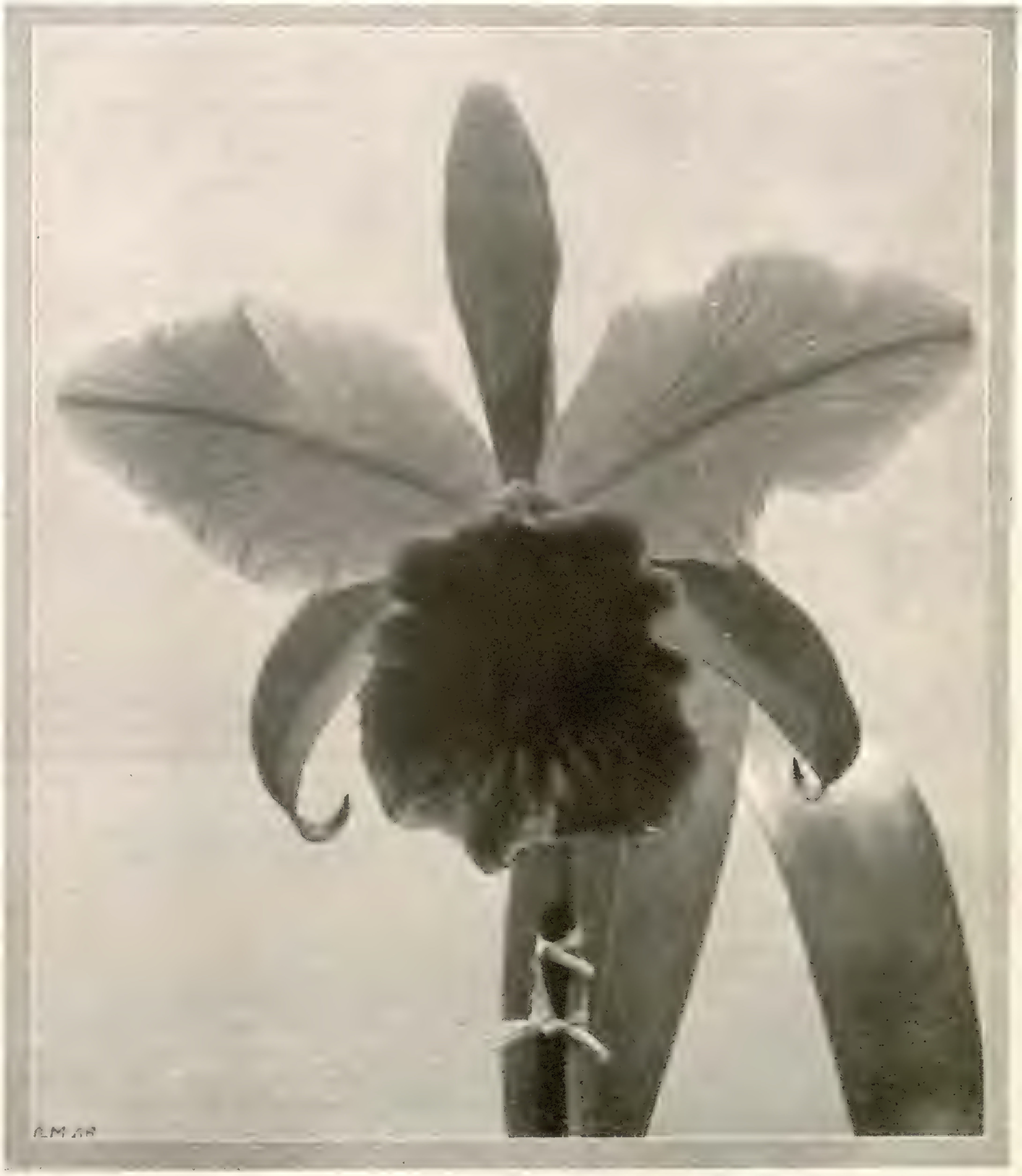
**The Greater Birmingham Show of** 1912.—The famous Handsworth Floral Fete will in future yield name and place to the new society created as a result of the great extension of Birmingham City. Mr. W. G. Carradine, the secretary of the Birmingham Horticultural Society, is making great efforts to secure the success of the first show under the new conditions. An attractive schedule is in course of preparation, and everything points to a great exhibition. The Lord Mayor of Birmingham (Alderman W. H. Bowater, Esq., J.P.), has accepted the Presidency for 1912.

**Barnsbury Square.**—The Islington Borough Council have, in terms of a lease held for many years past, maintained Barnsbury Square as a public garden. The lease has now terminated by effluxion of time, and the land has reverted to the owners of the houses abutting on the square. The Council being desirous of keeping the square as an open space, have decided to purchase under the Open Spaces Act, 1906, the land for £2,000, less one 29th part, and to dedicate the square to public use as an open space.

**The National Hardy Plant Society's** first exhibition will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Wednesday, June 19, 1912. A preliminary schedule of open and amateur's classes has been prepared, and may be had post free on application to Mr. A. J. Macself, show secretary and organiser, 52, Beechfield Road, Finsbury Park, London, N.

**Sweet Pea Trials in** 1912.—The National Sweet Pea Society will hold trials of sweet peas at the "Times Experimental Station," Sutton Green, Guildford (conducted by Mr. Harry Foster), and at Burbage Experimental Station, Leicestershire (conducted by Major C. C. Hurst, F.L.S.), in 1912. No Awards or Certificates will be granted to novelties unless they are sent for trial. For the novelty trials a charge of 5s. per variety will be made, and novelties will be accepted only from the raiser or introducer. Forty seeds of each novelty must reach the hon. secretary, Mr. C. H. Curtis, Adelaide Road, Brentford, Middlesex, not later than January 20, 1912. The seeds must be divided, and placed in plain packets, 20 seeds in each; and every pair of plain packets representing one variety must bear the same number or letter, for purposes of identification. With each set of seeds there must be a letter, bearing the sender's name at the top, the number or letter of each variety sent, and, opposite such number or letter, the name of the variety (if any), the colour section to which it belongs, and (if orange or salmon) whether it should be shaded. Sweet peas will also be tested for purity at a charge of 10s. per stock or variety sent; not fewer than two dozen seeds should be sent, and the sender may elect at which set of trials these be tested. In every case the amount due for trial charges must be sent with the seeds. The proceedings of the Floral Committee will be printed in the autumn of 1912, and a copy will be sent to every person or firm sending seeds to the trials.

**Horticulture at Oxford.**—We are very sorry to learn that the financial results of the Oxford Horticultural Society's work during the past year were not satisfactory. The chairman at the annual meeting stated that the gate money taken at the two shows was about £70 less than in 1910, and this decrease had necessitated the use of the whole of the reserve fund in meeting the liabilities. The total income was only £190, and it appears to us such change in policy should be made as would ensure the exhibitions proving more attractive to the residents than they were in the summer of 1911.



LÆLIO-CATTLEYA MRS. W. HOPKINS.

A handsome variety with medium-sized flowers, crimson-purple lip, and rich yellow sepals and petals, the latter mottled with purple. A.M., R.H.S., January 9. F. Wellesley, Esq., Westfield, Woking.

**San Jose Scale in the Transvaal.**—From the current issue of the "Agricultural Journal of the Union of South Africa," we learn that the much-dreaded San José scale (Aspidiotus perniciosus), has found its way into the Transvaal. The pest was discovered by Mr. J. W. Moore, of Potchefstroom, in working up a collection, and steps were at once taken to effect its extermination.

**Royal Society.**—M. Klement A. Timiriazeff, professor of botany in the University of Moscow, has been elected a foreign member of this society.

## EVERGREEN SHRUBBY CLIMBERS.

For covering walls, or where a screen is required all the year round, the deciduous climbers cannot compete with evergreens during the winter. Many of the latter also have most beautiful flowers. As pillar plants, and for furnishing pergolas to give variety, especially during the winter, evergreen subjects are most useful, particularly some of the ivies. Some object to these latter on account of their sombre appearance, but what could be more handsome than the entrance to a pergola draped with Hedera dentata, clothed with flower and fruit?

Some few subjects that I shall name require somewhat different treatment, but as a general rule, any deeply-dug, well-manured soil will grow the several subjects well. I need hardly say that extra care when planting, such as adding mould, old potting soil, or the spent refuse from a mushroom-bed, will give the plants a good start into growth. Abundance of moisture to the roots and overhead during dry weather is important to secure satisfactory growth. The more free growth is the more handsome will be the leafage and the finer the effect produced.

Berberidopsis corallina is an interesting and showy climber, not enough grown; true, it requires a little extra care to obtain success, and a wall 6ft. or more high. with an eastern aspect, suits it well; good drainage and a compost of peat, leaf-mould, and light loam (free from chalk) is what it delights in, with abundance of moisture during the summer. Free growth then is thus assured, with a full crop of handsome coral-coloured blossoms. Cotoneaster microphylla is usually seen on a rockery or as a shrubbery plant, but many sites are quite unsuitable for its proper display. Through the autumn, winter, and spring, thickly clothed with its crimson berries, it is most attractive when trained up a wall from 10ft. to 20ft. high. It is under such conditions that one can appreciate the great beauty of this much neglected shrub.

Escallonia macrantha and E. Lamgleyensis are two subjects that should be more often planted in the south of England than they are; the deep green leaves and pretty pink blossoms are handsome, and the plants form a thick, attractive covering for a wall or fence, and are quite amenable to close pruning to obtain a neat appearance. Euonymus radicans variegata is usually associated with the rockery or used as an edging to paths, rather than as a wall plant, yet no subject I know is better adapted for covering high or low walls under a verandah where light is partly obscured; 20ft. high is not an unusual height for it. E. japonica aurea also makes an excellent wall plant, growing 15ft. high, and when thickly clothed with its golden leaves it is very handsome on a south wall.

Cistus ladaniferus is seldom seen as a wall climber, but that is just the place for it, with a southern aspect. The full beauty of its large flowers is here shown as the wood becomes thoroughly matured, and consequently gives a heavy flower crop. Eugenia Ugni, known as the Chilian Myrtle, is a desirable plant to grow at the foot of a south wall, as its pure white blossoms are abundantly produced in summer. Fabiana imbricata may not be a climber, in the strict sense of the word, but it is an interesting subject for the base of a wall facing south, east, or west, where it flowers profusely, much more freely than when in the open shrubbery; indeed, it is difficult to grow in some open sites. A plant growing here at the foot of a south wall in quite a narrow border, gives such a crop of its pure white tubular heath-like blossoms annually as to hide its leaves, showing that maturity of growth has a large influence upon it. This plant belongs to the heath family, and will not grow in soil impregnated with lime; it enjoys peat. The rosemary is much better for walls than is generally supposed, and it grows quite compactly with judicious pruning, on any site, and has a pleasing appearance.

Where a thick, rapid covering is required on a north or west wall, Garrya elliptica is a fine subject, growing vigorously and giving a full crop of its catkin-like flowers during the dull months of the year. Cratægus pyracantha Lelandi is one of the most useful subjects we can employ; it will grow high or low, can be pruned in quite close or allowed to grow freely, and still give annual crops of its orange-red berries. Ceanothus azureus, C. Veitchianus, C. divaricatus, and C. Gloire de Versailles embrace the best of this family, and they have no superiors as wall plants, especially on a southern aspect. The first-named is of close growth; C. divaricatus grows vigorously, and soon reaches a height of 30ft.

Among ivies we have abundant material to choose from, and for quickly covering high walls or screens in any aspect Hedera Helix Rægneriana is the best, making growths 6ft. long when liberally supplied with manure and moisture. H. dentata, previously alluded to, is most handsome with its drooping heart-shaped leaves. H. maderensis is of medium growth as compared to the other two, yet it is one of the best. H. canariensis (Irish ivy) is the well-known variety most often employed. H. Helix atropurpurea, a form of the English ivy, is excellent for walls where a close growth is needed; for instance, around porches or windows, it has a particularly neat appearance, and as the autumn comes round it assumes a dark purple hue.

Swanmore Park. E. MOLYNEUX.

## THE IDEAL IN GARDEN-MAKING.

It is when the autumn and winter are upon us that we find ourselves face to face with the everlasting problem, the possibility of creating ideally beautiful gardens out of small plots or extensive areas; we must ask ourselves how far we have as yet accomplished this purpose, in what manner we have failed, and define at once our desires and the limitations of our circumstances. It is not money alone that will succeed. The true flower-lover with scanty means will often achieve triumphs that the wealthy owner of fine grounds has never wrought either personally or by proxy.

A thicket of hollyhocks, sunflowers, and Pyrethrum uliginosum, of delphiniums and Oriental poppies, of Crown Imperials and tall tulips, around a rustic summer-house or a thatched cottage, will offer as fair a scene in spring, summer, and autumn as heart can desire. The simplest annuals, too, such as sweet peas and larkspurs, are capable of giving perfect colour schemes and grace. The costliness of plants has no real relation to the beauty of a garden, being only of value as showing how much culture and discovery have done in bringing exotic glories to our land and improving upon their natural forms.

Just as a thin, pale, delicate child from a London alley will develop into health and loveliness after being given for some years the food, air, and atmosphere of a country life, so an exotic or an alpine plant may attain improvement when translated to a region in which it does not have to battle against the former local ills. It is a mistake, surely, to suppose that all flowers open just where the conditions are most fit for them; there is a struggle for existence always going on; the luxuriance of a Mexican forest chokes the gorgeous climbers that mount the tallest trees, the ice does not invariably melt away when the mountain blossom needs moisture. The skilled florist, and, in a minor degree, the patient gardener, work to render conditions ideal for the plants, and, by learning how to suit their wants, are enabled to employ them in the fairest combinations and environments.

Probably the great secret of fashioning a really beautiful garden is the acceptation of its form, climate, levels and valleys, sun-stretches and shadows, not regretfully as evils with which to fight, but gladly as the true opportunities. When this truth is realised we shall find Nature's charm imitated without slavery. At present the natural style of gardening is as monotonous as the formal methods it has largely ousted from favour; the ideal arrangement of trees, shrubs, and plants is their allotment to spots just suited to their needs; a group of crimson-tinted blue-berried berberis may crown a rugged bank summit, a gulley at the sunniest base of the same bank can be blush apricot-rose with masses of hardy azaleas. Where the moist ground lies further excavation will result in water lying outspread among islands and shores of emerald turf. This is the ideal form of water garden, just as natural sides of old quarries are the ideal rockeries. Some day we shall have learnt to shudder at the symmetrical basins and stone heaps that we manufacture so laboriously to-day.

Pillar roses of rampant habit, such as The Dawson, Rose Euprdosyne, Aglaia, etc., placed opposite one another on a path do not need any stiff wire or wood arch to induce them to span the walk. Their luxuriant boughs can be tied by cords together. The natural pergola is but an extension of this principle, the side boughs being turned in and out, and fastened thus will form hedgelike boundaries that will require thinning out to check the shade ere long. A wide expanse of grass—sloping if not devoted to tennis or croquet, for which special courts made out of fields are more suitable—looks best when of irregular boundaries and very sparingly adorned by specimen trees or shrubs, or a few groups of those. The prim beds that are the joy of the suburban dweller's heart never improve bold lawns; their sole raison d'être is to enable flowers to be possessed in small pleasure-grounds. An almond tree, rosy in spring, verdant all summer, crimson-fruited, too, is lovelier, casting flecks of shade on the green, than any level spash of geranium or begonia colour could be.

It has been said that the orchard is the most beautiful of gardens. Why should we not station our fruit-trees in companies, allowing healthy space between, but making no pretence at formality, leaving large glades and stretches of lawn here and there, instead of congregating them in aisles far from the flower garden? Hosts of shade-loving plants may flourish in cuttings out of the turf beneath the branches; beds, and borders, that is to say, only of sufficient size to be covered and hidden by the herbaceous subjects they contain. Myriads of daffodils, hardy tulips, ornithogalums, lilies, iris, etc., can rise out of the grass itself, and climbing roses may mingle blossom with the tips of the apple, pear, and plum boughs, or lie over banks that serve partly as boundaries.

Each man or woman will own a different mental vision of an ideal garden; these suggestions are but offered to assist, not limit, originality. Let us all realise, however, that the crowding together of the greatest possible number of flowers into the given space is not an artistic object of ambition, and that emptinesses are to lavish fillings as necessary to perfection as are shadows to sunshine. M. H.

**Begonia Gloire de Lorraine.**—It is not unusual to meet with well-flowered specimens of this begonia during autumn and early winter, and occasionally extra good specimens are seen, and this was the case at the show of The Ancient Society of York Florists, held at York recently. In a class for six begonias, the first prize was awarded to Mr. Folkard, gardener to Sir J. Walker, Sand-Hutton. The exhibit was an excellent one, the plants being perfect pyramids of bloom, grown in six-inch pots. Judging from the number of prize cards bearing his name, Mr. Folkard was a most successful exhibitor.—PAUL T. MORE.

**Lapagerias.**—Some cultivators find a difficulty in securing and establishing climbers on the trellises in houses on the north side of a high wall. Lapageria alba and L. rosea do remarkably well in such positions. Some plants which have been growing in a cool north aspect all through the past summer, have rarely been without a nice lot of flowers on them during the whole of the time, and still bear many blossoms, clear and rich in colour. The plants, too, are very healthy. Fibrous loam forms the principal ingredient in which the roots are growing, only a small quantity of leaf-soil and peat being used.—G. B.

## CHOICE PLANTS FOR THE ROCK GARDEN.

Although the plants suitable for rock garden adornment are numerous, there are several which stand above the general crowd from an enthusiast's point of view. They do not create such brilliant effects in their flowering season as do many others, such as aubrietias, helianthemums, arabis, alyssums, etc., yet they are extremely interesting and deserve prominent positions. Many are of rather difficult culture, and consequently have often to give place to more easily grown subjects on account of the care and attention which have to be bestowed upon them.

The androsaces are gems of the first water, and every endeavour must be made to keep them in a healthy condition. A. lanuginosa, A. sarmentosa, and A. Chumbyi are perhaps three of the best, although the others are exceedingly pretty and worthy of a place. The first mentioned is an excellent plant for hanging over a ledge, so that the trailing growths are not subjected to much moisture in the winter; they all require to be protected from the winter rains. The Shortias are choice subjects, delighting in a half-shady position, and should be grown in sandy loam and peat. They need abundance of water during the summer, and should be occasionally top dressed; the foliage is very pretty, dark shining green, sometimes having a bronzy tint. S. galacifolia is a North American species, and S. uniflora a native of Japan. The grandiflora variety of S. uniflora is the most robust, and will thrive where S. galacifolia fails.

Tanakaea radicans is an interesting plant for a north fissure; it is similar to a miniature white spiræa when in blossom. Omphalodes Luciliæ, although an old plant, is not common by any means; it delights in a partially shaded position, and should be planted in a mixture of sandy loam and peat, with plenty of chippings added. Mertensia echioides is a beautiful Himalayan species, with graceful sprays of blue flowers. Cynanthus lobatus is not frequently met with. Yet it well deserves a position in a choice collection. A half shady spot should be afforded it, and one where its slender trails can hang down. A mixture of loam, leaf-soil, and chippings will meet its requirements regarding soil, and abundance of water must be given during dry weather. Soldanella alpina, S. montana, and S. pusilla are dwarf gems from the Alps, and are extremely interesting and pretty; a fairly moist crevice or pocket should be devoted to them, which has been filled with a compost of loam, peat, and stone chippings. They require protection from excessive wet during the winter, and should be carefully guarded from the ravages of slugs, or these pests will destroy every flower spike.

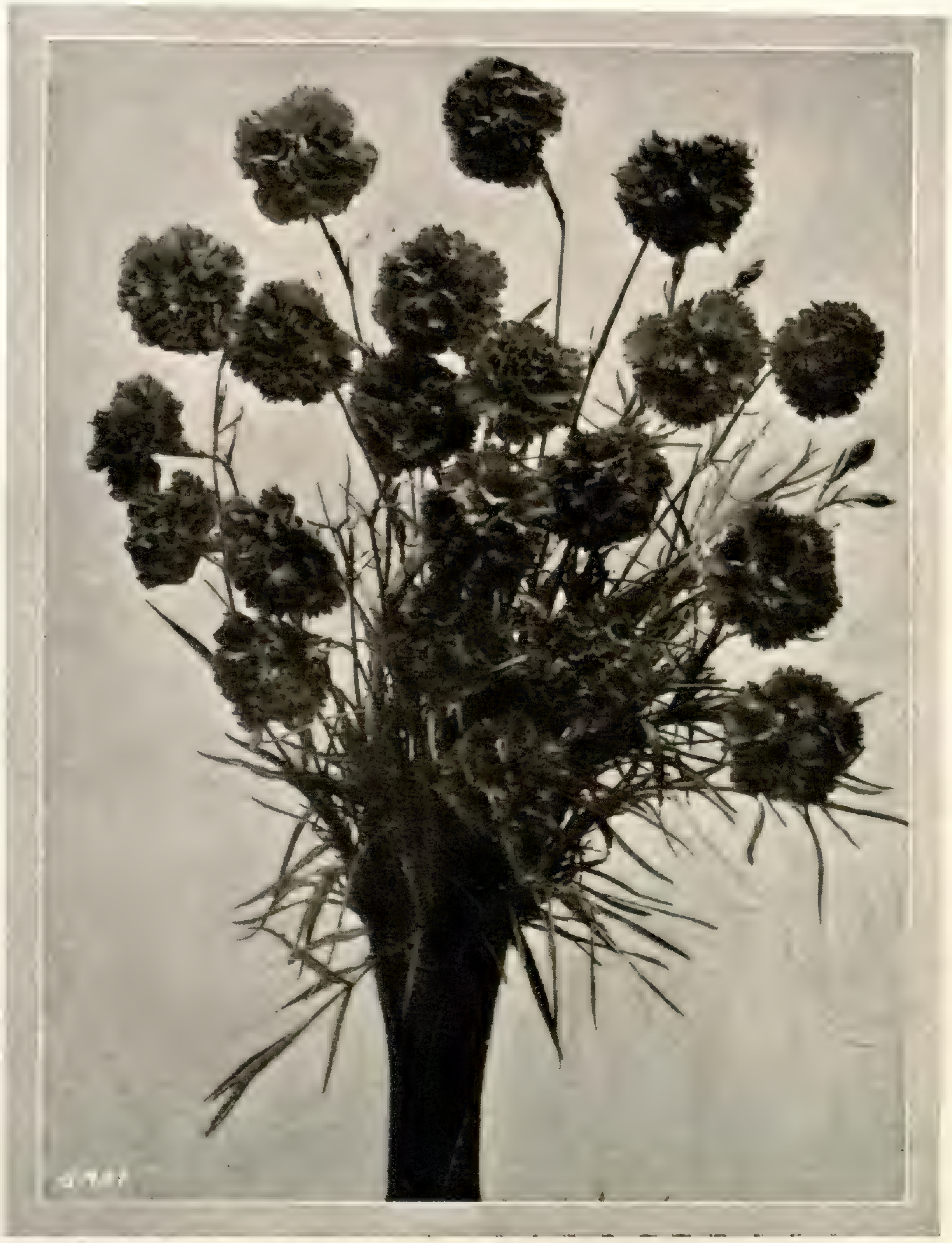
Calceolaria polyrhiza makes small rosettes of foliage from underground shoots, and from these spring the flower spike which carries one or two flowers that are pale yellow, slightly spotted with brown. The family of the saxafrages is a large one, and contains many rare and beautiful plants, among which may be mentioned S. Griesbachi, S. Boydi, and S. Boydi alba, S. Ferdinandi Koburgi, S. Bathoniensis, S. sancta, S. Burseriana major, S. porophylla, and S. oppositifolia splendens. Oxalis enneaphylla is a good plant, with glaucous foliage and large white flowers; it requires a position where it does not feel the full effects of the sun. Gentiana bavarica and G. verna are two choice gems, and should have a place in every collection; the former delights in a moist situation, while the latter is more at home in a dryer one

Among the recent introductions of primulas there are several of high merit, such as P. Veitchi, P. Cockburniana, P. Bulleyana, P. malacoides, P. Forresti, P. pulveruleuta, and the hybrid P. Unique. Schizocodon soldanelloides has fringed flowers, similar to those of the soldanellas, and handsome evergreen foliage. Codonopsis ovata is an interesting plant, having pendant, bell-shaped flowers, beautifully marked on the inside; it should be grown in a position where the inner colouring can be easily seen. Edraianthus serpyllifolius has purple, bell-shaped flowers resembling a campanula; it is very dwarf in habit, and delights in sunny crevies. E. dalmaticus, E. pumiliorum, and E. pumilo are all choice species. Morisia hypogæa delights in a well-drained sandy loam in a sunny situation. It forms rosettes of evergreen foliage, and bears numerous yellow flowers. Ourisia coccinea, with its spikes of bright scarlet flowers is a striking subject. It thrives in sandy loam and peat in a moist yet well-drained situation. Stones should be laid on the surface of the soil for the stems to creep over, and it should be given plenty of water during dry weather. One of the most curious and interesting of plants is Phyteuma comosum; this has blue and white flowers, and should be planted in crevices and guarded against slugs. Perhaps the most difficult of all plants to establish is Eritrichium nanum, and it is one of the most lovely of alpines. It must be kept dry from late in autumn until the end of February, and even after then water must be sparingly given for some time until growth advances.

E. C. Pooley.

## CARNATION GEISHA.

Prominent among the novelties contributed to the exhibition held by the Perpetual Carnation Society on December 5 and 6 last, was the variety Geisha, which is remarkable for its high quality, and belongs to a class that, as yet, is comparatively small. The large finely fringed mauve or light heliotrope coloured flowers, borne erect on stiff stems, attracted much attention, and the variety was generally considered to be a marked advance in the mauve section of colours. The blooms are larger in size than those of Mikado, the colour is pure, and the calyx and stem are such as to contribute materially to the merit of the variety. The raisers are Messrs. George Fairbairn and Sons, The Croft Nurseries, Botcherby, Carlisle, and the blooms open perfectly throughout the winter. The plant is vigorous in growth and free in flowering, and otherwise satisfactory. On expanding the colour is a warm shade of heliotrope with salmon suffusion at the base of the petals, but, as the bloom acquires age, the colour passes to light heliotrope or mauve. The variety had an Award of Merit conferred upon it at the exhibition of the Perpetual Carnation Society, held on the dates mentioned above, a distinction that was well deserved.



CARNATION GEISHA.

A beautiful perpetual variety, raised by Messrs. G. Fairbairn and Sons; the flowers large and of fine form, the colour a pleasing shade of mauve.

## THE HORTICULTURAL EDUCATION MOVEMENT.

The importance of a well-devised scheme of horticultural education is now fully recognised by those who are keenly interested in the gardening art, and as the result of the strong feeling that exists among the more advanced thinkers with regard to the necessity for a reform in the existing methods a movement is now on foot that can hardly fail to have a far-reaching effect upon the progress of horticulture. Whether the movement will bring about results that will prove advantageous to the art, and those engaged in the several branches thereof, belongs to the future, but there need be no apprehensions as to their proving otherwise than satisfactory. Public opinion has undergone a remarkable change in relation to educational matters within the last two decades, and there is very little, if any, danger of those, who are actively interested in the question suggesting schemes in which paper work will have undue prominence. Twenty years ago text books were regarded as all sufficient for the purposes of general education, but now it is regarded as essential that pupils should be taught to use their powers of observation, and take some part in such practical work as may be associated with the subjects that are being studied. In connection with the teaching of gardening in elementary schools, the value, and, indeed, the necessity for practical work, has obtained the fullest recognition, as evidenced by the fact that there are now not less than 2,000 school gardens in this country. At the University College, Reading, the Royal Horticultural Society's Gardens, Wisley, and some other institutions where systematic instruction is given in horticulture, the utmost importance is attached to the practical details of cultural methods, and it, therefore, occupies a prominent position in the several curricula. With these facts before us we may safely assume that as the advantages of the newer educational methods become still more manifest, the opinions held with regard to a proper combination or practical and theoretical work will be greatly strengthened, and have practical effect given to them.

The feelings that have prompted those who have been instrumental in calling attention to the necessity for the higher education of those engaged in the several branches of horticulture are such as to merit the fullest sympathy. It is felt that to achieve success in the management of a private garden, or a commercial establishment of any considerable size, something more than an acquaintance with the practical details is necessary. A practical acquaintance with the multiferous details of garden and nursery work is acknowledged to be essential, but the opinion is held that those whose equipment is limited to them, are placed at a considerable disadvantage, as compared with those who have also a knowledge of the scientific aspects of horticulture. In the case of those who aspire to the management of a private, or nursery establishment of the first class, or to the position of a park superintendent, the combination of science with practice is a necessity. It is also recognised that as a body gardeners are not recognised in accordance with their abilities, and it is felt that the result of an improved method of training would so raise their status as to bring about an amelioration of their financial position. These, briefly stated, appear to be the considerations that have influenced those who are taking a leading part in the movement, and they are well deserving of the most careful attention.

It will be readily understood by those who are careful to examine questions, as they arise, from all sides, that any material change in educational methods, in their relation to horticulture will involve some additional sacrifice on the part of the parents of those who purpose entering on a gardening career, and reduce during the period of training the time the students will have for recreation. In other words, the boys will have to remain longer at school, and also to devote more time to study after they have entered the garden or nursery, if they have a desire to obtain positions in the front rank. Having regard to the increased cost of education, and the strenuous endeavour to master the principles, as well as become proficient in practice, it is not unreasonable to ask whether the probable advantages will be a sufficient compensation. Should the question be asked the answer must be in the affirmative. All knowledge that is properly understood and rightly applied is an advantage, inasmuch as it expands the mind, broadens the outlook, and creates a greater interest in life. But a knowledge of the principles on which good practice must be based will be of much assistance in the endeavour to achieve a high degree of success in the management of horticultural establishments.

It should be understood that the educational movement is not a matter that only affects one branch of horticulture. It concerns all who are connected therewith, and is, therefore, of much interest to those connected with commercial establishments, as well as those engaged in private gardens, and especially to those who are desirous of engaging in the teaching of gardening, whether as horticultural instructors or teachers in training colleges. There are at present some 2,000 school gardens, and it is reasonable to assume that this number will be largely increased at no distant date. These gardens are cultivated under the direction of school teachers, who have, for the most part, had to obtain their knowledge of gardening by attending vacation classes, Saturday afternoon lectures, and so forth, and they have done very well. There is, however, room for improvement, and it is recognised that gardening should be included in the curricula of training colleges. Consequently, it may be assumed that this will be done within a few years hence, and that a demand will arise for men fully qualified to teach both principles and practice. It may be that with a fuller appreciation on the part of County Councils of the importance of gardening to the community there will be some extension of the demand for the services of horticultural instructors, and that those who by strenuous endeavour have obtained such distinction as may be regarded as the hall mark of efficiency will be able to command a higher rate of remuneration than that which now in many instances obtains. It is most important horticultural instruction in the counties should remain in the hands of men who are masters of the practical details, as well as of the principles, but to ensure this horticulturists must undergo a course of training that will enable them to obtain such distinction as will be accepted as a proof of efficiency. At present there is no such distinction, but it may be anticipated that a scheme for the provision of a suitable diploma will be formulated as the result of the labours of the committee recently appointed by the Royal Horticultural Society for dealing with this important question, and of the conference on education that will be held in conjunction with the Royal International Horticultural Exhibition in May next.

There has yet to be formulated a scheme of horticultural education on systematic lines, and yet sufficiently elastic to admit of it being adapted to the requirements of the various classes engaged in horticultural pursuits. We may have to wait some time for it, but it will come in due course, and if fully suited to the needs of the case it will in a few years hence given to gardening increased interest, and to those engaged therein a much improved status. There is ample justification for the hope that the anticipated scheme will prove beneficial, because of the remarkable consensus of opinion as to the importance of a proper co-ordination of practice and science in horticultural education. G.

BUSH APPLE TREE CLAYGATE PEARMAIN
That has been properly root-pruned.

# CONTROLLING THE ROOT SYSTEM OF FRUIT TREES.

There is no practical operation associated with fruit culture so absolutely violated as is that of unnecessarily tampering with the roots of fruit trees. The roots of young apple trees undoubtedly come in for more than a due amount of mutilation, and it is astonishing to what extent the roots can be hacked off without causing the death of the tree. The experienced grower knows just how far to go, but, as in other professions, and perhaps more so in gardening, young men are appointed as head gardeners who may not have had the opportunity during their apprenticeship, or as journeymen or foremen, of observing the effects of root pruning, and particularly so if their duties were largely confined, as is so often the case, to the cultivation of plants under glass, and not that of fruit trees growing in the open.

## Apple Trees.

Given a retentive loam, young apples on the crab or the broadleaved paradise or similarly constituted stock will, as soon as established, proceed to make vigorous wood growth, which, if allowed to continue, will undoubtedly make it difficult for the pruner to regulate the branching system and control the formation of fruiting spurs, unless he first inspects and regulates the root system of the tree. Bushes or pyramids on the French paradise do not demand the same attention, as here we have a stock which by nature is fibrous and surface rooting, and even though the tree does attain a reasonable amount of vigour in the third or fourth year after planting, the branches can usually be controlled without any manipulation of the roots, but not so with strong-growing varieties of apples on equally vigorous stocks.

An all too common practice is to allow bushes to attain to large proportions, and to assume a naked condition of the lower branches before an attempt is made to root prune; and when such operation is commenced, insufficient care is taken in laying bare the roots. The process adopted is akin to grubbing up a tree rather than to transplanting. Where the tree has been carefully lifted, the stronger roots should be severed with the greatest care, as very often, when the leading roots are cut back very severely, the corresponding branches of the tree receive a check from which they do not recover. As far as possible, root pruning should be done at the fall of the leaf, or while the soil is sufficiently warm to encourage the formation of new roots before winter, cannot be overestimated. The trees may be lifted late in the year, or as is sometimes done, early in spring, but it is essential to use the greatest care in carrying out the various details. Where subsoils are cold and wet, no better opportunity is afforded of improving them than at this stage, and before commencing the operation of lifting, an ample supply of suitably prepared soil should be at hand, and the more this compost facilitates the formation of young fibrous roots, the more satisfactory will be the results.

The two trees herewith illustrated are of interest as showing a proper balance between the growth of the roots and branches.

## Pear Trees.

The method of root pruning pears is practically identical with that recommended for apples. Dwarfing stocks like the quince, of which, by the way, there are two varieties, the "Angers" and the "Portugal," are of somewhat similar habit to the paradise stock, which has its origin from a dwarf trailing species of the Pyrus family. Before the introduction of these fibrous rooting stocks, very little attention was given to root pruning, nor was the subject sufficiently well understood. For a few years after planting, the balance between root and top is about equal, but as soon as the allotted space is filled up, and the roots penetrate into a strong fertile soil, a disproportion between the two soon takes place.

## Plum Trees.

Much difficulty is experienced in the management of plums. As to soil conditions, I have found that these fruits thrive where apricots have proved a success, whereas if planted in cold, damp clays, failure is sure to attend their cultivation. It seems difficult for some growers to realise this fact, and so we come across plantations of plums in heavy retentive soils in which they make a luxuriance of growth for several years, but never show any inclination to bear fruit, however favourable climatic conditions may prove.

BUSH APPLE TREE, SANDRINGHAM,
With roots that are well under control.

Probably, like others, I have had some remarkable results attend the judicious root pruning of plums. In the case of gross-growing trees the usual practice with many is to stop the shoots in May or June, followed up by a more severe pruning when the growths push forth for the second time in July. If, in addition to this, the roots are examined, and the strongest of them removed, particularly those with a tendency to make a downward growth, and the space below well filled and made firm with lime rubble or suitable compost, in due course, it will be found that the young season's wood soon becomes firm and hard, and that fruit buds are freely developed. To be successful this regulation of the roots must be performed late in July or early in August, and not delayed until the soil loses its heat; should this occur new roots will not be formed before the following spring, and the preparation for next year's fruiting will be incomplete. Further, if the roots are pruned too late, disease is more likely to make its appearance, whereas if the operation is performed early, disease is unknown, although the trees retain their foliage, and go to rest early.

Plums, the finer varieties of which are grafted on stocks of the mussel plum, are rarely subject to disease if afforded a healthy root run in suitable soil. If proper control is not kept over the roots the branches soon assume an irregular form and abstract nourishment from the soil, which should go towards maintaining the fruiting spurs in health and vigour of growth. In the case of the Victoria and other robust-growing varieties of plums, the bending or tying down of the branches is often recommended, and, while tending to check such growths and to promote the development of fruiting spurs, very considerable assistance will be afforded if young trees are taken up and their roots systematically pruned before they have an opportunity of growing downward.

J. C. N.

(To be continued.)

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"CHRYSANTHEMUMS AND HOW TO GROW THEM FOR EXHIBITION," by J. B. Wroe.—Full details on timing and stopping for Northern, Southern, and Midland growers, selections of the best varieties, illustrated instructions on taking the buds, cuttings, staging, etc. Prices 1s. net, by post 1s. 2d.; cloth, 1s. 6d., by post 1s. 8d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## THE MAIDEN PINK.

The Maiden Pink (Dianthus deltoides) is no new introduction to this country, and, so far from this being the case, it is a member of our native flora and plentiful in various parts of the United Kingdom. One of the most beautiful of wild plants, it has long been grown in gardens; how long it is not possible to say. The Maiden Pink was cultivated by Gerard in his garden upwards of three centuries ago, and with reference to it he writes in his "Herbal": "The Virgin is like unto the rest of the garden pinkes in stalkes, leaves, and rootes. The flowers are of a blush colour, whereof it tooke its name, which sheweth the difference from the other." The plants of this pink range when under cultivation from six to twelve inches in height, according to the conditions under which they are grown, and the flower stems are freely produced, and, as they divide near the top, and produce several blooms each, the effect produced by a well-developed specimen is very pleasing.

A GOOD SPECIMEN OF THE MAIDEN PINK (DIANTHUS DELTOIDES).
The flowers are blush pink, and freely produced.

While worthy of a place in rock gardens that are under the charge of cultivators of exceptional experience, it is especially adapted to the requirements of those to whom plants that thrive under simple treatment are of value. It will flourish on the ledge of a rockery or in the mixed border, but where the soil is naturally heavy and tenacious, it is an advantage to provide the plants with specially prepared stations, and to raise the surface a few inches above the surface. Good turfy loam, to which have been added small proportions of broken limestone or sandstone, coarse sand, and lime rubble, should be used in the preparation of rock ledges or stations in the borders. Planting may be done at the close of the winter or early in the autumn.

## PROGRESS IN SWEET PEAS.

(Continued from page 4.)

Among the yellow or cream varieties Queen Victoria was the first I made particular note of, and it was followed by Mrs. Eckford, The Hon. Mrs. E. Kenyon, and, later still, by Mrs. Collins, the latter being probably the best in the old type. However, the introduction of Clara Curtis put these varieties out of court, and, as an exhibition flower, it seems likely to keep its place for some time to come. Paradise Ivory and Isabel Malcolm are both good flowers, but they do not exhibit that improvement on the old type that Clara Curtis does. Orange-scarlet is a colour in which much improvement has been made; in fact, one might almost say the most improvement has been made here. Thomas Stevenson, Edna Unwin, and others are far in advance of the old type, not only in size and colour, but also from the fact that the flowers will stand the sun, a virtue not possessed by Evelyn Byatt or Gorgeous, which were the best of this colour in the old type.

Among the rose-coloured varieties, John Ingman and Rosabella may be said to excel, and here again it must be acknowledged they are far in advance of Splendour and Lord Rosebery, while Lady G. Hamilton and Countess of Radnor would hardly now be pitted against such varieties as R. F. Felton and Florence Nightingale in the lavender class.

The bicolor varieties also have made considerable progress, and Mrs. A. Ireland, Colleen, and Mrs. Cuthbertson may be said to quite oust Apple Blossom, Triumph, and Jeannie Gordon, though I have still a love for the two first because of their delicacy of colouring. The flaked varieties are now amongst the best of sweet peas in form and substance, and Mr. W. J. Unwin, Spencer America, May Campbell, and Loyalty are far in advance of anything we had in the old type, either in colour, form, or size, though Aurora, Grey Friars, Gaiety, and Senator were all good representative varieties in their time. In Lottie Eckford and Dainty we had two very pleasing picotee-edged varieties in the old form, but with the introduction of Evelyn Hemus and Elsie Herbert we made certainly one of the greatest advances in sweet pea raising, and this in the early days of the waved forms; since then distinct picotee varieties have been slow to come, for though there have been two or three others, these much lack the form and substance of the two named.

Henry Eckford was, to the best of my knowledge and remembrance, the only salmon variety of the grandiflora type, so here again distinct advances have been made, for Earl Spencer, Barbara, and Melba each are good waved sweet peas, and when well grown make wonderfully effective bunches. I have no doubt our raisers will soon give us these in sunproof form, which will be a notable advance. Stirling Stent is deeper in colour, and does not turn so much as the preceding varieties, but it lacks size. In lilac, mauve, and fancy varieties much improvement has been made, and Charles Foster, Prince George, Marquis, Tennant Spencer, Marchioness of Tweedale, etc., etc., are much in advance of the older varieties, the delicacy of colouring being even more marked than the advance in size and form, though these two qualities are in no way lacking.

These few comparisons will show the great advances that have been made, but there is still room for improvement. We should like a flower of the same colour as Coccinea, of good size and Spencer form, of, say, the same style as Tom Bolton is when grown well. The variety Admiration always pleased me, and we could do well with one of this colour in Spencer form. Prince Edward of York was a good exhibition flower in the old type and very striking in colour, so that its appearance in waved form would be welcome. The blue and yellow sorts, it goes without saying, we desire to see improved, and it can only be a question of time, as there are many capable men who are giving these matters very serious attention, both for the love of the flower and from a commercial point of view.

During the past season or two many of the varieties introduced have given rather a large percentage of double standards under good cultivation, and though some growers look with favour on this, I am bound to say that I do not, as the delicate outline of the flower is quite lost; further, in wet weather the flowers are apt to be rather too heavy for their stems. For market purposes the double standards may be found useful, as it will take fewer flowers to make up a bunch, but for really light and elegant decorations, good single-standard flowers will always be welcomed.

The cultivation and methods of exhibiting sweet peas have also advanced, and one only needs to visit any or either of the large summer shows to see a striking example of this; many of the sweet pea specialists' groups are striking examples of artistic decoration, while the individual blooms give distinct evidence of good cultivation. The competitive classes are also usually very well filled, and it is a rare thing to see a poor or slovenly exhibit, but the amount of space allowed an exhibitor is very often far short of what is required to show off his flowers to advantage. In good competition nowadays 18in. square is the least that should be allowed for a vase of from 20 to 25 spikes, and where the staging is in tiers there should be at least 8in. rise in each of the two back tiers; this would allow the exhibitor to make the most of his flowers, and also allow the judges to see the blooms without having to move some of the front vases.

Sweet peas are still progressing, and likely to continue, providing our raisers can keep the public interested by putting a few really striking novelties on the market each season, and these in a fairly well fixed condition, as nothing is so vexing to a grower to find (after he has taken a lot of trouble) that a very poor percentage of the plants are true to name, but things are much better in this respect than formerly, and when the seeds are obtained from well-known growers there will not be much cause for grumbling, so that progress is being made in this direction also.

THOMAS STEVENSON.

Woburn Place Gardens.

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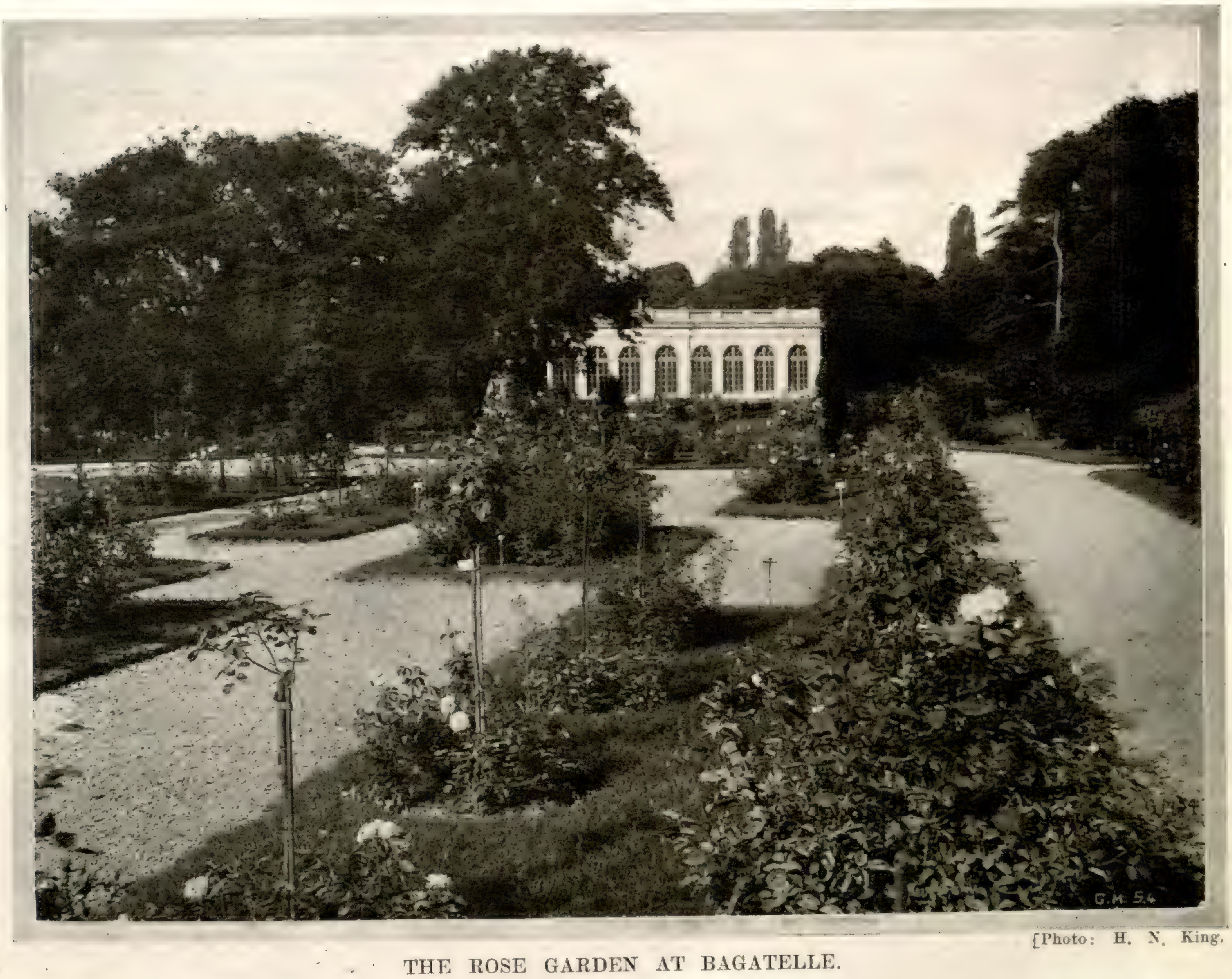
**Crassula Schmidti.** — This very pretty member of the crassula family was introduced from South Africa a quarter of a century or so ago, but it is even now very little plant for the greenhouse, and retains have been noted this autumn at the meetings of the Royal Horticultural Society. It forms a mass of erect stems about three inches high, each terminated by a branching corymb of small red flowers. The succulent leaves and the stems are also suffused with the reddish tint, so that the entire plant is more or less of a ruddy hue. It is a really pretty little plant for the greenhouse, and retains its beauty for a considerable time.—W.



[Photo: H. N. King.

THE ROSE GARDEN AT BAGATELLE.

# THE BAGATELLE ROSE TRIALS.

The trials of new roses that have been in progress during the past six or seven years in the rosery of Bagatelle, which is situate on the western boundary of the Bois de Boulogne, have proved so successful as to have created much interest among the leading rosarians of Europe and America. These trials were commenced on the initiative of M. Jules Gravereaux, the eminent amateur rosarian, and have been carried out under the direction of M. J. C. N. Forestier, the able chief of the public gardens of Paris. Bagatelle is remarkable for the charm of its grounds, and is of some historical interest. The villa was originally built by the Count d'Artois, who subsequently became Charles X., for a wager between himself and the Prince of Wales that he would have it built in sixty days. It was completed in fifty-nine days, and the Count was accordingly the winner. After several changes in ownership, the villa and its grounds were purchased by Richard Wallace, and subsequently became the property of the municipal authorities of Paris.

The rosery is not the least attractive feature of the grounds, and during the summer months, when the roses are in bloom, they possess much interest to those who are desirous of seeing the more noteworthy of the new roses growing under ordinary conditions at the earliest possible moment. Usually there are some fifty or sixty roses under trial, and the manner in which they are grown is clearly indicated in the accompanying illustration. The course of procedure that has been adopted is for M.

Forestier to issue annually a circular letter inviting raisers of roses to send any varieties they may wish to be included in the trial to the Roseraie de Bagatelle not later than April 15. Five plants in pots have to be sent of each variety, accompanied by their name, place of origin, and their parentage. The plants are bedded out on their arrival, and grown for two years, and during that period are inspected twice by an international jury. The inspection is made during the month of June in each year, the date being arranged to coincide, as far as possible, with the period of the roses being at their best. By this arrangement the members of the jury are placed in the best possible position for determining the merits of the varieties on which they have to express an opinion. They are all grown under the same conditions, the number of plants obviates the risk incidental to trials in which there is but one plant of each variety, and the jury have an opportunity of seeing them two seasons in which the climatic conditions may differ greatly, as, for example, in 1910 and 1911. The first season after planting it is not easy to determine the merits of novelties so exactly as could be wished, but in the second year it is possible to form an estimate sufficiently near for practical purposes of the habit of growth, freedom of flowering, and the quality of blooms. During the period over which the trials have extended, the following roses have received awards:

In 1907 the Bagatelle Gold Medal was awarded to Marquise de Sinéty, (M. Pernet-Ducher, Lyons) and Mme. Edmond Sablayrolles (M. Bonnaire, Lyons), Mme. Constant Soupert (MM. Soupert et Notting, Luxembourg), and Mrs. Peter Blair (Messrs. Alex. Dickson and Sons, Newtownards) were commended.

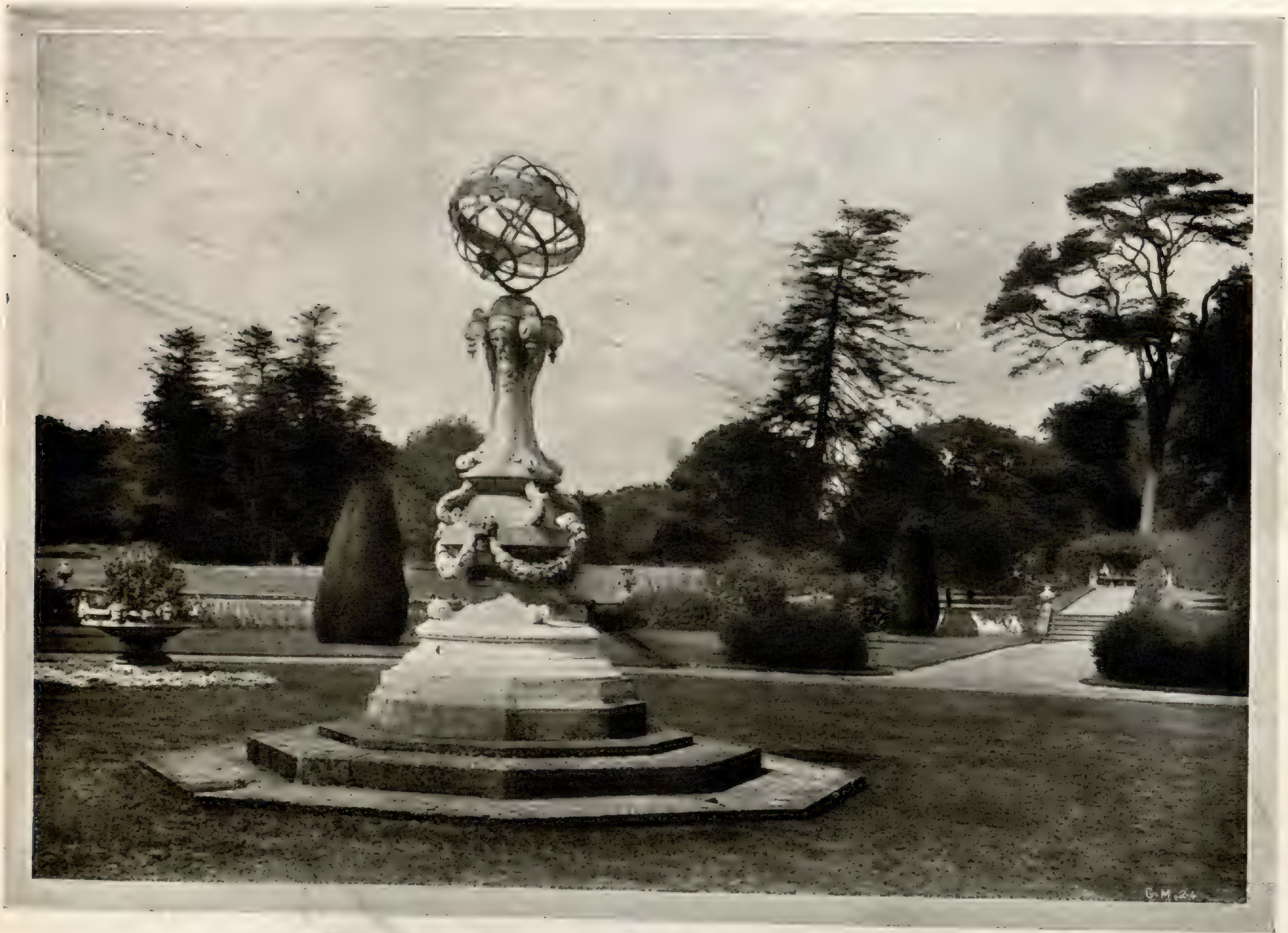
In 1908 the Bagatelle Gold Medal was awarded to Rhea Reid (Messrs. E. G. Hill and Co., Richmond, U.S.A.), and silver-gilt medals to Mrs. Dudley Cross (Messrs. W. Paul and Son, Waltham Cross), Dorothy Page Roberts (Messrs. Alex. Dickson and Sons), Mme. Segond Weber (MM. Soupert et Notting), and Frau Oberhofgartner Singer (Mr. P. Lambert, Germany).

Subsequent to 1908 the only medals offered have been of gold, and these have been offered in separate classes, one for French raised roses and the other for roses raised in any country other than France. The silver-gilt medals were replaced by certificates.

In 1909 The Bagatelle Gold Medal for roses raised in France was conferred upon the Lyon Rose (M. Pernet-Ducher), and that for roses from other countries to Mme. Segond Weber (MM. Soupert et Notting).

No gold medal was awarded in 1910, but Certificates of Bagatelle were conferred upon the following roses: Molly Sharman Crawford (Messrs. Alex. Dickson and Sons), Madlle. Marie Mascuraud (M. Bernaix, Lyons), Lady Alice Stanley (Messrs. McGreedy and Sons, Portadown), and Commandeur Jules Gravereaux (M. Croibies Lyons).

Last year (1911) was more prolific in good varieties, or the weather that was experienced in Paris was more favourable to roses, for two gold medals were awarded and several certificates. The several awards were: A Bagatelle Gold Medal to Beauté de Lyon (M. Pernet-Ducher) and to Jonkher J. C. Mook (Mr. Leenders, Holland), and certificates to Viscountess Enfield (M. Pernet-Ducher), May Miller (Messrs. E. G. Hill and Co.), William Speed (Messrs. Alex. Dickson and Sons), and Desiré Bergeia (MM. Barbier et Cie, Orleans).



THE HANDSOME SUNDIAL AT SOMERLEYTON HALL. [Photo: H. N. King.

## THE SUNDIAL AT SOMERLEYTON HALL.

Occupying a prominent position in the flower garden on the western side of the mansion, the handsome sundial contributes so materially both to the interest and attractiveness of the wondrously beautiful scene that our illustrations of the gardens of Somerleyton Hall would have been incomplete had they not included a representation of it. Appreciating this fact, when visiting the gardens, we had an illustration prepared, and this we intended using with the others in our issue of the 6th inst., but the great pressure on our space prevented this being done. We have now the pleasure of giving the picture, and we have no doubt that our readers will readily appreciate the object-lesson it affords on the value of a tastefully designed sundial in garden scenery of a more or less formal character.

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**Grevillea alpina.**—As a foliage plant Grevillea robusta is well known, but those species whose beauty depends principally upon their flowers are much less in evidence. That under notice forms a little dense bush, whose flowers, borne in clusters at the points of the shoots, are rosy-red tipped with yellow, and borne throughout the winter months.—W. T.

**Zonal Pelargonium Paul Crampel.**—Apart from its being one of the best of all the bright coloured zonal pelargoniums for summer bedding, this is also good for winter flowering. Of course, it needs to be specially grown for this purpose. The salmon-coloured sport therefrom is now becoming generally distributed, and is liked by many. The double form, which was so much boomed, I personally am not an admirer of.—W.

# REVOLUTION IN VEGETABLE GROWING.

(Continued from page 14.)

## Shows, Showing, and Judging.

For the purpose of this article we may take two types of shows; first the one at which professional gardeners compete with each other (for some reason or other exhibiting has little attraction for the market gardener); and secondly the cottagers' and village show. Of the former it must be said that a vegetable show pure and simple does not attract the public like a flower show. At any rate, in London, and if this were the case there would have been no need for the National Vegetable Society to have changed the place of its next exhibition to Watford, but at the big mixed shows in the provinces vegetables play a conspicuous part, and they never fail to arouse interest. You see three things which strike you in a keen vegetable competition at a big show. First, there is the obvious evidence of the wonderful improvement in types of vegetables, and shows have done much to bring improved varieties to the front. Secondly, as compared to former days, there is a marked absence of coarseness. In short, exhibitors have learnt that size is not, nor should it be, the first consideration, and every winning dish is stamped with the hallmark of quality. Lastly, there is arrangement of vegetables at shows, and to such men as Messrs. E. Beckett and Gibson must be given credit for raising this to a fine art. In fact, the methods of arranging collections of vegetables at shows has improved out of all knowledge in recent years, nor do I think we have reached the limit of possibilities in this direction. If another word may be added, it is that vegetables at a modern show bear tribute to the skill of raisers, and prove the British gardener to be a master hand at the cultivation of utility crops. In passing, a special tribute must be paid to the trade exhibits at modern shows, and, even if they are set up for the purpose of advertisement, those wonderful displays of vegetables staged from time to time by the leading firms afford evidence of the revolution that has taken place in vegetable culture.

Vegetables, of course, take pride of place at the village show, and when at one of these events you see a horny-handed son of toil going round after the judges, jotting down with a half-inch stump of lead pencil on the margin of a soiled catalogue the amount of his winnings, you observe a humble champion of the cause at the hour of his triumph, but you should also think of the hours he has spent in the garden at home, early and late, growing those vegetables that adorn the show board. Now and then you see the exhibitor pucker his brow and look astonished when he observes specimens the like of which won first prize the year before passed over, but this is where judges are at fault. More consistency is wanted amongst the gardeners who adjudicate at village shows. There are too many of them who still act on the principle that in a cottagers' class the prizes must necessarily be given to the biggest specimens, and they tempt exhibitors to aim for size alone. Then when a change of judges takes place, and men come along who have studied the Royal Horticultural Society's rules for judging, the big things which lack quality are left out, and the exhibitor is naturally puzzled and disappointed. Let us then have consistency amongst village show judges, and in the case of collections of vegetables I would go one better and have point cards placed on the exhibits, showing the marks accorded to each dish. In other respects village shows are not yet perfect; perhaps they never will be, but nevertheless they figure conspicuously amongst the national institutions of the country, and have, perhaps, done more than anything else to raise the standard of gardening in general, and vegetable growing in particular, amongst the working population of rural Britain.

## Stocks and Types.

After admitting everything that growers and exhibitors have done in bringing vegetable growing up to its present high standard there remains the raiser, the skilled expert, who, by crossing, selecting, and rogueing, has put material in the shape of modern varieties in the hands of cultivators. It is a wonderful story this evolution in the vegetable world, and no one man or one generation of men can claim credit for it all. Take the cosmopolitan potato, for instance. Sir Walter Raleigh introduced it, so the story goes, but that famous old gardener, Gerard, was amongst the first to realise its value, and he figured the potato in his "Herbal," published in 1597. But what of the ups and downs in potato culture since? There were those black years of disease and potato famine which began in 1845, when it was seriously thought that the vegetable would drop out of cultivation. Fortunately, however, it did not, and why not? Largely because raisers saw the necessity of introducing new blood in the shape of varieties with vigorous constitutions that had some capacity for resisting disease, and so the situation was saved. Some varieties have made history. Amongst them Sutton's Magnum Bonum, which came just at the moment when a potato of its splendid type was wanted, and when it waned Findlay's Up-to-Date and other varieties of the type stepped into the breach. The wonderful boom in potatoes, when Northern Star and Eldorado appeared, and single tubers were worth their weight in gold, is a matter of modern history, and the same may be said of the ill-fated National Potato Society, but the position so far is that the growing of potatoes is a more important industry now than ever before in the history of the world.

We are told that green peas were first imported from Holland in the days of Queen Bess, but for years they remained a luxury for the few, not, as now, a commodity for the million. Now the varieties of peas are legion, and the cottager can have as good peas on his table as the millionaire. We have passed through the period of small rounded seeded peas, which are now considered to be only good enough for field culture, and we have seen how the raiser has introduced into the dwarf section the long pods and flavour of the Marrowfat type. Take Sutton's Little Marvel as an illustration, and compare, say, Early Giant, introduced by the same firm, with the best first early of half-a-century ago. In Carter's Quite Content we have a pea that might have been specially designed for the exhibitor, with Veitch's Autocrat as a standard variety, with others of the Duke of Albany type, for those who want big quantities, and have room for growing tall peas. Truly it is a story of progress, this revolution in pea culture!

Go into any vegetable show you like, even a cottagers' show, and note the scarlet runner beans—long, straight, fleshy pods of first-class quality, having little in common with the original type of scarlet runner. What are they? Here again give the raiser credit, for, ten to one, they are Sutton's Prizewinner, Carter's Emperor, or some similarly selected type.

It occurred to some enthusiastic gardener in the years gone by that, by getting his spring onions a bit bigger he would stand a better chance of winning first prize, so he devised the method of sowing seeds early under glass and transplanting. This marked the beginning of the big onion craze; the result is the magnificently-grown specimens that are now seen on show boards, but the varieties, the Ailsa Craig, Cranston's Excelsior, etc., were supplied by the trade, and one of the latest introductions which is growing in favour is the Premier, a variety sent out by Messrs. Dickson and Robinson, Manchester. It may further be said of the exhibition method that, in a modified degree, the indoor raising and transplanting of onions is now largely employed in the culture of crops for purely utility purposes.

The members of the brassica tribe have lent themselves to wonderful improvement, and it is hard to think that the wild cabbage, which one finds flourishing on the cliffs at Dover, and in some other parts of this country, could have been the possible parents, say, of Ellam's Early or Flower of Spring, and in addition to this section raisers have presented us with splendid autumn cabbages of the type of Dobbie's Winningstadt. Savoys have been known in gardens for hundreds of years, but the plant has shown its willingness to lend itself to further possibilities, for recently Messrs. Sutton and Sons sent out a type which produces a savoy on the top, with sprouts up the stem that resemble small savoys. A collection of modern kales—green, variegated, plain curled, and hearting—bear tribute to the skill of raisers, and in the days of Gerard, who mentions them in his "Herbal," the cauliflowers were doubtless of a different stamp to Veitch's Autumn Giant and Sutton's Magnum Bonum; while in the way of broccoli, which is said to have made its appearance at the beginning of the eighteenth century, from out of the early types have come the splendid self-protecting varieties, and white and sprouting forms. Every grower of Brussels sprouts knows the advantage of sowing seeds of a selected type, because in the case of a superior variety one can rely on obtaining firm hard sprouts all the way up the stems.

In the above instances, we see evidence of the most marked improvements, but no crop in the kitchen garden has been overlooked. For instance, the types of modern lettuces are quite a study, tomatoes may be described as a creation of recent years, and every other grower you meet has his own selection. The introduction of what is called French gardening has prompted raisers to turn their attention to types suited to this class of culture. Even with the most commonplace vegetables the gardener to-day can choose between ordinary types and improved relations, and, generally speaking, it is to his advantage to take the latter. In short, by an equal display of skill and intelligence these two great parties, the seedsmen on the one hand and growers on the other, have joined hands with wonderful effect in bringing about the revolution in vegetable culture, the effects of which are to be seen in gardens of every description at the present day.

G. H. H.

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**Primula obconica.**—Anyone acquainted with this little primula thirty years ago, when it was figured in the "Botanical Magazine" as Primula poculiformis, can fully appreciate the great improvements that have been effected by a gradual process of selection. Now not only are the flowers large and boldly displayed, but there is also a wide range of colour among them.—W. T.

## NOTES FROM KEW.

### Clerodendron cephalanthum.

There is a large amount of variability among the different species of clerodendrons, some being vigorous climbers, while others form more or less compact shrubs or trees. The species at the head of this note is stated to be a climber, but it is flowering in a small state in the intermediate portion of the T range. The ovate leaves are of a dark green tint, and the flowers are disposed in dense terminal heads. Like many members of the genus, the calyx is large, being white, with slight purplish suffusion. The flowers, which protrude therefrom, consist of a slender tube, nearly three inches in length, greenish white, while the spreading segments, which are about an inch across, are white, very slightly tinged with purple. The much-exserted stamens are of a pinkish tint. This clerodendron is a native of Zanzibar, and was, according to the "Dictionary of Gardening," introduced in 1888. Outside of a botanic garden it is a very uncommon species.

### Jasminum Maingayi.

This uncommon warm-house species of jasmine is exceedingly valuable from the fact that it flowers throughout the winter, as may be seen by a specimen trained to a rafter in the T range. The foliage is of a neat tint, and the starry white flowers are borne freely in clusters at the points of the shoots. Though but little known, and, I believe, comparatively new, it well merits more extended cultivation.

### Plumbago rosea superba.

This plumbago, which is often known in gardens as P. coccinea, and is usually grown in bush form, is, in the T range, trained to the roof, and in this way it forms a really striking feature, the long spikes of bright-coloured blossoms disposing themselves in a pleasing and informal manner. It is not sufficiently vigorous to be trained to the roof of lofty structures, but, as grown at Kew, it is really most striking. Being a taller grower than P. rosea itself, this brighter-coloured variety is better adapted for training to a roof or rafter. Plumbago rosea is a very old occupant of gardens, and its variety superba has now been grown for many years.

### Tupistra grandis.

The tupistras form a very singular group of the order Liliaceæ. From the thickened rhizome leaves somewhat resembling those of an aspidistra, but narrower, are produced. From a flowering point of view, T. grandis, now in bloom in the stove portion of the T range, is well worthy of consideration. The flowers are borne in an erect, closely-packed spike, and are deep shining purple, against which ground the lighter-tinted disc-like stigma stands out in a marked manner. The general effect of the inflorescence, which stands about fifteen inches high, is that of a very narrow, elongated spike of hyacinth.

### Exacum zeylanicum.

As seen in the T range, this is quite distinct from E. macranthum, with which it is sometimes confounded. This last-named is now generally well known, for it has been extensively shown at Westminster within the last few years. A notable feature of this beautiful flowering plant is the intense bluish-purple colour of its blossoms. From this better-known kind the specimen of E. zeylanicum differs in its far more vigorous growth, being four feet high or thereabouts, while the flowers are of a much lighter blue than those of E. macranthum. Close by is a specimen of the small lilac-flowered E. affine, which is interesting as being one of the discoveries on the Island of Socotra, at the same time as Begonia socotrana. While E. affine is a pretty little flowering plant, it is much less showy than E. macranthum.

### Aphelandra Fascinator.

This species of aphelandra is a native of Colombia, but is not known to anything like the same extent as some of the others. A distinguishing feature is the way in which the leaves are striped with silvery-white on an olive-green ground, while though the flowers of many members of the genus are scarlet, those of A. Fascinator are of a vivid and uncommon shade. Like the others, it is of comparatively easy culture, and may be seen in good condition in the intermediate portion of the T. range.

### Jacobinia coccinea.

This, one of the oldest of the jacobinias, is more often met with in gardens as Justicia coccinea. Of stout, upright growth, with a terminal head of scarlet blossoms, it is just now very noticeable. Where a display of flowers has to be kept up at all seasons, this is particularly valuable from the fact that its bright-coloured blossoms are borne in the winter months. Now in flower in the T range. A desirable feature of the jacobinias is that they are for the most part of easy culture.

### Aloe Thraski.

A couple of fine specimens of this noble South African species of aloe are flowering freely in the Succulent House. They show well the distinctive character of the vegetation which so frequently occurs in South Africa, and, furthermore, they are, from a flowering point of view, most attractive. This aloe must, I should say, be classed with the larger-growing members of the genus, the erect, stout, naked stem being several feet in height, and crowned with a handsome head of leafage, which is, in its turn, overtopped by numerous spikes of blossoms, disposed in an erect branching panicle. The leaves recurve in a very regular manner, and are from three to four feet in length, and six inches wide at the base, from whence they narrow gradually to a point. The flowers are yellow, and suggest those of a tritoma.

### Eupatoriums.

The value of these at this season is well shown in the greenhouse, where a large ground of Eupatorium Weinmannianum. This, often known as E. odoratissum, is in full bloom. Rapidly approaching that stage are some examples of Eupatorium petiolare, whose daisy-like flower heads have, as they are developing, a pinkish tinge. This last forms very handsome specimens, and in a cut state the flowers last a long time in water, added to which they emit a pleasing fragrance.

### Crassula lactea.

This might well be more often grown for the sake of its winter-flowering qualities than it is, for it is just now very pretty. In the greenhouse small-flowering specimens in four-inch pots are employed for the edging of one or two groups, and well suited they are for this purpose. It is a free-growing plant, the stem being stout, and the ovate leaves of a thick fleshy nature. It reaches a height of a foot or so, and branches out towards the base, so that it forms a mass or clump. The starry flowers are white, and freely produced in spreading panicles. Though not very much known in gardens nowadays, it is quite an old plant, having been introduced from South Africa in 1774. A second species of crassula, namely, C. spathulata, is largely used as an edging to the stages of the Succulent House. It is of free growth, and the decumbent stems, which spread a considerable distance, hang down from the stage, and thus form a living fringe. The leaves are small, almost round, and of a dark green colour. The flowers are white, tinged with pink, but they do not add much to the merits of the plant, its principal claim to recognition being its free growth and neat leafage.

### Luculia gratissima.

A large specimen of this magnificent Himalayan shrub, planted out in one of the beds of the Temperate House, is now in flower, and in this stage its beauty is unsurpassed. It succeeds much better planted out than when grown in pots or tubs, as under these latter conditions it is not always satisfactory. When laden with its large bright pink flower heads it is a sight to be remembered. Of all the different subjects that I have propagated from cuttings, this luculia is affected more than any other if the cuttings are allowed to flag before expansion, though Coprosma Baueriana variegata is nearly as bad.

### The Alpine House.

As might be expected, there is not a very long list of plants in flower thus early in the year, though some very beautiful and interesting subjects are already in bloom. The charming, and withal fragile-looking, Narcissus bulbocodium monophyllus serves to remind one of the coming daffodil season, while snowdrops are represented by the noble-looking Galanthus Elwesi Whittali, by Galanthus Elwesi itself, and Galanthus byzantinus. Helleborus niger (Christmas Rose), and its tall-growing variety, H. niger altifolius, supply bold masses of white, while the golden flowers of Crocus vitellinus and Sternbergia Fischeriana are very bright and effective. Beside these there are the distinct white-flowered Colchicum libanoticum, Merendera caucasica, Cyclamen ibericum, Alyssum Bornmuelleri, with tiny white flowers; Saxifraga Burseriana grandiflora, one of the finest of white-flowered saxifrages; the yellow-flowered Saxifraga apiculata, and Saxifraga Haagi, a pretty hybrid kind. Some pots of the Winter Heliotrope (Petasites fragrans) enabled one to enjoy the sweet-scented flowers better than when they are growing in the open. A word of caution must, however, be given with this last, as if planted out in good ground it will soon become a terrible nuisance.

K.

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## CHRYSANTHEMUM MRS. L. THORN.

There are very few more reliable varieties than this; every small bud will develop into a clean flower, and every small shoot will bear a bud. The colour is a clear, rich yellow; the variety being classed with the Japanese incurved. I do not know of many varieties that bear flowers which will last fresh on the plants or in a cut state for a longer time. There is only one fault, not a serious one, namely, the young buds are very brittle and soon break off. The stems harden and do not readily snap off as the flowers develop; the leaves are usually mildew-resisting, and last fresh for a long period, even in semi-dark conservatories—a good point.

Geo. Garner.

## A BEAUTIFUL SINGLE CHRYSANTHEMUM.

The high degree of popularity to which the single-flowered chrysanthemums have attained within recent years was admirably exemplified during the past season by the many new varieties that were submitted to public notice during the past season. There were, it need hardly be said, some that failed to find favour with the Floral Committees of the Royal Horticultural Society and the National Chrysanthemum Society, but a considerable proportion were of so high an order of merit as to obtain distinction from one or other of the two committees or both, and to immediately attract the attention of those who appreciate the claims of chrysanthemums with single flowers. To the latter class belongs the beautiful variety Percy Arnold, illustrated herewith. The form of the blooms is so well shown as to render description unnecessary, and it will suffice to say that grown under ordinary culture the blooms are a trifle larger than they are represented in the illustration. Their elegance and adaptability for decorative purposes in a cut state is evident, and it remains to be said that the colour is rich pink, with a white zone round the disk. The variety was raised by Mr. W. Rigden, Englefield Green, and had an Award of Merit made in its favour at the meeting of the Royal Horticultural Society held on November 9 last.

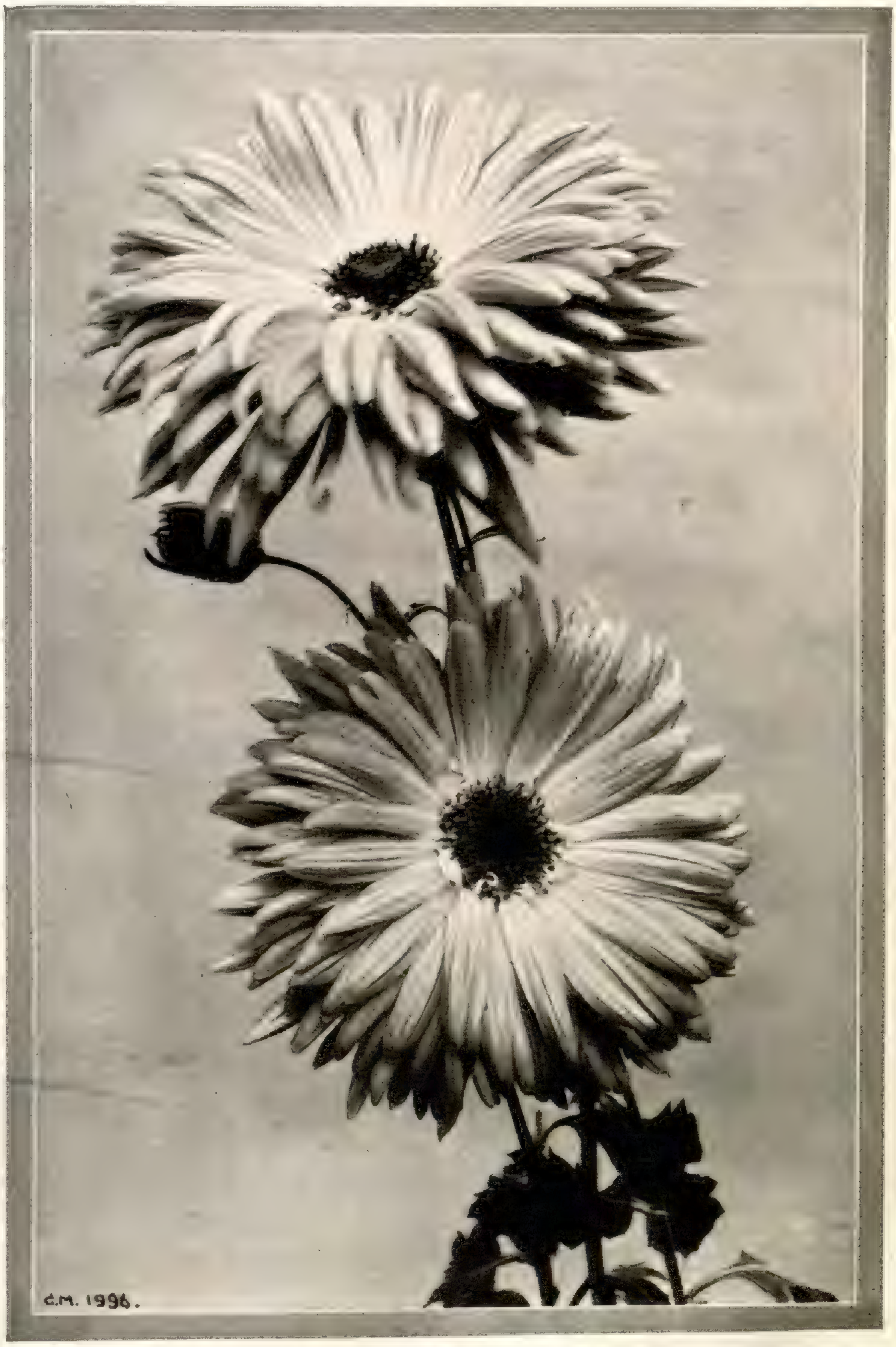
## APPLE COX'S ORANGE PIPPIN.

Many readers, besides myself, will have read "E. M.'s" experience with this variety as grown in a clayey soil, with much interest. I have never grown the variety in a really heavy loam, even; but in a light and medium heavy one only. I have, however, seen trees badly cankered in a clayey rooting medium. I confess to being extremely fond of Cox's Orange Pippin. My trees never cankered, but they made too much growth, and had to be root-pruned a little.

A gentleman living near had one tree of this variety in his garden, the soil of which was a very clayey one. He saw my trees, and asked me what he should do to his as it did not bear fruit, and was badly cankered, and after my suggestions had been made he said I could experiment with the tree, and kill or cure it. A trench was opened, roots cut off, some brought up nearer the surface, and some lighter soil was mixed with the original in filling up the trench again. "E. M." rightly draws attention to the fact that the roots will go down in such uncongenial soils, as in the case of the tree in question, nearly all the roots were found very deep down in the cold, hard sub-soil. We freely cut out all cankered parts of the branches, so much so that I could see through some of them near the junction of the main branches with the stem of the tree. Then the pared parts were twice painted with pure (undiluted) fir-tree oil. The following year a nice crop of fruit was gathered from the tree; the second year a heavy crop, and the healthy bark had covered all the wounds. The tree continued to bear satisfactory for several years, but I have not heard how it has behaved since I left the district. It presented a sorry appearance when first cut and dressed with the oil. This reference may be of some use to those persons who are growing a few specimens in a clay soil.

In my light soil the trees of Ribston Pippin cankered badly, and all my efforts only resulted in a very partial cure.

GEO. GARNER.



CHRYSANTHEMUM PERCY ARNOLD.

A distinct and beautiful single variety, raised by Mr. W. Rigden, with rather large blooms, which are rich pink with white zone round the disc.

# WORK FOR THE WEEK.

### THE ORCHID HOUSES.

CLEANLINESS. — It is desirable the cleansing of the houses, both inside and outside, should be brought to a conclusion as soon as possible, so that everything is ready when the busy season commences. It is essential that all wood work, walls, glass, stages, should be scrubbed thoroughly clean, as cleanliness is one of the greatest aids to good cultivation. The inmates of the various houses should also be thoroughly cleansed. Every plant before being put back in its quarters should be dipped overhead in a solution of some approved insecticide, and all dirt, insects and other pests removed. Many growers object to removing the outer sheaths of cattleyas, and other plants of that class, but when they are dried up and easily removed, I do not hesitate to remove them. By doing this, a nice stock of scale and other insects, which infest this class of plant, is exposed. If these are not eradicated, the plants will succumb sooner or later. Light is a necessity in the cultivation of orchids as of other plants, therefore the glass at all times should be kept scrupulously clean, so that the maximum amount of light may pass through it.

WATERING.—Success in plant cultivation in their artificial homes depends entirely on the application of water, or the withholding of it. Each family of plants will require different treatment in this respect, and in many cases different plants of the same kind will vary in their requirements in the amount of water they require. In some cases the error is made of giving too much water at the roots with the idea of keeping the pseudo-bulbs plump and hard, and in not a few instances they are seriously injured. On the other hand excessive dryness is quite as harmful, and anyone studying this question must take pains to understand his plants. In the warmest division (East Indian house) such evergreen epiphytal orchids as ærides, saccolabiums, renantheras, angræcums require water in sufficient quantities to prevent loss of foliage. When the sphagnum moss on the surface assumes a whitish colour, it will show at once that water is required; therefore the compost should be thoroughly soaked, and left until it becomes dry again. The species of phalænopsis at this season should have close attention in the matter of watering. Cypripediums of all kinds require water whenever they appear in the least dry. Catleyas and lælias require less moisture at the roots now than at any season, excepting those plants which are now making new growths, or developing flower spikes. The object at this season should be to induce the development of roots, but not growth, and to ensure this give just sufficient water to keep the pseudo-bulbs and leaves green and plump. Cattleyas and lælias will not root in a compost that is heavily charged with moisture. Vandas of the V. tricolor and V. suavis section occupying the cooler end of the cattleya house, should, as soon as they are rooting freely, have sufficient water to encourage the sphagnum moss to grow luxuriantly. Vandas of the terete-leaved section, such as V. teres and V. Hookeriana, should have sufficient water to prevent shrivelling, as this in any orchid is a source of much danger. The various genera which occupy the cool houses, such as odontoglossums, oncidiums, masdevallias, and maxillarias, are in a growing state almost at all times, and should be watered often enough to keep the compost moist, but in no case should the latter be allowed to become saturated. Cochliodas, odontiodas, and plants of this class must have water whenever the compost appears dry.—J. T. BARKER, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

PREPARATION WORK.—With the opening of the New Year, the successes and failures of the one that is past should be carefully considered, and the lessons of the most recent experience be taken advantage of. Plant life under glass with the slow return of sunlight and lengthening days will gradually become active, and many things will need attention. Chrysanthemums will have yielded their blooms, and cuttings will be in demand. The first batch of these put in small pots in November will now be rooting freely, but some of the varieties are slow in producing new growths suitable for cuttings. Where the stock of plants of any of the varieties is limited, the stools should be placed in a light, airy house, with a genial temperature, and as near to the glass as possible, and sprayed occasionally to encourage them to produce strong cuttings, as those which are drawn seldom make vigorous plants. The best results are obtained by placing four cuttings in each three-inch pot; the compost should be two parts fine sifted loam, one part leaf-soil, one part coarse silver sand. Place the pots in a propagating frame in an unheated house, keep close for a few days, and when the cuttings commence rooting admit air gradually.

BULBOUS PLANTS.—Roman hyacinths are plentiful and good; hyacinths and tulips are growing freely, and should be removed from the ash bed and, if well rooted, started in batches. Paper White and Gloriosa narcissi will also be soon in bloom; freesias and lachenalias are also showing their flower spikes. Liquid manure is very beneficial to all bulbous plants, commencing with small quantities and gradually increasing the supply as the flower spikes develop.

HIPPEASTRUMS.—These should be carefully examined, and those showing flower spikes should be top-dressed and transferred to a warmer house; top-dress if necessary with a mixture of fibrous loam and well-rotted manure and coarse sand. Do not give any water until the flower spikes are well above the top of the bulb, or the foliage will grow and the flower spike remain dormant.

BEGONIAS.—Gloire de Lorraine and its varieties are now making a glorious display. As the plants go out of bloom they should be cut down and given a short rest for a couple of weeks by withholding water. Subsequently they should be top-dressed and placed where they will have the assistance of a warm temperature and moist atmosphere. An early vinery is an ideal place for the plants, giving frequent syringings overhead.

WINTER-FLOWERING CARNATIONS.—These will now be producing plenty of flowers which will improve with the increased light. Give liquid manure every alternate time of watering, as carnations are gross feeders. Cuttings of these should now be put in whenever procurable. These are best inserted in three-inch pots, four or five in each. The pots should be washed and filled with silver sand, watering each thoroughly. Insert the cuttings when ready, press firmly, and place in the propagating frame in a temperature of 60 degrees, keeping close until rooted, which will be in from ten to sixteen days. Directly the cuttings are rooted they should be potted off singly, using small pots, and a mixture of fine turfy loam and sand, a dash of leaf-soil, or peat will be beneficial. The soil should be raised to the same temperature as the house in which the cuttings are already growing before using.—LEWIS SMITH, Shotesham Park Gardens.

## HARDY FRUITS.

PLANTING AND PRUNING.—The excessive rainfall of the past few weeks has considerably retarded the work of pruning and planting. It is to be hoped that as we have now entered the New Year the climatic conditions will be favourable to the completion of such operations as are in arrears. The soil in this district being of a light sandy loam does not feel the effects of a heavy rainfall, as in the case of heavy loams, and consequently we are enabled to carry on the work of planting and pruning, etc., when others who have to deal with loams of a stiffer nature can make but little, if any, progress. In the latter case it will be necessary to take advantage of every favourable opportunity for speeding up operations.

SPRAYING.—It will soon be time to prepare for spraying the trees. For the winter spray I have for several years used caustic alkali wash with excellent results. This I procure in tins, as I find it saves a certain amount of time and trouble, and is a convenient method where spraying operations are spread over a considerable area. To those who prefer to mix the materials for themselves I append the recognised formula: 3lbs. soda carbonate—(1 p.c. 98), 1lb. potash carbonate, 3lb. soft soap, 10 gallons of water. Indiaruber gloves should be worn during spraying operations to protect the hands.

GENERAL REMARKS.—During wet days coping boards (where used) may have a coat of paint, shreds cut ready for use, gooseberry and currant cuttings prepared and laid in for insertion when a favourable opportunity occurs. Rake up and burn all prunings as the work proceeds. A short length or two of trellis will be found very handy for wall tree work; the soil does not become panned down by the constant movement of the feet, and the operator works under more comfortable conditions. The pieces of bark used as a protection against excessive sunheat should be removed from the stems of wall trees, and if sound and serviceable, plunged into boiling water for a few minutes. Fresh pieces should receive the same treatment to kill any insect life which may be present.

PEACHES AND NECTARINES. — The pruning, spraying, and tying-in of peaches and nectarines is usually left over until all other kinds of fruit trees have been attended to, with the result that, owing to pressure of other work, the above operations are unduly hurried over. If the trees were carefully pruned immediately after the fruits were removed, very little pruning will now be needed, merely cutting out any faulty shoots which may have been overlooked with the trees covered with foliage. The trees should be loosened from the wall, tying the bunches into convenient sized bundles, and then sprayed with a suitable insecticide, thoroughly damping every portion of the tree. The wall should also be thoroughly cleansed to destroy any insect life which may be hidden in the holes and crevices. This applies more particularly after the experience of the past hot summer, when red-spider was so very much in evidence. The arrangement of the branches and shoots may follow closely on the heels of the spraying. The distance between the shoots should be ample for the laying-in of young growths without undue crowding. To obtain fruits of the best quality, and well-ripened shoots for the following season it is most essential to train thinly. Apart from peach cases, blinds, and netting are the usual means of affording protection. If these are early placed in position the flowering period may be considerably retarded. — W. MESSENGER, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

SOIL PREPARATION. — The weather of the past month will be remembered in this locality for its abnormal rainfall; a record month's fall for the last ten years here, viz., 10.76in. As the result, trenching and digging will be in arrears. With fairer weather these operations must be pushed on with all possible speed, bearing in mind in carrying out this work the many lessons of the past excessively hot and dry season. A system of deep digging, whether "bastard" or double digging, should be practised as far as one is able, as deep cultivation will promote a lasting and steady growth throughout any trying period that may occur. Manure, both long and decayed, should be used, as the work proceeds, where the ground is intended for peas, beans, onions, cauliflowers, and such gross feeding plants. Other plots, provided they were manured for the previous crops, and are now intended for parsnips, carrots, beet, and even potatoes, will only require trenching. Then previous to sowing the seed give a good dressing of old leaf-soil, burnt garden refuse, soot, and lime, and harrow it in. When digging or trenching always leave the surface as rough as possible, to enable the action of the weather to pulverise and sweeten it.

BROCCOLI.—These have up till now produced a regular supply of excellent heads, due to the mild weather we have experienced. Precautions should now be taken to maintain a constant supply by lifting the most forwardest plants with a nice ball of earth, and plant them thickly in pits or even cold frames. In open weather remove the lights entirely, unless "curds" are scarce, when every encouragement must be given to maintain a steady growth. It is remarkable what nice heads are obtained in this way. Winter Mammoth and Snow's Winter White are two excellent kinds at this season.

SEAKALE.—This is so important a crop that it might be regarded as indispensable. At this season it will force quite easily if placed in pots or boxes with light soil, and placed in a dark and warm place; a daily syringing is all that is required. Insert the crowns at intervals of ten days. If the whole are not consumed, cut when about eight inches long and stand in shallow water. It will keep a few days treated thus in a cool dark place.

TOMATOES.—The autumn sown plants have made a fine steady growth this season, and will now benefit by a shift into 5 or 6-inch pots. Use a rather light compost of loam, leaf-soil, and a dash of sand. Do not pot too firmly; and when potted place near the glass in a structure with a temperature of 55 degrees. Be sparing with water.

GENERAL REMARKS.—Maintain a constant supply of salads. Chicory and dandelion can be placed in the mushroom house at intervals of ten days; mustard and cress sown in boxes in gentle heat. Endive is far crisper and nutty if blanched in a cool temperature, a cold frame for preference, where a clean mat can be placed over it in the frame besides matting the glass also. In frosty weather litter may be required. Procure protecting material, such as long litter, bracken, or fir boughs, which can be used as a protection against wind in exposed places. Have under cover loam, sand, leaf-soil, and burnt garden refuse, as many seeds should be sown from the middle of the month onwards. Make boxes suitable for seed sowing during wet weather; prepare early potatoes by standing them up in boxes in a light warm position to sprout previous to planting in pots, boxes, and frames.—G. ELLWOOD, Swanmore Park Gardens.

## WEATHER OF 1911.

The first nine months of the past year will long be remembered by gardeners and farmers alike, especially in the Midland and South-Western counties, as being by far the driest period on record. There was nothing approaching it since 1847, when the rainfall in the south for the first nine months of that year was 11.40 inches, and as the remaining three months in 1847 were also dry, the total fall for the year was only 17.58 inches.

But, though the first nine months of 1847 were so dry, the same period this year even beat that record, for only 10.41 inches of rain fell as measured in my rain guage, which is 157 feet above sea level, and is too far from the hills to be affected by them. But the last three months of the past year were wet, and in some places the rainfall was so heavy as to bring the total up to near the average; while in other districts it has even been over the average. With us, however, not far from the city of Gloucester, the rainfall for the year up to December 29 was very near the normal, being 22.69 inches.

Those whose memories will carry them back as far as 1851, may recollect the dry period that was then experienced, for during the last four months of that year there was only 5.63 inches of rain. This was followed by the wettest year on record, when there was a fall in the South of England of over fifty and a-half inches. There are many who can recollect as far back as 1858, who will no doubt remember that extraordinary year, when July was by far the wettest month of the whole twelve. Up to the end of September there was a fall of 13.57 inches, of which more than a quarter was contributed in July. The fall for the whole year being 19.36 inches. Well do I remember the dry summer of 1868, but it was only of short duration, for the rainfall of that year up to the end of September was 19.97 inches. It must, however, be mentioned that January, 1868, was a very wet month, contributing nearly four and a-half inches, and December 6.51 inches, bringing up the total fall for the year to 30.51 inches. This was followed by one of the mildest winters on record.

We next come to 1870, which, up to the end of September, had produced only 13.37 inches, but the three last months brought up the total to 24.99. Again, in 1874, we had a dry period, the rainfall to the end of September being 15.49 inches, and the fall for the whole year 24.65 inches. There have been several dry periods since, but none of very long duration; the driest of all was in 1893, when in some places, between the first week in March and the end of June, hardly any rain fell; but July of that year was very wet, there being heavy thunder storms in places. January and February were also wet months, there being a fall of over seven inches, but the weather cleared up in March, and there was but little rain between that month and July, but by the end of September there had been a fall of 17.69.

I mention the foregoing as showing that there has not been such a long period of drought since a record of the rainfall was kept; and, having compared these with that of the present year, it will be seen that no season approaching it is to be found since 1847. But there are other conditions besides the rainfall that make the year 1911 a remarkable one, as will be seen by looking more fully into the details of the conditions of each month separately. January was mild up to the end, when there was a sharp frost. Our thermometer registered 15 degrees. Between the 12th and the end of the month the weather was fine, which enabled us to proceed with all outside work. The readings of the barometer were very high, only on one occasion did it fall below 30. The rainfall for the month was .91 inches.

February opened with frost, but this was of short duration, only lasting a few nights, after which the temperature rose, and the month throughout was comparatively mild and dry, especially up to the 13th, after which there were slight showers most days until the end, the total rainfall being 1.28 inches. The barometer for the first half was very high.

March was a showery month, rain falling on fifteen days the total fall being 2.15 inches. During the latter part the prevailing wind was from the north, and, though there were no severe frosts, the nights were cold, as only on two occasions did the minimum exceed 40 degrees, and this in the early part of the month.

April was a dry month, there being only .78 of rain. The wind for the first half was northerly, and the night temperature was low. The barometer was high throughout the month.

In May genial weather as a rule prevailed, but there was no exceptionally high temperature until the latter part of the month, when on several occasions the thermometer rose in the shade to over 80 degrees. The month throughout was very dry, the total rainfall being .77 inches.

June was a fine genial month, and only on six occasions did the maximum fail to reach 70 degrees in the shade. The night temperatures were for the most part also high, the average being 48 degrees, though on the 10th the temperature fell to 36 degrees. Rainfall was partial, but here we registered 2.24 inches.

The weather in July was quite exceptional; day after day the skies were like steel, not a cloud to be seen. The temperatures in the daytime were very high. On nineteen days it exceeded 80 degrees in the shade, in addition to five others when we registered over 90 degrees. It was remarkable that, although the weather was so hot, and at times very close, there was no thunder storms. The barometer was steady throughout the month, and the only rain we registered was .07 inch, and this at the end of the month.

In August, also, the day temperature was very high. On six occasions the maximum exceeded 90 degrees in the shade, the highest being 99 degrees, on the 9th; while on twelve others it was over 80 degrees. The rainfall for the month was 1.35 inches, and the barometer was steady.

The maximum temperature for the first twelve days in September were also very high, on eight occasions the reading exceeded 80 degrees in the shade, and on two over 90 degrees. After the 12th there was a considerable fall in the temperature both day and night, this was especially so from the 14th to the 17th; while on the 21st we registered one degree of frost. The barometer was high throughout the month. Rainfall, most of which fell after the 19th, was .86 inches.

The early part of October was fine though somewhat foggy; on the 13th we had .64 inches of rain, and from the 19th to the end of the month there was rain more or less every day, though only in small quantities, the total fall being 2.95 inches. The temperature was not high during the month, the highest reading being 59 degrees. Only on two occasions did the temperature fall below 32 degrees, consequently the month throughout was mild, and the pastures resumed somewhat of their usual appearance.

In November there were only nine days in which there was no fall of rain, the total fall being 3.07. The heaviest fall in any twenty-four hours was on the 11th, when we registered .49 inches. The month for the most part was mild, but on the 21st eleven degrees of frost were registered, which considerably checked vegetation; excepting for that check grass continued to grow, and the fields once more looked fresh and green.

During December the weather was mild throughout. On eight occasions the maximum readings were over 50 degrees in the shade, while on only three occasions was there any frost registered. Rain fell more or less on twenty-eight days, the total fall up to the 29th being 6.26 inches. The barometer was very irregular, and only on occasion did the reading exceed 30; while the wind for the most part was south or south-east. So endeth one of the most remarkable years on record.

H. C. Prinsep.

# EXHIBITIONS AND MEETINGS.

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### Royal Horticultural Society.

The first meeting of the year was a good one, but the hall was not crowded, either with exhibits or visitors. Orchids were a good feature, while carnations, apples, home-grown oranges, and ferns were other notable subjects on view. The Orchid Committee had much business to transact, about forty plants being submitted for awards. The Chairman of this committee, with his usual generosity, added to his New Year's wishes a printed copy of the orchid awards granted in 1911, and a printed copy of new hybrid orchids and their percentage, for the year 1911; needless to say, his kindness was greatly appreciated. Novelties on Tuesday, January 9, included a good new pear, named Mrs. Seden.

FLORAL COMMITTEE.

Mr. H. Burnett, Guernsey, brought over some beautiful carnations, and exhibited bunches of charming flowers of Scarlet Glow, White Enchantress, Mrs. C. F. Raphael, Marmion, White Perfection, May Day, Mikado, Marmion.

Messrs. Barr and Sons, Covent Garden, had on view a number of snowdrops, freesias, gerberas, primulas, and a collection of small-leaved ivies.

Lady Northcliffe, a fine rich pink perpetual carnation, with fringed petals, and a sweet fragrance, was capitally shown by Mr. C. Engelmann, Saffron Walden. The flower is carried on a good stem, and has a perfect calyx.

Very beautiful were the camellias from Messrs. Wm. Paul and Son, Waltham Cross, which filled one corner of the hall. The plants were pictures of health, and carried abundance of flowers; the older double forms were well in evidence, but the single or semi-double Apollo, Adelina Patti, Mars, Donckalaari, Waltham Glory, and Festa were especially admired.

Messrs. H. B. May and Sons, Edmonton, contributed a collection of adiantums, the newer plumosa nephrolepis, davallias, and a collection of elegant hardy varieties of Polypodium vulgare, P. v. pulcherrimum, P. v. cambricum, P. v. multifidum, and P. v. cambricum Barrowi were all charming.

Perpetual carnations were admirably shown by Messrs. Wm. Cutbush and Son, Highgate, and the charming flowers in a variety of colours, well set up; the same firm showed hellebores, early irises, the pretty witch hazels, heaths, liliums.

Messrs. W. Wells and Co., Merstham, had a small exhibit of carnations, and showed White House and White Wonder in good condition.

Zonal pelargoniums came from Messrs. H. Cannell and Sons, Swanley, and these, set up in big bunches, contributed a fine bank of colour, and served to indicate varieties useful for winter flowering.

Mr. E. Guile, The Gardens, Short Grove, Newport, staged a pretty rose-pink perpetual carnation, named Lady Meyer, a variety of great promise.

Messrs. Young and Co., Hatherley, also showed perpetual carnations, and their chief variety was a new seedling, named A. H. Montgomery, a shapely flower of a particularly bright purplish-lavender hue, quite distinct, and very attractive.

A bright exhibit from Messrs. Jas. Veitch and Sons included greenhouse rhododendrons, the beautiful and rare Urceolina aurea, freesias, the fine Winter Cheer begonia, Indian azaleas, and camellias, the useful winter-flowering Moschosma riparia, and Coleus thyrsoideus.

Messrs. Stuart Low and Co., Enfield, displayed carnations in great variety, and made a feature of Lady Alington and Baroness de Brienen; with these were fine strains of cyclamens, the plants staged in baskets of a variety.

Primula malacoides and Indian azaleas were largely shown by Mr. L. R. Russell, Richmond, who also had a number of Witch Hazels and Garryas.

Messrs. Allwood Brothers, Haywards Heath, staged carnations, and put them up in stands and vases of varying heights; Lady Alington and Wivelsfield Wonder (A.M.), recently figured in our pages, were prominent varieties.

Messrs. J. Cheal and Sons, Crawley, put up models of garden screens, garden seats, arbours, tea houses, etc., and also staged a small rock garden.

Mr. G. Reuthe, Keston, and Messrs. J. Peed and Sons, each staged alpines.

From the GARDENERS' MAGAZINE office, 148, 149, Aldersgate Street, came an attractive stall of useful works on gardening, these covering a wide range of subjects.

### ORCHID COMMITTEE.

A handsome exhibit of orchids from Messrs. Sander and Sons, St. Albans, contained some fine forms of Lælia anceps, a large plant of Lælio-cattleya Charlesworthi, L.-c. Ophir, the interesting Cypripedium caudatum Sanderæ, with "tails" over 18 inches long, Cymbidium Holfordianum, Cœlogyne Gardnerianum, and such fine cypripediums as C. Golden Oriole and C. Jucundum, and a few odontoglossums.

A pretty exhibit of orchids from Messrs. Jas. Veitch and Sons, Chelsea, consisted largely of the useful old Zygopetalum Mackayi, several dozen spikes being presented. Cypripediums, notably C. insigne Sanderæ, were shown in force, and a few odontoglossums were exhibited.

Calanthe Veitchi was prominent in the group displayed by Messrs. Stuart Low and Co., Bush Hill Park, Enfield; with these were Cypripedium callosum Sanderæ, C. Euryades, C. Niobe, Vanda cærulea, and some white forms of Lælia anceps.

The bank of orchids set up by Messrs. Armstrong and Brown, Tunbridge Wells, was a very attractive one, and a few of its leading features were Odontioda Vuylestekeæ, O. Bradshawæ, Cymbidium Gattonense, Calanthe Harrisi, the strong C. bella, Cypripedium Cupid, C. Helen, C. Armstrongæ, C. nitens Queen of Yellows, C. insigne Aberdeen, C. eboraicum, Cattleya Maggie Raphael alba, and some splendidly marked odontoglossums.

The five-lipped Lælia anceps Schroderæ was splendidly shown by Messrs. J. and A. McBean, Cooksbridge, who presented nearly three dozen spikes of this fine orchid. The odontoglossums were excellent, particularly a form of O. Lambeauianum, and the light varieties of O. crispum.

From Gatton Park, Mr. J. Collier, gardener to Sir J. Colman, Bart., brought a big specimen of Dendrobium speciosum nitidum, with about thirty spikes of yellowish flowers; Masdevallia macurua, Lælio-cattleya Epicasta Gatton var., Lælia bella, and Phaiocalanthe Colmani were also well shown.

Lælio-cattleya bella alba, a fine Cattleya Octave Down, with four beautiful flowers, and the bright yellow L.-c. Ariel and Odontioda Schroderiana were shown by Messrs. Charlesworth and Co., Haywards Heath.

Mr. W. Hopkins, gardener to Francis Wellesley, Esq., Westfield, Woking, showed some splendidly grown cypripediums, the fine C. San-Actæus Westfield var. gaining an A.M.; C. D. S. Mills carried six splendid flowers; Lælio-cattleya Mrs. W. Hopkins (L.-c. Haroldiana magnifica and L. Iona nigricans), with intense crimson-purple lip and yellow sepals and petals, the latter mottled with purple, was very fine, and gained an A.M. unanimously.

From the Dell, Mr. Shill, gardener to Baron Schröder, brought up a superb plant of Lælio-cattleya Bella alba, The Dell var. (F.C.C.), carrying six splendid white and purple flowers.

Mr. H. Alexander, grower to Sir G. Holford, Westonbirt, Tetbury, showed Cypripedium Brouyena, with a wonderful crimson-purple dorsal sepal; and C. nitens Leeanum. Cypripediums were well displayed by Messrs. J. Cypher and Sons, Cheltenham, and C. Mrs. W. Mostyn, C. Felicity, C. Minos Youngi, C. aureum Surprise, C. Euryades splendens, and C. Fascinator were all in fine form.

M. Firmin, Lambeau, Brussels, sent a new orchid named Odontiona Firmini, and said to be a cross between Miltonia vexillaria and Odontoglossum crispum, but doubts were expressed as to M. vexillaria being one parent; the white flowers were very pretty.

Walter Cobb, Esq., Normanhurst, Rusper, gained an A.M. for Odontoglossum crispum Queen of the Morn, with rosy flowers; and J. Gurney Fowler, Esq., Glebelands, South Woodford, gained an A.M. for Cypripedium nitens Beckensis, a bold and big flower, evidently of C. Beckmanni parentage. A fine form of C. Hera came from Sir Trevor Lawrence, Bart., Dorking.

Messrs. Hassall and Co., Southgate, showed a good specimen of Masdevallia Schrœderæ, and bright forms of Odontoglossum amabile and O. laudatum.

Mr. Edward V. Low, Vale Bridge, Haywards Heath, exhibited the lovely Dendrobium Phalænopsis album G. S. Ball's var., of purest whiteness; Cypripedium Leeanum Clinkaberryanum, C. The Nizam, C. Minor Youngi, etc.

Mr. Hunter, gardener to the Duke of Marlborough, Blenheim Palace, Oxford, gained an A.M. for Cypripedium Cataline, which has a bright rosy dorsal sepal. Cymbidium Rosefieldiense, a fine hybrid between C. Tracyanum and C. gigantea (A.M.), was shown by Mr. Stables, gardener to De Barri Crawshay, Esq., Rosefield, Sevenoaks, who also exhibited some beautiful dark-coloured forms of Lælia anceps.

### FRUIT AND VEGETABLE COMMITTEE.

Apples were magnificently shown by Messrs. Jas. Veitch and Sons, Chelsea, this firm filling one long table with one hundred and three dishes or baskets of splendid fruits, each dish or basket representing a distinct variety. The individual fruits were fine in size, handsome in colour, and quite free from blemishes. A few varieties that were of outstanding merit were Blue Pearmain, Belle Pontoise, Reinette du Canada, Lane's Prince Albert, King of the Pippins, King of Tompkin's County, Blenheim Orange, Barnack Beauty, Bismarck, Wadhurst Pippin, Sandringham, Newton Wonder, Bow Hill Pippin, Gascoigne's Seedling, Cox's Orange Pippin, and Annie Elizabeth. The firm showed a new pear, a highly-flavoured rounded fruit, crimson flushed, obtained by crossing Seckle with Bergamotte d'Esperen; the name is Mrs. Seden, and an A.M. was granted it.

Of unusual interest was the big exhibit of oranges contributed by Messrs. T. Rivers and Son, Sawbridgeworth. Large trees laden with fruits, were staged, as well as a host of picked fruits. Lemons and grape fruits were also shown, but the White, Achilles, Excelsior, Silver, Egg, Bittencourt, and Navel oranges were by far the most interesting and attractive items in a splendid exhibit that was a fine feature of the show.

Messrs. Sutton and Sons presented a collection of New Year salads and vegetables; the savoys, cabbages, Winter Mammoth broccoli, and Brussels sprouts were especially good. There were climbing French beans (Tender and True), forced dandelion, Batavian endive, and Christmas salad.

Mr. T. Taylor, gardener to Frank Bibby, Esq., Hardwicke Grange, Shrewsbury, showed a good collection of well-preserved apples and pears, the latter including Easter Beurre, Glou Morceau, Beurre Rance, Oliver des Serres, and Josephine de Malines.

Mr. Gentle, gardener to Mrs. Denison, Little Gaddesden, Berkhamstead, put up two dozen dishes of wonderfully clean and well-kept potatoes; The Factor, The Provost, Ideal, Up-to-Date, Monarch, Satisfaction, and Goldfinder were the pick of a good set.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Lælia-cattleya Bella alba, Dell var., from Mr. Shill, grower to Baron Schroder, The Dell, Egham.

Awards of Merit.—To Pear Mrs. Seden, from Messrs. Jas. Veitch and Sons, Chelsea; to Lælio-cattleya Mrs. W. Hopkins, from Francis Wellesley, Esq., J.P., Westfield, Woking (gardener, Mr. Hopkins); to Cypripedium San-actæus Westfield var., from F. Wellesley, Esq.; to Odontoglossum crispum Queen of the Morn, from Mr. C. Salter, gardener to Walter Cobb, Esq., Normanhurst, Rusper; to Cypripedium Jucundum, from Messrs. Sander and Sons, St. Albans; to Cattleya Maggie Raphael, Orchidhurst var., from Messrs. Armstrong and Brown, Tunbridge Wells; to Cypripedium Catalina, from Mr. Hunter, gardener to the Duke of Marlborough, Blenheim Palace; to Cymbidium Rosefieldiense, from Mr. Stables, gardener to De Barri Crawshay, Esq., Rosefield, Sevenoaks; to Carnation Wivelsfield Wonder, from Messrs. Allwood Brothers, Haywards Heath.

### MEDALS.

Gold.—To Messrs. Jas. Veitch and Sons, Chelsea, for apples.

Silver-gilt Banksian.—To Messrs. W. Cutbush and Son, Highgate, for carnations and greenhouse plants; to Messrs. Wm. Paul and Son, Waltham Cross, Herts., for camellias.

Silver Flora.—To Mr. H. Burnett, Guernsey, for carnations; Messrs. H. Cannell and Sons, Swanley, for cut pelargoniums; Messrs. Stuart Low and Co., Enfield, for carnations and cyclamen; Messrs. H. B. May and Sons, Edmonton, for ferns; Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse plants; Messrs. Armstrong and Brown, Tunbridge Wells, for orchids; Messrs. Stuart Low and Co., Enfield, for orchids; Messrs. J. Veitch and Sons, Chelsea, for orchids; Messrs. J. Cypher and Co., Cheltenham, for orchids; Messrs. J. and A. McBean, Cooksbridge.

Silver Knightian.—To Messrs. Sutton and Sons, Reading, for vegetables and salading; and Mr. Taylor, gardener to Frank Bibby, Esq., Hardwicke Grange, Shrewsbury, for apples and pears.

Silver Banksian.—To Mr. A. Gentle, gardener to Mr. Denison, Little Gaddesden, for potatoes; to Mr. Collier, gardener to Sir J. Colman, Bart., Gatton Park, for orchids; Mr. E. V. Low, Haywards Heath, for orchids; Messrs. Charlesworth and Co., Haywards Heath, for orchids; Mr. L. R. Russell, Richmond, for flowering trees and shrubs.

Bronze Flora.—Messrs. Allwood Brothers, Haywards Heath, for carnations.

Bronze Banksian.—To Mr. E. Guile, Newport, for carnations; and to Messrs. Hassall and Co., Southgate, for orchids.

## GARDENING ENGAGEMENTS.

Mr. H. H. Mills, late gardener at Holmwood Park, has been appointed gardener to Hugh Morrison, Esq., Fonthill House, Tisbury, Wilts.

Mr. F. F. Street, late of King's Walden, Bury, has been appointed gardener to G. Oakley, Esq., Lawrence End, Luton.

Mr. William Barrie, for some years foreman in the gardens, Sandringham, has been appointed head gardener to the Dowager Countess of Leicester, Weasenham, Swaffham, Norfolk.

Mr. John Clark, during the past three years foreman at Latherton Hall, Aberford, has been appointed gardener to F. J. Gould, Esq., Avenue Picard, Maisons Lafitte, Paris.

**The Women's Agricultural and Horticultural International Union.**—With regard to women's work, which is claiming so much attention at the present time, it is interesting to note the steady progress made by the above association, founded in 1899. So important has the work now become that the room which has been placed at its disposal for office use, etc., by the hon. secretary, Mrs. Chamberlain, has now become quite inadequate for the requirements, and a new and enlarged office has been secured at 45, Queen Anne Chambers, Westminster, S.W., where full information concerning the Union may be obtained

## NEW BOOKS.

### THE CITY DIARY AND ALMANACK, 1912.

(The "City Press" Offices, 148 and 149, Aldersgate Street, London, E.C.). Price 1s., by post, 1s. 3d.

A more valuable work of reference to the City man than the "City Diary," the 1912 edition of which has just been published, it would scarcely be possible to compile. The annual is, indeed, a veritable philosopher and friend, and constitutes an up-to-date and reliable guide to the City in its many ramifications. It contains among other matters of interest a complete list of members of the Corporation; the names and addresses of the Clerks of the Guilds; particulars of the City churches, with the names of the clergy; detailed data concerning the Territorial Force of the City; and full information as to the personnel of the various municipal and parochial organisations of the one square mile. The "Diary" proper gives three days to a page, and is interleaved with blotting paper.

### THE GARDENING YEAR BOOK, 1912.

Edited by George Gordon, V.M.H. (W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London, E.C.). Price 1s., post free, 1s. 3d.

The Gardening Year Book, which has now reached the fifty-fourth year of publication, appears in covers of a somewhat brighter shade of green than for some years past. The appearance of the book is a point of some importance, but it is far more important to know that the contents are not less remarkable for their freshness, interest, and usefulness than in the fifty odd editions that have preceded that for the current year.

In the opening pages the reader is provided with a diary that will be found of great value for recording facts specially concerned with the garden, and facing the diary pages are reminders of the work that should have attention, and if the value of these is fully appreciated, the numerous details involved in the management of a garden will be carried out at the time when the greatest possible advantage can be derived from them.

Immediately following the diary pages is the section which has long been highly appreciated by readers, in which the year's work in the garden is detailed in such manner as to enable readers to at once refer to the information of which they may be in need. In common with other of the standing features, this section has been thoroughly revised, and there is much new matter, and as the result the information is in every way up-to-date. The lists of new plants and flowers that were introduced during 1911 form as usual an important feature, for they are not only valuable for purposes of reference, but they indicate the trend of public opinion in relation to the garden, and also show the directions in which the activities of raisers are at the present time chiefly directed. The lists of new orchids show in a striking manner how strenuous is the endeavour of those who are engaged in the raising of new orchids. The chapters on annuals and biennials, hardy perennials, bulbous and tuberous plants, conservatory and greenhouse plants, not only contain ample information on the propagation and cultivation of an immense number of genera, and these the most important, for beautifying the garden, but selections of species or varieties, as the case may be, are given, and these, we know from past experience, prove of great assistance to those who have not the opportunities for obtaining that fulness of information essential to the avoidance of mistakes in making selections of plants. Hardy fruits and vegetables are dealt with in a similar manner, but the cultural details are somewhat fuller.

The chapters on insect pests and fungoid diseases are so arranged as to place readers in possession of the information necessary to successfully combat the various insects and fungi that are destructive to plant life. The chapter devoted to recipes is closely related to the two last-named, for therein are directions for the preparation of the various spray fluids, etc., that have in practice been found the most effectual in the prevention of fungoid attacks and the eradication of insect pests.

The directories of the public parks and gardens and horticultural societies maintain the important positions they have so long occupied, and, as in past years, have been subjected to the most thorough revision, with the aid of returns obtained from the municipal authorities and secretaries of societies.

"Histoirê des Légumes." By Georges Gibault. (Librairie Horticole, 84bis, Rue de Grenelle, Paris.) Price 5 francs.

For many years past our old and valued friend, M. Georges Gibault, the erudite librarian of the National Horticultural Society of France, has occupied a foremost position in the horticultural world as an authority on the history and literature of gardening. We do not forget his very valuable and instructive essay on ancient horticultural literature published some few years ago, nor the many contributions from his pen in the journal of his society, and the other organs of the French horticultural Press, all of which to the curious student of horticulture have a charm and a value peculiarly their own, for, as we have already hinted, M. Gibault is *facile princeps* in this special department of horticultural literary work.

The book now before us is of great interest. It will not, and does not pretend to, teach the tyro how to grow the "gros légumes" for show. It is frankly and undisguisedly a book for the student, the writer, the lecturer, and the literary amateur interested other things than mere cultural details. M. Gibault takes the whole series of well-known vegetables, and, we might add, to some English people, even unknown vegetables, and traces far back into the remote mists of antiquity the numerous references by the classic writers, and the descriptions and allusions by those of mediæval times right through the ages down to modern days. The process by which all this literary, historical, and even etymological material has been gathered, collated, and classified, must have extended over many years. And the patience, skill, and determination necessary to put it all into readable and instructive book form needs the capacity of a past master in such work.

Briefly, we may say that the contents include somewhat more than 400 pages of excellently printed matter; the type clear and readable. The text is divided not so much perhaps into chapters as into a series of practically independent essays, of which only a very few are illustrated. The subjects dealt with by our author are ninety-five, and among them we may mention the garlick, carrot, asparagus, artichoke, beet, celery, chervil, cabbage, lettuce, spinach, seakale, turnip, onion parsnip, potato, leek, pea, bean, radish, etc., among the more popular of our vegetables. In some of these essays, notably that on the potato, there is quite a large space devoted to it, and the references are very numerous. Thus he quotes the Spaniard Pietro Cieza de Léon, who mentioned it in 1532-35, and other Spanish authors of later date. Sir Walter Raleigh, Admiral Drake, John Gerarde Clusius, Bauhin, Parmentier, Olivier de Serres, are others called into requisition on the subject.

To the student of horticultural literature and history, M. Gibault's most recent work will appeal not only for its references, and quotations, but also on account of its readable and interesting style. The book also has great value as a work of reference, and in this respect it can be recommended for the bookshelf of such as require a horticultural working library, and to whom the reading of such a book in the French language presents no difficulty.

## ANSWERS TO CORRESPONDENTS.

CUCUMBER AND TOMATO CANKER.—W. F. B., Cornwall: In your letter you inform us that in the course of the autumn of the past year you lost a house of tomatoes from a disease which you were unable to recognise, and the cucumber plants in an adjoining pit suffered in much the same way, but not to the same extent. You further tell us that you are anxious to avoid a similar loss, and will be glad of any help we can give you. We are anxious to assist our readers to the fullest possible extent, but to enable us to do this in your case you should not only have submitted your question when the plants showed signs of ill-health, but have sent a portion of one of the stems with a few leaves that we may have been placed in a position to determine the cause of the mischief. But as you are careful to inform us that the first indication of ill-health was the wilting of the leaves, and that this was followed by the collapse and death of the plants, and that the lower nodes of the stems presented a swollen watery appearance and exuded gum, we have no doubt as to the cause. The disease was the cucumber and tomato canker, caused by the fungus known as Mycosphærella citrullina, which has made its appearance in this country within recent years and done considerable damage. The result of any preventive measures that may have been taken in this country has not been published, but there is good reason for believing that free ventilation will render good service in warding off attacks. This disease is very destructive to melons in America, and it has been found there that, while spore inoculation was quite easy in glass structures in which a rather high temperature and a moist atmosphere was maintained, the inoculations of plants growing in the open nearly all failed. It is very probable that occasional sprayings with Bordeaux mixture would be useful in warding off attacks.

FORMING A ROCK GARDEN.—S. B. H., Lancashire: We have within recent years given much information on forming and furnishing rock gardens. Necessarily the information is scattered through several volumes, and therefore to save your time we advise you to obtain "Rock Gardens and Alpine Plants," which we recently reviewed in these pages. The author is a master of his subject, and the information is thoroughly sound, and given with that clearness of statement that is none too common. It may be obtained from the publishers, 148 and 149, Aldersgate Street, London, E.C., price 2s. 9d., post free.

JAPANESE AND INDIAN PINKS.—T. S., Essex: The varieties Dianthus Heddewigi and D. chinensis, which are commonly known as Japanese and Indian pinks, are admirably adapted for contributing to the attractions of the flower garden during the summer months, and we are sorry that you did not succeed with them so well as you could have wished. The severe drought most probably checked the growth of the plants, but their failure to produce flowers until the summer was well advanced was due to your not having raised the plants early enough in the year. These dianthuses are biennials and not annuals, as you assume, and therefore have, when required for the production of summer effects, to be raised at an earlier period in the year than is necessary in the case of annuals. We advise you to obtain supplies of seed at once, and sow it immediately it is received. Sow the seed thinly in shallow pans or in five-inch pots, and place the seed in a pit or house where it will have a temperature of about 60 degrees during the germinating process, and the seedlings can have a position near the glass when they make their appearance above the surface. Prick off the plants into shallow boxes when they are becoming crowded, putting them about three inches apart each way. When established remove to a pit or frame where they will enjoy uninterrupted light and have sufficient warmth to maintain them in a progressive state. By this course of procedure you will have strong plants that will commence flowering soon after they are established in the beds. We need hardly say that watering must have careful attention, and that they must, as in the case of other plants raised under similar conditions, be gradually hardened off during May.

NEW ZEALAND SPINACH. B. K., Lincoln: We should certainly advise you to include sufficient seed of this vegetable in your order to form a bed of moderate size. Last summer it was the only vegetable of its kind available in some places for two or three months, and proved of immense value in many gardens where it was given a place. We trust we may not have so severe a drought next summer, but in ordinary seasons, it is most useful where, as in your case, the soil is light and dry, for maintaining a supply of spinach during July and the early part of August.

GOOSEBERRY SAWFLY.—Amateur Gardener: There is no more destructive pest of the gooseberry than the caterpillars of the Gooseberry and Currant Sawfly (Nematus ribesi), and there is no better plan of protecting the bushes from them than by adopting repressive measures during the winter season. From your description there is no doubt as to their having defoliated the bushes last summer, and thereby greatly reduced their vigour. The life history of this sawfly is of much interest, but it will suffice for your purpose to direct attention to the fact that the late broods of caterpillars go down in the autumn and bury themselves in the soil about two inches below the surface. Here they form small brown cocoons, and remain throughout the winter. At this stage it is a very simple matter to destroy large numbers. We suggest that you open out a large pit near the quarter occupied by the gooseberry bushes, and place the soil taken out in a heap near at hand. Then remove about three inches of soil from the whole of the area, and wheel it to the pit and well tread it in, and cover it with ten or twelve inches of ordinary soil. Having done this, add to the heap of soil an equal quantity of well-rotted manure, well mix, and then spread it over the surface of the soil in which the gooseberries are growing. The manure is not required for the destruction of the caterpillars, but for promoting the growth of the gooseberry bushes.

## OBITUARY.

◆

### MR. A. J. BROWN.

We record with much regret the death of Mr. A. J. Brown, superintendent of the gardens and outdoor department generally of the School of Handicrafts, Chertsey, which occurred on Christmas Day, in his fifty-fourth year. Mr. Brown took a keen interest in the United Horticultural Provident and Benefit Society, and also in the Royal Gardeners' Orphan Fund.

### MR. ARCHIBALD GRAHAME.

We learn with regret of the death, on the 6th inst., of Mr. A. Grahame, who for a long period was superintendent of the Hampton Court Gardens, and, by reason of his taste and skill, did much to popularise them. Mr. Grahame retired some years since, when he was succeeded by Mr. W. Gardiner, now superintendent of Hyde Park.

### MR. J. DEACON.

As we are going to press we learn with regret the death of Mr. J. Deacon, who for many years has been head gardener to the Right Hon. Joseph Chamberlain, M.P., Highbury, Birmingham. As most of our readers are aware, Mr. Chamberlain possesses an exceptionally fine collection of orchids, but Mr. Deacon was also an expert cultivator of Malmaison carnations, and, in fact, of all classes of plants.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Trade is fairly good, and supplies are excellent, carnations being plentiful and of high quality.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 3 0 | to | 4 0 |
| Arums | per doz. | 2 6 | | 3 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azalea | per doz. bun. | 4 0 | | 5 0 |
| Cattleyas | per doz. | 8 0 | | 12 0 |
| Carnations | per doz. | 2 0 | | 4 0 |
| ,, | per doz. bun. | 15 0 | | 21 0 |
| Camellias | per box | 2 0 | | 2 6 |
| Chrysanthemums | per doz. bun. | 4 0 | | 9 0 |
| ,, | per doz. blooms | 2 0 | | 3 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz. | 4 0 | | 6 0 |
| Hyacinths, Roman | per doz. bun. | 8 0 | | 10 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 3 0 |
| ,, longiflorum | per doz. | 3 0 | | 4 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 6 | | 2 6 |
| Mignonette | per doz. bun. | 2 6 | | 3 0 |
| Narcissus | per doz. bun. | 2 0 | | 3 0 |
| ,, Golden Spur | per doz. bun. | 8 0 | | 9 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 8 0 | | 10 6 |
| Roses | per doz. | 2 6 | | 6 0 |
| Smilax | per doz. trails | 2 0 | | 3 6 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips | per doz. bun. | 6 0 | | 14 0 |
| Violets | per doz. bun. | 1 3 | | 4 0 |

### Fruits.

Supplies of the various kinds in season are liberal with moderate demand.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, English, cooking | per bush. | 4 0 | 5 0 |
| ,, Nova Scotia | per barrel | 15 0 | 25 0 |
| ,, Canadian | per barrel | 15 0 | 20 0 |
| ,, American | per barrel | 26 0 | 35 0 |
| ,, Californian | per case | 10 0 | 12 0 |
| Bananas | per bun. | 7 0 | 15 0 |
| Cob Nuts | per doz. lb. | 6 0 | 7 0 |
| Cranberries | per case | 9 0 | 11 0 |
| Dates | per doz. boxes | 4 6 | 6 0 |
| Figs | per box | 0 9 | 1 6 |
| Grapes, English | per lb. | 1 0 | 6 0 |
| ,, Belgian | per lb. | 0 8 | 1 3 |
| ,, Almeria | per barrel | 7 0 | 15 6 |
| Lemons | per case | 6 0 | 30 0 |
| Oranges, Denia | per case | 12 0 | 30 0 |
| ,, Jamaica | per case | 9 0 | 11 0 |
| ,, Mandarins | per box | 0 8 | 4 0 |
| Pears, American | per barrel | 25 0 | 26 0 |
| ,, French | per crate | 7 6 | 10 0 |
| ,, Californian | per case | 10 0 | 16 0 |
| Pineapples | each | 2 9 | 6 0 |

### Vegetables.

There is a fairly good demand for vegetables of all kinds.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 0 | to | 4 0 |
| ,, Jerusalem | per bush. | 2 0 | | 3 0 |
| Asparagus | per bun. | 3 0 | | 6 0 |
| Beet | per bush. | 2 6 | | 3 6 |
| Brussels Sprouts | per ½-bush. | 0 6 | | 1 6 |
| Cabbage | per tally | 4 0 | | 8 0 |
| Carrots | per doz. bun. | 2 0 | | 4 0 |
| Cauliflowers | per doz. | 2 0 | | 4 0 |
| Celery | per doz. bun. | 6 0 | | 14 0 |
| Chicory | per lb. | 0 4 | | 0 5 |
| Cucumbers | per doz. | 6 0 | | 10 0 |
| Endive | per doz. | 1 6 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 18 0 |
| Leeks | per doz. | 2 0 | | 3 0 |
| Lettuce | per doz. | 1 6 | | 2 0 |
| Mushrooms | per doz. lb. | 10 0 | | 13 0 |
| Mint | per doz. bun. | 3 0 | | 5 0 |
| Onions | per case | 8 0 | | 9 0 |
| Parsnips | per bag | 4 0 | | 6 0 |
| Rhubarb | per doz. bun. | 1 0 | | 1 6 |
| Seakale | per pun. | 1 3 | | 1 6 |
| Spinach | per bush. | 4 0 | | 6 0 |
| Tomatoes | per 12 lbs. | 2 0 | | 5 0 |
| Turnips | per doz. bun. | 2 0 | | 2 6 |
| Watercress | per doz. bun. | 0 6 | | 0 6½ |

## CATALOGUES RECEIVED.

JAMES VEITCH AND SONS, LIM., CHELSEA.—This firm maintains its reputation for a comprehensive and freely-illustrated catalogue, as well as for the merit of its specialities and the excellence of its seeds. With the seed catalogue come lists of chrysanthemums and specialities in herbaceous plants.

DICKSON AND ROBINSON, MANCHESTER.—In this large and freely illustrated catalogue the arrangement is somewhat unusual. First come vegetables and fruits, then horticultural sundries, then flower seeds, flowering roots, trees, fruit trees, and floral designs, and in each and every department there is plenty to interest and instruct the reader.

HASSALL AND CO., SOUTHGATE.—Nowadays orchids are treated individually, rather than collectively, in catalogues, and in the issue before us the number of pseudo-bulbs and leads a plant possesses is recorded, so that a good idea of the size and condition of the specimen is thereby gained. In the case of hybrid orchids the parentage is given.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1911-1912. DECEMBER 31 TO JANUARY 6. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Dec. 31—Sunday | 0 12 | 44 | 44 | 47 | 42 |
| Jan. 1—Monday | — | 46 | 45 | 50 | 44 |
| ,, 2—Tuesday | — | 43 | 42 | 47 | 41 |
| ,, 3—Wednesday | — | 46 | 44 | 49 | 43 |
| ,, 4—Thursday | — | 47 | 46 | 51 | 46 |
| ,, 5—Friday | 3 48 | 45 | 43 | 45 | 45 |
| ,, 6—Saturday | — | 41 | 40 | 52 | 37 |
| Means | (total) 4 0 | 44 | 43 | 49 | 42 |

| DATE. 1911-1912. DECEMBER 31 TO JANUARY 6. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Dec. 31—Sunday | — | 46 | 45 | 46 | 38 |
| Jan. 1—Monday | — | 45 | 45 | 46 | 35 |
| ,, 2 Tuesday | — | 44 | 45 | 46 | 32 |
| ,, 3—Wednesday | trace | 45 | 45 | 46 | 39 |
| ,, 4—Thursday | 0·15 | 46 | 45 | 47 | 42 |
| ,, 5—Friday | 0·13 | 46 | 45 | 47 | 39 |
| ,, 6—Saturday | 0·40 | 42 | 45 | 47 | 30 |
| Means | (total) 0·68 | 45 | 45 | 46 | 36 |

## FORTHCOMING ENGAGEMENTS.

THURSDAY, JANUARY 18.—Gardeners' Royal Benevolent Institution Annual Meeting and Election.

TUESDAY, JANUARY 23.—Royal Horticultural Society. Meeting of Floral, Fruit, and Orchid Committees, noon. Exhibition, 1—5 p.m. General Meeting, 3 p.m., with lecture by Mr. H. Morgan Veitch on "Horticulture and the Proposed Taxation of Land Values," Scientific Committee, 4 p.m.

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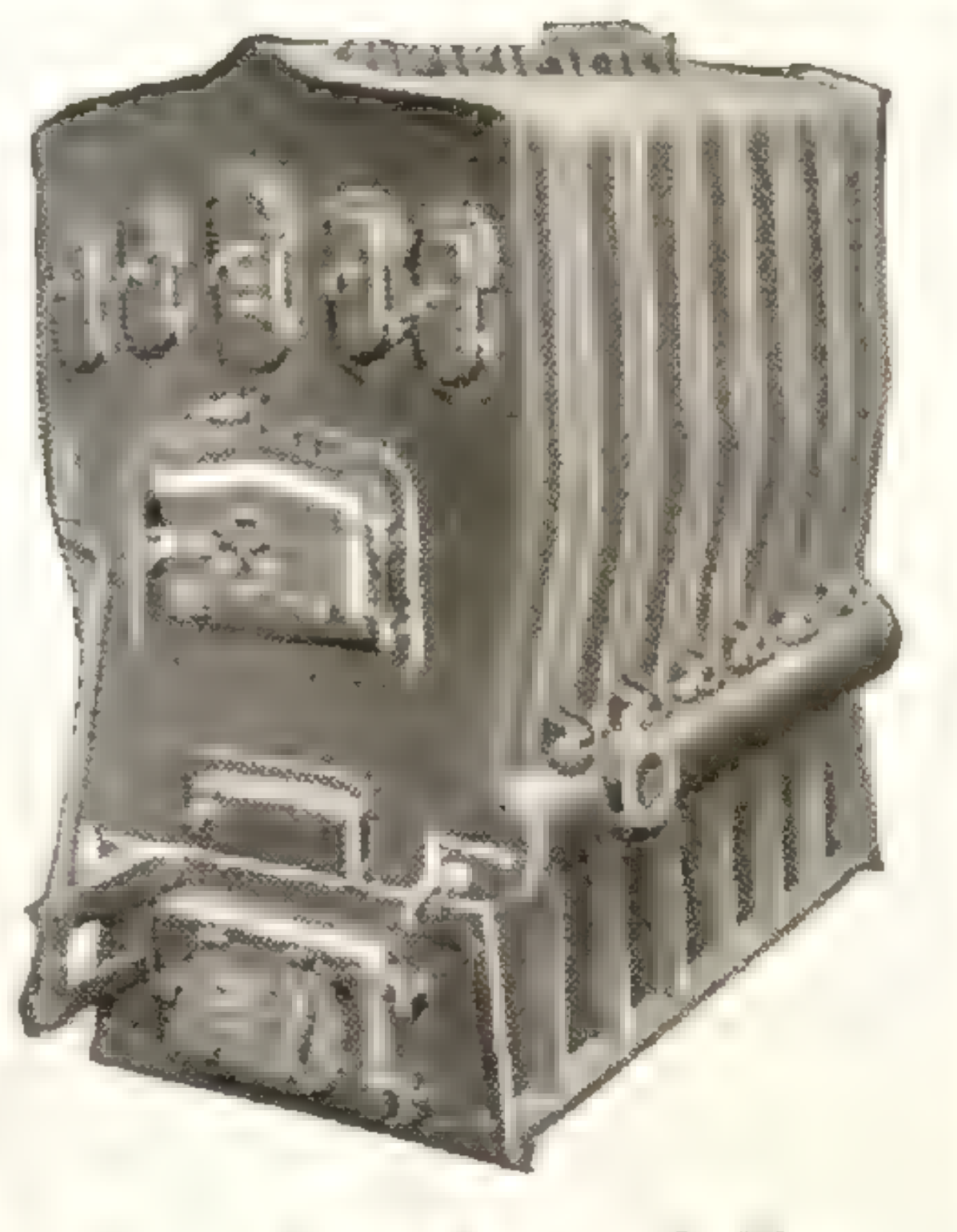

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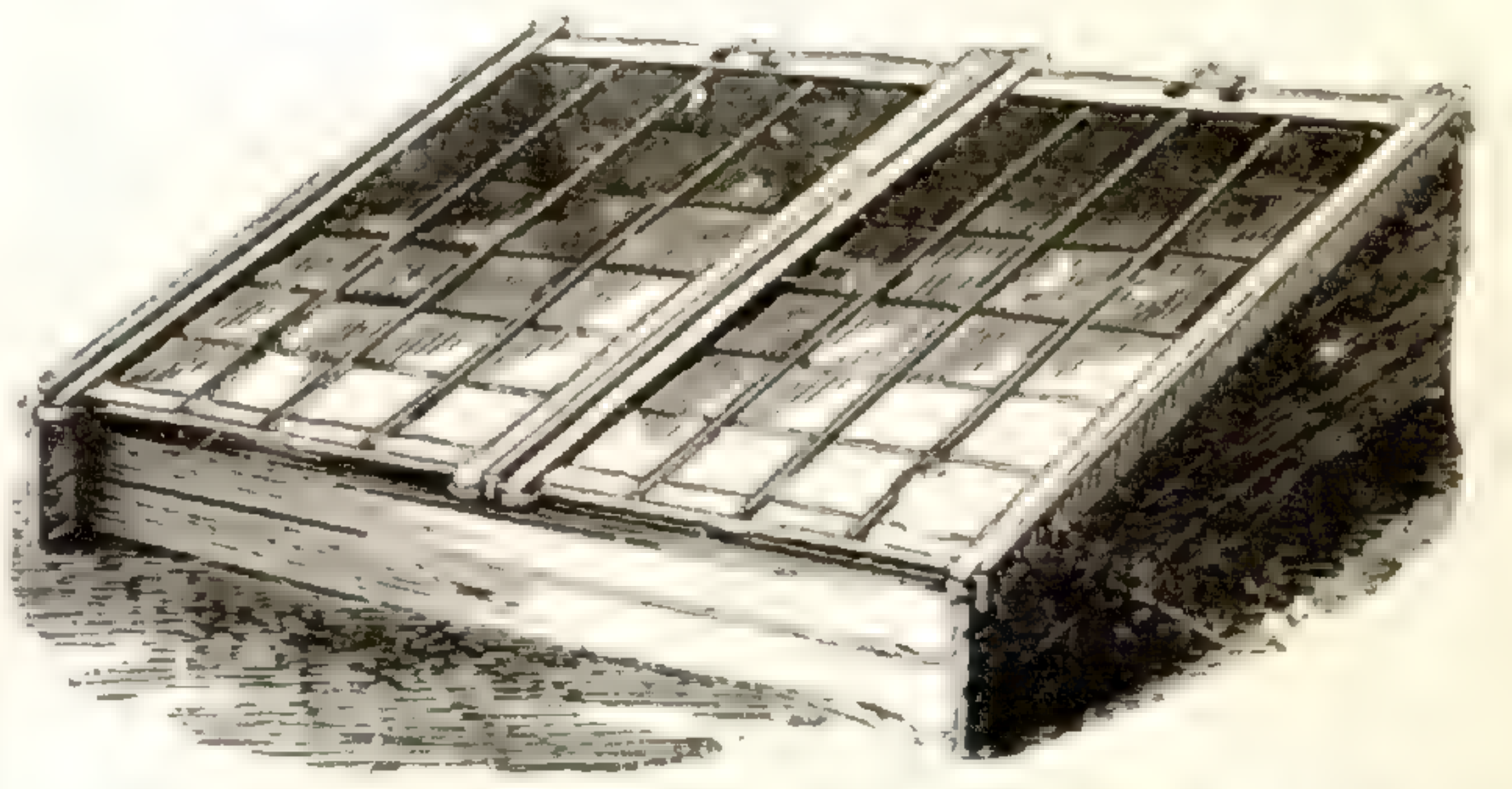

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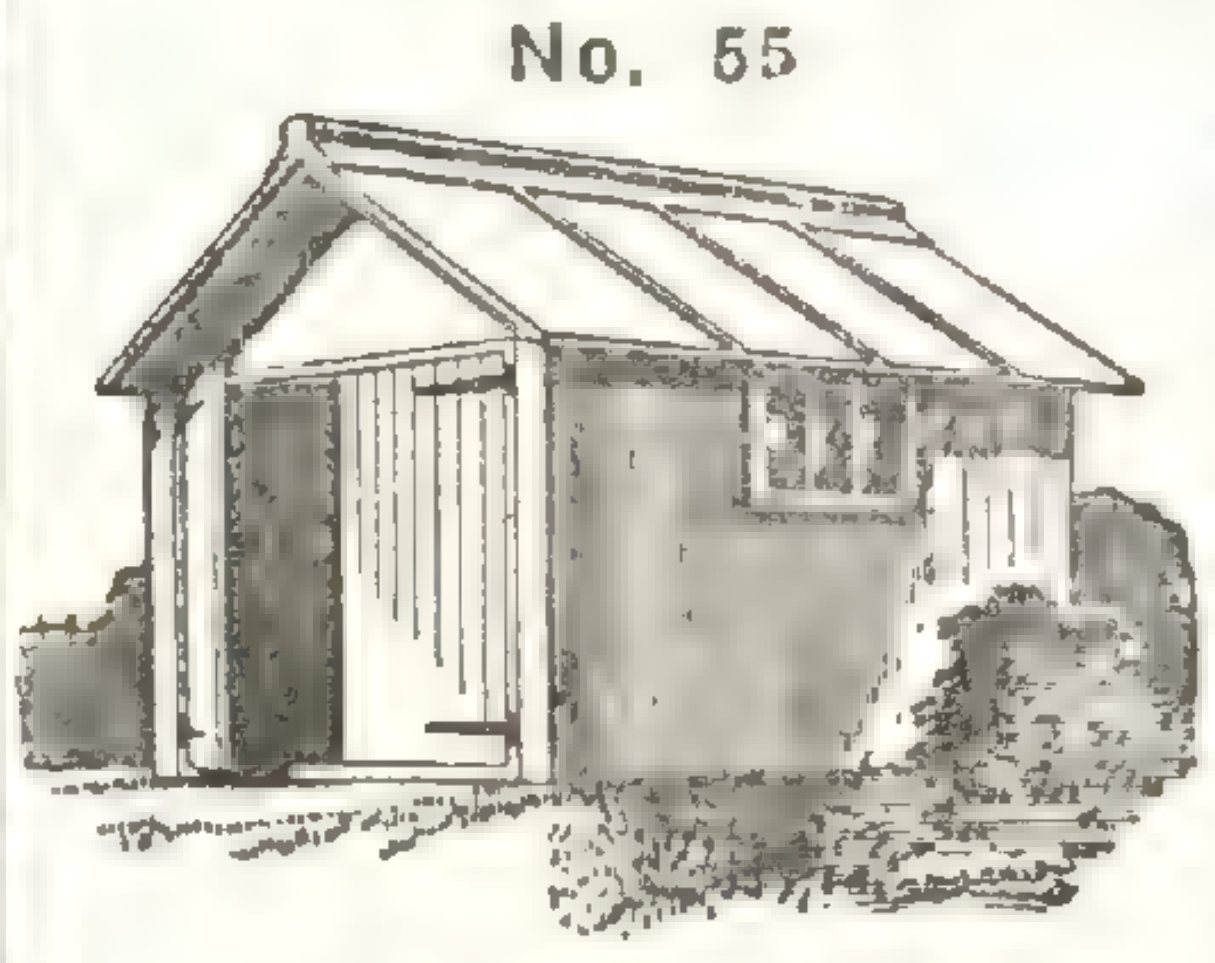

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**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A List of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

GARDENER (Head Working). — Mr. H. HEMSLEY, Rock Expert, Crawley, Sussex, would be pleased to highly recommend a thorough competent man in all branches of the profession; highest references; age 36; married. Address as above.

GARDENER (Head).—Lord Ashburton highly recommends his late Gardener; life experience in fruit, flower, vegetable culture, and landscape work; good manager; age 39; married, one child. GARRATT, 14, Kitchener Road, East Finchley, London, N.

GARDENER (Head Working) (Scotch) requires SITUATION where 2 or 3 are kept; 20 years' experience in all branches of gardening; 5 years present situation; married; age 36; 2 children; excellent testimonials. H. McCARTNEY, 14, Icklingham, nr. Mildenhall, Suffolk.

GARDENER (Head) seeks SITUATION where three or more are kept; practical experience in all branches; excellent references; age 31. Address, S. DOUGHTY, Overstone Park Gardens, Northants.

GARDENER (Head Working), where several kept; three years present situation; leaving through estate being sold. CHEAL, Bridley Manor, Worplesdon, Surrey.

GARDENER (Head, where two or more are kept); good practical experience in all branches, including Orchids, House and Table Decorations; highly recommended; age 28; married; disengaged. PERCY STANDEN, Cold Harbour, Ivy House Lane, Ore, near Hastings.

THE LADY WANTAGE, Lockinge Park, WANTAGE, very highly recommends N. TURNER, as HEAD GARDENER, thoroughly experienced in requirements of good establishment, Inside and Outside; 5 years' general Foreman at Lockinge; excellent references. Royal Gardens, Penrhyn and Elvaston; abstainer; age 30.

MR. CECIL SEBAG MONTEFIORE wishes to highly recommend his HEAD GARDENER, who is seeking another SITUATION, where 6 or more are kept; life experience in all branches; a good worker, used to management; age 43; married, one son aged 16; Home Counties preferred. Write B. ROGERS, Head Gardener, Stisted.

GARDENER (Head Working) seeks SITUATION, where one or more are kept; thoroughly experienced in all branches, Inside and Out; early and late forcing; 7 years' excellent character; middle aged; married, no family. Apply GARDENER, 11, Thornbury Road, Spring Grove, Isleworth.

GARDENER (Head Working, or Single-handed); life experience in all branches; Inside and out; age 40; married, no family; good references. W. CURD, 36, Clarence Place, Gravesend, Kent.

MR. F. W. NICHOLSON wishes to highly recommend his GARDENER (Head) as a thoroughly capable hard-working Man; understands his work, both Inside and Out, and good at Table Decorations; leaving solely through establishment being reduced; excellent testimonials; age 36; married, one boy, 9. J. SHIPLEY, The Old Vicarage Lodge, Shiplake, Henley, Oxon.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married.—G. HALL, Hermitage Cottage, Minchinhampton, Glos.

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MR. H. BLAKE, Head Gardener to the Earl of Onslow, Clandon Park Gardens, Guildford, will be pleased to recommend strong, active YOUNG MAN; Inside and Out; age 19; can take duty.

GARDENER (Single-handed, or where help is given); 12 years' practical experience; 4 years in last situation; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER (Single-handed or otherwise); 14 years' experience Inside and Out; good reference; age 32; married, two children; Midlands preferred. J. WORLOCK, Newtown, Buckland St. Mary, Chard, Somerset.

GARDENER (Single-handed or good Second); 4 years' good character; age 23; single; abstainer. Apply A. F. ROOKE, Houndean, Lewes, Sussex.

GARDENER (Single-handed); experienced; good reference; age 33; married, 1 child; disengaged. ARCHER, c.o. Gardener, Kingsbury House Gardens, Kingsbury, N.W.

GARDENER (Single-handed or with help); married, no family; 7 years present place; 10 years previous; left through death. C. LAWRENCE, The Highlands, Gipsy Hill, Upper Norwood, S.E.

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SITUATION required as FOREMAN or HEAD; 20 years' practical experience in all branches; nine years present place; good testimonials; age 33. W. HURST, Hale Cliffe, Hale, Liverpool.

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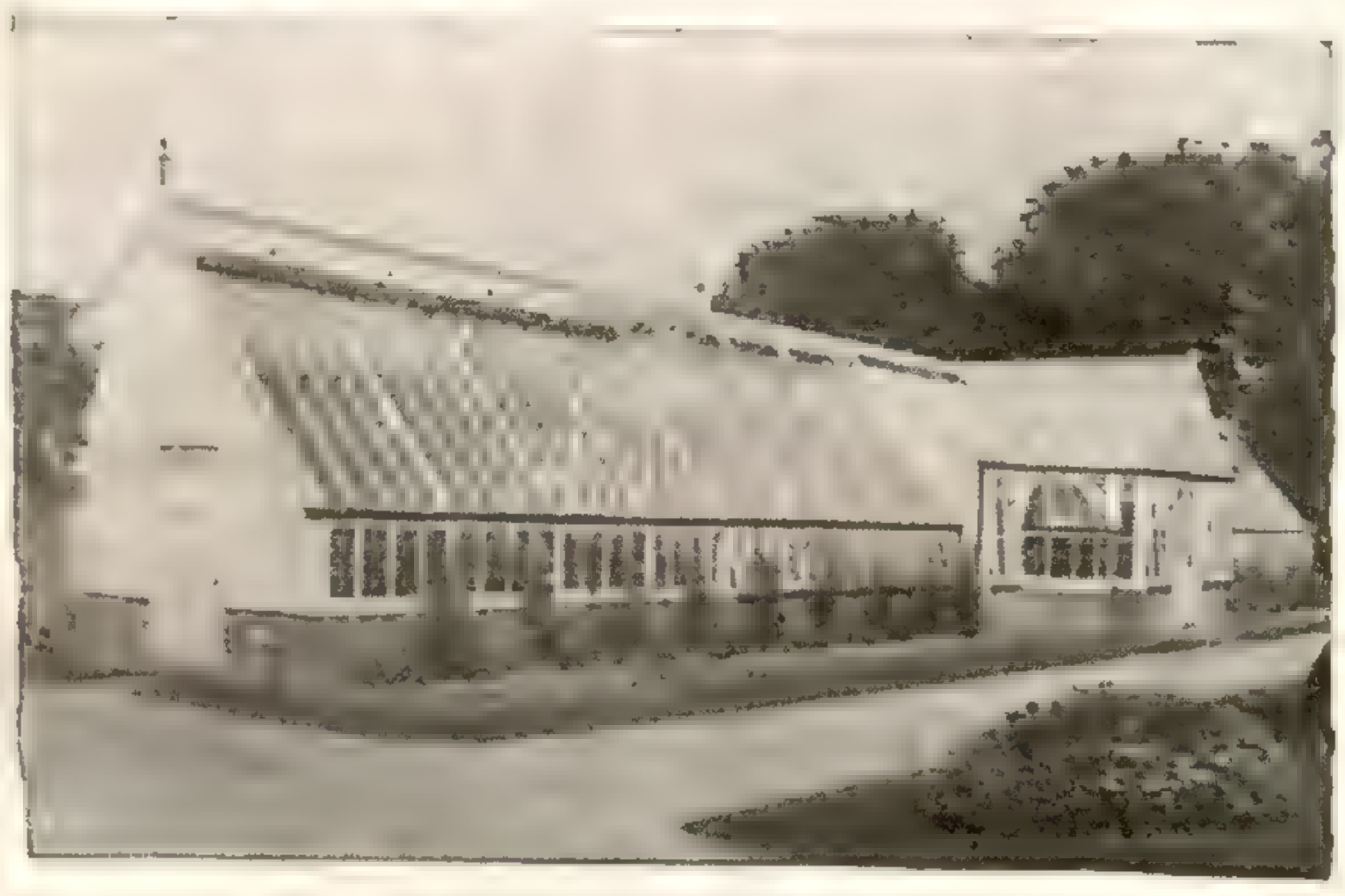

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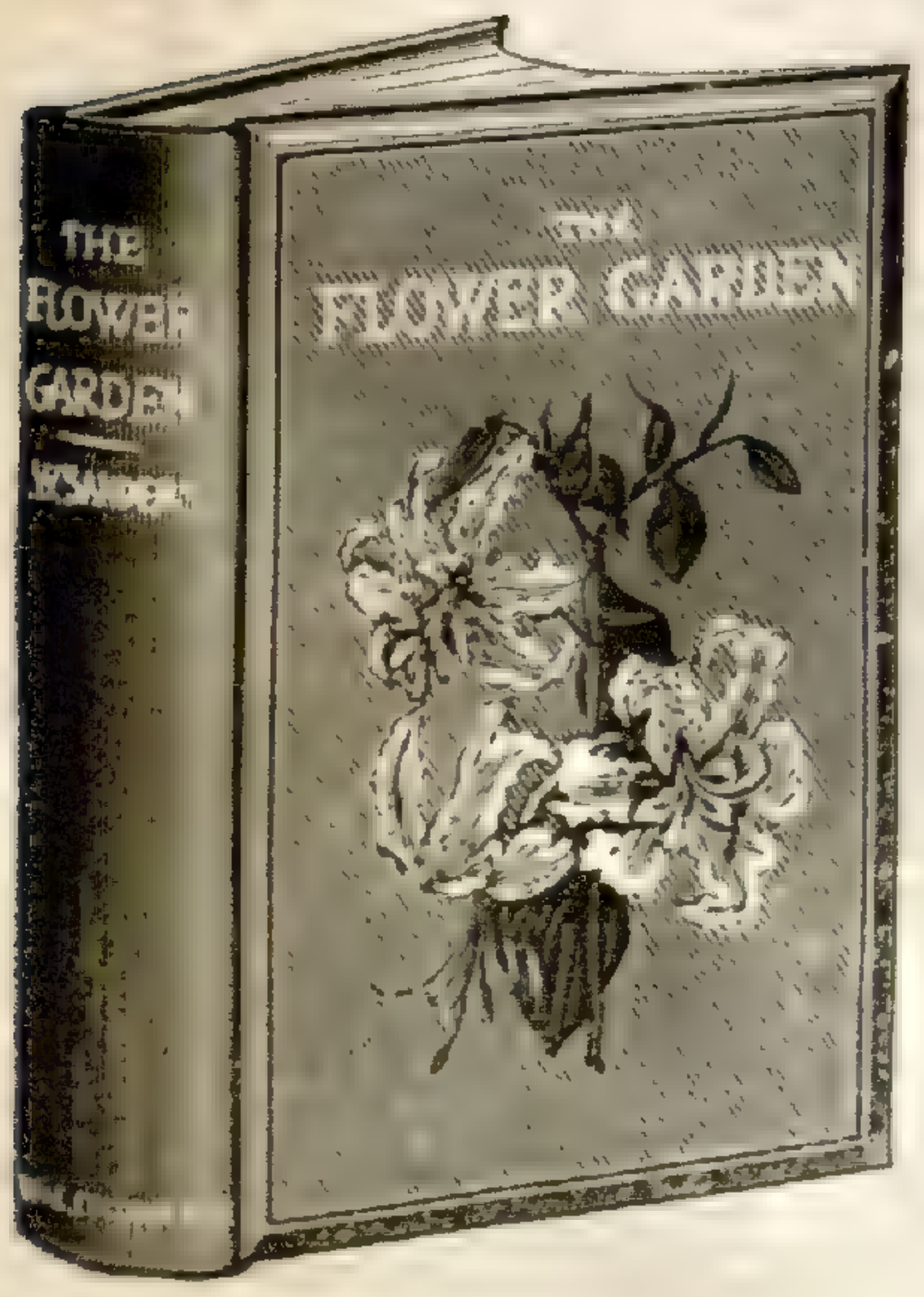

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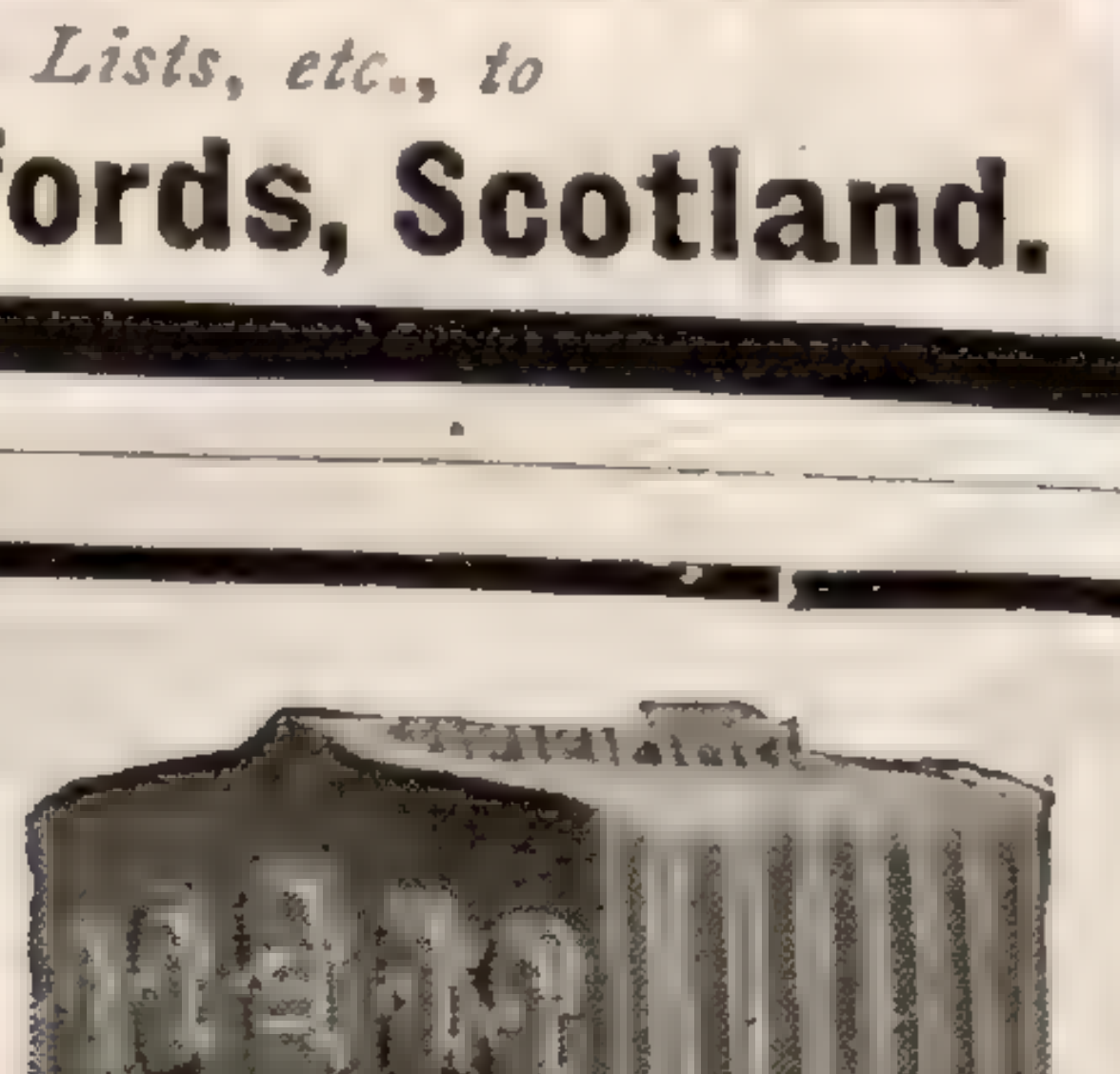

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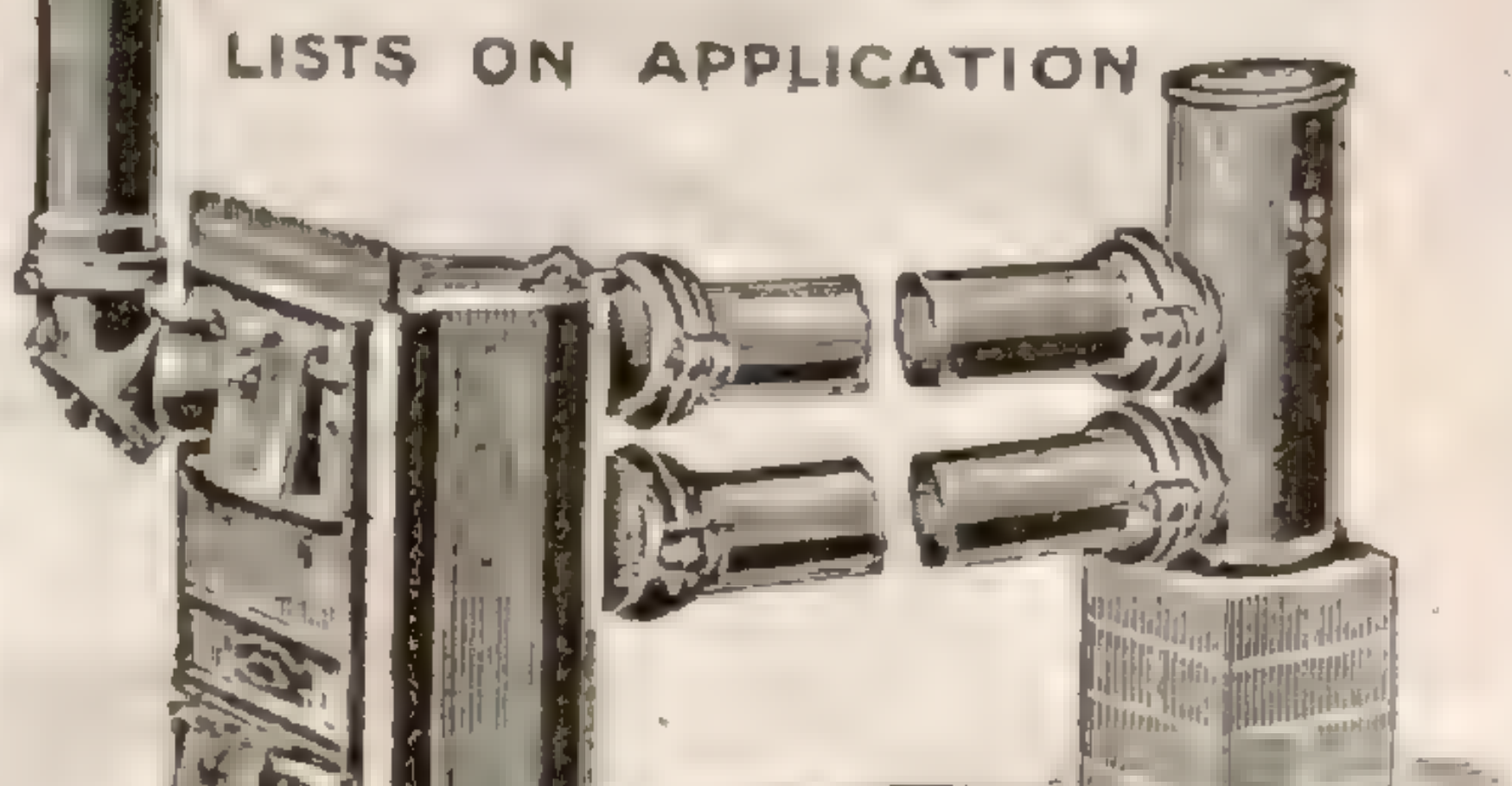

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VOL. LV.—No. 3,038. SATURDAY, JANUARY 20, 1912.

# THE GARDENERS' MAGAZINE.

## NOTE OF THE WEEK.

◆

### New Garden Flowers.

At all times the names and descriptions of new plants possessing sufficient merit to obtain awards from one or other of the principal societies are of much interest to those who fully appreciate the charm of novelty, both in the plant house and garden. But they are especially interesting when the whole of the gains for a given period are brought together and arranged in alphabetical order, as, for example, in the "Gardening Year Book," the new edition of which is already in the hands of many thousands of horticulturists. Here cultivators have not only an opportunity of making selections of varieties that, from the descriptions, appear likely to be the best adapted to their requirements, but they can readily institute comparisons between the different varieties. Moreover, by a survey of the complete list of novelties they can determine the trend of public taste in relation to the garden, and form a fairly correct estimate of the direction which the activities of raisers are taking. At the present time it is the general opinion that, excluding the orchids, by far the greatest energy is being shown in the improvement of hardy and half-hardy flowers that are especially adapted for beautifying the flower garden during the several seasons of the year. The list of new garden flowers, which, as usual, forms so important a feature of the "Gardening Year Book," contains upwards of one hundred and fifty varieties that received first-class certificates or awards of merit, and of these less than a dozen require glass culture throughout the year. Those of our readers who closely follow the lists of new plants that we publish from time to time will not be surprised to learn that the number of chrysanthemums which received awards exceeds that of any other class of flowers. This is a point of some interest, as it shows that whatever may be the opinion with regard to big exhibition blooms or the merits of the single-flowered varieties, the chrysanthemum continues to enjoy a high degree of popularity. The list that has a place in this year's edition of the publication mentioned differs materially from the one it contained, say, ten years ago. The latter consisted almost exclusively of varieties that were of value for the production of specimen blooms for exhibition, whereas the present list contains goodly proportions of single-flowered and decorative varieties now so highly appreciated for the supply of flowers for beautifying indoor apartments. Roses rank numerically next to the chrysanthemums, but, notwithstanding the length of the list, it only contains about half the number of varieties that are contained in the enumeration of the preceding flowers. The number of new roses should be sufficient to satisfy the needs of rosarians, and all who are concerned with roses have full justification for feeling proud of the splendid success that has been achieved in this country in the raising of new varieties. As for some years past hybrid teas greatly predominate, and on two of these—Mrs. R. Draper and Mrs. Sam Ross—the National Rose Society conferred its gold medal. Only two new hybrid perpetual roses obtained recognition, and one of these—George Dickson—was awarded the gold medal by the society mentioned. Two English-raised Wichuraiana roses had awards made in their favour, and their promise, as in the case of the other varieties of last year, fully justify the distinctions they received. The list of new dahlias that obtained recognition from the National Dahlia Society and the Royal Horticultural Society is of special interest from the fact that it is lengthy, and dahlias are supposed by not a few wanting in popularity. The dahlia does not enjoy the same degree of popularity as the rose or the sweet pea, but the trade in the plants of varieties in general cultivation is annually very large, and it is reasonable to to assume that, if there was not a fairly brisk demand for novelties, the raisers would be less active in their production. Last year twenty varieties received awards, and it is satisfactory to record the fact that several of the new race of collarette varieties obtained distinction. This is satisfactory as evidence that the authorities on the dahlia are beginning to fully recognise their responsibilities, and to give a welcome to all varieties of merit, no matter to what class they may belong. It is gratifying also to have evidence that the importance of freedom of flowering and long rigid stalks are essential in the case of cactus varieties intended for garden decoration, for not until we have a goodly number of varieties capable of producing rich colour effects will the cactus dahlia take the position it should occupy. Carnations appear to have in no way suffered from the severe competition of roses, sweet peas, and other favourite flowers, for there were three exhibitions in London, and eighteen new varieties received awards in the course of the past year. The border and perpetual-flowering varieties were very evenly balanced, and both classes were greatly enriched by the novelties added to them. The number of sweet peas that obtained recognition during the year was small, as compared with new varieties of some other classes of flowers, but nine really first-class novelties which these new sweet peas unquestionably are in one year should be sufficient to satisfy the large and ever-increasing body of growers of these fragrant flowers. The seven new rhododendrons that have a place in the "Gardening Year Book" list are remarkable for

MR. GEORGE KELF.

their diversity of character, as well as colouring, and include several that have descended from some of the more notable of the Himalayan species. Therefore, they are especially deserving of the attention of those who have gardens in those parts of the West of England where the comparatively tender rhododendrons are known to grow freely, and to produce an abundance of their bold and attractively-coloured flower trusses. Four only of the new narcissi that were presented to public notice in the spring of 1911 were successful in obtaining distinction, which is a comparatively small number, considering how great is the activity in the raising of seedlings. On the other hand, the hardy and tropical water lilies that were shown received awards with only one or two exceptions, and several that failed to find the support necesary to their obtaining distinction were of much merit. We mention this as evidence of the advances that are being made in the development of the nymphæas, and the wider range of selection that is thus afforded when furnishing lake and pool with acquatics.

**Mr. George Kelf,** head gardener to A. W. Merry, Esq., Danesbury Park, Welwyn, Herts, whose portrait we present to our readers in the present issue, is well-known to most horticulturists in the home counties. For many years he was head gardener at South Lodge, Regent's Park, a garden right in the inner circle, and where gardening was carried on under exceptionally difficult conditions. Here Mr. Kelf made a considerable name for himself by cultivating a large number of subjects exceptionally well. Perhaps he was then most famous for his management of fruit trees in pots, and for the first-rate collection of fruits, hardy and tender, that he from time to time exhibited before the Royal Horticultural Society. Mr. Kelf is now working under kindlier conditions of light and atmosphere at Danesbury Park. He is a member of the Royal Horticultural Society's Fruit and Vegetable Committee, and has long held a seat on that body; for a long number of years he was also a most regular and useful member of the Committee of the United Horticultural Benefit and Provident Society.

**Our Sweet Pea Number.**—Consequent on the great desire that is at the present time being expressed for the fullest possible information on the selection and cultivation of sweet peas, we shall devote our next issue (January 27) chiefly to these fragrant flowers. The several articles will be written by well-known experts, and will deal with both the scientific aspects of sweet peas and the practical details of their cultivation, and such information will be given on the novelties and standard varieties as will greatly facilitate the making of selections adapted to the requirements of the various classes of cultivators. The number will be profusely illustrated.

**Plants in Flower at Nuneham Park, Oxford.**—The Rt. Hon. Lewis Harcourt, P.C., writes us, under date of January 9, 1912: "It may be of interest to record, as I did to-day, the plants and shrubs now in flower in the garden here: Iris stylosa, Myrtus apiculata, aubrietia, Leptospermum scoparium, Cestrum luridum (south wall), Daphne indica rubra (west wall), antirrhinum, Andromeda floribunda, A. japonica, Menziesia polifolia, winter aconite, Jasminum nudiflorum, Lapageria rosea (north wall), L. alba (north wall), Lonicera fragrantissima, Veronica Autumn Glory, V. speciosa, V. Gauntletti, V. hybrida Diamant, Daphne mezereum album, D. Blagayana, Cydonia japonica Simoni, Galanthus Elwesi, Iris reticulata, I. Danfordiæ, I. persica Hildreichi, I. alata, Adonis vernalis, Eleganus macrophylla, Colchicum cydrophilum, Scilla sibirica, Erisymum Golden Gem, Helianthemum amabilis, Rosmarinus prostrata, arabis, Leycesteria formosa, Cyclamen coum, C. europæum, auricula, yellow, red, and Wilson's blue primroses, Sarcococca ruscifolia, Potentilla formosa, Achillea tomentosa, Rhododendron Nobleanum, Helleborus niger, H. n. altifolius giganteus, H. n. maximus, violets, winter heliotrope (petasites), Colletia cruciata, Berberis Darwini, Arbutus andrachne, A. Milleri, Photinia serrulata, Hammamelis japonica, H. Zucchariniana, H. arborea, Erica codonoides, E. arborea, E. carnea, E. carnea alba, E. Maweana, E. mediterranea hybrida, Mahonia japonica Beali, Tritoma uvaria, Berberis Aldenham hybrid, Iberis Gibraltarica, Garrya elliptica, Solanum jasminoides, Acacia dealbata (in full bud—almost open), and Laurestinus. Altogether seventy-three kinds of flowers." We are greatly obliged to Mr. Harcourt for this interesting note.

**Horticultural Club.** — The next house dinner of the club will take place on Tuesday, the 23rd inst., at the Hotel Windsor, Victoria Street, Westminster. The dinner will, as usual, commence at six p.m. Following the dinner a lecture will be given by Mr. Charles Pearson, entitled "Birds Eggs: Some Remarks on the Evolution of Colour." The lecture will be illustrated by lantern slides. The annual meeting and dinner will take place on Tuesday, February 20. Ladies are invited to both monthly and annual dinner, but the latter will, in accordance with the usual custom, be a special ladies' night.

**British Gardeners' Association.**—A general meeting of the members of this association will be held at Carr's Restaurant, 264, Strand, London, on Thursday, the 25th inst., "To consider alterations of rules, receive the resignation of the general secretary, and to confirm the sub-committee's report as adopted by the Executive Council." The chair will be taken at seven p.m. Mr. E. F. Hawes, Fortune Green, has been appointed editor, pro tem., of the "Journal" of the association.

**Mr. J. D. Crozier,** forester to Mr. Baird, of Durris, near Aberdeen, has been appointed to the Government Forestry Department in Ireland. A prominent office-bearer of the Royal Scottish Aboricultural Society, and one who has taken a keen interest in the affairs of the Aberdeen, Banff, and Kincardine branch of the society, Mr. Crozier has been a frequent contributor to the "Transactions" of the parent society, and one of his papers on "The Douglas Fir as a Commercial Timber Tree," attracted much attention. Mr. Crozier's opinion of the Douglas fir is aptly summarised in the concluding paragraph. "The practical experience of the Douglas fir in this country points it out as one of the most valuable timber trees ever introduced, and when its suitability for commercial purposes has been fully realised, there can be no doubt it will be one of the most largely planted of all our timber trees." On the occasion of the visit of the English Arboricultural Society to the north-east of Scotland some years ago, Mr. Crozier conducted a large party of the members over the extensive woods of Durris, and showed them a number of new features which he had introduced, and the successful experiments carried out with plantations of the Douglas fir and the Japanese larch. In all matters concerning forestry, Mr. Crozier has manifested a keen and practical interest, and his many friends in the north-east and north of Scotland, while readily congratulating him upon his appointment, greatly regret his departure from Durris. Mr. Crozier was entertained at a complimentary luncheon at the Imperial Hotel, Aberdeen, a few days ago, and was presented with a silver tea service.

**Resignation of the B. G. A. Secretary.** — We have received from Mr. J. Weathers the following copy of a letter sent by him to the chairman of the Executive Council of the British Gardeners' Association:

Dear Mr. Frogbrook,—On January 9 I tendered my resignation as secretary and editor to the Executive Council. To you now, as chairman, I again formally tender my resignation in writing. Kindly place it before the Executive Council at the next meeting. I have taken this step in consequence of what I consider to be the unreasonable, ungenerous, and suspicious attitude taken up by a few members of the Executive Council in regard to the way I have conducted the business of the association. I am not conscious of having done anything that was not for the welfare of the association, and for the cause for which it was instituted, during the six years I have been hon. secretary. I cannot, however, in justice to myself, hold office any longer whilst there is the slightest disposition to suspect the most innocent actions, and to distort the most simple phrases. I am therefore having all the property of the association forwarded to you, and as soon as the accounts have been audited by a chartered accountant, I shall also forward you all receipt books and vouchers, and correspondence that may come to hand. Kindly acknowledge the receipt of this letter, and believe me, yours faithfully,

John Weathers.

**A Conference on Dahlias** will be held under the auspices of the National Dahlia Society at Carr's Restaurant, 264, Strand, London, on Friday, March 8. The proceedings will commence at 6.30 p.m., when several papers connected with dahlias and their cultivation will be read.

**Monsieur Anatole Cordonnier.**—The twenty-fifth annual volume of our contemporary, "Le Jardin," of Paris, is just completed, and we notice that the Editor dedicates it to M. Anatole Cordonnier, of Bailleul, the eminent horticulturist, whose exhibits of grapes and forced fruits attract so much attention at the Continental shows. A portrait and a short biographical notice accompanies the dedication. Some of our readers may remember that over twenty years ago (December 26, 1891) the "Gardeners' Magazine" gave a portrait of M. Cordonnier, and a few notes concerning his horticultural activities. In the light of what has since transpired, our article of that date may be considered almost prophetic.

**Presentation to Mr. W. B. Beckett.**—The recent annual meeting of the Croydon Chrysanthemum Society was of exceptional interest, from the fact that the members had to take leave of Mr. Beckett, who has occupied the position of hon. secretary since the formation of the society in 1887, and to elect his successor. In view of this, there was a large attendance of members, with the president, Alderman Allen, in the chair. At the close of the formal business, the President expressed the regret that all felt at losing the services of their able and highly esteemed secretary, which, they were glad to know, was due to the increase in his business making greater demands upon his time. He said that associated with the regret was a feeling that they could not allow Mr. Beckett's twenty-four years' service to pass without presenting him with some token of their regard and esteem in which he was held by all who were interested in the society. The President, on behalf of the subscribers, presented Mr. Beckett with a silver tea and coffee service, and an illuminated address. The gift was suitably acknowledged by Mr. Beckett, who stated, in the course of his remarks, that during the period he had been secretary the society had disbursed £2,000 in prizes.

**Paris Spring Show.**—In consequence of the Royal International Horticultural Exhibition, London, 1912, opening its doors on May 22 next, the Paris Spring Show of the National Horticultural Society of France will be held somewhat earlier than usual, the date fixed being from May 15 to 22 of the same month.

**Success of Women Horticulturists.** — Miss Lilian Hamilton, of Studley Horticultural College, writing in the Monthly Magazine of the North of England Horticultural Society, says: "All over the country there are women who are either making a good living or increasing their incomes by gardening. One lady in Ireland told a friend of mine, that she could show by her books that she was clearing £1,000 a year from daffodil growing. One of our old students announced, at a meeting of the College Guild, that she and her partner, also an old Studley student, were dividing over £1,000 that year. Others will not tell us what they earn, but when we see new houses going up, and motor vans to carry the produce added to their equipment, we draw our own conclusions, and when at a dinner party I decide that the best dressed woman at the table is an old Studley student, now a market grower, I feel she must be doing well. Now as to posts! At present such is the demand for women gardeners that every year I have to send four or five newly qualified students where £50 a year and all found is offered, where I would rather send girls with greater experience. One year, two girls of twenty were fortunate enough to secure such posts, and one has remained in hers three years. The second has left to take other and more congenial work at an equally remunerative salary."

**Perpetual Carnation Society.**—The spring exhibition of this society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on March 21, and in connection therewith a conference on perpetual carnations will be held in the afternoon.

**Mr. Oxtoby** was elected secretary of the Croydon Chrysanthemum Society at the recent annual meeting, in succession to Mr. W. B. Beckett, who retired. Mr. Oxtoby has assisted the late secretary for some years past.

**R.H.S. Lectures.**—The following lectures are included in the Royal Horticultural Society's programme for the current year: January 23, Mr. H. Morgan Veitch, on "Horticulture and the Proposed Taxation of Land Values"; February 6, Sir Everard F. Thurn, K.C.M.G., on "Plants of Fiji and other South Sea Islands"; February 20, Mr. W. Cuthbertson, J.P., on "New Sweet Peas"; March 5, Professor H. E. Armstrong, F.R.S., on "The Stimulation of Plant Growth"; March 19, Mr. H. B. May, V.M.H., on "Ferns"; April 2, Mr. R. Irwin Lynch, V.M.H., on "Tender Plants for a Warm Corner"; April 16, the Rev. Professor G. Henslow, M.A., V.M.H., on "Darwin as Ecologist"; April 30, Dr. Redcliffe N. Salaman, on "Potatoes"; May 14, Professor I. Bayley Balfour, F.R.S., V.M.H., on "Gardening and Drought" (Masters' Memorial Lecture); June 4, Professor J. Bayley Balfour, F.R.S., V.M.H., on "Problems of Propagation" (Masters' Memorial Lecture); June 18, Rev. Professor G. Henslow, V.M.H., on "Professor J. S. Henslow as Ecologist"; July 16, Mr. E. A. Bunyard, on "The Flowers of Apples and Pears, and their Aid in Identifying Varieties"; July 30, Mr. Cecil H. Hooper, F.S.I., on "The Pollination and the setting of Fruit Blossom"; August 13, Mr. Pulham, jun., on "The Construction of the Wisley Rock Garden"; August 27, Mr. J. Hudson, V.M.H., on "Recently Introduced Water Lilies"; September 10, Miss Troyte-Bullock, on "Cape Pelargoniums"; September 24, Mr. C. Herman Senn, on "How to Cook some of the Root Vegetables"; October 8, Dr. Charles Crowther, on "The Influence of Atmospheric Impurities on Vegetation"; October 22, the Rev. Professor G. Henslow, V.M.H., on "The Senses of Plants"; November 5, Miss Edith R. Saunders, on "Double Flowers"; November 19, Dr. George Hamilton, on "Some of the Gardens of Bournemouth and Neighbourhood"; December 3, Mme. Tzikos St. Leger, on "The Vegetation of the Islands of Lake Maggiore."

**Societe Francaise d'Horticulture de Londres.**—The annual dinner of this society, which, for many years has taken place in January, will be held at the Café Royal, Regent Street, on March 30, when Mr. N. N. Sherwood will preside. Further particulars may be obtained from Mr. G. Schneider, 3, Meredyth Road, Barnes, S.W.

**M. Viger.**—His term of office having expired, M. Viger has, at the earnest request of a deputation of the National Horticultural Society of France, agreed to allow himself to be renominated as president of that society. Most English and other visitors to the French horticultural shows will rejoice that M. Viger will still continue to take an active interest in horticulture in general, and in the national society in particular.

**The Flowering Time of Apples.**—In an interesting contribution from the Wisley Laboratory to the recent issue of the "R.H.S. Journal," Mr. F. J. Chittenden ably discusses the subject of "Pollination in Orchards," and points out that "the time of flowering of apples varies between rather wide limits, both as to its commencement and as to the period over which the flowering continues. It commences in south-east England about the third week in April in early years, and continues into the second week in June in late years. During the four years 1908-1911 in which records have been kept at the Royal Horticultural Society's gardens at Wisley, the earliest apple to open, Red Astrachan, was in full bloom in 1910 on April 21; in 1911, May 2; in 1909, May 3; and in 1908, May 7; while the most consistently late-flowering variety, Royal Jubilee, was in full flower in 1908 on May 23; in 1909, May 17; in 1910, May 20; and in 1911, May 19. The period during which one variety or other of apple was in full flower (ignoring the few days, about seven or eight, before, and the few, about eight or nine, after full flowering time, during which some flowers were open) was, in 1908, 18 days (May 6 to May 23); in 1909, 20 days (May 3 to May 22); in 1910, 35 days (April 21 to May 25); and in 1911, 18 days (May 2 to May 19).

**Messrs. S. Rivers and Son** were awarded a gold medal for their exhibit of oranges at the Royal Horticultural Society's meeting on January 9.

## THE HEMLOCK SPRUCES.

The various species of Tsuga or Hemlock spruce are useful decorative trees, whilst some of them produce valuable timber. Although all are not generally hardy in the British Isles, there are some which may be grown almost anywhere, whilst the more tender species thrive well in the warmer counties. They are of North American and Asiastic origin; those native of the former country being distributed from Canada to the southern Alleghanies and California, and the Asiatic kinds being found in Japan, China, and the Himalayas. The Hemlock spruces are easily separated from the ordinary spruces by reason of their flat, soft, yew-like leaves and more plumose branches. As is the case with most other cone-bearing trees, they thrive best in places where the climate is fairly moist throughout the growing season, where late spring frosts are not experienced, and where the ground is cool and moist, but not water-logged. Such ideal conditions are not, however, essential to their success, for well-grown specimens are found where conditions cannot be considered to be first rate.

The species available for cultivation are as follows:

### North American.

T. canadensis, the Common Hemlock spruce, is widely distributed through the north-eastern United States and Canada, extending as far north as Nova Scotia. Towards the southern parts of its habitat it grows 100 feet high, but its average height is about 50 or 60 feet. Its oblong linear leaves are one-third to two-thirds of an inch long, and rounded at the apex. In America the wood is used for building purposes, but is considered to be inferior to that of T. Mertensiana. Numerous garden varieties are known, the more distinct being those with weeping branches. These are milfordensis pendula, pendula argentea, and Sargenti pendula. Argentea is recognised by reason of its greyish leaves, variegata by its variegated foliage, and macrophylla by having larger leaves than the type.

T. caroliniana, the Carolina Hemlock spruce, occupies a more southerly range of country than T. canadensis. Its flattened linear leaves are one-third to three-quarters of an inch long, petiolate, dark green and shining, with conspicuous silvery bands beneath. It is not very common in this country.

T. Mertensiana, the Western Hemlock spruce, often called T. Albertiana, is found on the western side of N. America. It grows more freely than the eastern species, and is more valued for timber in its native country. In the British Isles it appears to be the most suitable of all the Hemlock spruces for planting under forest conditions, and there is reason to suppose that it may turn out to be a profitable timber tree in certain localities. The wood is used in America for general building purposes, railway sleepers, etc. When growing with the Canadian Hemlock spruce, it may be distinguished by its more vigorous habit and single trunk; T. canadensis often forming a series of trunks from one root-stock.

T. Pattoniana, the Californian Hemlock spruce.—This is a very beautiful species when well grown, for it forms a shapely bush or small tree with bluish or glaucous foliage. Unfortunately, it is less hardy than the other kinds, and only thrives satisfactorily in the warmer parts of the country. The pubescent branches are well clothed with leaves three-quarters to one inch in length, which are distinctly narrower than those of other species. The two silvery bands on the under surface, which are so prominent in other species, give place in this instance to the rich glaucous colouring which is noticeable on the upper surface. The arrangement of the leaves on the branches also differs somewhat from that of other Hemlock spruces, and is more suggestive of that of the Douglas fir. T. Pattoniana is found wild in the mountains of California, and is well worth planting in any garden where the climatic conditions are not too dry or too severe. It is not seen at its best in the vicinity of manufacturing towns, for the deposit of dirt on its leaves detracts greatly from its appearance.

### Asiatic Species.

T. Brunoniana, the Indian Hemlock spruce.—This is a native of the central and eastern Himalaya, and is one of the more tender kinds. It, however, thrives satisfactorily in Devonshire, Cornwall, and other places where similar climatic conditions prevail. At its best, in the Himalayas, it is stated to grow upwards of 100 feet high, with a girth approaching 20 feet. In this country the best trees are not more than 50 feet high, but there are really good examples to be found here and there, where the graceful widespreading branches clothe the trunk to the ground. Such a specimen is to be seen at Strete-Raleigh, near Exeter. The leaves of this species are longer than those of other kinds, the larger ones being rather more than an inch long. The silvery lines on the under surface are very conspicuous. When growing freely it is one of the most ornamental kinds.

T. diversifolia is one of two Japanese Hemlock spruces. It occupies the more northerly parts of the empire, and, according to Sargent's "Forest Flora of Japan," p. 80, forms an extensive forest on the Nikko Mountains up to an altitude of 5,000 feet. A picture accompanying Sargent's description represents it as a large timber tree, but in England, where it is not common, it is only known as a bush of less commanding presence than the other Japanese species. In addition to its less vigorous habit, it may be distinguished from the southern Japanese Hemlock spruce by its smaller leaves and hairy branches. The leaves are of two distinct sizes, those of the upper rank being a quarter of an inch or less in length, whilst the lower leaves are up to half an inch long.

T. Sieboldi, the second of the two species, is found in the more southern parts of Japan. In this country it grows into a large, handsome bush, or small tree, with somewhat of the appearance of the yew. Its branches are, however, lighter and the foliage is less sombre-hued, therefore, it might well be substituted for that tree in places where the dark leaves of the yew are objectionable. It has ample leafage, the leaves being half to three-quarters of an inch long, and very silvery on the under surface. The more vigorous habit, larger leaves, and hairless branches separate it from T. diversifolia. When cones are obtainable they also offer a distinguishing character, for those of T. Sieboldi are larger than those of the other kind.

T. Yunnanensis.—This is of comparatively recent introduction, as it has only been in cultivation for a few years. Originally collected in Yunnan by Father Delavay, a French missionary, it was named by M. Franchet, and described in the "Journal de Botanique." Other travellers subsequently gathered specimens, notably Henry in Szechuan, Pratt on Mount Omi, and Wilson in Hupeh. The latter collector was the first to send good seeds home, and from them Messrs. Veitch were able to raise plants. The branches are hairy as in T. diversifolia, but it differs from that species by its longer leaves, for the larger ones are quite three-quarters of an inch long, and by the ends of the leaves being usually entire, whilst those of both the Japanese kinds are distinctly notched. The silvery marks on the under-sides of the leaves are also less well defined than in the kindred species from Japan.

Pictures of the cones show them to be rounder than those of T. diversifolia, though they are very similar in size. So far as can be ascertained at present, it is quite hardy, but it is only likely to form an ornamental bush or small tree, in fact, it does not appear as if either of the Asiatic Hemlock spruces will ever be of any value in this country as forest trees. It might, however, be possible to use the stronger of the Japanese kinds as a hedge plant.

W. D.

## THE DECLINE OF BIG CHRYSANTHEMUMS.

This is the headline under which Mr. Molyneux deplores the loss of a few old and good exhibitors of the noble autumn flower. One wonders in reading his communication whether your excellent correspondent is becoming a little conceited (no offence intended) because he and a few other exhibitors feel that they have had enough of it, and that there are no younger growers capable of taking up the running. Whether that be the case or not, I could point to many who grow and show blooms quite equal to those which are seen at the National or other big shows, and the societies at which they compete were not started at the time when Mr. Molyneux was busily engaged in winning cups and other prizes. I should say there are three times the number of shows held now as compared with those held in his exhibition days, and each local society obtains the best flowers from its members, and as each grower can compete in several classes, a magnificent display is the result. Now if we combine three of these local shows, I have no hesitation in saying that the flowers, both in quantity and quality, would equal either of the big shows held at the present time.

But before these local societies were started, exhibitors used to compete at the big shows. I wonder how many chrysanthemum societies there are in Surrey? Let us mentally, of course, take just one exhibit from each of these, and place them side by side at the N.C.S. Exhibition at the Crystal Palace. If this were done, the several exhibits would be found as strong a class as any set of judges need ask for. I would like to ask Mr. Jefferies (who was one of the judges at Reigate) what kind of exhibition three such shows as the one at Reigate would make. (Ask him for his opinion, Mr. Editor.) At Reigate provision was made for boards and vases, and I believe the society has a ten guinea cup to be competed for in 1912.

Another point, and it is a very important one, when a gardener takes flowers to compete at a three days' show, practically a week is spoilt, and the employer cannot enjoy the flowers, for few employers will go to a big show twenty miles from home. Moreover, if there are, say, twelve exhibitors, and about four prizes, eight of the twelve derive so little satisfaction from the competition, that they make up their minds to exhibit only at the local shows, and a reduction in the competitors at the big exhibitions follows as a matter of course.

Then there are the vase classes, and with reference to them I would say, let any of those non-competing members of the committees who would like to see the boards banished from the tables try their hands at exhibiting blooms in vases. I will only suggest they should do this for one year, and make a journey to a show involving three or four changes, and, it may be, a drive across London.

Now with regard to varieties, I would ask Mr. Molyneux not to throw Mme. C. Audiguier and such-like varieties, that attained a height of thirteen feet and produced blooms that a six-inch space would comfortably accommodate. These would surely not compare with blooms that require nine inches square, as in the case of the present-day varieties. Such comparisons would indeed be odious.

A good white, we are told, is wanted to beat Mrs. A. T. Miller. Well, Mrs. Gilbert Drabble does this easily, but perhaps I had better not say much about this variety. If Mrs. G. Drabble will not surpass Mrs. A. T. Miller, Queen Mary will, the blooms of the latter being a pure white, while those of Mrs. G. Drabble are milk white. The variety dedicated to our Queen will not, however, be in the hands of cultivators this spring.

I would like to add that during the time I have been in the chrysanthemum trade we have never had so many orders for Japanese varieties as this season. But I cannot say the same with regard to novelties yet. I will not make any remarks about the singles, they are taking care of themselves. But the anemones, pompons, and anemone pompons do not pay for the paper and printing, much less defray cost of growing and stocking. The public know what they like, and prizes will not make them grow these sections if they do not like them.

W. Wells.

## CLIMBING ROSES.

I have read with interest Mr. E. Molyneux's additional notes (see page 953 of last year's volume) on my selection of autumnal flowering climbing roses (see p. 983). I quite agree with him that Aimée Vibert's habit of retaining its dead blossoms so long is very disfiguring to the plant. When describing this rose this failing did not escape me, and I omitted Flora from my list of summer flowering roses on account of this defect. But Flora is only a summer bloomer after all, and there are many others that can take her place; whereas I know of no autumn blooming climbing rose that can compare with Aimée Vibert in hardiness, vigour, and freedom of bloom. Possibly Sylvia, the new white Wichuraiana, that is said to be perpetual, may prove a substitute for our old friend Aimée Vibert. As regards Tausendschon, Mr. Molyneux will find I reserved that for my third list of climbers, as it is neither a Wichuraiana nor an autumn flowering climber. I am interested to see that the form of the flowers reminds Mr. Molyneux of the oleander, for in describing this variety in my article on summer flowering roses, written before his notes appeared, I have noted this resemblance.

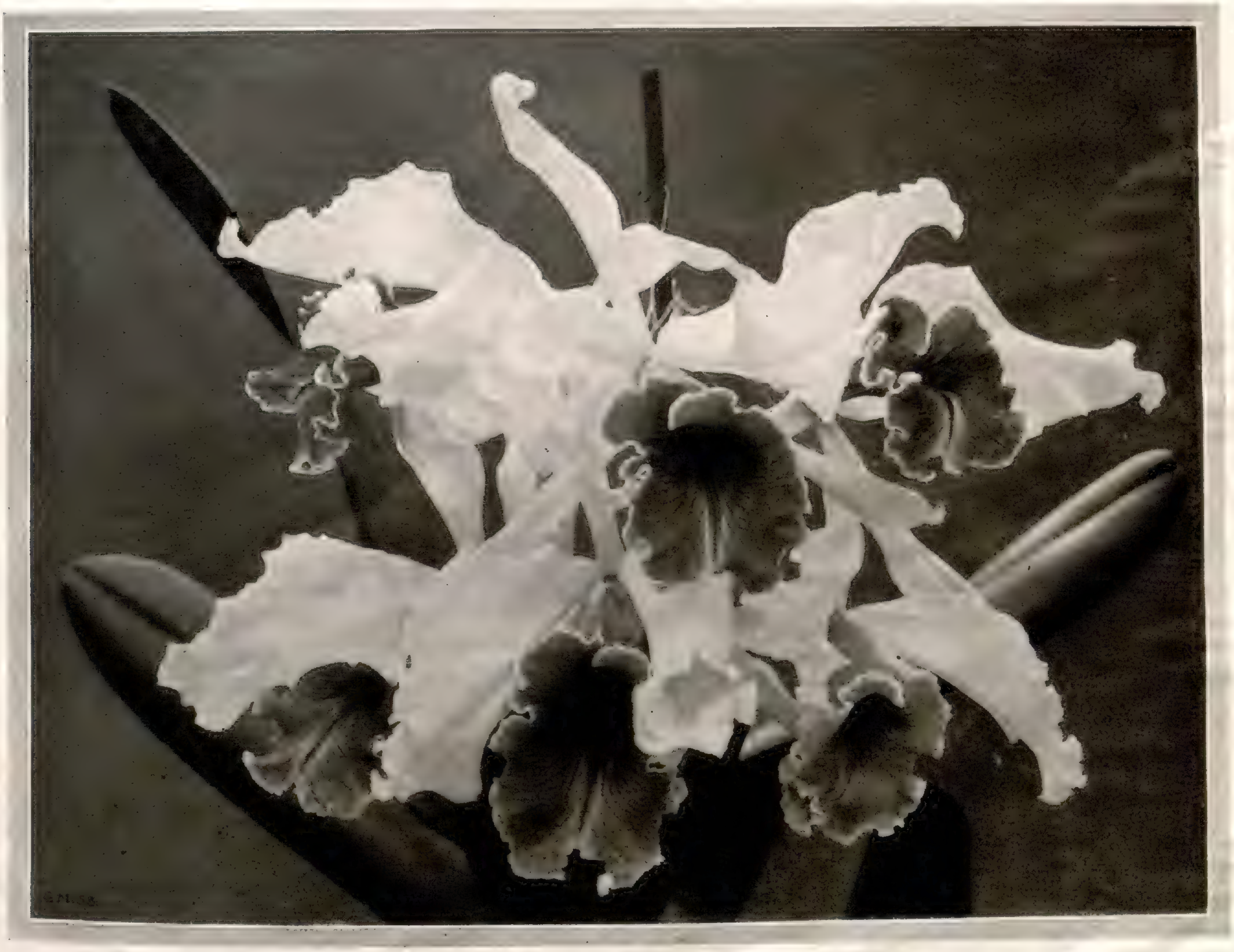
"White Lady."

**Hotbeds.**—These are essential where early vegetables, salads, etc., are required, and so easy to construct, that no garden, however small, should be without even one. It is now known that far better returns are obtained from gentle hotbeds than even heated houses, besides the outlay being much less, and the advantage of having a good mulching material from the spent beds for the later summer vegetables of various kinds. In preparing the materials, choose two parts long fresh stable litter and three parts leaves. Well mix by turning several times to sweeten before forming the bed. This should not be less than four feet high, and should exceed in width the frames by two feet. Place the frames in position immediately the bed is made. In a few days place nice prepared soil in the frame to a depth required for the intended crop. When aired or warmed through, gently press the bed evenly over, and sow a good type of short horn carrot, Inimitable for preference, forcing turnip, radishes, cauliflowers, and lettuce. If a shortage of lettuce is feared, plants from the autumn sowing should be planted in such frames, taking care to well air on all favourable occasions. Subsequent beds should be made according to requirements. It will be necessary to line the frames with additional litter from time to time to maintain a lasting heat.—G. Ellwood.

## NEW PLANTS, ETC.

### LÆLIO-CATTLEYA BELLA ALBA, DELL VARIETY.

This is a superb orchid, and it was exhibited in fine style, the plant carrying six large and beautiful flowers on one spike. The sepals and petals are pure white, the large lip being dark, rich crimson-purple, with some lighter lines in the throat. F.C.C., R.H.S., Jan. 9. Baron Bruno Schroder (grower, Mr. J. E. Shill), The Dell, Egham.



LÆLIO-CATTLEYA BELLA ALBA, DELL VAR.

A very beautiful variety, with pure white sepals and petals and crimson-purple lip. F.C.C., R.H.S., Jan. 9. Baron Bruno Schroder (grower, Mr. J. Shill), The Dell, Egham.

### LÆLIO-CATTLEYA MRS. W. HOPKINS.

A very beautiful hybrid, derived from L.-c. Haroldiana and Lælia Iona nigricans. It has a shapely flower, and is very effective, the sepals being deep yellow, and the broader petals a lighter, brighter, and glistening yellow, with some purple mottling on the upper half. The lip is very bright crimson-purple. A.M., R.H.S., Jan. 9. F. Wellesley, Esq. (gardener, Mr. W. Hopkins), Westfield, Woking.

### CYPRIPEDIUM SAN-ACTÆUS WESTFIELD VAR.

This effective variety of a well-known orchid is a charming one; the dorsal sepal is white with a green base and purplish spots, while the sepals and lip are light greenish-yellow. A.M., R.H.S., Jan. 9. F. Wellesley, Esq. (gardener, Mr. W. Hopkins), Westfield, Woking.

### ODONTOGLOSSUM CRISPUM QUEEN OF THE MORN.

A finely formed and very pretty variety, the broad and rounded flowers being almost wholly of a soft and pleasing shade of light rose. A.M., R.H.S., Jan. 9. Walter Cobb, Esq. (gardener, Mr. C. Salter), Normanhurst, Rusper.

### CYPRIPEDIUM JUCUNDUM.

A most distinct hybrid, the parents being C. alcidiades and C. veronica. The large flower has a white dorsal sepal of considerable size, with a small green area at the base and some delicate lines of rosy-purple dots. The petals are also white, with delicate purple markings, but the lip is of a creamy shade, tinged with purple. A.M., R.H.S., Jan. 9. Messrs. Sander and Sons, St. Albans.

### CATTLEYA MAGGIE RAPHAEL ORCHIDHURST VAR.

The parents of this variety of a popular and beautiful hybrid were evidently well selected, fine forms of C. Trianæ alba and C. Dowiana being used. The result is a fine batch of seedlings remarkably true in form and colour, the sepals and petals being white and the lip purple with gold veins. A.M., R.H.S., Jan. 9. Messrs. Armstrong and Brown, Tunbridge Wells.

### CYMBIDIUM ROSEFIELDIENSE.

An excellent addition to the hybrid cymbidiums, the parents in this instance being C. grandiflorum (Hookeri) and C. Traceyanum. The flowers are of large size, and the broad bright green sepals and petals are regularly spotted with light red, while the large lip is cream-coloured, with red-brown spotting. A.M., R.H.S., Jan. 9. De Barri Crawshay, Esq. (gardener, Mr. W. Stables), Rosefield, Sevenoaks.

### CYPRIPEDIUM CATILINE.

A large and showy cypripedium obtained by crossing C. Mrs. W. Mostyn with C. Leonidas superbum. The influence of the first-named parent is very marked, the bright rose-purple markings, the sheen, and the white apex to the dorsal sepal all being confirmative evidence. The lip and petals are greenish-yellow, with purplish shading. A.M., R.H.S., Jan. 9. The Duke of Marlborough (gardener, Mr. Hunter), Blenheim Palace, Woodstock.

### CARNATIONS WIVELSFIELD WONDER.

A handsome fancy perpetual carnation, long-stemmed and with an excellent calyx. The flowers are of large size, white freely and delicately marked with red. We figured this variety in a recent issue. A.M., R.H.S., Jan. 9. Messrs. Allwood Brothers, Wivelsfield, Hayward's Heath.

### CYPRIPEDIUM NITENS-BEEKENSIS.

One of the largest of cypripediums, its parents being C. nitens and C. Beekmanni. It has a big, rounded dorsal sepal, white, with a green base, and heavy spots of bright purple. The lip and petals are yellowish-green, shaded with purplish-brown. A.M., R.H.S., Jan. 9. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

### PEAR MRS. SEDEN.

A handsome, rounded pear, of ample size for dessert purposes, and of special value because of its excellent quality at a late date. This newcomer is the result of crossing Seckle with Bergamotte Esperen, and it has the shape of the latter with the finer flavour of the Seckle. The skin is dull greenish-yellow, with crimson streaks or shading on the sunny side, and the whole is covered with a fine bloom. The flesh is melting, not gritty, and of pleasant and good flavour. A.M., R.H.S., Jan. 9. Messrs. James Veitch and Sons, Chelsea.

## PROBLEMS IN FRUIT CULTURE.

Hardly a year goes by but what some fresh problems crop up in fruit culture, or some fresh difficulty arises which brings disappointment to those who grow fruit as a hobby and loss to those who depend upon it for a living.

Last year when apples, which in a general way were a good crop, were advancing towards the stage of ripening, and Nature was painting colours on their cheeks, the like of which they had never seen before, growers were confident in their anticipations that the fruit was maturing as it should, and that after it was picked it would keep in perfect condition. It is true the fruit ripened earlier than usual, but we put that down to the extraordinary summer, and never feared but what everything would be well.

So much for anticipations, but what about the realisation? The general complaint since last autumn has been that apples were keeping badly, and badly they have kept without a doubt. Tons of fruit that was apparently sound when picked have had to be thrown away, and because they were afraid of what might happen many growers rushed their apples into a glutted market, and sold them for what they would fetch in preference to running the risk of keeping them and having none to sell later on.

PEAR MRS. SEDEN.
A useful, rounded, finely-flavoured pear, late, and of good quality.
A.M., R.H.S., Jan. 9. Messrs. James Veitch and Sons, Chelsea.

What is the actual cause of all this disappointment? This is just where the problem part comes in, but whether it can be so easily solved is another matter. We may venture, I think, to give that peculiar disease known as "bitter-pit" the credit for a large proportion of the apples failing to keep, but what was the cause of the "bitter-pit"? One correspondent, writing of the apple crop in his particular district and speaking of the spots with which the fruits were marked, said that they were bruises caused by hailstones, but he did not explain how the hailstones had managed to hit the undersides of the fruits. I need hardly describe the symptoms of bitter-pit because most people unfortunately are too well acquainted with them, and they take the form of brown spots in the flesh which have no apparent connection with any surface injury.

We naturally look to the Scientific Committee of the Royal Horticultural Society for help in troubles of this kind, and the views of that body were given in the GARDENERS' MAGAZINE for November 11 last in the following words: "No fungi or bacteria have been found connected with bitter-pit, and it *appears to be a* disease of physiological origin rather than due to any parasite. The dead brown cells contain starch, whereas in the rest of the flesh the starch has been converted into sugar. It would therefore appear that the death of the cells *probably* took place before the ripening process had proceeded so far as the conversion of the starch into sugar, and may *possibly* be due to an accumulation of a poisonous substance in the cells through interference with the water supply." The italics are mine, and they go to show that there is a strong element of doubt about it all. And even if the solution is the correct one it does not help the grower much who has lost his apples, and all that he can do is to leave out the scientific explanation and say that the dry season is the cause of the trouble. The position appears to be one in which scientists may surmise and suggest, but they cannot prove, and the grower must apparently follow the advice of a noted statesman, and "wait and see." Shall we have a repetition of the "bitter-pit" trouble in the coming season? We do not know, but we should not if the Scientific Committee is right in its conclusions, and we are favoured with a normal summer in point of rainfall. In short, we must wait and see.

In the meantime another problem has been added to fruit culture, the fear of another loss has been placed on the already burdened shoulders of the fruit grower, and his only hope is that the trouble may be due, as suggested, to physiological reasons, and he may get no more of it. Be that as it may, the fact remains that bitter-pit has upset the calculations of growers, and brought about loss and disappointment in a season when everybody thought the natural conditions were favourable for apples keeping in a perfectly sound state.

Speaking of another fruit problem, take the homely gooseberry. A few years ago the American mildew was "discovered" on it, and a great sensation was the result. It is a matter of history now how the affair was brought before Parliament, the mildew was scheduled as a notifiable disease, inspectors were appointed, and plantations and gardens were searched, with the result that there turned out to be a good deal more American mildew in the country than was at first imagined. It is needless to say that with it all growers have been put to a good deal of trouble and expense, and now how do they stand? This is the problem, and like Rosa Warble, I only ask the questions, How far have we gone in the eradication of gooseberry mildew? Is there more or less of it now than there was four or five years ago? Is it such a dreaded disease as growers were first led to believe? Has any grower failed to obtain a crop of berries from established bushes, as the direct result of mildew? The American mildew certainly presented a problem, but the time has arrived when some kind of solution ought to be forthcoming, and there should be something to show for all the money that has been spent.
H.

## ACANTHUS MONTANUS.

Three years ago a First Class Certificate was given to Acanthus montanus, a tender member of the Bear's Breech family, nearly all of which are quite hardy. This comes from the West Coast of Africa, and requires a warm house for its successful culture. Apart from this feature in which it differs from its hardy relatives, it forms an erect stem of a half-woody character. This stem is regularly furnished with long deeply-cut leaves, disposed in an almost horizontal manner. These leaves have the course of the midrib and principal veins marked with a pale tint, almost white, while the remaining portion is of a deeper hue, the effect being to give a singularly mottled appearance to the surface of the leaf.

This acanthus flowers, as a rule, in the depth of winter, and, like the common kinds, the blossoms are produced in an erect spike. Each flower is sub-tended by a large rosy bract, and a succession is kept up from one spike for a considerable time. The flowers themselves are white, their principal feature being the large widely-expanded lip. This species has been grown for over forty years in this country, yet on the occasion of the certificate being granted it was practically unknown. Of easy propagation by means of cuttings, it will thrive in ordinary potting compost, providing it be grown in the stove, or at all events in the temperature of an intermediate house.
W. T.

**Chrysanthemum Mrs. Roots.**—This variety is unsurpassed as a good all-round one; it is equally as good grown in pots as in the open border. The habit is dwarf and compact. Cuttings rooted in March flower in October and early in November. Tops, taken off and struck in June, flower two weeks later, and only grow about 10in. high. Sucker cuttings result in plants bearing flowers two weeks later still, so that blooms of the purest white are available for a long period. There is nothing stunted about the plants, and they are so very useful for placing on front stages in greenhouses and conservatories.—GEO. GARNER.

## NEW RAMBLER ROSE ROWENA.

Rambling roses continue to increase in popularity and numbers, and considering the trend of the taste of those who are specially interested in roses and the activities of raisers of new varieties, it may be assumed that the day is far distant when some decline may be anticipated in the favour with which these elegant roses are regarded, or in the number of novelties introduced. The list of rambling roses is somewhat lengthy, but, owing to the raisers beyond the boundaries of the United Kingdom not so fully appreciating the importance of a high standard in selecting from the seed bed as growers at home, the number of really first-class varieties is as yet considerably short of requirements. Hence it is that novelties which possess the attributes essential to a variety of the first-class not only merit the attention of the rose-loving public, but are likely to receive the warmest welcome when their high qualities become known.

The beautiful variety Rowena, which we have the pleasure of illustrating herewith, is one of the most notable roses of its class that have been introduced within a recent period, and should, when distributed in the coming spring, have the instant attention of those who are interested in rambling roses. It belongs to the Wichuraiana section, is really vigorous, and the flowers are profusely produced in large and elegant trusses. The colour is best described as transparent rose-pink, with a slight shading of mauve, and in this respect the variety is quite distinct. Rowena was raised from seed in the nurseries of Messrs William Paul and Son, Waltham Cross, and is a valuable addition to the list of rambler roses.

## CONTROLLING THE ROOT SYSTEM OF FRUIT TREES.

(Concluded from page 27.)

### Apricot Trees.

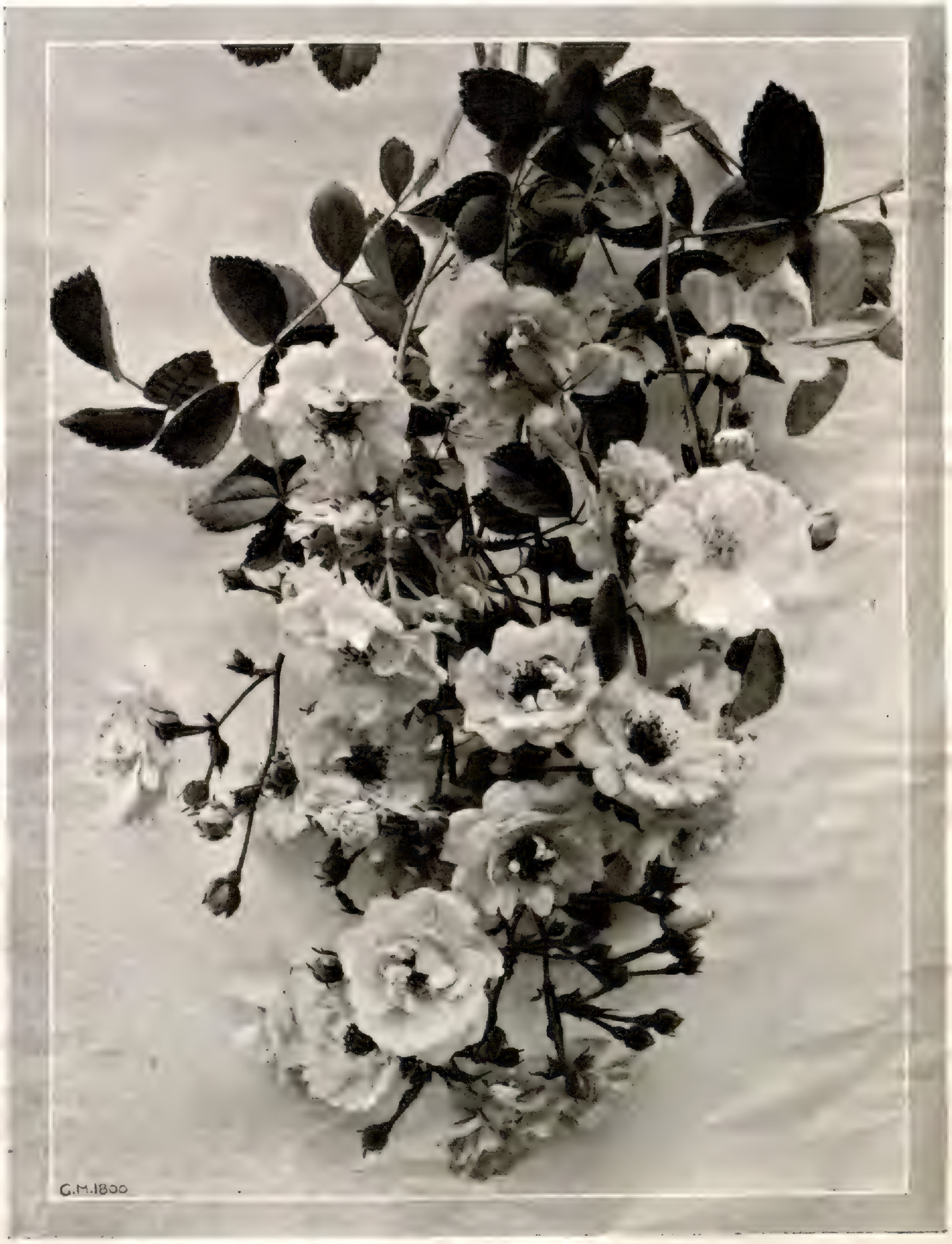
Apples will succeed in nearly all classes of soils, provided that, where necessary, a little special preparation is given, but such cannot, however, be said of apricots. In its native country the apricot is found to flourish on poor sandy soils, which may account for the fact that nowhere in this country do we find the apricot making a luxuriant growth in soil naturally heavy and damp, but only at the higher elevations where drier soil conditions prevail. Also, if such soils have a fair percentage of lime and sand in their composition, so much the better.

The difficulty which many experienced cultivators encounter is that of being unable to procure really strong healthy young trees; too often it is found that, through being cut back, snags have formed, which indicate that constitutional trouble has already commenced. The necessity for this practice of hard cutting back is because the trees have made an abundance of rank growth. Where these difficulties exist, it is wise to purchase maidens, not only of apricots, but of all other stone fruits, and plant them where they are to remain, giving the trees such soil and root area as will conduce to a steady and well-balanced growth of wood.

As to soil requirements, I doubt if there is anything better than good fibrous loam, with which is incorporated a liberal supply of brick and mortar rubble; in fact, the healthiest apricots I have ever seen were growing in material which was excavated to lay bare the foundation of an old castle, that had been buried by débris for quite a century. Further, it may be remarked that, given an ideal soil, it matters little how firm and hard these soils become. Where apricots are found growing under these ideal conditions of soil, elevation, and climate, the roots call for little, if any, special attention, while if, on the other hand, the trees are placed in unsuitable soils, not sufficiently compressed, or where heavy tenaceous soils receive too much ramming, root troubles must be expected. Where young trees exhibit signs of canker, and the limbs commence to die back, the sooner they are lifted and examined the better. Lifting must be performed carefully, all suckers and diseased growths removed, after which the tree should be replanted in a compost as above advised. Soil stagnation is often the cause of unhealthy root action, which is speedily followed by decay.

The greatest difficulty is often experienced with large trees, in which case it is advisable to excavate carefully under the roots, and note if any have their existence in cold, damp, or unwholesome subsoil. If so, sever these roots carefully, afterwards ramming a thick layer of lime rubble into the space between the ball of the tree and the subsoil. It would appear that the cause of barrenness in the majority of cases is traceable to trees having been planted in deep, rich, or cold, damp soils.

Mulching is often attended with excellent results where soils are naturally shallow and light, and equally good effects are to be found where mulching is practised for the purpose of preventing roots from penetrating into an undesirable stratum of soil below, as, for instance, a blue clay, which I have known prove fatal to many specimen trees when once the roots have penetrated into it. In some establishments that I have visited, I have been impressed by the many large trees cankered and diseased, which ought to have been grubbed out long ago. Sentiment, doubtless, is the reason for the existence of many such trees, and if the gardener had his own way, probably the ground would long ago have been planted with young and healthy specimens. When once these aged subjects have gone beyond renovation the sooner they are destroyed the better, but before replanting, very careful attention must be paid to making good and replenishing the necessary soil constituents and destroying injurious germ life which is undoubtedly active for some considerable time.



ROSE ROWENA.

A distinct and beautiful Wichuraiana variety raised by Messrs. William Paul and Son, Waltham Cross, and bearing a profusion of rose-pink flowers.

### Peach Trees.

Of late years fewer peaches are to be seen growing in the open throughout the southern counties of England than was once the case. Nevertheless, many still remain and succeed admirably where good walls with a south aspect can be afforded them. Many object to peaches being classed as hardy fruits, but if those who hold this opinion were to see the perfection to which some trees attain in the open, they would hold less strictly to their classification. To ensure healthy growth the soil conditions must receive special attention, otherwise the roots, however healthy when planted, will go wrong, and I know no soil that will sooner bring disaster to peaches than one that is close and damp, and more especially if overcharged with manurial ingredients of a highly concentrated character.

If the natural soil is a loam it can be perfected by the application of lime on brick rubble, together with a sprinkling of well-decomposed farmyard manure—in preference, that which has come out of a covered yard. Soot and wood ashes are also beneficial in the proportion of half a bushel to a cart load of the mixture. The whole secret of success is to provide a compost that will retain its sweetness over a long period, and restrict the production of gross, watery shoots, thereby giving place to firm and fruitful wood.

Another source of barrenness in peaches is often caused by allowing the roots to grow in loose open soils devoid of sun-heat through being shaded by other crops, planted, maybe, on the borders. Peaches will endure less tampering at the roots than any other fruits, and while it is necessary to lift and examine them occasionally, such operations must be conducted with the greatest possible care; and in replacing the soil, avoid giving rich mixtures containing an excess of farmyard manure. On no account should any nitrogenous fertilisers, such as nitrate of soda, sulphate of ammonia, or the more recently-introduced nitrogenous manures, nitrate of lime, or nitrolim, be added. Bone-meal will contain all the nitrogen necessary, and in addition, will provide the roots with phosphates in the best possible form for their future benefit. If wood ashes cannot be procured, give a few ounces or so of sulphate of potash; say five ounces to every square yard of the compost. I would here repeat that if a too rich nitrogenous soil is provided, it will be necessary to again lift the trees owing to their unfruitful condition, due to the roots having again established themselves in this rich layer of soil.

By systematic stopping of gross shoots the branches can be easily regulated, and so the use of a knife may be dispensed with, except perhaps as regards the cutting back of a few gross shoots after the season's growth has been completed, care being taken not to leave "snaggs," the presence of which indicates mismanagement or lack of good training on the part of the operator. If removed close to the main branch all cut surfaces will heal over.

With large gross-growing trees every attempt must be made to control root action and to encourage the formation of fibres in preference to slashing away at the branches indiscriminately with a knife. Abundance of sunshine is absolutely essential for the ripening of the wood, and it is owing to this lack of sunshine that several years ago peaches as hardy fruits proved such failures throughout the South of England. Last year extreme conditions were experienced and there can be no doubt as to the wood being ripened and sound, if only the foliage was retained in a healthy condition. Spring frosts contribute to the uncertainty of peaches becoming popular as hardy fruits, even in the southern counties. There are, however, still many kitchen gardens which can boast of productive trees that will repay the labour and expense incurred in their cultivation. Excessive cutting of the roots of peaches is a common source of bark disease.

### Cherry Trees.

Although it is advised to plant cherries in deep mellow, or rather sandy, soil, I have seen some of the finest specimens growing in little more than stones and rubble. Some of our best varieties of cherries are very subject to gumming, even where a knife has never touched the tree, but this disease, as most assuredly it is, can be averted to a great extent by retaining the roots close to the surface, thereby inducing a short growth and the establishment of firm natural spurs. In rich, loamy soils, some varieties grow too luxuriantly, with the result that the trees do not go early to rest, and that shortness and firmness of growth so essential to fruit production is not secured.

Morellos as bushes grow very luxuriantly, but unless the roots are induced to make abundance of fibres by keeping well to the surface, and well away from an unhealthy subsoil, they often die off very rapidly. One often comes across old specimen cherry trees which have not received treatment of any kind since the day of planting; trees of this class I have even seen growing in what would appear little more than gravel, and into which, on examination, the roots were found to have penetrated with considerable zeal. The branches, by the way, were thickly and regularly studded with clusters of fruiting spurs. Healthy cherry trees are also commonly met with in limestone districts, or where refuse from limestone quarries is incorporated with an open and well-drained loam. Gumming in cherries, as in plums, often takes place after periods of drought; the bark and sap vessels become so contracted that when rain softens the ground the roots take up a superabundance of nourishment which the half-dried stem cannot adequately deal with, and so gumming results.

### Currants and Gooseberries.

It is rarely that any special attention is paid to the roots of currants and gooseberries, the usual practice being to regulate growth from above rather than from below. Too often, hard cutting back is adopted in nurseries where the one object is to keep trees that are unsold from making too much head growth. In gardens we come across large bushes that would benefit very considerably if the roots were given a little attention, and, if need be, lifted and replanted in new ground.

In cottage gardens and allotments, one is continually coming into contact with old bushes that have been practically starved for want of nourishment and feeding, and where such specimens are diseased and dirty, the best remedy may be to make a bonfire of them, but if constitutional weakness is the only defect, and the surrounding ground is not choked with weeds, much good can be done by drawing away the surface soil, and placing a liberal mulching of manure around the roots, again covering with the soil that was removed. To still further rejuvenate the plants, remove a reasonable number of old branches, particularly those from the centre, so as to admit as much sun and air as possible. By retaining the roots of all trees near to the surface, many forms of disease, particularly canker, are warded off. While the wanton mutilation of roots is to be discouraged, there can be little doubt that the careful management and pruning of roots with the object of producing an abundance of fibres is a step in the proper direction, provided that such fibrous roots are carefully fed. J. C. N.

## A NUT WALK.

The planting of nuts so as to form a nut-walk affords an opportunity of combining fruit-growing with a charming piece of wild gardening. The prime necessity is space, for, if the bushes or trees are planted at such distances that the walk is well grown together in two or three years, its future will be disappointing, both as regards the amount of fruit produced and the opportunities for wild gardening. It should be planned on a liberal scale in this respect, or else left alone.

The question of soil preparation need not be entered into here, except so far as to say that, as it will not be properly dug again for many years, it should be well broken up to start with, and a good dressing of quarter-inch bones applied at the same time, say, at the rate of twenty pounds to forty square yards, and, in addition, for the sake of the plants, farmyard manure and refuse of all sorts. Twelve feet between the bushes in the rows is a fair distance apart, or, with a view to early effect, they may be planted at six feet apart, with the unswerving purpose of taking out alternate trees after a couple of years, or three at the most. The distance between the two rows, which will, of course, include the path, must depend, to some extent, upon the way in which the trees are to be allowed to grow. If they are to meet together at a fair distance above the heads of those walking through, a greater distance is necessary than would be the case if they are going to be limited to a height of six or eight feet, and the walk kept open by cutting in the trees at the sides. A fair average space to allow would be a foot-path of three to four feet, with a similar distance from the edge of the path to the centres of the bushes. This will seem a great deal at first, but if twelve feet are to be allowed between the bushes in the rows, ten to twelve feet is not at all too much between the rows, and, in fact, the border on each side of the path might well be increased by a foot each side, if due regard is paid to the future. All the above distances are based on the assumption that the kind of tree to be planted will be the naturally-grown bush, and not the semi-standard with a clean stem. If there is any choice about the position of the walk it should be laid out from north to south, that direction ensuring the maximum amount of sunshine alike for the nut trees and the borders between.

The system of pruning adopted will depend upon the character one wishes the walk to take. If fruit is the main object, which it will hardly be when the trees are grown in this way, then a good deal of cutting out of old wood will be practised, and the trees kept open, a system which is, of course, fatal to the beauty of the trees. If they are to be allowed to grow naturally within certain limits, then all that will be necessary will be a careful thinning out of the branches that will admit sun and air into the trees without disfiguring them, this method of thinning out giving the opportunity of regulating the height as well as the spread of the branches. In practice, all cutting back of the branches lessens the beauty of the trees, especially when the leaves are off, and as the early spring is the time when a nut-walk is in its fullest beauty, this aspect of the matter should receive careful consideration. In pruning nuts it should always be borne in mind that the female blossom is almost entirely pollinated by the action of the wind carrying the pollen to it, and, in order that there may be as much pollen blown about as possible, the pruning should not take place until the catkins are beginning to dry up, say, the latter part of February, the trees being almost at rest for a month or more after that time.

The use to which the borders along the walk are put may be quite different the first year or two from that to which they will be put later on when they become a good deal shaded. The ground having been well prepared to start with, it may be used, within certain limits, as ordinary flower borders at first, though no general digging should be practised, for, as the space between the bushes and the path is so small, it will be occupied throughout by the roots of the bushes by the end of the first year. After it begins to get shady, and the soil more fully permeated with roots, so that little cultivation can be practised, few summer-flowering plants will do much good, and the borders must be given up almost entirely to spring subjects of all sorts, including, of course, bulbs, all growing in a semi-wild state, the main attention given after it has become well filled with plants, being weeding, the clearing out of masses of seedlings of primroses, foxgloves, violets, and the like, and the occasional taking up of big clumps of bulbs and dividing them. Many bulbs do better among the roots of trees than anywhere, and many kinds of narcissus and tulips may be left for several years undisturbed, tulips especially never looking better than when growing in clumps with ten or a dozen blooms springing from a mass of luxuriant foliage. When it is advisable to take up the bulbs for division, or certain clumps of them, it is better to do this in October, when the disturbance to the roots of the trees will not harm the latter so much as it would when the foliage of the bulbs is dying down in June, though at the former season lifting gives a check to the bulbs, as their roots for the following season are then well developed.

These borders offer a fine position for primroses, especially that beautiful class which have come to be named Munstead, bunch, or polyanthus primroses. Though division is necessary for perpetuating the finest strains, it is better in a place of this kind, where practically no proper preparation of the soil can be made, to rely upon self-sown plants, selecting plants of the finest varieties for propagation for other parts of the garden. All the scilla family will thrive here, and clumps of hyacinths turned out of the pots after flowering will do well in such a position for years, increasing until they become fine naturally-grown clumps, which is the only way in which hyacinths in the open give real satisfaction in the opinion of some. It is as nearly a natural position for many spring bulbs as can be found, for while shady in the summer, when the bulbs are at rest, and fairly dry in the winter relatively to the general condition of the soil, when the bulbs are in flower, they get almost full sunshine owing to the leafless state of the bushes. Foxgloves luxuriate in such a place, but they must be kept under control, so that they do not damage the lower branches of the nut stubs. Plants of the best gloxinia-flowered strains should be planted to start with, and then left to seed themselves, always pulling up, or cutting for the house, any plants which are not good enough to be allowed to seed themselves. Doronicums will be in their element, as well as Jacob's ladder, and the old European pæony, if there is room for it. The delightful old-fashioned hepaticas will often succeed in a shady place kept open by the roots of trees, if not too dry, when they dwindle in other parts of the garden. Among other suitable subjects for a nut-walk, there might be mentioned columbines of the short-spurred type, Lenten and Christmas roses, wood lilies, tradescantias, honesty, wallflowers, evening primroses, Dielytra spectabilis, astrantias, lily of the valley, Solomon's seal, Hypericums calycinum, evening primroses, etc., etc.

Alger Petts.

## ACACIAS IN OPEN BORDERS.

The specimen of Acacia verticillata in full blossom, herewith illustrated, is growing in the gardens of Gnaton Hall, near Plymouth, the residence of Charles Bewis, Esq. The border in which it is planted is sheltered from the north and east winds by a belt of hardy evergreen shrubs, otherwise no other protection is given. The soil is an open, friable loam, and apparently is highly conducive to the healthy and rapid growth. The height of the specimen is fifteen feet, and, as will be seen, is well furnished to the base, and in the spring its growths are thickly hung with tail-like yellow flowers, making a highly attractive object. A few yards distant in the same border is a specimen of A. armata in excellent condition, and growing well. This species is not quite so hardy as the first-mentioned, and consequently a little protection is given during severe weather. A framework (similar to those used by nurserymen for packing) is placed over it, and in frosty weather, mats are placed over the frame at night. The small dark-green foliage acts as an admirable setting to the small balls of blossom with which the shoots are studded late in spring.

Several of these beautiful flowering shrubs adapt themselves to outside cultivation in the genial climate of South Devon and Cornwall, and deserve to be largely planted, where suitable spots can be found for them. Of course, even in these favoured districts, some require protection, when the weather is very severe, and they well repay any extra labour that has to be expended on them. A. longifolia is very handsome, with long, smooth foliage, and pale yellow blossom. A. Riceana is of rather rambling growth and pale yellow flowers. A. cultriformis has pretty glaucous foliage. A. dealbata, commonly called Mimosa, should have the shelter of a warm wall in a favoured spot. Large quantities of flowers of the latter are imported from the South of France for the London markets in the early part of the year.

E. C. Pooley.

A PROFUSELY-FLOWERED SPECIMEN OF ACACIA VERTICILLATA.
About fifteen feet high, growing in the gardens of Gnaton Hall, Plymouth, the residence of Charles Bewis, Esq.

An edition of "SWEET PEAS AND THEIR CULTIVATION," by C. H. Curtis, has just been issued for 1912, and consequently this is the most up-to-date work on the subject. The price, by post, is 1s. 2d. (cloth, 1s. 9d.) from the Publishers, 148-9, Aldersgate Street, London, E.C.

Mo. Bot. Garden

## GOURDS FOR PERGOLAS.

The abnormal summer of 1911, although not suiting many subjects in the garden, certainly favoured the growth of ornamental and other gourds, and all the varieties that I grew fruited splendidly. The colours also were certainly more remarkable than I have ever had them, although I have cultivated these very interesting plants somewhat largely for the past twelve or thirteen years.

In the early part of the season they certainly did not grow quite as fast as I liked to see them, there not being quite sufficient moisture to suit them in the early stages, but once I realised this there was no further need to worry, either about the growth they made, or the manner in which they set their fruit. Many of the smaller growing varieties, such as the orange, gooseberry, yellow pear, white, striped, and bicolor pear, the portmanteau, and bell-shaped gourds carried fruit from four to six inches apart, on growths from ten to twenty feet in length. Such plants as these, covering a pergola some sixty yards in length, with practically every upright supporting a different variety, made a quite pleasing feature in the kitchen garden, and certainly elicited more attention from visitors than many other subjects upon which more time and money had been expended.

The small varieties in themselves make a most pleasing display, but to produce a really telling effect some of the larger-growing varieties, such as the Giant Spanish, Red Etampes, Grey and Green Boulogne, Whale, Giant Turks Cap, Naples, Corfu, Embroidered, Climbing Crook-neck, Olive, and Hubbard gourds, must be employed, especially where the pergolas or arches are of large dimensions. These large gourds not only produce contrasts in the matter of size, but it is in these that one obtains the best colours, none of the small ones being really brilliant; I might add that practically all the large forms mentioned are edible, and where well ripened can be kept and used from right through the winter. The most popular one probably from an economic point of view is the Red Etampes, this being much in demand for various purposes on the continent, the chief use being for soup-making.

The Lagenaria family forms a quite distinct group of gourds, the growth and foliage being quite silky to the touch, whilst those in the Cucurbit group are all more or less prickly, and some of them are apt to cause small eruptions or spots on the arms of those working among them during very hot weather. Another distinctive feature of the lagenaria group is found in the flowers, which are white, and usually borne on a longer stem than that of the curcubit section. This family includes all the different types of bottle gourds, some of these being quite small, whilst others are so large that, if hollowed out, they would hold a couple of gallons of water. Some are of the shape of clubs, bottles, syphons, powder flasks, and snakes, and as the fruits of these remain a beautiful shade of green till quite late in the season, they are also desirable subjects for using on pergolas, in conjunction with the others But it cannot be too distinctly understood that their fruits must not be eaten, being described as bitter and probably poisonous. The species and varieties forming the lagenaria group are natives of tropical countries, and it is doubtful if they would fruit as well every season as they did during the past year, but from the fact that they add variety and interest to a collection a few at least should be tried, as, even if they did not fruit, the foliage and flowers are quite decorative.

The cultivation of gourds is simplicity itself. The young plants are raised as you would raise vegetable marrows, giving a little protection from cold winds at planting-out time. This should be done fairly early, so as to give the plants a good season's growth. The ground naturally should be well prepared for them, trenching it at least three feet deep, previously giving a fair dressing of manure. During hot dry weather plenty of water will be needed to keep them growing freely, and as the roots are apt to keep fairly near the surface, a mulching of suitable material will be of much assistance to them.

Considerable attention is needed in training to keep the growths tied in, and during July and August the growth is so rapid that they must not be left to themselves many days, or they may be seriously damaged by the wind. I have found them grow from eight to twelve inches to a foot each day during this period. As the fruits begin to swell, some support must be given to them, or they will soon break the growths down. Strong yarn is sufficient for the medium-sized fruits, running it over them in the same way that one often sees melons slung; but the larger fruits will need something much stronger. The best material I have used is 1½in. webbing, using it in the same way as the string, and allowing plenty of room for swelling. Even this must be of great strength, as some of the larger varieties will carry fruit ranging from 50lb. to 100lb. If carefully looked after, and care taken to so arrange the varieties that several plants of any one variety are not in close association, they cannot fail to be of interest.

Thomas Stevenson.

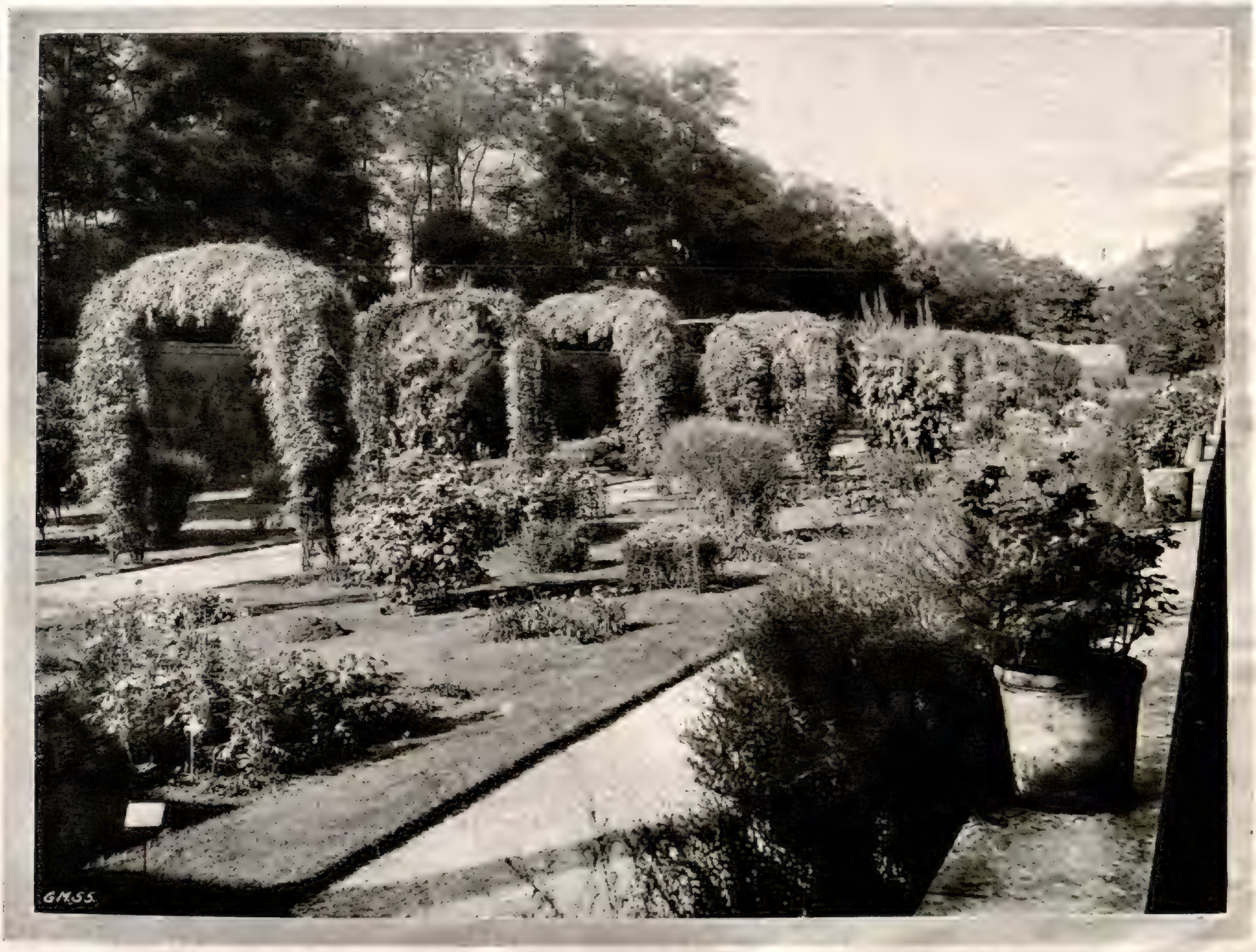
PORTION OF MR. T. STEVENSON'S GOLD MEDAL COLLECTION OF GOURDS.

Exhibited at the meeting held by the Royal Horticultural Society, September 26, 1911, the aggregate weight of the fruits being two tons.

## CLIMBING PLANTS IN THE BAGATELLE GARDENS.

So numerous are the hardy climbers that have been introduced from Western China and other parts of the world within recent years that the question of displaying their distinctive charms to the best advantage has become of considerable importance, especially in gardens where they are rather fully represented. In some gardens many of the kinds can, with advantage, be utilised in clothing the walls of the dwelling-house and other buildings within view of the gardens, for not only is it desirable to cover wall surfaces that are bare, but to use some of the vitis for the purpose of obtaining a greater diversity of foliage than when the ivies alone are planted. Some are specially adapted for training to strong trelliswork to form screens where it is desired to separate one part of the garden form the other, or to shut out some unsightly object. Again, several are well suited for climbing stout poles, and where these are judiciously placed they present a most attractive appearance, and render substantial assistance in removing any flatness that may be evident in the part of the garden in which they have been arranged.

With few exceptions, they may all be successfully employed in covering pergolas and arches which usually now have such prominent positions assigned them in the garden. With reference to the use of hardy climbers in the embellishment of pergolas and arches we do not purpose doing more than direct attention to the facilities which the latter afford for growing a select number of species and varieties separately. By spanning a broad walk of some considerable length with arches, as in the grounds of Bagatelle, Paris, of which an illustration is given herewith, a number of the finest of the vitis, clematis, etc., may be grown separately, and the owner of the garden given an opportunity of enjoying to the full their varied charms. When several members of the same group of climbers are arranged in close association when a pergola is being furnished, they lose much of their individuality; but by constructing a number of arches and allotting one to each of the climbers, they have full opportunity for the display of their distinctive habit and affording much pleasure to those who derive interest from the study of individuality in plant life. The arches may be of iron, and of the same shape as those in the Bagatelle Gardens, or they may be of wood, and with flat tops, if preferred; but in all cases they should be of sufficient width and height to avoid inconvenience to persons passing along the walk, and be of sufficient strength to withstand strong winds when fully clothed.



CREEPER CLAD ARCHES IN THE GARDENS OF BAGATELLE, PARIS.

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**Sarracenias in Flower.**—The curious pitcher-like leaves of the sarracenias are usually regarded as their principal claim to recognition, but the blossoms from their strange shape and showy character must not be altogether passed over. In this respect Sarracenia rubra stands first, as apart from the noble appearance of the deep red blossoms they have also a pleasing violet-like perfume. Though the flowers of S. flava are of a pretty primrose tint, they have a disagreeable cat-like odour. The purplish-coloured flowers of S. Drummondi have but little or no scent. These sarracenias seem now to have almost dropped out of cultivation; at all events they are not as much grown as they were 25 years ago.—W. T.

## HARDY SHRUBS FOR FORCING.

Many kinds of these are well adapted for decorative purposes, especially in a small state, as they make delightful pot plants, and as many of them can be raised from cuttings or seed, plants may be obtained in quantity, provided there is convenience at command for their production. Where this is not possible suitable plants may be purchased from a nursery at a cheap rate. Some species are produced by grafting, and these are best left to those who make a special business of that branch of horticulture.

The light graceful sprays of the various forms of deutzias, spiræas, prunus, cerasus, viburnums, syringas, philadelphus, pyrus, and some others form a list that could not well fail to satisfy the most fastidious, but those who wish for a still greater variety may include the various forms of azaleas, Clethra alnifolia, and hydrangeas. If we take the different kinds separately we shall find that they will not all do treated alike, as some require a peaty soil, others a light rich loam. The kinds that are the most easily excited by a gentle heat are those that naturally flower early when grown in the open ground, such as some of the spiræas and deutzias. Spiræa Thunbergi and S. confusa are most desirable, the last-named species producing its flowers in small clusters like the hawthorn, and is often called the French May. When forced gently it is charming for decorative purposes, its small pale-green foliage forming a neat background to the delicate little trusses of flowers. There are many of the deutzias that are useful for forcing, but the most common is D. gracilis. Prunus are all grafted plants, and those of the sinensis type form neat little bushes when their clusters of snow-white flowers are produced all along the slender growths. There are several species, such as P. Mumé, double white; there is also a pink form of this, which is very pretty; P. sinensis flore alba pleno, and rosea pleno; also the double-flowering sloe. As the flowers of these expand with the aid of a low temperature, it is essential they should be grown in a light airy structure, and not be subjected to an excess of warmth. Some of the pyrus also make grand subjects for forcing, and where large conservatories have to be furnished, these early-flowering shrubs form special features when well grown. Such forms as P. coronaria fl.-pl. and P. floribunda atro-sanguinea, when grown as standards, make delightful subjects for conservatory decoration; their long sprays of highly-coloured sweet-scented flowers remind us of the profuse display of flowers produced late in the spring in the open. Then we have the various forms of Cydonia japonica and C. Maulei, their richly-coloured flowers, which are freely produced, being most attractive.

Who is there that does not admire the cherry blossom early in the spring. The various double-flowered forms of these are most interesting. They all force well, and the double-flowering kinds, whether white or pink, are very attractive. They may be had either as dwarfs or standards, but for them to show to best advantage the plants should be of fair size. They are all grafted and when grown in pots will need liberal treatment. Syringas or lilacs are always much admired, particularly the white varieties. Plants of these may be purchased of almost any size, but those most useful are such as can be grown in moderately-sized pots. It is a great mistake to force these into bloom too rapidly, as, by so doing, the flowers are rendered soft, and therefore do not stand so well, either on the plants or when cut.

The old snowball tree (Viburnum opulus sterile), which is found in such abundance all over the country, needs no description, but there are several others that are not, as a rule, well known to the generality of gardeners. V. plicatum, V. macrocephalum, and V. tomentosum are alike useful for forcing, and those who have not grown them thus can have but little idea of their beauty. The large trusses of pure white flowers, which are borne in such abundance, produce a most attractive display.

All are more or less acquainted with the hardy deciduous azaleas, but there are now so many hybrids from the various sections that it is not easy to say to which section they belong. The long-tubed forms are very pretty, reminding one of the honeysuckle. Then there are the mollis, mollis hybrids, and the Ghent hybrids. These hardy azaleas would of themselves form a glorious feature in the conservatory during the early spring months, and as they are so easily grown and forced, should be had in quantities. A peat soil suits them best, though they will thrive in a loam that is free from lime. Clethra alnifolia is sometimes seen in gardens in a most miserable condition on account of its being planted in the common garden soil, whereas it is a peat-loving subject. When growing in the open it does not bloom until the latter part of the summer, but no shrub that I am acquainted with forces so well, or is an object of greater beauty when in bloom. It produces upright terminal spikes, and has a light graceful habit. The flowers are pure white when forced.

H. C. PRINSEP.

## SNOWDROPS.

> "Soon shall kind spring her flowery gifts bestow
> On sunny banks, where silver snowdrops grow."
> —J. SCOTT.

Snowdrops are better known as garden blossoms than as real wild flowers. Like the primrose, the lily of the valley, and the foxglove, their beauty and grace have lead to their wholesale introduction into the garden. They are nevertheless true wild flowers, as truly wild as any buttercup. It has been contended by some writers that the snowdrop is probably not indigenous, but it has in any case got so thoroughly naturalised amongst us that, whatever may have been the state of affairs five hundred years ago, it is now as much a wild flower in our midst as any of the other plants mentioned in the British flora, and as such is always included without question among them. The snowdrop is a perennial galanthus, its graceful little drooping flowers must be sought for in gardens, orchards, shady pastures, woods, and hedgerows during the months of January, February, and March.

"In our own orchard," writes Edward Hulme, "and nestling deep down in our hedges, we have them springing up by thousands at the opening of each year. The third week in January is generally the time when we may look for them." Gilbert White, the famous Selborne naturalist, gives the dates of flowering 12th to the 24th. I can give you some dates from my own observation, namely: 1906, January 25; 1907, January 20; 1909, January 12; 1910, January 16, only one bulb flowering; 1911, January 18, three or four blooms flowering. How often have we noticed it showing its drooping head immediately after the melting of the snow. Dr. Alfred Smee tells us that one year, and only one he new of, his snowdrops appearing between Christmas and the New Year, and I remember some being brought from Stanway Hall, Essex, at the end of December.

Snowdrops are naturally single, but cultivation has given us a variety with double flowers, but I think my readers will agree with me that the former have the greater charm. It is only necessary to plant the bulbs, and then to leave them, when they will multiply year by year. Quantities of snowdrops should be grown in every garden and in shrubberies, and under trees whenever the space can be found, as they light up the bare ground in the garden among ferns, etc. A larger species of snowdrop known as Galanthus plicatus, was introduced from the Crimea in 1872. The flower is somewhat larger, and the leaves are much broader and coarser. It is less plentiful than the common species, and differs so little from it that it is hardly to be recognised without careful and close examination. Except as a mere curiosity, it is not a very desirable addition to the garden. The old snowdrop is now known to be only one member of a large family, most of which have some merits for garden culture. The snowdrop never looks better than when naturalised amid the tender grass of an old orchard or paddock, the margin of lawns, or beside the pathways of woods. Almost any soil suits them, but rich gravelly-bottomed soils drained are best, though we are met by the rather startling fact that in Leicestershire and Nottinghamshire this flower grows well on the clay soil of hedge banks and old orchards. As cut flowers, snowdrops are most attractive and useful, and a delightful addition to bouquets, etc.. To cut the flowers in bud is, however, essential to ensuring perfect beauty, as they can be carried better and open fresher in water, than if cut when fully expanded.

The present very interesting and growing state of our knowledge of snowdrops may best be gleaned from a paper read by the late Mr. James Allen before the Royal Horticultural Society, of which the following is an extract: "Less than twenty years ago there was practically but one kind of snowdrop grown in England—Galanthus nivalis—in its single and double forms. Galanthus plicatus was introduced soon after the Crimean War, but it was not often seen unless in botanic gardens. Early in the 70's Galanthus Elwesi was introduced, and in 1875 Mr. Barr offered, under the name of Galanthus Imperati, a very fine form, which the late Mr. James Atkins, of Painswick, procured 'from somewhere in the kingdom of Naples. This is much finer than the Galanthus Imperati offered some two or three years later, and now generally grown under that name. I propose that the earlier form be called Galanthus Atkinsi. Then Galanthus latifolius (first offered as Galanthus Redoutei), a snowdrop with the leaves of a scilla, was followed later on by Galanthus caucasicus, and finally by Galanthus Fosteri." We have also discovered that a few forms of Galanthus nivalis, from the mountains of Greece, hurry into flower in September or October, instead of January, and some of their little cousins in Corfu try to do the same, but cannot get their wardrobes ready until a few weeks later. In speaking of snowdrops, we must not forget that, besides the division into species and subspecies, we have the arrangements into classes according to colours, and other peculiarities. Consequently, we hear of white snowdrops and yellow snowdrops, and also green snowdrops. Galanthus Elwesi is a native of the Levant, with large flowers, the three inner segments of which have a much larger and more conspicuous green blotch than the common kind which is a native of Great Britain, and largely cultivated in Lincolnshire for the supply of flowers to the London and other markets, and also for the production of bulbs for sale.

Many of my readers will understand that nivalis is a Latin adjective that signifies relating to or resembling snow. The generic name is Greek in its origin, and signifies milk flower. And now for the description of the flower itself. The leaves are two in number, bluish-green in colour, hence no other green (not even ivy leaves) associate so well with snowdrops when used for decorative purposes, the leaves being long and narrow, and at the time of flowering they are often six inches in length, but after the blossoms have died away, continue to elongate for some time, and may often be found a foot long, and the vigorous upward growth of their younger days exchanged for a somewhat drooping and feeble appearance. The flowering stem that rises from the midst of these little leaves, bears a single flower. The flowers of the snowdrop are somewhat bell-shaped and composed of six segments; of these three are pure white, while the other three that alternate with these, and are placed within them are considerably smaller and are tipped or blotched at their outer extremity with a spot of bright green. The three outer and larger segments spread outwards considerably more than do the others. It does not call for forcing, and it is very disappointing to try it, for the leaves grow long before the flower reveals its beauty. If you want them early for a bowl in the room (the bulbs, I mean, of course), lift a clump just as it shows above ground, and you will have it true to nature. A quaint old book gives this: "The snowdrop is a special favourite of all who are acquainted with the English language, and who have heard of its appearance amid the snows of winter. Still more is it to be prized by those whose eyes are cheered by the first arrival in gardens, groves, and shrubberies when yet partially covered with a white mantle of Nature's own weaving. The snowdrop is the earnest of spring, it is the forerunner of that glorious train of flowers in which follow on in rapid succession the various beauties which Flora itself brings before our enchanted gaze month by month. Who can look upon the snowdrop without feeling a thrill of renewed pleasure and joy? Who can see its drooping pearly head without his own heart rising in grateful joy at its assurance of returning spring? Hence we have a sympathy with the snowdrop apart from all other flowers which claim our love and care later on in the year."

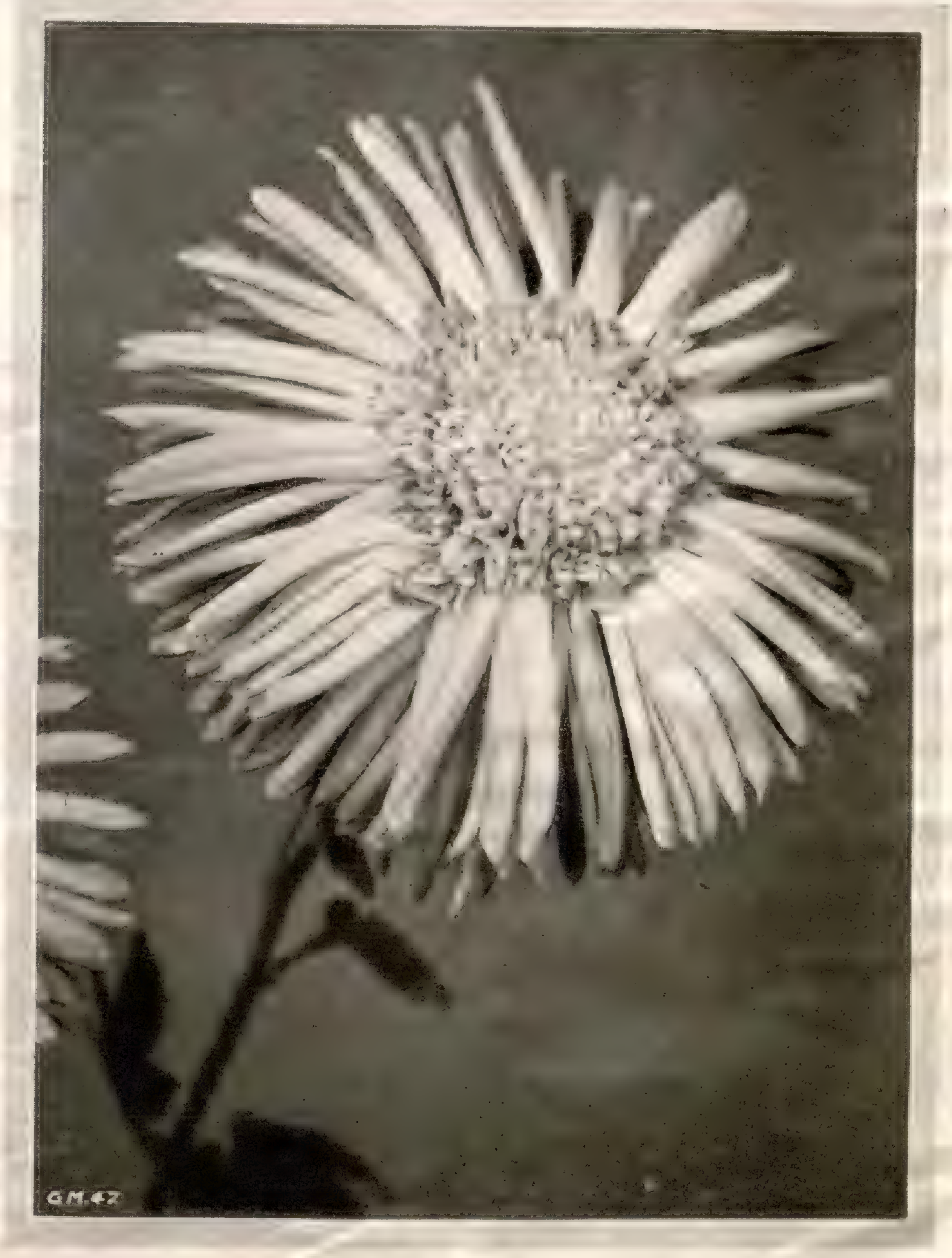
And now for its other names, for Galanthus nivalis, the common snowdrop, has been called the early bulbous violet, and Fair Maids of February (natural order, Amaryllidacæ), one of the most charming members of the British Flora, a native of our fields, woods, and orchards, so beautiful to be beyond description, and fortunately so common as to need none. It belongs to a noble order of bulbous plants, the genera of which are numerous, as are the species, too, in perhaps an increased proportion, comparatively few are hardy in our climate, and very few indeed are natives of this country, so that in this respect the snowdrop, if not a rare flower, is a rare representative in our Flora of the order Amaryllidacæ. It may be useful to give a few of the better known genera to which galanthus is so nearly related, amaryllis, crinum, vallota, pancratium, alströmeria, and narcissus. The last-named is more nearly allied than any of the other genera mentioned. Not only does the narcissus resemble the snowdrop in style, early period of bloom, and habit of becoming double, but also in the general hardiness of its species, a feature not usual to their order. The literal meaning of the generic name is "milk flower." The title, with a pleasing reference, was given by Linnæus. The specific name, meaning white, may for two reasons seem unnecessary; first, because milk is white (or should be), and because no other than white-flowered species are known. All the three common names are happy ones; snowdrop and Fair Maids of February are appropriate both to the season, and a pretty flower, bulbous violet, pleasantly alludes to its sweetness, and they have a very delicate and exquisite perfume which ever tells of coming spring—all are poetical as if this lovely flower had the same effect on different kinds of verse (including Linnæus) who first gave them. A dropped name for the snowdrop was that of "Gillo-flower." Theophrastus, the father of natural history, gave it the name of violet (Viola alba or Viola bulbosa), that would be about two thousand one hundred years ago.

The bulbs should be planted by thousands where it can be managed, and as I said before anywhere and in almost any kind of soil, the demand for their blossoms is growing, and increasing, and snowdorps are, as we all know, ever welcome, and in place in the grass, border, or window sill, or as decorations for the table, they are pure, and attractive without showiness, and may be used as emblems, both of joy and sorrow. This is the flower, and the only flower, I think, that "trembles to the kisses of the bee."

H. C. Philbrick.

## CHRYSANTHEMUM MRS. BULLIVANT.

We were much interested in the handsome single-flowered chrysanthemum that Mr. Cresswell, of the Holmwood Gardens, Eden Park, Beckenham, contributed to the second of the two meetings held by the Royal Horticultural Society in December last. The distinctive merits of the variety fully justify it receiving a full share of attention, but it was of special interest to us as representing a type of flower that we believe has a promising future. All the single varieties that have blooms of good form are more or less attractive, but in many cases the beauty of the blooms is discounted by a somewhat prominent disk of a green-yellow hue. In this case the ordinary yellow disk has disappeared, and is replaced by a central cluster of florets that, like those forming the outer fringe, are of a bright lilac-rose hue, and, in combination with them, produce a pleasing effect. To those who appreciate the elegance of the single chrysanthemums, but have an objection to the yellow disks, this variety, which is known as Mrs. Bullivant, will be especially welcome, and in their interest, and indeed of chrysanthemum-lovers generally, we hope to have the opportunity of recording the introduction of other varieties of a similar character.



CHRYSANTHEMUM MRS. BULLIVANT.
A distinct single variety, raised by Mr. Cresswell, with anemone centre, and of a pleasing lilac-rose hue.

CHRYSANTHEMUMS.—For full instructions on the Culture of Early-flowering Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of Chrysanthemums for Garden and Greenhouse, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## THOUGHTS FOR THE NEW YEAR.

With the opening of the New Year the work of the garden enters upon a phase of activity, which will increase as rapidly as the days lengthen. Mental as well as manual activity is the requirement of the moment. Much has to be arranged for the coming spring and summer, and any delay or hesitation now will be felt tenfold later on. There is no time for procrastination in garden work, and happy is he who is alert to the requirements of the times.

At the moment of writing the mildness of the season lulls one into a feeling of security. One can hardly realise in these mild days that we are in January; it rather seems like early autumn, so un-wintry are the conditions. The rock garden reveals the rapidity of movement and the need for pushing work forward. A mass of Lithospermum prostratum is in full flower, giving its exquisite touch of blue at a very early date. Potentilla alba is also fully out, the tiny cups of white being very acceptable. Geums, especially montanum and giganteum, are lifting their golden flowers above the green leafage, and Aubrietia Dr. Mules is beginning to cover itself with beauty.

Rock garden subjects are all very much on the move, and point to a fine spring display. This coming spring will undoubtedly see a further extension of the cultivation of rock plants. Such a widespread interest is now taken in these gems of the mountain and the wild, that we are in danger of being overwhelmed by an over-sufficiency of varieties. Like the sweet peas and other florist's flowers, amateurs and professionals are taking up with avidity the cult of special rock plants, and I am afraid we shall soon want a "Saxifrage Committee," a "Primula Committee," and a host of other committees to look after the interests of these plants at the meetings of the R.H.S.

New varieties are very welcome when they are improvements, but they are bewildering and time-wasting if they do not surpass standard varieties. What we want is more definite selection instead of indiscriminate seedling raising. Might I suggest that raisers should work with a definite object in view. Saxifrages that will keep their colour in the sunlight. Aubrietias with the perpetual habit of Dr. Mules; primulas of greater hardiness and in some cases of improved colouring; violas that will for ever banish Papilio and it confrères from the rock garden, are just a few ideas of many which might be brought into play.

The meetings of the R.H.S. will probably reveal many new things in rock plants, as well as among other plant groups. We shall await these with great interest. There are new saxifrages we want to compare, new aubrietias which we hear more of than see, which must have a testing with the standard varieties.

It would be a good thing if the new Hardy Plant Society could occasionally convene meetings in suitable centres, so that the growers and raisers of special subjects could bring their varieties and novelties together, and finally settle the merits of the differing forms to the complete satisfaction of the floral world. A day devoted to mossy saxifrages would be of material service to all who cherish rock garden subjects, a day to dianthus, a day for heucheras, a day to pentstemons, and so on, covering in turn a vast range of subjects, would assuredly settle in a large degree the comparative values of the many varieties. It would materially assist intending purchasers, both in private and trade capacities, to a knowledge of the better forms in each plant group, without necessitating a previous trial, which is enforced upon many cultivators at the present time. The propagation of stock for spring and early summer planting must commence forthwith.

Schemes must be thought out for the summer, to ensure pleasing effects. The points of different varieties must be considered in order to obtain the best out of them when planted. Care should be taken to ensure diversity from previous season's arrangements. The eye tires of sameness. What is wanted is originality in our designs and plantings, and in this it is necessary to arrange for this as early as possible, in order to have the material forward for the planting season.

Mistakes of past seasons should be considered, to avoid a repetition of them. No garden is perfect, and a wide margin is usually to be found to exist between the "actual" and the "ideal." To aim high is as necessary in the garden as in other walks of life. To use an Americanism, one should "hitch their waggon to a star," for the upward striving after the ideal brings improvement, if not perfection, and he who fails is one who courts failure by sitting still while his fellows are making the running.

Thus we welcome the New Year, with its abundance of work and its hearty promise, thankful that the opportunity is given us to march in the ranks of progress.

P. S. HAYWARD.

**PROFITABLE FRUIT GROWING** for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, writen for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## ROSES IN UNHEATED HOUSES.

Few climbers are more suited for unheated houses than a good selection of roses, growing so well in a sheltered wall it is evident they would much appreciate the little further help of an unheated structure, where we can keep any excessively cold or uncongenial winds at bay. But we find the chief fault lies in giving too much protection in the majority of cases; and more ventilation, so as to keep the plants as backward as possible during the chilly days of January and February should be given. Any semblance of hurrying the growth will assuredly mean checks later on. It is not to force roses that these houses are most useful, but rather as a most efficient protection from the cold days and nights early in the spring, which so frequently spoil the first crops in sheltered places.

We can battle against insect foes and mildew much better, being able to fumigate when necessary. Perhaps the most difficult point to contend against is the damp atmosphere so often experienced where one has no means of drying by artificial heat. A little thought and care will avoid this. Ample ventilation upon all suitable occasions, also to keep the borders and soil on the dry, rather than moist side, and never syringing or using water in any form, except early upon clear days.

Later on as the days become warmer more moisture may be given, but to have deckles of water hanging from young foliage is, perhaps, the most frequent cause of its dropping. That it conduces to decayed tips and flower buds cannot well be denied, although such conditions are very grateful to the growth in the summer months; acting in the same refreshing way as dews at that season.

Other occupants of the house should be confined to those thriving under similar conditions, for it would not be wise to attempt any that could not stand a few degrees of frost, should extra severe weather set in. We should not forget that if we encourage early growth we have no means of effectually contending against the severe frosts often met with at the end of February and early in March. Once the days get warmer growth will come on with surprising freedom, because of the shelter from chilly winds and morning frosts, and it is this protection which makes the house so valuable.

Too often young growth is allowed to touch the glass because the older wood was not secured sufficiently far away. Twelve to eighteen inches is not too much, and we can scarcely expect the young growth to be safe when in contact with glass that is frozen over.

Most of the pruning is done late in January, except in the case of the strongest climbers, which should have most of the wood cut away soon after they have flowered. This will induce some longer rods than would otherwise be the case, and it is such wood that proves most valuable upon the climbers. A few, notably William Allen Richardson and Climbing Niphetos, may be spurred back instead of cutting away so freely. These varieties have a tendency to bloom over an extended period, but I would not allow them to become crowded.

Before new growth commences, it is well to thoroughly cleanse the old wood, more especially because we can now use much stronger measures than would be safe later on. Syringing with very strong insecticides does not find favour here, it often being injurious to the roots from running down the stem of the plant.

Ventilation is rather difficult, because we so frequently have a bright sun, which, so far as the outdoor roses are concerned, is tempered by quite a keen wind, and so does not hurry the growth on so rapidly. But under glass the temperature is speedily raised, and we cannot give enough ventilation to counteract this unless able to put it upon the sheltered side, so that it is essential to have these in as many aspects as possible. All endeavours should be made to avoid any extremes of temperature, as there can be little doubt such are the chief causes of mildew. A moister atmosphere can be given as the plants make progress and the season allows of drying this off more frequently. Roses do not need much shade, but, as the sun gains power, the strongest of its glare may be broken. A weak wash of whiting and milk keeps on well, and is not so dark as many other washes. The slightest break of glare and burning is all that is needed.

Plenty of weak liquid manure may be used when growth is active, but do not use it strong for the sake of applying a less number of times. Strong manures, more particularly when the soil is on the dry side, check the points of growing roots, and do much harm. As the wood gets a fair length all the light and air possible is needed, also a little less water. This will encourage an earlier and more efficient ripening, which is essential to future blooms.

ROSARIAN.

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## HIDDEN TREASURES IN FLOWERS.

There are more unappreciated things of value laying around us than things that are treasured and held in high repute. It was only recently that a great orator told us of his sorrow that so many books should lay upon the shelves of our libraries unread. But to the horticulturist the saddest thought of all must be that millions of plants of great rarity, beauty, and value grow in far-off nooks unknown, whilst others grow in greenhouses unappreciated by some, and perchance despised by others. Nothing in the world was given to the few, but everything was made for the many. The diamond which flashes in the tiara of the duchess can be admired and enjoyed by the gods in the gallery, and its brilliancy is seen by them more than by the wearer, but the choice seedling carnation which flowers in the greenhouse of a selfish person is hidden from the outer world and lives, and perhaps dies, without its full worth being known.

It seems to me that all who have uncommon plants, or seedlings, which appear better than present existing kinds, should communicate with the Editor of the GARDENERS' MAGAZINE, or some specialist in that particular kind of plant, so that it may be appraised, and then disseminated, if of true merit. Personally, it is one of the joys of my life to receive specimen flowers of other people's carnation seedlings, partly, I suppose, because I delight in criticising the work of others, and partly because I love to see good carnations. Few raisers are capable of judging the worth of their own seedlings, and they should invite criticism.

In the case of perpetual flowering carnation seedlings, the present is perhaps the best season to deliver judgment upon them, because a variety which is not good now will never be of very great value. But it must also be remembered that a perpetual carnation seedling is not properly fixed until it is four years old, and good cultivation during that time can have a great influence upon it, while bad cultivation would naturally have the opposite effect.

Nothing that I know of is so interesting as the raising of cross-bred seedlings for new varieties. It may be a petty form of gambling, but then we Britishers all love the sporting chance.

MONTAGUE C. ALLWOOD.

## APPLE NEWTON WONDER.

Introduced to cultivation by Messrs. J. R. Pearson and Sons a quarter of a century ago, this valuable late apple was for a time slow in obtaining full recognition from cultivators of hardy fruits, and was in consequence not planted so largely as should have been the case. When, however, fruit-growers became acquainted with its great merits it at once leapt into favour and has enjoyed an ever-increasing popularity until the present time. As so well known, it belongs to the culinary section, and whatever the season of its availability for use, it would merit high praise; but, seeing that its season extends from November to May, it is somewhat difficult to place too high an estimate upon its value for general cultivation. The accompanying illustration of a well-grown specimen will be sufficient to indicate that the fruit is of large size and shapely, and when it is stated that the skin is yellow and crimson, the latter colour extending over the greater part of the fruit when fully exposed to the light and air, it will be readily understood that it is one of the most handsome of culinary apples. The flesh is firm, greenish white, and subacid, and when late in the season the fruits are ripe, they are sufficiently pleasant in flavour to be eaten. The growth is vigorous with handsome foliage, and the variety is equally suitable for orchard trees on the crab and bushes on the paradise stock, and on the last-named stock it makes excellent espaliers. Grown in either of the three forms, the trees bear excellent crops, and with reference to the productiveness of the variety it is important to mention that it is one of the most sure croppers in the northern counties of England, and is being largely planted both in private gardens and market plantations. An apple possessing so many good qualities should have a place in every garden.

APPLE NEWTON WONDER.
A well-grown typical fruit of this valuable late culinary variety.

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## DECIDUOUS HEDGES.

For extensive lines of hedgerow, such as park and estate boundaries in general, as well as for the division of large tracts of land into large or small areas best suited to the purposes of agriculture, deciduous trees and shrubs have always been much in favour. This is accounted for by their free growth, greater strength of stem and branch, which enables them the better to resist the efforts of deer and cattle to break through, as well as to their freedom from any poisonous substance injurious to animals. It may seem paradoxical, but the statement is none the less true, that a higher, stronger, and altogether better fence is at the present day required to effectually fulfil its purpose, than was the case a few years ago. This is due, in a large extent, to the unrest (not in the labour world) among quadrupeds. Formerly cattle were bred, and spent their existence, in one particular district, and possessed, or acquired, a quieter disposition than is the case at present, when, to replenish and maintain the vastly-increased herds, the animals, when young, are introduced from far-distant places, and for a long time afterwards do not settle down with any degree of contentment; hence it is that fences as nearly perfect as possible must be maintained to adequately meet the exigencies of the case.

This subject of hedges, their upkeep and improvement, was discussed by the members of the North Northumberland Hunt at their annual meeting in the early days of the present month—November—and the decision arrived at was that of the appointment of an expert hedger for the district, to whom both owners and occupiers could apply, and obtain advice and instruction upon the best courses to pursue in respect to existing fences, as well as in the preparation of the soil and planting of new ones.

### The Beech.

In the immediate neighbourhood of the mansion, for avenues, for surrounding orchards or other small enclosures, where a pleasing tone of colouring and shelter from piercing winds are required, the beech is, in many respects, unsurpassed among deciduous shrubs. As a hedge plant, subject to annual clipping, the young shoots following upon this retain the dead foliage throughout the greater part of the winter, thus presenting a warm and cheerful appearance when most other hedges are bare. Though less particular as to soil than the thorn, it well repays the labour and expense involved in preparing the site. Frequent transplanting in the nursery, and ample room provided each time, is the principal item in the management of the plants to fit them for their future use.

### Hornbeam.

This very closely resembles the foregoing, but has rather more diversified foliage, which also remains upon the branches long after the summer lustre has departed therefrom. This plant is considered more hardy, and better able to withstand storms and greater vicissitudes of temperature than the beech, but in practice I have never discovered any material difference in this respect, though it will thrive satisfactorily in poor, thin soils, which makes its valuable for exposed uplands, where the fitful gleams of winter sunshine, resting upon the russet foliage, vastly improves the landscape scenery.

Plants of the two last-named subjects naturally assume a bushy habit of growth, consequently frequent transplantation and sufficient room to encourage this should be given in the nursery lines to fit them for a permanent position. A single line of plants, so arranged that one about meets the other, which may be from twelve to eighteen inches apart at the roots, will, in well-prepared soil, speedily form a handsome hedge.

### Mixed Hedges.

Thorn and beech, two plants of the former to one of the latter, make a good mixture, or, if so desired, the holly may be introduced at intervals, and the appearance of such, in the winter season especially, when all around is bare, is very pleasing.

### Myrobalan Plum.

Hedges are sometimes required of subjects than can be allowed to grow with little or no attention to keeping them within limits by close trimming. For the purpose this plant is one of the best, as, allowed to grow naturally, a fine display of blossoms are produced in April, which, apart from their beauty as growing, are very useful for cut flower decoration. To achieve this, however, the shoots must not be close cropped annually, though the plant is as much amenable to this treatment as the whitethorn, and bears severance near to the root when it becomes much overgrown, equally well.

James Day.

Galloway House, Garlieston.

(To be continued.)

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

WATERING ORCHIDS.—In the cultivation of all plants under artificial conditions, the application of water to their roots and foliage is one of the chief agents that leads either to success or failure. Successful plant culture depends in a large measure upon the administration to each individual the proper quantity of water at the proper time, accordingly to its requirements, whether it is in full growth or at rest. In the first place, we must study the plants both at rest and in full growth. Orchids are so many and so varied that in one short article one cannot deal with them all at the same time, but I hope to deal with the different families from time to time; so that watering may be readily understood. Owing to the wet, sunless weather we have experienced now for some time, the atmosphere outside has been heavily charged with moisture, which has prevented the evaporation in our houses being what it would have been had the weather been clear and bright. Consequently, the plants have not required so much water as they otherwise would have done. The greatest mistake possible, in my opinion, is giving water at the roots with a view to forcing the pseudo-bulbs to become plump and hard. Such treatment is likely to end in the loss of the roots. The best thing to do at this season is to keep the plants on the dry side, making sure they require water, before it is applied to them. The atmosphere also at this season should be kept drier than it is during the growing season.

VANDAS of the V. tricolor and V. suavis sections, occupying the cooler end of the cattleya house and rooting freely, should be given sufficient water to induce the sphagnum moss to grow luxuriantly. The terete leaved vandas, such as V. teres, V. Hookeriana, and others, in fact, any terete leaved orchids at this season should only have sufficient water to prevent shrivelling. Shrivelling in any orchid, at any time of the year, is detrimental to its well-being.

COMPOSTS.—A good supply of the different fibres, such as peat, polypodium, and osmunda, which are used for the preparation of the different composts should now be obtained, so that it may be in proper condition for use, and readily available when the potting season commences. During open weather a good supply of sphagnum moss should also be obtained.

REPOTTING.—The practice is not a good one that is often adopted of overhauling a house, whether it be of cattleyas, odontoglossums, or other kinds, and repotting everything therein that may appear to require it, quite regardless of whether they are in a proper stage of growth to be repotted. For instance, one plant may have just commenced growth, another may have half completed it, whilst a third may be at rest. The best course is to repot each plant at the proper season only. The plants will not only be the better for it, but the work distributed over a longer period, and undue pressure at any particular time prevented. Should, however, any plant be in an unsatisfactory condition, do not hesitate to give it new compost, even in the depth of winter. It will be much better than allowing it to dwindle in sour materials.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

PROPAGATING.—Although one can generally find a place in the ordinary stove for a temporary propagating case, yet a properly constructed pit or house for propagation is most desirable in the garden. In some gardens where much propagation has to be done it is carried out early in the year on a hot-bed formed in one of the houses set apart for early cucumbers or melons, and if hand-lights, or a frame is placed thereon, this answers well for the raising of seeds and cuttings. Whatever means are adopted, now is the time for preparation, so that the propagation of the various plants may proceed as opportunities offer. Insert good batches of cuttings of the various plants used for edgings to the stages, as Panicum variegatum, fittonias, and lycopodium. These root readily if dibbled several in a small 60 filled with rich sandy soil. When rooted they should be placed on a shelf near the glass, and have the points pinched out to promote the production of side growths. When well established they may be placed in position.

RAISING SEEDLINGS. — Some stove plants are annually raised from seed, and many of the seeds are a long time in germinating. Therefore sow early in the year to ensure a long season of growth. The plants usually raised from seed which require to be sown early are asparagus, Myssiphyllum, Clerodendron fallax, Asclepias carassavica, Exacum macranthum, and gloxinias. Pans or pots may be used according to the quantity of seed to be sown. They should be quite clean and efficiently drained, covering the crocks with a layer of clean moss, then nearly fill with light sandy soil. Equal parts of good loam and leaf-soil, with half a part of peat and of sharp sand form an excellent mixture. Water through a fine rose, with tepid water and sow the seeds thinly and evenly an hour or so afterwards. Cover lightly with sandy soil passed through a fine mesh. For some of the very small seeds but a dusting of sand will suffice. Place a sheet of glass over the pot or pan, and plunge to one half the depth in the propagating bed. Sprinkle the surface with water occasionally to assist germination, then remove the glass and keep near the light, but avoid draughts.

PLANTS IN ROOMS.—As many of the plants used at this time of the year for the adornment of indoor apartments are taken from warm houses it is most desirable that they are not exposed to draughts. A careful man who is fond of his work should be in charge of the house decorating, and it should be impressed upon him the necessity of close watchfulness to watering and frequent changing of the various plants used. A covered barrow should invariably be requisitioned at this time, and the plants moved in and out with dispatch.

CLIMBERS. — Allamandas, dipladenias, stephanotis, Clerodendron Balfouri, and other climbers should now be pruned and cleansed, it being important to do this when at rest. It is a mistake to spare the knife with these subjects, though I am aware that pruning may be carried to excess. Cut back each growth to well-matured wood; then if the other conditions be favourable a wealth of blossom will result. In gardens where these are grown for exhibition as specimens they should be treated in like manner as those permanently planted for the rafters and pillars, except they should be so tied to the wires placed near the roof-glass that they may be easily taken down when well advanced, and trained to the balloon-shaped trellis.

WATERING.—Great care is necessary in watering at this dull season; rather err on the side of dryness for the majority of the subjects.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY VINES.—The shoots will be sufficiently advanced in growth to handle, and will need to be carefully disbudded. Commence by rubbing off the weakest growths, and finally in a few days reduce them to the required number, leaving the strongest and best placed shoots that show the best bunches. Examine the borders, and if at all dry, give sufficient tepid water to soak the whole thoroughly, increase the night temperature to 60 deg., with a day temperature of from 65 deg. to 70 deg., allowing a rise of 10 deg. with sun heat. Maintain a moist atmosphere in the house, and give air on all favourable occasions, close the house early, and during bright weather lightly syringe the rods and foliage with water of the same temperature as that of the atmosphere in the house. Where it is possible to obtain liquid manure from the farmyard, the paths and walls should be damped down late in the afternoon with a weak solution of this liquid.

LATE VINES.—The work of pruning, cleaning the rods, and washing the houses should be finished without delay, allow the ventilators of the house to stand wide open during open weather to give the vines a complete rest. Care must be exercised not to allow the water in the pipe to become frozen; this can usually be obviated by reducing the ventilators or closing them altogether during severe weather.

PEACHES AND NECTARINES. Permanent trees that were started some weeks ago will be in flower; therefore increase the temperature to between 50 deg. to 55 deg. at night, allowing a day temperature of from 60 to 65 deg. During the flowering period the air should be kept rather dry, and the flowers be pollinated every day with the aid of a camel-hair brush or a rabbit's tail to ensure a good set of fruit. Admit plenty of air when possible, but at the same time avoid cold draughts. If the borders require water, this should be applied early in the day to allow a fairly dry atmosphere to be maintained at night during the flowering period. Disbud sparingly as the young shoots develop, removing only the strongest from the upper and lower part of the branches. Keep a sharp look out for green-fly, and fumigate on its first appearance.

POT FIGS.—Pay particular attention to figs grown in pots. The soil must not be allowed to become dry, or the fruit will turn yellow and drop off. On the other hand, the pots must be thoroughly well drained, or the trees will suffer in precisely the same way from stagnant moisture. A temperature of 50 deg. at night and 60 deg. by day with sun heat is sufficient to commence with, gradually increasing the night temperature to 60 deg. and 65 deg. in the day. Lightly syringe the plants in genial weather, admitting air on all favourable occasions to maintain a sweet growing atmosphere.

STRAWBERRIES.—If the fruits are set, thin them immediately to the required number, and give those remaining some support, attend carefully to the watering, and supply occasionally with liquid manure water, to accelerate the swelling of the fruit. Continue to syringe the plants on fine days until the fruit commences to colour, when springing must be discontinued. Maintain a night temperature of 55 deg, with a day temperature of 60 deg. Introduce batches of plants into a cool house to maintain a succession.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

HERBACEOUS BORDERS.—Where these have to be rearranged, push on with the work during mild weather, in order to complete it as soon as possible, and in replanting always retain the more vigorous outside portions of the roots. In dealing with a border of large dimensions it is desirable to place each variety in bold masses, as a finer effect is obtained in this way, but in the case of a smaller border it is preferable to arrange the plants in small groups. The arrangement of the herbaceous border is a matter that requires close attention; and an intimate knowledge of the various plants is necessary to enable the cultivator to group them with due regard to their height and colour. The more bold kinds, like delphiniums, phloxes, pæonies, the campanulas, helianthuses, artemisias, and rudbeckias, will form the outstanding features of the border, while such kinds as aquilegias, potentillas, trollius, gaillardias, pyrethrums, veronicas, are suitable for the intermediate spaces. Herbaceous borders may be carefully forked over now, and, where well-rotted manure is available, a dressing of this can be worked in with advantage.

THE WILD GARDEN.—This portion of the pleasure grounds, when judiciously planted and well cared for, forms a pleasing feature. At the same time such a garden need not be a wilderness, but rather an arrangement on natural lines of some of the more ornamental hardy plants and shrubs not largely employed in other parts of the grounds. A wild garden is capable of being made extremely beautiful, for the number of plants and bulbs suitable for its embellishment is sufficient to make it more or less attractive at all seasons of the year. An undulating area is the best for such a garden, and if it contains a few specimen trees a foundation exists for a picturesque and beautiful feature. Should there be water within or near the wild garden that will admit of an irregular stream being made to wind through it, the general effect will be greatly enhanced. Moreover, if the stream can be widened here and there to form pools, it would provide suitable positions for a considerable number of aquatic and bog plants. Among suitable subjects for a wild garden are Japanese maples, roses in variety, rhododendrons, ericas, rubus, cystisus, vitis, hardy bamboos, yuccas, and other ornamental, deciduous, and evergreen shrubs; plants like gunneras, Japanese irises, spiræas, foxgloves, senecios, campanulas, funkias, prim. roses, apennine anemones, narcissi snowdrops, and numerous others are desirable.

BEDDING PLANTS.—Cuttings taken of tender bedding plants last autumn can now be potted off and put separately into 3in. pots, and it is well to attend to this before the roots become much entangled. Heliotropes, fuchsias, swainsonias, streptosolens and pelargoniums should be treated in this way. Soft-wooded plants, as, for example, mesembryanthemums iresines, alternantheras, verbenas, and ageratum can now be propagated by means of cuttings taken from plants potted up for the purpose. They may be inserted in well-drained pots or boxes filled with a light sandy compost, and rooted in a warm temperature.—J. GARDNER, Batsford Park Gardens.

## MAGNOLIA GLAUCA.

The sunny summer of 1911 was most favourable to this species, for it bloomed more freely than usual, and the flowers were produced over a considerable period. Even when we had reached the middle of October, flowers were to be found, while many unopened buds failed to develop. As a rule, flowering takes place during the earlier summer months, the white or cream-coloured flowers terminating the short shoots. They are two to three inches across when fully expanded, and very fragrant. The flowers are succeeded, when conditions are favourable, by reddish-brown fruits, from which scarlet-coated seeds are ejected in autumn. For a short period after ejection the seeds are suspended from the fruits by means of slender threads, which gives the whole head a somewhat quaint appearance. The leaves on different plants may be evergreen or deciduous. They are oval, from three to five inches long, green above and glaucous beneath.

M. glauca is a native of the United States, where it forms a bush from six to fifteen feet or so in height. Owing to the laurel-like leaves it is sometimes called the laurel magnolia, while its preference for damp or swampy ground has gained for it the name of swamp bay. Though in its natural habitat it is often met with in wet ground, it thrives under cultivation in ordinary garden soil, with a preference for that which contains a little peat, and is never liable to become very dry.

W. D.

For pretty gardens and lovely flowers read THE FLOWER GARDEN, by T. W. Sanders, F.L.S. An up-to-date work on the formation, planting, and management of the garden, with description and cultivation of flowers and plants adapted for outdoor culture. Price 7s. 6d. net, by post, in box, 8s., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## THE VALUE OF BIRDS TO MAN.

At a recent meeting of the British Empire Naturalists' Association, Mr. James Buckland read an exhaustive and interesting paper on "The Value of Birds to Man," and, in view of the importance of the subject, we purpose publishing the sections of special interest to horticulturists.

### The Use of the Birds in Nature.

Man has become the dominant power on the earth. He has delegated to himself the right to adopt a utilitarian standard by which he measures the usefulness or destructiveness of all other forms of life. All animals which injure his person or his property he classes as injurious. All animals that contribute to the increase in value of his property, or to his comfort, he considers beneficial. Beauty he disregards, devastating the wild places of the earth in mere wontonness of strength. But let that pass for the present. To take him from his own standpoint, is he not sometimes in error? In his grasp for the useful, has he not overlooked the beneficent power of the bird?

To answer this question we must first determine what particular functions it is in the economy of Nature that birds alone are fitted to perform.

Vegetation is the prime requisite for the perpetuity of all other forms of life upon the earth. It is the only form in organic nature that does not war upon other forms. The greatest known enemy to vegetation is insect life, while bird life, by virtue of its predominating insect diet, wields a most important balance of power against the ravages of this the chief pest of vegetation.

This is the principal mission of the bird in preserving the balance of Nature's forces; and when we remember that birds are distinguished from all other animals by organs of perfect flight, when we remember that the sense of sight in birds is developd to a degree unparalleled in the animal world, when we remember the surpassing breathing power possessed by birds, their wonderful muscular strength and activity, the high temperature and rapid circulation of their blood, and, as necessary fuel for all these fires, their extraordinary capacity for assimilating food, we must admit that these marvellous creatures are admirably fitted to pursue and capture their natural prey, or, by making earth-wide sweeps from zone to zone, to follow the seasonable ebb and flow of the tide of insect life. We must also admit that no other class of animals could fill their peculiar place.

### Number and Reproductiveness of Insects.

That it may be seen how essential the bird is as a part of Nature's great plan, I propose making brief mention of the enormous number of insect species, of their stupendous powers of reproduction, and of their insatiable voracity.

The number of insect species is greater by far than that of the species of all other living creatures combined. Over 300,000 have been described, and it is considered not improbable that twice that number remain to be described. Practically all living animals, as well as most plants, furnish food for these incomputable hordes. More than this, Kirkby, in the "Introduction to Entomology," devotes no less than five entire epistles to the injuries we sustain from insects, whilst two only are sufficient to describe the benefits they yield.

The fecundity of certain insect forms is astounding, the numbers bred reaching such prodigious proportions as to be almost beyond belief. Riley once computed that the hop aphis, developing thirteen generations in a single year, would, if unchecked to the end of the twelfth generation, have multiplied to the inconceivable number of ten sextillions of individuals. Noting the preceding, Forbush says, if this brood were marshalled in line, ten to the inch, it would extend to a point so sunk in the profundity of space that light from the head of the procession travelling at the rate of 184,000 miles per second, would require 2,500 years in which to reach the earth.

Kirkland has computed that one pair of gipsy moths, if unchecked, would produce enough progeny in eight years to destroy all the foliage in the United States.

A Canadian entomologist has determined that a single pair of Colorado beetles, without check, would multiply in one season to 60,000,000 units.

The filibusters of old, who carried on their nefarious business chiefly within tropical areas, declared that of all dangers, and of all pains, they dreaded most the wounds of insects. No surgical instrument ever invented by man could inspire more terror than the impliments insects possess for piercing, cutting, dissecting, and rending. These appliances, which are used to do battle with animal and vegetable life, are equalled in horror only by the furious ravenousness of the insects.

Indeed, the voracity of insect life is as astonishing as its power of reproduction. Many caterpillars consume twice their weight in leaves per day, which corresponds to a horse eating daily a ton of hay. Forbush says that a certain flesh-feeding larva will consume in twenty-four fours 200 times its original weight, a parallel to which, in the human race, would be an infant consuming, in the first day of its existence, 1,500 pounds of beef. Trouvelot, who made a special study of the subject, affirms that the food taken by a single silkworm in fifty-six days equals in weight 86,000 times its original weight at hatching. What a destruction this single species of insect could make, if only a one-hundredth part of the eggs laid came to maturity!

### Man at War with Nature's Laws.

The development of young birds is so rapid, and the demand upon the vitality of older ones so great, that an enormous amount of food is necessary to sustain the vital processes. Digestion is exceedingly rapid in birds, and they feed for the most part throughout the day, especially when rearing young. The number of insects daily passed into the insatiable maws of the nestlings during this period almost exceeds belief.

But the most valuable services of the adult bird are rendered when it is feeding in winter or early spring, for then it destroys countless numbers of insects in the embryo state, and thus presents myriads of depredators from coming forth.

Grave and far-reaching results invariably follow the suppression of this perennial regulative influence which is exerted by birds individually everywhere as a check on insect life.

Some years ago the agriculturists of Hungary, moved to the insane step by ignorance and prejudice, succeeded in getting the sparrow doomed to destruction. Within five years these same men were crying frantically for the bird to be given back to them, lest they should perish; and it cost the Government 230,000 rix-dollars to reinstate the outlaw. So the sparrow was brought back, and, driving out the hordes of devastating insects, proved the salvation of the country.

In the Island of Bourbon once, because of the same ignorance and prejudice, a price was set on each martin's head. The birds all but disappeared, and grasshoppers took possession of the island. Then the edict of banishment was hurriedly revoked and the exile recalled. And fortunate indeed was it for the Island of Bourbon that the bird was not beyond recall.

During the years 1861 the harvests of France gave an unusually poor return, and a commission was appointed at the instance of the Minister of Agriculture to investigate the cause of the deficiency. By this commission the deficiency was attributed to the ravages of insects which it was the function of certain birds to check. These birds, it appeared, had been shot, snared, and trapped throughout the country in such numbers that but little repressive influence had been exerted upon the insects. In one department of the east of France the value of the wheat destroyed in a single year was estimated at 5,000,000 francs.

For some years prior to 1877 vast numbers of red-winged blackbirds were poisoned in the spring and autumn round the cornfields of Nebraska. This was done in the belief that the blackbirds were damaging the crops, especially the wheat. Great numbers of prairie chicken, quail, plover, and various other insect-eating species were destroyed at the same time by eating the poisoned grain. Then came 1877, and with it Nemesis. The locusts appeared in countless numbers, and Nebraska mourned. Hardly a field of grain escaped.

An astounding number of bird-skins are collected annually for hat decorations in Russian Siberia. In 1895 the ravages of two species of cut-worms and some ten species of locusts produced a famine in the region of Ekaterinburg, which is in Russian Siberia. The local Society of Natural Sciences inquired into the cause which had permitted such a numerous propagation of insect pests, and reported that it was due to the almost complete destruction of birds, most of which had been killed and sent abroad by wagon-loads for millinery purposes.

Though I could give a hundred cases similar to the foregoing, I must rely on the few I have cited to show that the wholesale destruction of birds is surely followed by disaster to man.

(To be continued.)

## EXHIBITING HARDY FLOWERS.

A keen supporter of the National Hardy Plant Society, I feel I must make a brief reference to it. There is not the slightest doubt that this society will become one of the most useful yet formed. My idea is that this society should have the full confidence of all horticultural committees, and I suggest to the latter that they would do well to seek the society's aid in the framing of classes for hardy plants. Most lovers of Nature will agree with the chairman's suggestion that in the staging of hardy flowers an endeavour should be made to represent the herbaceous border in as natural a manner as possible. I suggest that a schedule should distinctly state in the conditions governing a class of this description, that bamboo stands shall not be used, and also that their use will lead to disqualification. At York, Norwich, and the Great Yorkshire Show at Rotherham, there were bamboo stands from five to six feet high filled with heuchera, double gypsophila, Chrysanthemum maximum, gaillardias, etc. Can anyone imagine anything more ridiculous than in using such stands in an arrangement intended to represent a herbaceous border? No vases or stands for raising the flowers should be allowed, but sand or other material should be supplied by the societies to form a sloping bank on which to arrange the flowers; or a platform could be provided, but it ought not to exceed two feet high at the back, sloping to the level of the ground in the front. Any other kind of elevation should disqualify.

With reference to the rock and water gardens, which are such a great feature at the exhibitions at York and Wolverhampton, and this year for the first time will, it is anticipated, be a great feature at Shrewsbury, there is not the slightest doubt but what these arrangements attract as much, if not more, attention than any other exhibits in the show. I ask, are rock and water gardens shown in a natural manner? My answer is in the negative. The class for rock and water gardens was first introduced at York several years ago as a class for hardy herbaceous plants. The prize was not a large one, but it has been increased since. I have staged in this class from the first year it was introduced for the firm by whom I am employed, and therefore know something about the matter. The first year at York a well-known firm introduced huge stones built up in a most artistic manner. To compete with any chance of success against such arrangements made it a very expensive matter for a firm from a considerable distance. I have done it myself continually, not because I am an advocate of a natural style. I have used stone freely, because if you go to Rome you have to do what Rome does. Owing to the large quantity of stone used in these groups the effect is far too massive for the space occupied. The same quantity used in double the space would present a much more natural appearance as a rock garden for which the class is intended. Bamboos or others decorative plants can be used as a background. What's the meaning of this? Where is Nature represented when a group of bamboos, rambler roses, etc., are planted on the top of a massive bank of stone from four to six feet high? We all know bamboos are more or less bog plants, growing in damp positions. If I suggest pine trees, or such that do grow naturally on the top of rocks, I feel sure I shall meet with support, and thousands of these can be seen growing naturally on the top of rocks in different parts of the country. Most of them self-sown and growing between stons where one would hardly realise there was any soil.

I feel sure the National Hardy Plant Society could suggest more natural methods and help to state the conditions of competition more clearly in the schedules, and especially is clearness of expression necessary where the competition in the hardy plant classes form an important feature.

In conclusion, I wish to state that my object in pointing out some defects in exhibiting hardy flowers (knowing, of course, that my remarks will meet with some opposition) is toshow how the National Hardy Plant Society could do much good, if only the committees of the various local societies would act upon the advice the National Society is so well able to give. J. L. EDGINTON.

## LADY HUTT GRAPE.

Without entering into a discussion upon the relative value of "close pruning," and the extension system, I may say, at "G. B.'s" request, that close pruning, viz., cutting back the previous season's growth to two eyes—with the exception of the leading shoot, which was left two to four feet, according to the strength of the vine until the available space was filled—has been the method adopted here with the vines of Lady Hutt grape referred to on page 935 of the GARDENERS' MAGAZINE for 1911. Had I "G. B.'s" plant of Lady Hutt under my care I should not hesitate to cut it down to within two eyes of the ground level, providing the eyes were not damaged, which may possibly be the case with "G. B.'s" vine, and even then a young growth would almost certainly spring from the base, which would doubtless give a stronger and better result than if the previous year's growth were left, say, two or three feet long.

Lady Hutt is not a difficult grape to cultivate, given the conditions mentioned on page 935, and is worthy of more extended cultivation for winter use.

Somerleyton Gardens. F. HANSON.

**A Useful Blotting Pad.**—Messrs. Evans, Sons, Lescher, and Webb, Lim., 56, Hanover Square, Liverpool, have issued a useful "Agents' and Factors' Blotting Pad and Diary for 1912." Tables of weights and measures and a list of the chief agricultural societies are given, with various statistics of interest to agriculturists. The blotter is flat, and the diary, and when not in use the pages of useful information fold down like two desk lids over the pad. The pad is of substantial make, and will be found a useful adjunct to the writing-table of an agent or farmer.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

## EXHIBITIONS AND MEETINGS.

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### Royal Caledonian Horticultural Society.

The annual general meeting of the above society was held in Dowell's Rooms, 18, George Street, Edinburgh, on the 10th inst. Mr. McHattie, senior vice-president, presided, and there were about thirty present.

The Secretary submitted the report by the Council on the year's work of the society. The members had reason, it stated, to congratulate themselves on the shows, but the financial result was disappointing on account of want of support by the public, especially in the case of the autumn show. It was hoped the heating of the Waverley Market would have a beneficial effect, especially in the case of the spring show, on the attendance in future. The accounts showed an increase of £23 in the funds.

Mr. J. Stewart Clark, of Dundas, was re-elected president, and Mr. D. W. Thomson was elected as a vice-president in room of Mr. McHattie, who retires by rotation. Messrs. W. Galloway, Gosford; J. Phillips, Granton Road Nursery, Edinburgh; and R. Craig Cowan, Eskhill, Inveresk, were elected to the vacancies in the council.

The question of increase of allotments in Edinburgh was raised by a member, who pointed out that certain land, at present nursery ground, belonging to the Heriot Trust, was about to be used for other purposes, and suggested that the Council should bring the matter to the notice of the Town Council. The Chairman stated that he favoured increase of these allotments in Edinburgh, and that the council would keep the matter in view. This was all the business, and a vote of thanks to the chairman closed the meeting.

### National Chrysanthemum Society.

There was a well-attended meeting of the Executive Committee of this society at Carr's Restaurant, Strand, W.C., on Monday, January 15, under the chairmanship of Mr. Thomas Bevan.

The draft annual report was submitted and passed for presentation to the annual meeting, and it is in every way satisfactory, as also is the financial statement, which shows a balance of £47 5s. 10d., in addition to £50 on deposit, while the total surplus of assets over liabilities is £101 12s. 7d. It was arranged that three further medals, gold, silver-gilt, and silver, respectively, be offered to the International Horticultural Exhibition authorities, to be awarded for the best non-competitive exhibits of chrysanthemums at the great show in May.

In connection with schedule matters, an interesting recommendation was that prizes of two guineas each be offered in 1913 for the best seedling plant of an anemone, anemone pompon, and pompon chrysanthemum, while the usual class for affiliated societies will be altered, and will be for three vases each of Japanese, incurved, and single chrysanthemums. An exhibition is to be held at Essex Hall on November 20, and the Holmes Memorial Cup for incurved blooms will be offered for competition on that occasion. All the prizes offered on November 20 are being presented by members of the society.

The committee has in view the issue of various publications, and the beginning of a new era in this direction will probably commence with a modest volume of "Transactions," the schedule to contain only matter immediately relative to the society's exhibitions. Several nominations for Honorary Fellowships and corresponding members were made, and unanimously put forward for the confirmation of the annual meeting that will take place at Carr's Restaurant on Monday, February 5, at seven p.m. The Floral Committee members propose to dine together on February 19 at six p.m. One new member at a guinea, and three new ordinary members were elected, and a donation of one guinea to the prize fund of 1912, from an anonymous donor, was handed in by Mr. Frogbrook, and thankfully acknowledged.

## Chester Paxton Society.

Under the chairmanship of Mr. A. W. Armstrong, the annual general meeting was recently held in the Grosvenor Museum.

In presenting the annual report, Mr. G. P. Miln, the hon. secretary, reported an increase in the number of members, and stated that the course of winter lectures was probably the most successful in the society's history. He also reported that the exhibition of fruits, chrysanthemums, etc., held last November was admitted by all to be one of the best on record, the quality of both fruit and flowers being of a very high standard. The decorative effect was also better than at any previous exhibition. He regretted to have to report that the exhibition was a financial loss, which was mainly accounted for by reduced takings at the doors and the loss of several subscriptions, which, he hoped, however, would be remedied another year. The officers and committee were thanked for their services. a special tribute being paid to the hon. secretary for his valued services and continued interest in the work of the society.

The following officers and members of committee were elected for the ensuing year: President, Mr. T. Gibbons Frost, C.C., vice-presidents; Major McGillycuddy, J.P., Mr. James G. Frost, J.P., Rev. Canon L. Garnett, M.A., and Mr. E. Peter Jones, J.P.; chairman of committee, Mr. A. W. Armstrong. Executive Committee: Messrs. N. F. Barnes, J. Clack, O. Edwards, W. Evans, J. Fleet, T. Gilbert, W. H. Little, S. May, E. Palin, G. H. Plant, W. Pringle, J. Ryder, W. Seddon, E. Stubbs, R. Wakefield, A. Walker, J. Weaver, and J. Wynne; Districts Committee: Messrs. J. Breen, J. Clarke, F. England, C. Flack, A. Grimsditch, E. Jones, J. Saunderson, W. S. Sharp, J. Shaw, J. H. Taylor, and J. Thompson; Consulting naturalist: Professor R. Newstead, M.Sc., etc.; hon. secretary and treasurer, G. P. Miln.

## Reading Gardeners' Association.

The members of the Reading and District Gardeners' Association reviewed another successful year at the annual meeting held on Monday in the Abbey Hall. The President, Mr. F. B. Parfitt, was in the chair.

The Hon. Secretary introduced the report he had prepared, and which had been passed by the committee, reviewing the doings of the Association during the year 1911. The report revealed the excellent work done by the society, fourteen lectures being given during the spring and autumn months and three instructive excursions taking place during the summer. Unfortunately, the association had lost several prominent members and supporters by death during the year, notably Sir Wm. Farrer, Mr. Chas. Foster, and Mr. W. G. Pigg.

The financial statement revealed the substantial balance in hand of £50 11s. The receipts amounted to £92 16s. 11d., included in which were balance brought forward £43 7s. 2d., members' subscriptions £35 15s., and honorary members' subscriptions £13 0s. 6d., and the expenditure totalled £42 5s. 11d.

The President congratulated the society on its sound financial position, and added that the report so carefully compiled by the secretary and committee would compare very favourably with that of any previous year. He wished to re-echo the statement that the continued success of the society depended not so much upon the officers as upon the individual efforts of every member. In this connection he wished the younger members would overcome their bashfulness and join in the discussion at the meetings, so as to profit by the experience of their older brethren.

The report and balance-sheet were adopted on the proposition of the President, seconded by Mr. F. Townsend.

The election of officers followed and in every case was unanimous, the feeling being one of satisfaction at the excellent choice made. Mr. Parfitt was re-elected president, and Mr. Leonard Sutton vice-president, while Messrs. A. C. Bartholomew and M. J. Sutton were reappointed trustees. The new chairman is Mr. F. G. Drew, and the new vice-chairman Mr. E. Blackwell, who succeed Mr. F. Townsend and Mr. H. Goodger respectively. Mr. E. J. Dore continues in office as librarian, being assisted by Mr. Durrant. while the auditors are Messrs. A. H. Leaver and W. J. Taylor, the latter in place of Mr. A. Smith. Messrs. L. Castle (hon. secretary) and F. W. Macdonald (hon. treasurer) were again chosen.

Balloting for the committee resulted in the election of Messrs. A. F. Bailey, F. Barnes, G. Carter, H. G. Cox, D. Dore, F. Goodger, H. Goodger, R. A. Hatton, G. Hinton, W. Hulbert, T. Judd, H. C. Loader, W. C. Moles, T. Neve, T. J. Powell, G. Stanton, F. Townsend, W. J. Townsend, T. Tunbridge, and H. Wilson.

The meeting voted the following subscriptions: Royal Horticultural Society £2 2s. (delegates, chairman and vice-chairman), Gardeners' Orphan Fund £3 3s. (Mr. Neve), Gardeners' Royal Benevolent Institution £2 2s. (the hon. secretary), Royal Berkshire Hospital £1 1s. (Mr. Dore), and University College, Reading, £3 (the hon. secretary).

A hearty vote of thanks to the President concluded the meeting.

## Kew Gardeners' Social Meeting.

The gardeners employed at Kew held their 15th social gathering at the Boat House, Kew, on January 12. The hall of this building was tastefully decorated with evergreens, plants, and flowers, and the usual greetings "Welcome" and "Floreat Kew" were prominent on either side of the hall. The attendance was large, and among those present were many past Kewites, including several from the Colonies.

## East Anglian Horticultural Club.

This club held its 23rd annual dinner on Wednesday, January 10, at the Criterion Restaurant, Norwich. Mr. W. Rush, gardener to F. P. Hinde, Esq., Thorpe, presided, and the company included the prominent amateur and professional gardeners of the district. After the loyal and patriotic toasts had been duly honoured, Mr. A. W. Preston, in some well-chosen and encouraging words, gave "Success to the East Anglian Horticultural Club." This was responded to by the President, the vice-president (Mr. F. Williams), and the secretary, Mr. W. L. Wallis, each of whom gave some interesting facts of the growth and useful work the club had achieved since its formation.

Mr. H. Perry gave "The Norfolk and Norwich Horticultural Society," and remarked that this was one of the oldest societies in the kingdom, and could trace back its existence to the time when the weavers grew their flaked and biazzare tulips, laced pinks, and other well-known florists' flowers of the early part of the nineteenth century. He was glad that the falling off of income had been checked and that the society was able to again report progress.

Mr. C. E. Pilling, hon. secretary, replied most suitably. Mr. J. Forder gave "The Royal Horticultural Society," to which Mr. Charles Daniels responded, and in so doing detailed a visit he made during the past summer to the Wisley Gardens. "Success to the Royal International Horticultural Exhibition," was ably proposed by Mr. J. Clayton, who spoke of the magnitude of the proposed exhibition, and urged everyone to make a point of going. Mr. L. Smith responded, and as the representative of the club upon the local county committee, was able to give some useful information as to admission, etc. Mr. J. F. Betts gave "The Norwich Museum Association," to which Mr. E. Peake responded; other toasts being "The Prize Donors" and "The Press." A capital musical programme had also been provided.

## Edinburgh Market Gardeners' Association.

The Edinburgh Market Gardeners' held their annual dinner in the Imperial Hotel, Market Street, Edinburgh, on the 12th inst., under the presidency of Mr. David King, president of the association.

Mr. Thomas Russell, Glasgow, took occasion, in proposing the toast of "The Fruit Growers," to point out that the fruit which came to the Glasgow Market from East Lothian was of extra fine quality, but that some of the land on which such fruit was produced in the East of Scotland was rented as high as £10 an acre, while land in Ayrshire, which was used for this purpose, and was quite as satisfactory as regards the quantity of fruit produced, was rented at £2 10s. to £3 an acre. With such high-priced land and dear labour growers could not compete with those who rented land at the lower figure. Mr. George Sinclair, East Linton, who replied, thought that the opportunity should be taken under the Scottish Smallholders' Act to increase the fruit-growing area, and he would prefer to see some of the best land in the Lothians used for this purpose instead of sending growers to the Highlands.

## CATALOGUES RECEIVED.

DICKSONS, CHESTER.—Garden seeds in great variety are offered by the Chester house, and the leading kinds and varieties are illustrated. Collections of seeds for various purposes and for gardens of various sizes are a feature of the catalogue.

W. DRUMMOND AND SONS, LIM., DAWSON STREET, DUBLIN.—This old-established Irish firm issues a capitally illustrated catalogue of selected varieties of flower and vegetable seeds, and also gives an unusually good list of tools and horticultural sundries.

BARR AND SONS, COVENT GARDEN.—The very business-like size and arrangement of Barr's Seed Guide cannot fail to appeal to those who love order and method. Everything is arranged in alphabetical order, brief cultural notes are given for each subject, and in every case the botanical name and order of the plant is appended.

ALEXANDER AND BROWN, PERTH.—An excellent catalogue of flower and vegetable seeds and roses. It is freely illustrated with charming views in a large number of Scottish gardens, many of the pictures showing the firm's specialities under cultivation.

THOMAS S. WARE, LIM., FELTHAM.—From the Feltham firm we have received two catalogues, one dealing with seeds of flowers and vegetables in great variety, and the other devoted to the splendid tuberous begonias for which the firm is famous.

DANIELS BROS., LIM., NORWICH. — Though chiefly devoted to seeds and containing illustrations of several of the firm's specialities in flowers and vegetables, a considerable space is devoted to hardy climbers, fruit trees, ornamental trees, dahlias, and herbaceous plants.

VILMORIN-ANDRIEUX AND CO., QUAI DE LA MEJISSERIE, PARIS.—This freely-illustrated and closely-printed seed catalogue is on the usual comprehensive lines followed by the Paris firm; it is difficult to think of any subject usually raised from seeds and fail to find it listed.

H. CANNELL AND SONS, SWANLEY.—Once more there comes from Swanley the "Herald of Spring," which is a very practical and interesting list of "Golden Seeds."

HENRY ECKFORD, WEM, SALOP.—As becomes a house famous for the "making" and development of sweet peas, the new seed list has a cover upon which new and beautiful sweet peas are portrayed in colour. As already notified, the firm is offering £1,000 in prizes for sweet peas in 1912, but it should not be forgotten that culinary peas are also a speciality of the Wem seedsman.

BLACKMORE AND LANGDON, TWERTON HILL, BATH.—Tuberous begonias take pride of place in this firm's catalogue, and our readers are well aware of the high position the Twerton strains and varieties now occupy. Other subjects specialised in are carnations, delphiniums, violets, primroses, and polyanthuses.

W. ATLEE, BURPEE, AND CO., PHILADELPHIA, U.S.A.—There is plenty of evidence of American "go-aheadiveness" in the handy seed catalogue issued by the Philadelphian firm. The list is crowded with illustrations, the descriptions are unique, and novelties and specialities are very much in evidence, notably in sweet peas and vegetables.

WILLIAM BULL AND SONS, CHELSEA.—The familiar red-covered seed catalogue from the nursery rendered famous by its many introductions of new plants, contains a very carefully selected list of varieties of the best kinds of flower and vegetable seeds.

H. W. CHURCHMAN, SAWSTON.—A handy and descriptive little list of sweet peas.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

---

ROSE EDU MEYER.—W. P., Stamford Hill: It seems fairly evident from the letters decipherable on the label that the rose you have is a comparatively new one named Edu Meyer, a hybrid tea variety raised in Germany by Lambert, of Trier, and sent out in 1904. It is a vigorous bedding variety, with flesh-pink flowers heavily shaded with copper and tinted with fawn. It is a pretty rose, its striking colour and semi-double flowers making it at once attractive and elegant.

FERTILISERS FOR TOMATOES.—A. R., Notts: Sterilise the soil for the seed bed by heating it to 180 degrees; when cool add sand and proceed to sow the seeds thinly. The seedlings will not grow away so freely at first as those raised in unsterilised soil, but they will soon make up for apparently lost time, and will eventually become sturdier and more fruitful if cultural conditions are suitable. If only a very poor loam is available for tomatoes, the very best results can scarcely be expected, but the soil may be materially improved by the addition of old potting soil from chrysanthemums and decayed vegetable material from the refuse heap. Only under exceptional circumstances should organic manures be added to the potting soil, but when such addition is deemed necessary one part of old spent mushroom-bed manure to six parts of loam will suffice. Potash, especially muriate of potash, may be added to the soil with advantage, at the rate of about 2oz. to the bushel. When the tomatoes have set two trusses of fruits they should be fed with superphosphate, given at the rate of one ounce to three gallons of water once a week. An occasional feeding with clear soot water and also of liquid cow manure will prove of great service, while top-dressings of rich soil should be given whenever the roots show through the soil surface. Make the soil very firm, especially in the fruiting pots.

GUANO.—C. B. M., Chelsfield.—If you are not satisfied you should have the guano analysed as per the instructions given. We must say we do not fully understand your position or what it is you wish us to do for you. There are various tests for high-class guano, besides those of chemical analysis, and they are fairly good ones. Your sample blazes up quickly when put on the fire, and leaves a charcoal residue; it has a strong salty taste, and it is neither grey enough to contain an excess of earthy matter, or brown enough to suggest an excess of moisture; when damped it smells strongly of ammonia, as also it does when mixed with quicklime, and all these tests suggest that the sample is a good one. We shall be glad to help you further if you will tell us exactly what your difficulty is.

GARDENING IN VICTORIA (AUSTRALIA).—T. H. P., Surrey, writes: "Having been a constant reader of the GARDENERS' MAGAZINE for some considerable time, I would like, through its pages, to ask for opinions from gardeners as to the suitability or otherwise of Victoria, Australia, for gardeners. I have had twenty years' experience in very good private gardens, and am thinking of going to Victoria, and therefore should be glad of some expressions of opinion regarding private gardening there. I am especially anxious to have opinions from those not directly interested in emigration." If any of our readers are able to help T. H. P., we shall be glad if they will send us an expression of opinion on the matter.

PRIVATE GARDENS OPEN TO THE PUBLIC.—G. W., Harrogate: In most cases the well-known private gardens may be inspected free of charge if a request is made in proper form to the owner. Some owners throw open their gardens upon certain days in the week or at certain periods of the year, such as when rhododendrons or daffodils are in bloom; if a charge is made for admission on these occasions the amount received is generally devoted to a charity or charities. Among the gardens mentioned in your letter we know that those at Belvoir Castle are regularly opened to the public, but whether there are specified times for the admission of visitors to the others we do not know. You could readily obtain the desired information by writing to the head gardener in each instance, and enclosing a stamped addressed envelope for reply. At the same time the matter is of general interest, and so we should be extremely obliged to our readers if they will send us, on a postcard, the days and hours during which private gardens in their neighbourhood are thrown open to the public. Such information regarding Rufford Abbey, Melbourne Hall, Tissington Hall, Beaulieu Palace, Brockenhurst, Eridge Castle, Farnham Castle, Groombridge House, Longford Castle, Paulton Park, Knole Park, Penshurst Place, The Palace, Salisbury, Tring Park, Wilton House, Taplow Court, Pentillie Castle, Cotebele, Waverley Abbey, Castle Malwood, Chequer's Court, Hedsor

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OPEN TO ALL CLASSES. OVER 200 CASH PRIZES.

**1912 will be a great "SWEET PEA YEAR," for interest in the Queen of Annuals is still increasing. In view of the tremendous number of growers of Eckford's Sweet Peas, the famous Wem firm of Sweet Pea Specialists have decided to give £1,000 in Cash Prizes to cultivators this year. Provision has been made so that every grower, large or small, may have a chance of a prize. There is no entry fee, and full particulars of prizes, classes and conditions, may be obtained free by sending a postcard for same to HENRY ECKFORD, DEPT. 221, SWEET PEA SPECIALIST, WEM.**

SPECIAL NOVELTY OFFER FOR 1912.

**CLARA CURTIS (WAVED).**—A fine waved primrose of splendid substance; very free flowering; strong in growth and stem; fine for exhibition. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**W. T. HUTCHINGS (WAVED).**—A very fascinating flower of soft cream overlaid with a delicate pink; exceedingly warm when bunched; a strong grower, frequently producing four flowers on long stems; of fine size and splendid for exhibition. In sealed packets, 7 seeds, **3d.**; 15, **6d.**; 30, **1/-**.

**OTHELLO (WAVED).**—A beautiful self-coloured giant chocolate, of splendid substance and robust habit. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**APPLE BLOSSOMI 1908 (WAVED).**—This, as its name implies, is a beautiful flower of apple blossom colour, of giant size, and, like most of the waved varieties, is a very strong grower, giving long, strong stems, frequently four-flowered. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**APRICOT (WAVED).**—A beautiful light apricot overlaid with rich cream pink; delightful for table decoration; one of the most superb; frequently giving fours on its splendid long stems. In sealed packets, 5 seeds, **6d.**; 10, **1/-**.

**MRS. HENRY BELL (WAVED).**—A beautiful rich apricot ground overlaid with a soft pink, which deepens towards the edges of both standards and wings. Exceedingly dainty for table or other decoration; finely waved and frequently four flowered; on long strong stems; a strong grower. In sealed packets, 10 seeds. **3d.** 20, **6d.**; 40, **1/-**.

**TERRA COTTA.**—A bright cerise standard overlaid with terra-cotta; wings soft rose; a very showy and free flowering garden variety, and exquisite for table; most effective under artificial light. In sealed packets, 5 seeds, **6d.**: 10, **1/-**.

Eckford's Giant Sweet Peas

**MISS GUEST (WAVED).**—A pure, bright, almost self rose, robust and of giant size; beautifully waved; a bold flower; exquisite for cutting and fine for exhibition. In sealed packets, 5 seeds, **6d.**; 10, **1/-**.

**ASTA OHN (WAVED).**—A pretty waved lavender overlaid with rose; a very charming flower of good size and substance; a strong grower. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**CERISE (WAVED).**—A fine bold, beautifully waved, true cerise; a very strong grower, giving generally four flowers on long, strong stems; a fine exhibition variety and exquisite for cutting. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**SAINT GEORGE (IMPROVED WAVED).**—This is a very charming flower; as accurately as one can describe, it is a deep, exquisite coral of giant size and splendid substance; is a fine exhibition variety and frequently produces four flowers on long strong stems. In sealed packets, 5 seeds, **6d.**; 10, **1/-**.

**DODWELL F. BROWNE (WAVED).**—This is a very beautiful intense bright crimson, three and four flowered, almost a self: a true Giant Waved variety of intense King Edward VII. colour, it is in great demand for exhibition and all other purposes. In sealed packets, 10 seeds, **3d.**; 20, **6d**; 40, **1/-**.

**EVELYN HEMUS (WAVED).**—A warm cream shading to yellow with a picotee edge of terra-cotta pink; of great size and refinement; standard and wings beautifully waved, and nearly always four-flowered. In sealed packets, 10 seeds. **3d.**; 20, **6d.**; 40, **1/-**.

**PICOTEE, (WAVED).**—A giant waved flower, pure white with a beautiful picotee edge of carmine; in most cases the flowers are borne in fours on a long, strong stem; and they are well placed and of splendid substance; a really beautiful flower and fine for exhibition. In sealed packets, 5 seeds, **3d.**; 10, **6d.**; 20, **1/-**.

**SPECIAL OFFER.** One full-sized packet of each of the foregoing 14 charming and novel Sweet Peas, **11/6** post free for cash with order. One half-sized packet of each of the foregoing 14 charming and novel Sweet Peas, **6/-** post free for cash with order.

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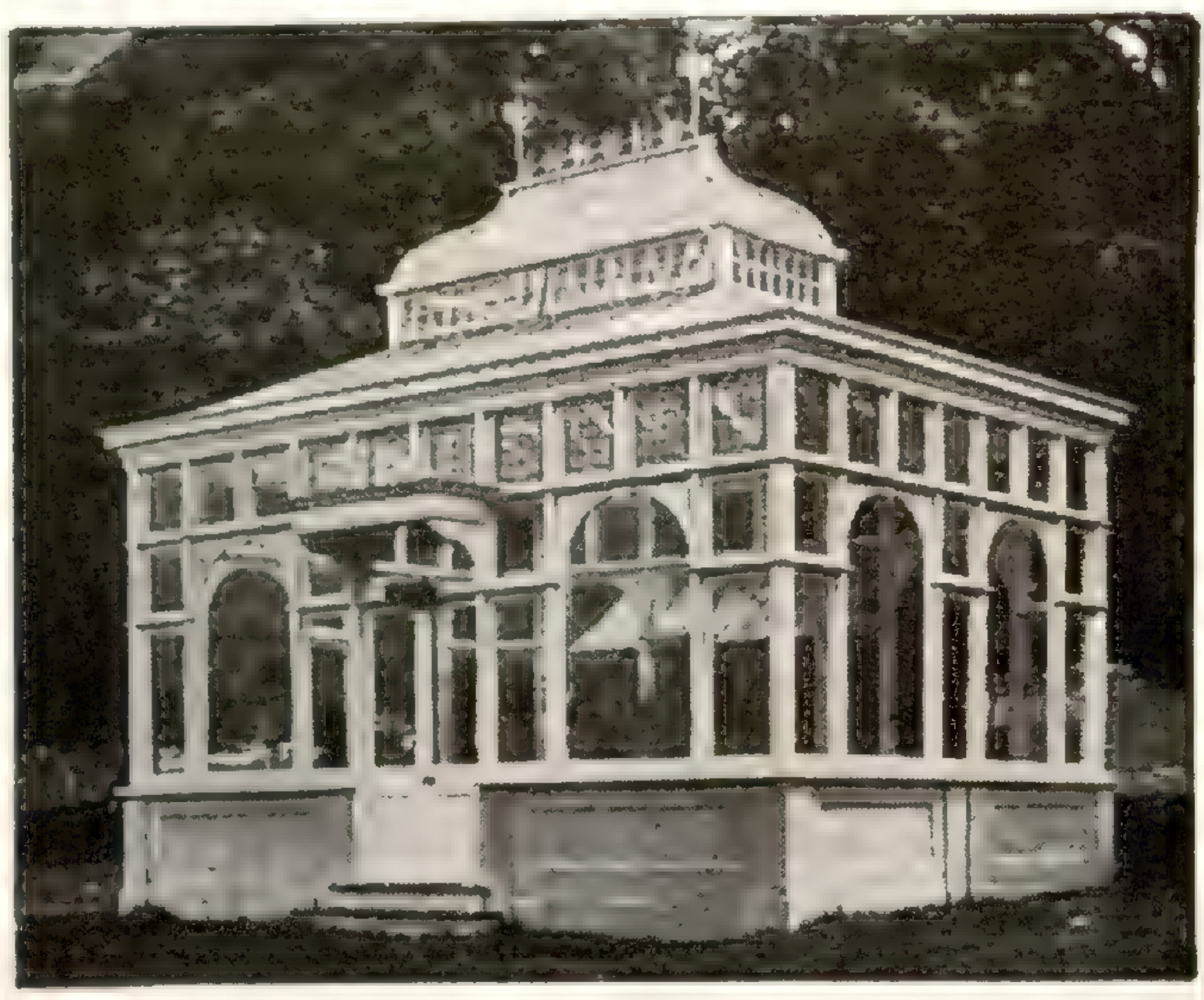

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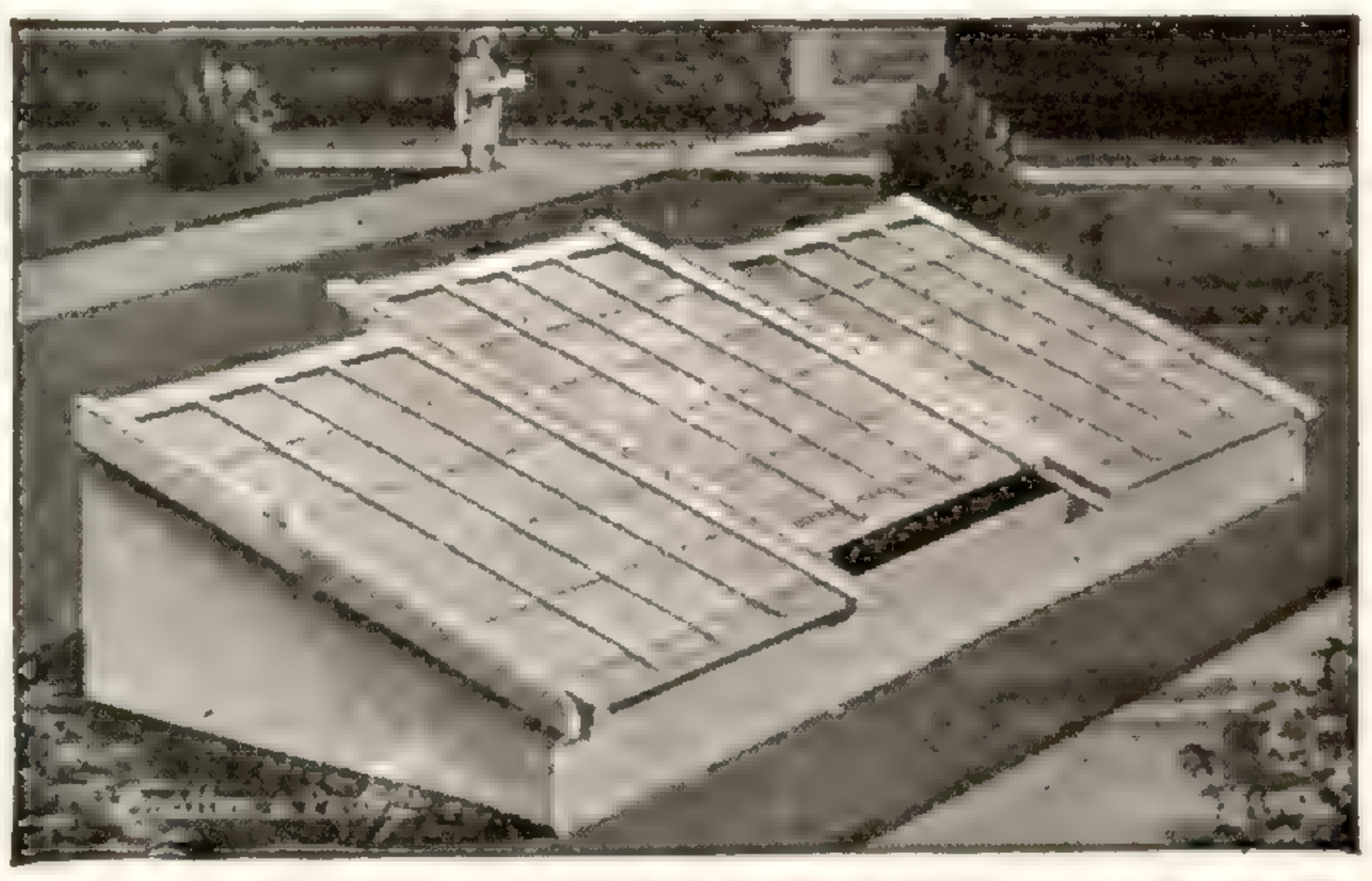

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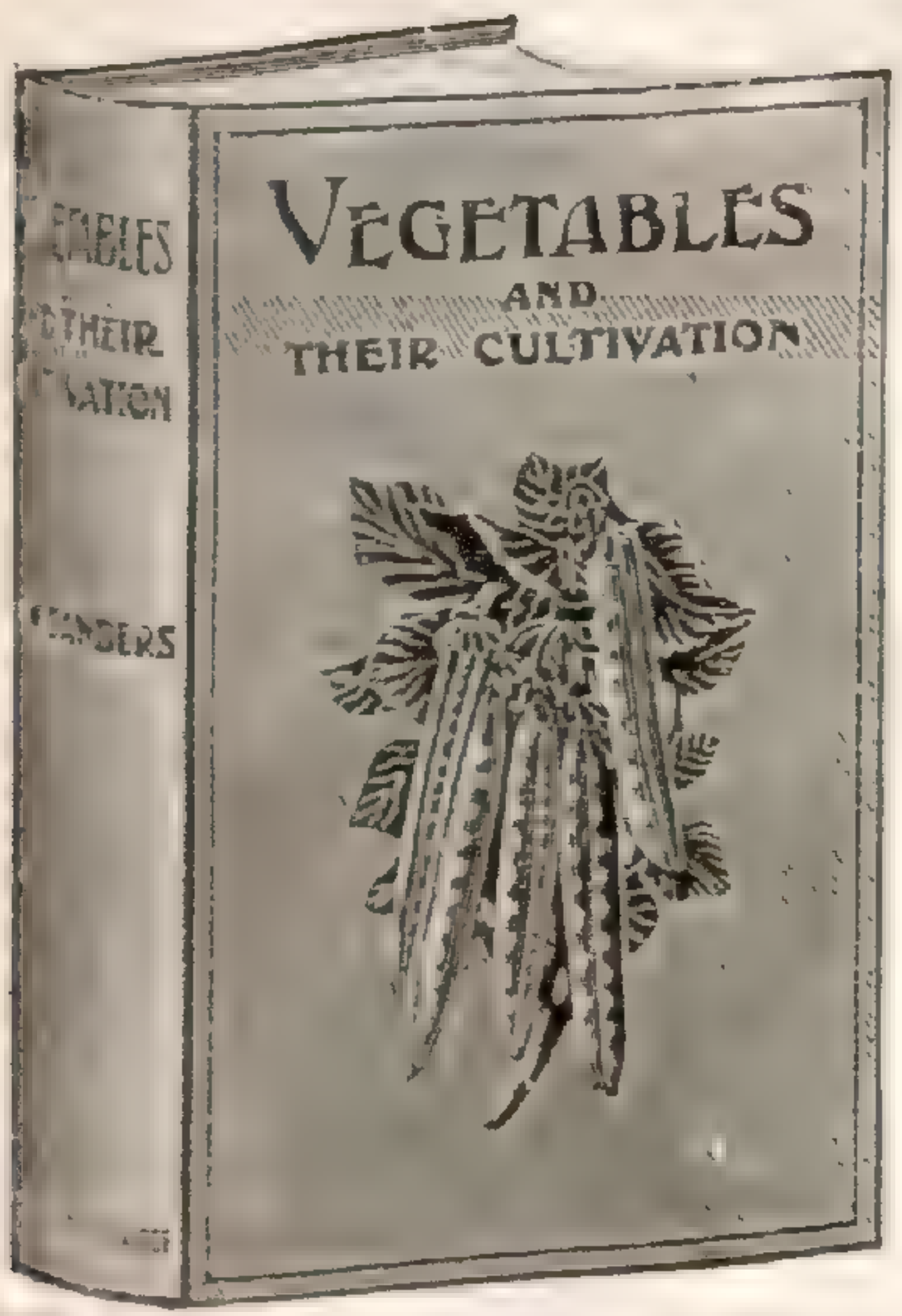
**VEGETABLES AND THEIR CULTIVATION**



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Please send me a copy of "VEGETABLES AND THEIR CULTIVATION" by Post, for which I enclose remittance of 5/6.

*Name* ..........................................................

*Address* ..........................................................

Castle, Hardwick Hall, and Belvoir Castle would be much appreciated.

PROPAGATION OF BEGONIA GLOIRE DE LORRAINE.—D. W., Orpington: This useful begonia may be propagated by means of cuttings of the young growths that push up if the old plants are rested a while after flowering, and then placed in genial warmth. Such cuttings should be about an inch and a-half long and be inserted in sandy soil in a propagating case, taking care to avoid excess of moisture. Another method is to use leaves, inserting these in sandy soil, in an erect position, and sufficiently low to cover the junction of the leaf-stalk with the leaf blade.

ROCK GARDENS AND ALPINE PLANTS.—E. K., Halifax: The book you refer to is "Rock Gardens and Alpine Plants," by Mr. E. H. Jenkins. This can be obtained from the office of the GARDENERS' MAGAZINE, 148, 149, Aldersgate Street, E.C., past free, price 2s. 9d.

## NAMES OF PLANTS.

Under this heading we can only undertake to name species and well-marked varieties of plants, and not florists' flowers. Specimens should be packed in stout boxes with damp (not wet) moss, or some leaves, as packing material, to ensure their reaching us in a fresh state. It is essential that flowers must accompany specimens of flowering plants, that fern fronds be fertile, and that numbers be firmly attached to the specimens so that they can be seen without any untying. We cannot promise to name more than six specimens at one time from any one correspondent.

G. W., Reigate.—1, Maranta zebrina; 2, Acacia dealbata; 3, Cypripedium Tityus.

R. G., Dorking. 1, Thyrsacanthus rutilans; 2, Erica mediterranea; 3, Chimonanthus fragrans.

F. E. S., Newbury.—1, Epidendrum variegatum; 2, Primula floribunda; 3, Coleus thyrsoideus; 4, not sufficient for identification.

A. O., Bedford.—1, Cymbidium grandiflorum; 2, Cypripedium Memoria-Mœnsi; 3, C.- Cardoscanum; 4, Odontoglossum Lambeauianum; 5, O. crispum, a very pretty form; 6, also a variety of O. crispum.

## OBITUARY.

### MR. JOHN DEACON.

It is with deep regret we learn of the death of Mr. John Deacon, head gardener to the Right Hon. Joseph Chamberlain, M.P., at Highbury, Birmingham. Mr. Deacon was found dead in one of the lakes at Highbury. Mr. Deacon was a capable gardener, and had been at Highbury about twenty years; he had a special knowledge of chrysanthemums, hardy spring flowers, alpines, and amaryllis, but he was a skilful cultivator of all subjects he took in hand, as those who have visited the Highbury Gardens can testify. Mr. Deacon was an old Kewite, having left the Royal Gardens in 1881. His death is deeply deplored, and the sympathy of all who knew him will be extended to his family.

## GARDENING ENGAGEMENT.

**Mr. J. Bratley,** late head gardener at Hopwood Hall, has been appointed head gardener to Robert Armitage, Esq., M P., Farnley Hall, near Leeds, and entered on his duties January 13.

**The only resemblance** between a Pine Spray Syringe and others is in the shape of the barrel. The metal is more substantial. For the rest, the combination spraying head renders Spray, Rose, and Bend instantly obtainable without the addition or removal of a single fitment, while the adjustable leather bucket plunger gives perfect suction, never allows water to escape past it and up your sleeve, and wears interminably.

A written request from your ironmonger or seedsman, and a Syringe will be sent in 24 hours for your approval. Price 10/6. Sole proprietors and manufacturers, **Robinson Bros., Ltd., West Bromwich.**

**PINE SPRAY SYRINGE** (patent).

## MARKETS.

◆

### COVENT GARDEN.

#### Flowers.

There is an excellent request for all kinds of flowers; carnations, forced bulbs, and Acacia dealbata sell readily.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Acacia | per doz. bun. | 8 | 0 | | 12 | 0 |
| Adiantum cuneatum | per doz. bun. | 3 | 0 | to | 4 | 0 |
| Arums | per doz. | 2 | 6 | | 3 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 15 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azalea | per doz. bun. | 4 | 0 | | 5 | 0 |
| Cattleyas | per doz. | 8 | 0 | | 12 | 0 |
| Carnations | per doz. | 2 | 0 | | 4 | 0 |
| ,, | per doz. bun. | 15 | 0 | | 21 | 0 |
| Camellias | per box | 2 | 0 | | 2 | 6 |
| Chrysanthemums | per doz. bun. | 5 | 0 | | 10 | 0 |
| ,, | per doz. blooms | 2 | 0 | | 3 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Eucharis | per doz. | 2 | 0 | | 3 | 6 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Freesias | per doz. bun. | 2 | 0 | | 2 | 6 |
| Gardenias | per doz. | 5 | 0 | | 9 | 0 |
| Hellebores | per doz. | 1 | 6 | | 2 | 0 |
| Hyacinths, Roman | per doz. bun. | 6 | 0 | | 8 | 0 |
| Lilium auratum | per doz. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 3 | 0 |
| ,, longiflorum | per doz. | 3 | 0 | | 4 | 0 |
| Lily of the Valley | per doz. bun. | 8 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 1 | 6 | | 2 | 6 |
| Mignonette | per doz. bun. | 2 | 6 | | 3 | 0 |
| Narcissus | per doz. bun. | 1 | 6 | | 9 | 0 |
| Odontoglossums | per doz. blms. | 3 | 0 | | 4 | 6 |
| Pelargoniums | per doz. bun. | 8 | 0 | | 10 | 6 |
| Poinsettias | per doz. | 10 | 0 | | 12 | 0 |
| Roses | per doz. | 2 | 6 | | 8 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 6 |
| Tuberoses | per doz. | 0 | 5 | | 0 | 9 |
| Tulips | per doz. bun. | 6 | 0 | | 14 | 0 |
| Violets | per doz. bun. | 1 | 3 | | 4 | 0 |

#### Fruits.

Oranges and apples sell freely, but there is not much demand for grapes. Bananas meet a ready sale.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, English, cooking | per bush. | 4 | 0 | | 7 | 0 |
| ,, Nova Scotia | per barrel | 10 | 6 | | 25 | 0 |
| ,, Canadian | per barrel | 15 | 0 | | 20 | 0 |
| ,, American | per barrel | 26 | 0 | | 35 | 0 |
| ,, Californian | per case | 7 | 6 | | 10 | 6 |
| Bananas | per bun. | 3 | 6 | | 10 | 6 |
| Cob Nuts | per doz. lb. | 6 | 0 | | 7 | 0 |
| Cranberries | per case | 9 | 0 | | 11 | 0 |
| Dates | per doz. boxes | 4 | 6 | | 6 | 0 |
| Figs | per box | 0 | 9 | | 1 | 6 |
| Grapes, English | per lb. | 1 | 0 | | 6 | 0 |
| ,, Belgian | per lb. | 0 | 8 | | 1 | 3 |
| ,, Almeria | per barrel | 7 | 0 | | 15 | 6 |
| Lemons | per case | 6 | 0 | | 30 | 0 |
| Oranges, Denia | per case | 12 | 0 | | 26 | 0 |
| ,, Jamaica | per case | 9 | 0 | | 11 | 0 |
| ,, Californian | per case | 14 | 0 | | 16 | 0 |
| Pears, American | per barrel | 25 | 0 | | 26 | 0 |
| ,, French | per crate | 7 | 6 | | 10 | 0 |
| ,, Californian | per case | 10 | 0 | | 12 | 0 |
| Pineapples | each | 2 | 9 | | 5 | 6 |

#### Vegetables.

Good supplies are offered, and there is a steady demand for most kinds.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 | 0 | to | 4 | 0 |
| ,, Jerusalem | per bush. | 2 | 0 | | 3 | 0 |
| Asparagus | per bun. | 3 | 0 | | 6 | 0 |
| Beet | per bush. | 2 | 6 | | 3 | 6 |
| Brussels Sprouts | per ½-bush. | 1 | 0 | | 1 | 6 |
| Cabbage | per tally | 4 | 0 | | 6 | 0 |
| Carrots | per doz. bun. | 2 | 0 | | 4 | 0 |
| Cauliflowers | per doz. | 2 | 0 | | 4 | 0 |
| Celery | per doz. | 6 | 0 | | 16 | 0 |
| Chicory | per lb. | 0 | 4 | | 0 | 5 |
| Cucumbers | per doz. | 6 | 0 | | 15 | 0 |
| Endive | per doz. | 1 | 6 | | 2 | 6 |
| Horseradish | per doz. bun. | 10 | 0 | | 18 | 0 |
| Leeks | per doz. | 2 | 0 | | 3 | 0 |
| Lettuce | per doz. | 1 | 0 | | 2 | 0 |
| Mushrooms | per doz., lb. | 10 | 0 | | 13 | 0 |
| Mint | per doz. bun. | 3 | 0 | | 5 | 0 |
| Onions | per case | 8 | 0 | | 9 | 0 |
| Parsnips | per bag | 4 | 0 | | 6 | 0 |
| Rhubarb | per doz. bun. | 1 | 0 | | 1 | 6 |
| Seakale | per bun. | 1 | 0 | | 1 | 6 |
| Spinach | per bush. | 4 | 0 | | 6 | 0 |
| Tomatoes | per 12 lbs. | 2 | 0 | | 5 | 0 |
| Turnips | per doz. bun. | 1 | 6 | | 2 | 6 |
| Turnip Tops | per bag | 1 | 6 | | 2 | 0 |
| Watercress | per doz. bun. | 0 | 6 | | 0 | 6½ |

### LONDON POTATO MARKETS.

Supplies are good, and the demand is brisk; large consignments are being sent to America.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Blackland | per ton | 70 | 0 | to | 80 | 0 |
| British Queen | per ton | 80 | 0 | | 95 | 0 |
| Eclipse | per ton | 75 | 0 | | 85 | 0 |
| Epicure | per ton | 65 | 0 | | 70 | 0 |
| Essex | per ton | 65 | 0 | | 70 | 0 |
| Evergood | per ton | 60 | 0 | | 70 | 0 |
| King Edward | per ton | 80 | 0 | | 85 | 0 |
| Maincrop | per ton | 100 | 0 | | 105 | 0 |
| Up-to-Date | per ton | 85 | 0 | | 105 | 0 |

## METEOROLOGICAL OBSERVATIONS,

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.
Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| 1912.<br>JANUARY 7<br>TO<br>JANUARY 13. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Jan. 7—Sunday | — | 40 | 38 | 42 | 39 |
| ,, 8—Monday | — | 32 | 31 | 49 | 28 |
| ,, 9—Tuesday | 5 12 | 46 | 45 | 51 | 30 |
| ,, 10—Wednesday | 5 48 | 35 | 35 | 47 | 34 |
| ,, 11—Thursday | — | 44 | 42 | 47 | 25 |
| ,, 12—Friday | 0 12 | 45 | 45 | 46 | 38 |
| ,, 13—Saturday | — | 45 | 44 | 48 | 39 |
| Means | (total)<br>8 12 | 41 | 40 | 47 | 3 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| 1912.<br>JANUARY 7<br>TO<br>JANUARY 13. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Jan. 7—Sunday | — | 44 | 44 | 47 | 36 |
| ,, 8—Monday | 0·25 | 40 | 44 | 47 | 18 |
| ,, 9—Tuesday | — | 41 | 43 | 46 | 27 |
| ,, 10—Wednesday | — | 40 | 43 | 46 | 23 |
| ,, 11—Thursday | 0·04 | 42 | 42 | 46 | 28 |
| ,, 12—Friday | 0·03 | 42 | 42 | 46 | 27 |
| ,, 13—Saturday | — | 43 | 43 | 46 | 27 |
| Means | (total)<br>0·32 | 41 | 43 | 46 | 26 |

## TRADE NOTE.

Messrs. Barr and Sons, King Street, Covent Garden, inform us that their Surbiton Nurseries will be finally closed on March 25, 1912. All orders for hardy plants will then be executed from the new nurseries at Taplow, where the displays of daffodils and tulips will also be on view this year in April and May.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, January 23. — Royal Horticultural Society. Meeting of Floral, Fruit, and Orchid Committees, noon. Exhibition, 1—5 p.m. General Meeting, 3 p.m., with lecture by Mr. H. Morgan Veitch on "Horticulture and the Proposed Taxation of Land Values." Scientific Committee, 4 p.m.

Horticultural Club House Dinner at the Hotel Windsor, Victoria Street, Westminster, 6 p.m., followed by a lecture by Mr. C. E. Pearson on "Birds' Eggs."

THURSDAY, January 25.—British Gardeners' Association. General Meeting at Carr's Restaurant, Strand, W.C., 7 p.m.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

GARDENER (Head Working). — Mr. H. HEMSLEY, Rock Expert, Crawley, Sussex, would be pleased to highly recommend a thorough competent man in all branches of the profession; highest references; age 36; married. Address as above.

GARDENER (Head) seeks SITUATION where three or more are kept; practical experience in all branches; excellent references; age 31. Address, S. DOUGHTY, Overstone Park Gardens, Northants.

GARDENER (Head Working) seeks SITUATION, where one or more are kept; thoroughly experienced in all branches, Inside and Out; early and late forcing; 7 years' excellent character; middle aged; married, no family. Apply GARDENER, 11, Thornbury Road, Spring Grove, Isleworth.

GARDENER (Head Working, or Single-handed); life experience in all branches; Inside and out; age 40; married, no family; good references. W. CURD, 36, Clarence Place, Gravesend, Kent.

MR. F. W. NICHOLSON wishes to highly recommend his GARDENER (Head) as a thoroughly capable hard-working Man; understands his work, both Inside and Out, and good at Table Decorations; leaving solely through establishment being reduced; excellent testimonials; age 36; married, one boy, 9. J. SHIPLEY, The Old Vicarage Lodge, Shiplake, Henley, Oxon.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married.—G. HALL, Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working); practical life experience all branches; excellent references from present and previous employers; 14 years present place; leaving through reduction in staff. H. BUNTING, Ilam Gardens, Ashbourne.

GARDENER (Head Working, where one or two kept); 10 years in present situation; 5 years as second; age 31; married when suited. A. GIBBS, The Gardens, Farrants, Bickley, Kent.

GARDENER (Head Working).—Mr. COLLEDGE, Gardener to the Earl of Darnley, highly recommends F. BISHOP as above; 4½ years as Foreman here. Cobham Hall Gardens, Gravesend, Kent.

GARDENER (Head) seeks SITUATION where two or more are employed; age 36; married, no family; life experience, Inside and Out, Roses and Carnations; excellent references. J. SMITH, 2, Lyncombe Vale Farm, Bath.

GARDENER (Head of two or three) seeks SITUATION; good experience Inside and Out; well recommended; abstainer; age 28; married when suited; disengaged. BRISTOW, Seafield House, Salisbury Street, Taunton, Somerset.

COL. PALEY, Mickleton Manor, with confidence recommends HEAD GARDENER; here 9 years Head; understands his duties thoroughly in everything connected with large establishment; 20 years' experience, Lowther Castle, etc.; age 35. ROWLAND, 4, Orchard Street, Carlisle.

GARDENER ( (Head, six or more kept); 17 years in large establishments, four years Head; six kept present situation; excellent references; age 31; married, no family; abstainer. H. P., 2, South Road, Reigate, Surrey. (No circulars.)

WM. HOLLINS, Esq., Berry Hill Hall, Mansfield, Notts, and his Head Gardener, W. Spicer, thoroughly recommend their Foreman, A. POTTER, as a capable and efficient Gardener (Head Working, where three or more are kept); life experience in all branches; age 28; married when suited. A. POTTER, Berry Hill, Mansfield, Notts.

GARDENER of Three or more. — F. WILES, Gardener to J. de Pass, Esq., Middleton Hall, Kings Lynn, recommends his Foreman as above; life experience, Inside and Out; married, no family; age 30. C. CRADWICK, The Gardens, Middleton Hall, Kings Lynn (bear own expenses).

PRACTICAL GARDENER, 22, abstainer, references, wants Place anywhere; Single-handed or otherwise; Greenhouse, Propagation, Garden Planning, Forcing Salads, etc., Grapes, Poultry. MARTIN, 53, Wellesley Road, Chiswick, W.

GARDENER, Single-handed, or where help is given; thoroughly experienced; middle age; married, no encumbrance; wife would take charge of house during absence of family. J. G., 101, Liverpool Road, Watford, Herts.

GARDENER, age 27, single, life experience, seeks SITUATION in London suburbs or near; good references; as good Single-handed or help given; will bear own expense. Apply, stating wages, to A. WHATMORE, Troed-y-rhiw, Merthyr.

GARDENER seeks SITUATION as Second or Third (Inside or Inside and Out); age 21; seven years' experience; good references. J. FOY, Store Grove Lodge, Tree Root Walk, Sheffield.

GARDENER (Single-handed, or otherwise) requires SITUATION; fully experienced both Inside and Out; accustomed to large gardens; highly recommended; excellent characters; and takes great interest in his work; single at present; age 27; abstainer; Hants preferred; disengaged when suited. Apply, J. G., 997, "Gardeners' Magazine" Office, 148-9, Aldersgate Street, London, E.C.

GARDENER (Single-handed, or where help is given); 12 years' practical experience; 4 years in last situation; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER (Single-handed, or where help is given); life experience in all branches; highest references; thoroughly understands Oil Engine; age 40; strong and active; married; 3 in family, youngest 12½. E. STEVENS, 13, Connaught Road, Newbury, Berks.

GARDENER wants SITUATION (second), age 25 years; Single; 7 years' practical experience Inside and Out; Vines, Peaches, Chrysanthemums, Roses, etc.; abstainer; good refs. W. COOPER, Bell Lane, Alconbury, Huntingdon.

GARDENER seeks SITUATION as Single-handed or good Second; 4½ and 1½ years' experience, Inside and Out; well recommended; age 23; married when suited. H., Post Office, Hayes, Kent.

GARDENER (Single-handed, or Under), life experience; good references; age 25; Single; abstainer; could manage small place. Apply H. GOODING, The Gardens, Firbeck Hall, Rotherham, Yorks.

MR. H. DYSON, Rickmansworth Park, Herts, highly recommends A. BACON as Head Working GARDENER, where more are kept; life experience Inside and Out; excellent references; married; age 34; three children. Address as above.

GARDENER. — Wanted SITUATION as JOURNEYMAN. Inside or Inside and Out; age 20; six years' experience; over two years in present situation; Bothy preferred. J. C., Norwood Park Gardens, Southwell, Notts.

J. FOSTER, Gardener to Sir David Yule, with every confidence recommends good GARDENER (Head or good Single-handed); excellent testimonials; married when suited. Apply HEAD GARDENER, Hanstead House, Bricket Wood, St. Albans.

SITUATION Wanted, GARDENER (Single-handed or under); life experience in all branches; good references from past situations; age 29; Single. W. MILLER, The Gardens, Berry Hill, Taplow, Bucks.

GARDENER (Single-handed or good Second); 4 years' good character; age 23; single; abstainer. Apply A. F. ROOKE, Houndean, Lewes, Sussex.

GARDENER (Single-handed or with help); married, no family; 7 years present place; 10 years previous; left through death. C. LAWRENCE, The Highlands, Gipsy Hill, Upper Norwood, S.E.

JOURNEYMAN, 22, seeks SITUATION as Second, in good gardens under Foreman; 3 years' present situation; good ref. Apply F. WREN, Buxted P. O., Uckfield, Sussex.

MR. A. WAGG, Ossington Hall Gardens, Newark, Notts., wishes to highly recommend J. COUPLAND as Journeyman First in good establishment; age 23; two years present situation.

FOREMAN or GROWER in Cucumbers, Tomatoes, and General Market staff; age 25 years; good reference. A. DESSURNE, Rose Cottage, Dorton Road, Rumney, near Cardiff, Mon.

JOURNEYMAN seeks SITUATION (Inside or Inside and Out; 9 years' experience; good references. F. GLADDIS, The Farm, Sunningdale Park, Sunningdale, near Ascot, Berks.

UNDER GARDENER, age 19, three years in present place, with excellent character, seeks SITUATION where experience can be gained in greenhouse and garden; total abstainer. Apply P. SAULT, Station Road, Kegworth, Derby.

MR. G. S. EVANS, F.R.H.S., Carnation Specialist, Bexley Heath, wishes to recommend G. COLES as SECOND; life experience in Carnations, Chrysanthemums, Tomatoes, etc.

GARDENER.—Young Man as IMPROVER (inside, or Inside and Out); highest references; 2½ years last place; Bothy preferred. A. STEVENS, 21, Arnold Road, Woking.

SITUATION Required by a YOUNG MAN, age 25, as UNDER GARDENER; 7½ years' nursery experience, Inside and Out; good reference. C. NICHOLLS, 32, Orme Road, Worthing.

MAN and WIFE (young) require SITUATION end of February; man good Gardener (Single-handed), wife plain cooking or housework when required; no encumbrances; good references; no objection to Poultry. E. ANDREWS, Sydney Villa, Holly Road, Hampton Hill, Middlesex.

YOUNG MAN, 22, seeks SITUATION, under a Gardener, slight experience, willing to learn; no objection to small premium; abstainer; good reference. A. VACHER, Fairclose, Whitchurch, Hants.

YOUNG MAN, age 20, with five years' experience, seeks SITUATION where experience can be gained in Greenhouse and Garden; strong, willing, and abstainer. Apply, COX, Old Forge, Wolverley, nr. Kidderminster.

YOUNG MAN, age 21, seeks SITUATION Inside and Out; strong and willing; good references; disengaged. CHARLES SHILL, Daglingworth, Cirencester, Glos.

LAD, age 17, seeks SITUATION in Garden; some experience; wish to improve; good character; Bothy preferred. S. RAYNER, Chart Road, Sutton Valence, Maidstone.

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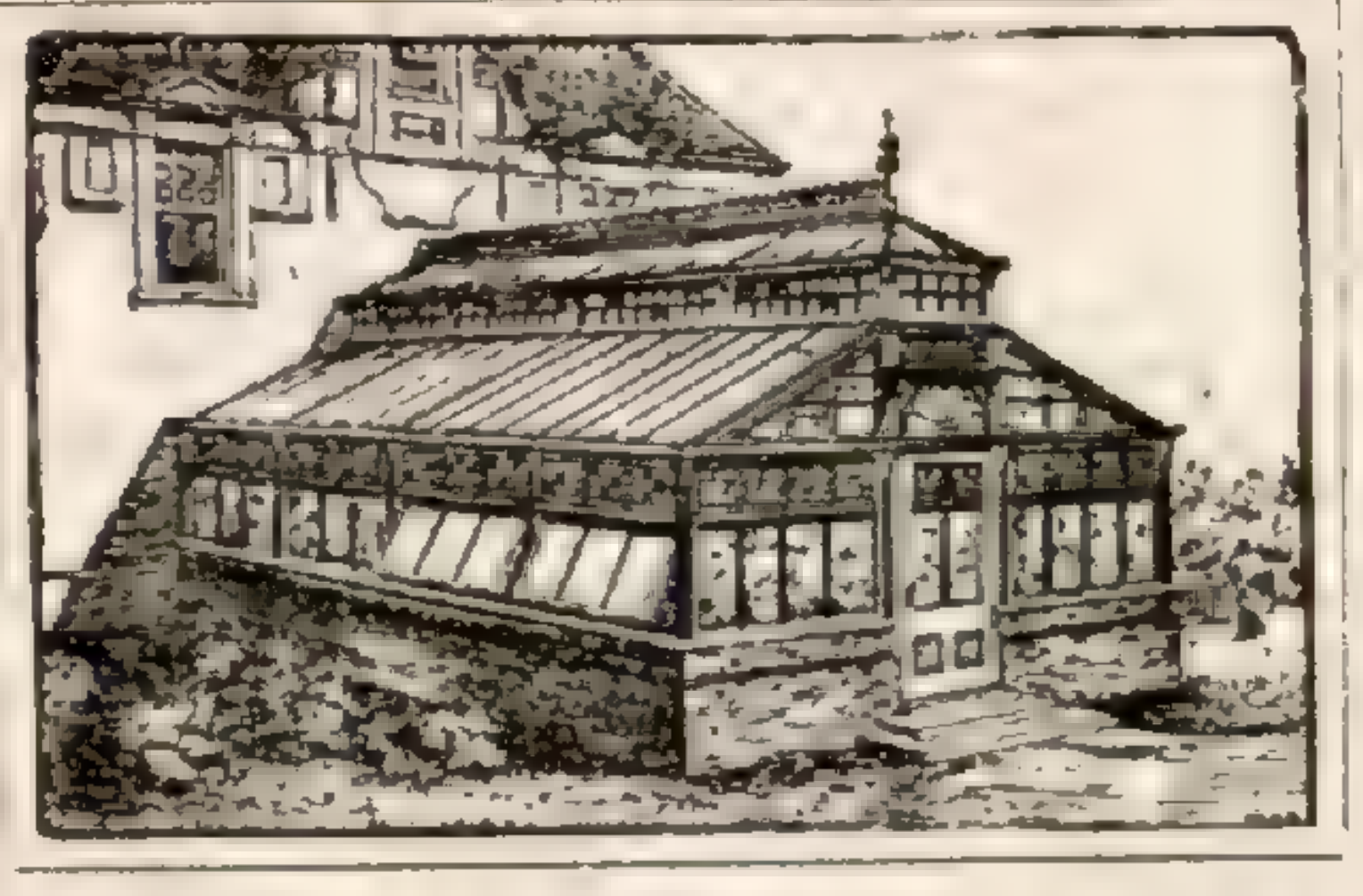

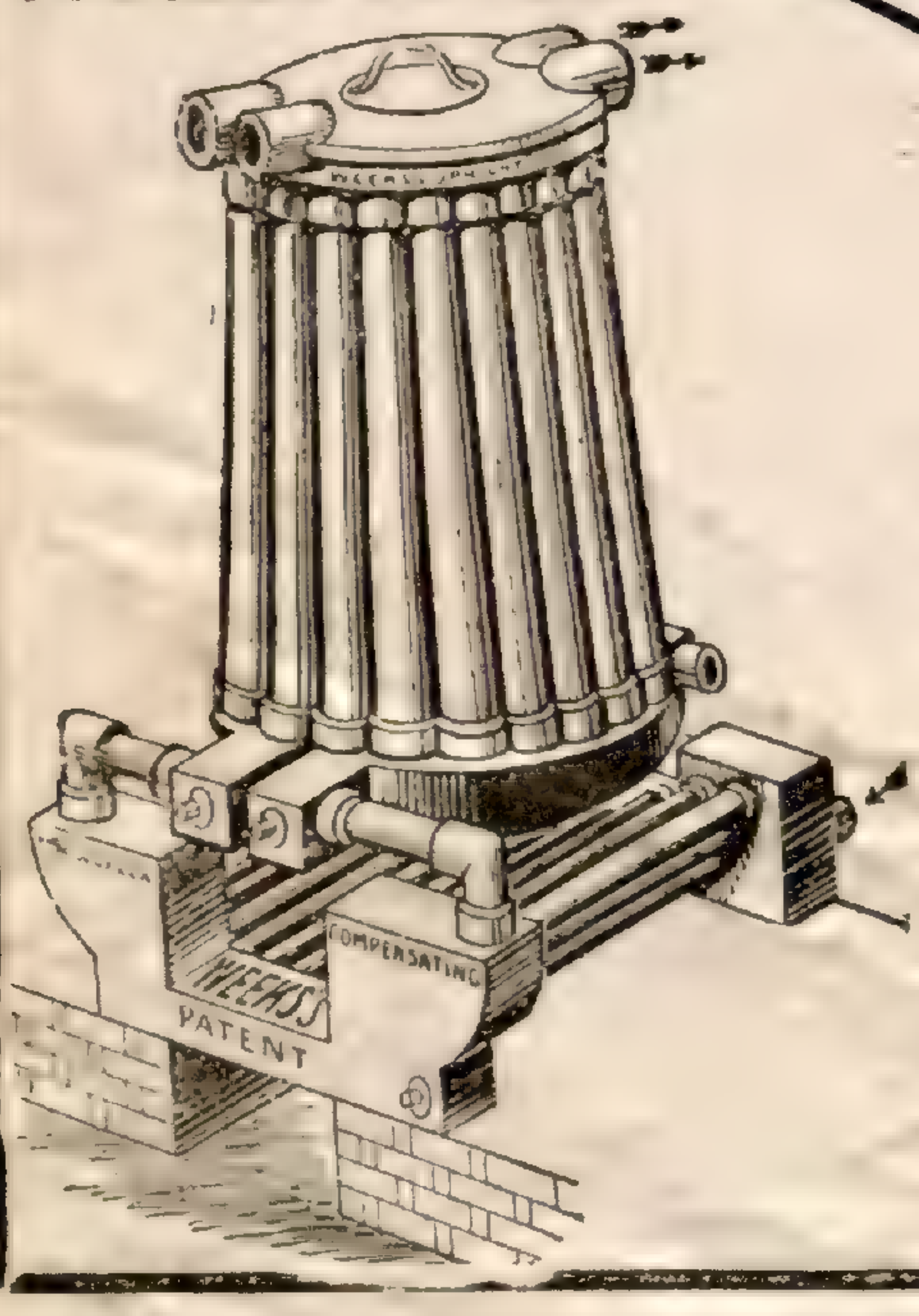

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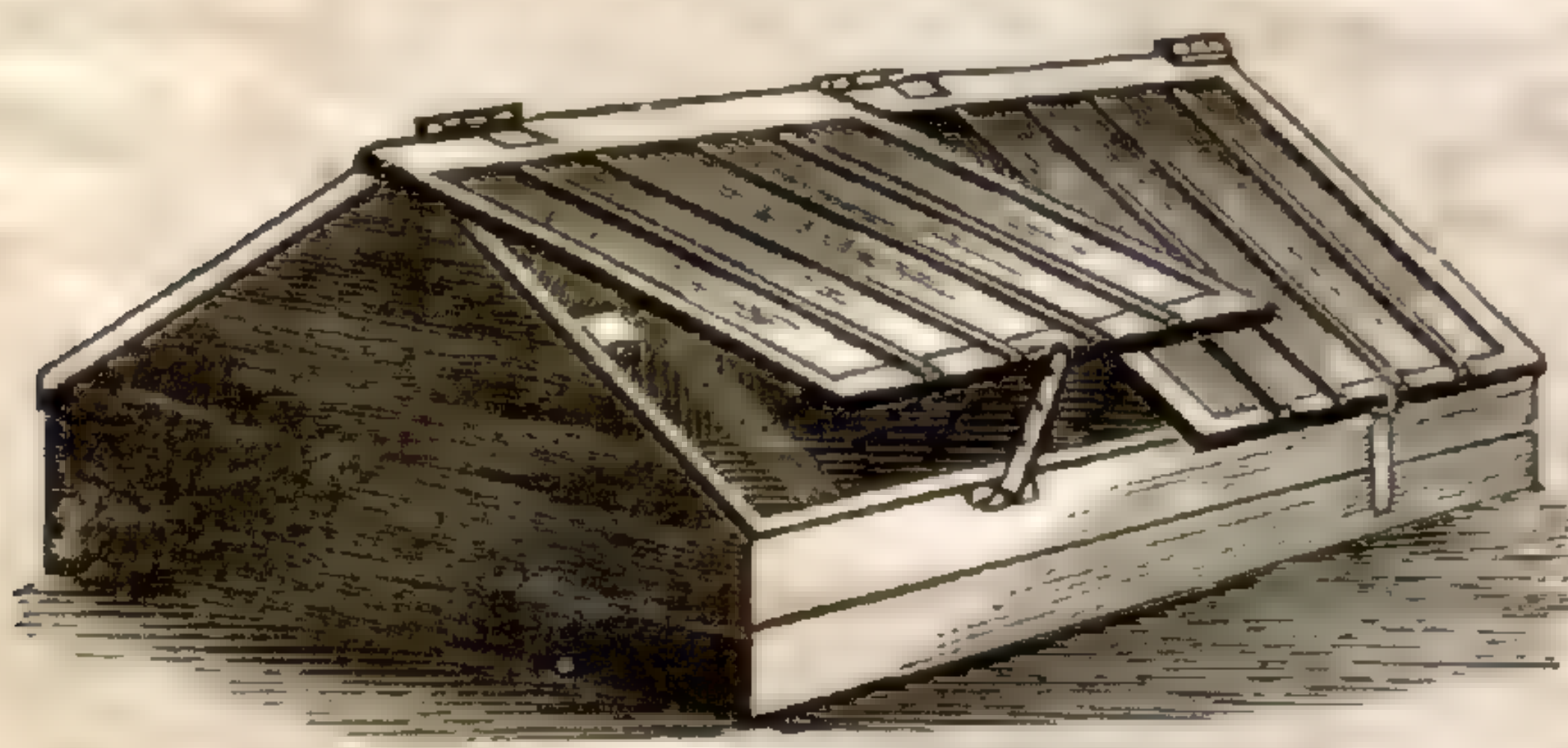

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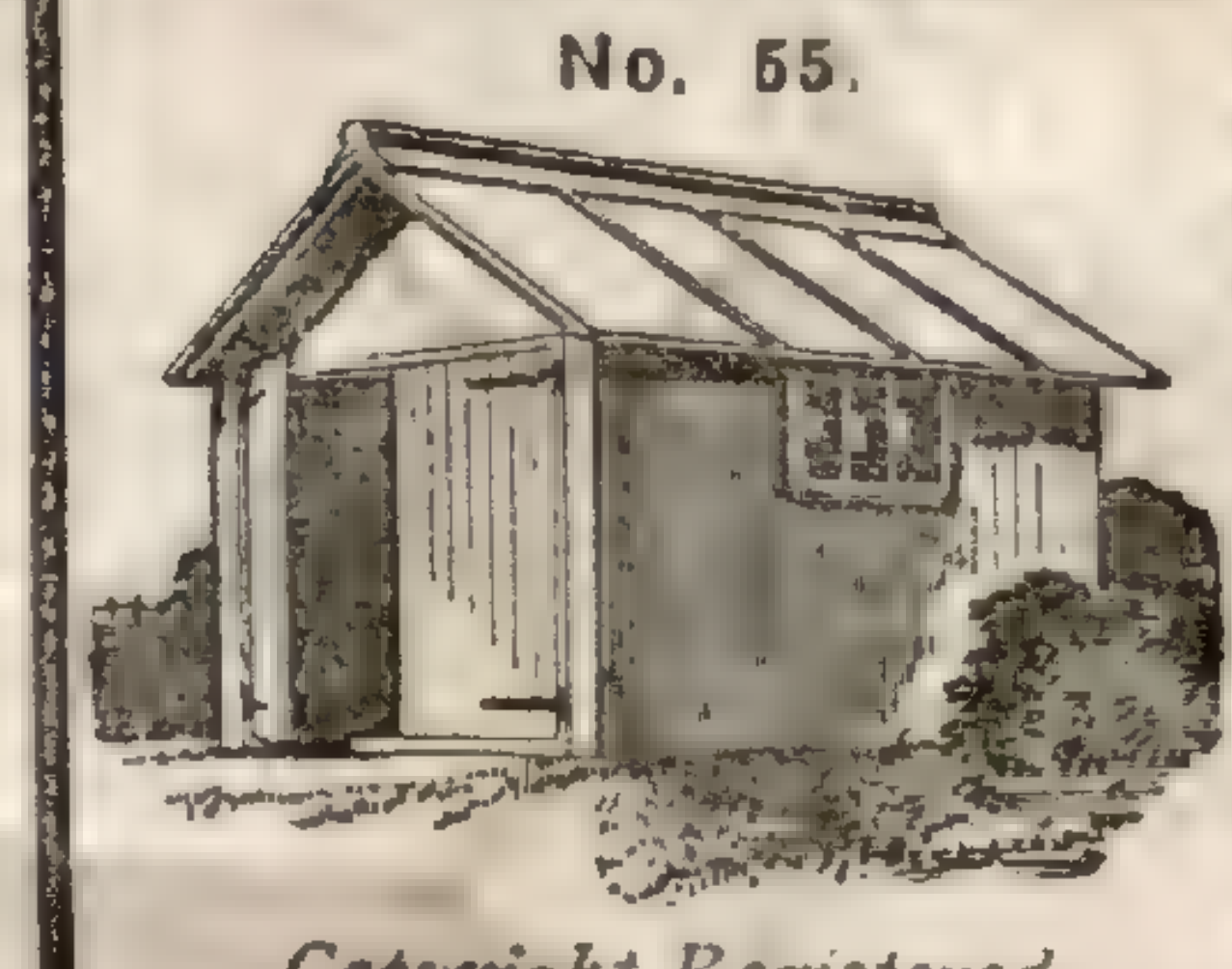

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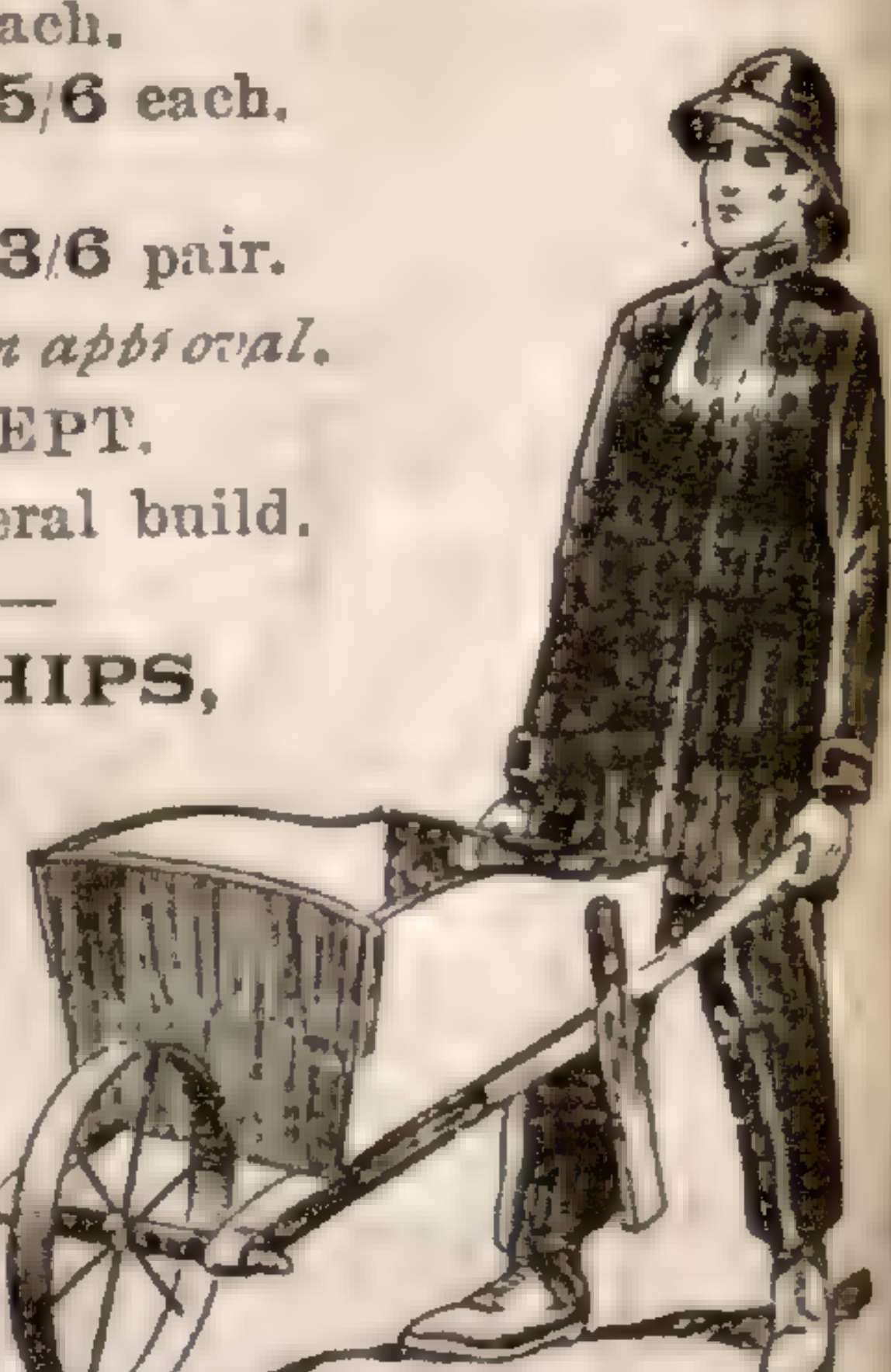

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# A GRAND ISSUE FOR SWEET PEA LOVERS.

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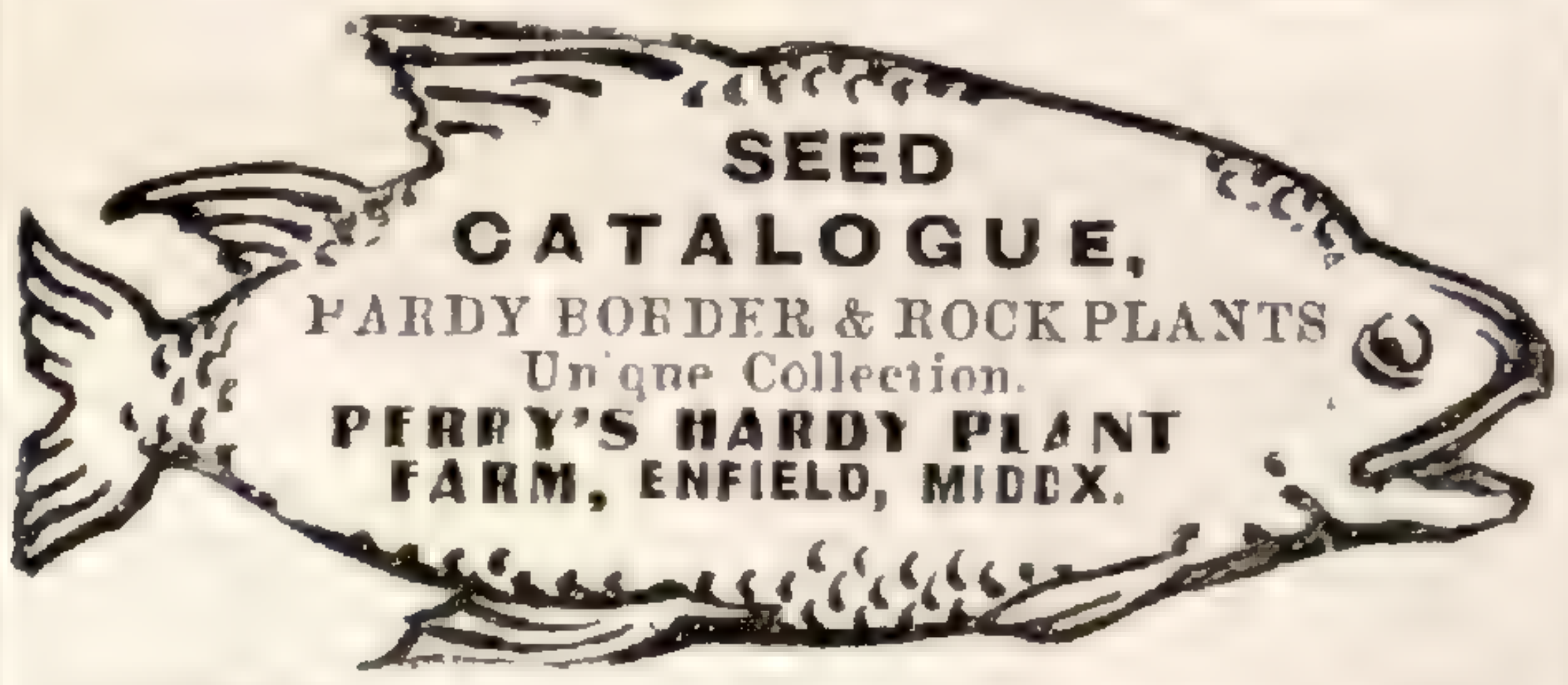

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VOL. LV.—No. 3,039. SATURDAY, JANUARY 27, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Cult of the Sweet Pea.

With a full appreciation of the wondrous beauty and the high degree of usefulness possessed by the sweet pea in its great diversity of colouring, it is impossible to regard otherwise than with a strong sense of satisfaction the prospects of the Queen of Annual Flowers in the year on which we have recently entered. Certainly, in no year since the introduction of the flower into this country, upwards of two centuries ago, has there been so great a promise of a magnificent demonstration of its capabilities, both for beautifying the garden and supplying an abundance of cut flowers for the adornment of the home and for obtaining honours at the exhibitions. Twelve months ago there was ample justification for anticipating a successful sweet pea year, but the exceptional heat and the long-continued drought effectually prevented the realisation of the anticipations that were indulged in, excepting it may have been in the few districts that were especially favoured by the rainfall. We do not pretend to forecast the weather of the coming summer, but we do not believe that the sweet peas will suffer to the same extent this year as in 1911, even if the climatic conditions should be much the same. As the result of the heavy rainfall during the past three months, the soil is now liberally charged with moisture, and it is not probable that the general body of cultivators will forget the remarkable object-lesson they had last summer on the value of deep cultivation in mitigating the effects of a severe drought. Whatever may have been the effect of the drought upon the sweet peas, it did not in any way check the interest that is being taken in them by the flower-loving community. It might, indeed, be inferred by those who are of a speculative turn of mind that the failures stimulated the interest in the flower. We offer no opinion upon that point, but we are in a position to state that in no year has the demand for seed of both old and new varieties been so keen as that which is being met this season. We have evidence also that there will be a considerable addition to the number of those who grow sweet peas in a manner commensurate with their beauty and usefulness. It is not surprising there should be considerable accessions to the ranks of sweet pea growers, for, as our contributors show in this issue, there are sufficient new varieties to satisfy those who attach much importance to novelty, and also an abundance of varieties of high quality among those now in general cultivation. The sweet pea possesses one trait that is not common to all classes of plants that are distinguished by the beauty of their flowers, and this trait is their adaptability to the gardens of all classes. That they are highly desirable in the ducal garden all will be prepared to admit, while for the cottage garden, however limited may be its dimensions, they are most appropriate, more especially as the seed of a selection of the finest of those in general cultivation can be obtained at a very small cost. Some of the cultivators who have not at their command a very large area available for these flowers are complaining of the number of new varieties being too large. We do not share in that opinion, and, with reference thereto would point out that, while it may not be possible for any one grower to include any considerable number of novelties among the varieties for which he has room, it is most desirable that all which are distinct in colour and of high quality should be placed at the disposal of the general body of cultivators. It should be remembered that new sweet peas, as in the case of other novelties, do not always fulfil their promise, and also that some which are not particularly promising possess qualities that render them in some respects superior to those of which a high opinion was held when they first made their appearance. It is certainly not desirable there should be an excessive multiplication of new varieties, and certainly not of those which differ but little in colour from others already in cultivation. As regards colour distinctions, there are too many varieties wanting in distinctness, as shown by the list of too-much-alike varieties prepared by the National Sweet Pea Society. But with the greater facilities that now exist for instituting comparisons, we may anticipate that there will be a material reduction in the numbers distributed that present too strong a family likeness to those already in commerce. Cultivators have good reason to be grateful to the society mentioned for the valuable service that has been rendered in this particular, but it is doubtful whether this work has been fully appreciated. In the interest of the cult it is satisfactory to know that the society has found it possible to arrange for two distinct trials of varieties under wholly different climatic and soil conditions. We are gratified by this extension of the society's work, because of the importance of not only eliminating such as are inferior, but of avoiding the possibility of a first-class flower failing to obtain recognition owing to the local conditions being unfavourable to its full development. With reference to the exhibition side of the cult, there is full justification for the belief that the competition for the cups, medals, and cash prizes offered by the various societies will be even more keen than in past years. No society specially identified with the sweet pea has of late been established in England, but a considerable proportion of the local rose societies have included sweet peas in their programme, and thereby materially enhanced the attractions of their exhibitions and improved their financial position. Horticultural societies have given additional encouragement to sweet peas, and these now form so important a feature as to suggest the possibility that in a few years hence they will be the means of excluding some classes of flowers that should be adequately represented at exhibitions of general societies. In Scotland sweet peas are, to use a common phrase, "going strong," for several special societies have been formed quite recently, and the exhibition season was highly successful last year. Although the drought was severe in Scotland it was not so injurious in its effects as in England, and from the beginning of July until September was well advanced, there was an abundance of flowers of exhibition quality. The great object-lesson that was afforded cultivators in the summer of 1911 on the importance of deep cultivation as a means of averting the effects of a severe drought received a full share of attention from the general body of cultivators. Some, we know, are increasing the depth to which the soil is usually cultivated, and it may be assumed that many others will do so. All the successful cultivators are careful to cultivate deeply, and those who have hitherto failed to obtain a high place on the prize list would improve their positions as prize winners were they to follow their example. Deep cultivation is, of course, equally necessary where the flowers are grown simply for beautifying the garden and yielding supplies of cut flowers. Liberal manuring is not less essential to success, but the excessive applications of manure that are frequently made are not only unnecessary, but undesirable, because of their promoting an undue luxuriance of growth and the development of coarseness, both in the flowers and flower stems. The use of large quantities of nitrogenous manures should be avoided, for they not only promote coarseness, but represent waste as the nitrifying organisms that locate themselves in the nodules on the roots will provide the plants with the greater part of the nitrogen they require. On the other hand, potassic fertilisers might be used more freely in preparation of light soils than is usually considered necessary.

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**Sugar in Plant Leaves.**—In studying the relationship between cane sugar, dextrose, and lævulose under different conditions in the leaf of the snowdrop for the purpose of testing Messrs. Brown and Morris's view that cane sugar is the first product of carbon assimilation in plants, Mr. John Parkin obtained some interesting results. It was found that maltose is always absent from the snowdrop leaf, so that it appears probable that maltose, when present in leaves, is a hydrolysis product of starch. The total quantity of sugar in the snowdrop leaf is considerable, being from 20 to 30 per cent. of the dry weight in leaves, actively assimilating. The amount of sugar increases from above downwards in a single leaf, and at the same time the ratio of cane sugar to dextrose and lævulose diminishes. In the early part of the season there is more cane sugar in proportion to reducing sugar than later, the comparison being made between leaves gathered about the same period of the day. During any single day the percentage of dextrose and lævulose in the leaf remains fairly constant, but that of cane sugar fluctuates considerably, increasing during the day and decreasing during the night. As the result of his investigations, Mr. Parkin is inclined to the opinion that cane sugar is, as suggested by Messrs. Brown and Morris, the first sugar formed in the leaf. Mr. Parkin also considers that it is within the bounds of probability that cane sugar itself may take a direct part in the formation of cell walls.

**Honour to Mr. Harman Payne.**—Among the French New Year's honours our old friend and correspondent, Mr. Harman Payne, has been awarded the "Palmes Académiques" by the French Government in recognition of his many years' writing in the French gardening press. This is the first time the decoration has been bestowed upon an English horticultural writer, and it carries with it the title of "Officier de l'Instruction Publique."

**Daphne odora.**—At the recent meeting of the R.H.S. Scientific Committee Dr. Otto Stapf drew attention to the fact that most of the figures in botanical works under this name represented Daphne sinensis, the true D. odora being very rarely figured, and apparently only of comparatively recent introduction into this country. In times past, at any rate, it would appear that D. sinensis was the more common plant. It differed from D. odora, a Japanese species, in having the calyx tube externally hairy. Messrs. J. Veitch exhibited the true D. odora at the show on this day. Dr. Stapf showed a figure from the "Garden," which was named D. odora, but which differed markedly from that species in the arrangement of its flowers.

**R.H.S. Colonial Fruit Show.**—We are informed by the Royal Horticultural Society that, owing to unforeseen circumstances, the Colonial Government have been compelled to abandon the exhibition of South African fruits, which had been arranged for March 14 and two following days.

**Primula obconica from Roehampton.**—From Mr. R. Bradford, gardener at Highwood, Roehampton, we have received a gathering of finely developed trusses of Primula obconica, which represent a strain of much merit. The trusses we have received have, we are informed, been cut from plants that were raised from offsets that were taken off and potted in April of last year. Mr. Bradford commenced the cultivation of his present strain of Primula obconica six years ago by purchasing from one or two firms the best seed obtainable. From the progeny thus obtained he has year by year made careful selections, and, as the result of his method of procedure, he has obtained finer flowers, bolder trusses, brighter colours, and larger flower stems. Mr. Bradford states that the flowers are used freely in a cut state for indoor decorations, and that they retain their freshness in gas-lighted rooms for fully a week. Last year he was able to maintain a supply of flowers over a period of six months.

**Big Bud of Black Currants.**—A small but useful experiment was carried out by an officer of the Board of Agriculture at Harvington, Worcestershire, in 1911, to test the efficacy of various sprays for combating big bud on black currants. The sprays used were lime and sulphur in the dry form at the rate of one part of lime to four of sulphur; quassia and soft soap at the rate of 2lb. of quassia chips, 1lb. of soft soap, and ten gallons of water, and soft soap alone at the rate of 1lb. soft soap to ten gallons of water. The quassia chips were boiled for two hours previous to the soft soap being added. At the first spraying, April 20, the sprays were used as above. At the second, May 4, the lime and sulphur were used in the proportion of 1 to 8, and at the third, May 25, sulphur alone was used. The soft soap spray did not produce any effect upon the mites, but the lime and sulphur treatment reduced the amount of disease to two-thirds of the untreated bushes, and the quassia and soft soap to four-fifths.

**Royal Horticultural Society of Ireland.**—At the recent monthly meeting of the Council of this society Alderman Bewley and Mr. B. d'Olier were elected chairman and vice-chairman respectively for the current year. Messrs. H. Nicholls, Farmleigh Gardens, Castlerock; J. Shekleton, Seafield Gardens, Donagate, and D. M'Intosh, Danum Gardens, Rathgar, were elected practical members of the society. The society will hold three exhibitions during the year. The spring show will be held April 17 and 18 at Ballsbridge in connection with the Royal Dublin Society's exhibition; the summer show will be held July 11, and the autumn show August 27, both in the grounds of Lord Iveagh's St. Stephen's Green residence, Dublin.

**Mr. William Ward,** who for many years represented Messrs. Osman and Co., London, and more recently occupied the position of general manager for Messrs. J. Backhouse and Son, Lim., York, has been in indifferent health for upwards of twelve months. Upon the advice of his doctor, he has, for the present, retired from active business life, and has gone to Lincolnshire for a complete change and rest. We are quite sure that Mr. Ward's many friends will join with us in the hope that he may be speedily restored to health.

**Fungicidal Action of Bordeaux Mixture.**—The problem of the manner in which Bordeaux Mixture exerts a fungicidal action has been investigated by Messrs. B. T. Barker and C. T. Gimingham, and reported upon in the "Journal of Agricultural Science." The question of the existence of a solvent action of the fungus itself upon Bordeaux precipitates has hitherto not been settled. In this investigation hanging drop cultures of spores were made with Bordeaux mixture and with the filtrate from it. In the filtrate germination and subsequent growth were fairly vigorous, while in the drops of the Bordeaux mixture germination was rare. Diffusion tubes were then used to separate Bordeaux precipitate from its filtrate, when the spores germinated both in the filtrate outside the diffusion tubes and in the diffusion tubes containing the precipitate, but in the latter case only at a little distance from the precipitate itself. In the final experiments films of Bordeaux precipitate were allowed to dry on cover-slips, and films of Nectria conidia were superimposed on these films, overlapping them. After twenty-four hours in a moist atmosphere there was a sharp limit between dead and living conida which coincided practically exactly with the edge of the copper film. Beyond the copper zone nearly all the conidia were living, and had germinated in many cases, especially in the region farthest removed from the copper. With regard to the practical outcome the results obtained support the views of the fruit-growers, with reference to the necessity for thorough spraying, so as to coat as completely as possible the surfaces liable to infection, the importance of the finely divided form of the copper precipitate, and of the adhesive properties of the spray.

**Trees in Paris.**—According to some recent statistics given in "Le Jardin," the number of trees in the Parisian boulevards is 86,154, representing some 21 species. The planes are the most strongly represented, and of these there are 26,254 trees; the horse chestnut ranks next with 16,662 trees, followed by 14,173 elms, 8,920 Ailanthus glandulosa, 5,960 maples, 4,788 sycamores, 3,903 acacias (robinias), 3,197 limes, 942 paulownias, 539 cedars, 344 American walnuts, 238 sophoras, 123 poplars, 34 negundos, 27 service trees, 26 planeras, 18 pterocarpus, two ash, and one mulberry and catalpa.

**Extraordinary Mushrooms.**—Mr. R. H. Legg writes as follows, from the Gardens at Melksham House: Some three or four years ago I put some mushroom spawn in a melon pit at the time I planted out some melons. In the autumn of that year quite a good crop of mushrooms was gathered, and in subsequent years several nice lots have been obtained in the same pit, although the manure and soil have been cleared out several times. At the present time, January 18, 1912, several fine mushrooms have grown out from the brick wall of the pit, a foot from the ground level. Evidently, the brickwork contains a lot of mycelium. I should say it is rather unusual to see mushrooms growing on a brick wall, although one often hears of them doing most extraordinary things; I am enclosing a mushroom from the wall for you to see." This is a remarkable case of persistence of mushroom mycelium; the mushroom sent was a very good specimen.

**Navel Orange.**—Mr. H. S. Rivers sent to a recent meeting of the Scientific Committee of the Royal Horticultural Society a large "St. Michael" orange, produced on a plant which three years before had been cut down. It had the "navel" form seen usually in some varieties of orange, but very unusual in this. Apparently, the extra vigour of the growth had induced its formation.

**Edinburgh Scholars and the Botanic Gardens.**—There was a brisk discussion at the meeting of the Edinburgh School Board on the question whether the school children should visit the Royal Botanic Gardens during or after school hours. The Committee on Day Schools recommended that, as the visits are made for educational purposes, the children should be taken to the gardens in school hours. Some members regarded the visits as recreative and opposed the recommendation, and moved an amendment to the committee's report. In the result it was decided by a majority of one that the children shall visit the gardens outside the school hours.

Photo: J. W. Beaufort.]

# MR. ROBERT SYDENHAM,

***President of the National Sweet Pea Society.***

Mr. Robert Sydenham occupies a prominent, and we had almost written unique, position in the world of horticulture. Few men are more widely known, and his genial personality has secured him large numbers of friends. By way of recreation he took up gardening very many years ago, and found it a pleasant change from the conduct of a wholesale jeweller's business. But his keen business instincts led him to look further than the recreative side of gardening, and before long he commenced to sell bulbs, and very soon developed a large business in them.

From bulbs to seeds was an easy step. The business has grown to be a very large one, and the premises at Tenby Street, Birmingham, are taxed to their utmost at this season of the year, when orders for seeds come pouring in. Though one of the keenest of business men, Mr. Robert Sydenham is also one of the most generous, while his jollity is infectious. He has travelled considerably in North America, Europe, the Mediterranean region, and in South Africa, and is contemplating a visit to California. An early riser and a hard worker himself, Mr. Sydenham sets the pace in any society with which he is connected, never shirking the duties that fall to his share. He has been from the time it was established the life and soul of the Midland Daffodil Society, which has done so much to promote the cultivation and improvement of the narcissi, spending time and money freely to maintain its high position. He is a member of the Royal Horticultural Society's Narcissus and Tulip Committee, and his knowledge of varieties is a wide one. Mr. Sydenham is a great believer in "taking notes," and he is mostly found with a note book in his hand.

For many years Mr. Sydenham grew carnations and picotees for exhibition purposes with wonderful success, and was difficult to beat at the Midland shows, a fact of interest as showing that he has the florists' instincts as well as a strong love for these two classes of flowers. Latterly he has, as a cultivator, taken special interest in the cultivation of bulbous plants in fibre, in undrained pots; indeed, he may be regarded as the pioneer of this useful form of cultivation. As so well known to all who are in any way concerned with sweet peas, these charming flowers occupy a large share of his attention, and in his private garden he grows them freely and well, while he travels far and wide to see new varieties and inspect seed stocks. It is of interest to recall the fact that Mr. Sydenham was a member of the committee that carried through the celebration of the bi-centenary of the introduction of the Sweet Pea, at the Crystal Palace, in 1900, which had such an enormous influence on the extension of the cultivation of sweet peas and on the development of new forms. Since the formation of the National Sweet Pea Society he has always been a prominent and official member, and so, in recognition of services rendered, the members of this society unanimously elected him, at the recent annual meeting, president for 1912, a position of which Mr. Sydenham is justly proud, and one which he will fill admirably.

## EARLY VEGETABLES.

### Peas.

There was a time when green peas were considered a great luxury in June; now they are to be had in abundance by the latter part of April and early in May. But, as a rule, private establishments are not provided with the requisite means for their production, so it is to the great market growers that we look for these most delicious and dainty dishes. Still it is possible in most private places to get a few early dishes before outside crops are ready. Those who are provided with brick pits ought not to have any difficulty in gathering peas by the end of April or early in May, as peas do not require any artificial heat, and they resent forcing. If some of the early varieties are sown at once in brick pits, the seeds will soon germinate, and the plants be then brought on gradually.

The varieties grown must in a measure be determined by the depth of the pits, but as a rule there is plenty of space for the dwarf kinds, or such as do not exceed a height of eighteen inches. A mistake often made when growing such things under glass is overcrowding the plants, and so preventing the air from circulating freely amongst them. Peas are fairly hardy, therefore only need to be protected from frost and cold winds to ensure success. When grown in pits, if the seed is sown any time during the first half of January, with due attention, and if an ordinary season, pods should be ready to gather early in May, but if required before that time they may be grown in a cool house. We have often had a good crop in pots in the late peach-house until the foliage of the peach trees began to shade the plants when they were transferred to a temporary pit. I have grown many varieties under glass, but have never grown the round-seeded kinds, as they are of poor quality. The best of the more recent introduction is Hundredfold; this is a good cropper, and produces fair-sized pods and peas of a deep green colour, and of excellent quality. It grows under glass to the height of about eighteen inches. Some like a dwarfer variety, but we do not obtain the same results from extraordinary dwarf kinds.

### Cauliflowers.

Cauliflowers in early summer are always in request, and as there are now so many dwarf kinds that are well adapted for growing under glass, there is no need to sow seeds in the autumn where a frame can be provided in spring. Seeds may be sown in a box or pan, and introduced into a gentle heat. Here they will soon germinate, and when large enough to handle should be pricked off to prevent damping. When the plants have made three or four rough leaves they should be planted on a slight hot-bed and have a frame placed over them. Air must be admitted on all favourable occasions to keep the plants sturdy. Such varieties as Early Forcing do not require much room; if planted about a foot apart each way, and kept fairly close to the glass, this will be found ample space for them to develop. When the weather is mild the lights may be removed entirely in the daytime, but should be put on early in the evening, and should there be any signs of frost, cover the glass with mats to ward this off, but air should be admitted as early in the day as possible to keep the plants sturdy.

### French Beans.

Of French beans there are now so many good varieties to grow under glass that it is difficult to say which is best. At this time of the year, if a hot-bed can be provided in a pit, an abundance of fleshy pods may be had a couple of weeks or so earlier than from cold frames. The main thing is to keep up a succession, and where the houses in early spring are crowded with other things, it is often difficult to find sufficient space for all; therefore if brick pits are available good crops may be had from these with far less trouble than growing the plants in pots. But it must be borne in mind that French beans, unlike peas, require heat to bring them forward, and unless this can be provided failure is sure to be the result. Where a three-inch pipe runs round the pit there should be no difficulty in keeping up the requisite degree of heat, especially if fermenting material can be given, but this should on no account be excessive, as bean roots are very sensitive, and often more harm than good is done by trying to bring the plants on too rapidly, especially before the pods have begun to form. When grown in pits it is essential that air be admitted both at the top and bottom of the lights on all favourable occasions, as there is not such a free circulation in these situations as in light, airy houses.

### Lettuces.

Lettuces are always in demand early in spring, and as there are now so many dwarf compact quick-growing kinds there is no need to winter so many plants in frames as of old. Seeds sown early in the year in gentle heat will give nice hearts by April and May. As soon as the plants are large enough to handle they should be pricked out about four inches apart each way on a gentle hot-bed, and as near the glass as possible. One light will be sufficient at a time for an ordinary establishment, but if more are required preparations should be made accordingly. The tender crisp hearts of such varieties as Golden Queen are much appreciated as salads.

### Potatoes.

No place should be without a continuous supply of potatoes from the early spring until they are ready to lift from the open ground, but there are very few gardens provided with sufficient accommodation to grow all that are required, hence the reason so many contrivances are made in order to bring forward and protect the numerous crops that are desired. Young potatoes are a dainty dish in the early months of the year, and unless a gardener is able to provide them he is not considered to be a first-class and capable man; but it is not at all times the man that is at fault, but the means at his command. Where heated pits are provided there should be no difficulty in keeping up a supply, as sets may be brought forward in the houses to take the place of those that have been cleared out, thus accelerating the growth of the crop by two or three weeks, which is a great consideration where space is limited.

H. C. Prinsep.

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**Cauliflowers.**—No pains should be spared to obtain these as early as possible, as they are greatly appreciated in most establishments. First Crop, Early Forcing, or any of the Early London types are the best for this sowing. Sow in light soil in boxes, place in gentle heat, and prick off immediately the seed leaves are fully developed, two inches apart. Later on some may be potted in 60-sized pots, and others planted out on declining hotbeds, the rest being gradually hardened off and planted on a south border and well protected. Magnum Bonum and White Queen, sown in the same manner, make a good succession to the above varieties.—G. Ellwood.

## MICHAELMAS DAISIES IN THE NORTH IN 1911.

I had almost begun to expect that Michaelmas daisies were going to be a failure in my garden during 1911. They did not like the extreme heat and dryness of the summer. Mine never received any artificial watering for the excellent reason that I was climbing amongst the Italian Alps when I should have been attending to their mute appeals for moisture.

But about mid-October they largely recovered. The aster which I personally "as at present advised," as lawyers say, admire most, is Climax. I wondered when it would condescend to open its flowers; it did so on October 18, and they were charming, though not so large as I have sometimes seen them. Beauty of Colwall, from whom, owing to the F.C.C. from the R.H.S., one is perhaps given to expect too much, was moderately good here. All the flowers were, I think, double. The Hon. Edith Gibbs was hardly as good as usual, but this year one small-flowered variety gave me great pleasure, to wit, Chastity. I took some trouble in planting it in a position where it would be able to show its beauty, and it did not disappoint me. The plant—not a large one—was a charming thicket of white blossoms, enhanced by their golden centres.

Of the pink or red varieties St. Egwin was as delicately pretty, though hardly so profuse in blossoms, as ever; while Ryecroft Pink, Lil Fardell, and Mrs. Rayner were all good. I used to place Mrs. Rayner first, but the sight of a breadth of Lil Fardell in the York Nurseries caused me to put Lil Fardell in front of my former favourite. Some of the pale pink varieties in my own border have been distinctly disappointing this season, e.g., Mrs. Twinam, Miss Gainsford, and Thirza. The new variety Lustre, which is of a deep pink or rose colour, pleased me much.

Of the blue, pale blue, and purplish-blue varieties, Feltham Blue—much paler in colour than last year—was very attractive. Miss Southall was good—much darker in colour than Feltham Blue. A variety which I have under the name of Splendens, was praiseworthy; so also was A. puniceus, which is very near it in colour.

One of my favourites, Brightness, was very late in opening, but, on the other hand, gave us flowers when other varieties had ceased to bloom. As to whites, I am not yet satisfied. Mrs. Peters does not do well in my garden. A variety at the York Nurseries, under the name of Mrs. F. Thorpe, was last year certainly better than Daisy Peters. Silver Queen, also a white. with a suspicion of a flush of pale blue, was pretty. I noticed one or two varieties in blossom about October 18 which were certainly pleasing—Ethel Perry, a good pink, not much more than two feet high, and A. japonicus, a semi-dwarf blue of a tint very difficult to describe.

It will be observed that I have said nothing of many well-known and praiseworthy varieties, either because they do not appeal to me personally, or because they did not seem to be particularly good this season. One plant which I do not generally admire extorted from me a word of praise, viz., William Bowman, whose purple flowers, in the sunshine, were decidedly effective.

The two chief points as to the culture of Michaelmas daisies ceem to me to be, first, do not let the clumps get too big, or, in other words, divide them every year, and, secondly, stake early.

G. Yeld.

York.

# SWEET PEAS IN 1912.

## NEW SWEET PEAS.

New sweet peas are as numerous as new roses and new cypripediums. Probably they are not so numerous as is the last-named family of orchids, but they are so abundant that hardly any enthusiast has seen all of them in any one year, and fewer have had opportunities of comparing the newer varieties one with the other. Doubtless some varieties that are at present by way of being "dark horses" may eventually become winners, and also it seems quite likely that some new sweet peas of which a good deal has been said and written, will soon fall in estimation. Therefore, one must needs write with care of new varieties lest overpraise or overblame be given.

SWEET PEA R. F. FELTON.

Lilac with blue-grey wings, flowers considerably reduced in size. Introduced by Mr. R. Bolton.

Mr. Robert Bolton occupies a foremost position with new varieties, especially with those belonging to the fancy section. He gave us a hint at further delightful colour combinations when he sent out Charles Foster, and probably his newest varieties will supersede that variety. It is doubtful whether any new sweet pea was more talked about at the N.S.P.S. show in July last than Afterglow, a beautiful and indescribable variety with blue, purple, and mauve colouring. Prince George is another fancy sort which Mr. Bolton thinks will quickly take the lead in this division: it is a combination of rose, violet, and bronze. R. F. Felton, lilac, with blue-grey wings, is another fine variety from Carnforth.

Messrs. Dobbie and Co. have some capital varieties to offer, and their May Campbell, cream, with rosy flaming and veining, is right at the top of the "marbled" section. Mauve Queen will not please everyone, but it is a first-class flower, and its shade of colour is very pleasing. Lady Knox, of ivory shade, gives a fine spike of flowers, while Melba, a light salmon-pink, is a beauty that can scarcely fail to secure popularity. Red Star, raised by Mr. Malcolm, and distributed by Messrs. Dobbie and Co., is fine in the rich deep scarlet section.

Mr. Robert Sydenham, Lim., presents several new sweet peas, chiefly raised by Mr. R. Holmes, of Norwich. Thomas Stevenson has been with us one season now, and is a fine orange-scarlet; Barbara is a fine deep salmon; Millie Maslin Spencer is a big waved magenta; Scarlet Empress is a waved counterpart of Queen Alexandra; Edith Taylor, deep rich rose; and Lady Evelyn Eyre, pink, flushed with soft salmon, are other sorts offered from Tenby Street, Birmingham, and all have been seen in fine form.

Mr. W. J. Unwin, Histon, offers four novelties, and of these Winifred Unwin, a charming light blue shade, should find favour; Leslie Imber gives a medium shade of blue; Cyril Unwin is a fine grower, and has maroon, violet-shaded flowers; while Walter P. Wright is light lavender-blue, a pretty shade of colour, and the variety has strong growth.

Miss Hemus, Upton-on-Severn, offers dwarf forms of Marjory Hemus, Maroon Paradise, and Purple Paradise; these are said to grow about sixteen inches high, forming little bushes; these I have not seen, but their descriptions suggest beauty and novelty. Of Lucy Hemus, Paradise Regained, and Evelyn Hemus, double forms, are now offered, and should prove interesting and useful. Paradise Moonstone, pink, with blue tinting; Holdfast Picotee, pink, with red edge; Marjory Hemus, white, with soft violet edge; Paradise Celestial, pale blue; and Paradise Opal Pierce, white with opal veining, are all new and striking novelties, and in some cases there is more than one shade of the variety offered, thus Marjory Hemus is offered in three heights—dwarf, intermediate, and tall—and in three shades of colour—pale, medium, and deep.

Messrs. W. Atlee Burpee and Co., Philadelphia, U.S.A., are offering the splendid Vermilion Brilliant in conjunction with Messrs. Alex. Dickson and Sons. Newtownards; it is vermilion, and it is brilliant. These two firms are also sending out Irish Belle, a lovely lilac flower, shaded with pink. The Burpee Company has several "duplex," or double, varieties, that is, those with two standards, and in Margaret Madison it would seem to have secured a good bright blue Spencer form.

Mr. Henry Eckford, Wem, has a short list of new sweet peas, and the varieties offered are Miss Guest, a bright reddish-rose self of great beauty; Apricot, a charming combination of soft apricot and pink; Terra Cotta, difficult to describe, but combining cerise and rose shades in pleasing fashion; and an improved waved form of the brilliant St. George.

Mr. C. W. Breadmore is distributing Iris, a lovely salmon sweet pea, promised some time past; Jack Tar, deep blue, with bronze-tinted standard, is a good thing; and so is Alpha, a fine pink, shown well at the Temple Show of 1911.

Messrs. Aldersey and Marsden Jones, Tilston, have some very choice varieties of refined form, and these include Amber, deep pink, shading to scarlet; Dragonfly, lavender and cream; George Curzon, deep blue flake; Mulberry, deep reddish-maroon; and True Blue, an indigo self that I do not remember having seen.

Messrs. Stark and Son, Great Ryburgh, have Hercules, which did so well last year, and White Queen, a white counterpart of the former. I am waiting for the Messrs. Stark to give us a waved form of the solid and pure White Florence Wright—it would be fine. Majestic is offered as a new cream form, and King Manoel must be classed as chocolate-red; and Ashantee as dark maroon; while Bluejacket is very promising in the deep blue section.

Messrs. Lumley and Co., Hayling, have a good chocolate self in Enid Damerum, and another dark variety in their Guy Langton, while Ruth Earl is a dark wine-red sweet pea that has been exhibited well on several occasions. Mr. William Deal, Kelvedon, offers Bouquet, a pink Helen Pierce; Minnie Orst, a pale waved Helen Pierce; and Juliet, a very pretty variety, cream, flushed with salmon. Mr. James Box, Lindfield, is distributing Orange Perfection, a rich variety he showed largely and well at many exhibitions in 1911. Messrs. Isaac House and Son, Westbury, Bristol, have a mauve and purple variety named Messrs. James C. House. Chastity, a fine blush form, from Messrs. R. H. Bath, Wisbech, promises well. Earl of Chester, orange-scarlet, offered by Mr. Ward, of Vicar's Cross, Chester, and Messrs. Faulkner and Aitkens, Tarvin, Chester, has been highly spoken of by many growers, but I do not think I have seen it myself. Mr. Mackereth, Ulverston, is sending out Mr. F. H. Chapman's Iolanthe, a good white garden variety. Messrs. Gilbert and Son, Dyke, Bourne, have a good cream-pink in Lady Florence Willoughby, and a charming blue flaked variety in Mrs. B. Gilbert, and Mr. A. E. Alsen, of Waterlooville, has a distinct novelty in Minnie Furnell, pink, with cream centre. Messrs. E. W. King and Co., Coggeshall, have a new ivory variety named Princess Mary. Mr. W. O. Cantley, Bury St. Edmunds, is offering a new pale blue named Seamew, and a lilac-blush variety named Agnita; the first-named is very pretty, while Agnita is unusually fragrant.

There are other new varieties, some of them offered by the raisers mentioned above, and some by other firms, but those named are all worthy of trial. Probably not fewer than a hundred and fifty new sweet peas were exhibited in 1911, but some of them appeared to be new only to the exhibitor, and so had received a new name for the time being. It grows more difficult each year to keep pace with the novelties. C.

## THE SCIENTIFIC INTEREST IN SWEET PEAS.

We all know the story of the Cambridge undergraduate whose one strong point was a simple problem in mechanics, and who, when sitting for the "Little-Go" began an answer to a question on Xenophon's Anabasis: "That the Retreat of the Ten Thousand may be clearly understood, I must first explain the principle of the Common Pump." I mention this because I fear your feelings will be mixed when I say that, in order to make clear the scientific interest in sweet peas, I must first explain Mendel's principles of heredity.

The main principle underlying Mendel's law is very simple, and really very interesting, as all up-to-date sweet pea raisers know, but the average man whose delight is in his prize blossoms, when he sees pages covered with symbols that look like algebra sums gone mad, is apt to shy at it and turn over to the next article with its accompaniment of pictures. I shall not go far into the mysteries of Mendelism, but just give the main principle. Mendel experimented with culinary peas, and came to the conclusion that the characteristics of a plant (height, colour, and so on) are due to pairs of alternative factors, respectively dominant and recessive, the recessive characteristic being latent except when the dominant factor is absent. He also found that when a pair of factors were brought together by crossing, the seedlings in the first generation showed dominant characteristics only, but that in the second, if self-fertilised, the plants had issue in the proportion of three dominants to one recessive. Of these the recessive and one dominant bred true, while the other two dominants always broke up again in the same three to one ratio. That is, as you may say, the bedrock of Mendel.

The chief workers on sweet peas from a purely scientific point of view are Mr. W. Bateson, late Professor of Biology at Cambridge and his successor, Professor R. C. Punnett. In one of their early experiments they found to their surprise, on crossing two white sweet peas, that the offspring was coloured. This was due to the fact that colour in a flower is not due to one, but to two factors, called C. and R., and if either of these is absent, the flower is white. In this case each flower carried one of the complementary factors, so their union produced a coloured seedling in the first generation, while in the second, of course, some of the seedlings were again white. Consequently, when crossing a coloured sweet pea with a white, we must not imagine that colours can come in from one parent only. This will be so if the whiteness is due to the absence of the factor R., but if C. is absent, all sorts of tints may be suppressed in the apparently pure white.

It was thus, I think, that Audrey Crier got its beautiful salmon shade. Audrey Crier, in stud book parlance, was by Countess Spencer out of Dorothy Eckford. Dorothy Eckford is the albino form of Miss Willmott, the factor C. having apparently dropped out, leaving the orange tint latent, to reappear in the offspring of the cross. Of course, the colour question is not so simple as this; in the composition of any tint it is probable that more than one, in fact, several, factors are concerned.

Another very interesting phenomenon with regard to sweet peas is what is known as "coupling" and "repulsion." Where two apparently quite independent factors are concerned, we sometimes find them occurring in a different ratio from the usual three to one series, certain combinations being far more frequent than others. A further discovery was made last year which may be of great practical value to raisers.

It is well known that old type sweet peas seed much more freely than the waved varieties. This would lead us to think that there is some connection between shade and fertility, that, for instance, a system exists in which the factors for plain standards and fertility are coupled, while the factor for waviness repels the fertility factor. If this were so, wavy sweet peas, with a fertility equal to plain ones, would occur with very great rarity, likewise sterile peas with plain standards. Last year it was discovered that if you cross these exceptional members of a coupling system, you reverse the system in their progeny, so that if in your seedlings of the second generation you find an extra sterile plain standard and an extra fertile wavy pea and cross these two, you will obtain a race in which the great majority of the waved peas will be extra fertile and the plain standards sterile.

Another interesting problem which remains to be solved is the cause of scalding and burning. Why should Sunproof Crimson, for example, come unscathed through the brightest sunshine, while King Edward Spencer, in the same circumstances, turns a kind of dingy purple? In this connection I made some interesting observations last year, which lead me to think that burning is not the result of sunshine only. Everyone remembers, with more or less gratitude, according to his occupation, that last July was exceptionally hot, dry, and sunny. From the 6th to the 13th we had cloudless days here, with a considerable breeze from the N.E. and temperatures from 75 to 85 degrees. On the 16th the wind went round to S.W., there was a good deal of cloud, and temperature ranged from 74 to 91 degrees, with a very close, thundery atmosphere, and kept so till the end of the month. Very light showers fell on four days in the latter period, the former was rainless. During the former period King Edward Spencer, growing unshaded in the open field with a S.E. aspect, showed absolutely no signs of burning, but no sooner had the wind gone into a southerly quarter and the air become close and humid, than it burnt badly, although there was more cloud, and at first a rather lower temperature. By the second morning, even the unopened buds were a dingy purple. Does this justify one in supposing that the phenomenon we call "burning" is not really as much the effect of sunburn as of the humidity in the air?

We often hear that a variety is quite fixed in one garden, and hopelessly sportive in another. Is there any connection between soils and fixity? Two things I have noticed with regard to wild flowers make me inclined to answer "Yes." In the first place, in this neighbourhood, cases of albinism seem to occur with comparative frequency in some districts, while in others they are very scarce. In the second place, I noticed in the Lincolnshire fens, on the border of the limestone district, that several normally blue chalk-flowers which had become naturalised by the side of the fenland dykes, bore pink blossoms in that situation. If there is anything in this analogy, we might find a clue here to the unexpected appearance of rogues in an apparently fixed variety and by following it up might arrive at an explanation of the origin of that source of worry and joy to raisers, namely, Sweet Pea Countess Spencer. T. H. DIPNALL.

Shelley, Hadleigh.

# A FIRST-CLASS 24 SWEET PEAS.

In giving a list of twenty-four varieties of sweet peas for exhibition, exclusive of the actual novelties, one is able to speak quite definitely as to the merits of all varieties, although I very much doubt whether any two growers would quite agree on the whole twenty-four, although they may probably agree on eighteen of that number. This really means that after a certain number of varieties have been included (of really outstanding merit), the inclusion of the others more or less depends on the taste of the individual making the selection, and so he naturally includes those varieties that do well in his particular neighbourhood, or which appeals to him most by their colour or form.

In staging twenty-four varieties of sweet peas the aim should be to include as many distinct colours as possible, and in preparing the following selection the importance of this has been constantly kept in mind.

Elsie Herbert, when in good form, is, I believe, as near perfection as we can hope to have in the sweet pea, and it is easily first in the picotee edge white ground section. Dainty Spencer is its only rival, but after growing both side by side I find that the first-named is the best.

Maud Holmes is another pea of unique proportions, a giant in every way, and is, if anything, just a little the best of the Sunproof Crimson section, but there is not much difference in point of merit between the first named and Dobbie's.

John Ingman, the first break from Countess Spencer in its true colour, rose, is the best in that section, and although we have Marie Corelli and one or two others similar, they are not to be compared to the first-named for exhibition purposes.

Clara Curtis.—This stands alone in the cream class for colour, a good bunch of it being very effective. Paradise Ivory and Isabel Malcolm are its nearest rivals, and, although good in every other way, they just lack the deep colour of Clara Curtis.

Mrs. C. W. Breadmore.—This is the exact counterpart of Evelyn Hemus, except that it is a trifle the stronger grower, and must be included in any collection, whether large or small, it being, in addition to a good exhibition variety, one of the best in the decorative section.

Thomas Stevenson.—Although of rather more recent introduction than the other varieties, it certainly deserves its place at the head of the orange-scarlet class. It is a good grower, and the flowers stand the sun well. They should be exhibited when well developed.

Elfrida Pearson should, I think, be included in the best twenty-four, not as a pink, but a blush variety, it being rather larger than Princess Victoria, with just a trifle more colour.

Mrs. Routzhan.—Now there is a true stock of this variety I think it stands quite at the head of the cream-pink section, a bunch of this being exquisitely beautiful and highly effective.

Queen of Norway. This variety belongs to the mauve section, and is of great merit. The flowers stand the sun well even in a summer such as that of last year. Tennant Spencer, Winvoe Castle, and Helio Paradise are also highly meritorious.

Anglian Blue. This is a sweet pea that I have grown and shown well for three seasons, and in comparison with other blue varieties, I consider it the best both in size of flower and colour.

Earl Spencer was undoubtedly the best in the salmon section till last year, and even now it is good enough to have a prominent position among the new varieties of last season belonging to the same shade of colour.

Florence Nightingale.—As a lavender variety a fixed stock of this sweet pea would be difficult to surpass. As grown in 1910 it was decidedly the best lavender I ever saw, but it did not quite keep up its reputation last year.

Nora Unwin.—Although not so free in producing four blooms on a stem as Etta Dyke, it makes a rather better bunch, the flowers having a longer stem, and show themselves off to better advantage. Etta Dyke is, of course, a very fine variety, and well deserves the popularity it enjoys.

Nubian.—This was my best dark variety last year, probably because it was on rather better ground. It is quite fixed, and is well worth commending, although Tom Bolton and Black Knight Spencer both so meritorious as to deserve the heartiest commendation.

SWEET PEA MRS. W. J. UNWIN.
A handsome red-flaked variety.

Scarlet Monarch.—This is probably the best variety raised by Mr. William Deal. It is a first-rate scarlet, although the plant is not so robust as some of the other colours; the flowers are very fine, and stand the sun well.

Helen Grosvenor.—This is about the best in the orange-pink section, not quite so large as Edrom Beauty, but it is brighter in colour and less liable to burn. In the north the latter might possibly prove the best.

Menie Christie.—This is a distinct sweet pea, the colour of which is described as magenta, but I think it more closely approaches violet. The flowers are large, and when well shown will make a good addition to a collection.

Charles Foster.—This is termed a fancy, and is a very fine pea, and will, I think, be seen in much better condition during a cooler season than that of last year.

Countess Spencer, in good form, is still one of the best of the pink varieties, but it has some strong competitors among the newest varieties.

Doris Usher belongs to the deep cream-pink class, and is very fine, and in a collection of twenty-four varieties there is room for it in addition to the other pinks named.

Winsome.—The colour of this variety might be described as lilac, and is a very pretty sweet pea of full exhibition size, and if given a suitable position in a collection is very telling.

Mrs. W. J. Unwin.—This very fine striped variety in good condition is very telling in the front row of a stand, and although not very long in the stem, the size and colour of the oflwer is all that can be desired.

W. R. Beaver.—The colour of this chocolate striped variety is not beloved by everyone. Nevertheless, it is a very telling variety, and certainly one of the best in size and form in its class, and, like nearly all the striped varieties, it is a very strong grower.

Arthur Unwin is a strong-growing bicolor, and the flowers are very effective in the bunch. It is not so distinct in the two colours as is Colleen and Mrs. Andrew

Ireland. The variety is of much merit for exhibition.

Although in this list of twenty-four varieties I have not been able to include one from each of the various colour classes, yet I believe I have included those of most moment, and certainly those that I have proved to be useful for various purposes. If they should be taken en bloc as a collection, it will be found that not one variety is included that, with good cultivation, will fail to do the raiser, grower, and myself justice. THOMAS STEVENSON.

SWEET PEA ETTA DYKE.
A pure white waved variety.

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**French Beans.**—Where a regular supply of these are required, fortnightly sowings must be made. A good plan at this season is to sow six seeds in 4in. pots, transferring them when large enough to 8in. pots, and potting them low enough to allow two top-dressings. It is remarkable the progress and ultimate benefit the plants receive from top-dressings as advised. Use a compost of loam, dried horse-droppings, grit, and wood-ashes, and maintain a temperature of not less than 60 degrees. Syringe during favourable weather to keep down red spider. Support the plants with hazel or other suitable branches, and pinch the tops of the shoots when high enough. When cropping give the plants occasional manurial waterings; using all liquids at the same temperature as the house. Plentiful and Ne Plus Ultra are two sure croppers at this season, and Canadian Wonder is perhaps the best variety for later batches. Sow broad beans in a cool house.—G. ELLWOOD.

## MARKET INTEREST IN SWEET PEAS.

There is no gainsaying the fact that the modern Sweet Pea has aroused a considerable interest in market-growing communities. The interest may be a commercial one, yet at the same time the market men may be said to take quite as much interest in the cultivation of this flower as any other section of the community, though, perhaps, from their own particular point of view.

No doubt the popularity of the flower has done much to stimulate its cultivation, for one can always walk round Covent Garden Market in the season and see the most up-to-date varieties grown to such a state of perfection that they would not disgrace even the National Sweet Pea Show. But for market use all and sundry varieties are not available, and the would-be cultivator has to make a careful selection of his colours, for plenty of our best peas, from an exhibitor's point of view, would be worthless for market purposes.

Although a wide range of varieties is grown, the colours must be decided, bright, and clear; washy pinks, thin blues, magentas, and most of the fancy sorts are absolutely barred, for nobody would buy them. The flowers of the varieties selected must have substance, or they will not pack well, and, above all, they must have long stems. These qualities are somewhat difficult to obtain, but they are to be found, first by proper selection of varieties, and afterwards by special cultivation.

Sweet pea growing for market is rather an expensive matter, for the land must be well cultivated and heavily manured, while the seed is a considerable item, especially in the past few years; then the stakes dip pretty heavily into the profits, while the labour is another somewhat heavy item.

### The Cropping Season.

The season cannot be described as a long one, for the indoor crop starts in April and goes through May and June, and by the time we reach the middle of July the market is tired of peas, and as soon as the stems shorten up they barely pay for gathering. I remember that in May last fine bunches could be bought from 2s. 6d. to 4s. per dozen bunches, while a few years back these would have realised at least 9s. to 10s. per dozen bunches; but I fear the day of high prices has departed, never to return. There are numbers of growers who will tell us that sweet pea culture for market does not pay, and I am inclined to this opinion myself, unless the very best sorts are grown with the best of cultivation and packing, then, no doubt, they will give a return; but there must be thousands of bunches sold in the summer that never return a penny profit to the grower, and now that the "streak" disease has become so prevalent the crop will have to be regarded as a problematical one, for last season there were crops that did not give a profitable picking for more than three weeks owing to this disease, and from a commercial point of view the cure or preventive seems as far off as ever.

### Culture.

In some favoured districts the seeds are sown in the autumn in the open ground, and where the plants survive the winter this crop work out well, for they come in on the first flush of the market, but there are so many enemies to contend with, that the bulk of growers sow early under glass, and plant out early in April, for seed of the newer kinds is too expensive to risk in the open air all winter, especially where birds and mice are troublesome.

Quite a large trade has sprung up in recent times for seedling plants in pots. These are sent to market by the thousand. I fear it would astonish our exhibitors if they only saw these little pots crowded with young plants. I should guess there are often twenty to thirty in a three-inch pot, but unless they are packed full, the buyers will not look at them.

### Varieties.

It is unnecessary to give the colours of the different varieties, as they are so well known, but the following are largely grown, with many others. Mont Blanc, Dorothy Eckford, Emily Henderson, Etta Dyke, Enchantress, Gladys Unwin, Countess Spencer, Miss Willmott, Mrs. Hardcastle Sykes, Nora Unwin, Helen Lewis, Queen Alexandra, Lady Grisel Hamilton, King Edward, Frank Dolby, Clara Curtis, Evelyn Hemus, and Asta Ohn.

Mixed bunches are also to be obtained in the cheaper grades, but I should think they hardly pay for packing.

### Packing.

This subject has been lately dealt with in these columns, but I may mention that scores of boxes of flowers find their way to the street carts solely because of bad packing, or packing them while the flowers are wet. Bruised or damaged flowers are useless for market or any other purpose.

J. B. RIDING.

# SOIL PREPARATION FOR SWEET PEAS.

No one will doubt that the proper preparation of the soil is the foundation of success in the cultivation of sweet peas. Last season provided many object-lessons as to the suitability or otherwise of certain soils for the successful growth of this favourite flower, and of the importance of deep cultivation. Excepting a deep friable loam, a heavy retentive soil is the best medium for the roots we could wish, provided it is properly prepared. The flowers colour well when the plants are growing in such a soil, and they possess much substance in both stem and petal, both of which are important, especially when the winning of prizes is the chief aim of the cultivator. Sweet peas, when growing in stiff soil, make stout haulm, which is most desirable, it being difficult to have the growth too sturdy. Large, thick, leathery leaves of a dense green colour are a sure indication of what the flower crop will be, provided, of course, all necessary details are carried out.

## Soils and Sites.

Sweet peas are impatient of a lack of moisture at the roots, and in a heavy soil when properly prepared, this is not nearly so likely to be a source of trouble as when the soil is light in texture. It must be remembered that the better the preparation of the soil the more effectually is the moisture conserved, and also that there is as much art in conserving moisture in soil as there is in applying it, and the conserved moisture is distinctly of greater benefit to the plants. Last season there were many excellent crops of flowers upon plants with but a minimum of labour expended in the supply of water by artificial means. I allude to stiff soils in low-lying districts where capillary attraction was indeed a boon last year.

Sandy soil, or that which is light, with a gravel subsoil, is the least desirable for sweet peas, at least where the best possible results are aimed at. In such soil we rarely find that luxuriance of haulm that is so pleasing, neither do we obtain a continuous supply of flowers extending over a long period. For ordinary garden decoration full crops of blossom can be obtained, but I have in my mind in writing these notes, a higher standard of quality.

A change of site, or I should say soil, is a distinct gain, for sweet peas resent being grown in the same soil in two consecutive years. The growth is not so vigorous when they occupy the same site year after year without changing the soil, which in the ordinary way is too much trouble. As far back as 1895 I had distinct experience of this. Then, and some years previous, I grew sweet peas in clumps beside paths in the kitchen garden for convenience in attending them, and for effect, and soon found that the growth became shorter each year. The ordinary grower for exhibition nowadays has none of this trouble to contend with; he does not arrange his plants for effect in groups, but he usually grows them in rows across the quarters in the kitchen garden. In this manner no trouble need be experienced, as the site can be changed at will. Not so the person who is expected to produce an effect in the same part of the garden year after year. In this case, a complete change of soil annually is the only remedy, and this is quite practicable. (I practise this method annually now in a small way, and with very good results.

## Deep Cultivation.

What is needed to ensure success is a deep, well-prepared, rich rooting medium, and as the roots of sweet peas go to a great depth when the medium will allow them to do so, deeply stirred soil is necessary. This is a brief summary of the requirements; how it shall be prepared is, of course, a matter of opinion, each cultivator has his own method, and, as I have always said, there is no one road only to success.

While trenching is such a boon in heavy soil, it is not such an essential detail in that which is sandy. Why are heavy soils trenched is a question that might well be asked, and it is one deserving an answer, as this, when properly given, should be of assistance to the inexperienced. Apart from the facility of root penetration, the deep stirring of the soil well down into the hard subsoil admits of a quick passage of water after heavy rains, and thus avoids stagnant water about the roots. This is important, as it ensures the free, uninterrupted growth which is so desirable for all plant life. Especially is checking injurious to plants that have to make so much progress in a limited period as in the case of the sweet pea. In deeply-stirred soil a much greater quantity of liquid stimulant can be given to the plants without fear of injury to the roots or growth, because the surplus liquid will quickly pass away.

## Manuring and Trenching.

In applying the manure as the trenching proceeds, put at the bottom of the trench, 3ft. deep after the bottom is broken up, a quanity of half-decayed stable manure. Cover this with a few inches of lighter soil and a good dressing of superphosphate of lime. In using this artificial manure it is well to employ a high grade as less in quantity is required. A good sample should contain 30 per cent. of soluble phosphate. The superphosphate should be mixed with the soil at the rate of 1oz. to every square foot superficial. Mix the manure with the soil as the trenching goes on, adding the superphospate regularly, but do not place thick layers of manure by itself, rather thoroughly mix with the soil, adding occasionally a handful of bone-meal. The farmyard manure should not be nearer than nine inches of the surface, but continue the superphosphate.

Whether the sweet peas are to be grown in lines or clumps the method of trenching is the same. In carrying out this operation the soil should be broken up to the desired depth, have the requisite quantity of manure incorporated with it, without any of the clay or other unsuitable material being brought to the surface. Where the soil is heavy near the surface, more nearly approaching clay than loam, and not more than twelve or eighteen in thickness, it appears to me to be folly to trench in the ordinary way to a depth of about three feet, and thereby bury the upper layer about two feet below the surface by means of the clay subsoil. What has to be done is to open out the trench in the usual way, but instead of turning the top spit of the second trench into the bottom of the

SWEET PEA COUNTESS SPENCER.

A fine pink sweet pea, the original of the waved section.

first, put it on one side. Then, having done this, dig over the soil in the bottom of the trench to the desired depth, and turn it over into the first trench, well incorporating the manure in the process. This having been done place the top spit from the third trench on the top of the soil in the bottom of the first trench and mix with it such manure as may be considered advisable.

Leave the surface as rough as possible for the action of frost to pulverise the lumps and render it friable. It is an advantage to trench the ground early in the autumn to allow the soil to settle down quite firmly by the time the plants are put out. But if the ground is at once trenched in accordance with the directions here given, the soil will become sufficiently consolidated by the time for planting to enable the plants to grow freely and to make stout and short-jointed haulm.

SWEET PEA CHARLES FOSTER.
A beautiful mauve and pink variety.

### Surface Treatment and Light Soils.

Over the surface spread a compost three inches thick of old potting soil, decayed vegetable refuse and wood ashes as a means of lightening the surface and rendering the soil favourable to root development. A surface dressing of quicklime applied during dry weather, and lightly forked in will make the surface still more friable, and more favourable to growth. In the case of light soil cow or pig dung is an excellent stimulant tending also to retain the moisture in the soil. Light soils are usually deficient in potash, and as the growth of leguminous plants is much promoted by a free supply of this fertiliser, an application should be made when the ground is being prepared. Kainit or sulphate of potash may be used at the rate of 2oz. of the former or 1oz. of the latter to the square foot, superficial, of the soil. The value of potash as a dressing to light soils in which sweet peas are grown is made very evident in dry seasons by the prolonged vigour of the plant and the abundant production of flowers.

Such soils need liberal quantities of manure, but it should be evenly mixed with them. Some persons will dig out a trench one foot wide, two feet deep, filling it nearly with manure, and covering it with soil sufficient to receive the seeds or plants. This is quite a wrong idea, the plants plants grow vigorously for a time, but the roots quickly run through the light manure to the sides of the trench, and if a spell of dry weather sets in, the plants suffer for want of moisture, mildew follows, and we all know the result of an attack of that fungus. E. Molyneux.

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**Pruning Raspberries.**—In established plantations the cutting out of old wood, and tying in of bearing canes calls for early attention. If not already done, the unripened tips should be removed. If the canes are left too long the lower buds usually fail to break, and the base will be bare. Clear away mulching material, and where pointing of the land between the rows is resorted to apply a dressing of well-rotted manure, as to the advisability of digging or lightly pointing the land between the rows the condition of the roots will prove the best guide. Where the roots have formed a dense mass near the surface the less they are interfered with the better. The necessary food can be given in the form of liquid manure, suitable artificials, and a mulching of horse or cow manure later in the season. — W. Messenger.

## WINTER HEATHS FOR THE ROCK GARDEN.

The lover of gardening is never satisfied unless he has in his garden something in flower. In this climate of ours, save in the more favoured parts of the three kingdoms, it is almost impossible to secure this in the open, and thus many, to satisfy their longing for the pleasures of flowers, seek to compass their desire by growing plants under glass. This is not possible for everyone, and the lover of hardy flowers is anxious to make his garden itself a place where he can enjoy some bloom at every season.

In compassing this he has no greater boon than some of the few Heaths, or Ericas, which, despite the hard weather, bloom on cheerily, and give an acceptable brightness to the garden.

The gem among the few we own is Erica carnea, a perfect gem indeed and a true jewel of the first water. It is a lovely thing when employed as an edging to other shrubs or heaths, but it is, I think, still more fascinating when it is in masses or groups among the rockwork, or massed in beds by itself on the grass. Then its pretty pink flowers, coming when we have few other plants in bloom, afford us a special pleasure, and agree well with the Snowdrop and the Winter Aconite, and the few other subjects which dare the inclemency of the season. A plant which we may have in bloom before Christmas in the milder parts of the kingdom, and early in the New Year in other places is a veritable boon to the outdoor garden.

The flesh-coloured flowers of what is known as the typical Erica carnea are very beautiful indeed, and the deeper-hued one, called rubra, gives an additional warmth to the garden. No less beautiful is the white variety, E. carnea alba, which looks at a distance as if its spiny green branches had been powdered with small flakes of snow. It comes a little earlier, and is a real beauty. The writer has long been desirous of securing other varieties of Erica carnea, said to exist in its native habitats, and it is whispered that such are likely to be offered by-and-by. If so, they will be coveted by all who love these heaths, and who appreciate their worth for the winter garden.

In Erica hybrida, which, we are told, has a share of the blood of both E. carnea and E. mediterranea within it, we have another and a truly indispensable heath. It is, perhaps, not so perfect in its habit of growth, and not so neat in its way, but it generally comes into bloom before E. carnea, and lasts in flower for a very long time. The writer has had it in bloom from early November until April, and very delightful it is with its pretty red flowers. It is more erect and taller than E. carnea, and is a plant which should be in every garden in which winter flowers are enjoyed. It and E. carnea are perfectly hardy, and it is but rarely that the writer has seen even the blooms injured by the most severe frosts of several decades.

These heaths are not difficult to cultivate in almost any soil, although lime should, if possible, be avoided. Peat is not essential, and in a good loam, with exposure to the sun, these lovely shrubs will give the highest satisfaction as the seasons come round for their blossoming. S. Arnott.

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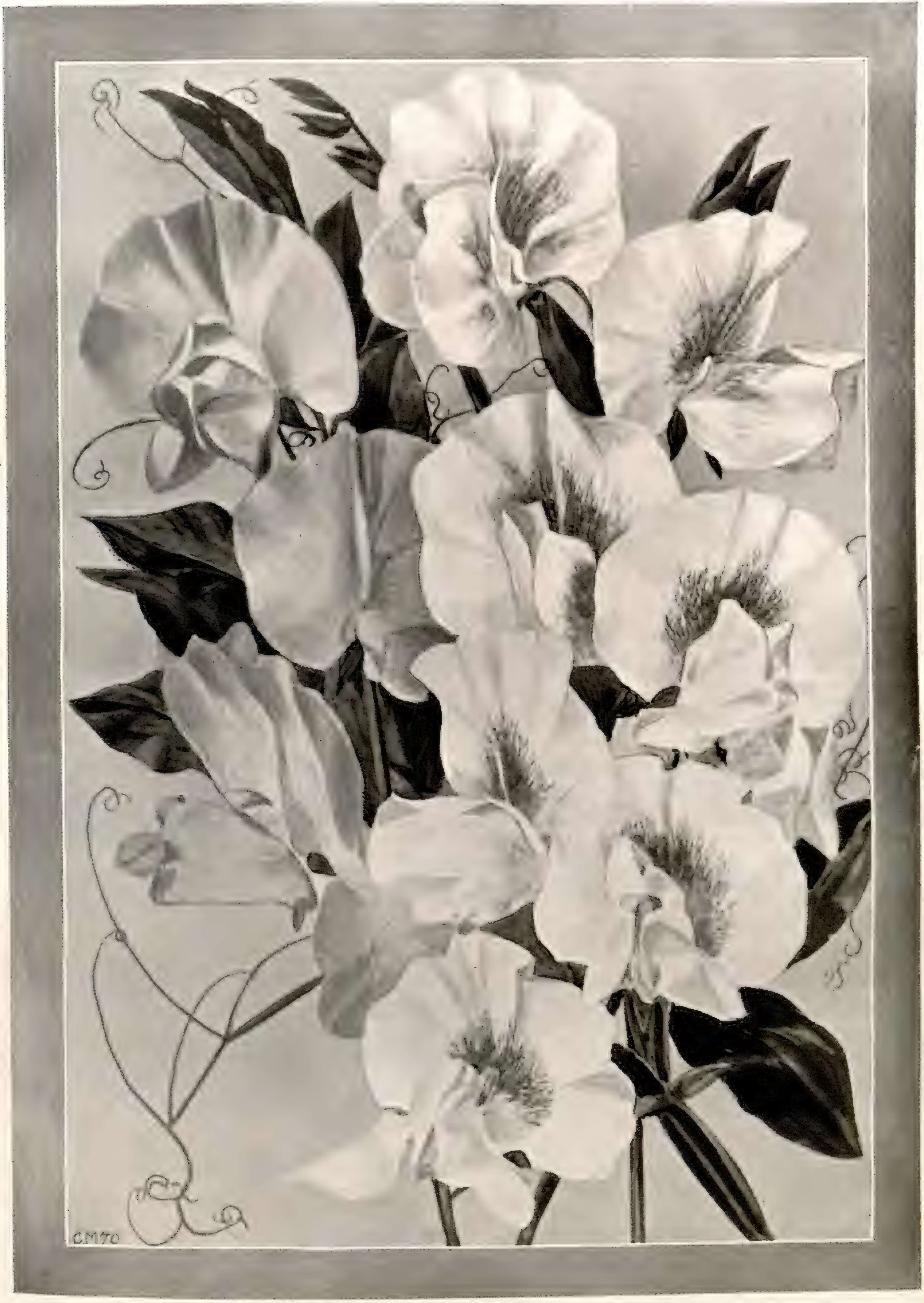


THREE GOOD SWEET PEAS.
Mrs. B. Gilbert (variety at top), blue-flaked, introduced by Messrs. Gilbert and Son. May Campbell (right-hand lower variety), cream flamed rose, introduced by Messrs. Dobbie and Co. Hercules (left-hand variety), pink, introduced by Messrs. Stark and Son.

## SOWING SWEET PEAS.

The best way to raise sweet peas is a matter of the greatest importance to sweet pea enthusiasts. If the seeds are plump and sound there is no reason why less than 96 per cent. should germinate. The grower must remember that the method he adopts in raising his seeds will most probably make all the difference between success and failure. What must be aimed at is a natural germination which will ultimately produce a sturdy, healthy plant. Seeds sown in excessive heat will be drawn and spindly, and one can never expect first-class results from them. There may be different times for sowing the seeds to keep up a succession of bloom, but whatever the time the method of sowing should be the same.

SWEET PEAS RAISED IN BOXES AND READY FOR POTTING OFF.

Everyone who is an enthusiast will naturally obtain the newest and most up-to-date varieties, and should adopt the most up-to-date methods of raising the seedlings. I shall therefore confine these notes to what I consider the most popular and economical way of working. Anyone who has a cold frame at disposal will find it excellent for the purpose. Fill it to within nine inches of the glass with cinder ashes to prevent worms working up from the soil below.

If the varieties to be sown are represented by only a few seeds of each, 4in. pots are best for our purpose. But should there be several packets of each variety, small trays, about 18in. long, 9in. wide, and 4in. deep, are the best receptacles. If pots are used they must be clean, otherwise when turning out the plants great damage will be done to the roots. One piece of crock only should be placed at the bottom, and the pot should then be filled with the compost to within one inch of the top. If boxes are used place a layer of leaves over the bottom, and fill to within one inch of the top and make level and firm.

It is necessary to have good loam, with plenty of coarse silver sand, well mixed with it, and the compost should be moist, but not sticky. Many specialists advocate leaf-mould, and, although it is a splendid material for sweet pea plants, I do not advocate it for sowing the seeds in, for I have found that if there happens to be a decaying seed a fungoid growth will appear on it in a few days if leaf-soil is used. Rosellina hecatrix or white root rot, thrives on the organic matter provided by leaf-mould, quickly spreads over the whole surface of the pot or box, and in some cases kills the plants outright. If the leafmould were sterilised it would be then free from fungus, and be excellent material.

The seeds should be sown evenly over the surface, placing five or six seeds in each pot, and covered with half an inch of the compost. Place in a cold frame after sowing, and water them. They should not require any more water until the plants are up, which should be in about twelve to fourteen days. If the seeds do not germinate regularly they should be examined, and it may be found that the outer skin of the seed has become very hard; if that is the case cut away a bit of the covering or file it through, and the seed will then develop all right. So soon as the seedlings appear through the soil they must have plenty of air, and whenever it is fine pull the lights off by day and give air at night. Frost will not kill the young plants, but it is not advisable to allow the soil to become frozen, so protect with a mat if frost threatens.

SWEET PEAS PUT SINGLY IN PAPER POTS.

When the young plants are about 4in. high they should be turned out of the pots or boxes, and potted off singly into 3in. pots. The cost of so many pots may be a consideration where a large number of plants have to be dealt with, but there are now several kinds of "paper pots" offered from 1s. 6d. per 100, which are very suitable. The potting compost should consist of two parts loam, one part leaf-mould, and one part coarse sand, with a dash of soot. When potted replace in the cold frame, and keep fairly close for a few days, then gradually give more air, and eventually pull the lights off and harden preparatory to planting out.

LEWIS SMITH.

Shotesham Park Gardens.

## SOLANUM JASMINOIDES.

This summer-flowering climber is rarely seen in a luxuriant state of growth in the open air. I shall never forget one specimen which I once saw trained nearly all over the gable end of a large dwelling-house, near the sea, on the Hampshire coast. Both the lower and bed-room windows were embowered in a rich mass of foliage and clustering flowers, and the general effect was charming indeed. Although there were other choice climbers on this house, none attracted as the solanum did.

The ordinary soil was a stiff loam on gravel, and, with the addition of some leaf-soil and old mortar rubble to form a rooting medium, there was no difficulty experienced in growing this solanum to perfection. As regards hardiness, the plant survived several rather severe winters without any protection.

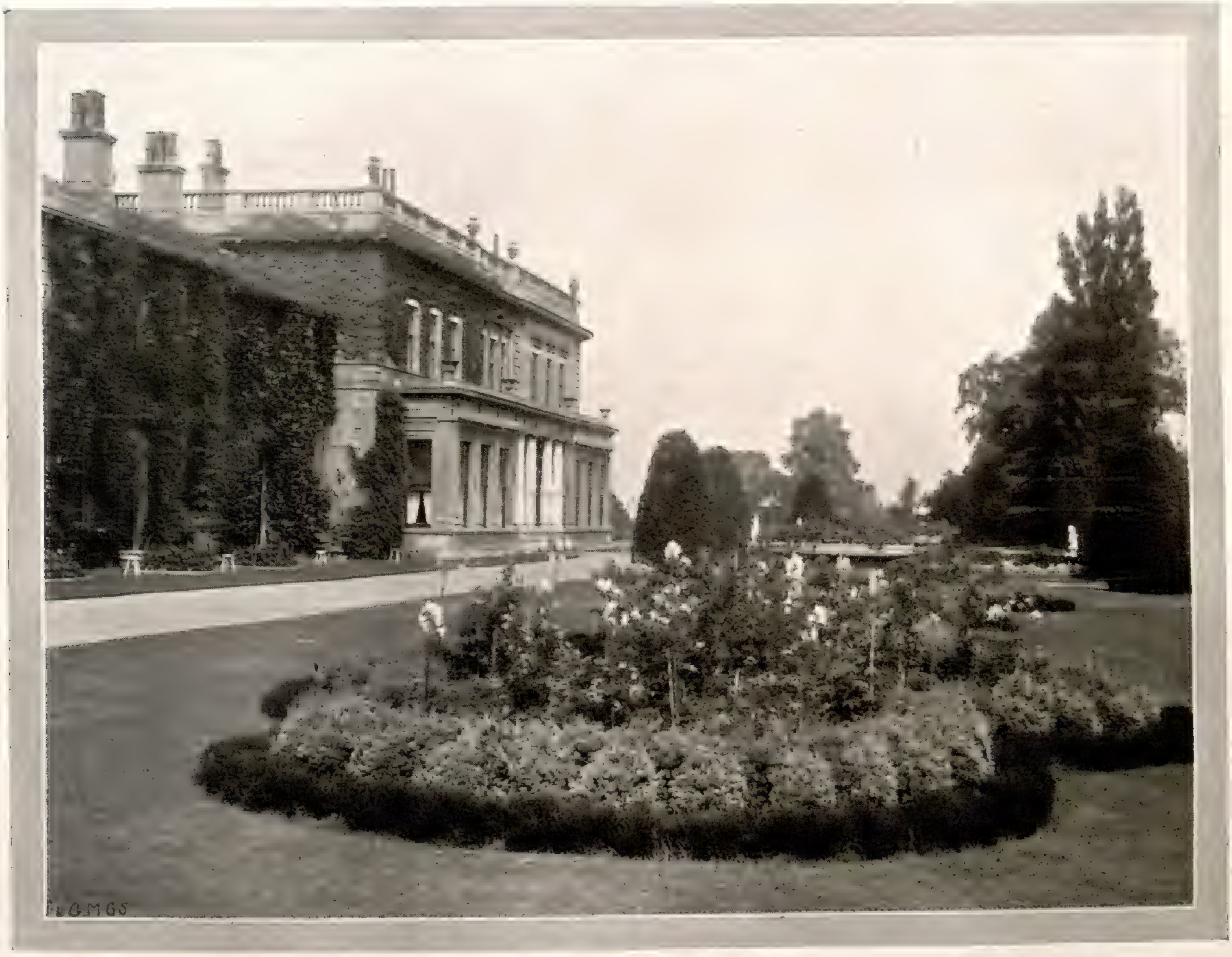
For the benefit of intending cultivators who have not had any experience with S. jasminoides, I may say that it is easily propagated in spring by inserting cuttings in small pots filled with sandy soil, and placed under a frame on a gentle hot-bed. They are very effective as pillar plants in a greenhouse or conservatory, and also when grown in large pots and placed on the lawn in summer, with the branches loosely supported by neat, tall stakes. G. B.

**Cæsalpinia pulcherrima.**—It is surprising how widespread the idea is that Certificates or Awards of Merit are given by the Royal Horticultural Society only to new or comparatively new, plants. It is questionable if such an opinion has even been wider of the mark than in the case of this cæsalpinia, which was given an Award of Merit on November 21. It is a native of the West Indies, and, according to the "Dictionary of Gardening," was introduced as long ago as 1690, that is to say, over two centuries have elapsed since it was first brought to this country. From its beauty as a flowering shrub it is now widely distributed throughout the tropics, but more generally under the name of Poinciana pulcherrima than that at the head of this note. The large bipinnate rich green leaves are very ornamental, while the flowers are particularly showy. They are borne in rather loosely disposed terminal clusters, and are a couple of inches or thereabout in diameter, the petals being orange-scarlet, with a yellow border.—W. T.

# HARDY HEATHS IN THE FLOWER GARDEN.

The beautiful gardens of Hillingdon Court, the Middlesex seat of Lord Hillingdon, are remarkable for the success that has been achieved in the creation of distinct features, and the great interest they have as a consequent result. While the most delightful harmony pervades the whole of the area of the ornamental grounds there are hardly two parts exactly alike, and as the attractions of the gardens are maintained at a high level throughout the year, the visitor finds much that is of exceptional interest, whatever may be the time of the visit. Immensely attractive throughout the summer months is the geometric flower garden, with its bold flower beds, edged with white marble, which forms so fine a feature adjacent to the mansion. Hardly less attractive and of much interest are the bold borders wholly devoted to blue and red flowers respectively; the big beds and bold groups of roses that in their season of flowering produce the most delightful colour effects, and so we might continue until a somewhat lengthy list has been made. Our object at the present time is not to deal with the general features of the Hillingdon Court gardens, but briefly to refer to the good use that has been made of the hardy heaths in furnishing the flower beds of a more or less formal character. We have within recent years devoted a considerable share of attention to these attractive denizens of the moorland, and thereby contributed materially to the popularity they now enjoy as ornaments of the garden. We have brought before our readers many different methods of utilising the hardy heaths, and we have been careful to point out that while they are of great interest and beauty when grown in such manner as to suggest a portion of some wild moorland, they are highly attractive when arranged in formal beds.

At Hillingdon Court they have been used with much success as marginal bands to beds of roses, mixed shrubs, and other suitable subjects. Two bands are formed in each bed, and, as each band consists of species or their varieties, flowering at different seasons, a display of flowers extending over a considerable period is obtained in each bed. Thus, by forming a broad margin of one of the several varieties of Erica carnea, and an inner band of one of the forms of E. mediterreana, a profusion of flowers may be had from quite early in the year until May. Again, by combining E. ciliaris with E. cinerea in a similar manner flowers can be had from early in June until September. The flower bed that occupies a prominent position in our illustration, as will be seen, was filled with Japanese maples, having richly-coloured leaves, and lilies which of themselves formed a charming combination, but the effect was appreciably enhanced by the bright rose-pink flowers of the heath. This bed, in its simplicity and quiet beauty, is the best possible proof of the success that may be achieved in the use of the hardy heaths for edging purposes, and affords an excellent object-lesson on what may be accomplished in beautifying the flower garden with their aid.



A SUCCESSFUL EXAMPLE OF THE USE OF HARDY HEATHS IN THE FLOWER GARDEN, HILLINGDON COURT.

# THE WITCH HAZELS.

Although but a few kinds of witch hazels or Hamamelis, as they are correctly named, are known, they form a very distinct and showy group of shrubs, which is of peculiar interest to the gardener, inasmuch as the various members blossom during autumn and mid-winter, thus giving bright touches of colour to the otherwise rather sombre appearance of the garden. Neither is their bright colour their only attraction, for the weird and spidery look of the curiously twisted petals is also of interest, whilst the flowers of one or two kinds are very fragrant. The witch hazels give the most satisfactory results when planted in light, warm, loamy soil of good quality, and are partial to a little peat about the roots.

Several methods of propagation suggest themselves, for they may be increased from seeds, layers, or by grafting. The method usually adopted is to raise stocks of the American H. virginica from seeds, and graft the other kinds on to it. Grafting may be done in spring, and the young plants either be kept in pots and wintered in a cold frame for the first winter, previous to planting in nursery quarters the following spring, or they may be planted out the first summer. By paying attention to pruning in the case of the stronger growing sorts, it is possible to get them to form a distinct leading shoot and assume the habit of small trees, otherwise they grow into bush form. Seeds are not produced every year, but in the event of the weather being favourable during the time of flowering, it often happens that a certain number of seeds are matured. These should be looked for about August, for if not gathered as soon as ripe, the fruits burst, and the black seeds disappear. The following species, one from North America and the others from China and Japan, may be obtained.

H. arborea is a Japanese species, which was introduced by Messrs. J. Veitch and Sons many years ago. In Japan it is said to sometimes attain a height of 30 or 40 feet. Here it is doubtful whether those dimensions will be attained, though it will grow 20 feet high under favourable conditions. The leaves are more or less ovate in shape, and up to 3½ inches in length. The flowers are borne in January from short growths of the previous year's wood, and each one has four narrow golden twisted petals, and an equal number of sepals which are brown on the outer side and red inside.

H. japonica is so like the last-named in most respects that the former is often made a variety of it. It is usually less tree-like in habit, has weaker growth, and the sepals and petals are less highly coloured. Sargent, in the "Forest Flora of Japan," p. 42, speaks of it as a common forest shrub and says that its leaves turn yellow in autumn, whilst those of another kind (H. arborea) turn deep vinous red. The variety Zuccariniana is distinguished by its lemon-coloured petals.

H. mollis is the best of all the species, so far as decorative value goes, and it is still the rarest. Curiously enough, it had been in cultivation in this country for 20 years before its true value became known. It was discovered by Charles Maries in the Kiu-kiang district of China, and was sent by him to Messrs. J. Veitch and Sons about 1879. The first description of the shrub, however, was prepared from one of Dr. Henry's specimens collected in Hupeh. This appeared in Hooker's "Icones Plantarum," No. 17,42, in the volume for the years 1887-1888. It grows naturally into a large bush or small tree, sometimes 30 feet high. The rounded or ovate leaves are 4 to 5 inches long and 3 inches or more wide, and they are covered on the under surface by a dense mass of stellate hairs. The golden, primrose-scented flowers are very showy, and differ from those of other species by their flat petals, with hooked ends. They appear during December and January. It grows freely, and flowers well even when quite small.

H. virginica is the common Witch Hazel of Eastern North America. In its native country it is usually met with as a bush 8 to 15 feet in height, but where specially well placed, it may attain a height of 25 feet. In our gardens we are familiar with it as a wide-spreading bush 6 to 8 feet high. The oval leaves are 3 to 5 inches long, with undulated margins. The flowers often appear in September about the time the leaves begin to assume their golden colour previous to falling. In America the flowering time is said to be a couple of months later. A great deal depends, however, on the place where the plant is growing. The bark of the Witch Hazel is collected in America, and used in the preparation of ointments, lotions, etc., for applying to wounds and for other purposes. The name of Witch Hazel is said to have been given partly on account of its resemblance to the hazel and partly by reason of forked branches being used as divining rods, with the belief that they were endowed with the power of indicating the position of hidden treasure, water, etc. An account of the American Witch Hazel and its uses is to be found in "American Medicinal Barks," by Alice Henkel. So far as flowers are concerned, it is less ornamental than the Asiatic kinds.

Kew. W. DALLIMORE.

## SOME WINTER-FLOWERING IRISES.

The fragrant blossoms of the beautiful winter-flowering Iris stylosa are highly appreciated, opening as they do in mid-winter when outside flowers are so scarce. The plant is perfectly hardy, but the flowers are very delicate in texture, so that it is advisable to afford some protection to prevent the frosts or rains from spoiling them. If planted by themselves in a narrow sheltered border, where a frame can be placed over the plants, an abundance of lovely blossoms can be obtained. In the event of the necessary protection being inconvenient or impossible, the flowers should be cut in the bud state, when they will freely open in water, if placed in a greenhouse. The colour is a lovely shade of blue, with yellow blotches. A warm sheltered position should be afforded the plants, and any well-drained, fairly light soil is suitable for their cultivation. There are several forms, having varying shades of blue, and one white variety.

Iris reticulata is an early-flowering bulbous species, with dark violet flowers, which are marked with bright yellow. These usually open in February. The stems reach the height of about six or eight inches, and are produced before the foliage has much advanced. It is a beautiful little flower for decorative purposes, especially when used in small glasses. A warm sheltered sunny position will be found suitable if a lighty sandy soil is provided. If planted in wet spots the bulbs will frequently decay during the summer, the light soil being more conducive to thorough ripening which is quite essential for the production of blossom the following season. I. reticulata Krelagei is not so handsome, being rather dull in colour, and not quite so large, yet at the same time it has one advantage over I. reticulata, that is, in flowering a little earlier. These two are very effective when planted in colonies in sunny sheltered spots in the rock garden, with dwarf mossy saxafrages for a carpet.

I. tuberosa—the Snake's Head—although an interesting species, cannot be called beautiful, yet where a corner can be found for a clump it is worth growing. It has grass-like foliage, and flower stems about twelve or fifteen inches high, which bear brownish-green blossoms with dark purple blotches.

The flowers of I. alata are a delicate blue, blotched with yellow, and are produced in mid-winter. It is a species comparatively easy of cultivation, and if given sandy soil and a warm sheltered nook in the rock garden, it will be found to thrive exceedingly well. To keep the flowers in good condition an overhead covering should be afforded the clump, to prevent the rains from bruising them. Owing to the fact that they are so delicate in colour and texture, rain and wind soon spoil them if they are unprotected.

I. Vartaini, a beautiful species from Palestine, resembles I. reticulata, but has flowers of a pale blue colour, which open in February. The plants should be treated in the same manner as I. alata. I. sina-pers is a hybrid between I. sinajarensis and I persica; it has lovely blue flowers, slightly fringed, and marked with black and yellow. This also flowers in February.

I. histrioides is apparently a form of I. reticulata, with a little white in the blotches and an orange crest. This usually flowers before I. reticulata, which makes it very acceptable, as the blossoms frequently open in January.

I. fimbriata is one of the most beautiful of all the irises, but unfortunately it is not sufficiently hardy to allow it to be successfully cultivated outdoors. It might thrive in some favoured spot in the south-west, but it is undoubtedly seen at its best when treated as a pot plant for a cold greenhouse. Numerous spikes are produced from a well-established plant, which carry an abundance of flowers, usually opening singly, but as one fades another opens. It is a plant which when once established should not be disturbed for some time, for apparently the more pot-bound it is, the better it flowers. A small quantity of peat should be given occasionally as a top-dressing when the growth is being made. When a plant is so tightly fixed in a pot that the rhizomes creep over the sides, flower spikes are produced in abundance. I. fimbriata usually commences to flower about January, and, as the buds are so numerous and open slowly, the beautiful blossoms are to be seen for some considerable period. Cultivation is by no means difficult. A fair amount of water is required when the plant is making its growth and during the summer months it is quite happy if stood outdoors. Regarding soil, peat suits it very well. It has graceful shining foliage, and the flowers rival those of many orchids in beauty; they are pale blue, veined with white, and delicately fringed.

E. C. POOLEY.

Gnaton Gardens.

## THE BALSAM POPLAR.

Although the poplars have been extensively employed throughout the country for landscape effects, screens, and, commercially, the production of timber, yet we rarely meet with Populus balsamifera, which is undoubtedly the most ornamental of the genus. Is this because it is not known, or through a lack of knowledge of its requirements? Some of the varieties of poplar like their roots in well-drained soil, and others theirs in water. The balsam poplar is among the latter, and if planted in rather heavy loam on the banks of a brook, river, or lake, or in boggy ground, its growth will be clean and rapid. The black Italian is also admirably suited for positions of this kind, and, if the object is simply to secure a screen, nothing is better, but if the aim is to have something more interesting and more beautiful then balsamifera is the species to plant.

It is one of the earliest of the trees coming into leaf in spring; its buds are covered with a resinous substance, which is strongly scented, and agreeable to the olfactory organs, and the leaves are of a yellowish-green hue. Even although the leaves take on a darker green colour as the year advances, still they retain their striking effect, in contrast with other foliage, all through the summer. Populus balsamifera would be a good companion to willows, alders, and other moisture-loving trees, and its conical habit of growth, foliage decidedly its own, early leafage, and fragrant buds, would enhance the landscape in early spring, gratify the sense of smell, and contribute to the diversity of tree growth in its neighbourhood. Possessing so many good points as it does, a few trees should find a home in the vicinity of every mansion when the essential moisture for its roots is available.

PEDESTRIAN.

# SWEET PEA ENTHUSIASM IN SCOTLAND.

The passing of another year shows an unabated enthusiasm in Scotland in the culture of the loveliest of all decorative flowers, the sweet pea. Notwithstanding the adverse season, a great many have joined the ranks of the sweet pea enthusiasts, and the number of sweet pea societies are on the increase. The Perthshire S.P.S. had a brilliant success on August 4 and 5 last, and, with regard to it, one of our judges has stated that at our show he "saw the largest show outside the National, and the flowers of the year." The entries numbered 229, an increase of about 30 over 1910, and the number of vases staged were considerably over 1,000. The feature of the show was undoubtedly the glorious flowers shown by Mr. John S. Grigor, Seapark, Forres, in the open classes, and Mr. G. Milne, Duninald, Montrose, in the small growers' section. Mr. Grigor, who won the cup and a whole string of firsts, showed perfect models of flowers and, just what all growers should aim at, large and substantial, and placed evenly and closely on strong stems, and every vase remarkable for refinement. He staged in his cup collection the following varieties: Mrs. Hugh Dickson, Sunproof Crimson (Dobbie's), Nubian, Elsie Herbert, Masterpiece, Mrs. W. J. Unwin, Etta Dyke, Countess Spencer, Isobel Malcolm, Edrom Beauty, John Ingman, and Earl Spencer. Mr. G. Milne's best collection was in the class for six vases, where he staged Sunproof Crimson (Dobbie's), Etta Dyke, Evelyn Hemus, Mrs. H. Dickson, Tennant Spencer, and Edrom Beauty. He also showed a glorious vase of Hercules, a giant rose of Messrs. Stark's, and it is a question whether the raisers ever saw it shown in as fine condition.

There was a great gathering of enthusiasts from east, west, north, and south at the Conference, at which Mr. W. P. Wright gave a short address on "Staging and Judging," in which he deprecated overfeeding, which was resulting in a coarseness of flower and a gappiness in the placing of the bloom on the stem. Mr. W. Cuthbertson, F.R.H.S., gave a paper on "New Sweet Peas," in which he indicated the probable position of certain varieties would take in the various colour sections next year.

Regarding the coming year, there are great changes in the schedule of the Perthshire Society, which a keen enthusiast (who has seen the advance proof) describes as "A1; the best you have yet sent out." The society have the honour of first offering for competition to Scottish growers the Scottish challenge cup presented by the National Sweet Pea Society (open to Scotland only), also they have the Dewar Challenge Cup offered by Sir John Dewar, Bart., M.P., Dupplin Castle (open to all); the society's challenge cup (open to all); also medals and other valuable prizes gifted by prominent city and county ladies and gentlemen. Messrs. Dobbie and Co., R. Sydenham, Lim., R. Bolton, W. G. Unwin, Thyne and Son, Young and Son, and the Boundary Chemical Company, all offer valuable prizes in the open section. The schedule comprises 33 classes, divided into six sections: Sec. I., open to trade only; Sec. II., open to all; Sec. III., open to growers of 15 to 50 yards or clumps; Sec. IV., open to growers of not more than 15 yards or clumps; Sec. V., decorative; Sec. VI., special open classes; and it is completed with a splendid paper by Mr. John S. Grigor on his mode of culture down on the borders of Scotland, made famous by Mrs. Fraser, Sproughton Manse, Kelso, winning the £1,000 "Daily Mail" prize last year.

The Lockerbie and District Sweet Pea Society was formed last year. This show is confined to the district, which considerably limits the competition; fully 20 members competed, and 235 vases were staged, and were, on the whole, the finest lot of flowers for quality seen on the Borders. Notwithstanding the drought, the peas did extremely well in that district, the growers adopting the deep mode of cultivation, and no disease of any kind appeared. The society is looking forward to drawing a grand year under the care and guidance of Mr. G. L. Moffatt, the energetic secretary. Ayrshire has a band of enthusiasts in the village of Catrine, who have formed a society, with Mr. M. Duncan as secretary, and are to hold their third annual show on July 27 next. The first year the schedule consisted of three classes, with a membership of 18; last year the membership increased to 30, and this season they expect a corresponding increase over last year. The schedule for 1912 consists of eight classes, and a special for the best vase in the show. Sweet peas in that district, with few exceptions, did well right up to September.

There are an enthusiastic lot of growers in the West of Scotland, and there are probably few counties in Scotland where the sweet pea is more extensively grown than in Dumbartonshire. Although the various county shows give liberal encouragement for sweet peas; they are held too late in the season to do justice to the sweet pea exhibits. A public meeting was held at Dunbarton on October 27 last, and it was agreed that the time was ripe to form a sweet pea society for the shire, and it was resolved to proceed with its formation. A strong committee was appointed, and it augured well for their success when Lord Inverclyde consented to become hon. president, W. Henderson, Esq., J.P., president, Captain Alex. Cameron vice-president, all keenly interested in the flower. The show will be held on July 27 next, and a most attractive schedule has been drawn up of twenty-seven classes, covering the trade, gardeners, amateurs, allotment holders, and school children. Prizes to the value of £21 is offered, also a silver cup and medals. The secretary is Mr. W. C. Hyndman, Willowbank, Dumbarton.

In Fifeshire, Dunfermline, the home of the Carnegie Trust, had a very fine show last year, and the quality was much better and competition keener than in 1910. In entries there were an increase of thirteen over last year's, which were eighty-three, and, considering the season, speaks well for the success of the coming year. In the East of Scotland the Broughty Ferry Society has held a nice little show and conference in the past two years, and is in the excellent hands of Mr. James Croll. Aberdeenshire, although not possessing a society, held a very successful show in Aberdeen last year (entirely owing to the energy of Mr. M. H. Sinclair, the secretary), where Mr. J. S. Grigor, of Forres, won the principal prizes. The quality of flower was great, and the competition very keen. The honour of being the "furtherest North" Sweet Pea Society belongs, we think, to Strathpeffer, where Mr. T. O. Fraser, of the Spa, the hon. secretary, organised a most successful two days' show on August 11 and 12 last. The schedule was a good one, ten classes in all, silver bowls, vases, and valuable cash prizes being offered.

Last year was peculiar for weather, for while some districts had a few good showers, others had none for weeks, and the results in the various districts were rather striking. In Stirlingshire, at Kippen, Mr. C. Shaw had about a four-yards row of Stirling Stent, a perfect blaze of colour, nearly ten feet high, at the beginning of August. The flowers were very fine, with no shade. Elsewhere in the district this variety did not do at all, and was most disappointing. Charles Foster did well, but needs shading. Earl Spencer all over was very fine, and will take a lot of beating. Mrs. Hugh Dickson, Edrom Beauty, Isobel Malcolm, Sunproof of Crimson, Nubian, Elsie Herbert, John Ingman, Mrs. H. Sykes, Elfrida Pearson, Hercules, and Thomas Stevenson have been the standard varieties for Scottish exhibitors, and did well last year at Cultoquhey. Mr. Thomas Fender was unfortunate owing to disease and drought, while lower down on the same estate Mr. T. M. Kirkwood was in grand form, and did well at Perth and Crieff, and Edinburgh. The following varieties did well with him: Mrs. Sykes, Mrs. Breadmore, Etta Dyke (Dobbies'), Charles Foster, Norah Unwin, Constance Oliver, Edrom Beauty (best of all), John Ingman, Helen Lewis, The King, Tom Bolton, Menie Christie was grand up to the Perth Show, but failed after, Mrs. Hugh Dickson (a perfect gem). In Comrie disease showed very badly with the Rev. H. Mayall ,and in Newburgh, Fife, Mr. W. A. Morrison failed entirely owing to the effects of drought and disease. Elsie Herbert completely changed its character, and showed a distinct feathering or pencilling in place of the usual edging. Should the coming season be a good sweet pea year secretaries of shows will have trouble in obtaining room for the shoals of entries that will be forthcoming. H. S. HALLEY.

# RUBUS BAMBUSARUM.

The rubi which have been introduced during the last ten or twelve years contain many distinct and ornamental species, some of which are already becoming popular in our gardens. R. bambusarum is, perhaps, one of the best known of these kinds, for it has been available to the public for the last five years, Messrs. J. Veitch and Sons offering it in their new plant list of 1906. It was first brought to notice by Dr. A. Henry, who found it growing at an elevation of from 4,000 to 6,000 feet in the Province of Hupeh, but it was Mr. E. H. Wilson who succeeded in sending good seeds home in 1903.

The long, slender branches grow from 12 to 15 feet in length, and they are clothed with trifoliate leaves, the narrow segments of which are deep green above and covered with a pale, buff-coloured felt beneath. Nothing can be urged in favour of the decorative qualities of the flowers, for, though borne in fair-sized terminal racemes, they are small and not showy. The black fruits are sweet, but not very large. It is a good plant for placing against the post of a pergola or for planting against a rough fence. In such positions its elegant habit and decorative foliage are seen to advantage, but left without a support and the branches allowed to trail along the ground much of its attractiveness is lost. There does not appear to be any doubt as to its general hardiness, and it grows well in any ordinary garden soil. W. D.

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# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CYPRIPEDIUMS of the cooler growing section are amongst the most beautiful and effective of winter-flowering orchids. C. insigne and its many varieties, such as Harefield Hall, Sanderæ, Sanderianum, Thompsoni, etc., are always appreciated. These and the less distinguished varieties are not only very beautiful, but last in a fresh condition for a considerable time. Therefore, where flowers are required in mid-winter, they are indispensable, and should be grown in quantity. The plants possess vigorous constitutions, and are easily cultivated. They are also capable of withstanding fogs better than the majority of plants which flower at this season, therefore, to those who reside near large cities or towns, they are most desirable. C. Charlesworthi, C. Fairrieanum, and C. villosum should also be grown, as should the numerous varieties of C. Leeanum, C. Euryades, C. Actæus, C. aureum, C. Alcibiades, C. Thalia, C. Minos, C. Priam, C. Froilus, C. Germain Opoix, C. Gaston Bulteel, and many others.

POTTING.—All of the foregoing should be potted as soon as possible after their flowers have faded, if this operation is necessary. I do not favour the practice of topdressing the plants, as I believe we add to the difficulty of watering by so doing. When repotting afford liberal root room, with a fair amount of clean crocks for drainage. The compost these cypripediums succeed in is made up of: two parts best fibrous peat, one part polypodium fibre, and one part fibrous loam, with a liberal addition of sphagnum moss. All the earthy particles should be shaken from the peat, polypodium, and loam. Pot each plant with moderate firmness, and keep its base just below the rim of the pot, and the compost filled up to the same level, so as to leave sufficient space for holding water. The compost should be used in a moist condition, but care must be taken that it is not too wet.

HEAT AND MOISTURE.—These plants delight in a moist position, and must have water administered to them, according to their requirements. Repotting offers a favourable opportunity for dividing any it is desirable to increase the stock of. I am not in favour of dividing plants simply to increase the numbers, as small plants do not produce flowers as fine as plants that are larger. Many recommend these plants be grown in a cool house, but, to my mind, it is folly to attempt their culture in a house of that description; they will exist there, but their proper place is in a moist atmosphere in the intermediate house, and during the growing season they need shade from strong sunlight.

GENERAL REMARKS.—During the wet, dull weather that we are now experiencing it is desirable to pay great attention to the airing and heating of the various houses: such weather as we have had lately is about the worst possible for successful orchid cultivation.—T. Barker, West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

CYCLAMEN.—These handsome greenhouse plants make a grand display in the conservatory all through the winter and spring months, and if they are brought on in batches there is no difficulty in maintaining a constant supply of flowers. A well-grown plant, carrying 15 to 30 fine flowers, set off with finely mottled foliage, is not easily surpassed. Cyclamens are best raised from seed annually. The older system of growing the bulbs or corms for several years has now pretty well died out, although in some gardens it is still practised with good results. The former system is generally acknowledged to be the best, as the plants produce finer flowers on stronger stems. I would advise sowing the seeds in two batches, the first about the third week in February and the second in August. The early batch is best raised in heat. The compost best suited for sowing the seeds in is two parts loam, one part leaf-soil or peat, and one part coarse silver sand, all passed through a half-inch sieve. Crock the pan well, and cover the crocks with oak leaves; fill to within one inch of the rim with the compost, make firm and level, and sow the seeds singly and evenly all over the surface, covering them lightly with the compost; afterwards cover the pan with a piece of glass, and this with a piece of paper until germination ensues. Place in a temperature of 60 degrees. When the plants are well up, and have formed two leaves, they should be potted off singly.

NERINES.—The nerines are among our most gorgeous autumn-flowering bulbs, and are at present finishing up their growth. Some people imagine it is necessary to crowd the bulbs in a mass to induce them to bloom well, and often they are left in the same pots for five or six years. It certainly is necessary to confine the roots, but at the same time liberal treatment and a thorough rest is the best inducement to a harvest of flower and spikes. Take, for instance, Nerine Fothergilli major, perhaps the most gorgeous of all. Large bulbs, the size of the biggest hyacinth bulbs, require a 48-size pot, and they should be repotted at least every three years. The best time for this is directly after flowering. The bulbs then commence to root freely, and soon get established. The best compost to grow them in is loam, some well-decayed manure, old mortar rubble, and coarse sand, all passed through an inch sieve.

LILIES.—Order bulbs of Lilium speciosum and L. s. rubrum, L. s. Melpomene, and L. auratum. Pot them directly they arrive, and place two bulbs in large 16-sized pots, using loam, rotten manure, peat, and coarse sand, leaving room for top-dressing. Place the pots in cold frame but protect from frost.

SEED SOWING, ETC.—Many stove and greenhouse subjects which are raised annually from seed require to be sown at once, such as gloxinias, begonias, Clerodendron fallax, etc. General remark: Place lilies, azaleas, deutzias, spiræas in heat, and if they have been grown in pots they will force readily. Constant supplies of tulips, hyacinths, lily of the valley, should be brought forward.—Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

RASPBERRIES.—If fresh plantations are to be formed the land should be heavily manured and trenched at the earliest opportunity to allow the necessary settlement of the soil before planting takes place. On well-prepared ground the raspberry will thrive and yield crops of fine fruits for many years. The most satisfactory method of training the growths is on wires strained at the ends to iron or stout wood posts. A space of four feet should be allowed between the rows, and the plants placed eighteen inches apart in the row; when established, five growths should be tied out at an equal distance apart. When planting spread out with due care the fibrous roots, working in amongst them the finer portions of soil, and make firm. I have noted very little difference eventually between such plants as were cut down to within a foot of the ground, or those from which the tips were removed, either practise can be carried out with satisfactory results. Many prefer to grow their plants on the old method, a stake to each plant. To do so the plants should be spaced out three feet apart in the row, and allowed four feet between the rows; when placing the stakes in position a cord stretched at the required height will ensure uniformity in the row.

LOGANBERRY. — This useful fruit requires more space between the rows, at least six feet and five feet apart in the row. The top wire should be six feet from the ground. Being a strong grower and gross feeder, it should be treated liberally, or the plants quickly lose strength, and the fruits deteriorate both in size and quality.

THE WINEBERRY.—This fruit is worthy of more extended culture. Its highly attractive fruits are of much value for mixing with red currants when the raspberry crop is over, or for preserving. The growths should be trained to wires similar to the loganberry, height of wire, five feet, three feet apart in the row, and five feet between the rows. The fruits are very much relished by the birds, and therefore have to be protected.

STANDARD AND BUSH PLUMS. — The birds have commenced stripping out the buds, and spraying will have to be resorted to, to prevent their depredations. Where growth is thick on standard trees, badly placed growths and dead shoots should be cut away. Bush trees, if properly attended to during the summer months, will require very little pruning. The young breast shoots and others for forming fruit spurs need less severe cutting back than is the case with apples and pears. To obtain crops of high-class fruits the branches should be so disposed that light and air has free admission to all parts of the tree. Young trees making too vigorous growth should be lifted, root-pruned, and replaced in original position. As a preventive of injury by birds taking the buds, spray the trees with a mixture of lime, soot, and nicotine compound. By adding half a pound of Russian tallow to each peck of unslaked lime, the mixture will adhere much better and longer. — W. Messenger, Wolverstone Gardens, Ipswich.

## THE KITCHEN GARDEN.

LEEKS.—A small quantity of leek seeds should be immediately sown where early or August leeks are required, deferring the sowing of the autumn ones till the second week in February. Sow the seed in 6in. pots, using a nice light sandy compost; an excellent place for germination is a vinery just started; in fact, this will suit the young plants for some time. Prick off the seedlings into boxes of similar soil when large enough, and place in a position near the glass.

ONIONS.—Where large, early bulbs are required, seeds must be sown in soil as advised for leeks, but using boxes instead of pots. Excellent onions are obtained for later use by sowing the middle of February. The boxes should be very carefully crocked to ensure perfect drainage; just cover the seeds with the fine soil, water well in, and afterwards go carefully with the water-pot. When the seedlings are large enough to handle, prick them off into other boxes at two inches apart in a well-prepared compost of two parts loam and one part each of leaf soil and spent mushroom-bed manure, adding enough sand to keep the whole open.

PEAS.—A few boxes should be sown for an early supply, choosing a dwarf-growing variety which can be planted out later in a frame; treated this way it will be observed that a freer growth will result than from sowing direct in the cold frame.

POTATOES.—Providing these have been sprouted in boxes, no time must be lost in placing some in pots and boxes as the case may be. Use a rough, light compost, and cover the sets with two inches of soil, top-dressing with similar soil as the shoots appear. A peach house just closed will be an ideal place for potatoes. Here we place three sets in a 9in. pot.

TOMATOES.—Make a sowing of seed in 6in. pots for a succession to the autumn-sown ones. Use a light soil, consisting of loam, leaf-soil, and sand in equal parts. Water well in, and place the seed pot on a shelf near the glass in a temperature of 55 to 60 degrees. As soon as the seedlings show their first true leaf, pot off singly into thumb pots, adding rather more loam to the compost this time. Place near the glass, and avoid excess of water, both at the roots and overhead.

CUCUMBERS.—Seeds of these should be sown singly in small 60-sized pots, and plunged in a hotbed to germinate; failing this, fill a water trough on the hot-water pipes with cocoanut-fibre or leaf-soil, and plunge the pots therein. Quiet germination must be encouraged, or the seeds will rot.—George Ellwood, Swanmore Park Gardens.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

Notwithstanding the woefully wet and dismally dark weather, there was a capital exhibition of fruits and flowers at the Royal Horticultural Hall on Tuesday, January 23, and there was a good attendance. In the early part of the day the darkness rendered artificial light necessary; but during the early part of the afternoon the natural light improved considerably. The Orchid Committee had plenty to do, but the Floral and Fruit Committees had practically nothing but groups to consider

### FLORAL COMMITTEE.

A fine lot of primulas and cyclamens from Messrs. Sutton and Sons, Reading, suffered a good deal in effectiveness because of the lack of light to bring the colours out properly. The salmon and red cyclamens, and the crimson primulas were very showy, and during the early part of the afternoon they lit up the surroundings. Reading Blue, Duchess, and Czar primulas stood out prominently, and the fine strain of P. obconica was a great attraction.

A large group of the yellow-flowered Jasminum primulianum, grown as standards, and represented by specimens 4ft. to 8ft. high, smothered with pretty flowers. The plants would have looked far better had not the fog of the previous two or three days reduced the numbers of blooms. This exhibit was from Mr. G. Reynolds, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Acton.

Another attractive group was staged by Mr. H. Prime, gardener to the Marquis of Salisbury, Hatfield House; this consisted of two mounds of Euphorbia fulgens (jacquinæflora), the plants carrying long sprays of brilliant orange-scarlet flowers; and a central bank of the beautiful blue-flowered Saintpaulia ionantha, very finely grown.

Messrs. R. Gill and Sons, Falmouth, showed some beautiful trusses of varieties of Rhododendron arboreum, splendid bunches of Iris stylosa, and bushes of Erica lusitanica, all from the open ground. The same firm contributed a very interesting set of paintings of native fungi representing a large number of species. Two plants of the new Primula Winteri were an attraction to lovers of hardy plants.

The cyclamens from Messrs. Stuart Low and Co., Enfield, made a brave show, and especially fine were the salmon-coloured varieties. The same firm showed a collection of perpetual carnations.

An interesting group of greenhouse plants from Messrs. Jas. Veitch and Sons, Chelsea, included a selection of Indian azaleas, tall plants of Acacia dealbata, the golden Senecio grandiflora, Primula Kewensis, the blue Coleus thyrsoideus, camellias, and the fragrant Daphne indica rubra.

A small group of Chinese primulas from Messrs. J. Carter and Co., Raynes Park, included a large number of new seedlings of the large-flowered section, and an interesting lot of a double rosy-flowered variety with deeply incised oak-leaf foliage.

The beautiful perpetual carnations from Mr. H. Burnett, Guernsey, suggested that the Channel Islands have enjoyed better light than London has of late; the group contained splendid bunches of Marmion, R. F. Felton, Mandarin, Mrs. H. Burnett, White Chief, Scarlet Glow, Sultan, and Carola.

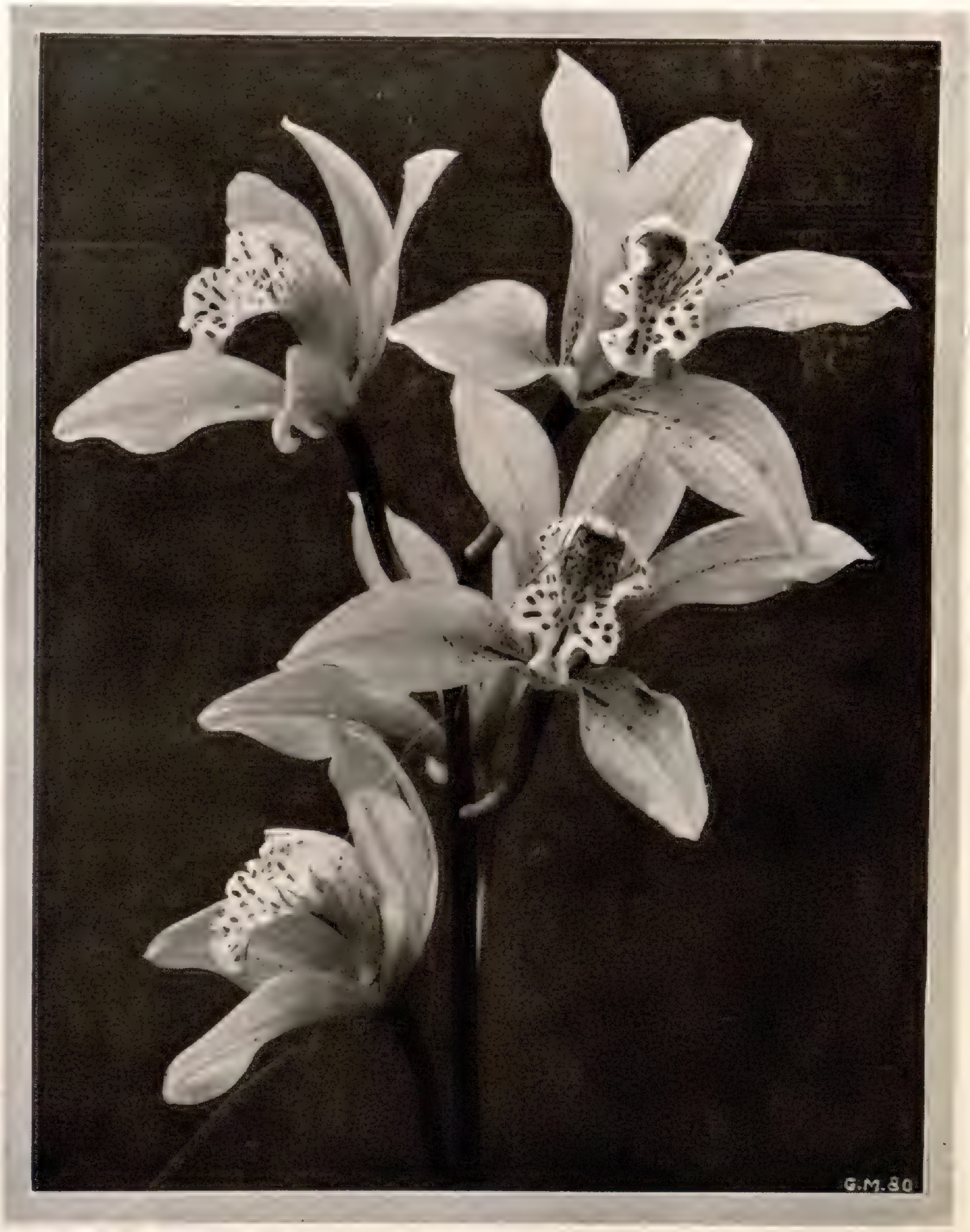
A little rock garden from Messrs. J. Cheal and Sons, Crawley, was furnished with hardy primulas and small-flowering specimens of Cydonia Maulei, Rhododendron Early Gem, Spiræa Thunbergi, Forsythia suspensa, Erica lusitanica, and berberis, etc.

A collection of begonias was submitted by Messrs. H. Cannell and Sons, Swanley, and proved very interesting; in the group those kinds that most appealed to us were B. fuchsiodes, B. foliosa, B. semperflorens gigantea rosea, B. Duchartrei, B. Vesuve, B. hybrida floribunda, and B. nitida alba odorata.

Messrs. Allwood Brothers, Wivelsfield, Haywards Heath, contributed a few good carnations, including Wivelsfield Wonder, White Wonder, Geisha, and the large-flowered yellow French variety, La Rayonnante.

Messrs. H. B. May and Sons, Upper Edmonton, brought up choice ferns, golden variegated oleanders, begonias, ardisias, etc.

Mr. L. R. Russell, Richmond, staged Jasminum primulinum and Buddleia asiatica, two useful shrubs for conservatory decoration, and the lovely Prunus triloba; with these were Primula malacoides and Japanese oranges.



CYMBIDIUM SCHLEGELI.

Flowers cream colour, with small purplish spots on petals and sepals, and large red-purple spots on the lip. A.M., R.H.S., January 23. Messrs. J. and A. McBean, Cooksbridge.

A large and bright exhibit from Messrs. W. Cutbush and Son, Highgate, was composed of perpetual carnations in variety, including lovely flowers of May Day, White Perfection, and Scarlet Glow; early flowers, such as Iris Danfordiæ, I. histrioides major, I. Tauri, Eranthes cicilicus and Narcissus Bulbocodum, are gems arranged in little rockwork groups; and flowering shrubs, such as magnolias, Prunus triloba, hamamelis, and lilacs.

Mr. C. Engelmann, Saffron Walden, had some new carnations on view, notably Salome, Lady Northcliffe, Rex, Washington, and La Mode.

Fringed cyclamens were capitally staged by Mr. Shambrook, gardener to the Rev. H. Buckston, Sutton Hall, Derby, and the salmon form named Mrs. Buckston was particularly good.

Messrs. T. S. Ware, Feltham; Mr. G. Reuthe, Keston; and Messrs. J. Peed and Sons, Norwood, showed collections of alpines, a few being in flower.

Among the carnations shown by Messrs. W. Wells and Co., Merstham, there were good blooms of Merstham Beauty, cerise-pink; White Wonder, White House, and Dorothy Gordon.

Messrs. Barr and Sons, Covent Garden, exhibited the popular Narcissus Soleil d'Or in quantity, and a collection of early hardy flowers, such as crocuses, hamamelis, Galanthus Whittalli, Iris stylosa, I. Danfordæ, and Narcissus bulbocodium.

Mr. Bertie Bell, Castel Nursery, Guernsey, brought over grand flowers of Coronation, a beautiful bright pink perpetual carnation, and showed the variety in quantity.

### ORCHID COMMITTEE.

The choice and elegant white varieties of Lælia anceps were well shown by Mr. J. Collier, gardener to Sir Jeremiah Colman, Esq., Gatton Park, Reigate, over fifty spikes being staged, the varieties being L. a. Williamsi, L. a. Gatton Park var., L. a. Schroderiana, L. a. Sandersi, L. a. Hilliana, and L. Dawsoni. Phaio-calanthe Colmani was also shown from the Gatton Park collection.

Messrs. Armstrong and Brown, Tunbridge Wells, contributed a group of orchids wherein cypripediums were abundant, together with Cattleya Maggie Raphael alba, various odontiodes, and odontoglossums, and the quaint unpleasant smelling Bulbophyllum neilgherense.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, made a brave show of orchids, and had Calanthe Veitchi, C. Williamsi, Lælio-cattleya Cappei, and various cypripediums and cattleyas.

From St. Albans, Messrs. Sander and Sons, came some choice hybrid odontoglossums, the lovely Odontioda Diana flammea, the white Saccolabium Harrisonianum, Odontioda Chelseaensis, and a number of cypripediums.

A Lindley medal, an uncommon and high award, was granted to Mr. Alexander, orchid grower to Lieut.-Col. Sir G. Holford, Westonbirt, Gloucester, for splendidly grown examples of Lælia anceps Amesiana with ten spikes; L. a. G. D. Owen, with nine spikes; Lælio-cattleya Cappei Westonbirt var., with a huge spike of thirteen gorgeous flowers; Vanda Watsoni, with seven spikes of pure white flowers; and Lælia autumnalis, with four spikes; and the new Cypripedium Norah (F.C.C.).

Mr. Hunt, gardener to Paulia Ralli, Esq., Ashstead Park, Leatherhead, showed two beautiful white forms of Cattleya Trianæ, and the handsome Lycaste Balliæ.

From Mr. E. V. Low, Haywards Heath, came Cypripedium aureum Surprise, C. The Nizam, C. Waterloo, C. Portia, etc.

Mr. Hunter, gardener to the Duke of Marlborough, Blenheim Palace, sent up Cypripedium Duke of Marlborough (A.M.) with fine white dorsal sepal.

De Barri Crawshay, Esq. (gardener, Mr. Stables, exhibited Odontoglossum Harvengtense Crawshayanum, a beautiful rounded yellowish flower; and Zygopetalum brachypetalum.

From Messrs. Hassall and Co., Southgate, came the chaste Cattleya Blacki, C. Octave Doin, and a beautiful form of Odontoglossum Lambeauranum.

Mr. W. Hopkins, gardener to Francis Wellesley, Esq., Westfield, Woking, sent up some cypripediums, including C. Thalia The Baron.

Messrs. J. and A. McBean, Cookbridge, showed some grandly-grown odontoglossums and white forms of Lælia anceps, but their leading plant was Cymbidium Schlegeli (A.M.), a cream-coloured hybrid between C. insigne and C. Wiganeanum, with purplish spotting at the base of the segments, and prominent red-purple spots on the white, yellow-throated lip.

A bank of cypripediums from Messrs. J. Cypher and Sons, Cheltenham, contained very fine blooms of C. villosum splendens, C. Vandyke, C. aureum Hyeanum, C. Mrs. F. Godman, C. Thompsoni, C. Actaeus Sybil, and C. Minos Youngi.

Messrs. Charlesworth and Co., Haywards Heath, submitted a beautiful form of Cattleya Octave Doin, the rare Calanthe violacea, Lælio-cattleya amabile (A.M.), Odontioda Bradshawiæ, Odontoglossum hibernicum, a richly-hued form of O. crispum; and a white form of the old Zygopetalum Mackayi named Charlesworthi (A.M.).

Zygocolax Charlesworthi Cobb's variety (A.M.) was sent by Walter Cobb, Esq., Normanhurst, Rusper, and some remarkably fine and beautiful spikes of Calanthe Wm. Murray were staged by Mr. E. S. Branson, gardener to G. Hanbury, Esq., Blythewood, Burnham, and gained a cultural commendation.

Odontoglossum Doris (O. crispum Victoria Regina x O. Ossultoni), prettily spotted with red, came from Messrs. Jas. Veitch and Sons, Chelsea. Mr. H. S. Goodson, Fairlawn, Putney (gardener, Mr. G. Day), brought up a fine form of Odontioda Cooksonæ named Royal Scarlet.

FRUIT AND VEGETABLE COMMITTEE.

A splendid collection of apples from Messrs. G. Bunyard and Co., Maidstone, was a striking feature of the meeting. It filled a whole length of double staging. Along the centre were piled up baskets of fruit, with smaller lots in dishes on either side, and a few ferns and palms to relieve the flatness of the exhibit. All the varieties were in splendid condition, but especially noteworthy were Wagener, Kentish Fillbasket, Clark's Seedling, Twenty-ounce, Newton Wonder, Belle de Pontoise, Foster's Seedling, King of the Pippins, Lane's Prince Albert, Hambling's Seedling, Mere de Menage, Chelmsford Wonder, Lord Derby, Red Ribbed Greening, Adam's Pearmain, Sanspariel, Blue Pearmain, Edward VII., Blenheim Pippin, and Cox's Orange Pippin. In all there were 180 varieties in this fine exhibit.

A collection of rhubarb from the Society's gardens merited attention, and showed the value of Early Red, Danver's Early Red, Laxton's No. 1, Crimson Perfection, Hawke's Champagne, and Collis' Ruby for forcing.

A group of vegetables stored in late autumn, and kept for winter use, was put up by Messrs. Sutton and Sons, Reading. Onions figured prominently, and potatoes were well to the fore. Carrots, both long and stump-rooted, beet, artichokes, and a grand lot of Tender and True parsnips, were included, and all showed evidence of careful handling and storing.

The well-kept apples displayed by Messrs. W. Seabrook and Sons, Chelmsford, provided a rare display of colour, and the dishes of Gascoigne's Scarlet, Bismarck, Blenheim Pippin, Cox's Orange Pippin, King of the Pippins, Barnack Beauty, Newton Wonder, Beauty of Kent, and The Queen, were of first-class size and colour.

Mr. W. E. Sands, Hillsborough, Co. Down, contributed a collection of potatoes, and a few notable varieties on view were Erin's Best, Langholm Model, Emerald Queen, Scottish Triumph, Fourball, Duchess of Cornwall, and Irish Hero.

CERTIFICATES AND AWARDS.

First-class Certificates.—To Cypripedium Norah, from Lieut.-Colonel Sir G. Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester.

Award of Merit.—To Zygocolax Charlesworthi, Cobb's var., from W. Cobb, Esq., Normanhurst, Rusper; to Cypripedium Duke of Marlborough, from the Duke of Marlborough (gardener, Mr. Hunter), Blenheim; to Zygopetalum Mackayi Charlesworthi, from Messrs. Charlesworth and Co., Haywards Heath; to Lælio-cattleya amabilis, from Messrs. Charlesworth and Co.; and to Cymbidium Schlegeli, from Messrs. J. and A. McBean, Cooksbridge, Sussex.

MEDALS.

Gold.—To Messrs. G. Bunyard and Co., Maidstone, for apples.

Lindley.—To Mr. Alexander, orchid grower to Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester.

Silver-gilt Banksian.—To Messrs. W. Cutbush and Son, Highgate, for carnations and flowering shrubs.

Silver Knightian.—To Messrs. Sutton and Sons, Reading, for vegetables; to Messrs. W. Seabrook and Sons, Chelmsford, for apples.

Silver Flora.—To Mr. H. Burnett, Guernsey, for carnations; to Mr. Reynolds, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Acton, for Jasminum primulinum; to Mr. H. Prime, gardener to the Marquis of Salisbury, Hatfield, for euphorbias and saintpaulias; to Messrs. Armstrong and Brown, Tunbridge Wells, for orchids; to Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; to Mr. J. Collier, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids.

Silver Banksian.—To Messrs. J. and A. McBean, Cooksbridge, for orchids; to Mr. W. Sands, Hillsborough, Ireland, for potatoes; to the Rev. H. Buckston, Derby, for cyclamens; to Messrs. R. Gill and Son, Falmouth, for rhododendrons and paintings of fungi; to Messrs. H. B. May and Sons, Edmonton, for ferns, etc.; to Mr. L. R. Russell, Richmond, for various flowering plants; to Messrs. Sutton and Sons, Reading, for primulas; to Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse flowering plants; and to Messrs. S. Low and Co., Enfield, for carnations and cyclamens.

Bronze Flora.—To Messrs. Barr and Sons, Covent Garden, for early flowers; and to Mr. Bertie Bell, Guernsey, for carnations.

Bronze Banksian.—To Messrs. H. Cannell and Sons, Swanley, for begonias; to Mr. C. Engelmann, Saffron Walden, for carnations, and to Messrs. T. S. Ware, Lim., Feltham, for alpines.

## Dundee Horticultural Association.

The ordinary monthly meeting was held in the Technical College on the evening of the 11th inst. Mr. Wm. Christeson presided.

The essayist, Mr. J. G. Beisant, late of Castle Huntly Gardens, was unavoidably absent owing to his acceptance of an appointment in Ireland. The Hon. President, Bailie Melville, kindly consented to read the paper, which was a concise and practical treatise on "Malmaison Carnations." At the outset the essay set forth the necessity of obtaining a clean, healthy stock to start with, and clearly showed how to keep up this clean, healthy condition by careful and intelligent cultivation. In fact, everything worth enquiring after, from the various methods and times suggested for layering, until the plants had flowered a second season, and were again operated upon for a renewal of stock, was amply dealt with in a way which showed the essayist to be conversant with every detail of successful cultivation. In the discussion which followed the reading of the paper, some members spoke highly of the success Mr. Beisant had achieved as a grower of Malmaisons. On the motion of Mr. James Bethel, Bailie Melville was thanked for his kindness in taking Mr. Beisant's place at the meeting, while he also moved that a letter of thanks be forwarded to Mr. Beisant.

The Chairman acknowledged a donation of £2 from the Right Hon. the Earl of Moray, while the secretary reported arrangements for a social meeting and dance on February 9, and an excursion to Pittencrieff Park on July 6.

## Scottish Horticultural Association.

The annual business meeting of this association was held in the hall of the Young Men's Christian Association, 14, South St. Andrew Street, Edinburgh, on the 16th inst. Mr. Massie, the president, occupied the chair, and there was an attendance of 155 members.

The report by the council for 1911 stated, inter alia, that the proposals laid before the members by the President in his inaugural address on February 7, which were remitted to the council for consideration and report, had received their earnest consideration, and that, as a result of their deliberations, they had now to present to the members for their acceptance a revision of the constitution of the association, embodying these proposals, and in other ways providing for the expansion of its work in the near future. The principal recommendations were: (1) a thorough revision of the finances of the asso-

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ciation; (2) that immediate steps be taken to start a fund for the foundation of a horticultural institution and library; (3) that more facilities be afforded the young men to take part in the work of the association; and (4) that a Benevolent Fund be started to temporarily assist gardeners who had met with misfortune. Provision was also made for the holding of examinations in horticulture, granting bursaries to students of horticulture, etc.

As regards the members' subscriptions, it was proposed to adopt, in place of the uniform annual subscription of 2s. 6d. at present in force, a scale of subscriptions commencing at 2s. 6d. as at present, running up to £2 2s.; and, as regards the foundation of a horticultural institution and benevolent fund, it was stated that the council were now in possession of the nucleus of a fund for the former in the shape of a donation of £80 from the surplus of the Scottish National Exhibition (1908), and that about £200 more had been subscribed by the office-bearers of the association, and that an anonymous donor had offered £25 to start the latter.

The work of the association, the report went on to say, had been well maintained in the past session, and that the average attendance at the ordinary meetings had been 100. The admissions to membership had been satisfactory, but the loss by deaths, resignations, and lapses had been in excess of the accessions, so that there was a small decrease in the total membership. The chrysanthemum show had been a decided success, and had yielded a profit of £31 5s. 9d. The adoption of the revised constitution and bylaws was moved from the Chair, and after same amendments of a minor kind had been made the motion was agreed to.

The following office-bearers were elected in place of those who retired by rotation: Honorary president, Captain Stirling, of Keir; president, Mr. W. H. Massie (reelected); vice-presidents, Messrs. James Dobdie and D. W. Thomson; councillors, Messrs. D. Kidd, Carberry Tower; Jas. Whytock, Dalkeith; A. Chalmers, Edinburgh; T. Highgate, Hopetoun; T. Fortune, Edinburgh; E. P. Laird, Edinburgh; W. J. Thomson, Edinburgh. Mr. A. D. Richardson was reelected secretary and treasurer.

It was intimated that Captain Stirling, the honorary president, had invited the members to Keir, and that July 27 had been fixed as the date of the excursion. Fifteen new members were elected.

On February 6 the president will take as the subject of his opening address, "Garden City Problems."

### North of England Horticultural Society.

The annual meeting was held in the Queen's Hotel, Leeds, on Thursday, January 18, Major Dent presiding.

The annual report presented reviewed the year's work, and stated that there should always be a majority of Council members from outside Yorkshire. The Council desired to express their thanks to those lecturers who have throughout the year given to the members the results of their labours in the garden or the laboratory. To the trade especially the Council desired to extend their appreciation of whole-hearted assistance and support. Needless to say, without the goodwill of those who are in the front line of horticulture, the society could neither have held the shows nor given its Fellows and members a continuous succession of floral feasts. At the same time it had been most encouraging to note the steady increase of amateur exhibits, and it cannot be too strongly stated how necessary it is that amateurs should also bring of their best to the shows. Although no money prizes can be given, yet all amateurs are entitled to awards. Amateurs are not placed in competition with the trade, each exhibit at all shows being judged apart by a recognised standard.

In 1912 and future years the policy of the society with regard to local shows will be the formation of local district committees, composed of Fellows and members of the society, who will be responsible for the accommodation, staging, and advertising of the local shows. The society was started with 52 members, and now there are 224 Fellows and 189 associate members.

The balance-sheet showed an adverse balance of £262 15s. 10d.

The Chairman moved the adoption of the report and balance-sheet, and explained the fact that the society was for the North of England and not merely for Yorkshire; he also referred to the great help received from the Royal Horticultural Society. Mr. Reginald Farrar seconded the motion, which was unanimously adopted.

It was subsequently agreed that the Council consist of 30 members instead of 15, and that bona fide gardeners be admitted as Fellows at 10s. 6d. per annum. To the existing Council were added Professor Seeton, Mr. W. Cuthbertson, and Mr. T. H. Gowan. The Rev. J. B. Hall was re-elected secretary, and the Hon. R. Beckett as treasurer. The standing committees were then appointed.

### Broughty Ferry Horticultural Association.

The opening meeting of the session was held on the 16th inst. Mr. William Grant presided, and the President, Mr. James Bethel, gave the opening address, as well as a paper entitled, "Orchard House Gleanings." The paper was thoroughly practical in every detail, and showed that the president was well up in every problem which presents itself to the cultivation of fruit trees in pots and tubs, from the grafting upwards. He gave a lucid survey of the best methods of cultivation to secure the best results. Apples, pears, plums, cherries, peaches, nectarines, apricots, and figs were the kinds dealt with, and the best varieties of each were given as a guide. Top-dressing, potting, housing, feeding, spraying, watering, setting the fruit, thinning, disbudding, pinching, and pruning were points emphasised.

The members showed their appreciation of the lecture in the usual way. There was a good display of cyclamens from Messrs. D. and W. Croll, Dalhousie Nurseries, and Mr. James Slater, Passmore Villa Gardens; vases of Christmas roses and chrysanthemums, and some forced rhubarb from Mr. Wm. Grant, Fern Hall Gardens. Three new members were enrolled.

### Beckenham Horticultural Society.

At the meeting of this society, held on Friday, 19th inst., Mr. C. F. Watts, B.Sc., in the chair, Mr. J. Gregory (of Croydon) gave a lantern lecture on "Ferns and their Allies." The beautiful pictures of mosses, lycopodiums, and ferns, both as specimens and groups, were much admired, while the remarks by the lecturer proved very instructive, especialy those relating to the evolution of the Nephrolepis, and the fertilisation of ferns. A large number of dried specimens was brought by Mr. Gregory, and these afforded much pleasure to the members. The meeting concluded with a hearty vote of thanks to Mr. Gregory.

## GARDENING ENGAGEMENTS.

Mr. W. Bailey, for upwards of twelve years fruit and plant foreman in the gardens of Woburn Abbey, Beds, has been appointed gardener to the Countess of Carysfort, Glenart Castle, Arklow, Co. Wicklow, Ireland.

Mr. Fred Low, late of Edinburgh, City Gardens, has been appointed gardener to J. D. Fletcher, Esq., Rosehaugh, Ross-shire.

Mr. C. J. Pople, for three years general foreman in the gardens of Breckenbrough Hall, Thirsk, Yorkshire, has been appointed gardener to G. B. Jackson, Esq., The White House, Saltburn-by-the-Sea.

Mr. W. Stevens, late gardener at Audley House, New Barnet, has been appointed gardener to Colonel Barham, Hole Park, Rolvenden, Kent.

## OBITUARY.

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### M. THEOPHILE DURAND.

With much regret we record the death of M. Théophile Durand, the Director of the Belgium State Botanical Garden, Brussels. Born in 1855, he was in the prime of life, and his many friends looked forward to his still further rendering good service in the cause of botanical science. After a successful university career, and taking his degree in medicine, M. Durand was in 1881 appointed an assistant in the State Botanical Garden, and in the discharge of his duties he showed such marked ability that he was appointed Conservateur in 1895, and Director in 1902. Throughout the whole period of his association with the State Botanic Garden he was a strenuous worker, and his contributions to the literature of botanical science were numerous and of a high order of merit, his most important work being "The Flora of the Congo." In the course of his active life M. Durand filled many important positions in learned societies of Belgium, other than those associated with botany, and was the recipient of many honours, both from home and foreign Universities, in addition to the Orders conferred upon him by the King of the Belgians.

There was a large gathering of scientists at the funeral, and in the course of the addresses that were given in the church the leaders in science and art testified in warm terms to the commanding abilities of M. Durand and the high estimation in which he was held.

## CATALOGUES RECEIVED.

FREDERICK ROEMER, QUEDLINBURG, GERMANY.—In this list of choice German flowers and garden seeds there are a number of novelties, especially in stocks and asters.

W. LAING, SUTTON, SURREY.—A plain, useful, descriptive and altogether useful list of seeds, bulbs, and flower roots.

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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

DAMPING OF FERN PROTHALLI.—J. B., Sheffield: The rapid damping off of large numbers of fern prothalli is due to the presence of a fungus named Pythium intermedium, but the presence of the fungus is due to certain conditions, just in the same way as mildew. Excess of moisture when the crowded prothalli are just developing provides conditions favourable to fungus attack, therefore overhead watering should never be resorted to when ferns are being raised from spores. The needful moisture can be provided by standing the pots in saucers of water, or by dipping each pot gently into a bucket or tank of water until the moisture rises through the drainage and soil, and just moistens the surface. It will be obvious that unless dipping is carefully performed it will be no advantage over overhead watering.

DAMAGED PLANTS IN GREENHOUSE.—F. B., Camberley: The damp surroundings, low temperature, and insufficient ventilation, probably all combine to produce the unpleasant results noted. A little more heat, combined with increased ventilation, would secure better atmospheric conditions in the house. The other matter we are endeavouring to elucidate, and hope to reply further at an early date.

EXAMINATION IN HORTICULTURE.—S., Barnsley: We congratulate you and your friends upon your work and success. The Royal Horticultural Society hold four examinations in horticulture; a general examination for those eighteen years old and upwards; a general examination for juniors, under eighteen years of age; a school teachers' examination and a public parks examination. We imagine you will prefer the school teachers' examination, which confines attention to cottage and allotment gardening. This examination is only open to elementary and technical school teachers, and has been undertaken in view of the increased demand in country districts that the school teachers shall be conpetent to teach the elements of cottage and allotment gardening, and of the absence of any test whatever of such capacity. You can obtain full particulars regarding this examination on application to the Secretary of the Royal Horticultural Society, Vincent Square, Westminster, enclosing a stamped addressed envelope for reply.

HEMP FOR SUB-TROPICAL GARDENING.—F. E. F., Staines: The hemp used in sub-tropical gardening is Cannabis sativa, an Indian species, easily raised from seeds sown under glass in March or April, and grown freely in rich soil until planting time.

OUTLINE SYLLABUS OF R.H.S. TEACHERS' EXAMINATION.—S., Barnsley: The folowing outline syllabus will give you a good idea of the nature of the examination: (1) Some knowledge of elementary chemistry and biology, as affecting garden practice. (2) Such a knowledge of the formation and nature of soils as is essential to cultivators. (3) Information as to the best average sizes of cottage gardens and allotments such as men engaged in diverse vocations can cultivate in spare time. (4) Preparation of soils for the reception of crops of all descriptions to ensure successful results. (5) Renovating neglected gardens. (6) Manuring soils for diverse crops with some knowledge in practical form of the nature of manures and their constituents. (7) Spring vegetable crops, varieties and method of cropping, times for manuring, planting, etc. (8) Summer crops—successional. (9) Autumn or winter crops for successional purposes. (10) General treatment to secure best results for all seasons. (11) Suitable fruits for cottage gardens. Varieties, methods of culture, pruning and training. General treatment. (12) Fruits suitable for allotment culture. (13) Flowers for cottage gardens, seasons of flowering, methods of propagation, etc. (14) Flowers suited for allotments, varieties and general culture. (15) Window gardening, inside and out.

GIANT FRENCH CARNATIONS.—S. W., Chingford: In all probability the strain of carnations you refer to is the one known as Geant de Nice, and is largely grown in the South of France for the early flower markets. The plants resemble a tree carnation in style of growth, and they grow freely and flower abundantly. You can purchase seeds from most of the seedsmen who advertise in our columns. The flowers are large and of varied and rich colours. Sow seeds in gentle heat in February, pot the seedlings as soon as they need more root room, and plant out on a warm border at the end of May. These plants will flower in September, and if they are protected with frame-lights they will continue to bloom for a long time. Now that the perpetual carnations are so well understood and so largely grown for winter-flowering, we doubt whether it would pay to grow any quantity of the Geant de Nice strain for flowering during the winter under glass; if you have room to spare, grow a dozen or two in pots, plunge them out in May, and lift them and bring them into a warm, airy greenhouse in October. The experiment would not be a costly one, but would prove the value of the strain for the purpose you have in view.

SWEET PEAS FOR EXHIBITION.—S. S. H., Retford: An excellent work on this subject is "Sweet Peas and Their Cultivation," by C. H. Curtis, Hon. Secretary, National Sweet Pea Society. This can be obtained at 1s. 2d., or 1s. 8d. (cloth) post free, from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, E.C.

ROLLING LAWN.—B. E. S., Dartford: As long as the grass is not frozen, or the lawn so wet as to be sticky and very soft, rolling should be done twice a week. Use a moderately heavy roller, and do not roll the lawn twice consecutively in the same direction; work lengthways one time, and crossways the next. When the surface is fairly dry give the lawn a good sweeping, using a new birch broom for the work.

### NAMES OF PLANTS.

B. T. L., Lichfield.—1, Plumbago rosea; 2, Callicarpa purpurea.

T. I., Byfleet.—Probably Oncidium incurvum; very poor specimens.

C. W., Bangor.—1, Odontoglossum crispum; 2, Lasiandra macrantha.

L. M. A., Abergavenny.—1, Rrododendron arboreum; 2, Pelargonium denticulatum.

N. R., Saltash.—1, Gmnogramma calomelanus; 2, G. Matthewsi; 3, Lastrea hispida.

A. A., Plymouth.—1, Abutilon Thompsoni; 2, Euphorbia fulgens; 3, Pinus Pinsapo; 4, Francisea calycina; 5, Amaryllis aulica.

E. G. K., Winchester.—1, Hamamelis mollis; 2, Exacum affine; 3, Monstera deliciosa; 4, Camellia Donckelaari; 5, Erica carnea.

W. L., Whitby.—1, Adiantum cuneatum; 2, probably A. c. mundulum; 3, A. c. Legrandi; 4, A. c. gracillimum; 5, A. c. grandiceps; 6, A. c. Pacotti.

## FORTHCOMING ENGAGEMENTS.

THURSDAY, February 1.—Linnean Society Meeting.

SATURDAY, February 3.—French Horticultural Society of London.

MONDAY, February 5.—National Chrysanthemum Society's Annual Meeting, Carr's Restaurant, Strand, W.C., at 7 p.m.

TUESDAY, February 6.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "Plants of Fiji and other South Sea Islands," by Sir Everard im Thurn; Scientific Committee at 4 o'clock.

THURSDAY, February 8.—Manchester and North of England Orchid Society.

FRIDAY, February 9.—Royal Gardeners' Orphan Fund Annual Meeting and Election at Simpson's Restaurant, Strand, at 3 p.m.

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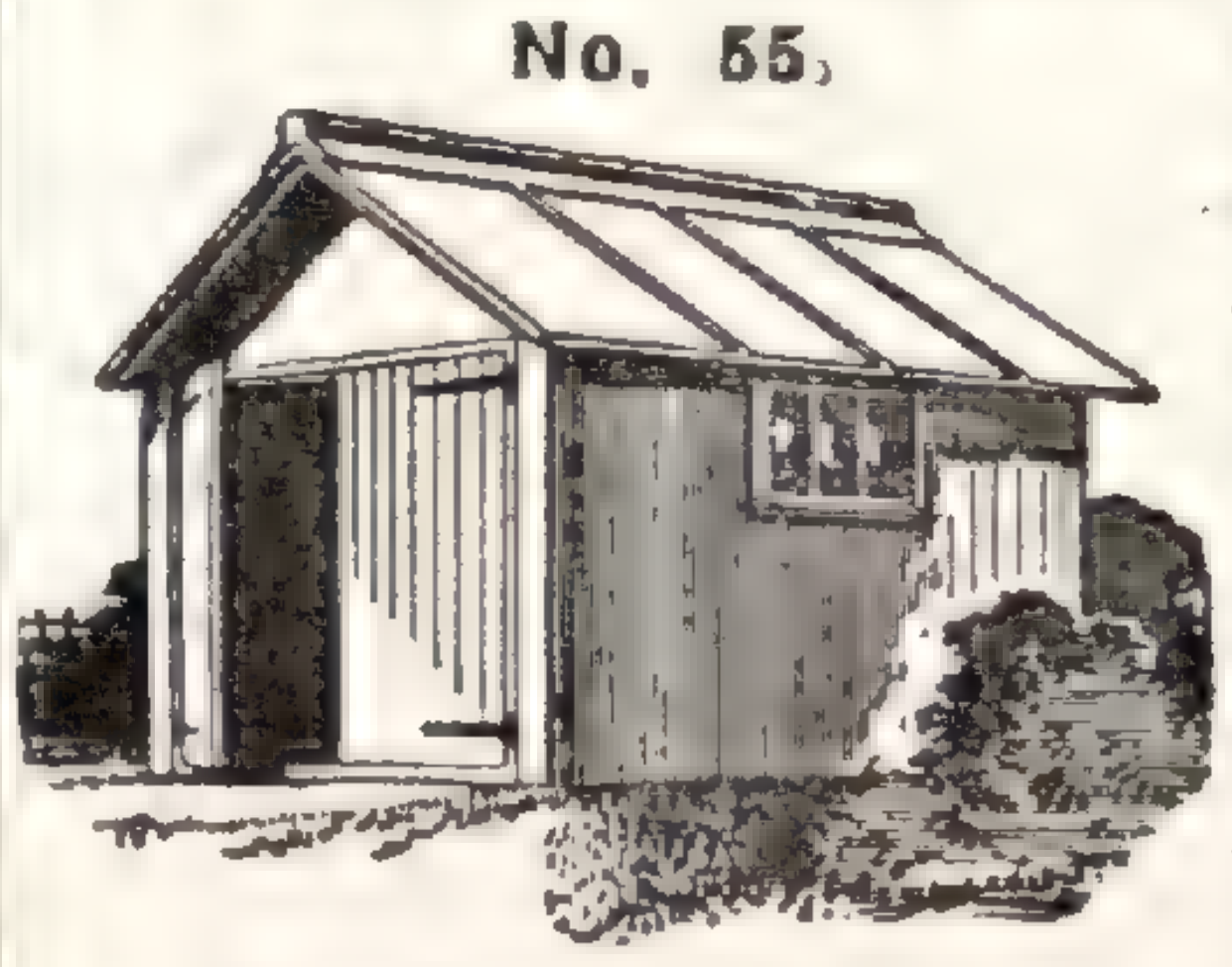

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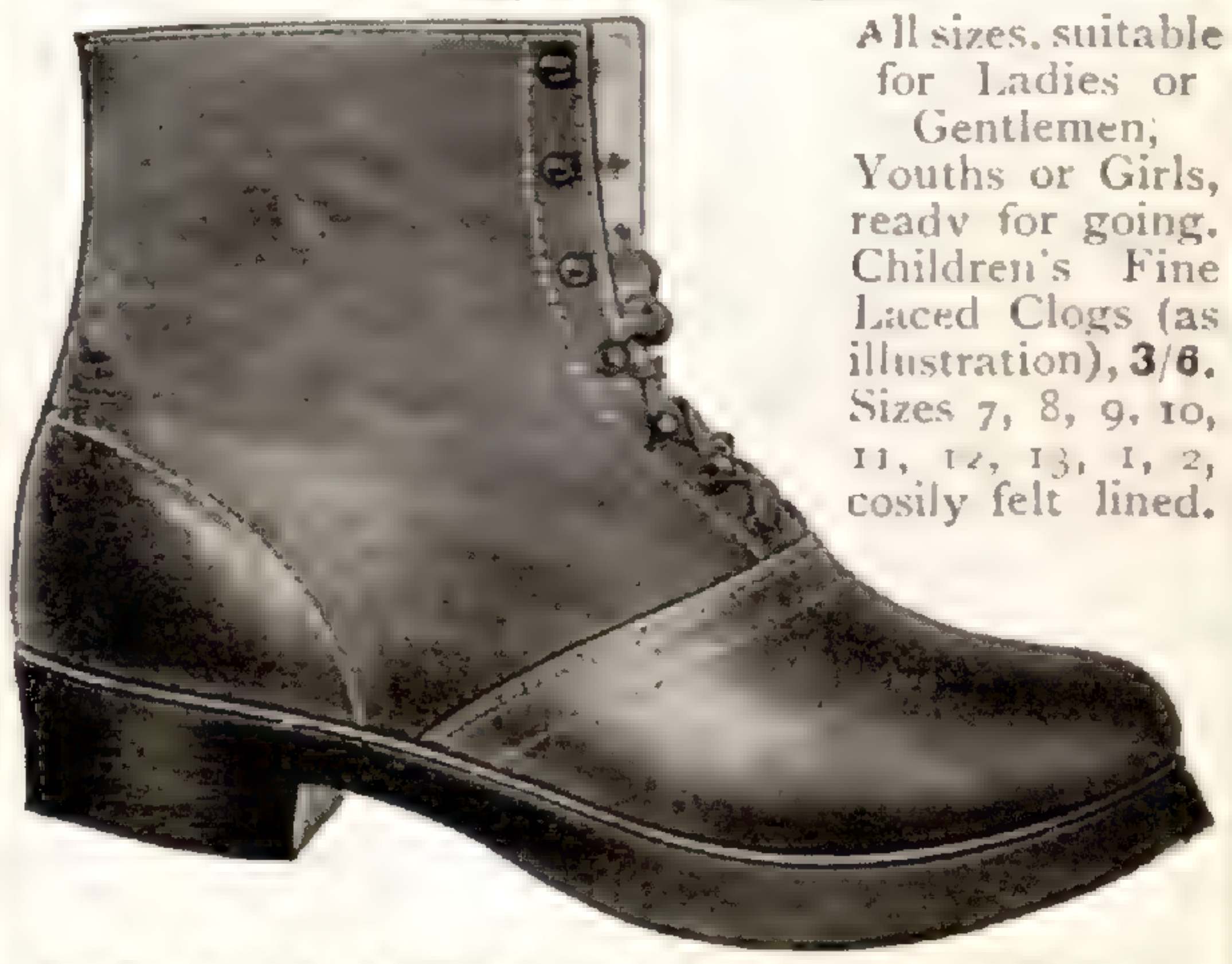

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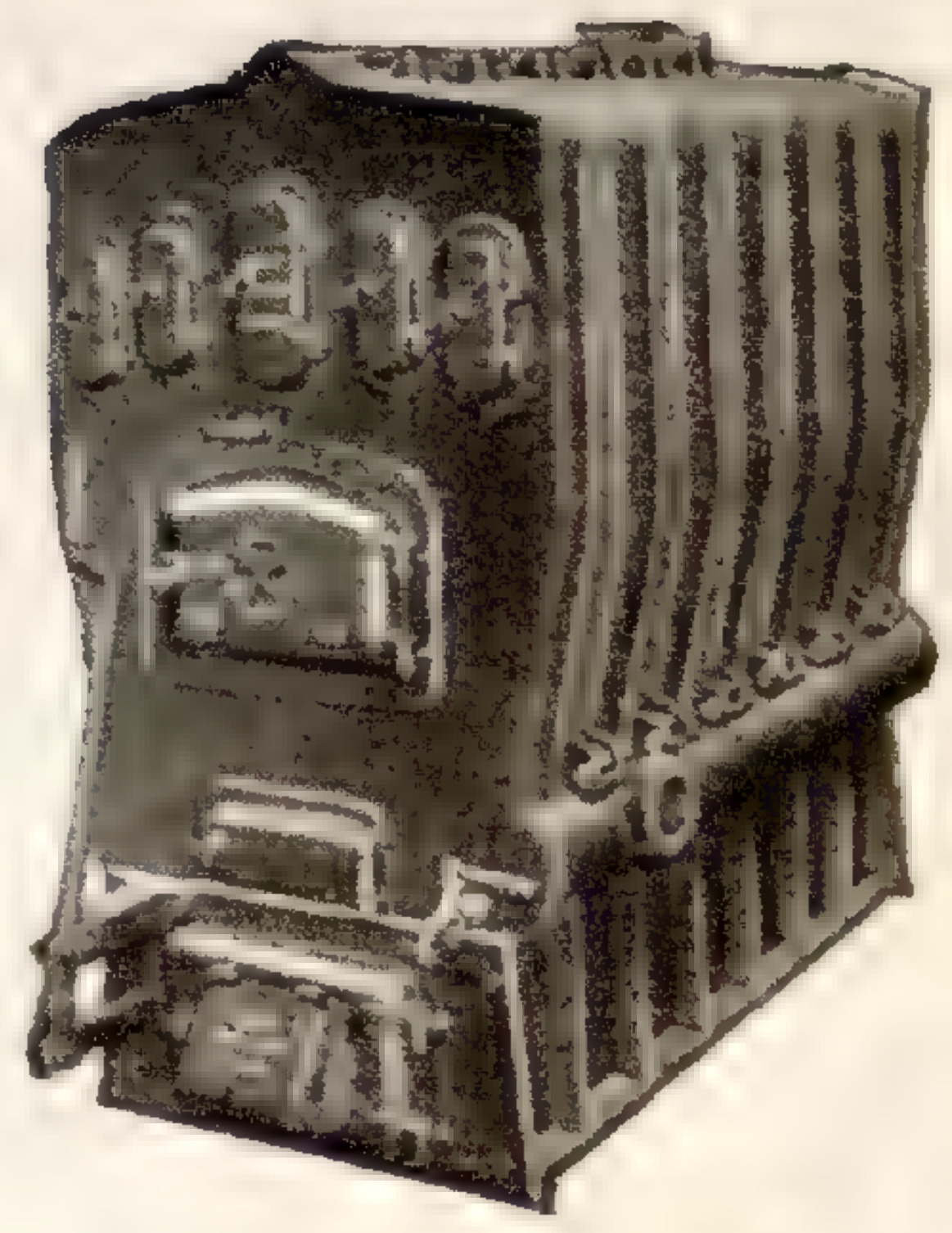

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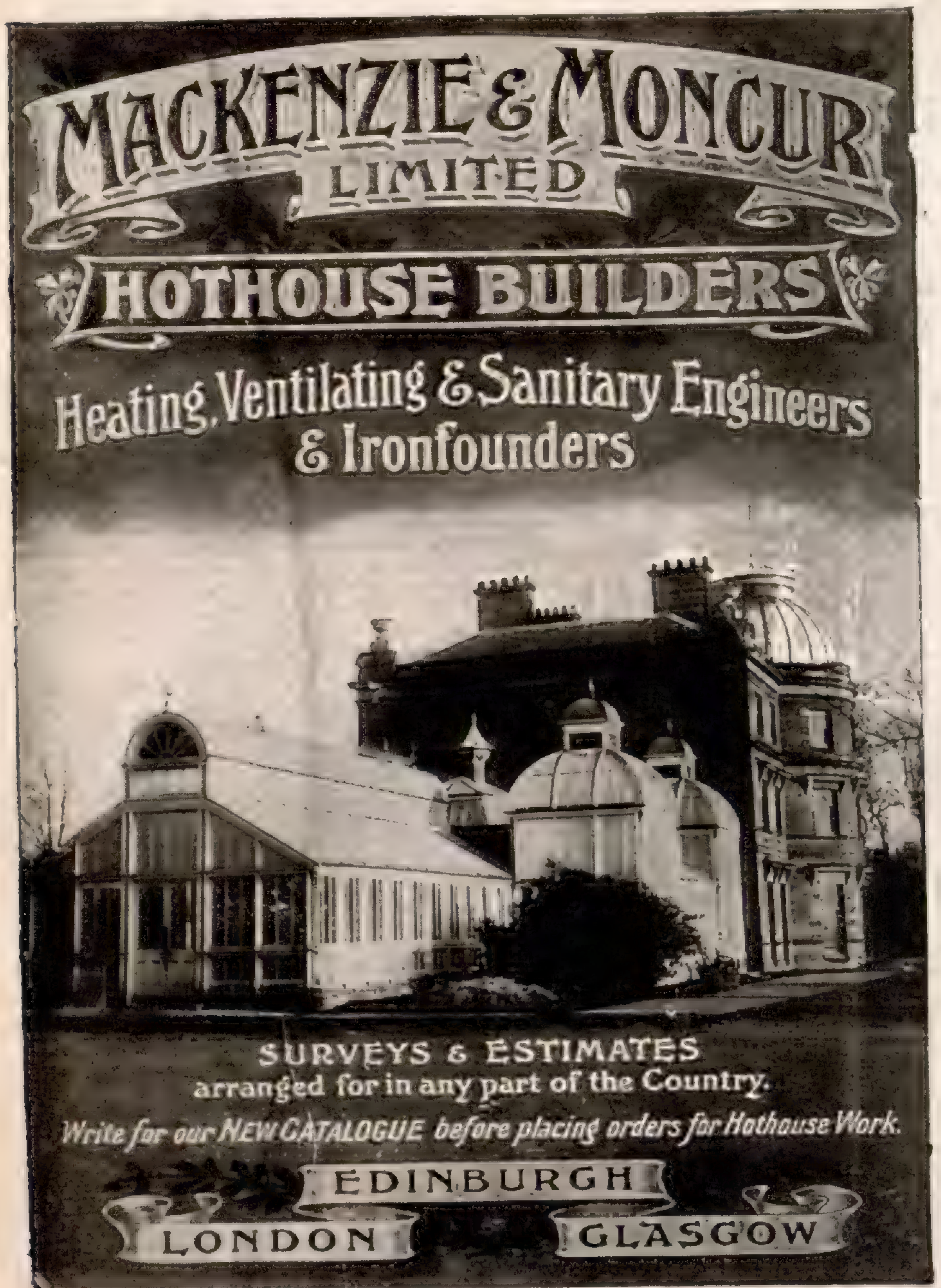

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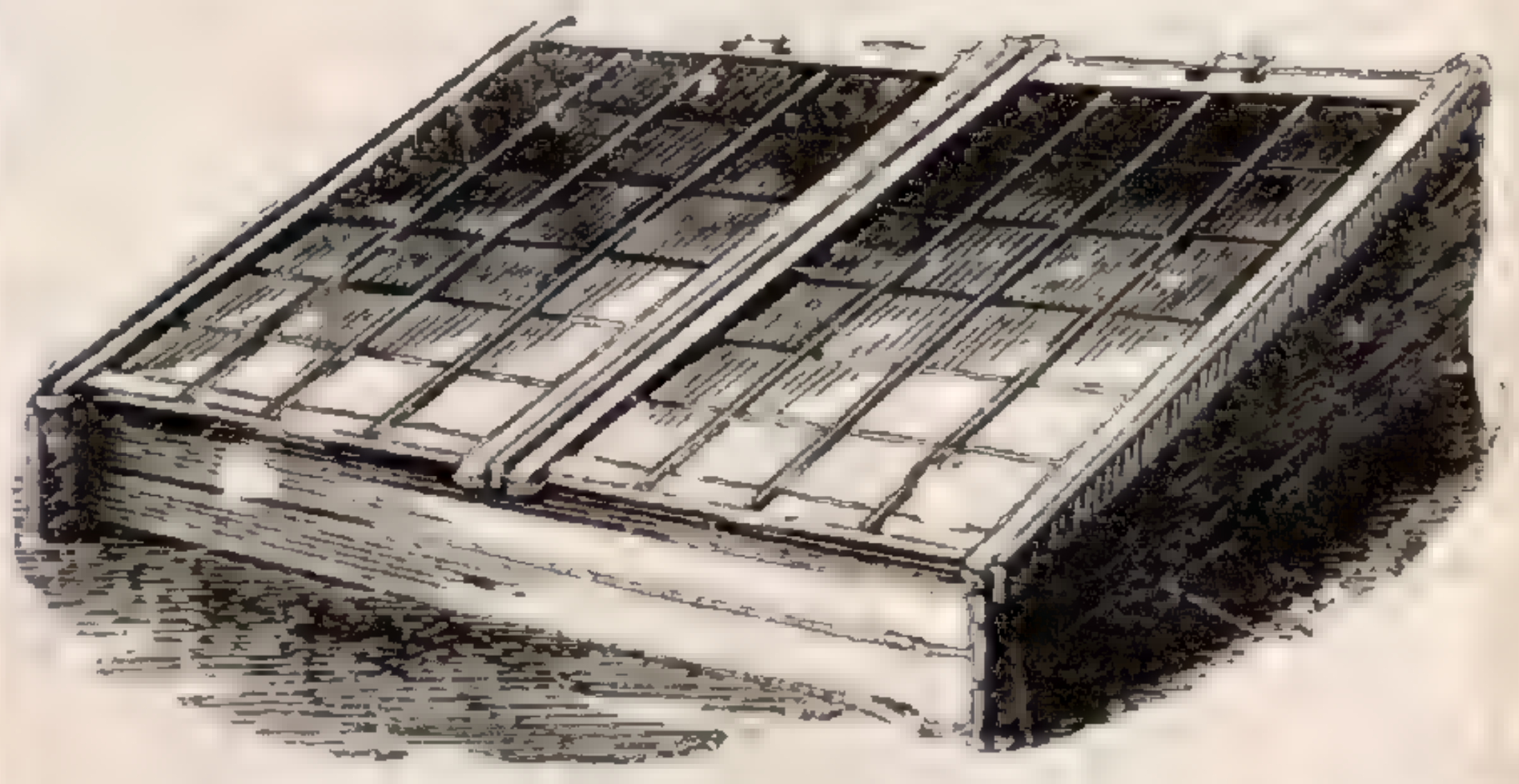

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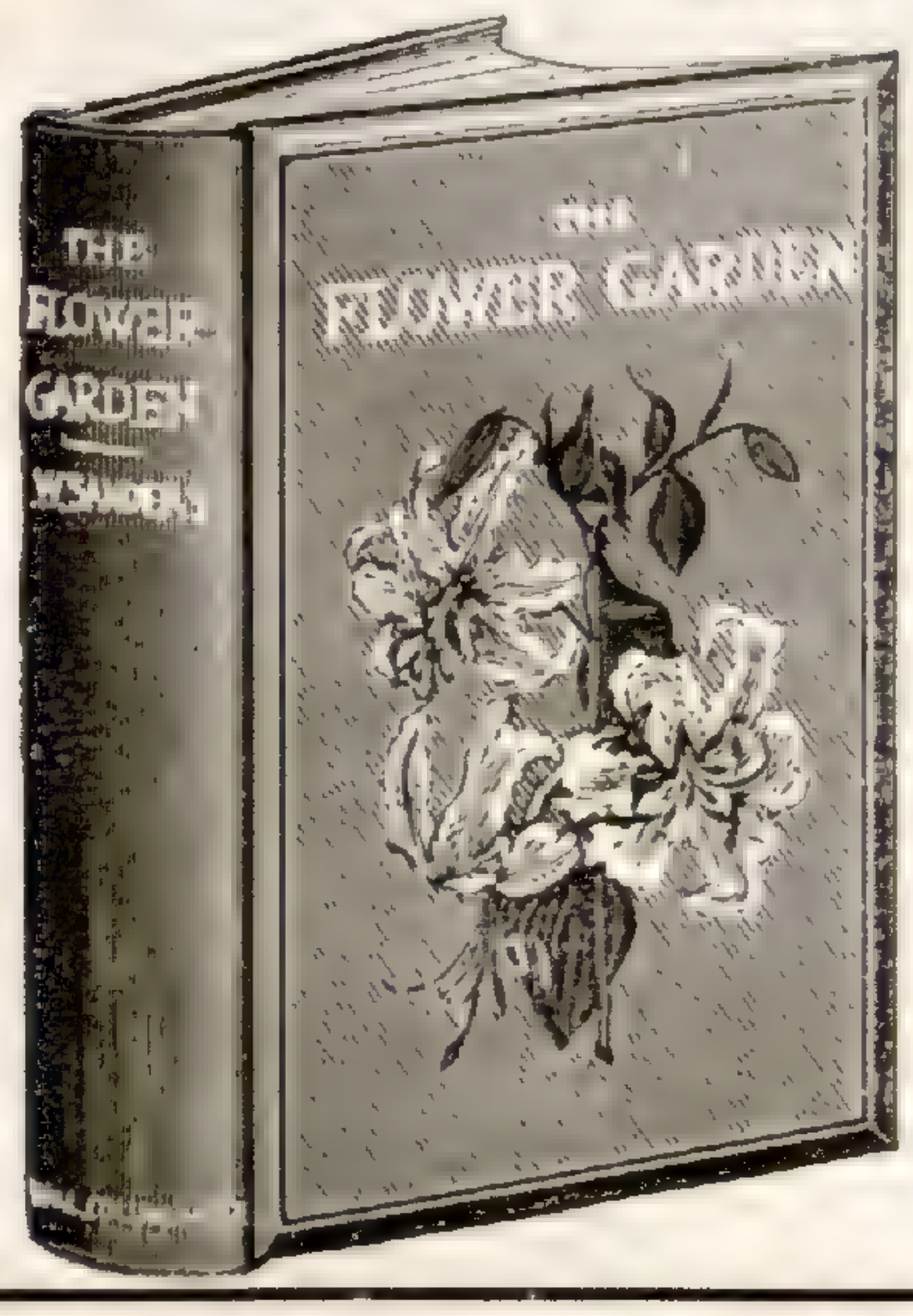

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VOL LV.—No. 3,040. SATURDAY, FEBRUARY 3, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Frost.

The advent at last of a period of truly winter weather is a matter of general congratulation to all who are in a position to defend themselves against the effects of biting cold and searching wind. Both the farmer and the gardener, though prevented by the ironbound condition of the soil from doing much on the land, is fully aware that an immensity of good is being done by its internal disintegration and mellowing, by the probable consequent reduction of vermin, and last, but not least, by checking betimes unseasonable growth, which, sooner or later, would be bound to suffer. The young and the healthy of all ages, find themselves invigorated, and are enabled to revel in the outdoor sports of skating, sliding, snowballing, tobogganing, curling, etc., etc., which Jack Frost alone is capable of facilitating, and the whole country assumes a new and refreshing aspect under the brilliant coating of snow or hoarfrost which winter proper brings in its train. Reflecting upon all this, and the immense difference such conditions present when compared with the decidedly miserable, muddy, misty, and moist ones which have prevailed for so long, it is curious to think that a change of a few degrees only, as indicated by the thermometer is sufficient to do so much. On one occasion recently, with the thermometer in the London suburbs at 31 degrees, the warmth of the soil was sufficient to check the frost, and the mixture of rain, sleet, and snow which accompanied this temperature, simply aggravated matters. Out in the country, however, a difference of only two or three degrees sufficed to produce heavy snowfalls, deep enough to impede traffic seriously, and, in many places, that somewhat rare phenomenon of rain freezing as it fell clothed everything with ice, and did much damage to trees and shrubs by its accumulated weight. The turning point of such phenomena is 32 degrees of Fahrenheit, hence termed the freezing point, or point of congelation of water. At that point, and this constitutes, undoubtedly, one of the most providential laws of Nature, the molecules of still water arrange themselves into a crystalline form in such a manner as to occupy more space than before, instead of less, as is the case with nearly all other bodies, so that a piece of ice of a given size, is larger than its constituent bulk of water. This, at first sight, seems an unimportant fact, but, nevertheless, were it not for this our world would be a very different one to what it is, and its habitable area would be immensely reduced. Thanks to this property, ice, bulk for bulk, weighs less than water, since the same contents occupy more space.

MR. W. HOPKINS.

Did water contract continuously by cooling, as it does until, as it were, the last moment when ice is formed, ice no sooner than formed would sink to the bottom, and go on accumulating there. Being thus withdrawn from the thawing and evaporating influence of open air and sunlight, it would eventually reach the surface, and every stream, pond, and lake would very speedily be frozen solid, instead of being covered, and thus protected by a superficial sheet. In all probability, also, owing to the consequent more persistent lowering of temperature due to accumulation, the great polar icecaps would again, as they have before, for a different reason, invade enormous areas to the south and north of their present limits, while, of course, both seas and oceans within the range of winter frosts would become solidified, as well as the terrestrial water areas aforesaid. Hence it would only be in tropical or sub-tropical regions, where frost is rarely experienced, that humanity could flourish or vegetation thrive. This represents, however, but one effect of this apparently unimportant expansion; there is another. Water, with its penetrative power, pervades all our rock systems, whether in their solid stratified state, or in their decomposed superficial forms, which constitutes the bulk of our soils. This water, no matter how finely diffused, fills the cracks, crevices and interstices, and when, by exposure, it falls to 32 degrees F., its molecules irresistibly demand greater space, and consequently force the containing walls farther apart. After a frost we see peculiarly clear evidence of this in every gravel walk, where, not merely is it rendered soft, but every pebble will be seen to have been clearly lifted, and now lies loose in a cavity. It is this property which mellows the land for the gardener's benefit by disintegrating the most obdurate soil to the very utmost, and thus giving entry eventually to the roots of his crops more effectively than any implements could do. When, too, we view a wide prospect of hill and dale, shaped mainly by the denuding action of the streams which intersect it, here, too, it is frost which does an immensity of disintegrating work, disrupting bit by bit every rock which water can permeate, by the irresistible expansion in question. To this we owe the great bulk of our fertile alluvial soil, which forms the major part of our cultivable land.

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**Mr. W. Hopkins,** who is head gardener to Francis Wellesley, Esq., J.P., at Westfield, Woking, has been prominently before the public during recent years as a successful cultivator of carnations, of sweet peas, and of orchids. At the beginning of his career he spent six years with Messrs. Sander and Sons, St. Albans, chiefly in the hybridising department. Two years among Mr. C. Winn's orchids at Selly Hill, Birmingham, followed, and then came two other years spent in the fruit and plant department at Kingsweston House, near Bristol. After this large experience under glass Mr. Hopkins spent three years in the kitchen garden and hardy fruit department in Mrs. Leveson Gower's gardens at Bill Hill, Wokingham, and left there to become foreman at Leighton House, Westbury, where he stayed two years, and then entered service with Mr. Wellesley. Some of his successes include the Champion Cup at Guildford for chrysanthemums, which he won three times in succession, and fifty first prizes for carnations. He has held the Eckford Cup for sweet peas, and was runner-up for the National Sweet Pea Society's Provincial Cup at Saltaire; the Reigate Cup and the Gamage Shield for sweet peas have also fallen to his share, while for orchids numerous First Class Certificates and Awards of Merit have been obtained from the Royal Horticultural Society, the majority being granted to hybrids raised at Westfield.

**Proposed Exhibition of South African Fruits.**—The Rev. W. Wilks writes: "The following cablegram was received on January 22 by the High Commissioner in London for the Union of South Africa from the Department of Agriculture, Pretoria: 'Owing to unforseen circumstances regret Government compelled to abandon exhibition.' No further explanation has yet come to hand, but it is necessary to abandon the exhibition accordingly. All notices of it appearing in the Royal Horticultural Society's Book of Arrangements, on Fellows' tickets, and elsewhere, are cancelled.

**Revival of the Hull Chrysanthemum Show.**—For some time past a strong desire has been felt by chrysanthemum lovers in the district of which Hull is the centre, that the chrysanthemum shows, which were allowed to fall into abeyance some eight years since, should be revived. As the result of this feeling a public meeting was held in the Town Hall, Hull, for the purpose of considering the question. The chairman was the Right Hon. T. R. Ferens, M.P., and he was supported by the Mayor and Sheriff of Hull and an influential body of citizens and the leading chrysanthemum growers. After some discussion it was unanimously resolved to revive the chrysanthemum show. The title of the Hull and East Riding Chrysanthemum Society has been revived, and a strong executive formed, with Mr. James Dixon, who for many years took an active part in the management of the old society as honorary secretary. The exhibition will open on Wednesday, November 20, and, presumably, be continued on the following day, but we have no definite information upon this point. It will be held in the new City Hall, which is in the centre of the city, and in every way suitable for an autumn flower show.

**British Gardeners' Association.**—As notified in our issue of January 20, Mr. J. Weathers has resigned the position of general secretary, which he has occupied during the past seven years, and on the 25th ult., a special general meeting was held at Carr's Restaurant, Strand, for the purpose of receiving his resignation and other business. The latter comprised the alteration of rules, and confirming the subcommittee's report upon the future management of the association, as adopted by the Executive Council. Mr. Frogbrook, the chairman of the Council, presided, and there was a large attendance of members, including a considerable number of representatives of the branches in the provinces. At the commencement of the meeting the Chairman directed attention to the fact that, as it was a special general one, the proceedings should be regarded as private; therefore the Council had decided not to allow the members of the Press, as such, to be present, unless the members wished it otherwise. On the question being submitted, it was decided by a large majority that the Press should not be admitted. While we respect the decision of the meeting, we protest against the refusal to allow the Press to give a report of the proceedings in the usual manner. The exceptional course taken on this occasion is all the more remarkable, for to us there did not appear anything in the course of the proceedings, which extended over about three and a-half hours, to whirh publicity might not have been given with advantage. For instance, there could surely be no objection to the publication of the fact that at this meeting Mr. John Weathers was heartily thanked for his splendid services, and was unanimously awarded the gold medal of the association, which is to be accompanied by an illuminated address! Since writing the foregoing we have received from the association, through Mr. Hawes, the Council's report of the proceedings at the meeting, but as our representative was not allowed to carry out his duties and thus provide our readers with an independent report, we do not propose to publish it.

**Rose Show at Belfast.**—The National Rose Society's visit to Belfast on July 19 should be a most interesting one, for the exhibition will be held in the beautiful Botanic Gardens Park, kindly lent for the occasion by the City Council. The local society that will receive the parent body on this occasion is the newly-formed Irish Rose and Floral Society, which has Colonel Sharman-Crawford as president, and includes Messrs. S. McGredy, Alex Dickson (Newtownards), Alex. Dickson (Belmont), and Hugh Dickson (Newtownards) among its official members. Belfast, needless to say, is the centre of a great rose growing and rose raising industry.

**American Roses at the International Show.**—The Massachusetts Horticultural Society has offered a gold medal, to be awarded at the International Horticultural Exhibition in May, for the best display of roses of American origin in pots. Mr. J. K. Farquhar has been appointed delegate from the Massachusetts Society to the great show.

**Sale of Herbals and Old Gardening Works.**—The library of the late Dr. J. F. Payne, librarian to the Royal College of Physicians, was sold by auction by Messrs. Sotheby, Wilkinson, and Hodge on Tuesday, January 30. There were 235 lots, and these realised £1,089. The Herbals and similar works were arranged in 116 lots, and an effort was made to sell these in one block, but, as the reserve price was not reached, the lots were put up separately. The principal works in this series, the prices realised, and the purchasers were as follows: Dr. L. Fuchs's "New Kreutzerbuch," etc., Basel, 1543, the first edition of this fine herbal in German—£27 5s. (Royal Gardens, Kew); P. A. Matthiolus, "De Plantis, Epitome Utilissima," etc., Franckfort-a-Main, 1586—£7 (Royal Gardens, Kew); Apuleius Platonicus, "Herbarium," Rome, circa 1488, extremely rare, the earliest printed book with figures of plants—£96 (Ellis); L. Fuchsius, "De Historia Stirpium Commentarii Insignes," Basel, 1542—£25 10s. (Tregaskis); Herbarius Patavie," Passu, 1485, a fine and perfect copy of this very rare herbal — £69 (Maggs); "Herbarius Teutsch," printed by Schoeffer, 1485—£22 (Leighton); "Herbarius zu Teutsch und Allerhandt Kreuteren," Augsburg, 1496—£26 (Llewellyn); three editions of the "Hortus Sanitatis," by Joannem de Cuba, one printed at "Moguntiae," by J. Meydenbach, 1491—£46; another at Cologne, circa 1496—£31; and the third from the Paris Press of Philippe Le Noir, no date, but about 1539—£35 (all purchased by Messrs. Wesley); Ortolff von Beylandt, "Ein Artzneibuch," the very rare original edition printed at Augsburg by G. Zainer, circa 1471—£24 (Maggs).

**Fijian Plants.**—The lecture to be delivered before the Royal Horticultural Society on Tuesday, February 6, at 3 p.m., at Westminster, should be of unusual interest. The lecturer is Sir Everard im Thurn, K.C.M.G., and his subject "Plants of the Fiji and other South Sea Islands."

**Anemone and Pompon Chrysanthemums.**—We are much gratified to learn from the report which will be presented to the members of the National Chrysanthemum Society, at the annual meeting on Monday evening, that the committee have decided to offer special prizes for seedlings of pompon, anemone pompon, and large anemone varieties at the autumn exhibition, to be held in 1913. Our gratification is derived from the fact that while distinct in character, and of great beauty, these sections have of late years been much neglected by chrysanthemum societies generally. We trust that the new departure on the part of the National Chrysanthemum Society will be successful in directing the attention of chrysanthemum lovers to the merits of these sections.

**National Chrysanthemum Society.**—The annual general meeting of this society will take place at Carr's Restaurant, 264, Strand, W.C., on Monday next, February 5, at 7 p.m., with Sir Albert Rollit, LL.D., D.C.L., president, in the chair.

**Partial Sterilisation of Soil for Glasshouses.**—During the past few years Dr. E. J. Russell, of the Rothamsted Experimental Station, has devoted considerable attention to the investigation of the effects of sterilisation on soil used for cultural purposes, and in the course of his experiments has obtained some remarkable results. To the current issue of the "Journal" of the Board of Agriculture, Dr. Russell contributes, conjointly with Mr. F. R. Petherington, B.A., a report on "The Partial Sterilisation of Soil for Glasshouse Work," which is not less deserving the attention of the practical cultivator than of the scientist. One of the great difficulties with which cultivators of cucumbers, tomatoes, and some other crops under glass have to contend is keeping the soil free from organisms more or less injurious to plants. As the investigators point out, "before very long the soil may be so infected with the germs of undesirables that it is little better than a death-trap for the plants, and has, therefore, to be thrown out." Recent experiments have shown that, by means of certain poisons, or by heat, these germs and the injurious bacteria can, practically speaking, be destroyed, and the beneficent food-making bacteria be thereby enabled to multiply freely, and make much more food than before. Such heated soils are, therefore, well suited for crops grown under glass, because they are free from harmful organisms. This differential treatment whereby some organisms are killed and others are spared, is known as partial sterilisation. The plants that were utilised in considerable detail, and the text is freely chrysanthemums, tomatoes, carnations, cinerarias, cucumbers, and melons, verbenas, and lettuce. The results are given in considerable detail ,and the text is freely illustrated, so that there is no difficulty in following the authors. Their conclusions, briefly summarised, are: Partial sterilisation of the soil increases the supply of food for the plant, somewhat alters its growth, and kills insect pests. It may cause a temporary retardation of growth. It was not proved advantageous for pot work, where abundant supplies of clean virgin soil and manure are available. It is very useful for work with borders, cold frames, and plants that are run for some time without fruiting. It is particularly useful for commercial glasshouses, where soil pests are a source of trouble, and soil sickness sets in. The most effective method of partial sterilisation is to heat the soil to a temperature above 140 deg., but not exceeding 212 deg., very satisfactory results being obtained between 180 deg. and 200 deg., and ½cwt. or less fuel is required per ton of soil.

**National Amateur Gardeners' Association.**—The syllabus of this strong and ably-managed association for 1912 is before us, and, as usual, it contains particulars of a large number of competitions to be held at the monthly and other meetings held during the year. The classes range from lowly and useful vegetables, through plants and flowers of many kinds, to the aristocratic orchids, and they are so arranged that they offer inducements to a very large number of the members, and are a direct encouragement to careful and skilful cultivation. The summer show is to be held at Winchester House, on July 13. A series of lectures has also been arranged, to be delivered at Winchester House, Old Broad Street, as follows: "Zonal Pelargoniums," by Mr. H. J. Jones, on March 5; "Ferns," by Mr. H. B. May, V.M.H., on April 2; "Orchids for Amateurs," by Mr. C. Alwyn Harrison (with lantern slides), on May 7; "Kew Gardens: Their History and Attractions," by Mr. Charles H. Curtis (with lantern slides), on June 4; "Hardy Plants for Sun and Shade," by Mr. A. J. Macself, on September 5; "Vegetables for Exhibition," by Mr. Edwin Beckett, V.M.H. (with lantern slides), on October 1; and "Gardens of Roses," by Mr. George Gordon, V.M.H. (with lantern slides), on November 5.

**Yucca with Curious Outgrowths.**—Mr. G. A. Bowles contributed to the recent meeting of the R.H.S. Scientific Committee leaves of Yucca filamentosa flaccida from his garden, with curious, short, hollow, horn-like lateral growths near the top of the leaves. He had seen the same thing in the same variety in the gardens of Trinity College, Dublin, and all the plants of this variety, but of this variety only, showed the peculiarity in his garden every season.

**Mushroom Culture in France.**—The commercial cultivation of mushrooms is carried out on a large scale in the suburbs of some of the larger towns in France, especially in the vicinity of Paris and Bordeaux. The production of mushrooms in the neighbourhood of Paris is very large, the supplies obtained being nearly equal to the whole of the demand of the city, often large quantities have been exported to England. The abandoned quarries of building stone, chalk, etc., are utilised for the purposes of the mushroom crop, and about 1,500 employees are engaged in the management of the beds and gathering the mushrooms, and packing them for market. It is estimated that about 500 cwt. of mushrooms are gathered daily during the summer months from the beds around Paris. In Garonne and Gironde 113 quarries are devoted to the production of mushrooms, and about 16,800 cwt. of mushrooms are gathered annually, the average price being £2 per cwt. There has been a decrease in mushroom culture in Garonne and Gironde within recent years, but in France, as a whole, there has been some increase, as the result, chiefly, of the rise in the price of mushrooms. The syndicates of mushroom growers estimates the total annual production at 128,000 cwt., and valued at £320,000. The shortage in suitable manure, due to the development of motor traffic, is being felt in France, as in this country, and the cost has materially increased. It is, indeed, thought by some that a limit has been placed upon mushroom culture round Paris by the decrease in the supplies of suitable manure.

**Royal Gardeners' Orphan Fund.**—Following the annual election of gardeners' orphans to the benefits of this fund, which will take place on Friday afternoon next, at Simpson's, 100, Strand, W.C., the committee and friends will dine together at 6.30 p.m., under the chairmanship of Mr. Henry B. May, V.M.H.

**Amateur Gardeners' Bohemian Concert.**—As a wind-up to its 1911-12 season the National Amateur Gardeners' Association have arranged a Bohemian Concert, to take place in the Council Chamber, at the Holborn Restaurant, on Wednesday, February 7, at 7.30 p.m. The prizes won at the various competitions and exhibitions during the last year will be presented on this occasion.

**Dry Cultivation,** which has been greatly extended within recent years, both in America and on the Continent, with evident advantage, was dealt with in a paper of much value by one of the delegates from Hungary at the International Institute of Agriculture at Rome. The great value of this method of culture had prominent attention given to it by the reader of the paper, and many proofs of the advantages derived from it were given. Dry cultivation is practically the maintenance of a loose surface by frequent use of the horse or hand hoe. The practice is, of course, of greater importance in dry climates than in this country, but there has been abundant proof of late years of the beneficial results following its adoption both in gardens and on farms in the United Kingdom. Those who visited the Woburn Experiment Station in July last had the opportunity of seeing a field of swedes looking healthy and prosperous, when in Bedfordshire generally the crop was almost a total failure. Dr. Voelcker attributed the comparative luxuriance of the Woburn crop to efficient surface cultivation. The hand and horse hoeing had probably not been so systematic as would be prescribed under the principles of dry farming, but it had been constant enough to minimise the effects of the drought. A prominent farmer in Bucks was also able to detect the influences of a fine surface mould upon the condition of his swedes and turnips. He continued to hoe the surface throughout the drought with the object of checking capillarity and conserving whatever moisture was in the soil, and, although the plants made little progress at the time, they responded quickly when the rain came late in September.

**Croydon Gardeners' Annual Dinner.**—The Croydon Horticultural Mutual Improvement Society held its twelfth annual dinner at the Greyhound Hotel, Croydon, on Thursday evening, February 15, at 7.30 precisely. A large attendance of members and friends is anticipated.

## COLOUR ARRANGEMENT IN FRONT GARDENS.

No person acquainted well with the aspects of our suburban and country roads, their monotony, dreariness in shade, garishiness in sunshine, but would wish to do something to render them more interesting and fair. The trees that overhang roadways are seldom of more than five or six sorts within a radius of a mile, the shrubs are not only mainly alike, but each is repeated half a dozen or more times in each garden; hedges are all of euonymus or privet, laurel, or yew.

Owners of front gardens possess each a great opportunity, therefore, since a very little originality ensures a great amount of appreciation; but of all the features that gain praise the most successful, as the least expensive, will be a striking colour scheme. If all the plants are those with golden flowers, the result will be an appearance almost of perpetual sunshine; a few dark evergreen, or crimson, foliaged shrubs are advisable, but the majority may be yellow-leaved, or so variegated that gold enters largely into their composition. An all-scarlet garden arrests notice instantly, and it is not difficult to carry out, since the popular pelargoniums can be pressed into service during summer to aid the perennials in maintaining the brilliant show. This is especially the garden to create on the east or west side of a road where there is sunshine only for a short period of each day. The neighbourhood of a red brick house will be no detriment, though a white or grey one will prove a far better foil to the glory of the vermilion flowers.

Blue gardens are suitable in hot situations, either by red, white, grey, or yellowish brick houses. On the whole, the result is better when variegated shrubs are freely used, and golden privet, golden elder, can also be recommended for their vivid contrast, intensifying every shade of blue. Groups of these shrubs will sufficiently separate different shades of blue, for the tone of delphiniums, Centaurea montana, gentians, borage, annual cornflowers, anchusa, is quite antagonistic to that of campanulas, violas of most sorts, asters, Michaelmas daisies, etc. Azure blues, as represented by many delphiniums, Polemonium Richardsoni, and forget-me-nots, ought also to be massed in unison.

An orange front garden, before a grey or white house, is remarkably effective and easily planned. The hues of marigolds, French and African, or the old English calendulas, of chrysanthemums, dahlias, and Tagetes signata pumila, gazanias, heleniums, rudbeckias, begonias, zinnias, day lilies, Iceland poppies, offer variety.

Arches in front gardens afford excellent patches of shade, as well as giving shelter from devastating winds. One charming example of the employment of arches was seen in a seaside town, the supports being of varnished wood, the climbers clematises of different shades, on a foundation of Japanese honeysuckle. It is often advisable to use this hardy climber with others of less strong character, as it enwraps the more delicate stems, which would otherwise suffer from cold gales. The arches, six in number, started at the entrance gate, and continued at intervals until one formed a porch.

A large centre rockery mound would make a novel ornament for a small front lawn, in place of the usual round bed, and a much greater diversity of plants could be grown. To scatter large rocks, singly, also in groups, over side borders, will be found to add interest, as well as to produce a novel effect.

M. H.

# THE VALUE OF BIRDS TO MAN.

(Continued from page 58.)

## Value of the Bird in Checking Insect Irruptions.

The marvellous powers of flight and perception possessed by birds ably fits them to perform the office of a swiftly-moving aerial army, large forces of which can be massed at any given point to correct disturbances caused by abnormal outbreaks of animal or vegetable life.

When the Mormons first settled in Utah their crops were destroyed utterly by myriads of black crickets that streamed down from the mountains. Promising fields of wheat in the morning were by evening as bare as though the land had not been sown. The first year's crop having been destroyed, the Mormons had sowed seed the second year, and again the crop promised well. But again the crickets appeared, devouring every blade of wheat, and the followers of Joseph Smith were on the verge of starvation. At this juncture, Franklin's gull came by hundreds of thousands, and, feeding greedily on the crickets, freed the fields of the pest. The settlers at Salt Lake regarded the advent of the gulls as a heaven-sent miracle, and practically canonised the birds. Several times afterwards the crops of the Mormons were attached by the crickets, and were saved by the gulls.

In the early days of the colonisation of New Zealand swarms of caterpillars infested the open tussock-clad country. When the white man began to cultivate the land this caterpillar disappeared from its old haunts and attacked the English grasses and cereal crops, increasing so enormously in numbers by reason of a more favourable environment, that they quickly became a blasting plague. They came not singly, or even in battalions, but in mighty armies, which laid waste the land. I have seen regiments of this invading force cover the pastures in such numbers as to make the green one brown. I have seen them march out of one cornfield—having stripped every stalk bare—cross the road in solid phalanx, and pass into another. I have seen big mobs of sheep mustered in hot haste and driven backwards and forwards to crush the atoms with their hurrying feet. I have seen every available horse-roller in a district brought up hurriedly, like engines to a fire, and dragged to and fro over the crawling masses until the huge cylinders stuck fast in a mire of crushed insects. I have seen large ditches dug in an attempt to stop the invaders' progress. The effort was as futile as that of a child who builds a bank of sand by the sea, thinking it will stem the oncoming tide. Even railway trains were brought to a standstill, the wheels of the engines being unable to grip the rails owing to the countless hordes of caterpillars which were crossing the line.

In time it became abundantly clear that if this disastrous condition of affairs continued it would be useless to attempt to carry on agriculture in New Zealand. Realising that any attempt which they might make to rid the smitten land of the plague would be but a mockery, the farmers turned their eyes longingly to the natural enemy of the caterpillar—the bird. But the native birds—though they had lived in closest companionship with the Maoris—had been taught the treachery of the white man in a school that reeked with blood, and those that had not been killed had retreated from the vicinity of the settlements, visiting the insect-ridden fields occasionally only.

Wherefore insectivorous birds from the old country were introduced, and the one that multiplied most rapidly was the sparrow. And the sparrow soon cut short the career of the caterpillars.

I have said that birds, because of their unrivalled powers of locomotion, are peculiarly adapted to suppressing unusual outbreaks of vegetable as well as of animal life. Here is an instance of this.

That formidable imported weed, the variegated Scotch thistle, threatened at one time to overrun the whole of New Zealand. Where it had once fairly established itself it seemed well-nigh impossible to eradicate it; and it was spreading with the speed of scandal. Much time and money was spent in cutting off the plants close to the ground, and in pouring turpentine upon the stumps. But the wind-driven clouds of thistle-down, which were planting the weed far and wide, grew yearly denser and more frequent. At length the fields became a thickly-packed growth of prickly plants, which nothing could face.

The sparrows took to eating the seed. In tens of thousands they fed on it, giving it the preference of all other hard food, and the weed was conquered.

To-day, in New Zealand, the sparrow is looked upon as an impudent thief, without a redeeming feature in its character.

No one, of course, can say what would happen if the sparrow was dismissed from New Zealand, but it is as certain as anything in this world can be that the Dominion would be again overrun with caterpillars and thistles.

As it is, the good the sparrows do must far outweigh the mischief which is laid to their charge. This statement receives the amplest confirmation in the bountiful harvests with which New Zealand is blessed. Never were the sparrows more numerous, never the complaints against them more bitter; yet the yield of grain is without precedent.

The growling of the New Zealand farmer at the sparrow, again justifies Virgil's complaint of the "miserly husbandman." Miserly, indeed, and blind. Not a grain will he give the bird which has laboured unceasingly for eleven long months to free the soil from grubs; but whole fields of wheat to the caterpillar!

## Birds in Woods and Forests.

Birds attain their greatest usefulness in the woods and forests, because the conditions there closely approach the primeval.

Forest trees have their natural insect foes, to which they give food and shelter, and these insects in turn have their natural enemies among the birds, to which the tree also gives food and shelter. Hence it follows that the existence of each one of these forms of life is dependent upon the existence of the other. Birds are not only essential to the well-being of the tree, but the tree is necessary to the life of the bird.

Consider for a moment the life of a tree in connection with the insects that prey upon it. At the very beginning, before the seed or nut has germinated, it may be entered by a grub which destroys it. Should, however, the seed or not be permitted to grow, the roots of the seedling may be attacked by beetles. Escaping this danger, a worm lays its eggs in the cracks of the bark. On hatching, the worm, or borer, perforates a hole in the stem. This hole, admitting water from every passing shower, causes a decay in the wood to commence, from which the tree may never recover. Other borers feed upon the bark, eating the soft inner layer and the sap. The twigs are affected by the larvæ of certain beetles, which act as girdlers, sometimes destroying limbs over an inch in diameter. Weevils bore under the bark and into the pith, making excavations in which the eggs are laid. For the same purpose the cicada makes a terrible wound, which often proves fatal. The limbs of trees are affected by aphides which puncture them, and feed upon their juices, exhausting the sap. Many species of plant lice and scale insects infest trees, doing great damage, while over 100 different species of gall flies are parasitic upon them. The buds of trees are entered and destroyed by the larvæ of certain moths, while the leaves are devoured by caterpillars. To take the oak as an example, it is known that altogether over 500 species of insects prey upon it. Finally, be it remembered that in the bark and in the underlying tissues lie the vital energies of a tree.

I spent the formative period of my years in, or in close proximity to, primeval forests, and going often to Nature's mighty school to learn her secrets, I was lastingly impressed by the way in which the care of the tree is kept up throughout the changing seasons by bird life, each species exerting its peculiar repressive influence upon the increase of this or that one of the various forms which insects assume.

How dependent trees are on birds for their existence may be gathered from the following illustration, instances of which I have often seen when the services of one or more of their natural protectors have been withdrawn. As now so generally known, trees breathe through their leaves. Consequently, if the buds of the leaves are prevented from developing by worms, or are eaten, when developed, by caterpillars, the tree is weakened. Many coniferous trees will die if stripped of their foliage for one year. Deciduous trees, if deprived of their respiratory organs for several years in succession will also perish, though these trees linger as a rule for two, or even three, years before finally succumbing.

Nor is injury to its breathing organs the only danger to which a tree, afflicted in this way, is subjected. The tree, being in a weakened condition, is at once beset by beetles, and other borers, who, multiplying rapidly under such favourable conditions, tunnel under the bark until all the vital tissues of the poor tree are wasted. Thus a tree, which might have recovered from the injury to its lungs, falls a victim to the attacks of an insidious enemy which took advantage of its feeble state.

Woodpeckers, or other birds of similar feeding habits, would have flown to the rescue of the tree, and possibly saved its life; but, when that corrective influence is missing, the tree must die.

This illustration of the dependence of the tree on the bird, and of the bird on the tree, is, of course, but one of a long series that could be cited, and it is because of this most delicate adjustment between the tree, the insect, and the bird, that I regard as profoundly true Frank M. Chapman's statement "that it can be clearly demonstrated that if we should lose our birds we should also lose our forests."

## The Value of the Bird in the Orchard.

For man's purposes the work of the bird in the orchard is not so thorough as that done by them in the forest. Birds are the slaves of Nature, and, in the main, Nature's endeavours are put forth only to produce such fruits as will ensure the perpetuity of each species of tree. With man the case is altogether different. His main object is not the propagation of trees, but the production of heavy crops. Moreover, by introducing arsenical syraying, tarred and greased bands, and other devices to counteract the evil action of insects, he has, to a certain extent. taken upon himself the office of the bird. In this he is wise, for it must be admitted that if he wishes a large crop of fruit, he must himself prevent the inroads of those insects which attack the fruit directly. It cannot be expected of the bird that it will become an efficient ally of man in protecting the artificially produced fruit from the attacks of the numerous insects that are drawn to the orchard by a vastly increased quantity of fruit of a vastly better quality than the natural product.

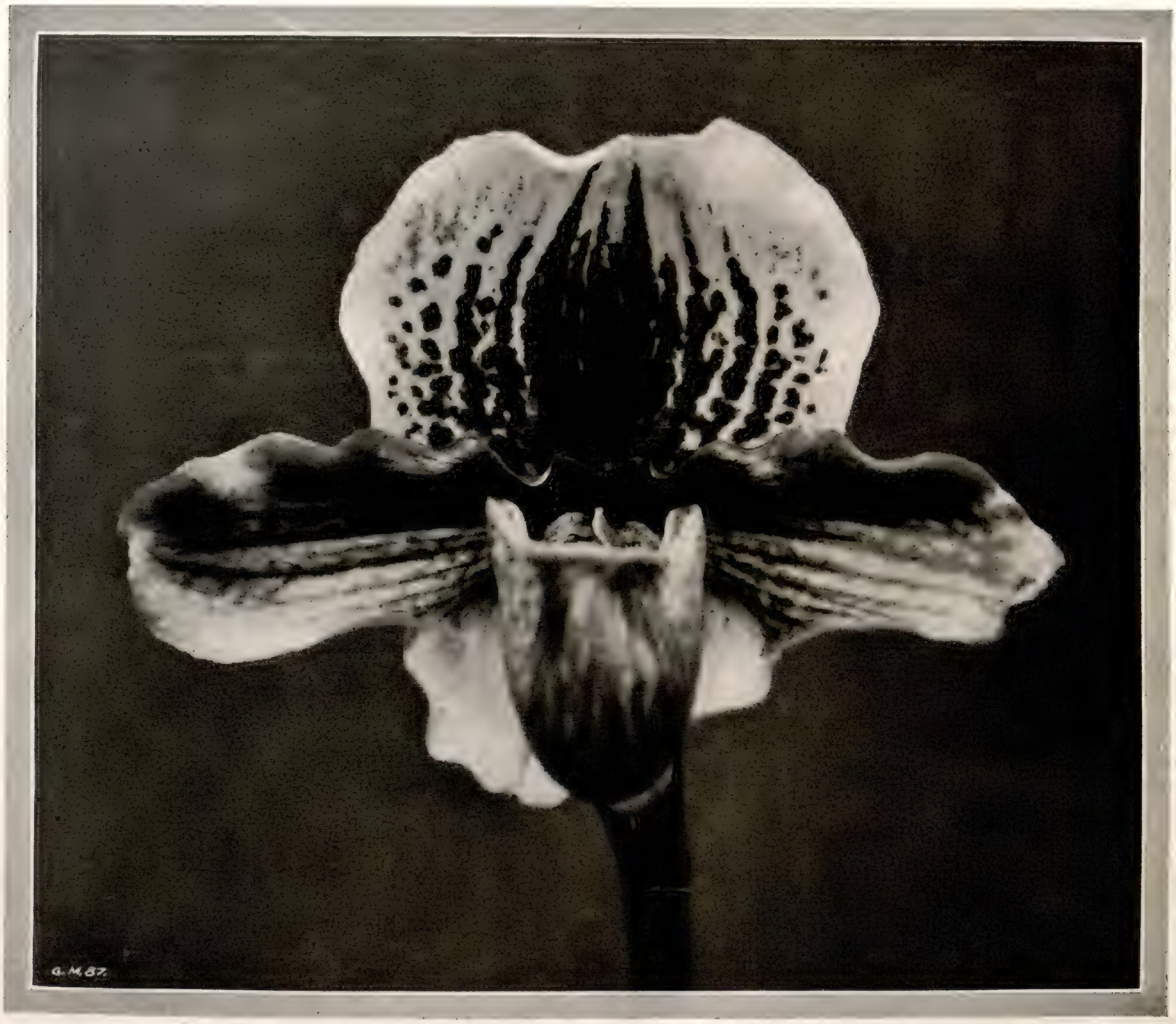
For all that, fruit-growers are largely indebted to the bird for a great part of their annual crop. There are a host of tiny creatures that are not affected by spraying. These lilliputian pests are the plant lice and their allies, bark lice and scale insects. Usually their presence is unnoticed on account of their diminutive size; but they suck out the juices of the tree, and are exceedingly harmful. If their multiplication remained unchecked, the ultimate result upon the development of the fruit, if not upon the life of the tree, would be very great. But nothing, however small, escapes the prying eyes of a bird, and it clears the trunk, branches, and twigs of the tree of these encumbrances.

(To be continued.)

# NEW PLANTS.

### CYPRIPEDIUM NORAH.

A handsome, large-flowered, and distinct cypripedium, obtained by crossing C. Mons. de. Curte with C. aureum Œdippe. The flower has a quite rounded outline, the petals being relatively short and very broad, yellowish, heavily shaded with red-brown. The dorsal sepal is large and rounded, purple, shaded with brown, and with a large white apex. Lip red-brown, shaded with yellow along the rim. The flower exhibited had two staminodes. F.C.C., R.H.S., January 23. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.



CYPRIPEDIUM NORAH.
Awarded F.C.C., R.H.S., January 23. Lieut.-Colonel Sir George Holford.

### CYMBIDIUM SCHLEGELI.

A fine new hybrid cymbidium figured in our issue of January 27. It was raised by crossing C. Wiganianum with C. insigne. The bold flowers have creamy, pink-tinted sepals and petals, these being strewn with dust-like dots of red-purple, the markings being larger and more numerous towards the base. The lip is white, with yellow throat, and has a number of fairly large bright red-brown spots. A.M., R.H.S., January 23. Messrs. J. and A. McBean, Cooksbridge.

### CYPRIPEDIUM DUKE OF MARLBOROUGH.

This large-flowered hybrid has a big dorsal sepal that is white with a green base, and a row of purple spots. The petals broaden towards the apex, and are green, shaded with brown, these colours being repeated in the lip. A.M., R.H.S., January 23. Duke of Marlborough (gardener, Mr. Hunter), Blenheim, Woodstock.

### ZYGO-COLAX CHARLESWORTHI, COBB'S VAR.

A well-grown plant of this form of a striking bigeneric hybrid was exhibited, and the flowers appeared somewhat larger than those of the original hybrid, and the violet colouring on the lip, and the violet veins on the creamy sepals and petals, seemed of brighter shade. A.M., R.H.S., January 23. Walter Cobb, Esq. (gardener, Mr. C. J. Salter), Normanhurst, Rusper, Horsham.

### LÆLIO-CATTLEYA AMABILIS.

A fine hybrid with stout, broad, pure white sepals and petals, and a large wavy lip, purple, margined with white, and with yellow markings in the throat. A.M., R.H.S., January 23. Messrs. Charlesworth and Co., Haywards Heath.

### ZYGOPETALUM MACKAYI CHARLESWORTHI.

A distinct and notable addition, being an albino form of the species, with pale green sepals and petals, and a pure white lip. A.M., R.H.S., January 23. Messrs. Charlesworth and Co., Haywards Heath.

"CARNATIONS, PICOTEES, AND PINKS" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# GOOD SUMMER-FLOWERING CLIMBING ROSES.

The best summer-flowering climbing roses, apart from the Wichuraianas, must be looked for chiefly in the multiflora scandens section, popularly known as the Ramblers. Two-thirds of the climbers described in this article belong to this section, the remaining third is made up with one sempervirens, one hybrid China or Musk, one hybrid tea, and one hybrid from Lævigata. Many might think that the Ayrshire and Boursault roses should be represented, and, of course, no collection of climbing roses would be complete that did not include some of these. But in so small a selection as twelve, I do not think they can find a place. The Ayrshires, though splendidly hardy, vigorous, and free-flowering, have not the variety and brilliancy of colour to be found among the multifloras, while the Boursaults, though delightful to hand and eye, on account of their almost spineless red shoots, do not give such a wealth of bloom, as would entitle them to rank among the best summer climbers. If, however, any of my readers should be looking for roses suitable for somewhat wild gardens in rough and perhaps shady places, it is to the Ayrshire and Boursault sections they must turn, for the Multiflora roses want good cultivation and plenty of sunshine.

Crimson Rambler (mult. scan., Turner, 1893), although to my mind by no means the most beautiful, is by far the most popular of the Ramblers—wherever roses are grown at all, one is almost sure to see a pillar or weeping standard of Crimson Rambler covered in July with the big, closely packed crimson bunches characteristic of this variety. If we are planting for distant effect undoubtedly there is much to be said for Crimson Rambler—a good plant makes a brilliant patch of colour in the garden—but seen close at hand the bunches are too heavy for real beauty, and its tendency to mildew is a serious drawback.

Leuchtstern (mult. scan., Schmidt, 1899), with single rose-pink blossoms and white eye, has many of the qualities, both good and bad, of Crimson Rambler—that is to say, it is very effective in the garden, and the flowers last in good condition much longer than is the case with most roses, but they are so closely packed together in the bunches that, unless severely thinned, do not look well when picked, and the plant almost always is attacked by mildew sooner or later.

Blush Rambler (mult. scan., B. R. Cant, 1903) is one of the loveliest climbers we have. It makes magnificent stout shoots of a bright green colour, which, with its large leathery leaves, give a happy impression of health and vigour. Throughout the greater part of July and beginning of August it is covered with huge erect sprays of blush-pink flowers, so delicate in colouring as to remind one of apple blossom.

American Pillar (mult. scan., Conard and Jones Company, 1909) is a good companion to Blush Rambler, with wonderful shining leaves of a very dark hue—in some lights they are almost purple—and so beautiful and persistent that this rose would be worth growing for its foliage alone. Fortunately, however, the flowers are quite worthy of the foliage. The N.R.S. catalogue describes them as deep pink, but I think vivid rose colour with paler centre more accurately expresses the tints. They are single, and borne in very large bunches. American Pillar comes out earlier than Blush Rambler, and this year a plant in our garden was in perfection at the time of the N.R.S. summer show, July 7, when I found its handsome bunches very useful in the decorative classes—and in spite of the great heat of the tent, they kept bright and fresh throughout the day.

Tea Rambler (mult. scan., Paul and Son, 1903), till recently called a Tea, is the result of a cross between Crimson Rambler and a Tea rose. The stems are smaller than those of many of the Ramblers, and the ruddy brown leaves tell of its relation to the teas. The coppery-pink, almost double flowers are large for a rambler, hang loosely and artistically on the branch, and have one delightful attribute lacking, I fear, in most of the Multifloras, that of fragrance. The very vigorous, hardy growth and the absence of a second season of bloom, however, have caused it to be placed among the Multifloras, and it is much more convenient that it should be so. The foliage is retained very late. Looking at a plant of Tea Rambler on December 13, 1911, I found it thickly covered with foliage, while a plant of Blush Rambler close at hand has only a few leaves at the very top.

Tausendschön (mult. scan., Schmidt, 1907) is a seedling from Crimson Rambler, and inherits from its parent the unfortunate tendency to mildew. The leaves are rather far apart on the reddish-brown stems, giving the foliage a thin appearance—but the stems are delightfully smooth and the large deep pink flowers, with curious crinkled edges, came early in mid-June, and last in perfection on the plant an unusually long time. They always remind me of oleanders, though unfortunately they are not such a pure pink; in fact, out of doors they are apt to get a magenta hue which, with the mildew on the stems, spoils them very much. The growth is strong, but by no means rampant. The flowers, if grown under glass, are a much clearer pink than when exposed to all weathers.

The good yellow ramblers are not so numerous as they might be. On the whole, I think

Aglaia (Lambert, 1896) and Claire Jacquier (Bernaix, 1888) are about the best. Aglaia takes time to establish itself, and may be some three or four years before it flowers, but when it does, always provided plenty of room is allowed it, the profusion of little pale yellow flowers, with a slight tinge of apricot in the centre, makes a very charming picture. Here we have it growing up a screen, but it is apt to get too leggy in such a position, and it is much more beautiful in a neighbouring garden where it has been allowed to form itself into a big bower and its long shoots can bend over naturally. The flowers come very early, and are somewhat fleeting; to me they have a scent too like paragoric to be altogether pleasant.

Claire Jacquier is the only rose I am writing about that I have not grown myself. Wall space is precious here, and this rose is said to be tender, and for this reason we have not tried it. But I have seen a big specimen, grown in the open border, transplanted from one Hertfordshire garden to a similar position in another without injury to the plant, so the reputation for tenderness may hardly be deserved. Provided, however, a south or west wall can be spared, Claire Jacquier will be grateful for the shelter, and will show its appreciation by rapidly covering the space at its disposal with its rampant shoots and its multitude of nankeen yellow blossoms. Where a wall cannot be given, the newer Goldfinch, with single yellow flowers, changing to cream colour, may be tried. Goldfinch has a good habit and nice dark foliage, but with us has not yet shown itself as free flowering as could be wished; but probably, like Aglaia, it takes two or three years to become established.

The Garland (hybrid musk, Wells) and Felicité Perpetué (sempervirens, Jacques, 1828) are two very beautiful summer-flowering roses that have stood well the supreme test of time. With all the wealth of new rambling roses given us by the multifloras and Wichuraianas, we can ill afford to dispense with these two veterans.

Few garden sights are more lovely than that of an established plant of The Garland covered with clusters of warm white flowers, and soft fawn-coloured buds. The individual blossoms are quite tiny, and little more than single, but they are produced in such profusion as almost to hide the foliage. I shall not easily forget the picture made by this rose one sunny day of late June in an old Middlesex garden. A long grass path, leading to a formal rose garden, was flanked on either side with tall standards of The Garland in full bloom, the snowy branches drooping almost to the ground, made veritable garlands of roses. But the soft attractive appearance of these wreaths of blossoms is deceptive, and would furnish a text to a moralist discoursing on the danger of trusting in external beauty. Behind those lovely blossoms are myriads of black, peculiarly sharp thorns, making it the least pleasant of roses to deal with from a pruner's point of view. The leaves fall rather early, and are followed by clusters of small orange berries.

Felicité Perpetué is a very vigorous climber that will grow in almost any position, and is specially suitable for covering a bower or summer-house; the great branches are almost evergreen, and the bunches of creamy-white flowers, with rose-tipped buds, are freely produced. They are better left on the plant than cut, as they drop their petals very quickly when picked.

Paul's Carmine Pillar (Paul and Son, 1895) is described as a hybrid tea, and in foliage and way of growth is certainly like this section. But it comes in my list of summer-flowering roses, as it only has one period of blooming, and that an early one, the brilliant carmine-crimson single flowers being produced throughout June. The blossoms are large, quite three inches across, and as far as brilliance and purity of colour goes, are perfection. If the new red perpetual climber Sheilagh Wilson equals Carmine Pillar in respect of colour and freedom of bloom, and in addition flowers again in autumn, it will indeed be an acquisition.

Rosa sinica Anemone, brought out by F. Schmidt in 1895, is the last rose I have in my list. It is a hybrid of Lævigata. Though hardier than Lævigata, it appreciates the shelter of a wall. The N.R.S. catalogue describes it as a semi-climber, but we have found it very rampant on a south wall, where it has smothered its companion on either side with its beautiful glossy foliage, and when in May the soft rose-pink single flowers appear they are so lovely that it is easy to forgive the encroachments they have made. The form of the flowers is prettier than that of any single rose known to me—it is incurved and cup-like, with rounded petals, and the fine golden anthers show up well against the Rose du Barri tint of the inner side of the petals. Unfortunately, the blossoms are somewhat fugitive, but this is partly compensated for by the ample foliage which is retained in perfection well into the winter. WHITE LADY.

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**The Blue Starwort.**—Very few of our aster species are natives of Europe, but the Blue Starwort (Aster acris) is one of them, and though several varieties have been raised differing in height and time of flowering, the original species remains one of the most beautiful of the family notwithstanding the 300 or 400 varieties at present known to florists. It is a slender plant, rarely attaining a height of three feet under the best conditions, and usually not more than two. It possesses an additional claim to regard with some people in that it does not spread, as so many kinds do, and, in fact, in a very heavy soil will not increase as one would like it to do. It may be left untouched for several years in the border, the only reason for moving it being its deterioration owing to the exhaustion of the soil or the desire to propagate it. It is one of the earliest of the asters to come into flower, and when one sees its minute flower buds on the tips of its slender stalks in mid-August one would never think it could make any show at all. Yet its colour is one of the best; its massed blossoms being highly effective, and for cutting it is perhaps the most useful of all. Mr. William Robinson tells us how he had some thousands of plants of this and the large Italian starwort (A. amellus) growing beneath a group of half-grown firs, and that he never had such a return of beauty from anything else. No matter what the weather the mixture of blue and purple was a picture. As a pot plant it is useful for massing in the conservatory before the chrysanthemums are put in, and though single plants look leggy, the effect of a dozen or so with some low-growing plants in front of them is very fine indeed.—ALGER PETTS.

## CYPRIPEDIUM VENUS.

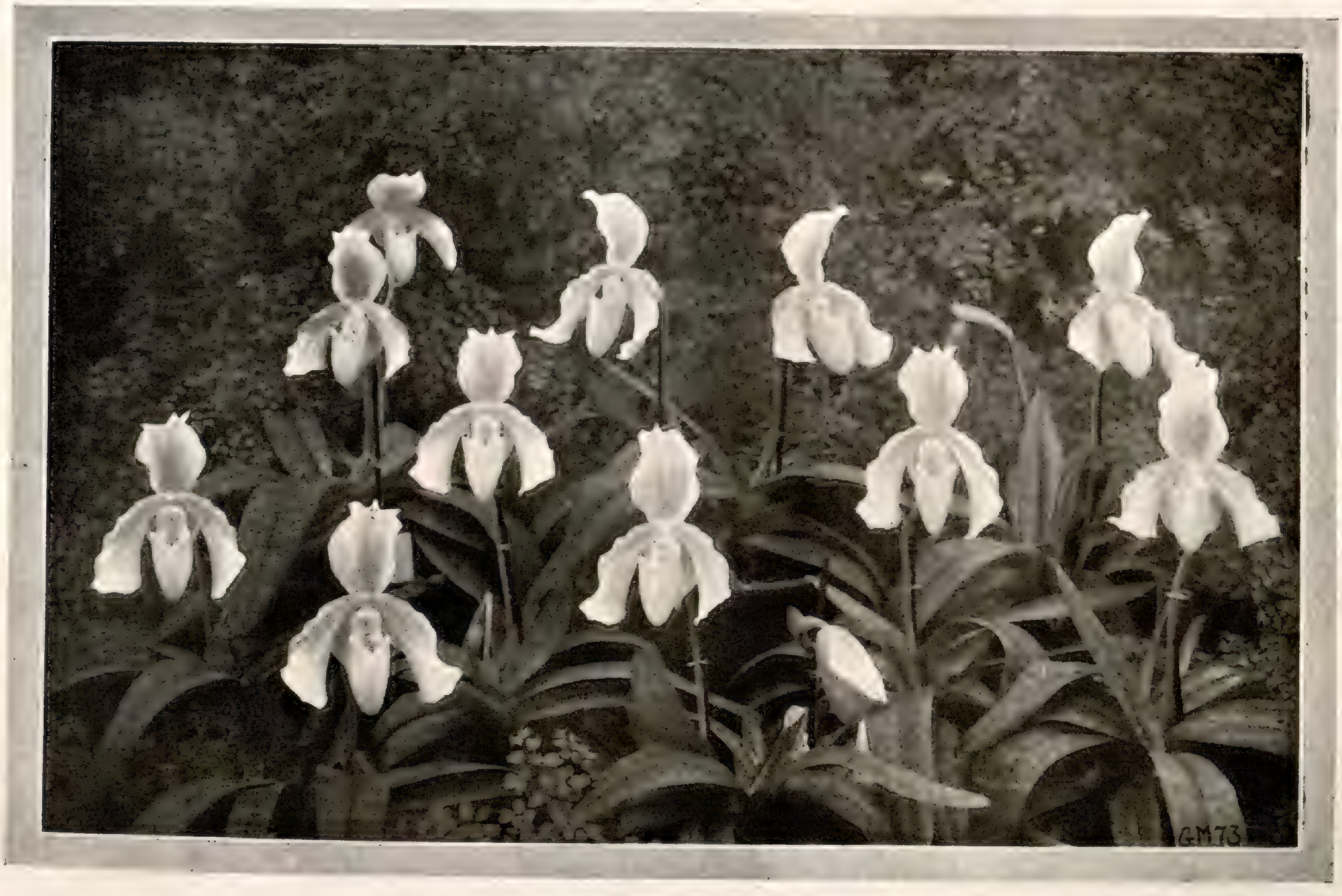
This hybrid was first recorded in a catalogue of the Woodlands Collection of Cypripediums, at Streatham, which was published about the year 1895. The hybrid was described as having been obtained from the intercrossing of Cypripedium insigne Sanderæ and C. niveum. If I remember correctly it was not until the spring of 1902 that the late Mr. Norman Cookson showed Cypripedium Venus, Oakwood variety, which was said to be superior to the plant which had flowered in the Woodlands Collection, and the R.H.S. Orchid Committee conferred on Mr. Cookson's plant a First Class Certificate.

For some years this plant was regarded as the only one that had been raised at Oakwood, but from a batch of plants with unrecorded parentage a second example flowered, and this has proved to be more vigorous in constitution than the original C. Venus, Oakwood variety. The flowers are larger and whiter, and the creamy-yellow tint almost entirely disappears with age; the spottings are larger also, and the flower better filled up than in the original form. The flower-stalks are correspondingly longer, and the flowers are held well above the foliage. This vigorous grower was exhibited with the original C. Venus, Oakwood variety, at the Manchester and North of England Orchid Society's meeting, on January 20, 1910, as Cypripedium Venus Oakwoodiense superbum, and received the unanimous award of a F.C.C.

The accompanying illustration will show the strength of a batch of this vigorous form, and it is from a photograph taken in Mrs. Norman Cookson's garden at Oakwood, Wylam, on New Year's Day of this year.

The plants illustrated were grown in a compost of about equal proportions of loam, fibrous peat, and chopped sphagnum, with a liberal addition of sand and finely broken crocks, the latter to assist in rendering the compost porous. The plants are divided and repotted annually, as soon after they have finished flowering as possible. They are raised to within a reasonable distance of the roof glass to prevent the leaves becoming drawn and weakly. The normal temperature of the house is from 60 to 65 degrees in winter, and 68 to 70 degrees in summer. C. Venus likes a liberal supply of root moisture at all seasons, and as it has thick robust roots an abundance of water is necessary when the pots have become well filled with them.

H. J. Chapman.



CYPRIPEDIUM VENUS OAKWOOD VARIETY.
A fine batch of plants grown at Oakwood, Wylam.

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## CHRYSANTHEMUM MRS. GEORGE RUNDLE.

With an occasional exception this has been almost ousted from cultivation by the larger-flowered members of the incurved section, yet it is such a charming flower that I should not be surprised to see it regain a good deal of its old-time popularity. On the show boards it would be, of course, quite overshadowed by the giants of the present day, but for decorative purposes, especially where the blossoms are brought near the eye, so that their refined character may be duly apparent to the observer, there is, I am convinced, a future before it still.

Without referring it is difficult to say how many years back this dates from, yet with the exception of its sports, there has been nothing since then its equal in a similar way. The flowers are pure white, and the sports referred to, Mr. George Glenny and Mrs. Dixon, have primrose and deep yellow flowers respectively. These are by no means the only old chrysanthemums that have practically disappeared from gardens, and yet are, in my opinion, well worth preserving. Especially noteworthy among these is the brilliantly coloured Tokio.

S. W.

## DECIDUOUS HEDGES.

(Concluded from page 55.)

### The Whitethorn, or Quick.

This, the favourite plant for forming hedgerows throughout estates, is so well known that any special description thereof would be superfluous. That the thorn will thrive in most localities goes without saying, but, all the same, there are but few common plants that respond more readily to good treatment. The great drawback in existing hedgerows is, too often, the presence of large, spreading trees, beneath the shadow of which no hedge plant will thrive satisfactorily, though the line of fence may be maintained, for appearance sake, by the addition of wire or other extraneous aid to strengthen what otherwise must always be a weak part.

The thorn will thrive equally well upon level ground or upon a bank of soil thrown out on one side or the other from the line of the proposed fence. After clearing away all rough herbage to a width of about six feet along the line, or site, a space not less than thirty inches in width, and fully half this in depth, should be thrown out, so as to form a trench, the lower strata of which can then be deeply broken up. If the soil is poor, liberal supplies of manure, turf, or even leaf-mould, can, with much after benefit to the plants, be well incorporated with the excavated soil, as it is returned to the trench, care being taken that a good portion of the best and most finely pulverised is kept near the surface to receive the roots.

Plants, which, having been twice transplanted, at least, once from the seed bed to open quarters, and again twelve months later to afford them necessary space, will, by this time, have attained a height of two feet, more or less, and be proportionately furnished with fibrous roots. Should a single line of plants be decided upon a space approximating four inches apart throughout the line is ample, but double lines, and rather more space between the plants, is preferable, placing these in alternately, and about eight inches apart every way. The usual method of placing the roots at about the same depth as before, and making all firm around them should be followed. Planting may take place at any time between October and April, but where the ground can be made ready in time the late autumn is best, the plants thus getting partly established before severe weather sets in, and are thereby better able to resist drought during the ensuing season. Protection from both game and cattle may be necessary, and must be carried out according to needs, and the exigencies of the situation.

Having completed a season's growth, in the spring following upon this, the plants may be hard pruned to induce a branching habit, thereby laying the foundation of the future hedge. With a sharp knife, or small hook, make a severance at about six inches from the soil, thus entirely removing the tops of the plants. Weeds will now have become troublesome, and should be cleared away, following up this operation, as the necessity for it becomes apparent, at intervals during the ensuing summer, after which the plants will largely take care of themselves in this respect, but rank grass at the sides should for several years be kept under control by means of the scythe.

Should the seasons prove favourable growth will accordingly be rapid, and rather than allow this to proceed unchecked a slight cutting of the tops with the hedge bill at midsummer would be time and labour well spent. In the autumn following close cutting, to incline the hedge to the desired shape, may be practised.

For agricultural land the square, or upright, form of hedge meets with most favour, owing to the small space it occupies at the base; but where ornamentation with utility is desired the slightly oval form will give more satisfaction. The triangle, or wedge shape, is well adapted for exposed situations, as wind and snowstorms have but little adverse effect thereupon.

### Flowering Currants.

The ribes, in various shades of colour, make a good hedge where flowering shoots in late spring are valued, and they bear the trimming process very well.

### Dogwoods and Roses.

Both green and variegated varieties of the dogwood make excellent, compact, low hedges, the coloured stems of which are very attractive when leafless.

Recent additions to the various classes of roses, more especially the Wichuraiana type, have provided quite a new departure in the making of hedges, for which purpose several varieties are well adapted, continuing in great beauty and gracefulness, both in regard to foliage and flowers, for a long period. These, of course, must be pruned, cutting away old and superabundant growths, and, occasionally perhaps, more severe measures, on the attainment of age and roughness. JAMES DAY.

Galloway House, Garlieston.

**Cotoneaster rotundifolia.**—We have had great additions to the cotoneaster family within recent years, but this old species still retains its position as one of the best. The small, dark green, box-like leaves are retained throughout the greater part of the winter, and often at that period they assume a more or less bronzy hue. The berries are bright scarlet in colour, and borne in great profusion, while, as a rule, they seem less palatable to birds than those of some other species.—T.

## ALPINE FLOWERS FOR SUNNY LIMESTONE ROCKERIES.

It is not everyone who can afford to bring stone from a distance for his rockeries, and there are many in limestone districts who have, perforce, to build them of the native stone, which is, after all, an excellent medium for the cultivation of alpine flowers. Many, indeed, of these gems of the mountains grow naturally on limestone, and some of them, in fact, will not thrive unless they are supplied with a certain amount of calcareous matter. But all lime-lovers cannot stand a hot and sunny place, and, as there are many alpinists who have a rockery with a full south exposure, a few notes on the suitable plants will probably be of value to them. Others who have rockeries of other stones and who wish to cultivate any of these plants can easily supply them with some limestone chips or old broken mortar mixed with the soil.

Some of the acænas, or New Zealand Burs, neat little carpeters, as a rule, will do well in such a place. A. argentea is as good as any, and is handsome with its silvery leaves. A. Buchanani, pea-green, will also thrive. They soon cover a good space, and a group of some early bulb, such as Scilla bifolia looks well spearing through these acænas. A choice and somewhat difficult acantholimon, or Prickly Thrift, called A. venustum, with spiny leaves, and neat rose flowers, should flourish if the place is quite well drained. A few of the choicer achilleas, or yarrows, may be chosen, A. argentea, sometimes called Anthemis aizoon, being as good as any. It has silvery, crinkled leaves, and bears daisy-like white flowers in summer. A. rupestris, only some four inches high, is of rather prostrate habit, and has white flowers. A. Clavennæ, also white, has pretty silvery foliage. Some of the æthionemas, or Lebanon candytufts, are lovely little plants for such a rockery. Æ. cordifolium, about six inches high, and rosy-pink, is lovely, as is Æ. grandiflorum, rosy-purple.

For an effective bold plant, Aciphylla Lyalli may be commended. This is one of the Bayonet plants, striking things on good-sized rockeries, with long, rigid, sharp-pointed leaves. Such alyssums as A. saxatile, the well-known Gold Dust, or Madwort, will flourish, but some choicer ones are alpestre and argenteum, both yellow, and spinosum, white. Androsace sarmentosa and A. foliosa are the best of these exquisite flowers for limestone rockeries, and either is lovely indeed, A. sarmentosa being especially pretty. A. Chumbyi is a fine variety of the latter. Anthemis montana and A. macedonica are both lovely little chamomiles with white flowers, and about six inches high. Anthyllis montana is a pretty Kidney Vetch, with whitish leaves and rosy-purple flowers.

Save in cold, wet districts, two snapdragons, named Antirrhinums asarina, white, and glutinosum, primrose, will give pleasure. Quite a striking plant is Astragalus tragacantha, a spiny-looking plant, with pale violet flowers, not often seen. Practically, any aubrietia may be chosen with confidence, and the curious little Centaurea stricta, which often dies out elsewhere, will grow in a satisfactory way. Campanula garganica hirsuta is one of the best of its race for limestone. For rough rockwork any of the cerastiums may be chosen, but they spread too quickly for small rockeries. Coronilla iberica will give pretty clusters of yellow flowers; and the lovely Cyananthus lobatus thrives in some places under these conditions, but, it may be said, not in all.

All the glaucous-leaved pinks will make nice cushions of foliage and flower, and our native Dianthus cæsius, the Cheddar Pink, is quite at home. Erodium guttatum, white, with deep blotches, is charming, and E. supracanum, pink, is a lovely thing. Erysimum pulchellum, although a little coarse, is a pretty hedge mustard, with yellow flowers in spring. The quaint Euphorbia capitata gives heads of greenish-yellow in plenty, though it is a trifle coarse for association with choice plants. Genista pilosa is a fine little woolly broom with yellow flowers, and the lovely Geranium argenteum, with pink, deeper-veined blossoms, is excellent. All the helianthemums, or Sun Roses, delight in such a rockery, and will give abundance of bright little flowers. Lithospermum Gastoni is a choice Gromwell for the limestone rockery, giving charming flowers of blue. Then Lychnis pyrenaica affords little heads of red. An oxytropis named campestris, though a trifle coarse, has pretty yellow pea-shaped blooms.

Some of the spring phloxes, such as The Bride, Nelsoni, Fairy, atropurpurea, and others are lovely with flowers of different colours in spring. They ought not to be forgotten. Potentilla valderia, with silvery leaves, is a nice white-flowered little plant. For a lime-loving primula we have no prettier thing than P. marginata, with flowers of a kind of lilac, and silver-margined leaves. The silvery saxifrages, i.e., those of the encrusted section, may all be grown, but a word of caution is required, and this is not to allow them to become too dry at the root in a season like the last. They are all charming, from the tall S. cotyledon to the minute S. cæsia.

Sedums, or stonecrops, are at home here, and spathulifolium and obtusatum are among the best of a wide choice. As for sempervivums, or houseleeks, their name is legion, and any of them will thrive. Such a rockery is just the place for all the cobweb kinds, such as S. Laggeri and S. arachnoideum. We may finish for the present with the pretty little rock speedwell, V. saxatilis, with blue flowers, with the white variety, V. s. alba, and the pretty trailing Vicia argentea, with silvery leaves and white flowers with purple markings.

Such are some of the many lovely alpine flowers which will adorn to perfection our sunny limestone rockery.

S. ARNOTT.

## PELARGONIUMS AS PYRAMIDS.

It is not often that pelargoniums are seen grown in pyramidal form, yet when so treated they form exceptionally handsome objects. There were two pyramids of this popular bedding plant growing in the gardens at Elsham Hall, Lincolnshire, the picturesque country residence of Sir Francis Astley-Corbett, Bart. These plants were fully twelve feet in height, and were planted round the outside of two round beds eight feet in diameter. The tops of the plants were brought together to form pyramids, and when in full flower they formed objects of especially beauty. The variety is an old, but free-flowering, one called Sultan, and the blooms are an intense scarlet. The plants were struck from cuttings in the year 1868 by Mr. Gardner when he first took up his duties as head gardener at Elsham. The plants are taken up every autumn, and potted, to be kept during the winter under glass. These are probably the only specimens in the country of such dimensions. J. G.

# LILIUM AURATUM AND ITS VARIETIES.

During the winter season bulbs of the Golden-rayed Lily of Japan are imported in immense numbers, and are frequently offered in tens of thousands at the auction sales of bulbs held in London. This alone furnishes a guarantee of its present-day popularity, for it is, as a matter of fact, universally grown, despite its, at times, erratic behaviour. The Queen of Lilies is a popular name applied to this Japanese representative of a noble family, and I do not think anyone will dispute the correctness of this title.

It is now nearly fifty years since Lilium auratum unfolded its earliest blossoms is this country. As a matter of fact, it was first shown by Messrs. J. Veitch and Sons at a meeting of the Royal Horticultural Society, on July 12, 1862, the bulbs having been collected by the late Mr. John Gould Veitch when travelling in what was then the comparatively unknown country of Japan. It was some years after this before it became generally cultivated in this country, as all the early importations were from bulbs collected in a state of Nature. After a time, however, it became evident to the Japanese that its culture would prove to be a remunerative one, and now it, and, in fact, many other lilies, are grown, and sent to this country in immense numbers. What is more, they are now sold so cheaply that their beauty can be enjoyed by prince and peasant alike.

A notable feature of Lilium auratum is the great amount of individual variation which is to be found when it is grown in quantity. I do not refer to the generally recognised and well-marked varieties, but what may be regarded as members of the rank and file. Some are comparatively dwarf, the sturdy stem being clothed with numerous thick-set pointed leaves. As a rule, the flowers of these are of good shape, with the spotting and golden rays clearly defined. The direct opposite to this is a form much taller in growth, with fewer and broader leaves, and flowers borne on long, rather weak stalks, so that they partially droop, and are consequently much less imposing than the others. In some of these the segments are too narrow to form an ideal bloom. Beside these two extreme forms there are many intermediate ones, so that even out of a large batch it is often difficult to pick two alike, as the points of difference are to be found in height, foliage, size, and shape of the flowers, and markings. The bulbs also vary greatly, but I have never succeeded with Lilium auratum, as I have done with Lilium speciosum, in selecting the forms with a certain amount of accuracy from bulbs alone.

The fully-recognised varieties that can be purchased true to name are L. a. platyphyllum, a noble grower with a massive flower. It differs from the ordinary L. auratum in the scale of the bulb being much broader and thicker, while the stem is stouter, and the leaves wider. The flower, too, is more saucer-shaped. In colouring the variety platyphyllum varies somewhat, the blooms being, as a rule, not much spotted, and with a clearly defined golden stripe down the centre of each petal. Occasionally a flower may be met with that is almost entirely white, and sometimes more spotted than usual. This variety was first sent home from a small island on the south-east of Japan by Mr. Charles Maries, when travelling in those regions. It is now, however, cultivated in quantity in Japan, and large numbers are every winter sent here from that country. Beside the varietal name of platyphyllum it is also known by that of macranthum.

L. a. rubro-vittatum, sometimes called cruentum, is a particularly striking form. The bulbs that reach this country are, as a rule, smaller than those of the average L. auratum, but they usually flower well. In this variety a rich glowing crimson-coloured band extends down the centre of each segment. When the flowers are first expanded this band is exceedingly bright and attractive, but before long it changes to a chocolate tint, and is then not nearly so effective as at first. This change is hastened if the weather happens to be hot. Sometimes the margins of the segments have a crimson suffusion.

A direct contrast in colour to this is another small-bulbed variety, namely, L. a. virginale, or L. a. Wittei. In this the petals are thick, wax-like, and of a pure unspotted white, with a golden stripe down the centre of each. The flowers of this remain fresh and bright longer than those of rubro-vittatum. In L. a. pictum we have a variety more densely spotted than the typical L. auratum, with a slight suspicion of the crimson band of rubro-vittatum. It (pictum) is now not often imported, and it varies somewhat in marking, being, apparently, a selection from seedlings of L. auratum itself.

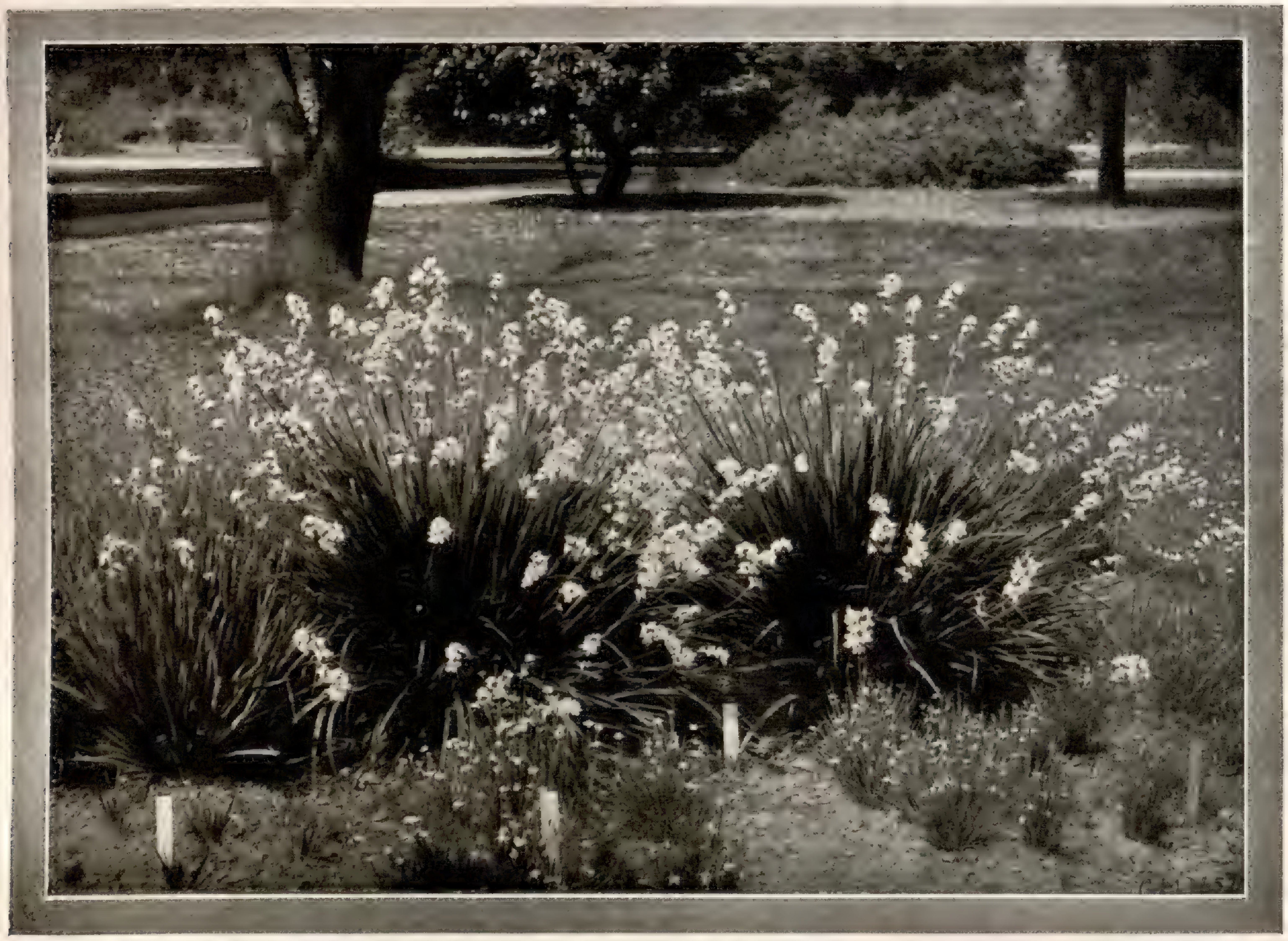
Volumes have been written regarding the cultural requirements of L. auratum, but from whatever standpoint it is viewed it must be set down as a decidedly erratic lily, for, while in some cases it will thrive without any special attention, in others, whatever care be taken, it is not a success. We have been told by travellers in its native country that Lilium auratum thrives on the outskirts of woods, where the amount of shade is just sufficient to break the hottest of the sun's rays, especially on the lower part of the stem and surrounding ground. This has proved to be the most satisfactory mode of treatment under cultivation in this country, where the practice frequently prevails of planting this lily in beds of rhododendrons, or associated with other shrubs, that serve to shade the base of the stems. The peaty soil in which rhododendrons thrive is a good substitute for the vegetable humus in which it grows in its native country. In any case, effective drainage is very necessary.

Not only is Lilium auratum looked upon as a plant for the open ground, but it is also extensively grown in pots, and employed for various decorative purposes. For grouping its grand flowers and noble proportions stand it in good stead, the one drawback being that, in confined places at least, its perfume is too powerful. It is one of the lilies now retarded by keeping the bulbs in refrigerators, so that the blossoms may be had at various periods of the year. It does not, however, prove to be so amendable to retardation as Lilium

A FINE POT SPECIMEN OF LILIUM AURATUM.
Grown by Harry Simpson, Esq., F.R.H.S., at Wandsworth.

longiflorum or L. speciosum, which are the two lilies most generally employed for this purpose.

When nearly all kinds of plants yield as they now do to the skill of the hybridist it is remarkable that there are still so few lilies of hybrid origin. There was (for one can unfortunately only speak of it now in the past tense) a very beautiful hybrid in the production of which Lilium auratum played its part. This hybrid (L. Parkmanni) was raised in America between L. auratum and a deep-coloured form of L. speciosum. It afterwards crossed the Atlantic, passing into the hands of Mr. Anthony Waterer, of Knap Hill. From there it was flowered and exhibited, but, inheriting the capricious character of L. auratum, it did not prove amenable to cultivation, and in time disappeared. It must be nearly twenty years ago since I last saw it exhibited, and enquiries a year or two ago elicited the reply from Mr. Waterer that, as far as he knew, it was no longer in cultivation. W. T.



LIBERTIA FORMOSA AT KEW.
A spring-flowering Chilian plant, carrying elegant spikes of pure white blooms.

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**Greenhouse Acacias.** — While many of the Australian acacias need to attain tree-like dimensions before they flower, such as the mimosa of the florists' shops (Acacia dealbata); yet some of them will bloom freely in a quite small state. From this circumstance they are very popular for greenhouse decoration, those most generally employed for the purpose being Acacia Drummondi, A. ovata, A. armata, A. hastulata (cordata), A. pulchella, A. grandis, and A. platyptera. All have flowers of some shade of yellow, and with the exception of A. platyptera, flower in the early months of the year. This last-named blooms in autumn. —K.

## LIBERTIA FORMOSA.

It is a pity that such an elegant and beautiful plant as the Chilian Libertia formosa is not perfectly hardy all over the United Kingdom, as it possesses attractions of a high order. Where the winters are mild, or even where the protection of bracken, or handlight, can be afforded in cold, wet weather, it may be grown with considerable success, but though it will live and flower in loamy soil, it thrives much better in a medium composed largely of sandy peat or leaf-soil. A warm position in the rock garden, or a sheltered spot on the sunny side of a rhododendron group, will suit it, but the planter must not expect too much in a short time, as, even when quite at home Libertia formosa is not by any means a fast-growing plant. The illustration shows specimens flowering at Kew, in May and June, at which time the 2 feet to 2½ feet spikes of pure white flowers are abundantly produced, and look well, rising from the tufts of erect, pointed, sword-like, deep green leaves.

Libertia formosa may be raised from seeds sown in a frame, but seedlings come into flower slowly. The usual method of propagation is by division of the clumps in early spring, when new growth commences. A careful hand and a sharp knife are essential to the proper division of the tufts.

For pretty gardens and lovely flowers read The Flower Garden, by T. W. Sanders, F.L.S. An up-to-date work on the formation, planting, and management of the garden, with description and cultivation of flowers and plants adapted for outdoor culture. Price, 7s. 6d. net by post, in box, 8s., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## ACOKANTHERA SPECTABILIS.

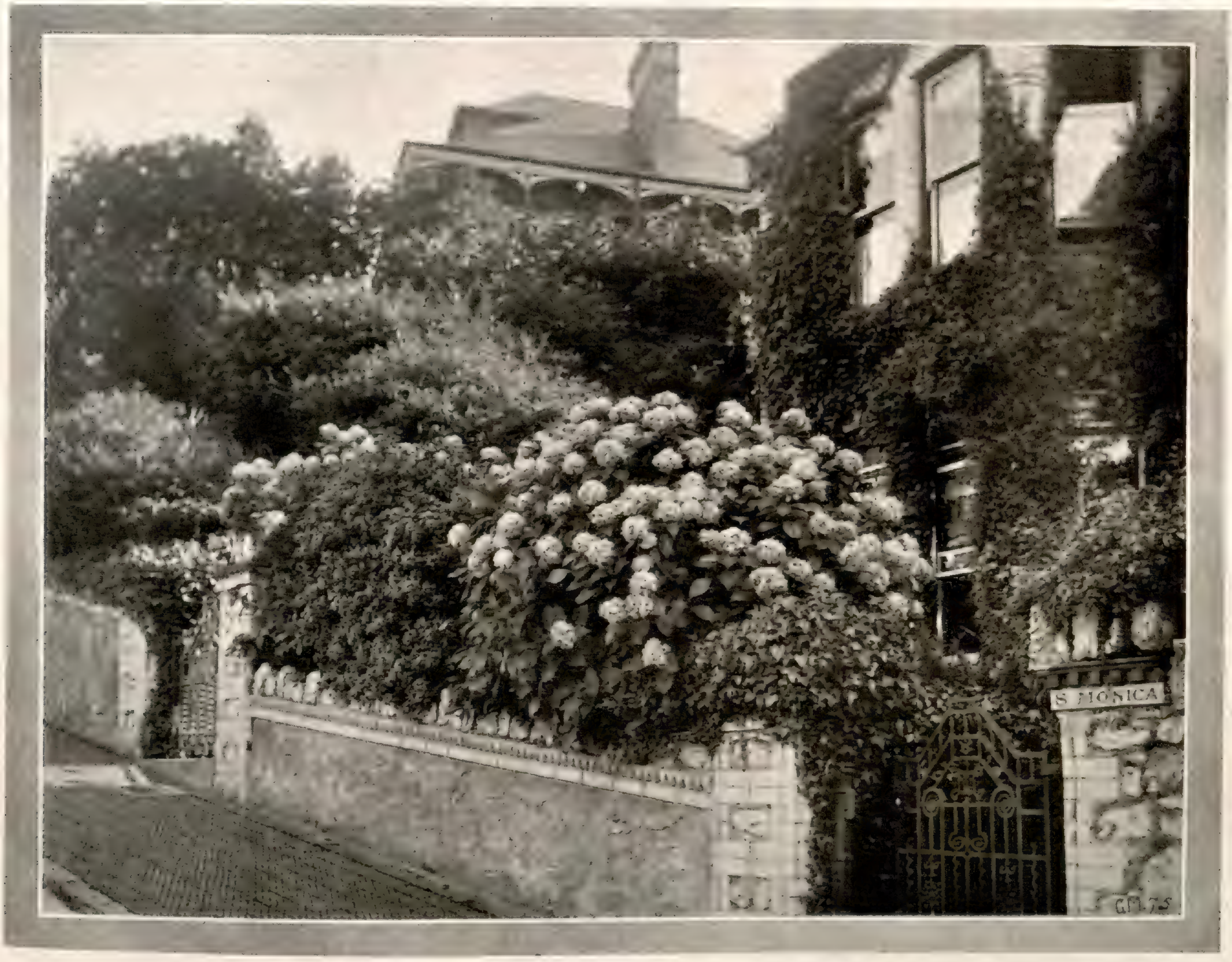
This South African evergreen shrub is very attractive just now in an intermediate house, as, being a native of the warmer parts of the southern portion of that Continent, it is more at home there than in the greenhouse proper, associated with heaths, pelargoniums, and such other of the many beautiful and interesting plants that have been introduced from Cape Colony.

Planted out in a suitable structure, and stopped freely when young, it forms a somewhat upright, dense-growing bush, clothed with oval leaves, four to five inches long, and of a dark green leathery nature. The flowers are borne in very dense clusters from the axils of the leaves, especially towards the upper parts of the shoots. They are small and white, but, being present in considerable numbers, they impart a decidedly ornamental feature to the specimen. What is more, the blossoms possess a sweet honey-like fragrance, that renders their presence manifest throughout a good-sized structure.

If allowed to mount upwards this acokanthera may be trained to the roof of a warm house, or as a screen plant for the end thereof. Furthermore, when struck from cuttings taken from the upper part of the specimen the young plants so obtained will flower freely when quite small. Beside the name at the head of this note, it is also known as Toxicophlæa spectabilis. A second species, less attractive than the first, is Acokanthera venenata, also known as Toxicophlæa Thunbergi. K.

# LARGE HYDRANGEAS IN THE GARDEN.

An illustration of fine hydrangeas in the portico at Buxted Park recently appeared in our pages, and the specimens shown indicated high-water mark in pot or tub culture. Hydrangea hortensis and H. Otaksa grow and flower well enough in many of the southern counties without any protection, but one has to go westward to see huge specimens in abundance. In Cornwall and in Devon, especially at Torquay, Ilfracombe, Clovelly, and other favoured and well-known holiday resorts, hydrangeas are splendid, and form a prominent feature in very many gardens. The accompanying illustration shows a front villa garden on one of the steep hilly roads of Ilfracombe. Here two big hydrangeas are prominent objects, and nearly one hundred heads of bloom can be counted on the plant in the foreground. Popular as hydrangeas are, especially as pot plants and for market culture, it is not too much to say that they do not receive that attention they deserve as flowering shrubs in the garden. In many places no protection would be needed, while in others a careful consideration of position would lead to happier results, and, yet again, where the winters are more severe, and suitable shelter not available, moderate protection would suffice to keep the plants safe from harm. In some gardens the practice is adopted of leaving the old heads on the plants throughout the winter.



FINE SPECIMEN HYDRANGEAS IN A FRONT GARDEN AT ILFRACOMBE.

# SPRAYING FRUIT TREES WITH LIME.

The time is again approaching when gardeners and fruit growers will be turning their attention to the spraying of their apple trees before growth commences, and, possibly now some are asking themselves the question, "What shall I spray with?" Though the spraying that is done, say, in March, before growth commences, is generally termed winter spraying, the term seems hardly a right one, as it would be more correct to call it early spring spraying, and the first point for consideration is, what are its objects? One is to clear the stems and branches of moss, lichen growths, and rough bark, all of which are natural harbours for insect pests, apart from the fact that parasitic vegetable growth must choke up the pores of the bark. In other words, it is assumed that cleanliness of the bark is essential to the good health of a fruit tree as is a cleanliness of skin to a human being.

This point about cleanliness reminds us of the early days of spraying, when caustic soda was first used for the purpose, and since then dozens of winter washes of a proprietary nature have been introduced. In short, there is no difficulty in obtaining a winter wash that will clean trees, and leave quite a polish on the bark, and if that were all there would be no need to resort to the uncomfortable work of lime spraying at all. There are the eggs of insect pests, however, to be considered in what is called winter spraying, and one remembers the time when it was claimed for the caustic soda wash that it would destroy the eggs referred to. The same thing has been claimed for different proprietary washes, but many growers have been disappointed, after making their trees as clean as a new pin, to see them later on ravaged with hungry caterpillars, and infested with apple sucker.

Possibly it was the failure of winter washes to destroy eggs and prevent attacks of insect pests that first led growers to turn their attention to lime, and the use of this material is, in a way, a case of history repeating itself. By this I mean that many a long year ago, when insect pests were classed comprehensively under the general heading of "blight," and their ravages were accepted as something that was inevitable, it was customary to paint the stems and lower branches of standard trees as high as a man could reach with lime wash, but I question whether the growers had any clear idea as to what they were doing it for. In a word, it was a custom, and as such it remains, and is practised in many places to the present day. The use of the brush, however, has largely given place to the sprayer, and instead of merely painting the stems and lower branches a thin film of the limewash is deposited all over the tree. The claims for lime spraying are that it will do everything that any other winter wash can effect in the matter of cleansing and destroying vegetable growth, and if it does not pretend to kill the eggs of insect pests, it will seal them to the twigs, so that they cannot hatch out. This particularly applies to apple sucker, and it is also claimed for lime that it has a check on that disfiguring fungus known as apple scab, but last season there was little evidence forthcoming in support of this, because apples generally grew particularly free from scab, which shows that climatic conditions are largely responsible for this trouble.

In connection with the use of lime some use a lime spray pure and simple; others employ lime and sulphur, which adds to its value as a fungicide; others pin their faith to lime and salt; but there is some variation of opinion as to whether there is any advantage in the addition of salt at all, and this view is held, by the way, by one noted grower in the West of England, who swears by the virtues of the plain lime spray; while some go further, and employ a lime-sulphur and salt wash. The worst thing about lime spraying is that no stretch of exaggeration could call it a desirable job, from the point of view of personal comfort, but difficulties have been reduced considerably by the introduction of improved machines and nozzles, and in this matter manufacturers have had an incentive, for, apart from fruit trees, the sprayer for lime-washing purposes has largely taken the place of the old-time brush. For effective lime spraying a fine day is essential, and, above all, it must be still. The operators should also protect themselves with overalls, and with some persons the lime has a painful effect on the skin. In some cases gloves are worn to avoid this, but the best thing I have found is to thickly cover the hands with grease before commencing the work.

In the use of lime as an insecticide it is desirable that a few simple rules should be observed. In the first place, the spraying is most effective if it is left as late as is consistent with safety. To be more precise, a good time to do it is from the middle to the end of March, just before the buds commence to swell. Secondly, only the best white lime should be used, and this should be obtained in the lump direct from the works. The lime should be placed in a tub at the rate of one bushel to twenty-five gallons of water, but the latter should be added a little at a time as the mixture boils, and if salt is added a quarter of a hundredweight to every one hundred gallons of limewash is the standard quantity. Thorough and effective straining is very essential, and if this is neglected a lot of time will soon be lost through the choking of nozzles. Another important point is the desirability of applying the lime wash while it is warm, and I heard one grower express the opinion that if he could not use it in this state he would not use it at all.

Let it be remembered also that the tree should be sprayed all over, and it is really more important to apply the wash to the tips of the twigs and the wood bearing the fruit buds than to the stems and thick limbs. The way that the wash sticks is the proof as to whether the best lime has been used, properly mixed, and applied at the right temperature, and consistency, but little good is done if the coating of lime scales off as soon as it gets dry.

After being sprayed the trees naturally present a ghostly appearance, which is a reason why lime spraying is not permissable in some private gardens, and, again, it is not an easy matter to lime spray trees in kitchen gardens where vegetables are growing round about them, such as winter greens, but on the other hand a good deal of the ground is unoccupied with crops when this spraying is done.

Lastly, it is wrong to claim for lime spraying that it will do everything, and to think that after doing it one's troubles will be over, but a strong point in its favour is that commercial growers have great faith in it. Last spring I travelled through some of the most famous apple-growing districts in England, and saw miles of orchards and plantations which looked as if they were covered with snow or hoar frost. These were orchards belonging to men who grow fruit for a living, and they are much too shrewd and business-like to spend time and money on lime spraying for mere amusement. When a commercial man begins a thing, and follows it up, you may generally depend that there is something in it, and lime spraying has increased because growers have derived benefit from it, and believe in it. At the moment of writing spraying apparatus is being put in order, and in those districts where fruit growing is a commercial industry, many a broad acre of apple trees will be covered with a white mantle before the buds burst into growth. H.

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## REVIEW OF BRITISH-RAISED PERPETUAL CARNATION NOVELTIES FOR 1911.

One of the most difficult tasks I know is for one raiser to criticise the work of others, and do it perfectly fairly and still retain their friendship, because all of us think our own crow the blackest, just the same as the mother fails to see the shortcomings of her fondled firstborn.

The two most-talked-of British novelties of last season were R. F. Felton and Lady Alington. Both received an Award of Merit from the R.H.S., and F.C.C. from the Perpetual Carnation Society, and many thousands of young plants of each variety were sold. Which is the better of the two it is unnecessary to say; both can be excellent without belittling the other's greatness.

R. F. Felton is the result of a cross between Enchantress and Mrs. H. Burnett. One would almost guess the parentage from the habit of growth, for it might be termed an improved Mrs. H. Burnett. The flowers are of a delightful shade of salmon-rose and of good size; also, while it makes an exceptionally fine bushy plant, the growth is slow in running off to flower. R. F. Felton has a rival in the new American variety Gloriosa, the two being similar in colour. However, perhaps, the British variety will suit the private grower best, though the American novelty may become the most popular with the market grower.

Lady Alington was obtained by crossing Britannia on to White Perfection. The cross was made five times, and 243 seedlings were raised, but out of this lot there was but one Lady Alington. The growth is much freer and quicker than in Britannia, making a larger plant, and it also grows much quicker in mid-winter. The flowers are a deep shade of salmon, almost a Leander pink, quite a distinct and beautiful break, strongly perfumed, and very large in size. In fact, owing to this and the excessive vigour, the flowers split just a little in dull weather. This, however, can be coped with by growing the plants in a smaller-sized pot and not feeding until spring. A small failing in Lady Alington is that the flowers take rather long to open owing to their size, and so do not last as long as some varieties when cut, but no perpetual carnation is perfect, and this is undoubtedly a great variety.

Mrs. C. F. Raphael belongs to the new perpetual-flowering Malmaison class. It is massive in size and build, and quite excellent in form for a Malmaison. The colour of the flower is cherry red, and the growth is quite the quickest in this class. This variety is undoubtedly a decided acquisition.

Rex, being a pale rose-pink, met with keen competition. In some respects it has proved rather disappointing, not flowering quite as freely as was expected. Yet many varieties have less to commend them than Rex, and still remain in cultivation.

Colossus is certainly a good variety which has never had the recognition it deserves. The flowers are cerise in colour and large in size, with an ideal stem and calyx. It also has a robust growth, not quite free enough for the market grower, but certainly of a quality sufficiently high to command a position in all private collections.

Regina, salmon-pink, was somewhat of a dark horse, but has proved quite a good variety, making a large plant. The flowers are of a good size. The same raiser, however, is sending out Lady Northcliff this season which should be superior.

Fireglow and Harlequin, both yellow fancy varieties, rival each other for premier place. The general voting is that the former is more beautiful in individual flowers and the latter has a quicker habit of growth.

La Mode, heliotrope, shaded deep pink in the centre, is a delightful break which has a great fascination for many members of the fair sex. However, this season we have that sterling novelty Geisha, which has caused such a sensation at the shows, challenging all its rivals successfully.

Edith Waters, deep bright cerise, is probably a hybrid border carnation, and not quite free enough flowering in mid-winter to claim a high position as a "perpetual."

Marchioness of Linlithgow has some merit. Being a seedling from White Perfection it has purity of colour and freedom of growth, but in comparison with White Wonder it can scarcely hope to survive.

Duchess of Devonshire is undoubtedly a good crimson, rich in colour, refined in form, and robust in growth. As a variety for cultivating in pots it has undoubtedly a future.

There may be other good varieties, but these are all of importance, that were shown before the Perpetual-Flowering Carnation Society, and that can hope to survive, and those that fail are of little importance, they do not rouse the sympathy or court the interests of anyone, and most of us, if we had a retentive mind, could recall a few failures, both of our own and other peoples.

Montagu C. Allwood.

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**Aster Lil Fardel.**—This very desirable Michaelmas daisy belongs to the Novæ Angliæ section. It is a very fine form, growing about five feet in height, and bears a great profusion of bright reddish rose-coloured flowers. A very symmetrical shaped specimen, occupying an isolated position, was much admired here last autumn. A feature of the Novæ Angliæ group is that the flowers are at their best in the first half of the day, as they partially close in the afternoon or when the weather is dull. I do not remember seeing this mentioned in any of the notes on Michaelmas daisies, and only in one catalogue that has come under my notice, namely, in that of Mr. Norman Davis, the chrysanthemum specialist, of Framfield, Sussex.—W.

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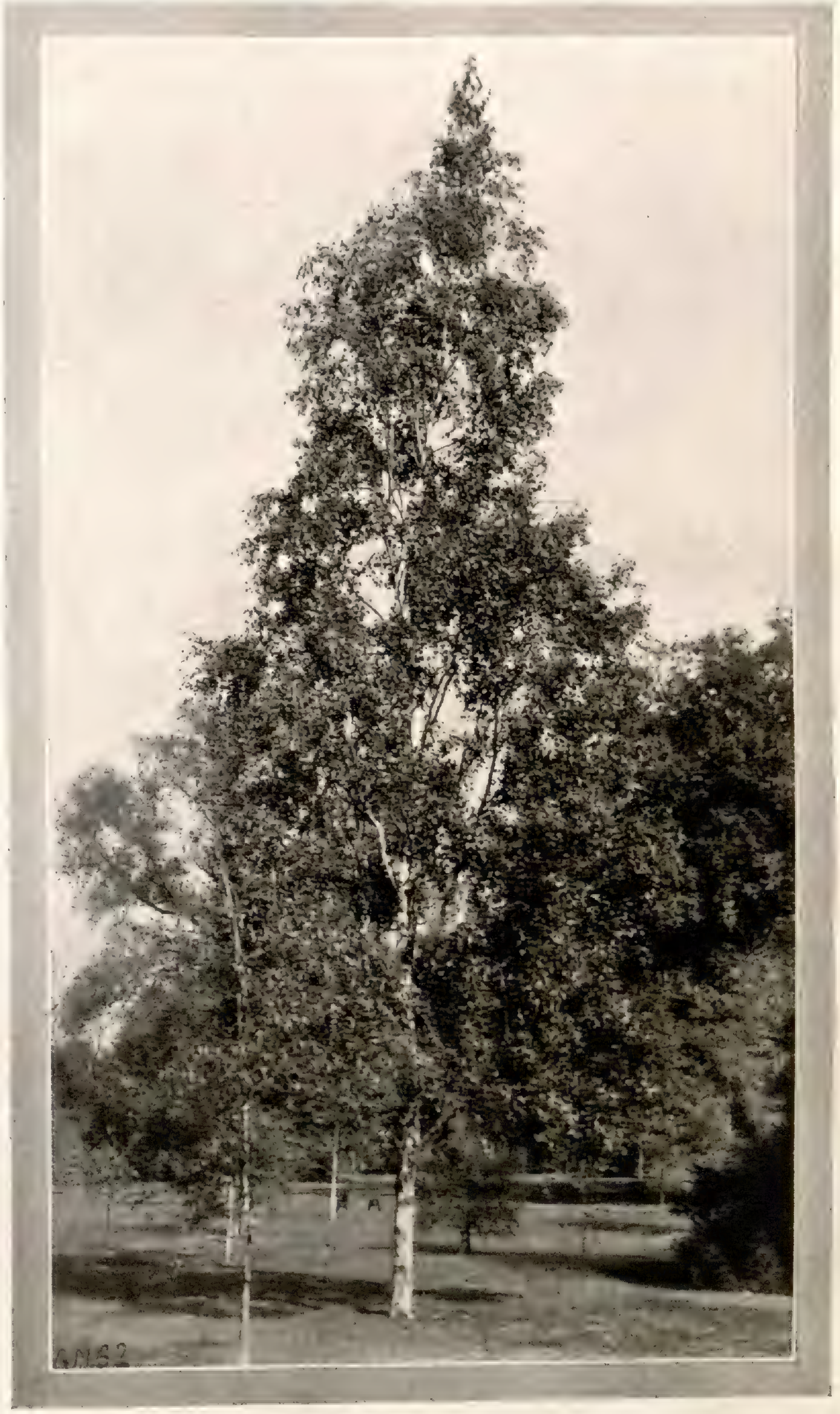
PROFITABLE FRUIT GROWING for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, writen for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## THE ERECT-GROWING BIRCH.

The varietal forms of the Silver Birch (Betula alba) are many, and of these the majority possess sufficient merit to justify their inclusion in a selection made for beautifying pleasure grounds that extend over a large area, or for the formation of a distinct feature in the park. For comparatively small gardens, a few of the more distinct will suffice; and in making a selection for these, as for the larger areas, the varieties should, as a matter of course, be selected with due regard to their adaptability for the positions in which they are to be planted.

The most desirable of the varieties for general planting are the Broad-leaved (Betula alba latifolia); the Toothed-leaved (B. a. dentata viscosa); the Erect-growing (B. a. fastigiata), the Weeping (B. a. pendula), Young's Weeping (B. a. pendula Youngi), the Purple-leaved (B. a. purpurea), and the Nettle-leaved (B. a. urticifolia). The popular names indicate the distinctive characteristics of the several varieties, and serve as a very good guide to the plants in making selections for various positions. If a tree of pendulous habit is required, the planter has the choice between the ordinary weeping variety and Young's Weeping, and as these differ much in habit, the planter should take advantage of any opportunity he may have for seeing trees of the two forms; but those who have no such opportunity, and require the tree or trees for a small garden, should select Young's variety. In large pleasure grounds, both weeping varieties might with advantage have a place. If it is desired to produce a contrast to one of the several golden-leaved trees the purple-leaved must be selected, and if a tree of erect growth would be the most appropriate for a given position, the fastigiate form, of which an illustration is given herewith, will be found of much value.

The last-named variety of the Silver Birch occupies much the same position among the birches as that occupied by the Lombardy poplar among the species of Populus, and consequently is well able to render good service as a component part of garden scenery. It is not suggested that it is superior to either the typical Silver Birch or any one of its varietal forms; but it is remarkable for its light and elegant aspect, and for the distinct and charming effect it produces, whether growing singly among its near relatives, as in the case of the specimen herewith illustrated, or arranged in groups in spacious pleasure grounds or park lands. The tree is not new, rare, or expensive, and consequently there is no obstacle to it being utilised in the creation of a distinct feature in the scenery of park or garden. G.



BETULA ALBA FASTIGIATA.
An elegant variety of the White Birch of upright growth at Kew.

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**Semi-double Zonal Pelargonium Chavarri Hermanos.**—This pelargonium belongs to that strong-growing section, "a gros bois," of our French neighbours, of which King of Denmark is one of the best known examples. In Chavarri Hermanos the flowers are large, with petals of unusual substance, and of a vivid scarlet tint. When grown for the purpose it flowers well during the winter.—T.

**Sericographis Ghiesbreghtiana.**—Several acanthaceous plants bloom during the winter months, and this is by no means the least attractive of them. The leaves, which are ovate lanceolate in shape, are of a very dark green tint, and the scarlet tubular shaped blossoms continue to develop throughout the late autumn till the spring. It flowers best when the plants are well exposed to light and air throughout the latter part of the summer.—W.

## THE SCIENTIFIC INTEREST IN SWEET PEAS.

Mr. T. H. Dipnall's writings are always very interesting to me, therefore I read, two or three times, his article in your last issue under the above heading.

I cannot see very clearly his meaning in the following paragraph: "Last year it was discovered that if you cross these exceptional members of a coupling system, you reverse the system in their progeny, so that if in your seedlings of the second generation you find an extra sterile plain standard and an extra fertile wavy pea, and cross these two, you obtain a race in which the great majority of the waved peas will be extra fertile and the plain standards sterile."

That may be so. Has it been proved? Briefly, I think Mr. Dipnall means that in the F2 we will get varieties with waved standards which will be good seeders, but it seems to me we take a retrograde step to obtain this by crossing with the plain standard varieties at all—we introduce trouble for ourselves We have a few good waved varieties which are good seeders, notably Mrs. Hugh Dickson, which seeds as well as any plain standard variety ever did. My idea would be to utilise such a one for crossing to breed for free-seeding qualities.

May I point out to Mr. Dipnall something which he might think about when pondering over the problem of burning or scalding? King Edward Spencer never burns, never goes dingy purple under glass, and I could name many others which do not. Underneath that fact lies the same analogy as Mr. Dipnall thinks he has discovered out of doors. Wm. Cuthbertson.

Edinburgh.

"CHRYSANTHEMUMS AND HOW TO GROW THEM FOR EXHIBITION," by J. B. Wroe.—Full details on timing and stopping for Northern, Southern, and Midland growers, selections of the best varieties, illustrated instructions on taking the buds, cuttings, staging, etc. Prices 1s. net, by post 1s. 2d.; cloth, 1s. 6d., by post 1s. 8d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street. London.

## ROSE NOTES.

We have enjoyed a prolonged season for planting, and there should be no more to do wherever the ground was available. Plants that were put in early have greatly benefited by the ground settling so firmly around the roots, but in many cases the soil is now very wet, and should a spell of severe frost set in, it may have a bad effect unless some means are taken to drain the base of plants.

We are well aware of the good results from earthing up the base of dwarf roses, both as a protection from frost and to throw off excessive wet; but few of us use the same precaution in the case of standards. Why not? One of the most vital parts of a standard is the base, and, although we do not protect the rose growth by earthing up soil around them, we avoid considerable swaying of the stems, but what I feel to be of still greater importance is throwing off water instead of allowing it to lie in a small hole around this most vital part. Upon more than one occasion, I have noticed the heads of standards "trussed up," and yet no protection was afforded to the base of the brier itself, while the plants were swaying sufficiently to form a hole that held water all the longer because of the smooth sides made by this swaying.

I would like to say that enough care is not given to protecting the junctions of rose and brier upon standards. It is not enough to put a little litter among the points of growth, and leave this part so open. Why should it not be protected as much as in the dwarfs? But, so far as protection is concerned, we do comparatively little of it now, being convinced that it is not so necessary as was once thought. We also have a much hardier race of varieties.

The old methods of using litter or manure are not practised to anything like the same extent as formerly. Experience proves that keeping the base of the plants as dry as possible is preferable to the risk of wet combined with frost, which results in a frozen mass all around the plants. Frost-laden winds are easily guarded against by using branches of fir or birch, which not only answer the purpose excellently, but stay where placed, and do not hold so much moisture. Litter either blows away to some sheltered nook where it is quite useless, or becomes a saturated mass in a very short time, in which condition it can be of little service.

Considering how very mild the winter has been so far, our roses, more particularly the ramblers, are keeping their growths more quiet than might have been anticipated. Even Dorothy Perkins, Crimson Rambler, and Claire Jacquier are quite dormant here. Doubtless, this is partly caused by their extended annual growths. Several seasons I have noticed this class of rose push out in a dangerously precocious way by this date, but it has always been after an early ripening. At present many of our roses are quite clothed with foliage. More so than I remember before.

It is pleasing to note how well the buds that were inserted last summer have set. Of course, they have had no trials yet; but I have more than once noticed how much better they set or unite to the stock during a dry season for budding, than when we have a dripping summer, and doubtless this is the same as with grafted plants in the propagating case; any wet between scion and stock being decidedly unfavourable to the formation of callus.

Rosarian.

## HARDY FLOWERS FOR ROCKWORK EDGINGS.

A rockwork edging to a border of hardy flowers forms a pretty feature of many gardens. A free use of really good plants for this purpose is also to be advocated as affording to many an excellent means of cultivating alpine and other dwarf subjects without the erection of a rockery. If the border can be raised about six inches above the path, and then edged with stones, however rough, firmly fixed in the soil, so as not to be easily displaced by a foot coming in contact with the edging, it can be made suitable for covering with plants of this class.

On such an edging many charming flowers can be cultivated, and these will be in perfect harmony with the taller plants of the border, besides affording a succession of flowers for many months in the year. By a judicious selection of such alpine flowers there need be no monotony in the border, and the bright and pleasing effect can be maintained for many years with the very minimum of trouble. Some will require clipping back to prevent them from encroaching on the paths, but, as a whole, they will not be troublesome in this respect.

Acænas are excellent for the purpose, and among the best of these, which are prized for their foliage rather than for their flowers are A. Buchanani and A. microphylla, with A. argentea. Achilleas are ornamental with their white or yellow flowers, and A. Clavennæ, A. Jaborneggi, and A. umbellata, all white, are among the best for our purpose. A. umbellata has pretty silvery leaves. For a choice sunny part, we may have Æthionema persicum, a dainty plant with glaucous leaves and rosy-lilac flowers— a gem for the edging where it will not be overgrown.

In Ajuga reptans variegata we have a pleasing trailer with silver and green variegated leaves, but the flowers are poor. It is a nice plant, however, and is cultivated in many gardens of choice flowers. Alyssum spinosum, silvery-leaved, and with white blooms, looks very pretty, and A. montanum, yellow, is a neat little subject, though far from showy. A. saxatile is decidedly on the big side for any but large edgings.

For a choice spot beside the æthionema we may have a plant of the exquisite Androsace lanuginosa, which, however, must be sheltered from rain in winter. Silky-leaved and with lovely lilac flowers, it is a choice flower indeed. Antennaria dioica rosea is a neat white-leaved carpeter for low stones, and it delights in a fairly moist place. With some lime about it, and in full sun, we can grow Anthyllis montana, with silvered silky leaves and heads of rose-pink; it is a dainty little plant only six inches high. Arabises can be named without any detail, as they are so well known, but those who want one seldom seen can add Arabis Sturti, a miniature with white flowers. For a portion of the edging with some shade, the pretty Bear-berry, a nice trailing shrub, called Arctostaphylos uva-ursi, is excellent as a trailer; and in a similar place the tiny creeping Arenaria balearica will cover a moist stone with green, all starred with white flowers. Arenaria montana, for sun or shade, is bigger, and has larger flowers, and is more a trailer than a creeper.

Armeria maritima laucheana is a pleasing thrift, with almost crimson flowers, and aubrietias will give us choice and to spare among their many varieties, none of which are unworthy, although some are better than others. A. tauricola alba, A. Moerheimi, A. Dr. Mules, and A. Hendersoni, with Bridesmaid, will give a nice variety. Campanulas, also, are plentiful, and we may choose from garganica and G. hirsuta, both blue and white; Portenschlagiana major, pusilla, and turbinata, without making any mistake, as all are so fine in every way.

Cerastums only require mention, and any of those in the trade will do, but they want to be cut back freely. Coronilla iberica is a nice yellow trailing plant, and Crucianella or Phuopsis stylosa is good with its heads of pinkish flowers. Pinks of many kinds look well over the stones, and we may choose among the heaths, such as E. carnea and E. c. alba for winter blooms and as lying nicely over the stones.

Erodiums macradenum and guttatum may be recommended to those who like dainty subjects, their bright flowers lasting well on the drier parts. Geraniums argenteum and cinereum, allied to the last-named, are lovely hardy flowers for edgings, and Gypsophylas prostrata and repens are fine as well, trailing over the edgings. Helianthemums make good sheets of bloom, but need clipping back, except where there is plenty of space; and Hypericums fragile and reptans have delightful yellow flowers on neat little plants. Iberises, or candytufts, are attractive, with sheets of white flowers, corifolia and sempervirens being among the best for general use. These, also, want to be well cut back, save in wide edgings.

Lithospermum prostratum is of a delightful blue, and Lotus corniculatus plenus is a double form of our "Lady's Fingers" of much beauty. Lychnis alpina, red, and Lysimachia nummularia aurea, the Golden Creeping Jenny, may be added, and on a dry edging Onosma taurica will supply drooping yellow blooms.

Such spring-flowering phloxes as reptans, and the many lovely varieties of P. subulata, such as The Bride, Nelsoni, and a host of others, are without rivals for beauty on the edgings. Prunella grandiflora, though a little coarse, is good; and Saponaria ocymoides on poor soil gives sheets of rose flowers. Almost all the saxifrages are of rare worth for our purpose, and sedums and sempervivums may be cultivated with great success, but, like the saxifrages, are too numerous to detail. Silenes alpestris and S. maritima plena, both white; Thymuses lanuginosus, Serpyllum coccineum and album, and vulgaris variegatus may be added where there is room. Tunica saxifraga and Silene Schaftæ are lovely for late bloom, and we may add Veronica prostrata and Waldsteinia trifoliata, for a profusion of bloom earlier in the year.

Many more alpine flowers present themselves, but a wide enough choice is offered in those named already.

S. Arnott.

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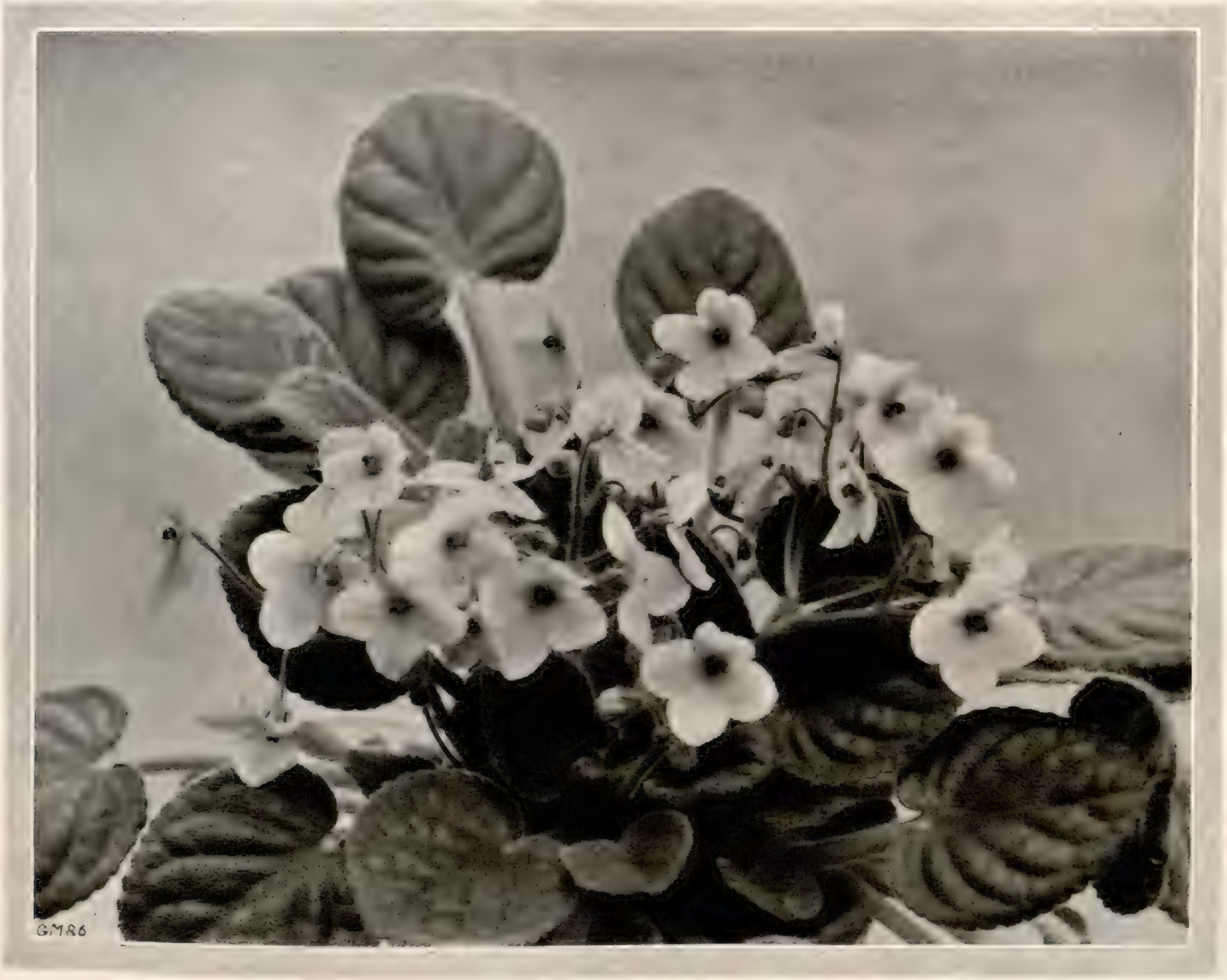
**Gloriosas.**—The tubers of gloriosas should be potted up and started into growth early. Shake away the old soil, and repot, using pots just large enough to hold the corms; then, as growth advances, shift into larger pots in which they are to flower. Two or three tubers may be placed at once into the flowering pot if desirable, but in such a case great care is necessary in affording water, or the soil will become sour and the roots refuse to work in it. After potting the treatment at first accorded should be similar to that usually adopted for caladiums. Watch should be kept for slugs, which are very partial to the young succulent shoots when they appear above the soil. A piece of cotton-wool tied loosely round each growth at the ground level will generally make them secure from these depredators.—H. T. Martin, Warren Wood Gardens.

## SAINTPAULIA IONANTHA.

This beautiful little gesneriad is a particularly charming plant for the warm greenhouse or intermediate house, and, as with a little extra care it can be induced to produce its bright violet-blue flowers towards the end of winter, as readily as at the end of summer, it becomes the more valuable. At no time is propagation difficult, either by seeds or from leaf cuttings, and if two or three sets of plants are produced the flowering season is thereby extended. Mr. H. Prime, gardener to the Marquis of Salisbury, Hatfield House, Hatfield, grows Saintpaulia ionantha unusually well, and the plant illustrated in the present issue is one of many equally as good exhibited by him at the meeting of the Royal Horticultural Society, held at Westminster on Tuesday, January 23. Mr. Prime will, we hope, tell our readers how he obtains such fine plants of this useful subject in January.



SAINTPAULIA IONANTHA.

One of several finely-flowered examples of this handsome blue-flowered stove plant, exhibited at R.H.S. Meeting, January 23, by Mr. H. Prime.

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**Ardisia crenulata.**—A prominent feature of this ardisia is the length of time the bright red berries remain fresh and consequently attractive. It is an old plant in gardens, but I scarcely think it is now grown to the same extent as it was years ago. Why this is so, I cannot say, for it is a very ornamental subject, and nothing else has cropped up to supersede it. It is sometimes referred to as a stove plant, but the temperature of that structure is not essential to its well doing, as it will thrive in a warm greenhouse or in an intermediate temperature. There is a variety with white berries, but it is not nearly as showy as the typical kind.—S. W.

## DIANTHUS CHINENSIS.

The Heddewigi group of Dianthus chinensis is one of the best, and affords cut flowers in abundance, and fine floral displays in the garden from the early part of summer to the month of November. Indeed, I have had batches of plants flowering almost as late as Christmas in a mild season.

From a packet of mixed seeds a large percentage of double flowers may be obtained, but I prefer to sow seeds of single and double-flowered varieties separately. Some of the double flowers are exquisite, and great beauty is to be found among the singles. For many years I have grown large numbers of these plants from seeds, and have been much struck with the decided improvement in the quality of the flowers from year to year.

The seeds should be sown in boxes or pans (I prefer the latter) filled with sandy loam, and well-rotted leaf soil, in equal proportions, with coarse sand added. Where a steady temperature of about 60 degrees can be maintained during the day seeds may be sown early in March; if a lower temperature prevails then defer the sowing until early in April.

I do not believe in covering the seed pans with paper to keep the surface of the soil in darkness, as it weakens the seedlings; but a square of glass may be used to retain moisture and induce early germination. The glass must, however, be removed at an early stage, or it would have a similar effect on the seedlings. The plants must afterwards be grown in a cool frame; the heat applied in the first place is only to aid in securing stock for the production of early flowers. A second sowing may be made at the end of April in a cold frame.

Instead of disturbing the seedlings and transplanting them very early—as they do not then possess many roots—keep them in a cool frame so as to induce a stocky growth. One transplanting in a prepared bed in a cold frame prior to removing them to their flowering quarters will be sufficient. The ground must be deeply dug, well enriched with rotted manure if poor in quality, and made moderately firm while fairly dry, if light in character, before the plants are put in about one foot apart each way.

Suitable varieties are: Dianthus Heddewigi alba; D. atropurpurea, blood-red; D. diadematus, D. hybridus, and D. laciniatus Lucifer, orange and scarlet, are excellent double-flowered varieties. Of singles the following may be grown: Salmon Queen, salmon; Eastern Queen, mauve and lilac; Crimson Belle, crimson-lake; Queen of Holland, pure white; and Snowdrift, pure white. GEO. GARNER.

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**Antirrhinums.**—There are some lovely varieties among the snapdragons, and when massed in the mixed border they are very effective, as indeed they are if planted in narrow borders in one colour. The tall varieties are useful for the back of the borders, but the intermediate type are special favourites, and when such colours as apricot, yellow, rose-pink, bright scarlet, and crimson are grown, they are very pleasing. Sown in boxes at the present time, and pricked off early, they make vigorous plants that flower freely and continuously over a long period.—J. GARDNER.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

MASDEVALLIAS.—The pure white flowers of Masdevallia tovarensis are now making a fine show in the cool house, and will last a long time in perfection, provided no moisture is allowed to settle upon them. After the flowers have fallen, the plants will soon commence to grow, and then will be the best time to repot them. Any plants which have become bare in the centre should be broken up, and either be made up into a specimen again, or the portions may be potted separately in small receptacles. I prefer what are known as half-pots, as the plants require no very great depth of compost. These should be filled to about one-third their depth with clean crocks, covering these lightly with a layer of clean sphagnum moss, and adding a compost of equal parts of peat, polypodium or osmunda fibre, and sphagnum, with a fair sprinkling of half-decayed leaves, which have been rubbed through a half-inch sieve.

THE CHIMAERA GROUP.—This is also an excellent time to give additional rooting space to M. Chimæra, M. Bella, M. Carderi, M. Chestertoni, M. Gongora, and others of the Chimæra section. These should be grown in shallow teak wood baskets, as their flowers are produced from descending stems; no crocks must be used for drainage, but, instead, some fern rhizomes may be used to prevent the compost being washed through. All masdevallias are liable to attacks of red spider and yellow thrips, and these pests must be kept in subjection by frequently spraying and sponging the leaves with some weak insecticide.

THE COOL HOUSE.—There are many plants in this house, particularly Odontoglossum crispum and it varieties and hybrids, that are now developing their flower spikes. These should be frequently examined, otherwise the spikes may be devoured by slugs before the grower is aware that they are showing. The usual means of trapping slugs, woodlice, and other pests should be continually in use. The plants may be kept fairly moist at the roots, but do not water a plant until the compost is dry. It is very detrimental to the plants to allow large spikes of bloom to remain on them for a long time, or to permit small or unhealthy plants to carry too many flowers.

ONCIDIUMS of the macranthum section, such as O. superbiens, O. undulatum, and O. macranthum itself, that are showing flower spikes, will for some time to come need constant attention, as, owing to the rambling habit of the spikes (which often grow many feet in length) some kind of training is necessary. Three or four strong stakes may be placed firmly near the edge of the pots, and the spikes trained around these, keeping the spikes at first as low down as possible.—J. T. Barker, West Hill Gardens.

## STOVE PLANTS.

CODIÆUMS.—During late years some splendid varieties of the useful crotons or codiæums have been introduced, many of them great improvements upon older varieties, so that we may well discard some and grow only the best. To obtain symmetrical specimens with the whole of the foliage richly coloured, they should have a house or pit devoted to them, as they can then be given that special treatment so essential to success. Abundance of heat and moisture, and scarcely any shade, are necessary during the growing season. Now is a good time to overhaul the plants and well cleanse the structure. Any plants that have become leggy should be placed on one side for propagation. Repot all specimens that are intended to be grown on. Turn each plant out of the pot and reduce the old ball of soil and roots, carefully, with a pointed stick, and repot in the size of pot most suitable for the requirements of the place. Let the pots be quite clean and well drained. The compost should consist of three parts rich fibrous loam, and one part peat, adding plenty of sharp sand, small nodules of mortar rubble, and charcoal.

RINGING CODIÆUMS.—The method of ringing tops of old plants that have grown leggy is the best for producing good specimens quickly, and this may now be performed. This method is now very much practised, and need not be explained in detail in these notes. To increase any particular variety in large numbers, the smaller side-shoots may also be taken off and inserted in small pots filled with sandy soil, and plunged to the rim in the propagating bed.

CALADIUMS.—These also should be potted up with as little delay as possible. Many losses occur through leaving the corms too long dormant. Use a similar compost to that recommended for gloxinias, and avoid over-potting. It is far better to repot into larger receptacles later on when new roots are formed. Use sharp sand freely both under the corms and round about them. The useful miniature C. argyrites should be grown largely, and 60-size pots are large enough for them. A high temperature and plenty of moisture are necessary to these plants, especially immediately after they are potted up. If the pots can be plunged in a hotbed so much the better for a rapid start into growth.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

PINE APPLES.—At this season of the year great care should be exercised in giving water to the plants; they should be examined at least once a week, and if the soil is at all dry, sufficient water, at a temperature equal to that of the bottom-heat, should be given to thoroughly soak the soil and roots. Fruiting plants will require a bottom-heat of 80 degrees, and a house temperature of 70 degrees at night, with 75 degrees by day, allowing a rise of 10 degrees with sun heat; admit air on all favourable occasions, but in such a manner as not to materially lower the temperature. For successional plants a bottom-heat of from 70 to 75 degrees will be sufficient, with a house temperature of from 60 to 70 degrees. Prepare a sufficient quantity of fairly dry soil for potting, also a supply of tan or leaves for plunging purposes; this work will greatly facilitate operations when a general shift is given to the plants at the latter end of this, or the beginning of next, month. Pineapples will not succeed in a close, heavy, retentive soil; a light fibrous loam should be used, broken up roughly. A good mixture is as follows—to every five barrowfuls of loam, add one barrowful of oak or beech leaf-mould, half a bushel each of crushed bones and charcoal, a good sprinkling of old mortar rubbish, and well pulverised cow manure.

EARLY VINES.—Stopping the laterals will now require constant attention. Pinch the points out of the young growths two leaves beyond the fruit, and stop all sublaterals at one leaf; carefully draw away with thin raffia any growths that are near the glass, but at the same time the final tieing down, and the proper regulating of the growths must be deferred until the flowering period, when, with ordinary care, there is no risk of the shoots breaking off. Thin the bunches to the required number immediately it can be seen which are the best to select; admit air in suitable weather, and maintain a moist atmosphere until the flowering period, when drier conditions should prevail, until the berries are set.

SECOND EARLY VINES.—Give the borders a good soaking with clean water, afterwards closing the house; commence with a night temperature of 45 degrees, and from 50 to 55 degrees by day. Syringe the rods and damp down the house once or twice a day to generate a moist atmosphere. When the buds commence to swell gradually increase the night temperature to 60 degrees in the daytime.

CUCUMBERS.—Fruiting plants will be benefited by frequent top-dressings with a light rich compost, also with occasional doses of weak liquid manure, or some approved chemical stimulant; pinch the laterals at the second leaf, carefully tie in, and thin the growth sufficiently to avoid overcrowding. Syringe the plants when possible, and maintain a moist atmosphere by damping down the house several times a day. Little or no air should be given at this season of the year. Maintain a minimum night temperature of 60 degrees, and a day temperature of 70 degrees, allowing a rise of 10 to 15 degrees with sun heat. Place young plants in their fruiting quarters as soon as ready, and sow more seeds for succession.

TOMATOES.—The earliest plants will be ready for their fruiting quarters, either in pots, boxes, or borders underglass. Use a compost of three parts good loam and one part leaf-mould, with a little old mortar rubbish added. Make the soil very firm as planting proceeds. Sow a small quantity of seeds thinly in a light compost, and place in a temperature of 60 degrees. Put the seedlings into 3in. pots when fit to handle, and place near the glass. If carefully attended to these plants will supply a good quantity of fruit next June.—H. R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

SEED SOWING.—To obtain strong sturdy specimens of certain kinds of summer-flowering plants, seeds should be sown at the present time in gentle heat. Fairy Queen Begonia, Ricinus, and verbenas should be sown at once. Sow thinly, and as soon as the seedlings appear give them a position near the glass in a house with a temperature of about 60 degrees. When large enough to handle, prick them off separately into small 60's, and grow in the same temperature.

PENTSTEMONS.—Those that were rooted from cuttings in the autumn are now ready to be put separately in 60-sized pots, and if given this treatment they will make sturdy specimens by the time for planting out. Keep them in a cold frame and protect from frost during severe weather. Pentstemons can be raised from seed sown now in shallow boxes, and these seedlings will flower late in the summer, if they are pricked out when large enough, and carefully grown until planting time.

EAST LOTHIAN STOCKS.—These are very popular, and are especially useful for bedding purposes, as they make a fine display, and produce handsome flower spikes under good cultivation.

THE RECENT SNOW.—Owing to the heavy fall of snow recently experienced in many places, outdoor operations have been considerably hindered, and, unfortunately, much damage has been done to conifers and evergreen trees where it was not possible to relieve them of the weight of snow soon enough. In many cases, large limbs and smaller branches have been split off, and the resulting snags must be carefully cut back with saw and pruning knife, afterwards applying a dressing of gas tar to the cuts. In the case of cupressus, Irish yews, and other trees of a similar nature, where the branches are bent out, they must be tied back into position with strong cord or wire, but when the latter is used, it is necessary to place a pad of cloth or leather next to the branch to prevent the wire cutting into the bark.

THE SHRUBBERIES.—The present time affords a good opportunity for examining the stakes and ties of all trees and shrubs, and after the recent weather a good many will require attention. Complete planting as soon as possible, so that the soil may become well settled around the roots before the growth commences. It is well to dig or fork over the shrubberies now, but when doing this take care not to damage the roots of any of the valuable or surface-rooting shrubs. Do not break up the soil too finely, as it will crumble down later on.—J. Gardner, Batsford Park Gardens.

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# EXHIBITIONS AND MEETINGS.

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## Gardeners' Royal Benevolent Institution.

The seventy-second annual meeting of this great charity was held at Simpson's, 101, Strand, W.C., on Thursday, January 18, commencing at 2.45 p.m. Mr. Harry J. Veitch, the treasurer, presided, and there were about two dozen subscribers present when proceedings were opened.

The usual formalities finished, the Secretary, Mr. G. J. Ingram, read the annual report, which we give in abridged form:

### REPORT OF THE COMMITTEE FOR THE YEAR 1911.

The committee desire, as in former years, to express their thankfulness at having been enabled to maintain the good work of benefiting those horticulturists or their widows who, through sheer calamity and misfortune, have been obliged to seek assistance. Established in the year 1839, the charity has since that time distributed in relief no less a sum than £137,000, whilst during the past year £4,344 was disbursed in permanent assistance alone, being £150 more than in any other year of its history.

At the commencement of 1911 there were 246 persons (140 men and 106 widows) in receipt of annuities of £20 and £16 a year respectively. During the year thirteen men and ten widows have passed away, and the committee now recommend the election of twenty candidates from an approved list of seventy-one applicants. They deeply regret it is not possible to place a larger number on the funds, especially as so many poor and deserving cases must necessarily be left over for another year.

The "Victorian Era Fund" and the "Good Samaritan Fund" are still proving of the utmost value and help. The former fund is for assisting unsuccessful candidates who have been subscribers whilst awaiting election, while the latter fund dispenses temporary and immediate relief in urgent cases of trouble and distress. It may again be mentioned that the income only of these two funds is available for distribution, so that any augmentation in the way of donations to one or either of them will be gratefully welcomed.

The annual festival dinner took place in June last in the Hall of the Worshipful Company of Grocers, by kind permission of the Court. Ladies were, for the first time in the history of the institution, present, and Sir Marcus Samuel, Bart., presided, to whom the committee tender their sincere thanks, not only for his able advocacy of the claims of the charity, but for his generous contribution and personal services which resulted in the dinner being a great success. They also take this opportunity of expressing their thanks to stewards and collectors, to the donors of flowers, to the decorators of the tables, to the horticultural Press, and to other friends in all parts of the country who contributed in any way towards the satisfactory result.

The committee have again to express their indebtedness to those noblemen, ladies, and gentlemen, who have so kindly allowed their beautiful gardens to be thrown open to the public for the benefit of the funds of the institution, amongst whom may be mentioned: The Right Hon. Earl Beauchamp, Madresfield; the Lady Battersea, Overstrand; Sir Frank Crisp, LL.B., J.P., Friar Park; and E. J. Wythes, Esq., Epping. The committee have also to thank the "George Monro" Concert Committee for again allocating a portion of the proceeds of their well-known annual concert in aid of the work. Mention must also be made of the kindness of Messrs. Sherwood, Sutton, Rochford, and Monro, for their handsome donations for unsuccessful candidates. The recipients of these gifts were most truly thankful.

The committee gratefully acknowledge the services of the hon. officers of the several auxiliaries, which have been and are of such invaluable assistance to the institution. Unfortunately, the committee have to deplose the loss of a large number of subscribers by reason of death during the past year. Amongst those may be mentioned: Mr. James Douglas and Mr. James Walker, members of committee, the former having served on the board for 35 years. Both these gentlemen were whole-hearted supporters of the institution, and their presence and help will be sadly missed.

In conclusion, the committee most earnestly appeal for further support and renewed effort on behalf of this national horticultural charity. After to-day's election, there will be 51 applicants left on the list who are appealing for aid—everyone of them fully investigated and deserving cases. To help them an increased income is sorely needed, and, although the committee are deeply sensible of the generous support accorded to them in the past, they again plead for further aid to enable them to extend the benefits of the charity to those who are in so much need.

The chairman, before speaking upon the report, and when formally moving its adoption, expressed the sympathy of all members and friends of the institution with the families of the late Mr. James Douglas, and Mr. Jas. Walker. He said that the institution was making fair progress, and the income of 1911 was larger than ever before. Postages, etc., proved a heavy item, but this was due to the fact that practically all the business was done through the post. He felt sure all would agree that the institution was carried on at the least possible expense. Mr. Veitch referred to a recent meeting at Worcester, organised by the Worcester Auxiliary, attended by himself and Mr. Ingram. He said that two beautiful pieces of Worcester porcelain were offered as prizes, and Mr. W. Crump, of Madresfield, won the specimen offered in reward for securing the largest number of new members during the year; the other prize was for securing the largest amount of subscriptions and donations. Recently, from Reading, the Auxiliary there had paid in £84. The work was proceeding steadily all round, and it only needed a material increase of income to permit of increased usefulness. Mr. Harry Veitch was thanked for his past services, and unanimously re-elected as chairman and treasurer, on the motion of Mr. A. W. Sutton and Mr. W. Iceton.

Mr. George Monro moved the re-election of Mr. G. J. Ingram as secretary, and paid a high compliment to the secretary for the excellence of his work and the charm of his personality. The Chairman seconded the motion, which was heartily carried.

Messrs. W. Y. Baker, W. Crump, J. Hudson, A. Mackellar, Alderman Piper, S. M. Segar, P. C. M. Veitch, R. G. Waterman, and Edward White, were all re-elected on the Committee of Management; and Messrs. Donald Macdonald, E. A. Bunyard, and R. J. Cuthbert were elected new members in the places of Messrs. E. T. Cook, J. Douglas, and J. Walker. The auditors were duly thanked and re-elected, and an arbitration board was elected on the motion of Mr. P. Rudolph Barr.

### ELECTION OF PENSIONERS.

Messrs. F. Cooper, B. Monro, and Percy White were elected scrutineers of the ballot, and the meeting then stood adjourned for the election of pensioners. About 4.30 the result of the poll was declared, the following being declared elected: Jane Field (3,670 votes), Jas. Auton (3,501), Henry Payne (3,386), John Bolton (3,233), John Hill (3,205), Samuel McMaster (3,176), David Dunstall (3,128), Marie Baillie (3,087), Julia Baker (3,054), Maria Elworthy (3,039), Emma Lamkin (3,009), R. W. Todd (2,899), Elizabeth Goldsmith (2,823), R. J. Watson (2,677), Thomas Osborne (2,674), Thomas Frost (2,611), James Chorton (2,599), Amos J. Keen (2,563), Maria Mackay (2,561), William Hobbs (2,527), two pensioners were, under Rule III., elected by the annual general meeting, and, in addition, a grant of £20 for one year was given by Mr. A. W. Sutton, George D. Chisholm being the recipient.

On the motion of Mr. McKerchar, a cordial vote of thanks was accorded to the scrutineers, and one to the chairman.

### FRIENDLY SUPPER.

After the close of the business proceedings, a few members and friends dined, or supped, together under the chairmanship of Mr. Segar. The attendance was rather small, owing, doubtless, to the inclemency of the weather.

After dinner and the loyal toasts, Mr. Segar, in proposing "Continued Prosperity to the Institution," said they had all great reason to be proud of the progress of the charity; each year the income had increased, but so had the liabilities. In the future there would possibly be financial difficulties, and so it behoved everyone to do his best to secure additional subscribers. At present the institution had liabilities of about £4,000 a year, and from the Victorian Era and Good Samaritan funds about £500 was disbursed last year. He coupled the toast with the name of Mr. Harry J. Veitch, the treasurer, who, as he said, had been such a splendid worker for the institution.

Mr. Harry J. Veitch, in response, thanked Mr. Segar for his presence, and referred to the beginning of the institution when one candidate was elected, and after two years elapsed two more were elected; whereas today twenty candidates were elected, two others were put on, and both Mr. A. W. Sutton of Mr. G. Monro had each promised a pension for the year to very needy pensioners. Mr. Veitch pleaded for increased help, and pointed out that there were 72 candidates for the pension, and only twenty-four had been granted direct help. He hoped they would not in the future have to curtail their work because of lack of funds. It was the duty of those in whose power it lay to render assistance to those who were in great need, and this help should be given by all who had a real love for the profession of horticulture.

Mr. N. N. Sherwood, V.M.H., in a charming little speech, proposed "The Committee," and spoke of the keen interest every member took in their work, giving time and money to its advancement; and, further, the committee had a very capable and businesslike chairman in Mr. H. J. Veitch, who had also been treasurer for 26 years. He concluded by offering £20 to go to the assistance of any specially needy and deserving unsuccessful candidates. Mr. G. Monro replied, and referred to the loss of Mr. J. Douglas and Mr. J. Walker, both members of committee, the former the oldest member at the time of his death. The committee was, he was glad to say, a national one, and not a London one. Mr. Monro closed with a very kindly word for the good work of the secretary, Mr. Ingram, and the chairman, Mr. Harry Veitch.

Mr. P. Rudolph Barr proposed the health of "Our Country Friends," and paid a high compliment to the splendid work of provincial members, and especially of the Auxiliaries. With this toast were coupled the names of Mr. W. Atkinson (Sheffield), Mr. Percy White (Worcester), and Mr. L. Castle (Reading), each of whom responded appreciatingly, Mr. Atkinson expressing the hope that the forthcoming Royal International Exhibition might be such a success as to bring some funds to the institution.

The Chairman proposed the health of Mr. G. J. Ingram, the secretary, and this was accorded with the greatest possible enthusiasm. Mr. Ingram suitably responded, and the meeting concluded with "The Chairman," very ably proposed by Mr. William Iceton.

## Liverpool Horticultural Association.

The annual meeting of this society was held on Saturday at Hackins Hey, Liverpool, Mr. W. Mercer in the chair.

The report stated that the spring, rose and sweet pea, and autumn shows had been much better attended than those of the previous years, while the exhibits and competition was above the average. The statement of accounts showed subscriptions amounting to £273 6s. 6d., admissions £144 15s. 4d., and prize money £217 9s. 6d., leaving a credit balance of £152 9s. 9d., or loss on the year's working of about £20, chiefly in subscriptions. Arrangements are in hand for again holding three exhibitions during the ensuing year in the Corn Exchange.

A vote of thanks was tendered to the officers and committee for their excellent services during the past year. The election of officers resulted as follows: President, the Right Hon. the Earl of Derby; treasurer, Mr. W. F. Rogers; sub-treasurer, Mr. G. Blackmore (re-elected for the twenty-fifth time); secretary, Mr. Harold Sadler, 31, North John Street, Liverpool (re-elected). A cordial vote of thanks to the chairman terminated the proceedings.

## Southampton Royal Horticultural Society.

The forty-ninth annual meeting of the Southampton Royal Horticultural Society was held at the Audit House, Southampton, on Monday afternoon, when Mr. A. J. Day, J.P., presided, in the absence of the Mayor.

The Chairman briefly expressed his interest in horticulture, and observed that it was not altogether satisfactory that such a society, which had been in existence for nearly fifty years, did not receive more general support. Speaking of the summer shows, he said he felt that the visit of the National Rose Society would be a very great attraction, and he hoped they would have good attendances.

The annual report stated, iter alia, that the financial position of the society had improved since the last account was issued. Although a small sum was due to the treasurer, the council had been able to meet all liabilities. Although many new members had been added during the past year, a larger number of former subscribers had unfortunately been lost. The society was fortunate in having secured the present Lord Swaythling to the vacant office of president, who is taking great interest in the jubilee of the society. The rose show was a decided success financially, and the exhibits, although showing a falling off in some classes, were generally of the highest order of merit. The carnation show was seriously affected by the exceptionally dry season, which caused the absence of many usual exhibitors. The autumn show was undoubtedly the best of the season, but unfortunately the attendance was very disappointing. The council are much encouraged by the support it is receiving in its endeavours to arrange an attractive programme for the society's fiftieth anniversary. The proposed visit of the National Rose Society would be received with much satisfaction, as it would ensure the largest and most interesting exhibition of roses seen in the county. A liberal and comprehensive schedule of prizes was being prepared for the great Jubilee Show, to be held in July, and it was hoped that the above exhibitions will attract not only the best exhibitors in the kingdom, but also many visitors to the town.

Mr. E. Kemp Toogood, in proposing the adoption of the annual report, impressed upon the members and his fellow townsmen the necessity of increased support to enable the council to make the society's fiftieth anniversary a notable event in an eventful history.

On the proposition of the Chairman, seconded by Mr. Ebborn, Lord Swaythling was unanimously elected president. The vice-presidents were also re-elected, with the addition of several patrons. Messrs. Green, Moberly, and Green were also re-elected as hon. solicitors. Mr. Toogood was enthusiastically re-elected chairman of the council. Mr. A. Doggrell was re-elected vice-chairman, and Mr. A. G. Thompson was again chosen as hon. treasurer.

Another popular re-election was that of Mr. C. S. Fuidge as secretary for the fortieth year, which was on the proposition of Mr. Glasspool, who observed that Mr. Fuidge's experience was probably unique in the history of secretarial work in Southampton. Mr. F. Chandler seconded, and the Chairman supported, remarking that his own father-in-law, General Lacy, who was instrumental in founding the society, was very appreciative of Mr. Fuidge's services.

Mr. S. D. Bartlett was re-elected members' auditor, and the retiring members of the council were re-elected as follows: Messrs. F. G. Bealing, T. Hall, W. Valentine, F. Chandler, and F. Green, with the addition of Mr. H. E. Molyneux.

The meeting closed with the usual votes of thanks.

## Bickley Horticultural Society.

At the recently held annual meeting of this society, Mr. Whitelegge, of Chislehurst, gave a lecture on "Orchids," which proved most interesting and useful. Before dealing with methods of cultivation and kinds, species, varieties, and hybrids to grow, Mr. Whitelegge pointed out that the orchid family contained some 9,000 species, of which from 40 to 50 were British, while from 5,000 to 6,000 hybrids had been obtained during recent years. The order had wide distribution, examples being found in every country excepting those situated within the arctic and antarctic zones, where, up to now, they had not been discovered, and the presumption was against their existence there, as orchids seemed to congregate as near the equator as they could. Burma, India, Brazil, Central America, and East India, Java, etc., were particularly rich in orchids. Though they grew in the warmer regions of the earth, it did not necessarily follow that orchids required intense heat. The majority of orchids loved fresh air, and in the desire for that, or in their struggle for existence against other plants, they had ascended the hills and mountains, and for the most part were found at considerable altitudes, often approaching and even intruding on the frost line, a fact that should be remembered by those who cultivated them.

The order was divided into three sections, epiphytal, terrestrial, and saprophytal. The last named lived on decayed wood chiefly, and had but little floral beauty. It was practically impossible to keep them alive under cultivation, and he only mentioned them in order to show that no orchid yet discovered was parasitical, as they were popularly but erroneously considered.

Epiphytal orchids grew on trees and large shrubs, moist rocks, or in any favourable position where they could fix themselves and obtain sufficient nourishment from any decayed debris and moisture. Terrestrial orchids had usually a more or less tuber-like root stock. Most of the British species belonged to this section, of which the common orchid, Orchis maculata, was a good example. The division between the last named sections was not by any means well marked, for the two often merged into one another. Botanically the nearest allies of orchids were the lilies and iris, from which they were distinguished chiefly by the curious formation of the pollen, which, instead of being granular and dust like, as in most plants, was formed into wax-like balls, in twos or multiples of twos.

With the exception of cypripediums, masdevallias, and a few minor genera, the growth of an orchid was analagous to that of a bulb. Cattleyas were perhaps the extreme example among epiphytes, one or more bulbs being freshly made each year, the older ones, up to a certain age, acting as food reservoirs, from which they derived their name of pseudo, or false bulbs. In terrestrial orchids the same rôle held good, but the pseudo bulb was often entirely underground. In fact, if some of the British orchids were dug up in late autumn it would be seen that the last year's bulb had almost vanished, having supported the plant during the formation of the present season's tubers, which in turn would wither. In nearly every case orchids seemed adapted to exist for considerable periods without rain, as, in fact, many of them did, the seasons in their original surroundings having well defined periods of heavy rain, alternating with long, dry summer seasons. Very few orchids were difficult to grow.

## Birmingham Horticultural Society.

At a meeting held at Fletcher's Restaurant, Birmingham, on January 22, the old Handsworth Horticultural Society ceased to exist, and the new Birmingham Horticultural Society came into being. Mr. E. H. Weaver presided, and there was a good attendance.

Mr. Silver, treasurer of the Handsworth Society, explained the situation, and showed that there was a desire for a society and exhibition worthy of the great Midland city. They had £237 in hand, and properties worth £100, but to enable the new society to compete with Wolverhampton, etc., a larger income was necessary. Promises of prizes to the extent of about £100 had been received, but this was by no means sufficient. He suggested a guarantee fund, and said that if Birmingham was to rival Wolverhampton and Leamington there must be a larger financial backing.

The Lord Mayor of Birmingham (Alderman W. A. Bowater) was elected president, Mr. W. G. Griffith, deputy president, and Mr. E. H. Weaver chairman. The exhibition for 1912 is fixed for July 19 and 20, and it will be held in Handsworth Park.

## Brighton Horticultural Society.

At the annual meeting of this society, held in the Pavilion, Brighton, Mr. W. Balchin presided. The annual report showed that the net loss on the Rose and Sweet Pea Show was £95 11s. 3d. To meet the desire for economy, this show was held in the Dome and Corn Exchange, the lawns and promenade being dispensed with, but the exceptional heat proved the futility of the experiment. The Chrysanthemum Show was held at a net loss of £51 9s. 1d. This show was acknowledged to be a successful achievement otherwise than financially, and in connection with the success the committee expressed their gratitude to the firms who so materially enhanced the show by their magnificent non-competitive exhibits. The loss on the year's working amounted to £43 2s. 4d., compared with £51 15s. 3d. in 1910, £76 19s. 11d. in 1909, and £64 18s. 3d. in 1908. With regard to the financial aspect of the society, the committee was at first prepared to advise what seemed to be the only solution of the difficulty, viz., the "winding up" of the affairs of the society. However, the President suggested the formation of a guarantee fund of about £50, as an experiment for next year, himself offering £10, and promising to appeal to his friends who were interested in horticulture. In addition, he suggested the election of a smaller committee, willing to become guarantors for £2 individually. The balance-sheet stated that the cash at the bank on January 1, 1911, was £1 1s. 11d., the deposit account £50, and the cash in hand £2 19s. 6d. The subscriptions amounted altogether to £194 18s. 6d. The gate receipts at the Rose and Sweet Pea Show were £56 3s. (first day), and £37 5s. (second day); and at the Chrysanthemum Show, £50 10s. 6d. (first day), and £68 15s. 5d. (second day). The receipts at the Rose and Sweet Pea Show were £112 15s., and at the Chrysanthemum Show £185 1s. 2d. The expenditure on the shows was respectively £208 6s. 3d. and £236 10s. 3d. The cash at the bank on December 31, 1911, was £11 19s. 10d. The rules were slightly altered in accordance with the findings of the report, and then the officers were elected as follows: President, Alderman Colman, J.P.; chairman, Mr. Balchin; treasurer, Mr. George Miles; vice-chairman, Mr. Frank Woollard; secretary, Mr. A. J. Gaston; members of committee (elected by ballot), Messrs. Steers (42 votes), Tebbs (41), Shrubsole (36), Pelley (34), Pratt (31), Howell (29), Greenfield (24), G. A. Miles (24), and Watson (24). In the course of the election of officers, Mr. George Miles thanked the society for the honour they had conferred upon him by allowing him to hold the position of chairman for so long. It was his jubilee in connection with the society, and he had without exception had something to do with the shows for fifty years. He had to give up the position of chairman, and thanked them for giving him a little to do to keep in touch with the society as treasurer. At the close of the meeting a vote of thanks was accorded the chairman.

## North of Scotland Hort. and Arb. Association.

The third lecture of the 1911-1912 series, under the auspices of this association, was given in the Botany Classroom, Aberdeen University, on Wednesday evening, 17th inst., by Mr. J. G. White, head gardener, The Orphanage, Aberlour. The subject was "Vegetables and Fruits: Their Dietetic Value." There was, as usual, a very good attendance, the president, Mr. John McKinnon, head gardener to the Earl of Aberdeen, Haddo House, occupying the chair. To illustrate his lecture, Mr. White had on view some thirty-two different varieties of common garden vegetables, all grown in the north of Scotland. Commencing with the classification of the ordinary vegetables into the classes, pulses, roots, and tubers, green vegetables, etc., Mr. White detailed their qualities both from a dietetic and medicinal point of view. Although not a Scotsman himself, he upheld, he said, the Scottish oatmeal for purposes of diet, and humorously remarked that the old saying, "Waterloo was won on the cricket field," should have been with more truth, "Waterloo was won on the breakfast table." Scientists agreed that in vegetables and fruits there were all the elements necessary to supply the needs of the human system. The diet of vegetarians who abstained from flesh meat of every form, proved the truth of the statement. The dietetic value of onions was perhaps greater than that of any other vegetable. Coming to deal with fruits, Mr. White said the great advantage of a fruit diet lay in the fact that the work of the digestive organs were greatly lessened. The consumpton of fruit per head at the present time was greater than ever before. People were beginning to understand that the food value of fruit was very high. It was not merely a luxury, but a health-promoting form of sustenance. Apples especially were now much in demand, as proved by the enormous quantities imported into this country.

At the close a short discussion followed, and several questions were asked by members relating to potatoes, and some of the other vegetables mentioned in the lecture, all of which were satisfactorily answered. A hearty vote of thanks to Mr. White, on the motion of Mr. C. S. France, concluded a most instructive evening.

## Reading Gardeners' Association.

The opening meeting of the present session took place in the Abbey Hall, Reading, on Monday, the President, Mr. F. B. Parfitt, occupying the chair. On this occasion a departure from the usual fortnightly lecture on a strictly horticultural subject was made, as, through the kind intermediacy of Mr. T. J. Powell, head gardener to Mrs. Noble, of Park Place, Henley-on-Thames, Mr. W. Marshall, the well-known photographic artist, of the famous Thames-side town, had kindly consented to display his unique collection of "Direct Colour Photographs" to the members of the association and their friends. A very large and appreciative gathering of those connected with the association was present, including, in addition to the President, the vice-president (Mr. Leonard Sutton) and Mr. and Mrs. E. P. F. Sutton. The audience was augmented by an invitation extended to the Reading Natural History Society, about twenty members with their president (Mr. W. E. Butler) being present. Several of the horticultural students from the University College were also among the company.

A few business formalities, including the election of six new members, having been disposed of, Mr. Marshall at once proceeded to display his lovely pictures. He informed the audience that the views were almost entirely taken in the grounds of Sir Frank Crisp, Friar Park; Mrs. Noble, Park Place; and Mr. C. J. D. Eveleigh, Wilminster Park, all in the close neighbourhood of Henley-on-Thames. The photographs were taken on autochrome plates direct from the flowers, and the exactitude with which the varied shades, both in the colours of the flowers and their foliage, were depicted, together with the wonderful accuracy of detail which appeared in the beautiful trees, evoked the wonder of all present, who showed their appreciation by unstinted applause. Many beautiful views in the grounds of Park Place, showing its charming water garden and wealth of lovely forest trees, were thrown upon the screen, while the wonderful rock garden with its replica of the Matterhorn, together with pictures of the topiary and water gardens, formed the subjects of a number of pictures taken at Friar Park. From Wilminster came many beautiful scenes, and in particular may be mentioned those showing bulbs, narcissi and tulips naturalised on a wild slope where previously nothing could be induced to grow. A number of miscellaneous subjects included many charming sunset and cloud effects, and pictures portraying autumn tints.

A hearty vote of thanks, proposed by Mr. Leonard Sutton, and seconded by Mr. Drew, with which the president also associated himself, was accorded Mr. Marshall for having so kindly provided such a delightful entertainment.

## Horticultural Club.

On Tuesday, the 23rd instant, this club held its usual monthly dinner at the Hotel Windsor, Mr. Harry J. Veitch occupying the chair, and a good number of members and guests being present. After dinner Mr. Chas. E. Pearson gave a very interesting lecture on "Birds' Eggs: Some remarks on the Evolution of Colour," illustrating it with a large number of beautiful lantern slides depicting the nests and eggs of many birds rare and otherwise, and also clutches of eggs minus nests which are laid among stones and under other conditions where their peculiar colour renders them all but indistinguishable from their surroundings. Mr. Pearson broached the theory that all birds' eggs were primarily white, as are those of the lizard and other reptiles, from which undoubtedly the Birds have been evolved. In course of time, what may be termed accidental variation led to natural selection of types, which happened to be protective, and eventually in this way a great variety of colouration was brought about, which in these days is exemplified by collectors by innumerable types so beautiful and so brilliant in tint and design as to render them marvels of evolutionary development. Cases of such examples were exhibited both by the lecturer and by Mr. Percy Bunyard, another expert in the cult, which, though only relating to two species of marine birds, the Guillemot and the Herring Gull, represented the cream of many hundreds of eggs collected from many sources, every one differing markedly, and most of them so brilliantly and variedly pigmented as to fully justify the enthusiastic admiration of everyone. The question of the protective character of this colouration seems, however, in many cases to be an open one, though the fact that the eggs of birds of prey, which lay their eggs in inaccessible places, usually have white eggs, of what Mr. Pearson considered the primary type, speaks somewhat in its favour, as did also a number of slides to which we have alluded, where the eggs were laid amongst waterworn stones which they so closely imitated as to be discovered on the screen with difficulty. It was also mooted in the course of the discussion which followed the lecture, and was participated in by Messrs. P. Bunyard, E. Bunyard, W. R. Darlington, and others, that old birds are prone to lay less highly coloured eggs than are young ones, losing the power of pigmentation to a greater or less degree. Apart from the variation in the eggs themselves, the different modes of construction and situation of the nests, as depicted on the screen evoked considerable interest, as did numerous interpolated anecdotes of bird and egg colecting and photographing experiences at home and abroad.

A hearty vote of thanks concluded a pleasant and instructive function.

## Bristol Gardeners' Association.

A largely-attended meeting was held on January 25, at St. John's Parish Rooms, presided over by Mr. A. Perry. Mr. Strugnell, gardener to Walter Long, Esq., gave an interesting lecture on "Hardy Fruit." The lecturer said the effects of the summer of 1911 left many and varied impressions. Many trees suffered, and some totally collapsed in soils of light texture. There would be no mistake about the ripeness of the wood this season. Speaking on the colouration of fruit, Mr. Strugnell said it was chiefly set up by sun and vapour. The following are a few hints given by the lecturer: Protect fruit blossom by the use of branches of yew, etc.; use lime rubble liberally for peach trees, also ashes from garden fires; mulching is a good practice, except on heavy lands; train gooseberry bushes on wire trellises, and enclose the whole with netting; where raspberries are unsatisfactory, a change of stock or varieties is advisable.

For three table plants, Mr. Jennings was first, and Mr. Bastin second. Two new members were elected.

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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

DIMORPHOTHECA HYBRIDS.—E. P. R., Malvern: The dimorphotheca hybrids offer a considerable range of colour, and all are beautiful. We saw a small batch flowering last year, and were struck by their grace and general attractiveness. There was a rumour to the effect that the hybrids had been derived from Dimorphotheca aurantiaca, fertilised by the pollen of the common Pot Marigold; but probably the latter was confused with the Cape Marigold (Dimorphotheca pluvialis), a white flowering species, which has no doubt combined with the handsome D. aurantiaca to produce the new race. The hybrids are half-hardy annuals, and when they are raised in gentle heat, each plant should be potted separately as soon as it can be easily handled, otherwise there will be losses when the time comes to transfer the plants from boxes to the border or the rock garden.

JAPANESE LILIES.—K. W., Waterford: The present is a capital time to obtain Japanese lily bulbs, as large importations are arriving, and it is always very desirable to pot up the bulbs or put them in boxes as soon as possible after importation. Except in very favourable circumstances of soil and climate, it is not a good plan to plant newly-imported bulbs straight away where they are to bloom. A better plan where a number of bulbs are to be placed in a bed is to put the bulbs in boxes in suitable soil, and keep them dark and free from frost until growth begins; by this time the weather and soil will be favourable for planting, and the bulbs, already nicely rooted, may be put out without harm. Use leaf-soil freely in the compost.

DAMPING OF FERN PROTHALLI.—"W. T." writes: Under "Answers to Correspondents" (page 82), the damping of fern prothalli is explained, and the remedy given. Having had a considerable experience in raising ferns from spores, a few notes may be of interest to your correspondent. Damping is far more likely to occur when the spores are sown too thickly, which, from their exceedingly minute character, is very liable to happen in the case of a beginner, and, for the matter of that, to old hands as well. Some ferns, too, are far more liable than others to damp off in this way. One of the worst is the popular Australian bracken (Pteris tremula), and as soon as it is attacked the disease spreads with great rapidity. Directly a pot of prothalli shows signs of damping I find the only course to save the remainder is to prick them off into fresh soil. This soil must be sterilised before use, otherwise insects and vegetable pests will often do a good deal of damage. Pots five inches in diameter are a very suitable size for pricking off these small prothalli. or, if preferred, pans may be used. In any case, ample drainage must be provided, and the pots then filled to within an inch of the rim with the prepared and sterilised compost. Next, some of this soil is passed through a sieve with an eighth of an inch mesh, and the remaining space to the rim of the pot made up with this fine soil. While the coarser compost should be pressed down moderately firm, that on the top must be levelled, but left as light as possible. Having prepared the pot or pan in this way, a small skewer-like stick, with the pointed end slightly flattened, should be obtained, and with it a very small tuft of the healthy prothalli taken up, and transferred to the pot, which has been prepared for its reception. As the soil is very light this small cluster of prothalli may be pressed into its place with the finger, and, if carefully done, no injury will result. A space of a quarter to half an inch should be allowed between each tuft, and when the pot is finished it should be watered through a very fine rose, using tepid water for the purpose. This will settle everything in its place, and the growing prothalli will extend and fill up the intervening spaces. I have sometimes pricked them off three times before the least signs of fronds were visible, and have consequently obtained a very large number from a single pot. When the pots are prepared for pricking off the prothalli some cultivators prefer to water the soil before transferring the little tufts into their new quarters, but, having given both systems an extended trial, I much prefer the first-named plan. In carrying it out only one pot at a time should have the fine soil put on the top; otherwise, if several are prepared at once the compost becomes too dry and the pricking off then is not so satisfactory.

PROTECTING CHOICE TULIPS AND DAFFODILS.—M. E. H., Bedford, whose daffodils are now pushing through the soil, inquires as to the best means of protecting these flowers and tulips from spring frosts. Daffodils and tulips are so hardy that, except in the case of some rare species of the latter, they do not need protection for the purpose of saving their lives, but some protection is often desirable, especially in a season when long continued open weather has induced early growth, and it is followed by severe frost. Sharp frost has the effect of stunting the advancing growths because under its influence the hard surface soil grips the developing stem very hard. This trouble may be guarded against by laying heather, furze, or birch twigs over the beds or borders containing daffodils and tulips, but the protecting material must be lightly laid on, or it will "draw" the plants up. A good layer of cocoanut-fibre refuse is also a good protection.

GLAZED FROST.—M. J., Streatham, and E. R., Weybridge, write asking for an explanation of the term "glazed frost," which phenomenon was mentioned in a recent issue as having occurred at Wisley: A glazed frost such as that experienced at Wisley and in the metropolitan district on January 18, is of somewhat rare occurence. It is caused by the falling of rain at a time when the temperature is below freezing point, and the result is that leaves of evergreen shrubs, twigs, arches, etc., are covered with a film of water that freezes as it settles, and if rain continues to fall for some time during the frost all the wetted surfaces become coated with a film of clear ice, this film varying in thickness with the position of the leaf or twig, and the amount of rain and frost. On the morning of January 18, the "glazing" varied from the merest icy film up to a thickness of two-tenths of an inch. Although glazed frosts are rare in this country they are fairly common in many parts of America and France, and it need hardly be pointed out that such frosts sometimes do a great deal of harm.

EDIBLE AND POISONOUS FUNGI.—C. P., Doncaster, is anxious to obtain an inexpensive book with coloured illustrations of edible and poisonous fungi: You can obtain a booklet entitled "Edible and Poisonous Fungi," from the office of the Board of Agriculture, Whitehall Place, London, S.W., for 1s. This contains coloured illustrations and descriptions of twenty-five species, and is a very useful little work.

NEMESIAS FOR POT CULTURE.—J. S. S., Hitchin: The seeds of nemesias should be sown now to provide flowering plants for conservatory decoration by the end of May or early June. Sow thinly, just covering the seeds with sandy soil, and place in a temperature of about 60 degrees; prick off the seedlings as soon as they can be handled, and eventually pot each plant separately, growing them in a light greenhouse or warm frame, where ample ventilation in good weather and a position near the glass will produce good results.

### NAMES OF PLANTS.

S. S., Tenby.—Zygopetalum Mackeyi.

W. H., Ongar.—Zygopetalum Mackeyi.

T. R. C., Alnwick.—1, Cypripedium Hera Euryades, a good form; 2, Asparagus verticillatus.

G. P. R., Abingdon.—1, Linum trigynum; 2, Begonia fuchsioides; 3, Curculigo recurvata; 4, Sarracenia Drummondi.

B. E. S., Ilfracombe.—1, Ruscus racemosus; 2, Cissus discolor; 3, Buddleia asiatica; 4, Primula floribunda; 5, Cycas revoluta.

R. E. W., Buckley.—1, Fittonia argyroneura Pearcei; 2, Acacia cultriformis; 3, Primula frondosa; 4, Iris stylosa; 5, probably Selaginella Emileana; 6, Cotoneaster horizontalis.

## GARDENING ENGAGEMENT.

Mr. George Carver, for the past thirty years gardener to the late Mrs. Fenwick, Allerton Hill, Chapel Allerton, Leeds, has been appointed head gardener to C. F. Ryder, Esq., The Grange, Scarcroft, near Leeds.

## METEOROLOGICAL OBSERVATIONS.

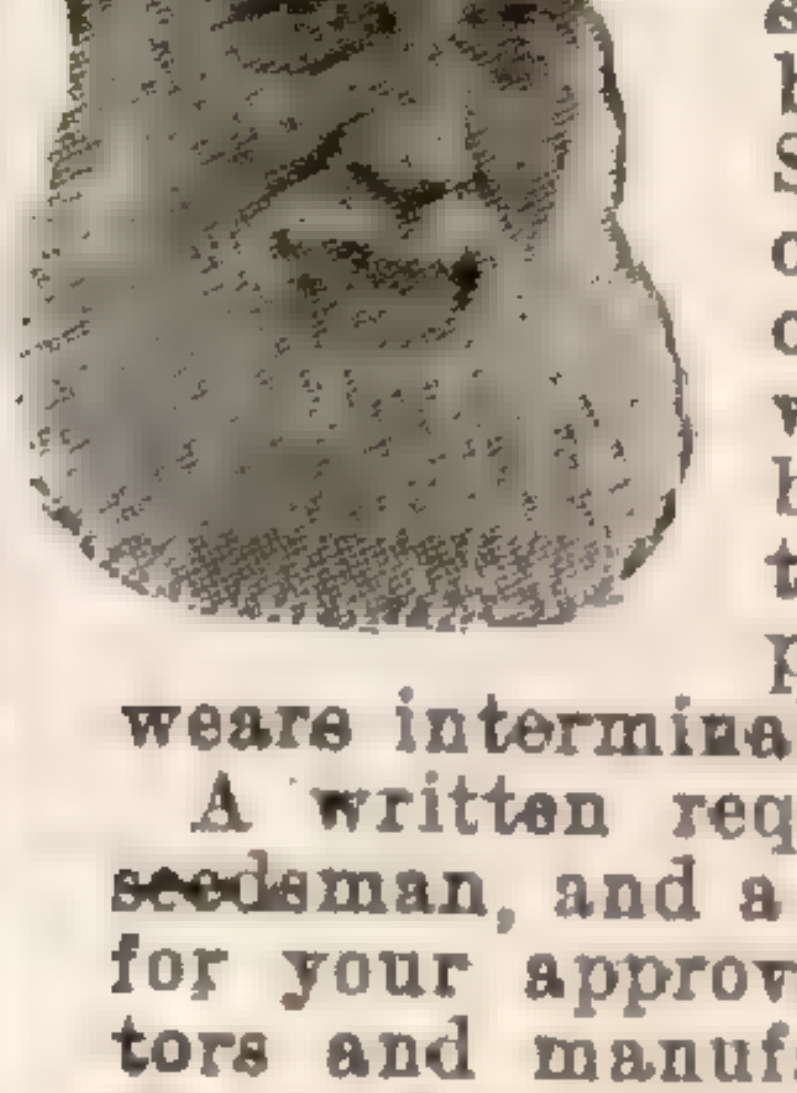
TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. JANUARY 21 TO JANUARY 27. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Jan. 21—Sunday ...... | — | 43 | 41 | 43 | 43 |
| ,, 22—Monday ...... | — | 37 | 37 | 41 | 36 |
| ,, 23—Tuesday ...... | — | 40 | 40 | 42 | 37 |
| ,, 24—Wednesday.. | 0 12 | 38 | 38 | 46 | 38 |
| ,, 25—Thursday .... | — | 38 | 38 | 39 | 37 |
| ,, 26—Friday ........ | — | 38 | 37 | 40 | 34 |
| ,, 27—Saturday..... | 2 24 | 33 | 31 | 36 | 31 |
| Means | (total) 2 36 | 38 | 37 | 41 | 36 |

| DATE. 1912. JANUARY 21 TO JANUARY 27. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Jan. 21—Sunday ...... | 0·01 | 42 | 42 | 45 | 34 |
| ,, 22—Monday ...... | 0·14 | 42 | 42 | 45 | 35 |
| ,, 23 Tuesday...... | 0·41 | 42 | 43 | 45 | 37 |
| ,, 24—Wednesday.. | 0·45 | 42 | 42 | 45 | 36 |
| ,, 25—Thursday.... | 0·07 | 42 | 43 | 45 | 33 |
| ,, 26—Friday ........ | trace | 41 | 42 | 45 | 26 |
| ,, 27—Saturday .... | — | 39 | 42 | 45 | 21 |
| Means ... | (total) 1·08 | 41 | 42 | 45 | 31 |

A slight fall of snow was observed on Saturday morning, January 27.



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## THE DECLINE OF BIG CHRYSANTHEMUMS.

There is this difference in the arguments used by Mr. Wells and myself on this subject. I give facts, names of tried exhibitors who have retired from the exhibition arena, and who we all deplore; while Mr. Wells indulges in sarcasm and ingeneralities about those to come into the front rank.

I was not alluding to the one great show only, that of the N.C.S., but to shows all over the country where the leading growers are in the habit of competing; the reports of the various shows tell whether my fears were well grounded or not. I hope he is correct in his suggestions that there are plenty of new men coming on; never was the almost worn-out, yet true, saying, "Wait and see," better applied. I did not say there were as many shows twenty years ago as there are now; but I think it is true there are not so many now as there were a few years ago. If there were not so many, but a little more concentration of societies into one centre in many districts, we should see finer displays. I doubt, however, if the local shows in any neighbourhood could present as fine a display as was the case a few years ago.

When these now departed giants took part in the more concentrated shows, good prizes were a strong stimulant, and we could see dozens of the leading varieties of both sectons, instead of the few now used to meet vase-class requirements, which are not a success in any way. Mr. Wells makes much of the Reigate Show held last year, and implies that, from it I should learn who were the young and rising competitors coming on to take the place of "the few old exhibitors." I quite feverishly searched the reports in the GARDENERS' MAGAZINE, which so ably gives a lucid description of all important shows, but, lo and behold! I could not find a mention of this magnificent display! I turned to three other leading contemporaries for this desired information, but with no better success! Mr. Wells must in the future see that this show on which he sets so much store for argument is duly reported.

There is one paragraph with which I find Mr. Wells and myself are quite in accord, that relating to the vase classes, and in which he invites those who would banish the boards from the tables to try their hand at vase class competition, and honestly note the result in the GARDENERS' MAGAZINE. I am glad to notice Mr. Wells's closing remark anent the large number of orders he is receiving for Japanese varieties. The public are evidently hoping for a return to the board classes, which certainly provides one way of giving a filip to the extended growth of big blooms.

E. J. MOLYNEUX.

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This new addition to the list of annual publications associated with gardening differs appreciably both in plan and purpose from those with which we have for so long a period been familiar; and presenting a highly attractive appearance, and being well stored with useful information on the various details of garden practice, should attain to a high degree of popularity among amateur gardeners.

The two hundred odd quarto pages of which the book consists are filled with articles relating to the several aspects of garden management, and illustrations of plants, fruits, and flowers, and beautiful garden scenes, the latter being numerous, and, with the text, are of a high order of merit. To indicate the scope of the work, it may be mentioned that the text includes lightly written essays on annuals, bulbous plants, carnations, dahlias, hardy azaleas, pæonies, roses, sweet peas, water gardens, water lilies, flowering shrubs, orange trees, winter salads, etc. There is also a comprehensive and admirably arranged calender of work in the garden and greenhouse for each month of the year; also a series of tables of hardy perennials for growing in sunny and shady beds and borders, annuals both hardy and half-hardy, biennials, and perennials, that can be readily raised from seed, vegetables that can be grown to maintain a supply all the year round, and a host of other data specially prepared to assist the beginner in gardening.

The "Amateur Gardening Annual and Year Book" is in every way a publication of much merit, and is admirably adapted to the requirements not only of amateurs of some experience in gardening, but also of those who are turning their attention to gardening as a relaxation from the ordinary affairs of life, and need such information as will enable them to become conversant with the many details that the cultivator must be acquainted with before he can achieve a high degree of success in cultural methods. Not only is information throughout the work thoroughly sound, but it is given in a style that is at once bright and fresh, and therefore free from the dullness which characterises so many books on gardening. It is an excellent shillingsworth, and the general body of amateurs will do well to give the book their immediate attention.

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## FORTHCOMING ENGAGEMENTS.

MONDAY, February 5.—National Chrysanthemum Society's Annual Meeting, Carr's Restaurant, Strand, W.C., at 7 p.m

TUESDAY, February 6.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "Plants of Fiji and other South Sea Islands," by Sir Everard im Thurn; Scientific Committee at 4 o'clock.

WEDNESDAY, February 7.—National Amateur Gardeners' Association Bohemian Concert, Holborn Restaurant, 7.30 p.m.

THURSDAY, February 8.—Manchester and North of England Orchid Society.

FRIDAY, February 9.—Royal Gardeners' Orphan Fund Annual Meeting and Election at Simpson's Restaurant, Strand, at 3 p.m. Friendly Dinner at the same place, 6.30 p.m.

THURSDAY, February 15.—Croydon Gardeners' Association, Annual Dinner, Greyhound Hotel, 7.30 p.m.

## CATALOGUES RECEIVED.

AMOS PERRY, ENFIELD, MIDDLESEX.—In this seed list flower seeds only are offered; and these are of perennial hardy plants, including many new and uncommon species not usually offered.

FISHER, SON, AND SIBRAY, LIM., HANDSWORTH NURSERIES, SHEFFIELD.—A useful, illustrated catalogue of vegetable and flower seeds and of bulbs for summer and autumn flowering.

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G. COOLING AND SONS, BATH.—A comprehensive list of seeds and bulbs; collections of vegetable and flower seeds at stated prices are a feature.

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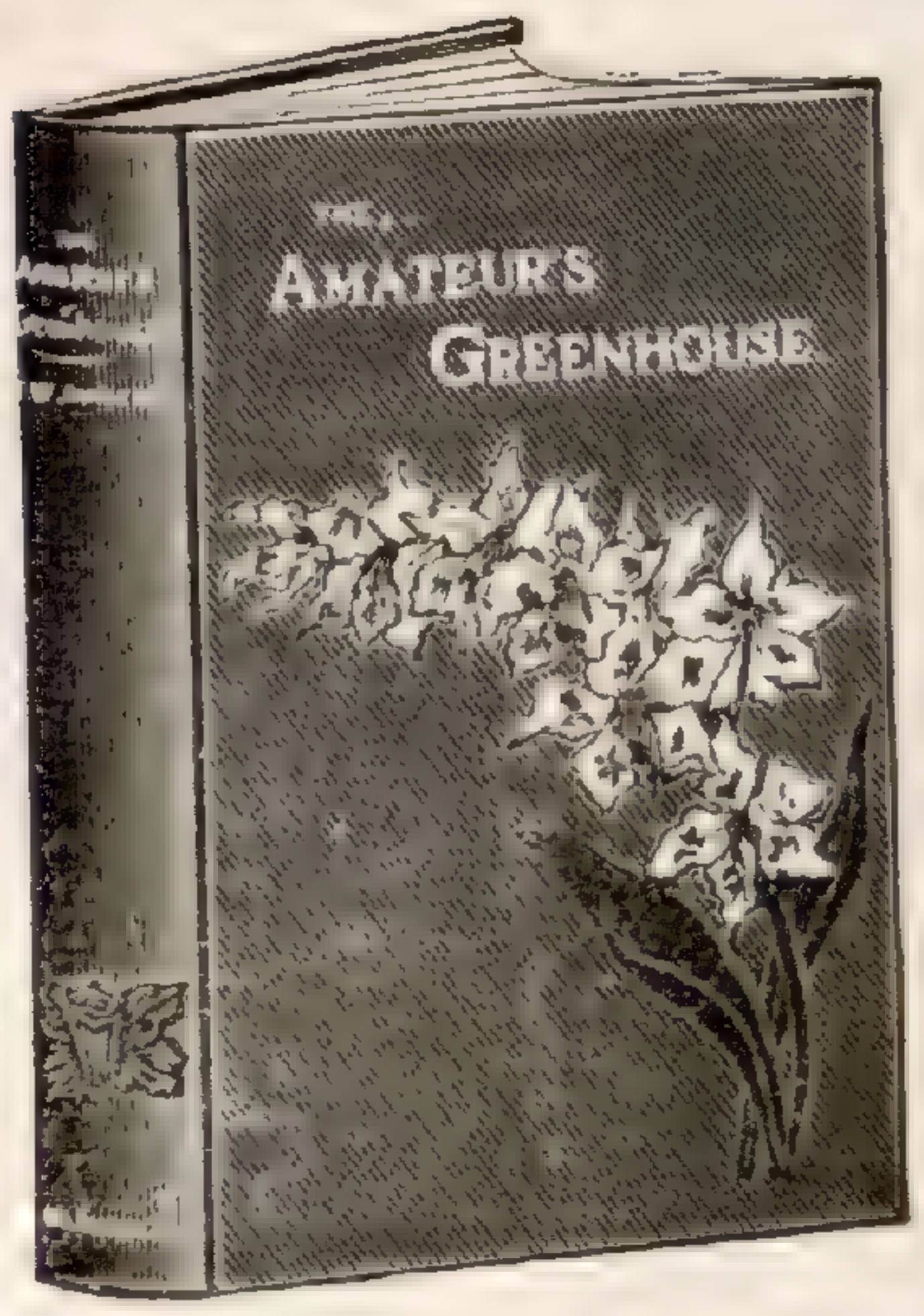

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GARDENER (Head) seeks SITUATION where two or more are employed; age 36; married, no family; life experience, Inside and Out, Roses and Carnations; excellent references. J. SMITH, 2, Lyncombe Vale Farm, Bath.

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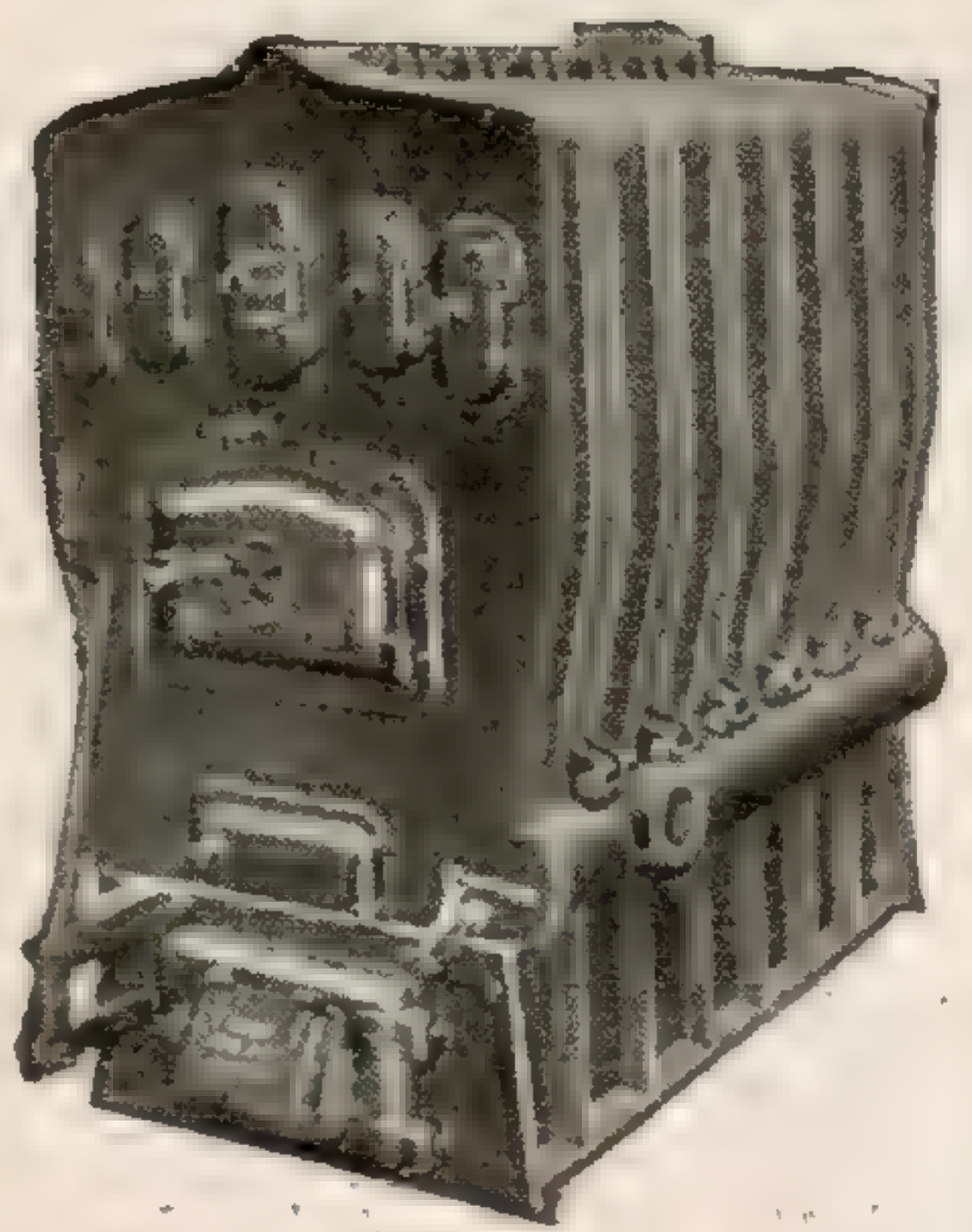

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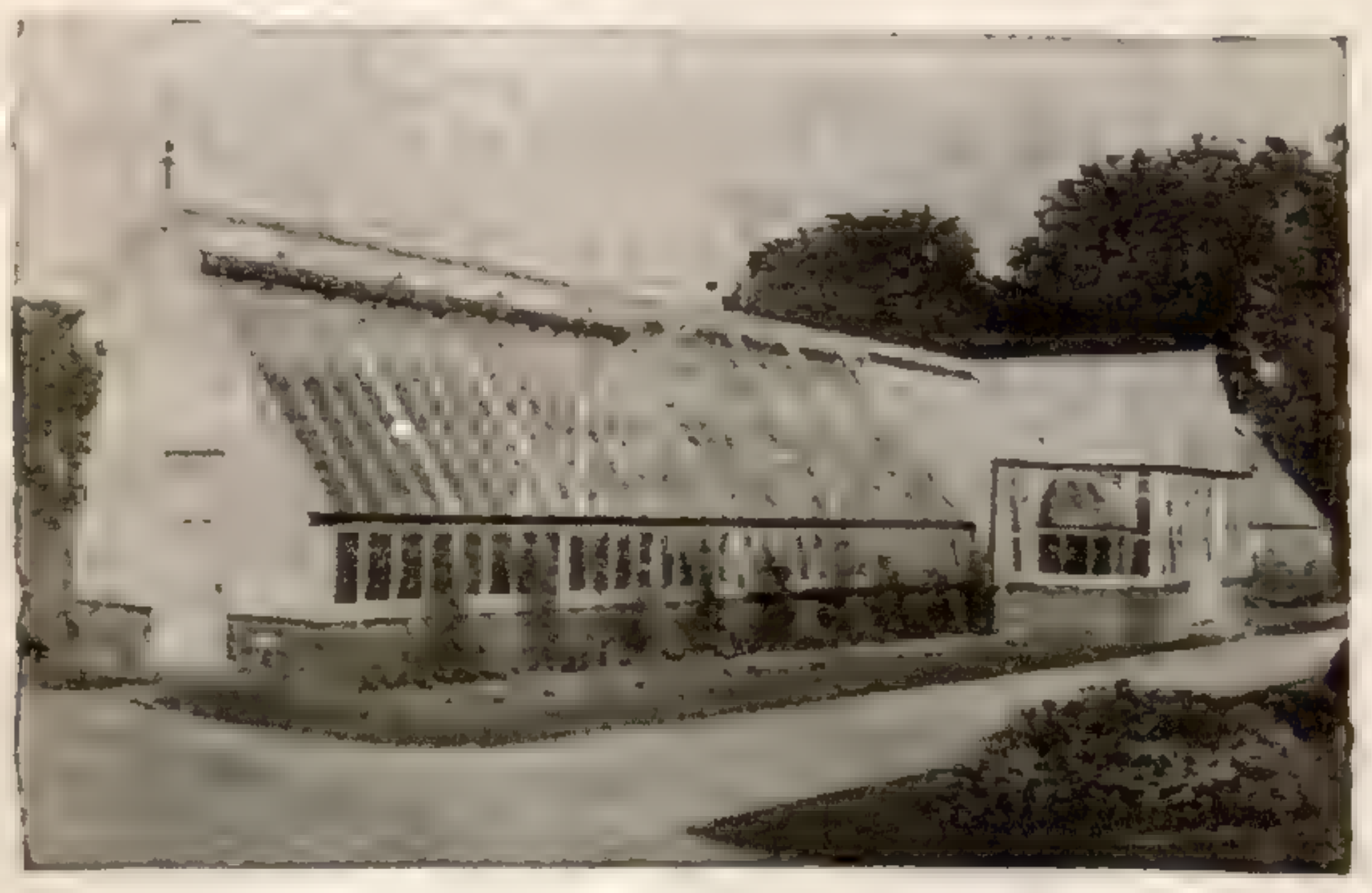

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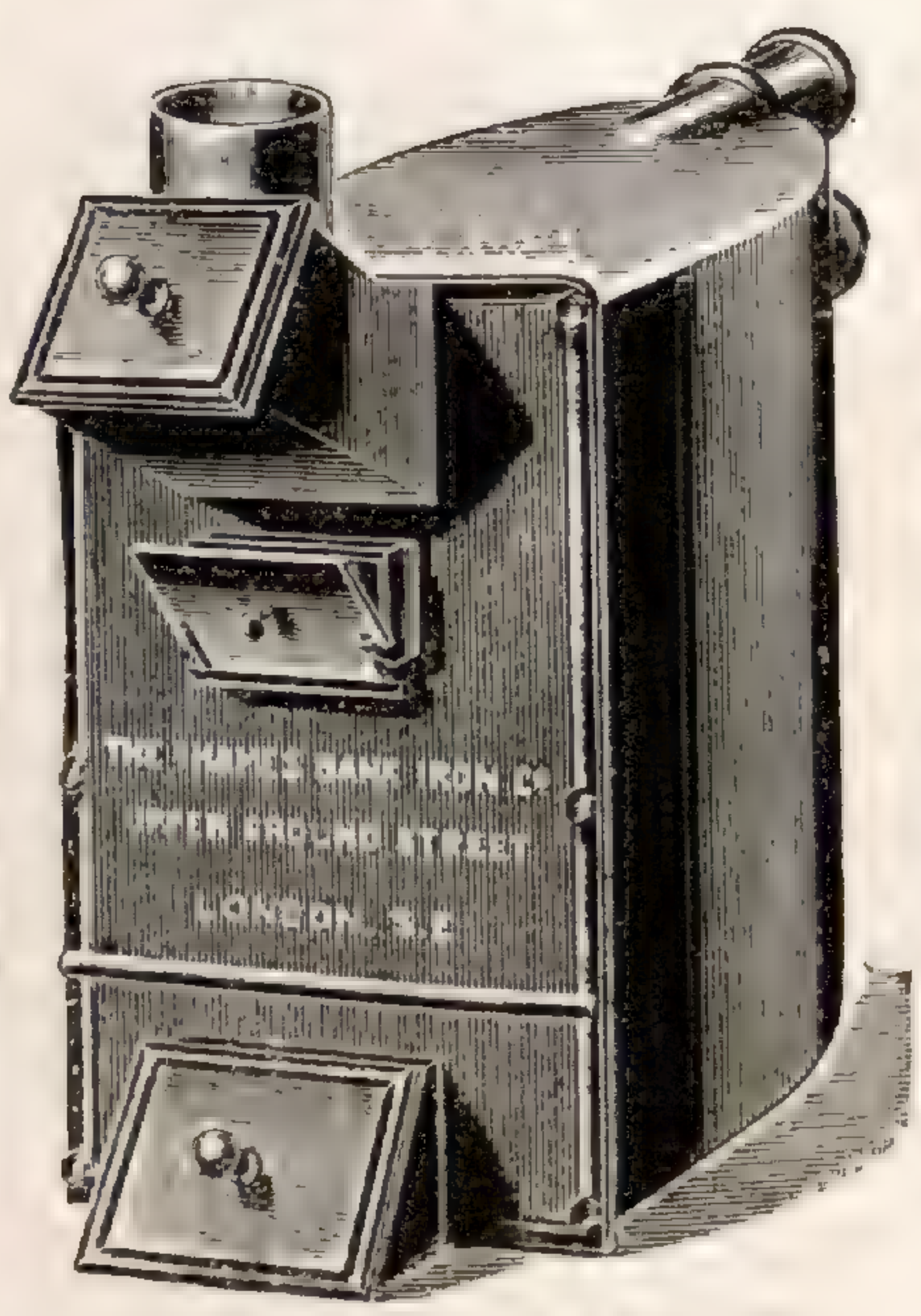

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VOL. LV.—No. 3,041. SATURDAY, FEBRUARY 10, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### A Splendid Record.

The report that will be presented by the Council of the Royal Horticultural Society to the Fellows assembled in annual meeting on Tuesday next will be found of quite exceptional interest, not only to those who are more or less closely associated with the work that has been accomplished at Westminster and Wisley, but to all who are in any way concerned with horticultural progress. It is now many years since the annual reports of the society have been otherwise than of a satisfactory character; but the report to which reference is now being made is especially gratifying from the fact that it marks the completion of the first quarter of a century of a strictly horticultural regime, and affords ample evidence that the policy initiated in 1887 has been an unqualified success. The success achieved by the society during this period has indeed been so great that it can hardly have failed to far surpass the anticipations of the most sanguine of those who unhesitatingly engaged in the task of rehabilitating the society, and placing it in a position worthy of its traditions, and of a country that, as a centre of horticultural enterprise, has no superior in any part of the world. There is no occasion to recount the history of the Royal Horticultural Society during the quarter of a century that immediately preceded its quitting the South Kensington Gardens, or to discuss the position in which it was when it made Westminster its headquarters. Suffice to know that the history of the period mentioned, however lightly told, would not be particularly pleasant reading, and it has not yet been forgotten that when the society obtained a new home its fortunes were as low as they well could be. Remembering how great were the difficulties that had to be contended with in 1887 it is pleasant to turn to the report and balance-sheet for the year ended December 31 last for the purpose of obtaining official information with regard to the position of the society at the present time. A mere glance at the balance-sheet is sufficient to show that during the past twenty-five years the Council have been able to invest £52,383 10s. 9d.; but to be able to fully appreciate the care and judgment that has been shown in the administration of the finances, it is necessary to remember that a new hall has been built and furnished at a cost of upwards of £43,000, and that a sum of nearly £12,000 has been expended on the equipment of the Wisley Gardens. Not less satisfactory is it to know that there were, at the end of last year, 12,839 Fellows, associates, and societies in affiliation, or a gain of 796, as compared with 1910, and that the annual subscriptions amounted to £17,965 12s., or an increase of £1,336 13s. Possibly some of our friends might be of the opinion that the Council are investing too large a proportion of the income annually, but, so far from being in agreement with such opinion, we feel that it would be an immense advantage to the progress of horticulture were those responsible for the management of horticultural societies generally to show a similar degree of prudence in the administration of the funds at their disposal. In the case of local societies it is not always possible to avert disaster by building up a substantial reserve fund during years of prosperity; but in the majority of cases a moderate reserve fund will enable the society to tide over an unfavourable period, and again proceed with its work with the vigour necessary to obtain useful results. There has been no lack of vigour in the manner in which the work of the society has been conducted during the past year, and there are to be new developments during the present one. The first of these is the exhibition of daffodils, which will be held in April, and the second the exhibition of orchids in November, this latter being arranged for the purpose of demonstrating beautiful and highly interesting plants. The bulb, fruit, and vegetable shows, which formed such useful and interesting features during 1911, will be repeated, and there will consequently be no lack of competitive gatherings at the Royal Horticultural Hall, apart from those that will be held by special societies. There will not be any show in the gardens of the Inner Temple, owing to the great International gathering taking place in May, but the summer show will again be held in the grounds of Holland House, and will extend over three days instead of two, as on former occasions.

MR. JAMES PULHAM.

The Fellows, and, indeed, all who are interested in the welfare of the society, will be much gratified in learning that the loss on the Olympia show in July last was but trifling. The conditions under which the experiment was made of holding a summer exhibition at Olympia could not well have been less favourable, for the temperature was abnormally high, and the sunshine so intense as to spoil the beauty of the cut flowers by the close of the first day, and to prove trying to visitors. Much good work has been done at Wisley during the year, and of special importance has been the construction of the extensive rock garden, including a small bog garden and a miniature moraine by Messrs. Pulham and Son. This garden covers what was formerly a rough grass-grown hill above the water lily pools in the south-west corner of the old garden, to which it will, when planted, make a most attractive addition. It is pointed out in the report that the garden is not designed to afford the most artistic arrangement of stonework, so much as to provide a suitable home for rock and alpine plants. A more suitable home for the denizens of alpine regions it would be difficult to obtain, for it is just such a home as Nature has provided in various parts of the Alps of Southern Europe, plus greater facilities for growing a representative collection in a given area than is found in natural rock gardens. This department has been placed in charge of a foreman, having a special knowledge of rock gardening, and there is full justification for the belief that when the garden has been fully furnished it will form a feature immensely attractive and of much importance educationally. The experimental work at Wisley is being greatly extended, and, in consequence of the increased demands it is making upon the time of the Director of the Laboratory and the necessity for his constant presence in the garden to watch experimental work, the Council have had a house built for him in the gardens and appointed an assistant lecturer. It is also satisfactory to learn from the report that the library which is now under the direct control of the Council, received a full share of attention during the year, and that about 300 volumes, involving an expenditure of between £800 and £900 were, on the advice of the Library Committee, purchased. It will thus be seen that the Council, while taking care of the profits resulting from the work in which the society is engaged, have given the fullest attention to the several branches of the society's activities, and maintained the whole of the departments in a high degree of efficiency.

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**Mr. James Pulham,** whose portrait we have the pleasure of giving in this issue, is the leading member of the old-established firm of Messrs. Pulham and Son, who, for at least half a century, have enjoyed a high reputation for the great excellence of their varied activities in beautifying gardens. The firm has, indeed, been so long established that they might well claim to be the pioneers in the art of naturalistic rock and water garden scenery, and also of formal garden craft carried out in the Pulhamite and all kinds of natural stone. The well-planned and tastefully-arranged rock garden, if produced with a true conception of the teachings of Nature in her most charming aspects, is one of the most delightful and interesting adjuncts to a garden with some pretension to versatility, and will afford an abundant return for the cost of construction and the time devoted to its management. It is surprising what can be accomplished in the improvement of the scenery of the garden and the attractions of its environment when a full acquaintance with the essentials of success in the formation of rock gardens and the necessary taste are forthcoming. In not a few instances, the Messrs. Pulham have been able to show how the aspect of some part of the garden may be changed, and a quite new and attractive feature be developed by a simple method of procedure. As for example, by the removal of a hedge and the transformation of the ditch on the outer side into a running brooklet, with rocky margins and waterfall, and spanned by a miniature bridge, or approached by picturesque stepping stones, a pleasing feature in which both rock and moisture-loving plants may be so combined as to produce a charming effect, and afford much to interest the plant lover. We mention this as evidence of the versatility of Mr. Pulham's taste, and as showing that he is not less successful in the construction of rock and water gardens where the area available is limited than in carrying out elaborate designs in great gardens. This versatility of taste is also shown in the skill with which the design is adapted to the environment and the special purpose the rockery or water garden is intended to serve. The number of gardens in which the Messrs. Pulham and Son having during the past fifty years constructed rock gardens, and formed, or greatly improved, lakes and streams are so numerous that it would require much space for the mention of any considerable proportion of them. It must, therefore, suffice to say that examples of their work may be seen at Aldenham House, Buckingham Palace, Batsford Park, Battersea Park, Lockinge, Preston Park, Sandringham, Newport, Welbeck Abbey, Glenart Castle, Co. Wicklow, The Dell, Englefield Green, Bawdsey Manor, Waddesden Manor, and Worth Park. Among the more recentwork that has been carried out has been the enlargement of the lake and water course, with a series of waterfalls, at Beaudesart for the Marquis of Anglesea, the construction of rock and water garden, lake and balustrade of terrace garden at Thornby Hall, Northampton; terrace gardens, balustrade, steps, fountain, etc., at Ardross Castle, under Mr. E. White; rock and water garden, with waterfalls and pools at Stanmore Hall; and a new terrace garden at The Node Welwyn. In addition to these works is the construction of the rock and water garden in the gardens of the Royal Horticultural Society. This garden has an area of nearly two acres, and, as we have already intimated, is not less remarkable for the judgment and taste shown in its design and construction than for its large area. As tasteful design and utility have been happily combined, the garden will long be regarded as a model of what a rock garden should be, irrespective of its area, and Mr. Pulham, who is assisted in the various branches of the business by his sons, may be heartily congratulated on the success achieved.

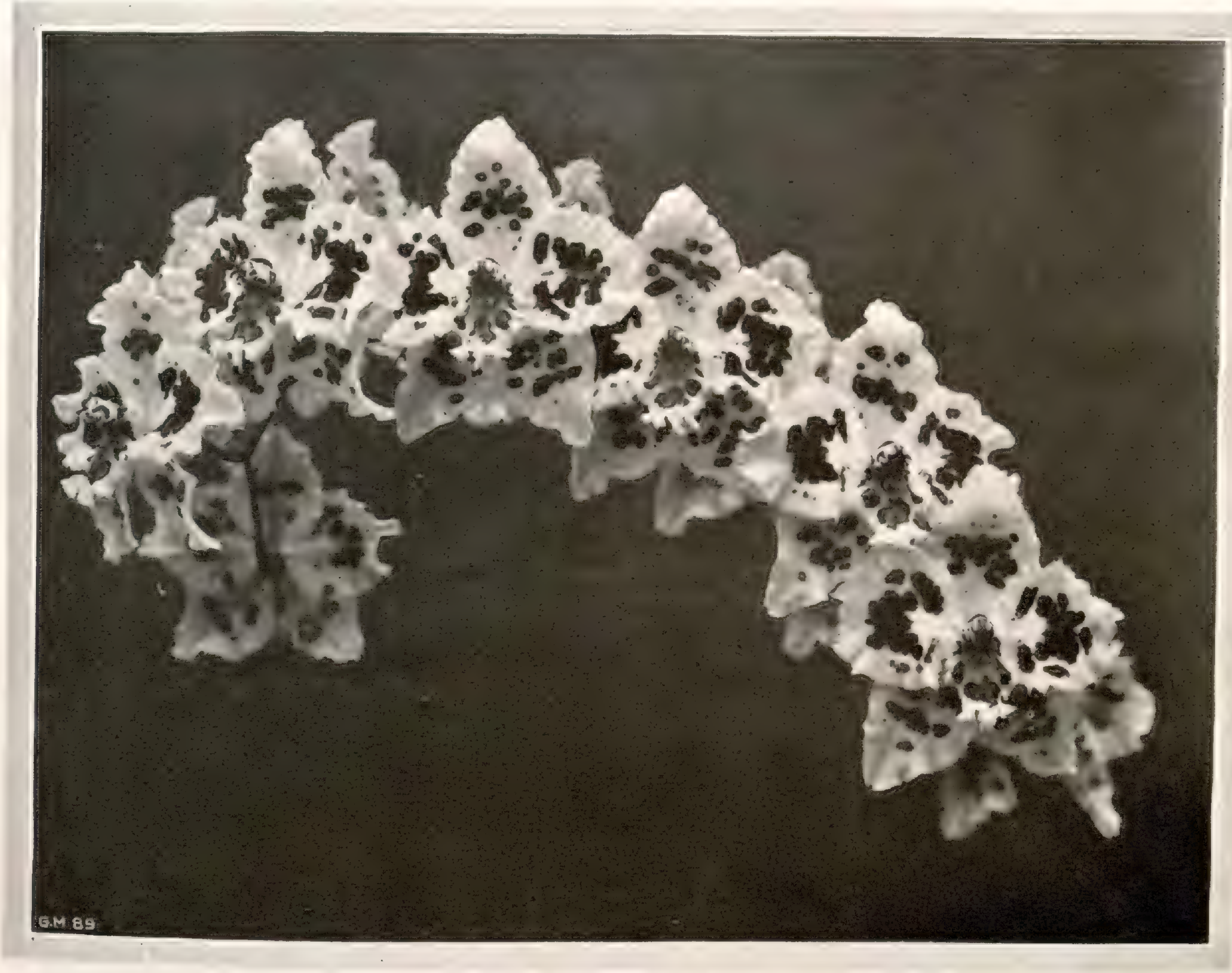
**Interest in the International Horticultural Exhibition.**—Great interest is being manifested in the forthcoming exhibition by Continental horticulturists. A proof of this is afforded by the fact that the secretary of the Société Nationale d'Horticulture de France, M. Abel Chatenay, paid a visit to London on the 30th of last month, and interviewed the directors on the subject of arrangements for the French exhibits. Invitations to attend the Exhibition have been distributed over the whole world, and official representatives of all foreign countries and of every Colony have been invited to the various functions and conferences. Since the issue of the last published list of presentation cups and other special prizes the directors have been informed, through Mr. James Whitton, one of the secretaries for Scotland, that the city of Glasgow will offer a silver cup for the best exhibit of hardy trees and shrubs suitable for planting in congested areas. The question of the suitability of various trees for cultivation in densely-populated towns possesses great interest for every park superintendent, and for all who are engaged in public gardening. Arrangements for the social functions in connection with the Exhibition are nearing completion, and the Reception Committee, through the chairman, Sir Albert K. Rollit, has presented its report to the directors. The Right Hon. W. Runciman, a member of his Majesty's Government, will attend and speak at the lunch to be given in the Exhibition grounds on the opening day to the members of the jury and administration.

**The Scientific Interest in Sweet Peas.**—Mr. T. H. Dipnall, M.A., writes, in answer to Mr. Cuthbertson: "My authority for stating that 'if you cross the exceptional members of a coupling system you reverse the system of their progeny' will be found in a paper 'On the Inter-relations of Genetic Factors,'" by W. Bateson, F.R.S., and R. C. Punnett, published in the Proceedings of the Royal Society, B, Vol. 84, 1911. In the "Sweet Pea Annual" of 1912 will be found, under my name, a review—or, rather, an epitome—of this paper, and another by the same authors, in which this question of coupling and repulsion is treated.

**The Late Sir Joseph Hooker.**—The current issue of the "Kew Bulletin" (No. 1, 1912) is of special interest; for, in addition to various contributions of scientific value, it contains a full and admirably-written biography of the late Sir Joseph Hooker. This biography extends over thirty-four pages, of which one-half are devoted to an enumeration of his writings during his long and remarkably active life. With reference to the position occupied by this distinguished botanist, the writer observes: "It is to his contributions to the field of botanical philosophy that Hooker largely owes his place in the roll of fame. His floristic work, though done with the hand of a master, is, after all, work that, if not done as well, might still have been done by others. But the philosophical papers, which commence with his share in the introductory essay to the "Flora Indica," in 1855, and end with his sketch of the vegetation of India in 1904, are those in which stand revealed the teacher we have lost." A feature of these philosophical contributions which arrests the attention and compels admiration is the style in which they were written.

**Potato Culture in Western Australia.**—The Government of Western Australia placed an order with Messrs. Sutton and Sons for 165 tons of seed potatoes, to be shipped to the Western State of the Commonwealth. The selection was made with the greatest care under the direct inspection of the British Board of Agriculture. The first consignment of 30 tons was despatched by the ss. Masunda. The object of this importation is to improve the type of potato grown in the State and to secure immunity from disease. Potato growing is an expanding industry in Western Australia, and great care is being taken, both by the grower and the Government, to prevent contamination by disease. The Capel district is one of the best for the cultivation of potatoes in Western Australia, and it is stated by the State Agricultural Commissioner, Mr. J. M. B. Connor, in a recent official report, that the south-western portion of Western Australia enjoys the distinction of being the only part of the Commonwealth in which absolutely clean potatoes can be procured. We learn that the balance of the order—viz., 135 tons—was shipped for their long voyage, on board the steamer "Jeanara," on Monday, February 5. The tubers, after being carefully examined and handpicked by Messrs. Sutton's staff, were specially packed in boxes (in expressly-prepared material), with a view to the protracted journey, each box containing 1cwt. of seed potatoes. The total consignment therefore consisted of no fewer than 3,300 cases. This is not the largest potato order exported by Messrs. Sutton. A year or two back an order for as many as 336 tons of one variety was executed for South Africa.

**Honorary Fellows and Corresponding Members of the N.C.S.**—At the annual meeting of the National Chrysanthemum Society, Mr. G. L. Caselton, superintendent of the gardens at the Crystal Palace, and for many years a member of the Executive Committee; Mr. George Gordon, V.M.H., Editor of the Gardeners' Magazine, member of the first General Committee of the National Chrysanthemum Society; Mr. W. Howe, member of the Executive Committee since 1897, and member of Floral Committee since 1898; Mr. George Langdon, member of the old Stoke Newington and Borough of Hackney Societies, and member of Executive Committee from 1883 to 1903; and M. Philippe de Vilmorin, Paris, were elected Honorary Fellows, while Dr. Chifflot, Lyons; Mons. A. Nonin, Paris; and Mons. Rodrigues, Biarritz, were elected as Corresponding Members of the society.



ODONTOGLOSSUM MERLIN.
Flowers white, with crimson markings. F.C.C., R.H.S., February 6. Lieut.-Colonel Sir George Holford.

**Winter Flowers at Kew.**—Just now, when the gardens are frost bound, and a biting easterly wind makes the inspection of outdoor plants anything but a pleasant pastime, it is a pleasure to turn into No. 4 house at Kew, where, in a comfortable temperature, an abundance of flowers are to be seen. A few days ago we made a note of the chief subjects in bloom, and now give the list as it may be useful to those who have conservatories to keep gay at this season. Among forced flowers there were double peaches and cherries, and pyruses, the old Kerria japonica fl. pl., tulips, daffodils, hyacinths, jonquils, and lily of the valley. Shrubby plants included a variety of heaths and epacrises, Sparmannia africana, Chorizemi illicifolius, Buddleia asiatica, Correa alba, Daphne indica, Indian azaleas, camellias, Abutilon megapotamicum, Polygala myrtifolia, eriostemons, Acacia longifolia, Jasminum primulinum, and cestrums. Besides all these there were batches of Primula chinensis, P. malacoides, P. obconica, and a few P. floribunda, with cyclamens, quantities of perpetual carnations, Begonia manicata, B. semperflorens gigantea, B. Gloire de Lorraine and its varieties, B. Gloire de Sceaux, arums, cinerarias, poinsettias, bouvardias, amaryllis, lachenalias, the Kew wallflower (Cheiranthus Kewensis), Coleus thyrsoideus, Eranthemum pulchellum, Centropogon Lucyanus, Impatiens Oliveri, Eupatorium Purpusi monticola, Erlangea tomentosa, Calceolaria Burbidgei, Peristrophe speciosa, Senecio petasites, and the bright and curious Strelitzia Reginæ.

**Gardeners' Tickets for the Royal International Horticultural Exhibition.**—Particulars of the reductions the International Exhibition authorities allow in the case of professional gardeners who obtain their tickets beforehand have already been published. We are now asked by the hon. Press secretary (Mr. R. Hooper Pearson) to state that application forms for these cheap tickets have been sent to the various county secretaries. As the tickets are available for the use of bona fide gardeners only, full particulars must be furnished to the secretary, and the tickets obtained before the opening date of the exhibition. All who have the requisite qualifications should apply at once to the secretary for the county in which they reside. The secretary will then send a form, which the applicant must fill up and return to him. Any delay may lead to disappointment.

**The Sweet Pea Annual** for the current year has been issued to the members of the National Sweet Pea Society, of which it is the official publication; and, as in the case of the previous issues, it is remarkable for its interest and usefulness to cultivators of sweet peas. The contents include articles on "Genetic Coupling and Repulsion," by Mr. T. H. Dipnall, M.A., which will be of interest to those who concern themselves with the scientific aspect of raising new sweet peas; "Life on a Californian Sweet Pea Ranch," by Mr. Frank G. Cuthbertson; "Sweet Peas in the Lake District," by Mr. F. J. Harrison; a report of the conference held on the occasion of the annual meeting; an audit of the National Sweet Pea Society's exhibition; an account of the several outings of the members; and many other matters relating to the work accomplished in 1911. The book is freely illustrated, and especially noteworthy among the illustrations is that of a Californian sweet pea farm.

**"George Munro" Concert.**—We would remind our readers that the 16th annual concert, under the direction of Mr. George Munro, V.M.H., of Covent Garden, in aid of the gardening and other charities, will be held at Queen's Hall, Langham Place, on the 15th inst. Last year the sum of £43 was distributed among charitable institutions; the Gardeners' Royal Benevolent Institution receiving £12 12s., the Wholesale Fruit and Trades' Society £8 8s., and the Royal Gardeners' Orphan Fund, £2 2s. The programme is an excellent one, and tickets may be obtained from Mr. H. Baker, 42, King Street, Covent Garden, London.

## CHRYSANTHEMUM MRS. G. RUNDLE.

I was very pleased to read the notes on Chrysanthemum Mrs. G. Rundle from your correspondent "S. W." because I look upon it as one of our most useful decorative sorts. In the late seventies it was a popular incurved form, but the advent of the modern type soon consigned such varieties to oblivion as far as our exhibitions were concerned, but one is pleased to know that it is still appreciated for decorative effect, and still finds a place in our gardens. It is also largely cultivated for Covent Garden market, and would be still more so if the buyers would pay the same prices for incurved as they do Japanese blooms. Strange to say, although the buyers appreciate the incurved flower, they evidently think these are easier to produce; the cultivator thinks otherwise. For market work ten to twelve blooms per plant will finish off well, in fact, almost as well as the old orthodox three flowers did. As a decorative sort it fails somewhat, owing to the weakly stem, but after Mr. P. Craggs advice to use superphosphate in such cases, I have no doubt it will be utilised with good effect. It is a perfect little gem for wreaths and other floral designs. I have not seen Mrs. Dixon or George Glenny for some years, but the former I know is still to be obtained.

What a pity it is the N.C.S. does not institute a class or classes for these little gems. Now that this body is trying to popularise the anemones and pompons, we may hope that the Rundle family will receive the recognition it deserves. Another old variety, Mr. Bunn, now practically out of cultivation, is of the same type, a beautiful golden yellow. The Dalston Chrysanthemum Society has a class for this variety in memory of one of its old members, and it is generally well filled. The growers there tell me they get the best flowers by growing seven to nine blooms on a plant; they then finish off well, with little or no dressing.

J. B. Riding.

## ANNUALS IN ROSE BEDS.

The late Mr. Wildsmith, when once complimented on the fine display of annuals he had in the garden, and asked what he did to secure such marked success, replied: "I give the plants the same care and treatment that I bestow on crops of more value, or supposed to be of more value, such as roses, and the more expensive bedding-out plants."

Annuals, well grown, are very beautiful indeed, and during the past few years much more attention has been given to them than formerly and by more cultivators. Undoubtedly, the unsatisfactory condition of annuals, as seen in many gardens, has been caused by lack of attention on the part of the cultivator. If seedlings are raised in boxes and allowed to become spindly before they are transplanted; or if those in the open beds are not thinned and cared for, the plants cannot be satisfactory at their flowering stage.

Half-hardy annuals should be raised in pans, pots, or boxes in a mild heat. I have found that the plants are more valuable when so raised and given a fairly long period in which to grow before they are finally put out than when raised later on and subjected to a higher temperature.

The seeds of hardy annuals should not be sown too early, or the resultant seedlings will be checked, and then the very best could not be expected of them.

The late Mr. Wildsmith grew many annuals in the rose beds at one time, and I did so after learning of his success. Of course, no one would think of growing these or any other kinds of plants among roses which are being grown for the production of exhibition blooms. In small beds the annuals should be confined to the outer portion. In large ones, clumps of annuals may be grown all over them, but not to such an extent as to cause overcrowding; and, furthermore, the annuals themselves must be thinly disposed; one plant, so grown, is far more effective than half-a-dozen in a crowded state. I will not refer to cultural details here, but simply name a few annuals that are very charmingly grown among roses. Half-hardy—Asters, stocks, zinnias, celosias, marigolds, Nicotiana affinis, Phlox Drummondi, godetias, early sown mignonette. Hardy.—Candytuft, Clarkia elegans rosea, Chrysanthemum Burridgeanum, Eschscholtzia californica, Limnanthes Douglasi, Nemophila insignis, saponarias, Phacelia campanularia, and Shirley poppies.

Geo. Garner.

## ROCKERY PLANTS OF EVERGREEN HABIT.

Alpines of evergreen habit, as also plants that are not, strictly speaking, alpines, but that are universally recognised and employed as rockery plants, play an important part in rendering this indispensable feature of the garden attractive in winter. Visitors to Kew Gardens and other public parks and gardens cannot fail to note that a good deal of colouring is to be found amongst the plants under notice, and apart from the numerous shades of green which alone form an interesting study, purple, silver, grey, crimson, and bronze colouring is represented in subjects while in undress uniform.

The delightful Gentiana acaulis presents a cheery and fresh appearance in winter, and one need not dwell upon the beauty and rare colouring of its flowers. Iberis gibraltarica supplies us with great sheets of greenery, and the same applies to the aubrietias and arabises, not forgetting the variegated forms.

It is true that the armerias have grass-like foliage, and this is very pronounced when a dense colony is formed. They, however, contribute their quota of life in the dull season. One or two of the hardy heaths arrest attention in Erica cinerea alba, Foxi, and minimum, and then we have the woolly Thymus languinosus and the rampant Muhlenbeckia complexa, which is capable of converting a large boulder or tree bole into a thing of beauty within a comparatively short period. Megasea cordifolia and others give us ruddy colouring, their bristling flower bracts forming an additional charm. The trailing veronicas as V. saxatilis and gentianoides, also the alpine pinks, are invaluable, while Arenaria balearica hides all traces of flat boulders. The edelweiss (Gnaphalium leontopodium) is attractive by reason of its silvery foliage, and another brilliant foliaged subject is seen in Galax aphylla.

It is superfluous to sing the praises of the saxifragas and sempervivums. The first-named is finely represented in S. sancta, S. rotundifolia, S. aizoon, S. muscoides, S. hypnoides, S. Wallacei, and S. aizoon var. paradoxa, while sempervivums in S. arachnoides, S. Reginæ, and S. triste are first-rate for our purpose. The above is not intended as an exhaustive list, but each and all should be represented by bold groups in the rockery in order to ensure life and beauty when winter is upon us.

Walter H. Aggett.

## FRUIT CULTURE FOR MARKET IN AMERICA.

The feature of the annual meeting of the Ulster Fruit Growers' Association, held at Portadown a few days ago, was a lecture delivered by Sir Frederick Moore, Curator of the Glasnevin Botanic Gardens.

Sir Frederick's lecture was entitled "The Cultivation of Hardy Fruits for Market Purposes in the Eastern Portion of the United States and Canada." When visiting the eastern districts of the two great North American countries, one of his chief objects was to discover what was being done in the development of the hardy fruit industry. In this connection the Irish growers could hold their own fairly well with the Americans. Their average fruit-grower was quite on a par with the average fruit-grower in America. If in Ireland they were going to live as fruit-growers it was only by conducting the industry on the best lines that they could hope to succeed. If fruit-growing was judiciously and carefully done it would pay, and he had not the slightest doubt as to the future success of apple-growing. In the United States and Canada the fruit-growers worked on a co-operative system, and they thought that without co-operation there was a poor chance for the future. They felt inclined to work more and more on that system, and to bring co-operation into every branch of industry. Irish growers sometimes said they could not compete with the Americans, who had better climatic conditions. As a matter of fact, they were fighting against the brains and skill of the Americans, and they could never succeed as apple-growers unless they adopted a system that would give them the best results. A paying orchard was invariably a cultivated orchard. The grass orchards were the second-rate orchards. In the fruit-growing districts of America he travelled for miles through orchards, every one with the surface cultivated. The ground was kept stirred up with cultivators two or three times a year, and the sole crop was apples. The best cultivators all said that for best-class produce open ground was necessary, and, notwithstanding that labour was so dear, they were able to compete successfully with the Irish fruit-grower.

One of the reasons for that was the enormously larger crop they were able to get from the same amount of ground. He was struck with the symmetry of the trees in the orchards in America. Thinning the branches or pruning was extensively practised there, and was encouraged by the Government. Most of the big growers pruned their trees twice a year. In all the fruit-growing districts thinning was done extensively, scientifically, and intelligently by men who had made a study of it. In Ireland it was often said that spraying was not worth doing. That was not the opinion in America. There it was one of the essential things, and one of the things that the Government had done its best to promote. American fruit-growers strongly recommended farmyard manure as best for the fruit trees, and with that they used wood ashes. They manured their young trees, and helped them along so as to get results as quickly as possible.

There were several strong fruit-growers' associations in America, and they had a central association, where the district associations met together to discuss the various problems that arose in different parts of the country. He was assured that great progress had been made through these associations for the mutual benefit of the fruit-growers. Drastic regulations were drawn up for dealing with farmers who neglected their orchards, and so contributed to the propagation of insect pests with which the intelligent fruit-growers had to contend. That was the fruit-growers' suggestion for their own protection, and the Government adopted it. The Americans were opposed to autumn planting, and were strongly in favour of spring planting as being much more likely to bring good results.

# CHINESE PRIMULAS.

There are many species of primulas that have come from China, and the hardy kinds form a most interesting group, but when a gardener speaks of Chinese primulas he almost always refers to the varieties of P. sinensis. These form a group of plants varying in colour from white to deepest crimson and purple; in habit from the dwarf, densely-flowered heads of the older florist's forms, to the tall, elegant, and free-branching Star primulas; and in form from the small stellate flowers up to the doubles and the giant-flowered varieties with exquisitely-frilled blooms. Not only have the seedsmen improved the size, form, and colouring of the primula, and varied their habit, but they have secured varieties which are identical, save that one has dark stems and leaves, and the other pale green ones; or one has plain foliage of the ordinary type, while the other has elongated rather than palmate leaves, and these crisped along the margin in such a way as to suggest the title of Fern-leaf.

SINGLE CHINESE PRIMULA CORAL PINK.
A distinct and beautiful variety raised by Messrs. Sutton and Sons with flowers of a charming shade of pink.

But all this variation—a variation so considerable that practically all tastes are now catered for—has not been brought about by chance or in a short time. One has only to visit the nurseries of Messrs. Sutton and Sons, at Reading, at this time of the year to understand all that is meant by patient care, quickness to detect minute improvements and variations, and skill in cultivation. The Reading firm has always occupied a foremost position as raisers and growers of Chinese primulas, and every effort is made each year to enhance that position. Besides the big blocks of catalogued varieties there are scores of selections and cross-breds, all occupying valuable space, but all showing evidence of a forward policy.

It is by means of these selections that new, vigorous and improved stocks of certain varieties are produced in a few years, and this improvement may be in substance, form, colour, or habit. With rare exceptions, the Reading primulas are practically re-made every few years. The firm knows quite well how to re-create each variety, and so, as the years proceed and the parents of a given variety show improvement, that variety is re-produced in better form than previously. For instance, supposing such a thing were possible that the famous Duchess primulas were entirely lost, seeds and plants destroyed; it could be raised over again by effecting a certain cross, and in two or three years would be offered for sale again. The records of the various crosses made, and the results accruing therefrom are systematically and most carefully kept, and when these records are not in actual use they recline in a safe, away from possible harm.

It was in 1873 that Messrs. Sutton and Sons took up the work of improving primulas, and they had but few varieties to work upon. Nevertheless the work was carried on with skill and judgment, and in 1879 the firm received a certificate from the Royal Horticultural Society for a variety named Ruby King, and within ten years had secured no fewer than seven similar awards. In more recent times other honours have fallen to the Reading primulas, but outstanding novelties, like the Duchess, new forms, like the Star series, or distinct colours, are far more difficult to obtain now than they were thirty years ago.

The popularity of Chinese primulas shows no decline, and though perhaps fewer plants are grown now than formerly for early winter flowering—due possibly to improvements in the varieties and culture of chrysanthemums, easy methods of forcing, etc.—larger numbers are cultivated for flowering early in the new year, when their brilliant colouring and handsome heads of bloom render them particularly suitable for conservatory or room decoration, either alone or in association with early forced bulbs, ferns, and palms. In 1874 the Messrs. Sutton and Sons saved five ounces of primula seed in their own nursery, and this was regarded as a large amount in those days, and the experiment began in 1873 was considered to be amply justified. We may assume that primulas are twenty-six times more popular now than in 1873 because whereas five ounces of seed was then a large amount, the firm now annually saves about 130 ounces, this amount varying a little according to the weather experienced during January, February, and March, bright weather always ensuring the best "set" and the finest crop of seeds.

Regarding varieties not much need be written, especially as the Messrs. Sutton have reproduced six popular sorts in colour in their new catalogue, and the latter is sent on application to prospective customers. The Reading primulas fall into four groups, i.e., single, double, giant, and Star varieties, the latter group being again subdivided into ordinary, double, and giant flowered forms.

Taking the groups in order of mention, an excellent half-dozen varieties would be The Duchess, white, with a carmine zone round the orange eye; Crimson King, deep vivid crimson; Coral Pink, a lovely form, which sweet pea enthusiasts would probably describe as cream-pink; The Czar, deep purple-violet; Reading Blue, of fine habit; and either Pearl or Royal White for a white variety. From among double varieties the scarlet, pink, and white forms are of the finest quality, and wonderfully useful; while Double Duchess is extremely effective, and Double Salmon Pink gives a shade of colour that is especially desirable in late winter.

The giant race has been evolved at the expense of fertility, and in this group it is quite possible that the limit of size and substance of blooms has been reached—at least, it seems that if larger flowers could be obtained these would yield no seeds, as under present conditions seed saving is a difficult matter among the giants. But they are a noble set, and if they do require a little more warmth and attention than the others, these are well repaid by the magnificence of the plants when in flower. Giant White, Giant Royal White, Giant Crimson, Giant Salmon Pink (a wondrously beautiful and effective primula), and Giant Pink, are a good set.

The Star varieties are immensely popular because of their taller and more graceful habit of growth, and because of their adaptability for cutting and for house decoration. In point of popularity the original White Star, with white flowers over dark foliage, has not yet been beaten; White Queen Star gives flowers of greater substance; Pink Star, and both Light Blue Star and Dark Blue Star, make excellent companions to the white varieties; while Ruby Star gives a welcome glow of rich colour. Double Star varieties are now offered in mixture, and there are Giant Star forms, with white, ruby, or carmine flowers, the blooms being much larger here than in the typical Star primulas.

Although Chinese primulas provide the great feast of colour and beauty at Reading just now, filling many houses and exciting wonder at the skill of the cultivator as well as the skill of the raiser. There are other displays of note, and these include a splendid lot of cyclamens, probably the finest lot that even Messrs. Sutton and Sons, have produced. The varied colours of these useful flowers and the freedom with which they are produced make it quite certain that cyclamen culture will not abate for long years to come. The firm has also a first-rate strain of Primula obconica, the plants strong and vigorous, the flowers large, and the colours distinct and good.

**Lantanas.**—Last year, when the summer was wet and cold, the different lantanas proved in many places to be among the most satisfactory of summer bedding plants, and this year, with quite opposite summer conditions, they have been equally satisfactory. That the very hot weather experienced during the present year has been in their favour can be fully understood, for in many parts of the tropics lantanas are among the commoner weeds, growing luxuriantly, and flowering with great freedom. Of those employed for bedding in this country the most generally met with is Lantana salviæfolia, far better known, however, as Lantana delicatissima. The flowers of this have been during the present season unusually deep in colour. This lantana is generally seen as dot plants over low-growing subjects, and in this way some of the other varieties are very effective. They are, however, like heliotropes, inasmuch as a bed may be planted entirely with them, dwarf and tall plants being grown in association. Of the bright scarlet forms, Incendie is one of the best, being free growing and profuse flowering, while two especially good dwarf growing varieties are Chelsea Gem, bright crimson and amber; and Drap d'Or, orange-yellow.—W. T.

# MANURES AND MANURING.

## Important Points for Gardeners.

Fertilisers that are used in an intelligent manner are undoubtedly a source of profit to both fruit and vegetables growers, especially the latter; but carelessly used, they may be a source of great loss. To suggest that they can ever take the place of cultivation is, of course, absurd; in fact, it is only in conjunction with the most thorough working of the soil that they will prove profitable. And it is safe to say that success in gardening operations depends primarily upon the continual use of the spade and the hoe, and unremitting warfare against insect and fungoid enemies. Generally speaking, the use of chemical fertilisers in the garden may be directed according to a few fundamental rules, although, of course, local soil conditions and other active influences will enter largely into consideration.

These rules may be outlined briefly as follows: Plants grown for the sake of their leaves and stems—the cabbage tribe, lettuces, asparagus, onions, and a great many others—require an excess of nitrogen. For the legumes which gather their own nitrogen, and potatoes, which use up large amounts of potash, potassic manures can safely be recommended. Root crops, such as carrots, parsnips, turnips, beet, etc., require a fair amount of leaf growth in order to be able to store up the sugar and the starch and other nutrients in the root; and in order to secure this, generous applications of potash must be made, as well as phosphatic and nitrogenous manures and lime, sufficient to give the requisite amount of growth. The swollen roots of such plants as are named above are merely storing-places for an excess of food assimilated by the plants during summer.

The cultivator should have in his mind at least one principal object in manuring; that object should be the conversion of the soil into a medium suitable for the cultivation of the plants which he intends to grow therein. Prior to the application of manure, however, a necessity arises to consider the distinctive features of the soil, for a knowledge of these features renders the choice of suitable manures and crops much easier. Generally speaking, light sandy soils are poor in phosphoric acid, and often deficient in lime; they require liberal manuring and frequent applications of lime, and the introduction of humus is necessary in order to improve their texture and to increase the supply of nitrogen. Heavy clayey soils of a more retentive nature are generally rich in potash and nitrogen, but deficient in lime and phosphoric acid; organic matter is often needed here, and applications of lime are found beneficial. Further, although containing a full complement of potash, the amount of this essential plant food which may be available for a growing crop has often to be augmented by judicious applications of potassic manures. Alluvial soils and good loams are usually regarded as fertile soils, inasmuch as their mechanical conditions leaves nothing to be desired, while the chemical constituents include liberal supplies of all the necessary plant foods, without any trace of poisonous substances.

The problem of manuring, therefore, resolves itself into the "making" of soils by the application of manures designed to supply all the deficiencies required, both on behalf of the soil itself and the plants cultivated therein. Farmyard or stable manure has served many generations of farmers and gardeners, faithfully and fairly efficiently in this respect, but as this material is more or less fixed in its composition, its use is subject to some drawbacks. From an analysis of an average sample of fresh dung, we may quote the following: Total nitrogen, 0.439 per cent.; insoluble nitrogen, 0.317 per cent.; total phosphoric acid, 0.271 per cent.; soluble, 0.138 per cent.; total potash, 0.435 per cent.; soluble potash, 0.330 per cent.; dry matter, 22.49 per cent.; organic matter, 16.58 per cent.; ash, 5.91 per cent.

From these figures it may be noted that dung is a complete manure; and by reason of the large proportion of organic matter or humus which it contains, may often produce better results than where equivalent amounts of nitrogen, phosphoric acid, and potash are supplied. However, as we have before noted, the composition of dung is invariably fixed, and therefore admits of no special consideration of the particular requirements of soils or crops. For this reason it is preferable to use artificial manures in conjunction with moderate quantities of dung. This plan enables the cultivato to supply with greater certainty the particular anurial constituent or constituents at a time when they are most needed by the crop. The manurial requirements of special crops, such as celery, onions, carrots, asparagus, vines, gooseberries, chrysanthemums, and a great many others, can then be attended to more effectively.

Nitrification in the soil, or the conversion of the existing nitrogen into nitric acid or nitrates, proceeds most favourably when the soil is moist and porous and the weather warm. In the winter and early in spring, the nitrates formed in the preceding summer, are washed down into the subsoil by rain, and are lost; thus the early spring crops are denied this most essential stimulant unless some readily available form of nitrogen is supplied at the proper time. Undoubtedly the most suitable form of nitrogen for rapid work is nitrate of soda, although a less well-known but quicker acting manure is to be found in the shape of nitrate of lime. The effect of these fertilisers is short-lived, but they are only supposed to supply active stimulant at a particular time, and therefore should be used in moderate quantities.

Where it is necessary to push on lettuces, cabbages, or other green crops for special purposes, 1oz. or 1½oz. per square yard may be applied with safety; but strong growing crops, such as rhubarb and asparagus, demand more than this, and as much as 2½oz. is a suitable dressing. In order to facilitate the distribution of the nitrate, it may be mixed with a quantity of fine dry earth. Sulphate of ammonia is a nitrogenous fertiliser, which gives a more lasting effect than nitrate of soda; it undergoes certain changes in the soil owing to the action of bacteria, the process consisting of conversion into nitrate of lime in the first place, and nitrate of lime in the second place. This process does not take place very rapidly, and so the fertiliser produces available nitrogen throughout the whole of the growing season. In exceptionally hot and damp seasons, however, it will soon become exhausted. As regards the amount of sulphate of ammonia to be used in gardens, it may be said that from ½oz. per square yard for small effects to 1½oz. for greater effects generally answers the purpose well and efficiently. At all events, there are many reasons why it should be preferred to soot, which is so commonly used in many gardens. In the composition of the latter substance only 6lbs. out of every 100 consist of sulphate of ammonia. J.

(To be concluded.)

## THE NEWER ZONAL PELARGONIUMS FOR WINTER FLOWERING.

Although not cultivated to the same extent as they were some few years since, the zonal pelargoniums comprise some of the most showy of the winter-flowering plants available for cultivation in the warm greenhouse. The ease with which they can be cultivated and the length of time they will, under careful treatment, remain in bloom, marks them at once as the most useful subjects for making a display in the houses. They are not so useful for the supply of cut flowers as some other subjects, the winter-flowering carnations, for example, but where a very bright display of colour is required for a limited time only, they are of much value. In brightness of colour, some of the varieties far surpass the carnations, which, it may be observed, have done more to reduce the cultivation of the zonal pelargoniums than any other.

ZONAL PELARGONIUM HIS MAJESTY.
A brilliant scarlet variety of special value for winter flowering, raised by Mr. W. H. Page.

In the country, where the atmosphere is clear, and fogs are not prevalent, they produce a bright display in the conservatory, and if this is a light structure and provided with a heating apparatus which will allow of a little roof ventilation practically every day, they may be regarded as one of the permanent inmates for the winter, but where fogs are prevalent, and the atmosphere of the district more or less humid, it is not wise to place too great a dependence on them, as they might fail and thereby prove disappointing.

For a number of years Messrs. Cannell and Sons have taken the lead in raising new zonal pelargoniums, and the sets they introduced some few years ago under the names of ships, mansions, and towns have not, as a whole, been superseded. Since then, however, a few varieties of sterling merit have made their appearance, not the least prominent among these being three varieties raised by Mr. W. H. Page, of Hampton, and of these the finest is His Majesty, which may be described as one of the best crimson-scarlet zonals I have ever seen, its effectiveness being greatly enhanced by the white eye of the blooms. This variety is a good grower, and profuse in blooming, the flowers being produced throughout the winter. Fiscal Reform is another good variety, the flowers bright salmon-rose; they are not perhaps quite so large as those of the preceding variety, but they are most pleasing. Winter Cheer is very distinct, the flowers a bright cerise. It has the promise of becoming popular when better known.

Another novelty of much merit is the new orange-scarlet Maxim Kralesky. It is very striking, having more yellow in its flowers than any of the zonals I know. Prince of Wales is a very large-flowered variety, bright magenta, with a splash of scarlet in the top petals. Scarlet King, as its name denotes, is a very bright scarlet, and the plant has a good bushy habit, and is very free in flowering.

Rider Haggard is a form of flower much in the way of Sir T. Hanbury, the two colours in the top and lower petals being, if anything, more decided, and the flowers more effective.

Salmon Paul Crampel is a sport from Paul Crampel, and is an exact counterpart of its parent, except that it has rosy-salmon flowers. Another good new salmon zonal is Mrs. J. Ward, which has probably larger flowers than those of the variety immediately preceding.

In addition to the foregoing new varieties, the following is a list of the older zonals that may be thoroughly relied upon to produce a continuous display of flowers during the winter months, and, as the present month is the best time to root cuttings for an autumn display, it may help those who contemplate making a selection for next winter.

Salmon.—Ascott, Mrs. George Cadbury, and Ian McLaren.

Blush.—Mauretiana, Cevic, and Lady Roscoe.

White.—Snowstorm, Venus, and Goodwood.

Pink and rose.—Hatfield, Caronia, Sydney, and Mrs. Brown Potter.

Purple. — Frogmore, Lusitania, and Royal Purple.

Orange. — Prince of Orange, Cleveden, and Donald Beaton.

Crimson.—Leonus, Maris, St. Louise, Sir Thomas Hanbury, and Aldenham.

Scarlet.—Naples, New York, Chatsworth, and Lord Kitchener.

All the above are singles, and for the supply of cut flowers, the following semi-doubles are useful: F. V. Raspail, Improved Hermoine, King of Denmark, Lave, Pink Raspail, and Fire Dragon.

T. STEVENSON.

## TREES AND SHRUBS FOR CLIFF GARDENS.

During the past thirty years I have had considerable experience with trees and shrubs in gardens near the sea, both in northern and southern countries, and the following notes may be of use to inexperienced cultivators, especially those who are now contemplating the planting of such subjects.

I am referring to gardens placed close to the sea, and particularly those on rather high cliffs. The latter position is much sought after for a dwelling-house, but very often much trouble is experienced in inducing many kinds of shrubs and trees to flourish there; indeed, it is absolutely necessary to have a protecting band of trees in many cases.

A gentleman recently said to me, "Those trees are badly bruised by the south-west winds; it is a wonder the owners do not plant fresh ones." I pointed out to him how unwise it would be to interfere with the protecting trees, as they had grown up with those in the pleasure grounds surrounding the dwelling-house, and that the lawn and border trees and shrubs were very beautiful and very fresh and healthy; also that, if the protecting band was removed, the trees inside would suffer very considerable damage before another windbreak could be obtained by planting young, hardy subjects, and even then, the new, outer bank of trees would be as bad as the existing ones. Then he at once realised the true position.

Before any trees or shrubs are planted the soil must be deeply trenched, whether it be light, gravelly, and poor, or loamy and rich. But I have found it advisable not to make any soil very rich by the addition of much manure. When the trees make a very luxuriant growth in such exposed positions, they suffer all the more when severe weather or strong gales from the sea come. A moderate growth well matured is the most satisfactory in every way. I have seen both trees and hedge plants a mile inland, and for many miles along the coast, seared as if with fire, by the salt spray blown from the sea when gales have been strong, and tenderer shrubs close to it, duly protected, almost untouched.

The shape of both trees and shrubs is better and more uniform where the annual growth is moderately strong, than where it is very luxuriant.

Good trees and shrubs for protection are Pinus insignis, P. austriaca, P. maritima, evergreen oak, Lombardy and white-leaved poplar, silver fir, sweet bay, tamarisk, sycamore, thuiopsis, wych elm, elder, Cupressus macrocarpa, and Arbutus Unedo. The taller-growing trees and shrubs must not be planted too closely together, as overcrowding would mean, eventually, weakening of the belt; each specimen must have sufficient space to develop in.

The under shrubs in the outer belt should be mainly Aucuba japonica, escallonias, berberises, hollies, privets, veronicas, sea buckthorn, and Olearia Haasti.

Inside, in the most exposed positions, plant the mountain ash, beech, Buddleia globosa, Garrya elliptica, Genista hispanica, Choisya ternata, euonymuses, Mahonia japonica, laurestinus, laburnum, Guelder rose, pernettyas, Skimmia japonica, snowberry, white and pink thorns, single and double flowered.

Rhododendrons, lilacs, mock oranges, flowering currants, pyracanthas, Jasminum nudiflorum, deutzias, almonds, sweet briars (Lord Penzance's hybrid briars), honeysuckles, and mollis azaleas may all be planted in the sheltered garden by the sea. It is much more satisfactory to have such subjects thriving and healthy than very choice ones in poor condition.

GEO. GARNER.

## AMONG THE ALPINE FLOWERS.

> "While the daffodils still waver,
> Ere the jonquil gets its savour,
> While the linnets yet but pair,
> You are fledged, and everywhere.
> Nought can daunt you, nought distress,
> Neither cold nor sunlessness."

So sings the Poet Laureate of the primroses, which, in cosy nooks, attest the truth of the picture of their hardiness he presents. Beautiful indeed are they, although the weather is unkind enough even for them. One day they are silvered by the hoar frost or are shrouded in snow; the next they are bathing in a clear, sun-lit air; and the next again they may be soaked and beaten to the ground with drenching rains or driving sleet. Many of these primroses must, however, "die unmarried, ere they can behold Phœbus in his strength," and we have a feeling that they are unhappy at present in this climate of ours, natives though they be. Yet they flower away in the sheltered parts of the rock garden. Some are true representatives of this "pale primrose" of the bard; orders are pure white, lightened, it may be, by a little yellow eye; others are warm red, pale pink, or pale or deep blue. Lovely flowers are they, though not yet in the full beauty of their true flowering time. Among them Harbinger is the first of the whites to come with any freedom, and it charms us as we look upon this flower of the season.

### Snowdrops.

Still more truly might Alfred Austin have applied the above lines to the snowdrop, whichever comes soon after the dawning of the year, and to which we might say, "Nought can daunt you, nought distress." A little poetic license is always allowed, and is required as well, as sometimes even the primrose or the snowdrop is distressed and daunted by the weather of the time. Do we not see the primrose reduced almost to pulp? Do we not observe the snowdrop bowing towards Mother Earth in keen frost as if to supplicate her to take it to her bosom again? Yet, in the main, it is true, for these flowers reck but little of weather which would destroy many of the sister flowers of the garden.

And now these galanthuses abound. They are in masses, they are in clumps, and here and there a few of the choicer snowdrops droop their flowers of white, decked with green, to tempt us to compare their beauty with that of their more common sisters. Here are the common snowdrops, modest as ever, less opulent in their charms than some of their kinswomen, but hardly eclipsed in point of real beauty. Here are forms of Galanthus plicatus, the Crimean snowdrop; over there are plants of the Nikarian species, Galanthus Icariæ, with its broad, green, arching leaves and beautiful flowers. Elwes's snowdrop is here in several forms, and many of the scarcer and most beautiful of the named snowdrops show their virgin flowers in nook, on mound, and on rocky terrace.

### Crocus hyemalis Foxi.

Here, too, are a few flowers of Fox's winter-flowering crocus, C. hyemalis Foxi. It isn't a showy flower; it lacks the size and brilliancy of those wonderful forms of C. vernus we get from Holland, and which glow and almost seem to palpitate with colour in the sunshine of the later days. But Fox's crocus is more modest in its charms, and appeals, in the main, to those who love to observe the more minute points of beauty. The little cones of white, suffused in part with light purple outside, please us as we lovingly study their form and their colouring. Symmetrical and beautiful are these flowers in that state, but it is when the pallid sun of the winter days musters all his little strength and shines on these flowers that we fully realise their beauties. The cone expands, the flower opens into a charming cup of white, touched with yellow at the throat, with gold wire-like stigmata, and anthers of deep black. A combination of colour as this we hardly expect at this season—and a very charming one it is, worthy of our unalloyed praise. Yet, truth to tell, this little crocus is not quite happy in our northern land, and longs for a happier home. Our winters are too unkindly, and it frequently seeks in vain to unfold its blooms, although it will live for years in our gardens. And so we will do well to shield it a little from our rough weather, and shelter it by glass, even on the rockery, from the inclemency of the time.

### Crocus vitellinus.

Worthy of this also is Crocus vitellinus, whose beauty is of another degree. It seems to afford us, though with hardly such lavish benison, the brilliance of the golden yellow crocus of the later months. A bright little thing it is, and we are charmed with its yellow flowers as they meet our eyes on the rockery. They also are grateful for a little shelter from the inclemency of the time, and we may well grant their petition, knowing full well that they will reward us more than fully for our care.

### Other Plants.

As this is written, frost holds a brief apparent sway, and the flowers are at a standstill. Yet there are a few to greet us as we wander through the pathways and see what we have in bloom. There are other crocuses, there are winter aconites, snowflakes peering amid their incipient leaves, a few viola glooms give bits of colour, though one has seen more individual blooms to dare the season than this year. Christmas roses are yet snowy, and their sisters of Lent show bits of colour on the way. There are many evergreen plants to tell us that even greenery alone has countless beauties. Little shrubs and mounds, and carpets of blue-green, deep green, emerald green, pea-green, and an unlimited range of colours, through whites and silvers, some with red and purple tones, abound. And amid all are to be seen swelling bud or shooting bulbous plant, all on the way to respond to the joyous call of the spring.

S. ARNOTT.

## THE BUCKLER FERNS.

The Buckler Ferns (Lastræas or Nephrodiums) of Great Britain, consist of six definite species, viz., L. filix-mas, the Male Fern; L. dilatata, the Broad Buckler Fern; L. montana or oreopteris, the Mountain or Lemon-scented Fern; L. æmula, the Hay-scented Fern; L. rigida, the Limestone Buckler Fern; L. thelypteris, the Marsh Fern.

All these derive their generic name from the shape of the indusium or little cover which protects the dot-like heaps of spores on the frond backs, and are kidney or buckler shaped. The name nephrodium is derived from "nephios," a kidney, that or Lastræa from a French botanist, while the popular name of Buckler Fern explains itself. We have termed these "definite" species because several others are recognised by botanists—viz., L. spinulosa, L. ulignosa, and L. cristata. All these, however, are considered by experts in Brtiish ferns as representing merely grades or forms of L. dilatata. This species varies considerably in make and form of frond, and these three last pseudo species merge so much into one another, as well as into L. dilatata, that their distinct specific character can hardly be established.

The Common Male Fern (L. filix-mas), on the other hand, has been legitimately divided by the late Mr. G. B. Wollaston into three sub-species—L. f.-mas, L. propinqua, and L. pseudo-mas, each characterised by constant differences in make and detail, and even in deciduous or non-deciduous character, L. pseudo-mas, or the Hard Male Fern, being much tougher in texture, and, under protection from destroying winds, quite evergreen; while the other two are quite deciduous. We do not, however, propose here to go into these minutiæ, for such they are as compared with the varietal "sports," which most of the species named have yielded under wild conditions in the first place, and under culture by selection in the second.

Taking the Male Fern in all its three subdivisions as the chief contributor in this direction, we will begin with L. pseudo-mas cristata, found many years ago in Cornwall, which has been justly termed the "King of the Male Ferns." This belongs to the evergreen section, and has the peculiarity of a rising crown, while the crowns of the others grow horizontally, or nearly so. The result is that in time, if the lateral offsets be removed as they appear, a trunk is formed, and a tree fern of bold habit, and with beautifully tasselled four-feet fronds, is produced.

Another of the evergreen type, and a fine companion to the "King," is L. p.-m. polydactyla Wills. This grows much larger even than the "King," but has fewer fronds, and the tassels, though larger, are flatter and less divided. Both these under glass retain their fronds well into the following season, and until, indeed, the new growth is fairly well developed. Wills' variety produces few off-sets, and does not assume the tree form. The "King" has yielded several sub-varieties—viz., a form with narrow fronds (L. p.-m cristata angustata), but otherwise identical except in size, the fronds being somewhat shorter. Some spores from the same source have also undoubtedly produced two remarkably beautiful varieties, L. p.-m. cristata fimbriata, a lucent fronded and fringed gem of moderate size; and L. p.-m. percristata apospora on even prettier lines, but handicapped by a weak constitution. It has, however, the probably unique peculiarity that the smallest tip of a division, if layered on moist soil, rapidly produces prothalli from its edges. These breed other prothalli, and in a very short time an indefinite number of typical plants arise from these by buds.

The rest of the Male Fern group have produced a considerable number of tasselled and congested varieties on different lines, and also some very pretty dwarf forms, plain and tasselled, all of which are well worth growing.

L. dilatata, the Broad Buckler Fern, has also yielded a number of crested and crispate forms, of which we may mention L. d. polydactyla, L. d. grandiceps Barnes, L. d. crispata cristata Oscroft, L. d. Howardii (a curio), L. d. lepidota, finely cut, and a crested form of some; and from the Azores we have L. d. folioso-cristata and folioso-cristata and folioso-digitata, which are exceptionally handsome and evergreen under glass. L. montana, once considered as non-variable, has belied that opinion subsequently by yielding a very large number of distinct varieties. The best of these are L. m. plumosa Airey, L. m. coronnus Barnes, L. m. cristata, L. m. cristato-gracile Druery, L. m. grandiceps, and L. m. Barnesi, the last a tall, erect, narrow form, with the side divisions flat like the steps of a ladder. L. æmula has yielded one very pretty crested variety, L. æm. cristata and L. thelypteris, a polydactulous form, which, however, was introduced from the United States.

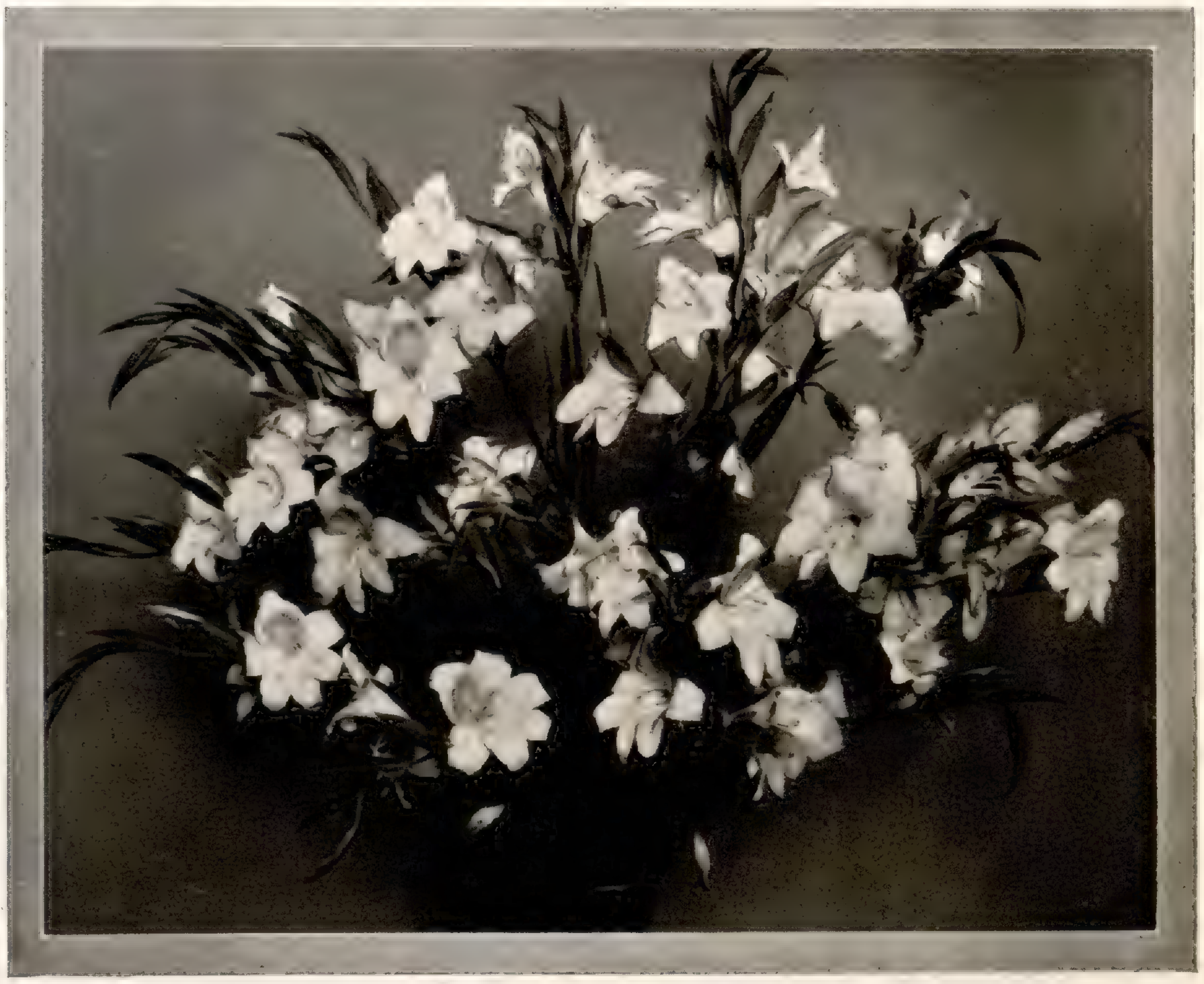
With regard to the culture of these ferns, the Male ferns will grow in any good soil, and thrive in ordinary garden mould. L. dilatata likes abundance of leaf-mould and plenty of moisture, but is by no means dainty. L. montana prefers good friable yellow loam with a little leaf-mould; it can stand much sunshine, but dislikes lime or hard water, and resents drought at the roots. When once established in the open, however, it will hold its own well, and makes handsome specimens. L. æmula is more delicate than its near relative, L. dilatata, and needs a moister atmosphere, doing best in pots in a cool house.

L. thelypteris is a thorough bog fern, its travelling root stocks revelling in quite wet soil. It does well in pots or pans standing in saucers of water. Soil peaty. For cool conservatories a selection of the above cannot be too highly recommended, and most of them do well in the open ground, where a little shade and protection from strong wind can be afforded.

Chas. T. Druery, V.M.H., F.L.S.

## GLADIOLUS QUEEN MARY.

The early-flowering gladioli, of which Gladiolus Colvillei and its varieties are the best known, steadily grow in favour, and the colour range steadily widens. Some of the varieties are very robust, and produce tall spikes, while others are of moderate height, and are more valuable for pot culture on this account. While under ordinary conditions producing their flowers at a comparatively early period, anything approaching severe forcing these gladioli dislike. But if they are grown in pots and brought into a warm greenhouse when well rooted, care being taken to give them plenty of light and air, their cultivation is followed by success, and the elegant spikes are capital for conservatory decoration or for cutting. A new introduction of much merit is G. nanus Queen Mary, a variety that attracted much attention at the great exhibition held by the Royal Horticultural Society at Olympia, July 4, 5, and 6, 1911. On that occasion it figured in the collection from Messrs. Barr and Sons, Covent Garden, this firm very kindly taking charge of it for Messrs. Smith and Son, of the Caledonian Nursery, Guernsey, by whom it was raised. Those who have the pleasure of knowing this Guernsey firm and their remarkable nursery of rare and beautiful plants will readily believe that they would not introduce a new plant that was otherwise than of the highest merit. Their new gladiolus has soft salmon-coloured flowers, with cream-coloured blotches on the lower segments, and the two colours form a most pleasing and effective combination. This variety gained an Award of Merit at the Olympia show, and is a valuable addition to its group.

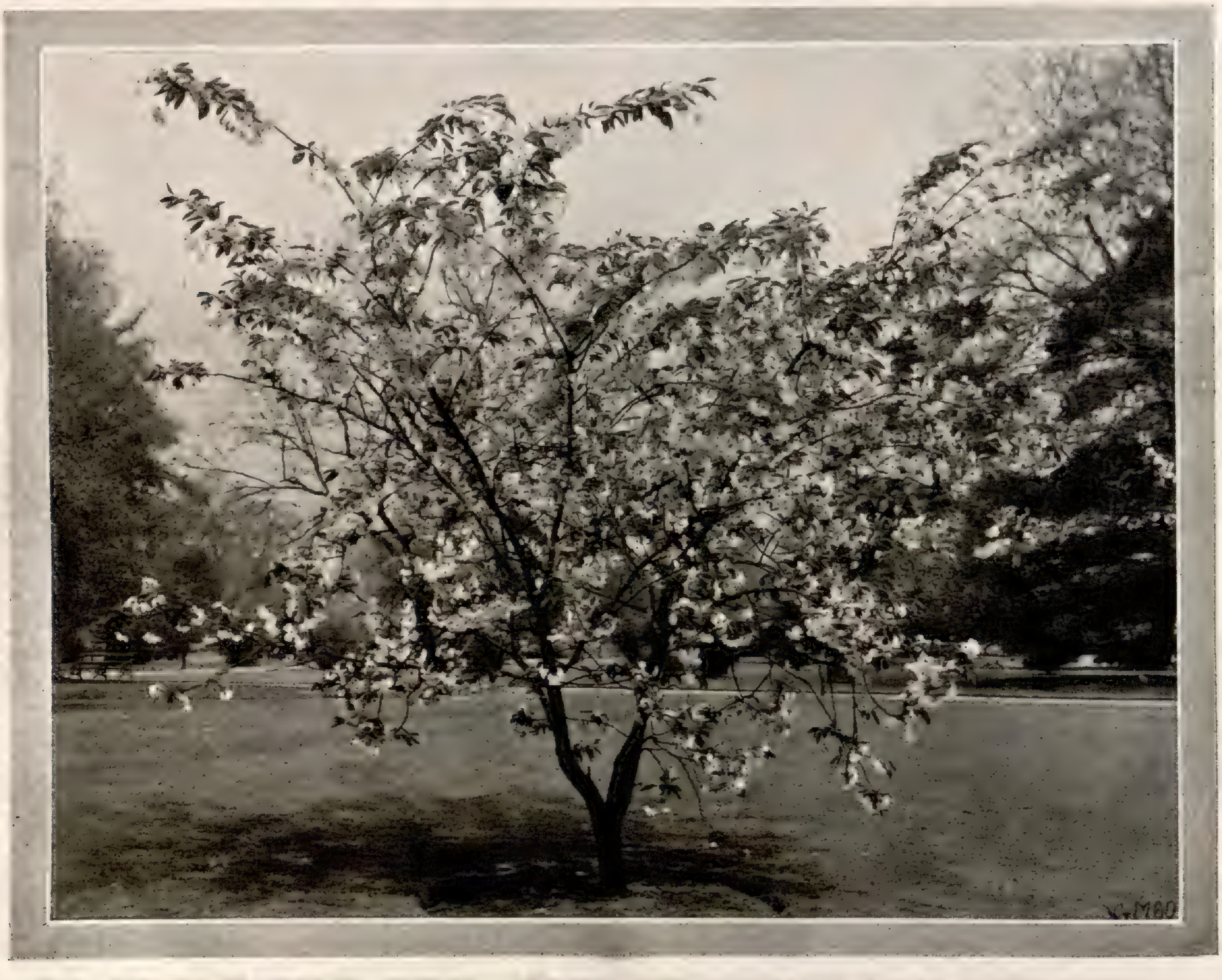


GLADIOLUS QUEEN MARY.

A distinct early-flowering variety bearing soft salmon-coloured flowers, raised by Messrs. Smith and Son, Caledonian Nursery, Guernsey. A.M., R.H.S., July 4, 1911.

## THE YELLOW-FLOWERED CHERRY.

Although not equal in effectiveness when in bloom to some of the Japanese cherries that now have a place in British gardens the yellow-flowered variety of Prunus pseudo-cerasus is so remarkable for its distinctness and beauty that it is surprising it should not have been distributed, and owners of gardens had an opportunity of enjoying its charms with other hardy trees of value for their flowers. It will not produce so rich a colour effect as will the variety known as J. H. Veitch when enwreathed with its large rose-pink flowers; nor, perhaps, is it quite equal to the typical form of P. pseudo-cerasus, and those who have so limited a space for flowering trees as to be compelled to confine their selection of the forms of this cherry to two would do well to plant the type and its variety, J. H. Veitch. Happily, there are many thousands of gardens within the British Isles which place no such limit upon the planter, and in these the yellow-flowered form would contribute its full share to their attractions. It is quite distinct from all the other double-flowered cherries whether native or exotic, and its large blossoms, with their soft colouring present a pleasing contrast to the rich warm hues of the flowers of J. H. Veitch, and the pure cold whiteness of those of the double form of the English Bird Cherry (Prunus avium fl. pl.), which also possesses merit of a high order.



THE YELLOW-FLOWERED CHERRY (PRUNUS PSEUDO-CERASUS FLORE LUTEO PLENO).
A handsome variety with large deep cream-coloured flowers.

So far as we are aware, Prunus pseudo-cerasus flore luteo pleno, to give the yellow-flowered form its scientific designation, has no place in trade catalogues, and can only be met with in the Royal Gardens, Kew. If this be not the case we shall greatly appreciate the kindness of those of our readers who have seen trees elsewhere, if they will give us particulars of those they have met with. The variety was first presented to public notice in this country at the meeting held by the Royal Horticultural Society on April 7, 1896, when Messrs. J. Veitch and Sons exhibited specimens. In our report it was described as a pretty unnamed cerasus, and in another report we have before us the flowers are described as white, shaded with green and tinted with rose, a description which suggests that the flowers shown had attained to considerable age, and lost something of their freshness. With reference to the colour it must be remembered that the light of the Drill Hall in which the R.H.S. meetings and shows were then held was usually such as to frequently render it difficult to distinguish the colours. Moreover, a few sprays of flowers or small plants wholly fail in conveying an adequate idea of the beauty of the tree. It is only when the tree has attained to a considerable size, as in the case of the Kew specimen herewith illustrated, that it is possible to properly estimate its decorative value. It is now some years since this tree came under our notice, and year by year we have been much surprised to find how greatly it has increased in beauty in process of development.

As the yellow-flowered cherry does not appear to advantage in a small state it made its appearance in this country at a rather unfortunate time. At this period increased attention was being paid to the beautiful P. pseudo-cerasus, which had been long in cultivation, as indicated by the fact that at the second of the April meetings, held in 1896 by the Royal Horticultural Society, it had an Award of Merit made in its favour. In addition, the variety J. H. Veitch had been introduced, and its merits fully known to those instrumental in its introduction. Whatever may have been the cause of the yellow-flowered cherry not having made its way into cultivation, the fact remains that it is a fine tree and worthy of a place wherever the charms of ornamental trees are fully appreciated. The colour of the flowers, it should be added, is rich cream colour, lightly tinted buff, and is closely approximate to that of the sweet pea known as Clara Curtis.

## BOX HEDGES.

Like the yew, the box is of slow growth, with dense habit, and therefore a valuable hedge plant. In some parts of the country the evergreen box has developed into tree-like proportions, and visitors to Hitchin will remember a number of large and old examples, carefully preserved by the side of the road near the main street and on the way to the station. But very large box hedges are not so common as high and broad yew hedges; nevertheless, some good examples are to be found in various parts of the country, and one of these figures in the present issue. This is a roadside hedge in Berkshire, and is a prominent and much-admired feature in a village through which one passes to the Berkshire downs.

It is not necessary to enlarge here upon the usefulness of Buxus sempervirens for hedges, as this matter has been dealt with so fully in recent issues by Mr. J. Day, chief of the Galloway House Gardens.

## PERPETUAL CARNATIONS.

Those readers who hold the idea that the high-water mark in raising perpetual carnations has been reached should realise that the perfection which we have sought is not yet with us. There is much to be done, and good as present-day varieties are, there is a need for far better. With all the new varieties that the last few years have brought us, we have not secured the permanent good that had been hoped for. Varieties arise and quickly pass from cultivation, leaving but a memory behind them, and one has to record against them—weakness of stem, slowness of flower production, poor constitution, or or some other weak point.

It looks as if raisers had relied too much upon the inherent good qualities of Enchantress in the production of seedlings, and these same seedlings have not gained in build, or vigour, upon that famous variety. A great failing of many varieties is the inability of the stem to support the blossoms erect, and I may name among others Mrs. C. Knopf, Roseate Dawn, Regal Mauve, Lady Dainty, Helen Gould, etc., as being deficient in stem vigour, the heavy blossoms of these and other varieties being more than the stems can carry. Engelmann's Rex is on the right lines; it is of perfect form, and exactly erect, and, though smaller than some other novelties, will provide an object-lesson to those who are making a hobby, or a business, of raising new varieties.

Varieties of the Lawson type, are among the most satisfactory. Sangamo is one; this is an improving variety, and habit and stem are excellent. Mrs. C. W. Ward is another free easy grower, with fine blossoms, and the approved Lawson habit and stem.

Taking another standpoint, we consider the claims of such ultra-vigorous varieties as Rose Doré, Afterglow, Pink Delight, Mikado, etc. These I like very much, but their great rambling stems make them appear somewhat ungainly in habit, and too much time is expended by the plant making these over-long stems. If one could reduce these varieties to the neat Lawson habit, their value would be greatly enhanced.

May Day is a good model, quick in growth, neat habited, good in colour, and possessing erect stems, and it should be recognised as a good type by raisers of novelties. This quickness of growth will be a great point with growers in the future, as a speedy succession of blossoms means a great difference in the profits of those who grow for market.

Fancy carnations are not greatly in demand, but there is no doubt that a few really "good" fancies, particularly white and yellow grounds, would be welcomed by private growers. One or two varieties, with a distinct shade of orange, or bright terra-cotta without any secondary colouring or markings, would be received with favour by all carnation-lovers.

Finally, I would urge the private grower to watch his stock, just as keenly as the trade grower. A close study of the varieties will repay for the trouble, as one can then note all the points of the differing forms.

P. S. Hayward.

[Photo: W. J. Vasey.

A ROADSIDE HEDGE OF THE EVERGREEN BOX (BUXUS SEMPERVIRENS).

## SEAKALE AND ITS PROPAGATION.

The dry and trying summer of 1911 must have taught many of us a lesson. By having a bountiful supply of home-grown seakale crowns a crop is assured; when other choice vegetables partly fail, seakale has done remarkably well here, standing the drought with impunity, and it is now appreciated. A little forethought and preparation are required to secure success. All crowns should be taken up by this date, so as to be in good time to prepare crowns for next season's forcing. Immediately the crop is lifted, the "root thongs" should be taken off, and cut into seven-inch lengths, the crown end to be cut square, and the base diagonally. This method of cutting will prevent confusion as to which is the growing bud; size the thongs in bundles, and stand the bundles upright in deep boxes, filling in around them with fine soil. Leave the tops exposed, well water in to settle the soil, and place the boxes in a frame or fruit house, exposed to the light. In a few weeks the growing crowns will form, when they must be gradually withdrawn to cooler quarters to keep the growths sturdy, previous to planting out in April. If treated in this way a gain of two months' growth is obtained over ordinary outside root planting, and this makes all the difference to the strength of the crowns when forcing time arrives. The plot intended for the "sets" should be well prepared by trenching as early as possible, incorporating farmyard manure, leaf-soil, burnt garden refuse, etc., and leaving the surface rough. Previous to planting well fork the plot over, bringing it to a fine tilth, over which a broadcast sowing of soot will be very beneficial.

G. Ellwood.

## SPRING SOWINGS IN THE KITCHEN GARDEN.

The season of sowing commences in real earnest as soon as the month of February is ushered in. A great many seeds have to be got in during this month, and very frequently it happens that the vegetables are neglected. Dwarf peas of a good variety may be sown at the end of the month in eight-inch pots, and sometimes a few peas and beans are sown outside before the end of January, but the latter are at the best chance crops, and it is doubtful whether the attention bestowed on them is ever rewarded with success. Certainly, a useful crop to sow towards the end of January or during the first week in February is tomatoes, provided they can be grown on steadily near the glass; a too strong heat must be avoided, however, for the plants become soft and long-jointed, and produce few early bunches of bloom.

### Peas.

On light soils and in early localities no time should be lost in making a first sowing of this important crop. In every garden, large or small, peas are given precedence over all other vegetables, and earnest attempts are made to provide the first dish at the earliest possible date, and the last at the latest. It is recognised by every professional gardener that peas grown on heavily manured soil are not only superior in quality, but the crop is far heavier, and the peas keep fresh for a far longer period.

Light soils require to be made fairly firm, for the pea does not seem to succeed at all well in a loose rooting medium. Also, on any description of land, thorough deep trenching is a necessary part of the preparatory work for peas; indeed, the difference between peas grown on deeply trenched soil and on that which has been merely dug over, is sufficient to demonstrate this point.

Of the earliest varieties, Carter's Eight Weeks, Gradus, Reading Wonder, and Early Giant are all deserving of attention, the first-named kind being a very hardy pea of the marrowfat type, growing to a height of only fifteen inches. About three weeks after the first sowings the mid-season varieties may be put in, a good selection being Duke of Albany, Centenary, Dreadnought, and Quite Content. The last-named is considered by some growers to be the best pea now in cultivation, especially for exhibition, as it bears pods seven inches in length.

### Cauliflowers and Broccoli.

Where frames can be spared, it is well to sow a pinch of seed of some of the earliest kinds of cauliflower, such as Snowball and Early Dwarf Forcing; if they are carefully hardened before being planted out in a rich soil they will be both early and useful. Only a limited quantity should be sown, however, as they do not stand very long. Where cabbage has suffered badly during the winter, the blank can be almost filled by sowing Flower of Spring cauliflower in heat in February, pricking off into boxes as soon as ready, and placing as near the glass as possible. As soon as they commence to show the rough leaf, remove them to frames, and gradually harden. Other good varieties of cauliflower to sow are White Queen, Veitch's Autumn Giant, Sutton's Purity, Veitch's Pearl, and Early Emperor.

Broccoli depends a great deal on the weather, but if brick pits are available, a succession from October to June can be easily obtained. Michaelmas White and A. Walcheren are both excellent varieties for autumn use, while of other varieties which head in twelve months after sowing the seeds, there are Snow White, Leamington, Sutton's Perfection, and Reading Giant. Late Queen and Latest of All are later-maturing kinds.

Some gardeners prefer to roll all seeds of the cabbage tribe in red lead before sowing, in order to prevent injury from birds or mice. In dry weather it is well to stir the soil well between the rows of cabbage, Brussels sprouts, and spinach, etc, for this will conduce materially towards rapidity of growth.

### Broad Beans.

For first sowings, Green Longpod is a serviceable kind, and is almost as early as Mazagan. A well-prepared soil is most essential for beans, and the work should have been got in hand some time previous to sowing. Little trouble will then be experienced in levelling down and planting. Any deep, cool, and retentive soil does for beans, and profitable crops can be secured from well-cultivated clay lands. The main supply is derived from the crop raised from seed sown in February or March, and for succession in April and May, in double rows, three feet apart.

### Lettuce.

Both the cos and cabbage varieties of lettuce are extremely popular in all gardens, and with good reason, for they adapt themselves to practically all soils, and furnish a wealth of valuable greenstuff during the summer months, when salads are so much in request. Sowings should be made at once under glass, and in the open from the first week in March until midsummer. This will enable the growers to keep up a successional supply during the whole of the season. Watering is most essential, for the plants are so constituted that a more than usual amount of moisture is required to start and keep them going than is the case with most other subjects. Among the best varieties of letuce are All the Year Round, Golden Ball, Grosse Pareusse, and Drumhead, of the cabbage section; and Mammoth White and Superb White of the cos lettuces. A Dutch hoe is a very useful implement to use between rows of lettuce, and copious supplies of water are further beneficial during dry weather.

### Radishes.

A dry, warm spot is best suited for early sowings of radishes made during February, and during severe weather it is well to cover them with fern or bracken, or light litter, so as to form some protection against exposure. The turnip-rooted radishes are the best to sow during the present month, about one ounce of seed being used to every two square yards of ground, the seeds being covered with an inch of fine earth, and the surface made firm with the back of a spade if necessary. Large seeds are best, it being advisable in all cases to discard the smaller ones. J. C. Newsham.

Old Basing.

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**Rubus lasiostylus.**—For a great many years, the Himalayan Rubus biflorus has ranked as the most noteworthy of the white-stemmed brambles, but it has now a formidable rival in the newer Chinese Rubus lasiostylus, in which the whitened stems are very pronounced. There are several species in which this character is more or less prominent, but the two above-named are the best, and in a mass or clump they form a striking woodland feature. They are much more effective when arranged somewhat thinly in comparatively large groups than when planted singly.—W. T.

## CHOICE EARLY-FLOWERING HARDY SHRUBS.

Singular importance invests the early-flowering hardy shrubs; precocious by nature, they brighten our gardens at the dullest period of the year, yet it is probably on account of this attribute that we find them entirely ignored in the majority of gardens. In many instances the colouring of the flowers is extremely vivid, so that when in season they impart a rich glow of warmth to their surroundings; others there are that excite unstinted admiration owing to the curious character and arrangement of the flowers.

Although perfectly hardy, as far as growth is concerned, all early-flowering shrubs have their beauty marred when the flowers are subjected to rigorous weather, either in the form of intense frost or violent winds, hence it is imperative when planting, to choose a position where the exposure to these climatic conditions is not unduly strained. This is best attained by planting in sheltered ravines or glades, or a position in the angle of shrub beds would readily invite success.

To this group of hardy plants belong Hamamelis arborea and H. mollis, two shrubs of inestimable value in garden decoration, as, although comparatively slow growing in their early stages, when once established they make annual growths a yard in length that, later, becomes entirely wreathed with flowers of a bright yellow or orange colour, so that both plants are capable of a bright and lasting display. They succeed in a loamy soil inclined to heaviness, and they generally prove most satisfactory if left uninterrupted for a number of years.

Another meritorious spring-flowering shrub is Daphne Mezereum; this species, like, the foregoing, produces the flowers on the naked branches; the type gives flowers of a rich purplish-red, the colour varying to some extent in different individuals, while there are also single and double white forms, all of which are deliciously scented. Daphne Mezereum, although an old shrub, still forms one of the most delightful spring pictures when wreathed with its ruddy scented blossoms.

A choice and interesting subject is found in Edgworthia chrysantha, a shrub that is hardy in mild and favoured districts; it froms an erect bush, producing early in March, on the naked branches, tubular flowers in inverted clusters; in the individual flower the lower part of the segments are united into an elongated tube, that is white and downy; while the free ends reflex and are coloured a bright orange-yellow, the whole aspect of the flower being wax-like in testure, and suggestive of some tender exotic.

Of the earliest flowering rhododendrons, R. præcox and R. Nobleanum are two important examples for garden decoration, as they unite extreme floriferousness with great beauty of colour, and both are reliable. They are hybrid forms of garden origin, the first-named being a cross between R. dauricum and R. ciliatum; the latter a hybrid of R. arboreum and R. caucasicum. Both are evergreen, but entirely distinct from each other. R. præcox has small hirsute leaves, and produces small rose-pink flowers on the terminal points of the branches, and they open kindly with the first warm days of March. In habit it is a much branched shrub, resembling R. dauricum in this respect, but being a better grower, and having larger, paler-coloured flowers than this parent; it is altogether more desirable as a garden plant. Rhododendron Nobleanum forms a low bush of spreading habit, somewhat after the character of the more familiar garden hybrid rhododendrons; it bears its flowers in erect globular heads, the colour being a rich rose-red, and it blooms in the open toward the end of February or early in March, according as the season is early or late.

Of other shrubs worthy of a place on account of their earliness, are the various forms of Cydonia japonica. When given the protection of a wall, and with the branches widely trained and the side growths spurred in, it flowers all along the branches, and presents a picture of exquisite beauty when in bloom, which frequently occurs in February, although plants growing entirely in the open do not flower until early in March; it is thus possible, by varying the position, to prolong the season in which this valuable shrub may be enjoyed in flower.

Thomas Smith.

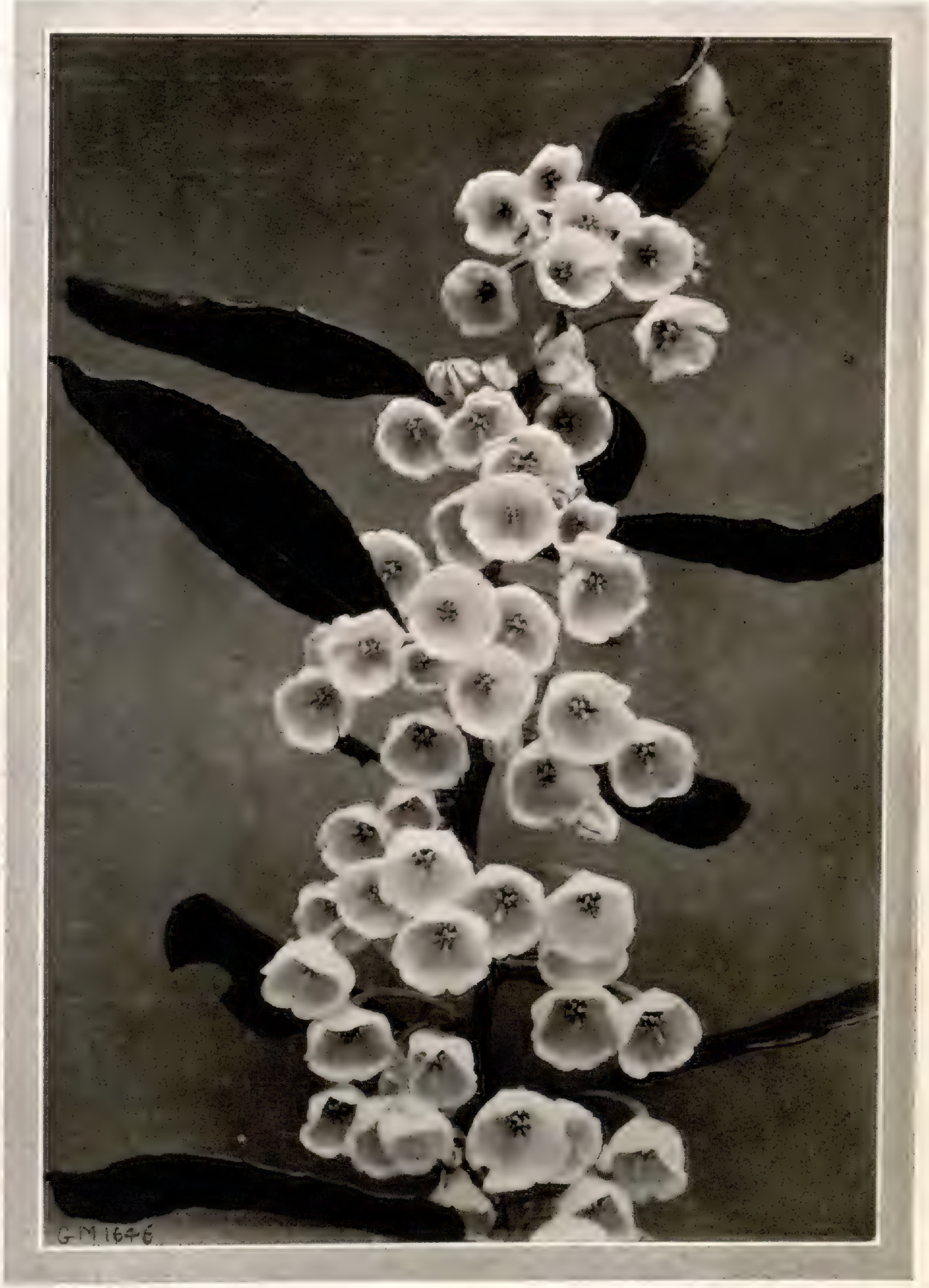
Coombe Court Gardens.

## ZENOBIA SPECIOSA.

One of the most beautiful of those flowering shrubs that pass under the general title of "American plants" is Zenobia speciosa. It has not the gorgeousness of the deciduous azaleas, or the grandeur of the finer rhododendrons, but it possesses an exquisite grace and modest beauty that brings it right into the forefront of shrubs cultivated for their flowers. The flowers, produced in little axillary clusters along the branchlets, are of the purest white, and individually they resemble the bells of a lily of the valley. The leathery leaves vary in shape, but are usually oblong-lanceolate, with crenate or serrate margins. Peaty soil suits Zenobia speciosa best, but moisture at the roots is essential to its well being, and, like the rhododendrons it does not like lime in the soil. Propagation is readily effected by layering the lower branches.

It was about the year 1800 that Zenobia speciosa was introduced from the Southern United States. In 1803 the variety Z. s. pulverulenta, which has a downy undersurface to its leaves, was figured in the "Botanical Magazine (t. 667) under the name of Andromeda pulverulenta, and the accompanying text reads: "For this valuable acquisition to our gardens we are indebted to the indefatigable Mr. Fraser, of Sloane Square, who found it in North Carolina, where, however, it had been observed long before by Mr. John Bartram. It is capable of withstanding the cold of our winters in the open air, but the beautiful foliage is better preserved by the shelter of a greenhouse; nor, indeed, have we yet seen it produce its flowers in perfection without some artificial heat, though there is reason to believe that older plants may not stand in need of such assistance."

At the end of 1806, in the same work, Zenobia speciosa was figured (t. 970) under the name of Andromeda cassinefolia, and there the question of whether the pulverulenta character of the leaves of Z. s. pulverulenta was due to disease was discussed. The writer says: "Whether this plant and the Andromeda pulverulenta ought in reality to be considered as distinct species, or merely varieties, may be doubted; they are certainly very nearly related, but this (Z. speciosa) is a smaller, less robust shrub, the leaves are not so bluntly crenated, but rather serrated, and quite entire at the base. At the time the pulverulenta was published, we had not seen Michaux's work, or we might have been induced to have adopted his name. Yet his assertion that the mealy appearance on the leaves is certainly the effect of disease, may be rendered dubious by the consideration that the pulverulenta is a much larger and in every way more robust plant, bearing flowers of greater size, and more in a bunch than the cassinefolia, circumstances difficult to be attributed to any malady. Our drawing was taken at Mr. Fraser's, in Sloane Square, who, we believe, first introduced it into this country. We received specimens also from Messrs. Malcolm's Nursery at Kensington. Native of North Carolina, about Fayette-town and Wilmington. Flowers in June."



ZENOBIA SPECIOSA PULVERULENTA.
A distinct and beautiful shrub; the flowers pure white.

**Gloxinias.**—All corms still unpotted should now be brought out of store, and, after shaking away the old soil, be repotted and placed in a brisk temperature near the light. A good compost consists of two parts loam, one part peat, and one part leaf-soil, adding sand, a little charred refuse, and dried cow manure. Six-inch pots are large enough for ordinary corms. Unless it is desired to perpetuate any particular variety, I do not advise keeping the old and large corms.—H. T. Martin.

## DWARF CAMPANULAS.

The bellflower family provides a large number of suitable plants for furnishing the rock garden, and these hold an important position among other subjects. The list of species and hybrids is an extensive one, but a select collection is indispensable to any rockery. The colours are mostly blue and white, with varying shades, some of the flowers being bell-shaped, others open and flat like a saucer. The majority are of easy cultivation, and providing a sandy soil is afforded them in a sunny position, they grow freely, producing a wealth of blossom, which is highly appreciated.

C. isophylla, C. i. alba, and C. i. Mayi are excellent for trailing over a ledge of stone, where their slender growths are seen to the best advantage. C. i. Mayi is the most robust and fastest growing of the trio, with whitish foliage and pale blue flowers. The growths usually die back in the autumn, and new shoots take their place in the following season. C. fragilis is another good trailing species, perhaps not quite so strong and vigorous as C. i. Mayi, yet, nevertheless, one which should be given a place among the best. C. muralis (portenschlagiana) has a tufted habit, with flowers of a pale blue colour; it is only three or four inches high, and produces flowers in such abundance that the foliage is quite hidden from sight. C. garganica is splendid for trailing, and has large pale blue flowers, with white centres. The white form of this species is very beautiful, and by no means common. C. garganica hirsuta is quite distinct, the foliage being covered with hairs.

The hybrid C. G. F. Wilson is of exceptional merit, and is said to be the result of a cross between C. carpatica and C. pulla. It has large purplish-blue flowers on short stalks, and is very compact in growth. The new forms of C. carpatica, which have been introduced during recent years, are highly appreciated for the size and colour of their blossoms; White Star, Riverslea, Profusion, and Robert Parker are deserving of great praise. White Star is a lovely variety, with large, open, saucer-shaped blossoms, which are freely produced. It is a vigorous grower, with stiff wiry stems, capable of holding the flowers in an upright position. Robert Parker has white flowers, with blue centre. Riverslea is quite distinct among the blues, with flat open flowers. C. turbinata Isabel is a handsome and effective form, of recent introduction, compact in habit, and free flowering. These forms of C. carpatica and C. turbinata vary in height from six to twelve inches.

C. rhomboidalis, with its arching sprays of pendant, bell-shaped flowers, is exceedingly graceful, sometimes reaching the height of nine inches. C. barbata is an interesting species, growing about twelve inches high, and bearing hairy bells, of a pale blue colour. It is advisable to treat this as a biennial, for in many gardens it has a habit of dying off after flowering. C. cæspitosa is a vigorous grower, and quickly makes larger patches of foliage, from among which rise slender stems bearing pale blue pendant bells. C. pumila is a dwarf variety of cæspitosa, and rarely grows more than four or six inches high; there is a white form of this variety. C. soldanellæflora, the double-flowered variety of rotundifolia, is a beautiful plant, with flower stems about twelve inches in height, carrying pendant blossoms.

C. Barrelieri closely resembles C. fragilis in habit of growth, and is a useful plant for a position where its trails can hang over a ledge of stone. C. Raineri should have a place in every collection, as it is of very dwarf habit, having upright, bell-shaped blue flowers. C. pulla and its hybrids are all choice plants, rather slow in growth compared to many others, and having neat foliage, produced from underground shoots. Careful cultivation is necessary when dealing with this group, a well-drained flat shelf or pocket being the most suitable place for them, while the compost should consist of gritty loam, leaf-soil, and a little peat. As the foliage usually dies down in the winter one must be careful not to disturb the roots. C. Allioni has large blue flowers, borne singly on dwarf stems, and should be given a good position. It has a strong dislike to limestone, and this fact must be borne in mind. A mixture as advised for C. pulla will be found agreeable to it.

There are many other bell flowers equally suited to rock garden cultivation, as those enumerated by no means exhaust the list of really good sorts.

E. C. Pooley.

## SINGLE-FLOWERED CHRYSANTHEMUMS.

Of the many sections of chrysanthemums none have made such rapid progress during the last twenty years as single-flowered varieties. It was in 1883 I saw the first variety, Magenta King, sent out by Teesdale, followed by America the next year, by Crushed Strawberry in 1885, and the pure white Jane, sent out by Mr. Cannell, which maintained its popularity for many years. The year 1887 brought us two remarkable varieties, Admiral Sir T. Symonds, a rich yellow, and the largest bloom, even of any sent out in recent years; not that that was a boon, as too large a flower is not always the most admired. The other variety, Souvenir de Londres, was sent out by Delaux, and was the first of the rich coloured sorts, being brilliant magenta-crimson.

Since then we have had varieties in galore, until now we have colours sufficient to satisfy the most exacting. The tendency now seems to be towards medium-sized, shapely flowers, of which Mensa is the ideal. In this the florets are substantial, shapely, with an elegant recurve at the tip, and, what is of perhaps more importance, the colour is purely white, really an Elaine white. This latter has never been excelled in the purity of its colour, and is the one variety I have always employed as a test of any other so-called white. The small-flowered varieties of which Mrs. Langtry is a type, appear to lose popularity, owing to the smallness of their flowers, I presume. No chrysanthemum that I know has so pleasing a perfume as this, which is really worth growing, even for no other reason than its delightful fragrance. In colour it is a pretty pink, blossoming profusely.

We have during the last few years received a quantity of varieties that flower in the open in September, really when not wanted, and many of them are weedy in form and washy in colour.

There is no doubt but that single-flowered chrysanthemums will play a great part in the near future, where quantities of cut flowers are required for filling vases, especially for table decoration, as the double blooms, no matter how small they may be, have a distinctly heavy appearance in small vases, but where they can be employed in a bold manner, they are in great request.

For the amateur gardener with limited space, singles are just the thing, as the plants do not require so much root space as other sections, and they are effective either disbudded or grown in a mass, and allowed to develop all their blossoms. For the conservatory, grown as large specimens, ever with three plants in one pot, they make a rare display; dwarf plants in small pots are good for edgings or side stages, and they make a brave show. For exhibition in groups the singles always attract notice, and are becoming more in evidence. At Windsor, Cardiff, and York special encouragement is given to this section, and right well exhibitors respond, the public reaping the benefit of a handsome display.

The method of culture that finds most favour is the production of plants to give from twelve to a couple of dozen blooms, each shoot being allowed to carry one flower only. In this way the blooms are not unduly large, but they are shapely, true in colour, and, having a substantial stem, are so useful in a cut state, or equally valuable in groups. While the undisbudded plants, with their mass of flower may appeal to many, I do not think there is the same form or colour to be seen under such a system, as the small flowers do not represent the variety so faithfully as these medium-sized blossoms do.

Cultivation is simple. Short cuttings inserted in the usual way early in January will prove excellent plants if care is taken to grow them sturdily by affording plenty of space and air at all times. A weak growth is useless. Top the plants once at four inches high, and allow them to grow uninterruptedly afterwards, except for thinning the shoots for a given quantity of flowers. Secure the shoots early to supports, yet loosely, so that the flower stems are straight—an important item when arranging them in vases or in a group of plants. As the plants are often grown in smaller pots than is usual for other sections, and carry more foliage, owing to the extra number of stems, they naturally require more water and food.

The following two dozen varieties represent the very cream of selection: Mensa, pure white; Charles Kingsley, a magnificent yellow companion to Mensa; Edith Pagram, rich pink; Bronze Edith Pagram, bronze; White Pagram, white; Mary Richardson, reddish-salmon; Sylvie Slade, rose-garnet, with a white ring round the disc; Altrincham Yellow, yellow; Metta, deep magenta-red, with a white zone; Mrs. W. Buckingham, pink; Kitty Bourne, deep yellow; Ceddie Mason, bright crimson; Mary Anderson, blush-white; Mrs. R. C. Pulling, pink; Gertrude, white; Reginald Godfrey, clear yellow; Charles Dickens, orange-yellow; Arcturus, velvety-crimson; Ideality, pure white, circular form; Mrs. W. G. Patching, bronze; Crimson Mary Richardson, crimson; Merstham Jewel, reddish terra-cotta, with golden centre; Sandown Radiance, rich chestnut-crimson; and Manor Beauty, dark red, flushed terra-cotta.

E. Molyneux.

Swanmore Park.

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**Hardy Pitcher Plants.**—Quaint beauty and an interest of no ordinary character surrounds insectivorous plants; to this group of the vegetable kingdom belong three distinct sets of plants which, in one form or another, develop organs for the capture of insects, which they use as a source of nutriment. In the first section we have a series of plant forms wherein chambers are developed, which admit of the entrance of small insects, but not of their escape. The second section embraces plants that perform definite movements in response to a stimulus caused by the contact of the insects with the object of covering the prey with as great a quantity of digestive fluid as possible. Lastly, there is a third section wherein the individual forms are neither provided with pitfalls nor capable of performing special movements, but have leaves converted into lime-twigs, and on them animals stick and are also digested. Peculiar interest attaches to the first of these groups of insectivorous plants, inasmuch as two members of the section are hardy, and are frequently represented in gardens by healthy, well-grown specimens. The species I refer to are Sarracenia purpurea, and Darlingtonia californica, and the best collection of these plants I am acquainted with are growing in the gardens of Sir Edmund Loder, Bart., at Horsham, in Sussex. In these famous gardens they are grown right in the open, on a steep hillside, from which a perpetual trickle of water oozes forth and keeps the beds continually moist—for there are several beds—and the number of specimens, many of gigantic size, must largely exceed one hundred, while the healthy appearance of all, and their great vigour, testify to the marked ability with which Mr. W. A. Cook (the gardener) ministers to their need.—T. Smith.

## NEMESIA STRUMOSA.

This half-hardy plant is one of the most beautiful annuals when it is well grown, but this latter condition is not always easy to obtain, which is doubtless responsible for the comparative infrequence of its growth. It is a native of South Africa, and plants from that part of the world are generally regarded as not only sun-loving, but accustomed to dryness. That might be regarded as the reason why this annual is so seldom a success in damp gardens, if it were not for the fact that it is often grown very successfully in the North of England. The finest heads of blossom I ever saw came from a North Yorkshire garden.

There is one very fine strain known as Suttoni, in many beautiful colours, the shades of orange and apricot being the most characteristic colours of the flower. A blue form has recently been raised known as Blue Gem, but for a bed there is little doubt that the various shades of scarlet, pink, yellow, and orange are best, without the admixture of blue or purple. The forget-me-not blue variety is a doubtful acquisition if it is going to be introduced into all mixtures of seed, as purples are in the case of verbenas and pentstemons.

Seedlings may be raised in any frost-proof structure, but if raised in a warm house they should be given very little heat, and water should be used very sparingly; while, as soon as the seedlings appear, they should be kept in a cool place, with plenty of ventilation, as they are as prone to damp off as stocks. A rich sandy soil should be used, and as soon as the plants are large enough to handle they should be pricked off into boxes; and they are even worth potting up for the sake of obtaining the best results. They should be bedded out about six inches apart each way in well-prepared soil in a sunny position; and if the soil has been deeply worked, so that the plants have an extensive root run, they will not need much water in an ordinary summer. At this distance apart they will grow together; and, as each plant sends up five or six stems of more or less equal strength, each crowned with a head of flowers, the whole bed will be a glowing mass of colour.

Seeds may be sown in the open ground after the first week in May, but it needs a favourable season and conditions for good results. They last in flower a fairly long time as annuals go, but, if the plants are raised early, so as to get them strong before the forcing weather of June, they must not be expected to make much show after the beginning of August—at least, in the South—and some reserve material should be in readiness to replant the bed for an autumn display.

These nemesias grow less than 1½ft. in height, even at their best, and they make excellent pot plants. They may be had in flower from May to September, according to the time of sowing. Though the Suttoni strain is the best known, having been longest in the field, other nurserymen are now raising their own strains, some growing less than 1ft. in height. A. C.

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**Berberis Wilsonæ.**—This, one of the earlier introductions that we owe to Mr. E. H. Wilson when travelling in China, has proved worthy to rank with the very best of the deciduous barberries. It is of a neat compact habit, and very pleasing from the arching disposition of the shoots. The flowers are yellow, and the fruits when ripe bright coral red. Another notable feature is that the leaves die off very richly tinted. —K.

## THINNING FRUIT BLOSSOM

People sometimes make the remark that they get a better crop of fruit from a tree after a moderate amount of blossom than they do when it has been crowded with bloom. When we look at a tree which is one mass of flowers, and consider that practically all the substance of calyx, corolla, stamens, and pistil, has been produced out of the reserve material stored in the tissues of the tree during the previous summer and autumn, we are not surprised that the strain on the tree is so great that, after producing all this blossom, it has an insufficient reserve of strength to produce the quantity of fruit we should expect. This may show itself either in the failure of the blossom to give any appearance of setting, or in the dropping of the young fruits soon after they are apparently set. With Marie Louise pear, for instance, it is notorious that a poor crop often follows from a great display of blossom, whereas after a thin show of blossom, or after a heavy one which has been properly thinned, a good crop results, as this variety is usually a good setter.

There is no doubt that with choice trees of all sorts of fruit it is worth while, if the branches are easily accessible, or so far as they are within reach, to thin the blossom when it seems to be in excess of the strength of the tree, and this is especially the case with very young or newly-planted trees, when it will pay in the long run to pick off a large proportion of the bloom as early in the spring as it can be conveniently done.

The thinning of plum blossom, however, is not only a rather fiddling operation, but as a rule such a large proportion of the embryo fruits drop soon after they become visible, that thinning is generally applied to the young fruits rather than the blossom. The same practice is often followed with peaches and nectarines, thinning the young fruits of which is, of course, one of the routine operations in their cultivation; but, as the blossoms of these fruits usually sets very freely, it may well be worth while to do a preliminary thinning as soon as the buds begin to show colour, choosing those for removal which are badly placed between the wood and the wall, or very thick together. The buds removed should in all cases be the smallest and weakest. In the case of choice wall plums a quarter of an hour devoted to relieving a tree of a portion of its superfluous blossom before the buds expand is undoubtedly very well spent.

It is in the case of the apples and pears, however, that this work is most necessary, as the blossoms, being much larger in all respects, besides being produced in greater masses, take a correspondingly heavier toll of the energy of the tree. The operation should be begun as soon as the trusses of blossom are sufficiently advanced for the individual buds to be easily detached, as the sooner it can be done the less the strain upon the tree. In the case of apples, the finest blossoms are usually those at the top of the pyramid or truss, and these are the most likely to set, especially the central one. If three or four blossoms set on one truss, as sometimes happens, it is the fruit from the central blossom which may be expected to be the finest. In thinning, therefore, it is the buds at the lower part of the truss which should be selected for removal, as we shall then relieve the tree with the minimum risk of lessening the crop.

With pears the reverse holds good. Most would expect that the central or topmost blossoms of the truss, which often appear to be the strongest, would be the most likely to produce the best fruit. This is not so, however, at least with most varieties, as anyone can see for himself if he studies the setting of the blossom, for he will see that it is the side blossoms that most generally set; in fact, it has been stated that the central flowers are not fertile, either with their own pollen or any other. This latter statement, however, is given with reservation, as, in the fertility of pear blossom, so much depends upon the source of the pollen which comes in contact with the stigmas, most varieties needing the pollen of another variety to fertilise any of their blossoms, and in some cases, apparently, set better when crossed with the pollen of one variety than with that of another.

Of course, everyone knows that picking off a fruit bud of apple or pear in its unexpanded winter condition also destroys the possibility of future fruit buds at that joint, in other words, a spur. When, however, trees have become very thickly set with fruit spurs, or rather, elongated or much branched, and crowded with blossom buds, a common condition with pears, it is a good plan to go over the trees in the winter or very early spring with a sharp knife, and reduce some of the clusters of buds to two, or three at the most, on a spur. This is the best way of thinning the blossom on older trees, though the actual removal of some of the buds from the trusses will still be necessary in some seasons.

ALGER PETTS.

## CROTONS.

In the bright and long-continued summer of 1911 many of these beautiful foliage plants acquired a richness of colouring beyond what we generally see—that is, where sufficient atmospheric moisture was maintained to counteract the baneful influence of red spider, which was just suited by the season. As a result many plants under glass suffered considerably, not from this just-named pest alone, but from that tiny mite which is usually spoken of as the begonia mite, though a great number of other soft-wooded plants are liable to be attacked by it.

With regard to the crotons, or codæiums, the narrow-leaved varieties are, generally speaking, preferred in this country to the broad-leaved kinds, though these last are very effective as large specimens in the formation of extensive groups. Great numbers of the narrow kinds are, however, disposed of as table plants, for which symmetrical little specimens in pots from 3 to 5in. in diameter meet with a ready sale. In some nurseries subjects such as these are grown in large numbers, and in many private establishments also. They have many advantages over some decorative plants, inasmuch as cuttings from 4 to 6in. in length root in a short time if put in a close propagating case with a gentle bottom heat; and, if care is taken, they will retain all their leaves, so that, as soon as they are rooted, they form perfect little plants. Large-growing tops may be struck on the plant by partially cutting through the stem as in layering, and surrounding it with sphagnum-moss kept moist.

Though crotons make their quickest growth, and acquire their richest colouring, under the influence of a high, moist temperature and good light, they should be hardened off as much as possible before they are used for house decoration, as the dry atmosphere and lower temperature will cause the leaves to drop. Plants that have suffered in this way during the cold weather of winter and early spring will, however, quickly push out new terminal growths.

S. W.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

DENDROBIUMS. — Many species and hybrids are now showing flower buds in various stages of development. Where good growth was obtained last year, and afterwards properly ripened, the plants may be allowed to carry them; but plants that failed to make satisfactory growth, or any that are weakly, from any cause, should be relieved of their flower buds, in order that they may make stronger growth in the coming season. Before the flower buds are far advanced, it is desirable that the plants should be thoroughly cleansed, so that after-flowering they may be repotted at once should this be necessary. The flowering plants will need a little extra moisture both at the roots and in the atmosphere, to enable the flower buds to expand satisfactorily. A temperature of 60 degrees will answer their requirements, and on no account must they be unduly forced. With dendrobiums it is as yet a little early to do very much repotting, but there are cases where a start can be made. Seedlings which are too small to flower may be potted. With newly-potted plants the watering must be done with great care until the new growths are well advanced, and the new roots taking a good hold of the compost. The temperature for these must be about 65 degrees, so that the growths may be healthy and sturdy. A suitable compost consists of equal parts of peat, polypodium and osmunda fibre, and sphagnum moss. I do not favour the use of leaves for dendrobiums.

IMPORTED DENDROBIUMS.—This is the best season of the year to acquire imported plants of D. nobile, D. Wardianum, and many others. After the plants have been thoroughly cleansed, they may be potted and treated in the same way as those that are now coming into flower. No effort to unduly bush the plants into growth should be made, and the compost should be kept somewhat dry until new roots are seen to be pushing from the base of the bulbs. Spraying overhead occasionally will be beneficial, and be conducive to growth. As the new growths gain in strength, and roots become plentiful, water may be more frequently and liberally given.

PHALÆNOPSIS. — These lovely winter flowering orchids are now practically over for this season, and will enjoy a slight rest. They should only receive sufficient water to support their large succulent leaves, which should remain at all times perfently plump and healthy. Having no pseudo-bulbs, these leaves are the mainstay of the plants, therefore every means should be taken to retain them as long as possible. I prefer pans in preference to baskets, or cylinders, as I think the majority of plants can be more successfully cultivated in pans than pots. When phalænopsis are seen to be moving into growth is the best time to overhaul them, and all those that are in want of new compost should have attention. A good compost consists of equal parts of peat, polypodium and osmunda fibre, and sphagnum moss, with a liberal addition of half-decayed oak leaves. After repotting the plants must be carefully watered, and shaded from strong light. All composts used in potting should be warmed quite up to the temperature of the house in which the plants are grown.—J. T. BARKER, West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

CANNAS.—During the last few years cannas have been greatly improved; they used to be grown chiefly for the fine effect they gave to sub-tropical bedding, the foliage being very effective, but the flowers were very poor and not of much account. They are now among our most gorgeous conservatory plants, and would be even more popular if their cultivation were better understood. The present is a good time to make a start. Seeds can be obtained, and if soaked in warm water for twenty-four hours by placing the vessel of water in the plant stove, before sowing, the plants are easily raised if sown in sandy loam and placed in a temperature of 60 degrees; but the varieties are generally so poor and disappointing from seeds that they are not worth the trouble. It is better to buy named varieties of merit to begin with. Plants that were grown last season, and have been rested under the stage, should now be placed in heat. In most cases they are a potful of roots, with one or two leading growths. When the leading growths have attained a height of 18 inches with the leaves developing, the rhizome should be cut clean through between the young growth and the old stool. The plants should then be knocked out of the pots, and the young growth with the roots attached to it pulled away from the side of the ball of soil, and potted, choosing large 32-sized pots. The compost should be good loam two parts, decayed manure one part, and plenty of coarse sand. The old stools should be thrown away unless required for stock. Cannas revel in plenty of heat and moisture, and they also like liquid manure when well rooted. When the flower-spike appears another young growth will start from the base, and when this is 18in. high, sever it from the plant, remove, and pot it separately as advised above, or it may take the lead, and very likely the flower spike will not develop. If this system is practised one may have cannas all the year round. A good selection of varieties is: Eliza Hoss, Oscar Dannicker, Black Prince, Gaekwar of Baroda, Mrs. G. H. Strohlein, Papa Crozy, W. Watson, H. Aldinger, and Goethe.

ROSES IN POTS.—These should now be pruned back to three buds on each growth. If the soil has become sour the plants should be shaken out of the soil and repotted. Trim back any long, straggling or decaying roots, and repot at once in a rich compost of fibrous loam, decayed manure, and coarse sand. If a top-dressing only is necessary, pick off as much of the soil as it is possible without injuring the roots, using a pointed wooden peg. Give a top-dressing of rich soil, adding a 5in. potful of some good fertiliser, such as Clay's, which is well suited for roses, to the barrowload of soil. When they have been potted or top-dressed, they should be placed in a heated frame, giving water sparingly. They should be syringed well overhead to encourage them to break freely; give on all favourable occasions. Such varieties as Marechal Niel, Niphetos, etc., trained on rafters, should be taken down and pruned hard, i.e., all the young growths made during the last summer should be tied carefully in their full length, as these varieties produce their best blooms on the last season's growth; but all old wood that flowered last season must be cut away.—LEWIS SMITH, Shotesham Park Gardens.

## HARDY FRUITS.

ORCHARDS.—The scathing remarks of our fruit-growing friends across the water on the management (or mismanagement) of our orchards are unfortunately in many cases only too true. In these days of efficient insecticides, washes, etc., and means of applying them, it is to be regretted that more time and energy is not given to the best of what may be a necessary evil, that is, to give the old trees, as far as possible, a new lease of life until such time as a younger plantation takes the place of the old one. Decrepit trees and worthless varieties should be removed and replaced by good varieties; the site should be trenched over, and, where necessary, fresh loam added before planting the young trees. Sadly neglected trees should first be pruned; usually this kind of tree is one mass of growth, and the work of thinning out must be drastic, with the object of allowing free admission of light and air to all parts. All dead wood and growths affected by canker must be cut away. The loose bark on the stems and main branches should be scraped off (a three-inch onion hoe is a handy tool for the purpose). To cleanse the trees of moss, lichen, etc., spray with a caustic wash, thoroughly wetting the main stem and branches to reach hidden insect pests. If growing in grass, remove the latter for a foot or fifteen inches clear of the stem.

AMERICAN BLIGHT.—Trees affected by this pest should be well brushed over with paraffin emulsion. The roots should be laid bare for a yard or so, and, if troubled with blight, damp the roots with the emulsion. The removed soil should be burnt and new put in its place. Old pear trees still retaining their vigour of growth, but if inferior varieties, may be cut back and grafted with choice varieties (this will be referred to in a later note.) To promote healthy growth a spring dressing of a suitable artificial mixture should be applied, and, if desired, a home-made mixture of superphosphate, sulphate of potash, and sulphate of ammonia can be used at the rate of 5cwt. of superphosphate, 2cwt. of sulphate of potash, and 2cwt. of sulphate of ammonia per acre, the whole to be thoroughly well mixed together before use.

BUSH TREES.—Arrears of pruning should be made good at the earliest opportunity, and the trees sprayed. When pruning apples discrimination and close observation of the various varieties are some of the prime factors of success, habit of growth varies considerably, and to prune all alike is to court failure. Varieties which form fruit spurs freely may be pruned back hard, leaving sufficient extension wood to fill up any gaps or weak places; there are several which form their fruit buds on the tips of the young wood, or in the forks of the branches, and Lady Sudeley is a well-known example of this type; with such varieties it is more a matter of thinning out the growths, leaving as much bearing wood as is consistent with admission of light and air; the main branches should be more thinly disposed to allow room for the young growths, but in many cases far too many fruit buds are allowed to remain on the trees. Many varieties of pears, if allowed to carry too many fruit buds, completely fail to produce fruit, and hard thinning will, in most cases, work wonders, and trees hitherto unfertile will set their fruits freely. Pears on the quince usually require a certain amount of thinning of the fruit buds, more particularly after a few years' growth. Trees making too vigorous growth and at the same time failing to crop should be root-pruned and allowed more growth until the balance of root action and growth is restored; once a tree becomes fruitful it continues so under ordinary circumstances and care. Young trees of both apples and pears, with an upright, close habit of growth, can be formed into shapely trees by tying out the branches.—W. MESSENGER, Wolverstone Park Gardens.

## THE KITCHEN GARDEN.

MUSHROOMS.—Prepare beds at frequent intervals to maintain a regular supply, this course being far more satisfactory than making very large beds less frequently. Oft'-times fresh horse-droppings are not obtainable in large quantities, therefore small beds made every three weeks will serve best and prevent deterioration of the manure, while trying to collect enough for larger beds.

ARTICHOKES (JERUSALEM).—Nothing is gained by leaving these in the ground after this date; lift the crop, choosing the larger tubers for use, and place them under a wall facing north till required; they should be "soiled" over to retain their freshness. The medium tubers of good shape should be planted back on the same plot, providing the ground is deeply dug and well manured. Artichokes answer well for hiding unsightly objects during the summer and autumn months.

GLOBE ARTICHOKES.—The old stools must have ample protection during cold weather; litter, bracken, or ashes answer well, but should be removed during open weather to prevent the growth from rotting or becoming drawn. Those growths that were taken off in the autumn and potted up, and are now in cold frames, should have all possible air given on favourable occasions; plant these out in March.

RHUBARB.—It is now an excellent time to replant a portion of the bed to keep up the vigour in the plants that are constantly forced. In this way a good maincrop is assured to succeed the forced crop, besides having a portion for forcing, viz., that which was planted two years previously. The ground for this crop should be trenched and well manured, placing leaf-soil, old mortar rubbish, or burnt garden refuse around the stools. Champagne is a very early variety, of splendid colour when cooked, and finely flavoured. The Sutton and Dawes' Champion are two excellent varieties for succession.

SPINACH.—To prevent a shortage in the supply that is at times felt during the next few weeks when cold weather is generally experienced, a sowing can be made with advantage on a hotbed, which can be succeeded by marrows from pots. The outside spinach should have every encouragement to hasten its growth; use the Dutch hoe freely, and give sprinklings of soot. Evergreen boughs placed on the cold sides of the beds will help materially to maintain a regular growth. The same system applies to lettuce, early cabbage, etc., and a small plot of each should always be planted on a sheltered site for early supplies.—G. ELLWOOD, Swanmore Park Gardens.

# THE VALUE OF BIRDS TO MAN.

(Concluded from page 86.)

## Birds Among the Fruits.

Birds are charged, as though the case were one of theft, with feeding to a greater or less extent on the fruit which they help to produce. In Nature, such services as the bird renders in direct protection of the tree is placed to its credit, and it receives its reward. Does man expect it, for his sake, to deviate from those habits which it has contracted under natural conditions? In other words, does he expect the bird to assist him in producing an unnatural surplus of fruit?

Call the bird in the orchard an evil—if you will. But it is a necessary evil, and the fruit-grower must make up his mind to pay the bird its wages, even though at times they may seem exorbitant.

What would happen to this poorer class of fruit-growers if they were deprived of the services of the bird is best seen in what happened to Frederick the Great. This worthy, in a fit of passion, because a flock of sparrows had pecked at some of his cherries, ordered every small bird that could be searched out to be instantly killed. Within two years his cherry trees, though bare of fruit, were weighed down with a splendid crop of insects.

## The Services of the Bird in the Garden.

The garden is the insect's paradise. It fares sumptuously every day on the most succulent of vegetable foods. Every opportunity is thus offered for its increase. The greatest insect enemy of the garden is a small, dull-coloured, hairless caterpillar, known as the cut-worm, which is the larva of a Noctuid moth. This chief of the brigand band of garden pests usually hides during the day beneath matted grass, or under the loose soil along the rows of plants. It comes forth at dusk to feed. The bird is abroad at the first peep of day, and it finds the robber-worm in the morning before it has retreated to its place of concealment.

The cut-worm, by the way, is the worm which is associated with the early bird in the well-known proverb.

But the bird has to come stealthily to the garden. Its visits are regarded by man with more than suspicion, and it is fortunate if it escapes with its life. In consequence, it snaps up a caterpillar and is off again, leaving thousands it would have eaten, if unmolested, to run riot among the vegetables.

Occasionally a bird more bold than its fellows will visit the garden in broad daylight to dig the cut-worms out of their hiding-places. Nature never having begrudged it the reward of its toil, the bird takes a few peas before leaving.

The gardener notices the damage done to his peas, and next morning is up betimes. He sees the early bird running along the rows of peas, stopping frequently to peck at something. There is a loud explosion, followed by a puff of smoke. The smoke slowly drifts away, to disclose a bird lying dead.

Caterpillars are not gifted with a voice. If they were, they would scarce forbear to cheer.

The bird is dead. Mark the sequel. One fine morning the gardener issues proudly forth to cut his mammoth cabbage—the one with which he intends to put to utter confusion all other competitors at the local fruit and flower show. Alas for human hopes, and the depredations of caterpillars. The cabbage is riddled like a colander.

The gardener, when he shot the bird, forgot, if, indeed, he ever knew, that the ancient law forbade a muzzle to the ox that threshed out the corn.

## Utility of Birds in the Meadow.

Each season, until hay-making commences, the grass offers cover and shelter for the nests of such birds as breed on the ground. The fields also provide food for birds, and for the insects on which birds feed. Thus there is established a natural inter-relation and interdependence between the bird and its food and shelter—that is to say, the insects and the grass. This simulates the condition of the earth before man made discord in the grand harmony of Nature's laws.

Where the birds of the field are undisturbed they tend to hold the grass insects in check. On the other hand, when the numbers of birds in the field are, for any reason, insufficient, the insects increase.

Here is an instance of this. Some years ago in Bridgewater, Massachusetts, a great battue was held by the ignorant townspeople in the spring of the year, and so many field birds were killed that their bodies were ploughed into the land for manure. The following summer whole fields of grass withered away and died. This was due solely to the fact that the number of field birds had been reduced, and, in cnsequence, the pressure which Nature demands the field bird shall exert upon the field insect had been released.

Again. At one time, in New Zealand, it was no uncommon thing to see English grass wither up in large patches, as though scorched by fire. This was due to the work of a crane-fly and click-beetle, the larvæ of both of which were addicted to the habit of eating the roots of the grass, just under the surface. English grass was then comparatively limited in the up-country districts, and, as there are large tracts of land in New Zealand destitute of native grasses, the depredations of these insects became a serious matter to those settlers who had stock to feed, and who were relying on the English grass to feed them. It was all the more serious because the insects were without any natural check, the native birds which had kept their numbers down before the advent of the white man having been scared from the vicinity of the homesteads. So the beetles continued to make merry, to marry, and to multiply. In a corresponding ratio the grass continued to fade, to wither, and to die.

Then came the English starling; and so voraciously did it feed on the larvæ that soon all was green again.

Without birds, provided insects were present, grass could not be grown. The grub of a single species of beetle, if unchecked, could destroy all the grass roots of our meadows, or any one of the several species of the cut-worms might be sufficient to destroy all the verdure above ground.

"CHRYSANTHEMUMS AND HOW TO GROW THEM FOR EXHIBITION," by J. B. Wroe.—Full details on timing and stopping for Northern, Southern, and Midland growers, selections of the best varieties, illustrated instructions on taking the buds, cuttings, staging, etc. Prices 1s. net, by post 1s. 2d.; cloth, 1s. 6d., by post 1s. 8d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

# EXHIBITIONS AND MEETINGS.

◆

## Royal Horticultural Society.

In spite of the bad weather, there was a bright display in the Royal Horticultural Hall on Tuesday, February 6. Forced shrubs, carnations, camellias, and orchids provided the chief attractions. Novelties were few. There was a capital attendance in the afternoon.

### FLORAL COMMITTEE.

A delightful group of forced flowering trees and shrubs from Messrs. R. and G. Cuthbert, Southgate, was a prominent feature of the meeting, and an especially bright and interesting one, as it served once more to demonstrate the value of these subjects for conservatory decoration. Magnolias figured largely in the centre of the group, and standard wisterias were delightful, as were the tall lilacs, Jasminum primulinum, Pyrus malus floribunda, mollis azaleas, Choisya ternata, Forsythias, and other lovely things associated with palms and ferns.

Perpetual carnations were very much in evidence on this occasion. Mr. H. Burnett brought over some charming flowers from Guernsey, and staged these in capital style, setting up fine vases of R. F. Felton, White Enchantress, Mandarin, Mrs. H. Burnett, White Perfection, the bold Marmion, Bonfire, Orpheus, and Majara, the latter being a good white.

Messrs. W. Wells and Co., Merstham, contributed a small collection of perpetual carnations, and disposed the flowers among Asparagus Sprengeri, the leading varieties being White House, May Day, Marmion, and Mikado.

Mr. L. R. Russell, Richmond, contributed a batch of Debregæsia velutina, with its yellowish green fruits, a group of Prunus triloba, and some berried aucubas.

Messrs. T. S. Ware, Lim., Feltham, contributed a collection of alpine plants, in pans, and though few of these were in bloom, they proved interesting and attractive.

Bunches of the golden Senecio grandifolius were sent by Mr. Kempshall, gardener to Mary Countess of Ilchester, Abbotsbury, Dorchester, and were very effective.

Messrs. Barr and Sons, Covent Garden, had a bright little exhibit of early narcissi, snowdrops, lachenalias, and squills.

The cyclamens from Messrs. S. Low and Co., Enfield, were exhibited in large pans of a variety, and in this way they were very effective, especially Salmon King, and the fringed Mrs. Buckston. With the cyclamens were shown some hyacinths. Messrs. Stuart Low and Co. also displayed perpetual carnations in quantity, and made a specially good show of Lady Alington, Baroness de Brienen, Royal Purple, Beacon, and Fire Glow.

→ Spraying ←
The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers Use **only** the **reliable** tested "FOUR OAKS" which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-.** No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 C., SUTTON COLDFIELD.**

A large exhibit from Messrs. James Veitch and Sons, Chelsea, contained a goodly number of bright Indian azaleas, semi-double camellias, Acacia lineata, A. Drummondi, Prunus sinensis fl.-pl. alba, Amygdalus persica fl.-pl. rosea, Primula Kewensis, lily of the valley, and other interesting early-flowering plants.

Mr. C. Engelmann, Saffron Walden, was a considerable exhibitor of perpetual carnations, and staged the new clove-scented crimson Triumph (A.M.), in good form; Gloriosa, May Day, Elektra, Lady Northcliffe, and Vinca were other notable varieties.

Messrs. Thompson and Charman, Bushey, Herts, ne wexhibitors, put up a small rock garden, but this was rather too thinly furnished to be really effective.

Small models of garden fencing, seats, bridges, arches, arbours, and tea houses, submitted by Messrs. J. Cheal and Sons, Crawley, with a background of flowering shrubs, constituted a most interesting contribution.

Miss E. Ough, Streatham Common, submitted a collection of paintings of flowers and fruits, and Miss Massee, Kew Gardens, exhibited a very interesting and useful series of studies of fungi, fern fructification, wild flowers, etc.

Hardy cyclamen, all C. ibericum seedlings, were delightful, as shown by Mr. F. H. Chapman, Rotherside Gardens, Rye; Mr. Chapman also showed Narcissus Ryensis, a hybrid between N. triandrus and N. bulbocodium.

Messrs. W. Cutbush and Sons, Highgate, presented a very showy exhibit, consisting of forced lilacs and magnolias, Indian azaleas, prunuses and pyruses, early irises, the sweet Boronia megastigma, hamamelis, and a large collection of perpetual carnations, the flowers all bright and well arranged.

A nice little contribution of Richmond roses, beautiful blooms, sweet, bright, and on long stems, came from Messrs. G. Mount and Sons, Canterbury, and was greatly admired

The carnations from Messrs. Allwood Brothers included vases of Marmion, Scarlet Glow, the new Geisha, La Rayonnante, Lady Alington, etc.

Mr. Bertie Bell, Castel, Guernsey, again made a good show with his new deep pink perpetual carnation named Coronation.

Camellias from Messrs. W. Paul and Sons, Waltham Cross, filled one corner of the hall with beauty, and everyone admired the well-flowered, glossy-leaved bushes of Jupiter, Mercury, Donckelaari, Mars, Waltham Glory, Ceres, and other semi-double and single varieties.

A remarkable exhibit was the one put up by Messrs. H. B. May and Sons, Edmonton. It consisted of a long paper-covered board with about three fronds each of some twelve species, and fifty-eight varieties of nephrolepis. The development of plumosa nephrolepis from stolen sports, and variation from spores, is one of the horticultural wonders of modern times, and the whole history of that development was, so to speak, set out in detail by the fronds thus exhibited. The exhibit was of outstanding interest, and of considerable educational value, as it afforded ample opportunities for making comparisons between the many plumose varieties now on the market.

### ORCHID COMMITTEE.

A splendid odontoglossum named O. Merlin, very like a fine crispum, white, with rich crimson spottings, was exhibited by Mr. H. Alexander, grower to Lieut.-Colonel Sir G. Holford, Westonbirt, Tetbury, and gained a F.C.C.; the marks on the petals are richer in colour than those on the sepals; Cypripedium Helen II., Holford's var., and Sophrolælio-cattleya Marathon Vesuvius, also came from Westonbirt.

Messrs. Charlesworth and Co., Haywards Heath, showed Odontioda Bradshawiæ finely, as well as Odontoglossum crispum and antholes, the lovely yellow Lælio-cattleya Ixion, and Vanda teres alba.

From the Glebelands collection Mr. J. Davis, gardener to J. Gurney Fowler, Esq., brought up Odontoglossum Memoria Lily Neumann (A.M.), of unknown parentage; the spike carried a dozen beautiful blooms, heavily marked with maroon on a rosy ground, the tips being whitish; the lip has a golden crest.

Messrs. J. Cypher and Sons, Cheltenham, brought forward a few cypripediums and masdevallias; C. Beechense superba was particularly good in this group.

A charming hybrid is Brasso-cattleya Wellesleyæ (B. glauca crossed with Cattleya Mossiæ Wagneri), with pure white flowers of great beauty, with a lemon-yellow throat; this, as well as some good cypripediums, were exhibited by Mr. W. Hopkins, gardener to Francis Wellesley, Esq., Westfield, Woking.

Mr. W. A. Manda, St. Albans, set up several forms of Cattleya Trianæ, one named American Beauty much resembling the variety Backhousiana.

A charming hybrid between Odontoglossum Phœbe and O. ardentissimum, with rich crimson markings, named O. Collieri, was shown by Mr. J. Collier, gardener to Sir J. Colman, Bart., Reigate.

Messrs. J. and A. McBean, Cooksbridge, showed Lælia anceps Schroderiana, L. a. Williamsiana, Cymbidium eburneo-Lowi, the lovely Brasso-cattleya Eudora splendens, and a good Odontioda Charlesworthi.

A few choice plants from Messrs. Hassell and Co., Southgate, included Lycaste Skinneri alba, Odontoglossum Lawrenceanum, and Cypripedium chrysotoxum Victor.

Some interesting orchids from Messrs. Stuart Low and Co., Bush Hill Park, Enfield, included the quaint black-flowered Pleurothallis Roezli, the fragrant Rodriguebia crispa, Platyclinis glumacea, and a number of bold sypripediums.

A showy group of orchids from Messrs. W. B. Hartland and Sons, Ardcairn, Cork, consisted of Odontoglossum Harryano-crispum, Cypripedium Actæus, C. Leeanum, C. callosum Sanderæ, C. Thalia, Cymbidium giganteum, etc.

### VEGETABLE COMMITTEE.

The early broccilis from Messrs. Sutton and Sons, Reading, formed a very attractive exhibit, the piles of neat heads of Snow White, Superb Early White—splendid heads, and Winter Mammoth proved very tempting and appetising, and showed how great has been the advance made with these useful vegetables in recent years.

### CERTIFICATE AND AWARDS.

First Class Certificate.—To Odontoglossum Merlin, from Lieut.-Col. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

Award of Merit.—To Odontoglossum Memoria Lucy Neumann, from J. Gurney Fowler, Esq. (gardener, Mr. Davis), Glebelands, South Woodford; to Carnation Triumph, from Mr. C. Engelmann, Saffron Walden.

### MEDALS.

Silver-Gilt Flora.—To Messrs. R. and G. Cuthbert, Southgate, for forced flowering shrubs; to Messrs. H. B. May and Sons, Edmonton, for fern fronds.

Silver-Gilt Banksian.—To Mr. H. Burnett, Guernsey, for carnations.

Silver Flora.—To Miss Massee, Kew Gardens, for paintings of fungi, etc.; to Messrs. Wm. Paul and Son, Waltham Cross, for camellias; to Messrs. James Veitch and Sons, Chelsea, for greenhouse plants; to Messrs. W. B. Hartland and Co., Cork, for orchids.

Silver Banksian.—To Messrs. Sutton and Sons, Reading, for early broccolis; to Messrs. W. Cutbush and Sons, Highgate, for forced shrubs, etc.; to Messrs. S. Low and Co., Enfield, for cyclamen and carnations; to Messrs. G. Mount and Sons, Canterbury, for roses; to Messrs. S. Low and Co., Enfield, for orchids; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; to Messrs. Charlesworth and Co., Hayward's Heath, for orchids; and to Messrs. J. and A. McBean, Cooksbridge, for orchids.

Bronze Banksian.—To Mr. C. Engelmann, Saffron Walden, for carnations; and to Mr. S. Hanham, Goldhawk Terrace, N.W., for paintings.

### SCIENTIFIC COMMITTEE.

January 23.—Present: Mr. E. A. Bowles, M.A., F.E.S., F.L.S. (in the chair); Messrs. A. D. Michael, G. Massee, R. H. Curtis, W. Hales, G. Gordon, and F. J. Chittenden (hon. secretary).

GALANTHUS ELWESI VAR. POCULIFORMIS.—Mr. Bowles showed a flower of this beautiful and robust snowdrop, the inner segments being white without the green marks usual in snowdrops.

NANDINA DOMESTICA FRUITING.—Mr. Fox, of Carmino, Falmouth, reported the fruiting of Nandina domestica in his garden in 1911.

RASPBERRY CANES DISEASED.—Mr. Peters, of Ripley, sent canes of raspberries showing whitish patches on the skin with tiny black spots upon them. Many canes had died, and others attacked had grown and fruited but poorly. Mr. Massee recognised the disease as due to the attack of the fungus Hendersonia rubi.

## National Chrysanthemum Society.

A rather small gathering of members assembled at Carr's Restaurant, Strand, W.C., on Monday, February 5, at seven p.m., when Mr. Thomas Bevan, in the unavoidable absence of the President, Sir Albert Rollit, presided over the annual general meeting.

The annual report and balance-sheet were taken as read, and the Chairman formally moved their adoption, and this Mr. John Green seconded, remarking that the old society appeared now to be sailing in smooth waters. This was carried unanimously. The following is an abstract of the report:

### REPORT OF THE COMMITTEE FOR 1911.

The Executive Committee have pleasure in submitting to the members their annual report for the year 1911, a year which has been marked with considerable progress and development in the respective spheres of the society's work.

At the annual meeting held in February last, Sir Albert Rollit, D.C.L., LL.D., was unanimously re-elected president. The members will be interested to hear that early in the year he was appointed Knight Commander of the Order of St. Olaf of Norway of the First Class. The president continued his activities to promote the welfare of the society during the past year, and made special efforts towards increasing the membership of the society, with the result that many notable additions were made to the Society's roll of Fellows and ordinary Members. Your committee felt that they were only anticipating the wishes of the general body of members in expressing to Sir Albert Rollit their very high appreciation of his efforts in this direction. At a meeting of the committee held on November 20, it was resolved that an expression of the committee's thanks on behalf of the members should be suitably engrossed and formally presented to the president at the annual dinner on November 29.

Two shows were held as usual at the Crystal Palace on October 4 and 5 and November 1, 2, and 3. The early exhibition showed marked traces of the prolonged drought which afflicted the whole of the country, particularly in the South, during the spring and autumn of the past year. The competition was consequently not keen, and the quality of the flowers was hardly up to the usual standard. At the November Show the same influences were felt in a smaller degree. Members will be interested to hear that the Publications Committee have received special instructions to prepare and issue to the members a full descriptive record of the show. It is proposed to continue this plan in future so that these reports will be of permanent historical interest as showing the variations in the exhibitions from year to year.

The exhibits which were put up by the trade in November were stated by more than one horticultural paper to have been "more magnificent than ever," and nobody who was present at the show will be likely to dispute this statement. It is impossible to praise too highly the loyalty of the trade, who readily came to the society's aid in a year which was certainly not an easy one for the culture of chrysanthemums.

For the third year in succession the committee arranged a conference which was held at Carr's Restaurant on December 4, when the following papers were read: "Chrysanthemums for Market," by Mr. F. W. Ladds; "Soil Preparation and some Chemical Foods," by Mr. P. A. Cragg. The audience numbered over 100 enthusiastic growers, and each paper was followed by an animated discussion. The deliberations of the Floral Committee during 1911 have again formed a very important branch of the society's work. Eight meetings of the committee were held at Essex Hall and the Crystal Palace. Two hundred and twenty-seven new varieties were considered by the committee, and the following awards were made: 38 First-class Certificates, 33 Commendations, and 1 Award for Colour; whilst votes of thanks were awarded to Messrs. Wells and Co., the Mill Hill Vineyards, Lim., and Mr. J. Simon, for collections submitted at meetings held on September 4, November 20, and December 4, respectively.

The members of the Floral Committee paid a visit to the nurseries of Messrs. Lowe and Shawyer on October 7, and a further visit to the nurseries of Messrs. Cragg, Harrison, and Cragg on October 21. Both these visits proved most interesting and instructive. In the committee's last report mention was made of the fact that the Floral Committee were taking into consideration the whole question of classification with a view to revising the list of sections. The sub-committee which has been charged with the duty of bringing up a full report on the matter have not yet finished their labours. The exceptional difficulties of the task only became apparent when the matter came to be considered in detail, but the Floral Committee hope to complete their deliberations and make a report to the members in time for the 1912 season.

On July 17 about 120 members and friends paid a visit to Clivedon, by special permission of the owner, W. Astor, Esq., and all agreed that the day had been one of the most enjoyable outings ever spent by the society.

The annual dinner was held at the Holborn Restaurant, under the chairmanship of the President, Sir Albert Rollit, on Wednesday, November 29. The company numbered 110, and an exceptionally good musical programme was interspersed between the various speeches.

The medals of this society which were offered to the committee of the International Exhibition have been accepted, and a class appears in the schedule for twelve bunches of chrysanthemums.

Having regard to the nature of the class, your committee have made further representations to the secretary of the exhibition, and he has agreed to allocate space for non-competitive exhibits of chrysanthemums. It is proposed to offer to the committee of the International Exhibitions the small gold medal, silver-gilt medal, and large silver medal of this society, to be awarded in connection with these non-competitive exhibits.

It was particularly noticed that these types—pompon, anemone pompon, and anemone chrysanthemums—were not represented at the show as worthily as might be desired. At a subsequent meeting of the committee special attention was drawn to this matter, and it was suggested that steps should be taken to arrest the apparent decline in these sections. The matter was very fully discussed, and eventually a recommendation was made to the Schedule Committee that they should take this question into careful consideration, with a view to offering in the 1912 schedule special prizes for seedling plants to be exhibited in 1913 of pompons, anemone pompons, and anemone chrysanthemums. That recommendation will be carried into effect by the Schedule Committee.

The finances of the society still continue in a very healthy condition. The accounts show that there were no ordinary liabilities on December 31 last, whilst the assets amounted to £126 15s. 7d. The accounts for 1911, duly audited, are appended to this report.

During the year, 22 Fellows and 51 ordinary members have been added to the society's roll, and three horticultural societies have been admitted to affiliation. It is believed that the progressive policy of the committee in dealing more fully with the educational side of the society's work, and in issuing valuable publications to the members, will be the means of securing many more new members during the coming year. Members joining during 1912 will receive copies of the society's recent publication, "The Culture and Exhibition of Large Chrysanthemum Blooms," in addition to the publications which will be issued during the forthcoming year.

Early in the year the committee were enabled, by the kindness of Mr. R. Ballantine, to obtain complete sets of the society's

Eckford's
GIANT SWEET PEAS
P.B.B.

Another Record Sweet Pea Year.

ECKFORD'S GREAT £1,000 COMPETITION.

Open to all—over 200 Cash Prizes.

There are two reasons, both equally good, for this competition, as you will admit. First and foremost, Eckford's, as the premier Sweet Pea Specialists of the world, wish to mark their tangible appreciation of the public preference for their unsurpassed Sweet Pea Seeds—a preference based upon the unexcelled standard they have always maintained.

To grow from Eckford's Seeds spells success—there is nothing to be doubtful or dubious about, either as regards the magnificent quality of the flowers, or on the score of their hardiness.

Eckford's have made the culture of the Sweet Pea the aim and object of their existence, and as all know and appreciate—Eckford's Sweet Peas are unrivalled in the bewitching splendour of their hue and fragrance.

Again Eckford's desire to promote, even more than before, the cult of the Sweet Pea. They wish everyone to become experts in the art of growing Sweet Peas to perfection, and they imagine no better way than the medium of a friendly competition—open to all.

It matters not whether you grow extensively, or on a limited scale, for Eckford's have graded the contest in classes.

The professional grower is restricted to his brethren—the amateur who has the aid of help is in a division by himself; those with modest gardens are also catered for; whilst even children have a section to themselves.

The competition is open to all. Simply send now to Wem for free particulars, and enter at once.

SPECIAL NOVELTY OFFER FOR 1912.

CLARA CURTIS (Waved). — A fine waved primrose; very free flowering, fine for exhibition. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-.**

W. T. HUTCHINGS (Waved).—A very fascinating flower of soft cream overlaid with a delicate pink. In sealed packets, 7 seeds **3d.**; 15, **6d.**; 30, **1/-.**

OTHELLO (Waved). — A beautiful self-coloured giant chocolate, of splendid substance and robust habit. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-.**

APPLE BLOSSOM (Waved). — A beautiful flower of apple blossom colour, of giant size, frequently four-flowered. In sealed packets, 10 seeds **3d.**; 20, **6d.**; 40, **1/-.**

APRICOT (Waved).— A beautiful light apricot overlaid with rich cream pink; delightful for table decoration; one of the most superb. In sealed packets, 5 seeds, **6d.** 10, **1/-.**

Mrs. HENRY BELL (Waved). — A beautiful rich apricot ground overlaid with a soft pink, which deepens towards the edges of both standards and wings; finely-waved. In sealed packets 10 seeds, **3d.**; 20, **6d.**; 40, **1/-.**

TERRA-COTTA.—A bright cerise standard overlaid with terra-cotta; wings soft rose. In sealed packets, 5 seeds, **6d.**; 10, **1/-.**

Miss GUEST (Waved).— A pure, bright, almost self rose, robust and of giant size; beautifully waved. In sealed packets, 5 seeds, **6d.**; 10, **1/-.**

ASTA OHN (Waved).— A pretty waved lavender overlaid with rose; a very charming flower. In sealed packets, 10 seeds **3d.**; 20, **6d**: 40, **1/.**

CERISE (Waved).—A fine bold, beautifully waved, true cerise; a very strong grower. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-.**

SAINT GEORGE (Improved Waved).— This is a very charming flower; as accurately as one can describe, it is a deep exquisite coral of giant size and splendid substance. In sealed packets, 5 seeds, **6d.**; 10, **1/-.**

DODWELL F. BROWNE (Waved).—This is a very beautiful intense bright crimson, three and four flowered, almost a self. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-.**

EVELYN HEMUS (Waved).— A warm cream shading to yellow with a picotee edge of terra-cotta pink; standard and wings beautifully waved, In sealed packets, 10 seeds, **3d.**; 20 **6d.**; 40 **1/-.**

PICOTEE (Waved). — A giant waved flower, pure white with a beautiful picotee edge of carmine; a really beautiful flower and fine for exhibition. In sealed packets, 5 seeds, **3d.**; 10, **6d.**; 20, **1/-.**

SPECIAL OFFER.— One full-sized packet of each of the foregoing 14 charming and novel Sweet Peas, 11/6, post free, for cash with order. One half-sized packet of each of the foregoing charming and novel Sweet Peas, **6/-**, post free, for cash with order.

SPECIAL COLLECTIONS for 1912.

EXHIBITOR'S (E) COLLECTION.—24 Giant Waved varieties, new and up-to-date; fine for exhibition, 10 seeds of each for **5/6**, post free, cash with order.

VILLA (B) COLLECTION.—24 splendid varieties, suitable for exhibition, 50 seeds of each, **5/6**, post free, cash with order.

HALF-VILLA (B) COLLECTION.—24 splendid varieties, suitable for exhibition, 25 seeds of each, **3/-**, post free, cash with order.

EXHIBITOR'S (D) COLLECTION. 12 Giant Waved varieties, new and up-to-date; fine for exhibition, 10 seeds of each for **2/9**, post free, cash with order.

VILLA (C) COLLECTION.—12 splendid varieties, suitable for exhibition, 50 seeds of each, **2/9**, post free, cash with order.

VILLA (E) COLLECTION.—12 splendid varieties, suitable for exhibition, 25 seeds of each, **1/6**, post free, cash with order.

A specially written booklet on Sweet Pea Growing given with every order. ☛ Send to WEM for satisfaction.

FREE. Send a postcard to-day for large illustrated and coloured Catalogue. It gives full particulars of all novelties in Sweet Peas for 1912; also complete particulars of the £1,000 offered in Prizes for growers of Eckford's Sweet Peas, and contains full list of all Flower and Vegetable Seeds.

HENRY ECKFORD, Sweet Pea Specialist, Dept. 221, WEM, SHROPSHIRE.

schedules and other publications since 1883, and these have now been bound in suitable style, and form a valuable addition to the society's historical records.

Your committee have taken into special consideration the form in which the society's publications should be issued in the future, and it has been decided that for 1912 and subsequent years the "Schedule" shall contain only the list of members and affiliated societies, the list of classes at the society's shows, and such other matter as may have direct relation to our exhibitions. A separate book will be published each year to be called the "Transactions of the National Chrysanthemum Society."

An agreement has been signed with the Receiver of the Crystal Palace for the holding of two shows during 1912, on October 2 and 3 and October 29, 30, and 31. The date of the large show is slightly earlier than the committee would desire, but it has been necessitated by the fact that at the date when the agreement was signed the Receiver of the Crystal Palace had only been granted permission by the Court to make agreements for shows up to the end of October, 1912. Under these circumstances your committee are making special arrangements for the holding of a supplementary exhibition at Essex Hall, on November 20 next.

### 1912 MEETINGS.

The meetings of the Executive Committee for 1912 have been fixed as follows: September 23, October 21, November 18, and December 16.

The meetings of the Floral Committee for 1912 have been fixed as follows: September 9, September 23, October 2, October 21, October 29, November 11, November 20, and December 2. It has already been decided to hold the society's annual conference at Essex Hall, on Wednesday, November 20, the same date as that fixed for the supplementary exhibition and meeting of the Floral Committee.

### FINANCIAL STATEMENT.

#### RECEIPTS.

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| To Balance at bank brought forward | 50 | 8 | 8 | | | |
| ,, Petty Cash brought forward ... | 0 | 17 | 6 | | | |
| | | | | 51 | 6 | 2 |
| ,, Annual Subscriptions ... ... ... ... ... | | | | 156 | 10 | 7 |
| ,, Donations and Special Prizes ... ... | | | | 14 | 19 | 0 |
| ,, Receiver of the Crystal Palace ... ... ... | | | | 150 | 0 | 0 |
| ,, Entry Fees ... ... ... ... ... ... ... | | | | 8 | 0 | 0 |
| ,, Affiliation Fees ... ... ... ... ... ... | | | | 46 | 14 | 6 |
| ,, Medals, etc., Affiliated Societies ... ... | | | | 39 | 11 | 6 |
| ,, Advertisements in Schedule and Conference Report ... ... ... ... ... ... | | | | 20 | 13 | 5 |
| ,, Space Charges at Shows ... ... ... ... | | | | 11 | 15 | 6 |
| ,, Sale of Dinner Tickets ... ... ... ... ... | | | | 24 | 10 | 0 |
| ,, To Balance of Outing Account ... ... | | | | 2 | 9 | 0 |
| ,, To Sale of Conference Reports ... ... | | | | 4 | 16 | 11 |
| ,, To Interest on Deposit ... ... ... ... | | | | 1 | 1 | 3 |
| | | | | £532 | 7 | 10 |

#### PAYMENTS.

| | £ | s. | d. |
|---|---|---|---|
| By Prize Money, October and November ... | 150 | 6 | 6 |
| ,, Printing and Stationery ... ... ... ... | 99 | 12 | 1 |
| ,, Medals and Engraving ... ... ... ... | 43 | 14 | 7 |
| ,, Cost of Annual Dinner ... ... ... ... | 31 | 10 | 8 |
| ,, Hire of Rooms ... ... ... ... ... ... ... | 7 | 15 | 0 |
| ,, Premium on Secretary's Guarantee Bond | 1 | 10 | 0 |
| ,, Advertising ... ... ... ... ... ... ... ... | 3 | 0 | 0 |
| ,, Secretary's Salary ... ... ... ... ... ... | 100 | 0 | 0 |
| ,, Postage, Telegrams, and Carriage ... ... | 35 | 19 | 1 |
| ,, Sundries ... ... ... ... ... ... ... ... | 5 | 0 | 5 |
| ,, Insurance of Trophies ... ... ... ... ... | 0 | 19 | 6 |
| ,, Crystal Palace Co. (Proportion of Space Charges) ... ... ... ... ... ... ... | 3 | 7 | 6 |
| ,, New Vases Purchased ... ... ... ... ... | 1 | 9 | 0 |
| ,, Cheque Books and Bank Charges ... ... | 0 | 17 | 8 |
| ,, Balance of Petty Cash ... ... ... ... ... | 2 | 4 | 8 |
| ,, Balance at Bank ... ... ... ... ... ... | 45 | 1 | 2 |
| | £532 | 7 | 10 |

A vote of thanks having been accorded to the auditors, the chairman, and vice-chairman, Mr. E. F. Hawes nominated Sir Albert Rollit as president in a few congratulatory remarks, and Sir Albert was unanimously re-elected. Messrs. J. B. Riding and G. Langdon moved the re-election of Mr. John Green as treasurer, and the motion was heartily carried.

Mr. Thomas Bevan was again re-elected chairman of committee, with applause, on the motion of Messrs. Moorman and Prickett. Mr. E. F. Hawes was then unanimously re-elected vice-chairman, and Mr. C. Harman Payne's re-election as honorary foreign corresponding secretary was equally unanimous and hearty, and he was congratulated upon the receipt of the Academic Palms from the Government of France—a high and rare honour.

The re-election of Mr. R. H. Witty was unanimous on the motion of Mr. J. Green and Mr. Hawes, the former adding a few appreciatory remarks that the meeting heartily endorsed. Mr. Witty gracefully acknowledged his re-election. Messrs. Cox and Stephens were elected auditors for the ensuing year.

The election of one-third of the committee as per rule, took little time, as the nominations only met the needs of the case, so there was no need for a ballot. Those elected were: Messrs. J. Emberson, D. Ingamells, C. Noyce, J. B. Riding, H. Runciman, G. Springthorpe, W. Wells, W. A. Cull, J. McKerchar, F. J. Toms, G. Caselton, A. Searle, and W. Wells, jun.

A vote of thanks to the chairman concluded the proceedings, which lasted about three-quarters of an hour.

## Manchester and North of England Orchid Society.

On the occasion of the meeting held by this society on the 25th ult. there was a good display of orchids, and the numerous contributions from amateur and trade growers contained many novelties of interest.

As usual, W. R. Lee, Esq., Heywood (gardener, Mr. Bunch), exhibited a remarkably fine group, and was awarded a silver-gilt medal. Odontoglossums were very strongly represented, especially noteworthy being the fine hybrids Harmac and Miranda. Sophro-cattleya Wellesleyi, Lee's variety, was especially noteworthy. Cypripediums were of a high order of merit, and chief among them were excellent examples of Lady Dillon, Magnificum, Queen Alexandra, Triumphans, Ville de Paris, Fascinator, Helen II., Sunrise, Rosette, and Marjorie, Lee's variety.

G. A. Ward, Esq., Northenden (gardener, Mr. Weatherley), was also awarded a silver-gilt medal, his collection being noteworthy for the number and the excellence of the plants it contained. The odontoglossums were of special interest, among them being fine examples of O. crispum Eric, Luciani, and O. L. White's variety; O. Prince Edward Ward's variety; O. amabile, O. Fascinator, O. ardentissimum Norman, O. Emperor, and O. Harryano-crispum. Cypripediums included such fine forms as C. Hilda, C. Thompsoni, C. Victor, C. aureum Hyeanum, and Dendrobium splendidissimum, the latter producing a good display of colour.

From S. Gratrix, Esq., Whalley Range (gardener, Mr. Brown), staged a small group, which was remarkable for the high quality of the kinds it contained, and the award of a silver medal was deservedly made. The Lady's slippers were especially interesting, as they included C. Alcibades Gratrix variety, C. Black Knight, C. Princess Wilhemina, C. Curtmani West Point variety, C. aureum Surprise, C. Mrs. F. Sander, and C. Alportense, O. crispum Ethel, and Cattlyea Trianæ Mary Gratrix, two beautiful forms, were also well shown.

Colonel J. Rutherford, M.P., Blackburn (gardener, Mr. Lupton), contributed a beautiful group, and was awarded a silver medal. Especially deserving of mention were Odontoglossum Luci Masereel, O. Canary, O. Rossi, a particularly fine form, Brasso-cattleya Rutherfordi, Cypripediums Actæus major, C. aureum Hyeanum, C. a. Virginale, C. Thompsoni, C. Earl of Tankerville, and C. Leeanum Clinaberryanum.

J. McCartney, Esq., Bolton (gardener, Mr. Holmes), contributed a varied and attractive group, in which the more noteworthy kinds included Lælia anceps Stella, L. a. Sanderiana, Cattleya Trianæ Donald, Brasso-cattleya Colonel J. C. Slater, B.-c. Mrs. Mary Gratrix, Lælio-cattleya Gottiana, Cypripedium Reginald Buller, C. Mrs. E. Carr, and C. Ville de Paris.

W. J. Hargreaves, Esq., Burnley, staged a nice group of cypripediums, to which a Bronze Medal was awarded, Cypripediums Minos Youngi, Thalia, Velma, Leeanum superbum, aureum Hyeanum, nitens, Euryades, New Hall Hey var C. aureum Virginale, and a light form of C. Leeanum were highly meritorious.

G. H. Pearce, Esq., Monton Grange (gardener, Mr. C. Mace), was also awarded a Bronze Medal for a small group, including Cypripedium aureum Hyeanum and C. a. H. Virginale, C. Leeanum Clinkoberryanum, C. aureum Œdippe, a nice variety of C. villosum, and Odontoglossums Harryano crispum and Pescatorei.

Rev. J. Crombleholme, Clayton-le-Moors (gardener, Mr. Marshall), also staged a small group, to which a Bronze Medal was awarded. It included Cypripediums Priam, Beekmanni, T. B. Haywood, Polettianum, Statterianum, and Chas. Richman, with varieties of insigne.

O. O. Wrigley, Esq., Bury (gardener, Mr. Rogers), was awarded a vote of thanks for a small group of very choice varieties, including Lycastes Skinneri alba, Purple Emperor, Robin, and Glory, with Cypripedium Beekmani, C. Thompsoni, C. aureum Œdippe, C. Leeanum Purity, C. Roweana, C. Beryl, and several unnamed seedlings.

J. J. Holden, Esq., Southport (gardener, Mr. Johnson), staged Cattleya Purity, Odontoglossum × George V., O. crispum Holdeni, and Cypripediums E. N. Holden (a variety of Chapmani), Archie Nield, and Ossulston var. Prime.

J. H. Craven, Esq., Keighley (gardener, Mr. Corney), staged Odontoglossum crispum Battle of Waterloo, O. crispum seedlings, and Odontioda Corneyanum.

H. J. Bromilow, Esq., Rann Lee (gardener, Mr. Morgan), staged Cypripediums Lord Wolmer, Euryades New Hall Hey, and a fine seedling of Actæus.

R. Ashworth, Esq., Newchurch (gardener, Mr. Gilden), staged Cypripedium Earl of Tankerville in good condition.

F. A. Hindley, Esq., Bradford, contributed a good example of Cypripedium Hindleyanum.

Messrs. Charlesworth and Co., Hayward's Heath, staged Odontioda Wilsoni and Lælio-cattleya Myrrah with yellow sepals and petals. Messrs. Hassall and Co., Southgate, contributed some fine examples of Odontoglossums Lambeauianum, ardentissimum, eximium, and Aireworth, with Cattleya Blacki.

Messrs. Stuart Low and Co., Enfield, showed two seedling Cypripedium Beekmani from a cross; and Mr. J. Evans, Congleton, had Cypripedium Venus and Odontoglossum Eximeum.

### AWARDS.

First Class Certificates.—To Odontoglossum Harmac, a full round flower, deep claret-purple, with white margin to sepals, petals, and lip; O. Miranda, good shape, rose colour, with brownish lines and spots, base of lip pure white; Sophro-cattleya Wellesleyi Lee's var., a good round flower, four inches across, rich scarlet colour—all from W. R. Lee, Esq. Cypripedium Alcidbiades Gratrix's variety, from S. Gratrix, Esq., a gigantic flower, good shape, with dorsal sepal well over three inches across. A silver medal was awarded in addition to the F.C.C.

Awards of Merit.—To Cattleya Lady Dillon magnificum, from W. R. Lee, Esq.; Cypripedium Black Knight and C. Princess Wilhemina, both from S. Gratrix, Esq.; Odontoglossum Prince Edward Ward's var., O. crispum Eric, and O. ardentissimum Norman, from Z. A. Ward, Esq.; O. Luci-Masereef and Brasso-cattleya Rutherfordi, both from Col. Rutherford, M.P.; Cattleya Purity and Odontoglossum × George V., both from J. J. Holden, Esq.

## Lee and Blackheath Horticultural Society.

At the recent meeting held in the Church Street Schools, a lecture on "Winter-flowering Plants" was given by Mr. R. C. Pullen, Councillor Balsdon taking the chair.

Bouvardias, said the lecturer, were among the very best of winter-flowering plants, useful alike for decorative purposes and for cutting, and they were very easily grown.

His method was to strike the cuttings in a compost of loam, leaf-mould, and sand, and when the cuttings were well rooted, pot them into three-inch pots and place on a shelf where they could receive plenty of light and air, stopping them as soon as they were properly established. In July they should be planted out on a good open border, very little attention being needed after planting them, except to give water, and an occasional stopping of long growths. In the early autumn they should be carefully lifted, potted, and plunged back into the holes they came out of. After about a fortnight they should be transferred to a cold frame or greenhouse, taking care to give them plenty of air.

The methods of propagating Euphorbia jacquinæflora, and the subsequent treatment, were well dealt with. Poinsettias, the lecturer said, should be grown out of doors in the summer, if strong, short, sturdy plants with big heads were to be obtained. The pots should be placed on a bed of ashes in an exposed position, thus keeping the plants dwarf.

A discussion took place at the end of the lecture, and a hearty vote of thanks to Mr. Pullen closed a very enjoyable evening.

## TRADE NOTE.

Mr. Leonard Cutbush, only son of Mr. Herbert Cutbush, has been admitted as junior partner to the firm of Messrs. Wm. Cutbush and Son, Highgate, N.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| 1912. January 28 to February 3. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Jan. 28—Sunday ...... | 7 12 | 23 | 23 | 39 | 21 |
| „ 29—Monday ..... | 5 54 | 20 | 20 | 36 | 18 |
| „ 30—Tuesday ... | 4 12 | 25 | 24 | 38 | 21 |
| „ 31—Wednesday.. | 2 12 | 33 | 31 | 39 | 26 |
| Feb. 1—Thursday.... | 0 48 | 32 | 32 | 37 | 30 |
| „ 2—Friday........ | 3 12 | 24 | 22 | 31 | 23 |
| „ 3—Saturday..... | 7 54 | 21 | 19 | 33 | 17 |
| Means ... | (total) 31 24 | 25 | 24 | 36 | 22 |

| Date. | Rain. | Temperature of the Soil at 9 a.m. | | | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| 1912. January 28 to February 3. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Jan. 28—Sunday ...... | — | 38 | 41 | 45 | 10 |
| „ 29—Monday ...... | — | 36 | 39 | 44 | 9 |
| „ 30—Tuesday...... | — | 35 | 39 | 44 | 11 |
| „ 31—Wednesday.. | — | 35 | 38 | 43 | 20 |
| Feb. 1—Thursday.... | — | 35 | 37 | 43 | 18 |
| „ 2—Friday........ | — | 35 | 37 | 43 | 10 |
| „ 3—Saturday.... | — | 31 | 37 | 42 | 5 |
| Means ... | (total) — | 35 | 38 | 43 | 12 |

Snow fell at intervals on Friday

**Paper Pots for Sweet Peas.**—Accompanying Mr. Lewis Smith's article on "Sowing Sweet Peas" which appeared in our issue of January 27, were two illustrations showing the use of paper pots in the raising of sweet peas under glass. The photographs from which the illustrations were reproduced were received through Mr. Smith from Mr. Robert Holmes, of Tuckswood Farm, Norwich; but owing to a misapprehension they were not credited to Mr. Holmes as they otherwise would have been. The paper pots represented are those which Mr. Holmes has introduced, and Mr. Smith uses with the most satisfactory results.

## ANSWERS TO CORRESPONDENTS.

LOSS OF AUTUMN-SOWN ANNUALS.—S. F., Malden.—Please tell me why so many of my hardy annuals have died during the last week or so?—The loss is due to intense frost and biting winds following so sharply upon open weather. The wet and comparatively mild weather experienced until quite recently caused the annuals to grow freely, but the growth was soft, and not of that hardy sturdy nature which drier and colder conditions would have induced, consequently the plants have been unable to stand the severity of the past week. There will certainly be large losses among annuals and among winter greenstuffs as the result of the wintry weather we have had. Sow more annuals in a warm greenhouse at the end of February or in March to make good the losses experienced.

GARDENERS' BENEFIT SOCIETY IN THE NORTH.—M. E. S., Carlisle.—I believe there is a gardeners' benefit society, with headquarters in the North of England; if I am right can you tell me its name, and the address of its secretary?—The society to which you refer is now known as the Professional Gardeners' Lodge, and is branch No. 6,776 of the Grand United Order of Oddfellows. The registered office is Green Dragon Hotel, Leeds, and the secretary is Mr. George Carver, The Gardens, The Grange, Scarcroft, near Leeds.

BLACK DOTS ON BACK OF CYMBIDIUM LEAVES. — J. R. O., Sparkhill.—I send two leaves of Cymbidium Lowianum which have some blackish dots on the under surface; what causes the spots, and is there a remedy? I am a novice at orchid growing. —The small blackish spots on the cymbidium leaves are ample evidence of the presence of thrips, and some of these lively little pests were found on the specimens sent. It is probable that the atmosphere of the house has been kept too dry for some time, as this state of affairs encourages several pests, notably red spider and thrips. Thoroughly and carefully sponge every leaf with warm water containing a little insecticide, and repeat the operation once a week for a little while. Examine contiguous plants, as they also may be infested; if they are, treat them similarly, otherwise the thrips will eat away the green leaf substance, and materially weaken the plants.

MALCOLMIA OR MALCOMIA.—F. F., Taunton.—We were discussing certain annuals the other evening, with a number of catalogues before us, when a lynx-eyed member of the party noticed that the popular Virginian stock was variously listed as Malcolmia maritima and Malcomia maritima. Garden works were referred to, but these did not solve the question of which was the correct rendering of the generic title. We now appeal to you, as we are sticklers for correctness of nomenclature in this district?—This is something of a poser. Turning to Nicholson's Dictionary of Gardening, we find the Virginian stock given as Malcolmia maritima, and there is a note in parenthesis to the effect that the genus was "named after William Malcolm, a London nurseryman, who published a Catalogue of Greenhouse Plants in 1771." This seemed to settle the matter in favour of Malcolmia. Turning to find the author of the generic title, we found Malcolmia credited to R. Brown and Malcomia to Aiton. Aiton certainly uses Malcomia in his "Hortus Kewensis" and his spelling and title are used in the Kew Hand List of Herbaceous Plants. Steudel prefers Brown's Malcolmia to Aiton's Malcomia, but if priority counts for anything—and it is considered almost everything in botany—then Malcomia must stand as the correct title because Aiton was an authority long before Robert Brown.

PHOSPHATIC FERTILISER: G. G. A., Hull.—Please advise me as to the kind of fertiliser to use for adding phosphates to the soil, and the amount to apply?—For supplying phosphates to the soil basic slag is a popular fertiliser, and it is the best for heavy soils; this is best applied in autumn at the

Robinsons' Guaranteed Gardenalities

ARE ABSOLUTELY NECESSARY FOR YOUR GARDEN'S WELFARE, AND WITHOUT THEM YOU WILL BE SERIOUSLY HANDICAPPED.

You must foster and protect your plants, or they will not reach maturity, fulness and beauty. Give them the utmost encouragement. Let the soil be prepared with

"Carmona" Fertilizers,

and then the plants will go ahead. The poorest soil will rear the most delicate plant if this is done, and your garden will do you infinite credit.

The "Carmona" Fertilisers are prepared in many varieties, suitable for all needs, so your every want can be supplied.

Sweet Pea growers reap a rich reward if they use the "Carmona" Sweet Pea Fertiliser. Vitality of plants, beauty of flowers, is then assured.

"Carmona" Fertilisers are put up in quantities to suit everyone's needs. Prices follow:—1 cwt., 20s.; ½ cwt., 12s. 6d.; 28 lbs, 7s. 6d.; 14 lbs., 4s. 6d.; 7 lbs., 2s. 6d.; 1s. and 6d. tins. Of all Seedsmen and Agents, or direct.

ROBINSON'S GREAT £350 SHOW.

This will be held at the Botanical Gardens, Edgbaston, Birmingham, on September 5th and 6th, this year, and the sum of £350 will be given away in cash prizes. Also many Championship Medals.

You should enter for this. Someone must win the prizes, and why not you? Write to Robinson's, asking for the Show Schedules.

Entries are free to every purchaser of "Carmona" Fertiliser, for in each packet is an entry "fee" coupon.

ARE YOU PESTERED WITH INSECTS?

Exterminate them, or else your plants will suffer. Weak plants and poor results are inevitable, if the insects have their own way. Annihilate them in the most systematic, scientific, and sure manner, by using Clift's Fluid Insecticide, the never-failing destroyer of all injurious and deadly insect pests. Clift's Fluid Insecticide is superior to all others, and has absolutely superseded all rivals.

Prepared in handy quantities, and prices are reasonable:—40 galls. at 4s. 6d. per gall.; 20 galls. at 5s. per gall.; 10 galls. at 5s. 3d.; 5 galls. at 5s. 6d. per gall.; 1 gall. at 6s.

MORE VALUABLE GARDEN ADVICE.

The two following Gardenalities are the best of their kind:

1. "Eradiweed," guaranteed cent. per cent. weed killer.
2. "Velvas" Lawn Sand.

FREE.—You will find much valuable advice in Robinson's Guaranteed Gardenalities booklet (24 pages), and Robinson's Garden Enemies booklet (32 pages).

These are sent post free to any address upon application. Also Show Schedules included if desired.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

ANYONE requiring thoroughly experienced WORKING and HEAD GARDENER, confident giving every satisfaction; twenty years all branches, large establishments, also on commercial lines if desired; home or abroad; age 35. C. ROWLAND, Ash House, Botcherby, Carlisle.

AS JOURNEYMAN (Inside), in good establishment; good general knowledge. A. G. GENTLE, Little Gaddesden, Berkhamstead.

COL. MULLENS highly recommends his GARDENER (Second of 5 gardeners) for a similar position, or Single-handed; age 26; single; abstainer; excellent references. Apply, E. DAMANT, Oaks, Langham, Colchester.

C. WINGROVE, The Gardens, Heath Lodge, Englefield Green, Surrey, requires Situation as JOURNEYMAN (Inside and Out); 2½ years here; five years' experience; age 20. For particulars apply as above.

FORESTER, aged 33, seeks SITUATION (Head or Assistant); trained English and Scotch estates, Agricultural College, Aberdeen University (part Highland and Agricultural certificate), and in Germany (certificates Royal Forest Academy, Tharandt); also business experience. J. W. MACKAY, 60, Park Street, Hull.

FOREMAN or MANAGER; age 38; life experience Strawberries, Cucumbers, Tomatoes, Chrysanthemums, general Pot Stuff; good references; please state wages. W. TESTER, 6, Novar Road, New Eltham.

GARDENER (Head) seeks SITUATION where two or more are employed; age 36; married, no family; life experience, Inside and Out, Roses and Carnations; excellent references. J. SMITH, 2, Lyncombe Vale Farm, Bath.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married.—G. HALL, Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working, where several are kept); life experience in all branches, Inside and Out, in good establishments; especially well up in Hardy and Herbaceous Plants, Shrubs, and Alpines; 14 years and 7½ as Head; excellent references; married, no family.—A. T., 30, Askew Road, Shepherd's Bush, London, W.

GARDENER (Head Working), 14 years' thorough practical experience; five years last place; good references; disengaged; age 29; married when suited. D. NORMAN, Botolph Claydon, Winslow, Bucks.

GARDENER (Head Working). —CAPT. C. BEHRENS wishes to strongly recommend R. GOODALL, who has been five years in his service, as Gardener (Second of seven), with six years in previous situation; life experience in all branches of garden work. Apply R. GOODALL, The Gardens, Swinton Grange, Malton, York.

GARDENER (Head Working, or Single-handed); life experience in all branches; Inside and out; age 40; married, no family; good references. W. CURD, 36, Clarence Place, Gravesend, Kent.

GARDENER of Three or more. — F. WILES, Gardener to J. de Pass, Esq., Middleton Hall, Kings Lynn, recommends his Foreman as above; life experience, Inside and Out; married, no family; age 30. C. CRADWICK, The Gardens, Middleton Hall, Kings Lynn (bear own expenses)

GARDENER, Good (Single-handed, or where help is given), seeks SITUATION; life experience in all branches; single; age 33; abstainer; good references. H. HARDIMAN, Horton Hollow, Wimborne, Dorset.

GARDENER (Head Working). — Miss E. ROBERTSON, Sele Grange, Hertford, high recommends H. BATES, who has been with her eight years, to any Lady or Gentleman, where about four are kept; life experience in all branches; winner of Silver Cups for Vegetables; age 36; married, two children, ages 14 and 12. Apply, H. BATES.

GARDENER (Head Working).—G. CHEAL is anxious to meet Lady or Gentleman requiring the services of a good all-round man; thoroughly experienced, and highly recommended; disengaged any time. Bridley Manor, Worplesdon, Surrey.

GARDENER (Head of two or three, or good Second) seeks SITUATION; life experience, Inside and Out; excellent references; age 28 years; married when suited. Address, A. B., c.o. HOLLOWAY, 17, Windsor Road, Teddington, Middlesex.

GARDENER (Single-handed or otherwise), seeks SITUATION; 10 years' good experience Inside and Out; age 25; good references. H. DUDLEY, Remenham, Henley-on-Thames.

GARDENER (Single-handed, or help given), 12 years' experience; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER (Single-handed or otherwise); 4 years' good character, age 23; single; abstainer. Apply A. F. ROOKE, Houndean, Lewes, Sussex.

GARDENER (Single-handed, or otherwise) requires SITUATION; fully experienced both Inside and Out; accustomed to large gardens; highly recommended; excellent characters; and takes great interest in his work; single at present; age 27; abstainer; Hants preferred; disengaged when suited. Apply, J. G., 997, " Gardeners' Magazine " Office, 148-9, Aldersgate Street, London, E.C.

GARDENER, Single-handed, or where help is given; thoroughly experienced; middle age; married, no encumbrance; wife would take charge of house during absence of family. J. G., 101, Liverpool Road, Watford, Herts.

GARDENER (Single-handed) seeks Re-engagement; life experience; can be well recommended; good references; age 26; single. W. SEAR, 51, Sumatra Road, West Hampstead, N.W.

GARDENER wants SITUATION (second), age 25 years; Single; 7 years' practical experience Inside and Out; Vines, Peaches, Chrysanthemums, Roses, etc.; abstainer; good refs. W. COOPER, Bell Lane, Alconbury, Huntingdon.

GARDENER, age 27, single, life experience, seeks SITUATION in London suburbs or near; good references; as good Single-handed or help given; will bear own expense. Apply, stating wages, to A. WHATMORE, Troed-y-rhiw, Merthyr.

GENTLEMAN wishes to recommend his GARDENER (Head Working) to any Lady or Gentleman; 15 years' experience in all branches; age 30; married, no children. G. BRUNTON, Charlesfield Road, Horley.

JOURNEYMAN seeks SITUATION; Second or Third, under glass; age 20; Bothy. W. GARWOOD, Clay Hall, Fornham All Saints, Bury St. Edmunds, Suffolk.

JOURNEYMAN (smart).—P. McLAREN, Head Gardener, Sandhills, Christchurch, wishes to recommend E. GUNTER as same; age 21; five years' good experience; Bothy preferred.

JOURNEYMAN (Inside or Inside and Out); 3½ years' experience; age 21; Bothy preferred. R. GOWARD, Ide Hill, Sevenoaks, Kent.

JOURNEYMAN (Second, Inside), age 20; good establishment; 5½ years' experience; good references; Bothy preferred. G. PAPWORTH, Great Barrington, Burford, Oxon.

J. FOSTER, Head Gardener to Sir David Tute, Hanstead House, Bricket Wood, St. Albans, with every confidence recommends excellent GARDENER, all branches; Head or Single-handed; married when suited. Apply above.

JOURNEYMAN (20) seeks SITUATION as Second; 6 years' excellent reference; experience Inside and Out; abstainer. Apply, GARDENER, Wanderwell, Gardeners, Bridport, Dorset.

LAD, age 17, seeks SITUATION in Garden; some experience; wish to improve; good character; Bothy preferred. S. RAYNER, Chart Road, Sutton Valence, Maidstone.

MR. SEDEN, West Grinstead Park, Horsham, wishes to recommend P. GEERING as FOREMAN (Inside); good experience in Tree Carnations and Malmaison, Fruit and Plant Houses; age 27; three years present situation.

MRS. JOHNSON, Silkmore Hall, Stafford, will be pleased to highly recommend W. CURTIS to any Lady or Gentleman requiring a good all-round Gardener, where two or three are kept; 12 years' practical experience; total abstainer.

MR. T. P. BROWN, The Gardens, Forty Hall, Enfield, wishes to highly recommend T. LEE, age 21, for Inside and Out, where not less than six kept; three years here; Bothy preferred.

MR. F. W. NICHOLSON wishes to highly recommend his GARDENER (Head) as a thoroughly capable hard-working Man; understands his work, both Inside and Out, and good at Table Decorations; leaving solely through establishment being reduced; excellent testimonials; age 36; married, one boy, 9. J. SHIPLEY, The Old Vicarage Lodge, Shiplake, Henley, Oxon.

MR. H. DYSON, Rickmansworth Park, Herts, highly recommends A. BACON as Head Working GARDENER, where more are kept; life experience Inside and Out; excellent references; married; age 34; three children. Address as above.

MAN and WIFE (young) require SITUATION end of February; man good Gardener (Single-handed), wife plain cooking or housework when required; no encumbrances; good references; no objection to Poultry. E. ANDREWS, Sydney Villa, Holly Road, Hampton Hill, Middlesex.

WANTED, Situation as Single-handed GARDENER, experienced, good all-round man; can milk; well recommended by Mr. Neal, Head Gardener; married, no children; age 48. S. CHERRY, Tilgate Gardens, Crawley, Sussex.

W. BEALE, Head Gardener, Camfield Place, Hatfield, Herts., wishes to recommend J. DOVER as IMPROVER or JOURNEYMAN in good establishment; been here 3½ years, chiefly Inside; age 18; Bothy preferred. J. DOVER, North Mymms, Hatfield, Herts.

YOUNG MAN, age 20, with five years' experience, seeks SITUATION in garden, where experience can be gained, both Inside and Out; strong, willing, and abstainer. Apply, COX, Old Forge, Wolverley, nr. Kidderminster.

YOUNG MAN, age 19, seeks SITUATION in garden as Journeyman, Inside or Inside and Out; 4 years' previous experience; can be well recommended by head gardener. F. BURDETT, Holdenby, Northampton.

YOUNG MAN (19) seeks SITUATION, Inside or Inside and Out; four years' good experience; excellent references; Bothy preferred. PENNINGTON, 49, Victoria Grove, Stoke Newington, London.

CARPENTER wants permanent job; Household, Nursery, or Estate; age 30; married, no family; good references. Apply, H. WATERS, Bifrons Estate, Bekesbourne, near Canterbury.

## SITUATION COUPON

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE," *148 & 149, Aldersgate Street, London, E.C.*

**For FEBRUARY 17, 1912.**

**Please Repeat my Advertisement.**

Name........................................

Address ........................................

........................................

Date ........................................

**THIS COUPON**, duly filled up, should be forwarded not later than Tuesday for the next issue.

## Situations Vacant.

CANADA.—Wanted, 15 GARDENERS or NURSERYMEN, complete orders. Good wages. Definite situations. Apply early, UNION TRANSIT CO., 381 Argyle Street, Glasgow.

WANTED, a capable MANAGER, to take charge of NURSERY, FRUIT TREE, and ROSE GROWING BUSINESS; about 60 acres, with considerable amount of glass; salary, £150 per annum, with allowance for house, and a bonus on a satisfactory yearly profit. Apply, with references, stating age and past experience, to R., "Gardeners' Magazine" Office, 148 and 149, Aldersgate St., London, E.C.

WANTED, good SECOND GARDENER for Inside and Out; single; must be willing and obliging; age about 25. Apply, W. HASLAR, Blake Hall, Ongar, Essex

WANTED, YOUNG MAN, about 20, for INSIDE AND OUT; Bothy, etc.

Apply to C. FRONDE, The Gardens, Cusworth, Doncaster.

rate of 4oz. per square yard, but we should not hesitate to use it now if a plot is being dug. For lighter soils a dressing of superphosphate of lime, 1oz. to the square yard, will prove valuable, and this may be given in spring. Bone-meal is also excellent for practically all soils and crops, 4oz. to the square yard, but it is best applied in the autumn.

PLANTING VIOLAS.—B. W., Peterborough.—What is the best time to plant out violas raised from cuttings or from seeds?—If the plants are sturdy and well rooted advantage should be taken of good weather in March to plant out the violas, but if from any cause the plants are backward, or if the weather in March is all against successful planting, defer the operation until April offers a favourable opportunity.

EMPLOYMENT AT KEW: W. R., Lewisham.—How should I proceed in an endeavour to obtain employment at Kew?—Write to the Curator, Royal Gardens, Kew, Surrey, stating your wish, and giving the amount and kind of horticultural experience you possess, and your age.

PUBLIC PARKS: E. S., Stourbridge—Being anxious to obtain experience in some of the leading public parks, I write to ask whether there is an inexpensive book giving the name, extent, place, and superintendent of the principal public parks in this country, so that I might write for information regarding employment?—The only book we know which deals with this matter fully is the "Gardening Year Book" of 1912. This gives all the information you require, and also states the extent of the parks and public gardens listed, and this should prove of special interest to you, and be a good guide to the selection of places to write to. The book deals with many other gardening matters, and contains a descriptive, illustrated list of the new plants of 1911; it may be obtained, post free, for 1s. 2d., from the Gardeners' Magazine Office, 148, 149, Aldersgate Street, London, E.C.

SWEET SCABIOUS: R. N. T., Corbridge.—Curiously enough, notwithstanding a long gardening experience, I have never grown sweet scabious, that is, the annual sorts. My employer saw some very fine strains last year at some of the London exhibitions, and ordered seeds. The scabious are needed for cut flowers rather than for garden effect, as flowers are used freely in the house, and large quantities are given away to friends and public institutions, such as hospitals, churches, etc. I imagine that if the scabious are raised and treated generally like asters they will succeed; kindly tell me if this is so?—Yes, the treatment for scabious is like that for asters; sow thinly in gentle heat in March, prick off into boxes, harden off in a frame or pit, and plant out at the end of May or early in June. Scabious thrive better in a moderately retentive soil than most annuals do.

### NAMES OF PLANTS.

B. G., Ludlow.—Helxine Solieroli.

H. P., Croydon.—A moderately good form of Cattleya labiata.

W. P., Smethwick.—1, Pteris tremula; 2, Notholæna sinuata; 3, not recognised.

S. N. S., Hessle.—1, Centropogon Lucyanus; 2, Peristrophe speciosa; 3, Cypripedium Actæus; 4, Lælia anceps, a good form.

H. S. M., Beaumaris.—1, Veronica buxifolia; 2, Abutilon meganotamicum; 3, Begonia manicata; 4, a dried flower of Rhodanthe Manglesi.

## GARDENING ENGAGEMENTS.

Mr. John Corrie, formerly head gardener at Cronmore Place, Chislehurst, has been appointed head gardener to E. Eversfield, Esq., Denne Park, Horsham.

Mr. W. J. Cowan, late inside foreman at Netherby Hall, has been appointed head gardener to Mr. Fletcher, Stoneligh, Workington.

Mr. John Kydd, for some years gardener at Drumcar, Dunleer, Ireland, has been appointed head gardener to W. D. James, Esq., Greywalls, Gullane, N.B.

Mr. W. E. Trevithick has been appointed head gardener to the Marquis of Headport, Headport House, Kells, Co. Meath.

## FORTHCOMING ENGAGEMENTS.

THURSDAY, February 15.—Croydon Gardeners' Association, Annual Dinner, Greyhound Hotel, 7.30 p.m.

THURSDAY, February 15.—The "George Munro" Concert, Queen's Hall, Langham Place, London.

TUESDAY, February 20.—Royal Horticultural Society. Fruit, Floral, and Orchid Committees, 12 noon. General meeting, with lecture at 3 p.m. Scientific Committee, 4 p.m.

North of England Horticultural Society. Meeting Queen's Midland Hotel, Leeds. Council Meeting, 2 p.m. Lecture on the Wisley Rock Garden, by Mr. Pulham, jun., 3.30 p.m.

THURSDAY, February 22.—Manchester and North of England Orchid Society. Meeting, Manchester Coal Exchange, 12 noon.

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PROTECT FRUIT BLOSSOM from frost. Our Scrim will do this well, and repay its modest cost in one frosty night. Later on, it will come in for shading exhibition sweet peas, greenhouses, etc., and also make excellent soft catching net in the peach house. Price, 2¼d. per sq. yd. 36in. and 72in. widths stocked.

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| 16 A. J. COOK, deep violet-mauve, of Gladys Unwin type; a fine variety | 50 | 2d. |
| 17 FLORA NORTON SPENCER (Zephyr), a bright blue pea, one of the best of this colour | 20 | 3d. |
| 18 LORD NELSON, a splendid dark blue of the plain type | 50 | 2d. |

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| 19 MRS. HARDCASTLE SYKES, the giant blush-pink Spencer | 20 | 3d. |
| 20 PRINCESS VICTORIA, fine pale pink Spencer | 20 | 3d. |

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| 22 KING EDWARD SPENCER, an enormous waved rich crimson | 25 | 3d. |
| 23 KING EDWARD VII., a fine crimson | 50 | 2d. |
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| 28 CONSTANCE OLIVER, creamy yellow, suffused deep pink | 20 | 4d. |
| 29 MRS. HENRY BELL, rich apricot pink on a cream ground | 15 | 3d. |
| 30 MRS. ROUTZAHN SPENCER, buff on apricot ground | 15 | 4d. |

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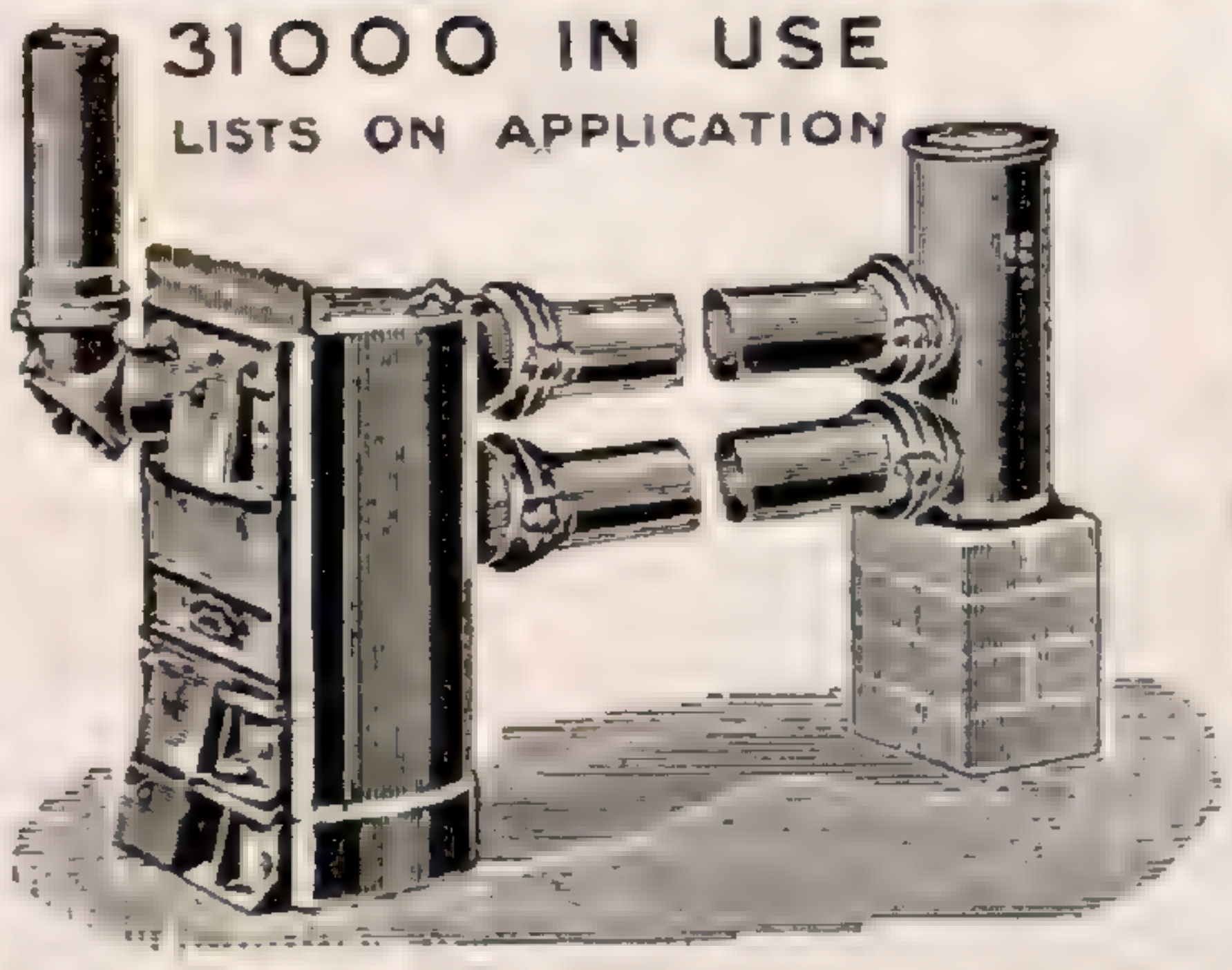

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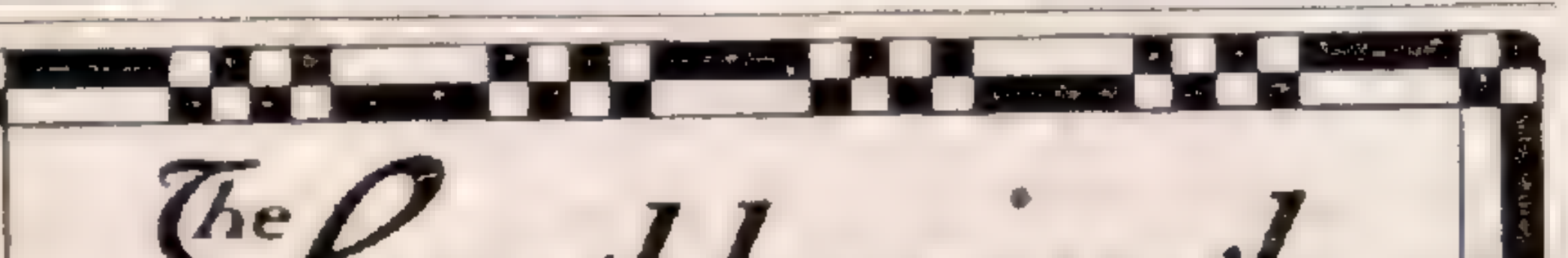

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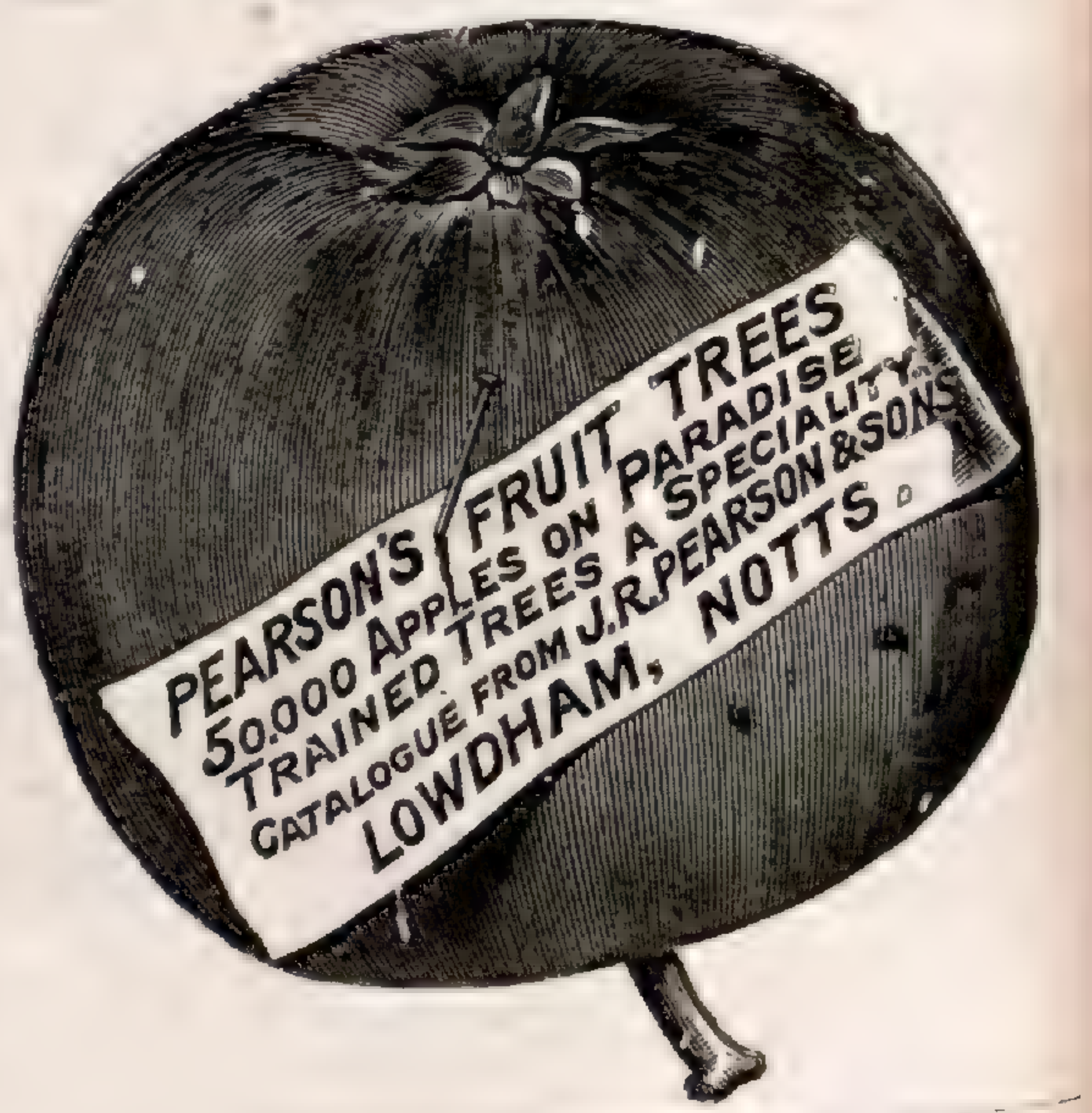
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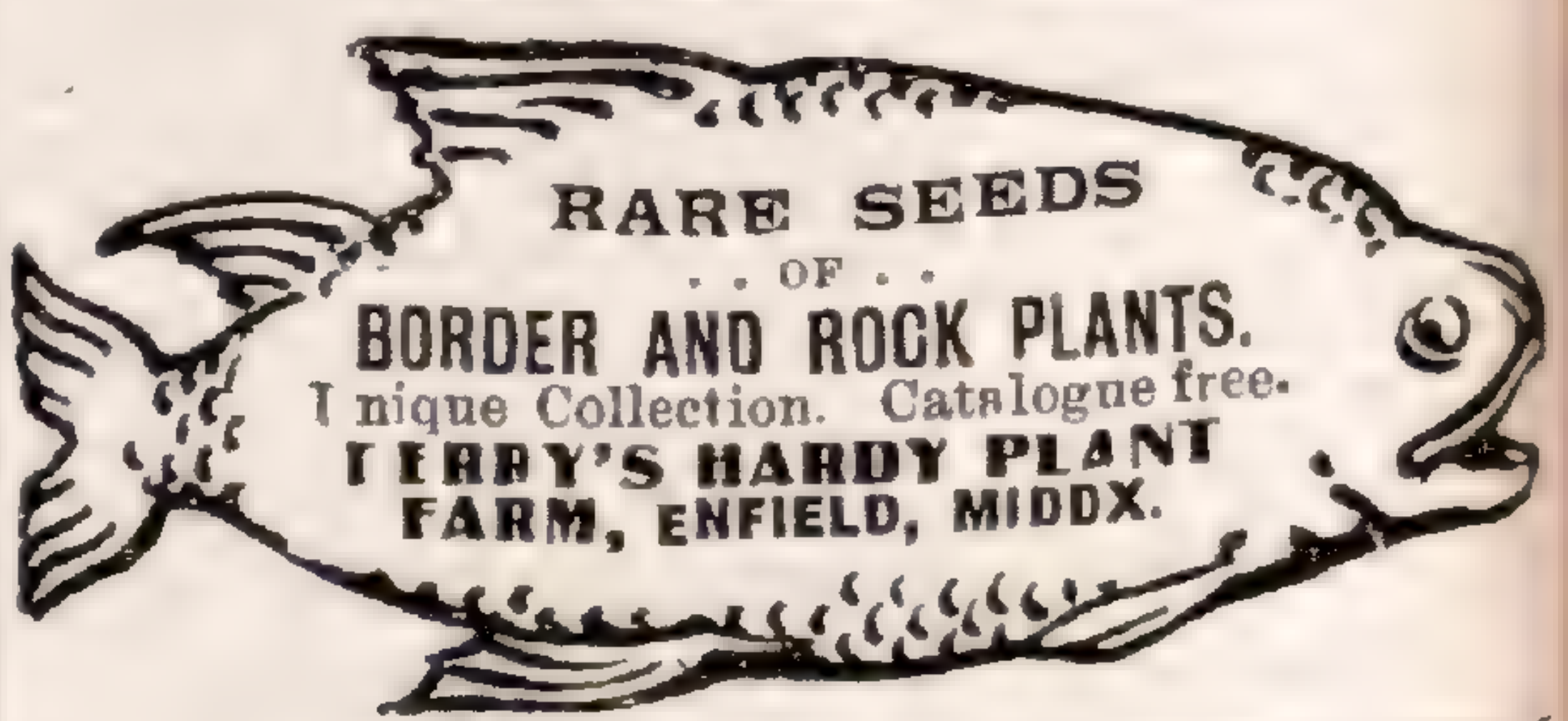

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VOL. LV.—No. 3,042. SATURDAY, FEBRUARY 17, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Snow Flowers.

In a recent Note of the Week, relating to frosts, we alluded to the curious fact that, at the moment of crystallisation or congelation of water, etc., molecules so arranged themselves as to require greater space than they occupy as a liquid, the resultant phenomena being of vital importance in the great scheme of Nature as regards climate and the conditions generally in which organic life exists. This increase of area, however, is accompanied by other phenomena than those mentioned, and especially those relating to crystallisation. If when snow is falling, particularly when the flakes are fairly large, we permit a flake to fall gently upon our coat-sleeve, even with the naked eye we can detect that it is not a mere woolly conglomeration of particles, but rather a cluster of beautiful star-like bodies of very definite and symmetrical structure. Each star is provided with six rays, set at an angle of thirty degrees to its neighbour. Search as we may, we shall never find two precisely alike in detail, since these rays may be simple rods of greater or less length in different flakes, or they may be furnished with lateral projections, making them more or less feathery in appearance, or the interstices between the rays may be entirely filled up, so that the flake becomes a perfectly six-sided disc, losing its star shape entirely. Between these extremes are all grades, but all through the thirty degree principle prevails, and, barring damages, all the parts will agree exactly in dimensions, and perfect symmetry will prevail. A large flake, usually indicative of thawing conditions, is produced by fortuitous meeting of a number of the constituent stars or discs in falling, and a dozen or more of these may be thus adherent, but each one will have its own individuality. Such fine snow as we have in a blizzard is no less artistically constructed, but on much finer and less obvious lines. The snowflake thus shows us in the simpest possible form, the law of crystallisation as exemplified in water, and the same law governs the solidification of all liquefiable bodies, including the metals and the gases, though not always so easily seen. The same law also determines the forms which chemical bodies assume in super-saturated solutions. With alum, for instance, dissolved in hot water until no more can be taken up, as the solution cools, the molecules invisibly suspended in the water, arrange themselves either on the undissolved surplus crystals, or, failing those, on nuclei self-engendered here and there in the containing vessel, and gradually build up symmetrical and beautiful crystals of the particular make and shape peculiar to alum, and possibly to alum alone, since nearly every body has its peculiarities. Here the crystallisation occurs because heated water is capable of holding more of the salt in solution than cold water, and, as the temperature falls, the surplus is deposited as described. With the snow flake we see something similar. The amount of water invisibly suspended in the atmosphere depends entirely upon the aerial temperature. In warm weather a cold wind blowing into a warm region at once renders the surplus water, which the air is unable to carry at the lower temperature, visible as clouds, which may or may not condense further into rain. Here the molecules of water cling together and fall, gathering up more and more as they descend, and so forming drops. Under freezing conditions, the minute particles of suspended water in the clouds start descent as particles of ice, the nuclei of the subsequent stars and discs and agglomerated snow flakes, the said nuclei chilling the air as they fall, the aqueous molecules collect equally all over them, obeying the particular law alluded to of a thirty degrees angle of attachment, and so each ray becomes of equal length, and of equal breadth by the lateral additions on the same principle. It is also due to the action of this beautiful law that we see such exquisite designs on window-panes and other surfaces, where warm aerial moisture is brought into contact with cold surfaces below the freezing point. The curves of the fern or moss-like ramification here noted are probably due in inception to minute artificial scratches made by cleaning, but otherwise it will be seen that the law of the thirty degrees angle determines the designs generally. The consideration of the star or flower-like forms assumed by the snowflake and the wonderful imitations of ferns and mosses assumed in the frost pictures of the window-pane, invariably suggest to the intelligent observer that there may be some link between the law of crystalisation in inorganic life and that which in some subtle fashion governs growth of both flowers and foliar vegetation. Each plant may thus be a law unto itself as regards its structural arrangement, as is every organic body as regards its crystallisation, a similar polar or magnetic influence determining its form on laws at any rate analogous if not identical.

MR. C. S. FUIDGE.

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**Mr. C. S. Fuidge** is at the present time a very interesting personality among the secretaries of the varous associations that have for their object the advancement of horticulture, for he completes the fortieth year of his secretaryship of the Southampton Royal Horticultural Society concurrently with the celebration of the society's jubilee. The society was founded in 1862, and in the following year a summer exhibition was held in Bannister Park under the patronage of the Lord Mayor of London; and in the following year spring shows were instituted, and continued until 1876. At the annual meeting held in January, 1873, Mr. C. S. Fudge was elected as secretary, and there can be no question as to the great service he has rendered the society during the long and eventful period that has elapsed since he assumed the responsibilities associated with the office. In the same year a new departure was made by the holding of a great flower show and floral fête at Westwood park. In 1879 the late Prince Leopold accepted the position of president, and within two or three months of the election of his Royal Highness, Queen Victoria was pleased to command that the society should in the future be known as the Southampton Royal Horticultural Society. About this time both Bannister Park and Westwood Park came into the market for building purposes; and the executive, appreciating the importance of obtaining an open space suitable for the holding of the society's exhibitions appointed a special committee to secure, if possible, a portion of Bannister Park as a permanent home for the society. This project having failed, a fourteen years' lease of ten acres of Westwood Park was secured in 1882, and in the following year the grounds were formally opened on June 28, when the National Rose Society held its provincial show therein. There was a large accession of new members in that year, and the series of floral fêtes that were held during the period of the occupancy by the society of Westwood Park were highly successful financially and otherwise; but the profit on them was more than absorbed by the expenses incidental to the maintenance of the grounds, and the society was faced with a heavy debt. The society has continued its work, since leaving Westwood Park, with unabated vigour, and some years ago succeeded in paying off the debt incurred. We mention these facts as of interest in connection with the jubilee of the Southampton Royal Horticultural Society, and as showing far better than mere platitudes could do, the remarkable ability and tact of its secretary, whose portrait we have the pleasure of giving herewith.

**Climbers Out of Place.**—We have persistently advocated the free use of climbing plants in clothing the walls of dwelling-houses and other buildings, but we have been careful to differentiate between buildings that are of so commonplace a style of architecture that they are improved by a covering of greenery and those of which the architectural features are so beautiful that they should not be hidden. On more than one occasion we have directed attention to the mistake that is made in allowing the more important, from an architecural point of view, of the buildings belonging to the colleges at Cambridge and Oxford to be so overgrown by Ampelopsis Veitchi and other free-growing creepers that their architecture cannot be readily seen and fully enjoyed. We are reminded of the extent to which the charm, and, indeed, the interest of a building of architectural importance is reduced by allowing climbers to spread over their walls by an illustration that is before us of the Common Room and Library of Oriel, Oxford. This is a massive building of two stories, the wall of the lower portion being of sufficient thickness to form recesses for the windows, and to carry a series of pillars that support the cornice of the roof. The lower part of the building is covered by ampelopsis, and had the growth been confined thereto no objection could well have been raised to the use of the climber, but it has been allowed to spread over the upper half and to cover the pillars, which project from the wall, and the intervening spaces with its green mantle. The distinctive design of the greater proportion of the windows is completely hidden, and the effect produced by the growths crossing the pillars at right angles is decidedly objectionable, apart altogether from the architectural lines being obscured.

**Royal Gardeners' Orphan Fund.**—The report presented by the committee of this charity to the members at the annual meeting on the 9th inst., contained much that is gratifying to those who fully appreciate the great value of the work it is doing in the maintenance of the orphans of gardeners. It stated, among other things, that at the beginning of the past year there were 118 children receiving the benefits of the funds, and that 17 were elected at the annual meeting, making a total of 125. During the year 18 children ceased to receive the benefits of the fund, 15 owing to their having reached the age limit, and three by retirement on leaving the country with their mothers. As 18 candidates were elected at the annual meeting the total is the same as that in the past year. The family to be provided for is therefore a large one. It is also a source of much satisfaction to have further proof of the generous manner in which the charity is supported by owners of gardens and by those engaged in the various branches of commercial horticulture. On the other hand, we regret to find that, while there was a remarkable advance in the proceeds of the annual festival, the annual subscriptions remain much below what they should be, and that the committee should, as regards the subscriptions, have to "appeal for a larger measure of support from gardeners especially." The total amount received as subscriptions was only £370, which is a very small sum considering that the annual sum required for the maintenance of the orphans is £1,788. We trust that during the present year gardeners will recognise their responsibilities in this matter more fully than is at present the case, and make a hearty response to the appeal made by the committee.

**The Liverpool Horticultural Association.**—The committee have decided to hold the following shows during this year at the Corn Exchange, Brunswick Street, Liverpool: Spring Show, Wednesday and Thursday, March 27 and 28; Sweet Pea Show, Wednesday, July 17; and Chrysanthemum Show, Wednesday and Thursday, November 13 and 14.

**Birmingham Flower Show.**—Under the chairmanship of Sir George Kenrick, an excellent meeting was recently held at the Birmingham Council House for the purpose of furthering the aims of the newly-formed Birmingham Horticultural Society. It appears that the Handsworth Horticultural Society has placed its balance of £237 9s. 7d. to the credit of the new society, in addition to properties valued at £100. The attempts to raise funds for the proposed Great Midland Show have resulted in donations of £59 2s. 6d., two silver cups valued at £11 11s., and trade prizes of £36 10s.—a total of £107 3s. 6d. The meeting referred to pledged itself "to do its best to raise a prize fund of at least £500, so that the committee of the Birmingham Horticultural Society may offer a prize schedule of £1,000." Sir George Kenrick gave £50, and Mr. W. G. Griffiths £25; these amounts, with others promised, brought the prize fund up to £193 0s. 6d. Local jealousies appear to be standing in the way of a thoroughly successful Birmingham show.

**Visitors to the Royal Gardens, Kew,** 1911.—According to the returns published in the current issue of the "Kew Bulletin," 3,704,606 visitors to the Royal Gardens, Kew, were recorded during 1911. These figures show an increase of 158,304 over those of the previous year, and are the largest on record. During the ten years 1901-10, 22,459,027 persons visited the gardens, giving an average of 2,245,902. The total number of visitors on Sundays, during 1911, was 1,517,650, and on week-days 2,186,956. The largely-increased number of visitors during the past year must be attributed mainly to the remarkable spell of brilliant summer weather and also to the large number of visitors to London in connection with the Coronation. As in 1910, there were five Bank Holidays, and the attendances on Easter Monday, Whit-Monday, and the August Bank Holiday were 144,084, 157,425, and 115,833 respectively. The total number of visitors for the five holidays was 446,644, as against 424,010 in 1910. Sunday visitors decreased by 96,435, while the number of visitors on week-days show an increase of 254,739. The greatest attendance on any one day was on Whit-Monday, when there were 4,971 more visitors recorded than for the corresponding day in the previous year, which previously held the record for a single day. The smallest number on any one day was 179 on December 20. The largest Sunday attendance was 88,005 on June 4, and the smallest 423. The former figures show a decrease of about 3,000 from those recorded in 1910.

**Mr. William Collins,** the veteran secretary of the United Horticultural Benefit and Provident Society, completed twenty-five years' service in that position on Monday last. The usual monthly meeting of the committee was held on that evening, and the chairman, Mr. C. H. Curtis, took advantage of the occasion to congratulate Mr. Collins, and to accord him the thanks and good wishes of all the officers, committee, and members of the society, adding a hope that he might be spared in health and strength to continue his good work for some time to come. The vice-chairman (Mr. F. Winter) and other members of the committee also added congratulations, and expressed their high appreciation of Mr. Collins, and the services he has rendered to horticulture through the U.H.B.P.S.

**Record Prices for Peas.**—That excellent and deservedly popular pea Senator, which was introduced by Messrs. E. Webb and Sons, Stourbridge, a few years since, fully justified during the past year the high estimation in which it is held by cultivators for market, as well as for home supplies. Writing on February 8, 1912, to Messrs. Webb and Sons, a customer of theirs, Mr. F. W. Gwilliam, of Milton, Cambs, states: "You will be pleased to hear that two acres of Webbs' Senator pea grown by me last year realised £98, or £49 per acre. This, I think, beats the 'record' in your catalogue. The peas were planted in rows, just the same as beans, and kept horse-hoed as long as possible." The "record" referred to was £44 and £41 per acre respectively, which prices were obtained in July last for fields of Webbs' Senator grown in the Stourport (Worcester) district.

LIEUT.-COLONEL D. PRAIN, V.M.H., ETC.

**New Victoria Medallists.**—It was with great pleasure that everyone present at the annual meeting of the Royal Horticultural Society heard Sir Trevor Lawrence announce that the vacancies on the roll of the Victoria Medal of Honour in Horticulture were to be filled by the appointment of Lieut.-Colonel D. Prain, director of the Royal Gardens, Kew, a famous botanist and splendid administrator; and Mr. E. H. Wilson, whose several journeys to Central and South-West China on behalf of Messrs. Jas. Veitch and Sons and the Harvard Arboretum have resulted in the enrichment of our gardens with large numbers of hardy flowers, trees, and shrubs. It was unfortunate that neither recipient was able to be present to receive this highest of all honours in horticulture and the congratulations of the Fellows present. Lieut.-Colonel Prain fills the vacancy caused by the death of Sir Joseph Hooker, and Mr. E. H. Wilson follows the late Mr. James Douglas.

**Index of Plant Diseases.**—The study of plant diseases is so important from the technical point of view, and presents so many problems of scientific interest, that any suggestions for advancing it deserve serious consideration. The Biology Committee of the Agricultural Education Association is, we learn from "Nature," organising a card index that shall form a systematic record of fungus, insect, and other diseases of plants, and invites the co-operation of those able and willing to help in order that the record shall be as complete as possible. The value of the work, of course, will depend entirely on the extent to which this invitation is taken up. The record thus compiled will be available for consultation by an investigator, either by application to the secretary of the committee, Professor J. H. Priestley, of the University of Leeds, or by the application to the Board of Agriculture, which will hold duplicates of all the entries. The committee hopes to receive the co-operation of all investigators of this subject in the British Isles, and to form a record that shall not only be useful to the economic biologist, but also to the mycologist and to other students of plant diseases. Full information about the scheme can be obtained from Professor Priestley.

**National Auricula Society.** — The thirty-fifth annual report of the Southern Section of the National Auricula Society has been published, and it is gratifying to have the evidence it affords of the continued prosperity of this section which has done so much excellent work in promoting the cultivation of auriculas in the southern parts of England. The schedule of the exhibition to be held on April 30, which accompanies the report, is on the same comprehensive scale as in previous years. Reference is made in the report to the loss the society has sustained by the death of Mr. James Douglas, V.M.H., who was one of its founders, and for many years its secretary, and the regret to which expression is given shows how high was the estimation in which he was held by those associated with him in the management of the society. To perpetuate the memory of the late Mr. Douglas, a silver challenge cup is offered for the best exhibit in the four more important classes for show and alpine auriculas. These classes are for twelve and six show varieties and twenty - four and twelve alpine varieties.

**Nesting Boxes in London Parks.**—Miss L. Gardiner, secretary of the Royal Society for the Protection of Birds, writes: "Your readers may be interested to know that, through the generosity of a member of this society, a large number of R.S.P.B. nesting boxes have been offered to the Public Works Department and to the London County Council for placing in the London parks, and that the offer has in each case been accepted. This spring, therefore, boxes will be placed in Richmond Park, Bushey Park, Hampton Court Gardens, Greenwich Park, Hyde Park, and Regent's Park, and other public resorts, and also in Kew Gardens. The experiment will be watched with pleasure, and it may be hoped that it will be imitated at Wimbledon Common and elsewhere, where the woodpeckers, nut-hatches, tree-creepers, and other hole-building birds greatly need some substitute for the old and rotten trees which once gave them lodging. It may likewise be of interest to bird-lovers to know that nesting-boxes will shortly be met with not only in Paris, Berlin, and London, but that some of the society's boxes have been sent out to Rome, and will be placed in the Vergilian Garden on the Palatine." This letter, we are informed, records the first systematic attempt to encourage the breeding of birds in artificial nesting-places in London.

**Royal International Horticultural Exhibition.**—At the request of Monsieur Louis Gentil, editor of the "Tribune Horticole," Brussels, the Belgian State Railway and the South-Eastern and Chatham Railway Companies have agreed to issue cheap tickets (50 per cent. under the usual price) to Belgian visitors to the London International Show in May next. These tickets will be issued from all the leading towns in Belgium direct to London, via Ostend or Calais, from May 18 up to May 26, and will be available for fourteen days.

MR. E. H. WILSON, V.M.H.

## ROYAL GARDENERS' ORPHAN FUND.

About twenty subscribers to the above-named useful and well-managed charity were present at three p.m. on February 9, at Simpson's, 100, Strand, on the occasion of the annual meeting and election of annuitants. Mr. H. B. May, V.M.H., chairman of committee, presided.

Notice of meeting having been read, and the minutes of the previous annual meeting confirmed, the committee's report was presented, as follows:

### REPORT OF COMMITTEE.

The committee, in presenting its report on the operations of the fund during the past year, has again great pleasure in congratulating the subscribers on its steadily increasing prosperity, and enhanced usefulness. The accounts presented herewith will be found to show an appreciable increase in general subscriptions and donations, a remarkable advance in the proceeds of the collection made in connection with the annual festival, and a still further increase in the total yearly amount disbursed among the beneficiaries. The total sum received in the form of annual contributions still, however, remains much below what it should be to enable your committee to meet the pressing claims for assistance constantly made upon the fund, and it again appeals for a larger measure of support, from gardeners especially, with the assurance that the smallest contribution will be most thankfully received.

At the commencement of the year the number of children receiving the full benefits of the fund was 118, and 27 candidates waiting for election were receiving temporary assistance. At the annual meeting 16 children were elected, 15 by the direct votes of the subscribers, and one by special resolution. This was the very sad case of a boy, 14 years of age (who, with five younger brothers and sisters), was left to the mercy of the world through the death of both parents within three days of each other, and at a time when such a lad most needs control and guidance. Your committee was able to provide a home for him in the School of Handicrafts at Chertsey, where he will be maintained and instructed in the rudiments of gardening until he is 16 years of age. Your committee thankfully acknowledges the readiness with which its action was confirmed.

During the year, 18 children ceased to receive the benefits of the fund, 15 under the operation of the age limit, and three by retirement on leaving the country with their mothers, two of whom have joined friends in the Colonies, and one in the United States. The committee has carefully selected a list of 23 candidates to appeal to the subscribers at the ensuing annual meeting, and much regrets its inability to prudently recommend the election of more than 18. The total amount disbursed in allowances during the year exceeded by over £50 the sum expended in 1910, and is the largest amount distributed in any one year since the fund was established. Since the first election, which took place in 1888, the total sum distributed in allowances amounts to over £24,746.

The annual festival, on May 4, presided over by Mr. Sherwood, one of the earliest of the vice-presidents, for several years the treasurer, and from its foundation one of the fund's most constant and most generous supporters, proved by far the most successful that has yet been held. the chairman's list exceeding all previous efforts by nearly £350. Your committee has in the past been constantly indebted to Mr. Sherwood for innumerable acts of kindness and generosity, and once more invites the supporters of the charity to unite with it in expressing to him its deep gratitude for the splendid services rendered in the sacred cause on this occasion. Most cordial thanks are also given to all who so enthusiastically helped Mr. Sherwood in making the festival such a splendid success.

One of the most gratifying contributions to the chairman's list was made by Mr. George E. Messer, Hyde Side Nursery, Lower Edmonton, who, in recognition of the warm interest taken in the charity by his late parents, and as a lasting memorial to their memory, gave £100 in Consols. Your committee the more keenly appreciate the filial affection which prompted this gift from the fact of both the late Mr. and Mrs. Messer having been personal and highly esteemed friends of most of its members. To their worthy son most grateful thanks are accorded.

Your committee again acknowledge with deep gratitude the valued contributions of Sir Frank Crisp and others who so kindly open their gardens to the public in aid of this and other charities. It also most heartily thanks the members of the Chislehurst Gardeners' Society, the Bradford Chrysanthemum Society, the Altrincham Gardeners' Society, the Leeds Professional Gardeners' Club, the Reading Gardeners' Society, the Spen Valley Gardeners' Society, and the Sevenoaks Gardeners' Society, etc., who, by means of concerts, flower shows, and the sale of flowers at their local exhibitions, have greatly benefited the fund. The honorary local secretaries are also specially thanked for their valued assistance and continued interest in the welfare of the fund.

Your committee with deep regret records its sense of the heavy losses which the fund has sustained during the year by the deaths of old and greatly valued supporters. In the late Mr. James Douglas and Mr. Alfred W. G. Weeks two most esteemed colleagues have passed away. Mr. Douglas was a member of the original committee, and Mr. Weeks joined the committee on the death of its first chairman, Mr. George Deal, both being ever earnest workers on the fund's behalf. The late Mr. A. J. Brown, of Chertsey, also for several years worked hard in the cause of a local secretary. The kindly efforts of one and all will long be remembered.

The retiring members of the committee are Mr. W. Bates, Mr. G. L. Caselton, Mr. C. Dixon, Mr. H. B. May, Mr. J. W. Moorman, Mr. W. Nutting, Mr. G. Reynolds, and Mr. J. H. Witty. All being eligible, offer themselves for re-election.

Through the much lamented death of Mr. M. Rowan, who had professionally audited the accounts of the fund for the past 18 years, it is essential that a new auditor should be elected, and the committee has much pleasure in recommending the election of Mr. Frank Reader to that office.

CASH STATEMENT FOR THE YEAR ENDING DECEMBER 30, 1911.

Receipts.

| | | |
|---|---|---|
| To Subscriptions— | | |
| General | £291 3 6 | |
| Local Secretaries | 81 11 10 | |
| | | £372 15 4 |
| ,, Donations— | | |
| General | 133 3 0 | |
| Local Secretaries | 20 8 1 | |
| | | 153 11 1 |
| ,, Receipts from Annual Festival | | 1,330 0 5 |
| ,, Advertisements in List of Subscribers | | 26 17 0 |
| ,, Dividends on Stock and Interest on Deposit | | 376 1 5 |
| ,, Income Tax returned | | 7 0 4 |
| | | 2,266 5 7 |
| ,, Balance last Account | | 807 8 4 |
| | | £3,073 13 11 |

Expenditure.

| | | |
|---|---|---|
| By Allowances to Orphans | £1,581 15 0 | |
| ,, Grants in Aid | 180 15 8 | |
| ,, "Emma Sherwood Memorial" | 13 0 0 | |
| ,, "Maybud Campbell Grant" | 13 0 0 | |
| | | £1,788 10 8 |
| ,, Secretary's Salary | | 200 0 0 |
| ,, Printing and Posting List of Subscribers | | 39 16 8 |
| ,, Rent, Insurance, Firing, Lighting, etc. | 38 3 0 | |
| ,, Printing and Stationery | 49 11 9 | |
| ,, Advertising | 6 1 8 | |
| ,, Annual General and Committee Meetings | 23 19 9 | |
| ,, New Furniture and Cost of Removal | 18 9 9 | |
| ,, Postages | 28 0 1 | |
| ,, Bank Charges | 2 11 1 | |
| ,, Petty Cash: Sundries | 7 13 10 | |
| | | 174 10 11 |
| | | £2,202 18 3 |
| ,, Balances— | | |
| Cash at Bank | 420 5 5 | |
| Cash on Deposit | 450 0 0 | |
| Cash in hand | 0 10 3 | |
| | | 870 15 8 |
| | | £3,073 13 11 |

The Chairman, in moving the adoption of the report and statement of accounts, said that, as printed copies were in the hands of all present, it was hardly necessary to cover the ground there treated. The charity was thoroughly deserving of every support, and he was sorry to find that many names well-known in horticulture were still absent from the list of subscribers. The annual dinner of 1911, presided over by Mr. N. N. Sherwood, was the most successful ever held, the sum obtained being over £300 above anything previously received at the festival. The donation of £100 by Mr. Merser, the chairman referred to as a highly appreciated gift and memorial. Sympathetic reference was made to the losses sustained by death during the year. In conclusion, Mr. May paid a loyal tribute to the hard, regular, and conscientious work done by every member of the committee. Mr. May also referred to the kindness of Mr. Frank Reader, who assisted in the audit of the accounts, at short notice, on the death of Mr. Martin Rowan.

Mr. George Gordon seconded the motion, and emphasised the need of more support from gardeners generally, and held up the good example of several gardening societies which in various ways already regularly augmented the funds of the charity.

On the motion of Mr. R. H. Pearson, seconded by Mr. Alex. Dean, V.M.H., Mr. A. A. Sherwood, V.M.H., was heartily thanked for presiding at the annual festival dinner, and securing such a splendid success. Mr. E. Sherwood was thanked for past services, and re-elected as treasurer. Mr. Frank Reader was elected an auditor on the motion of the Chairman, and Mr. J. F. McLeod.

Messrs. Bates, G. L. Caselton, C. Dixon, H. B. May, J. W. Moorman, W. Nutting, G. Reynolds, and J. H. Witty, were thanked for past services, and all re-elected members of the committee. Mr. Bryan Winn was re-elected secretary, and in this connection the Chairman took the opportunity of referring to the new home of the fund at Bedford Chambers, Covent Garden, where the fund had a room in which the committee could conveniently meet.

Messrs. W. Bates, G. H. Cutbush, W. H. Cutbush, W. Howe, D. Ingamells, J. F. McLeod, and J. W. Moorman, were appointed scrutineers of the ballot, and the meeting was adjourned until the declaration of the poll.

The poll was declared soon after five o'clock, and it was then found that Gertrude A. Riley (461), Edward Dodd (376), Evelyn Stokoe (336), Annie Steptoe (295), John E. G. King (290), Thos. L. Rainey (278), Hugh Fraser (270), Alice Lee (260), Dorothy Edwards (258), Reg. A. Powlesland (257), Marjorie Billings (213), Wm. Sprackling (210), Ralph Deadman (206), Winifred Lockyer (205), Ernest Wright (199), Elsie Pretty (132), Winifred Potter (148), and Thos. Rudge (117), these eighteen were declared duly elected to the benefits of the fund.

A vote of thanks was passed to the scrutineers, and a similar compliment to the chairman closed the procedings.

**Chrysanthemum Kathleen May.**—Some of the rich crimson-coloured chrysanthemums lose their brightness when they open late in the season, but not so this charming kind. As the singles are by no means confined to flowers with one row of florets, Kathleen May can be described as a single with an anemone-like centre. Good examples may be had in flower throughout the month of January, or even later.—S. W.

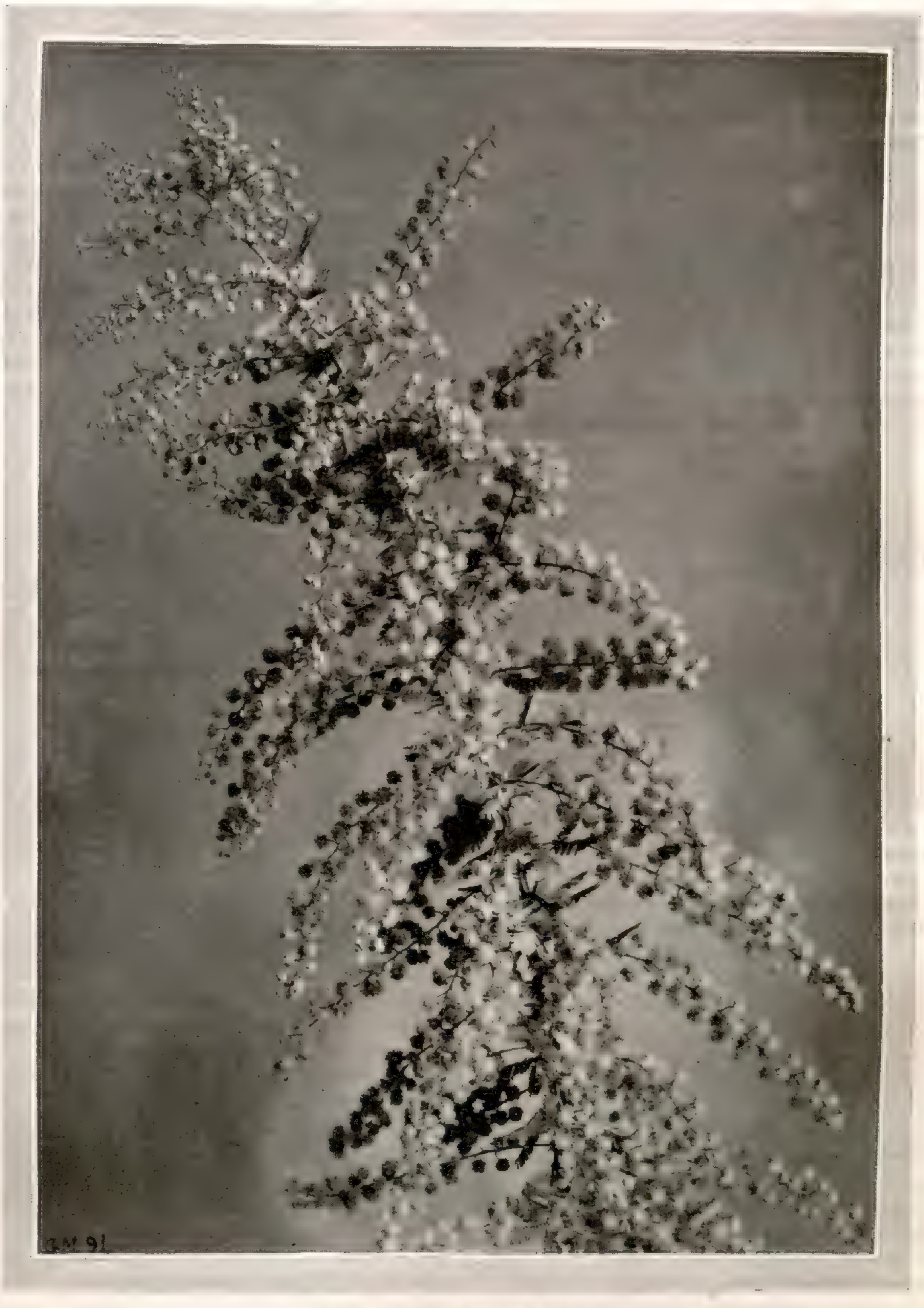
**Gesneras.**—We have had several opportunities at the Horticultural Hall during the autumn and winter of seeing the value of the garden varieties of gesneras for decorative purposes at that season. In colour the different forms vary a good deal, but the most effective during dull weather are those of a warm orange or orange-red tint. The foliage, too, of many of these gesneras is very handsome, being more or less of a velvety texture, and mottled or marbled in varying proportions with red and green.—S. W.

## ACACIA BAILEYANA.

To those who have had opportunities for becoming acquainted with the trade in cut flowers as conducted in the London markets, it is well known that immense quantities of acacia blossom are sent to this country from the South of France during the winter months. They will also be conversant with the fact that for many years past the flowers sold in the London markets have been chiefly those of the Silver Wattle (Acacia dealbata), which, under ordinarily favourable conditions, attains a large size, and in its native home reaches a height ranging from 30 to 100ft. This is, perhaps, one of the best known of the larger-growing kinds that are in cultivation in this country, and specimens are to be found in many gardens in which there is a conservatory or winter garden sufficiently lofty to afford a fair amount of head room. In some of the more favourably situated gardens in the West of England good specimens are found growing in sheltered positions in the open, where they bloom freely.

Within the past few years some of the flower growers in the district of which Nice is the centre have turned their attention to Acacia Baileyana, a species of singular beauty, and attaining the dimensions of a large shrub. They have been sending to the London markets for a year or two small quantities of the flowers of this species with their consignments of the blossom of A. dealbata, and this winter there has been a considerable increase in the supplies, a fact of interest as showing that they have found favour for decorative purposes. It would be somewhat surprising that A. Baileyana has not come into general cultivation in this country, were it not that hard-wooded plants have for some years past been at a discount. It is represented in the Kew collection, and the plant may be found among other acacias at the eastern end of the central part of the temperate house; but in the position it occupies it has no opportunities for the display of its distinctive characteristics, and affording some indication of its elegant habit and wondrous beauty when in bloom. In the case of a collection such as that at Kew, it is not, of course, possible to provide sufficient space for each specimen to attain its full development. It may also be met with in a few Cornish and Devonian gardens; but we have not been able to find it offered for sale in any of the trade catalogues that we have.

Acacia Baileyana is a native of New South Wales, where it forms a large shrub somewhat pyramidal in outline, and wholly free from formality. The shoots are slender, and well clothed with bluish-green leaves, which are bipinnate and about two inches in length and the same in breadth. The flowers are of medium size, and a rich golden colour; and, as shown in the accompanying illustration, are borne in gracefully-arching racemes that are produced in the axils of the leaves, and are about five inches in length. The spray illustrated was nearly 18in. in length; and, when we mention that there were nearly fifty racemes thereon, it will not be difficult to realise the fact that cut specimens are admirably adapted for the decoration of indoor apartments, and that well-grown bushes must, during the season of flowering, be immensely attractive. That A. Baileyana is free in blooming is evidenced by the large sprays the French growers are sending us, and the fact that they are growing it in increased quantities for the supply of cut flowers for the markets. For further evidence upon this point we turned to "Australian Plants," by Mr. W. R. Guilfoyle, late director of the Melbourne Botanic Gardens, and therein we found an illustration of a large, shapely bush, that was simply enveloped in the myriads of golden ball-like flowers. The species is so distinct and beautiful that it should have a place in every garden in which coolhouse plants are appreciated; and we have no doubt that, should a demand arise, there will be no difficulty in obtaining supplies from the nurseries. The spray illustrated is one of the many that have been sent to the London markets, and distributed therefrom in the usual course. G.



ACACIA BAILEYANA.

A free-flowering and handsome species, bearing elegant racemes of rich yellow flowers.

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**Daphne indica.**—Though this daphne cannot be called showy, the blossoms are so deliciously fragrant as to be admired by everyone. What is more, they are borne during the winter and very early spring months. It is often met with in a far from satisfactory condition, and this is, I think, in some cases at least, owing to the plant being propagated by grafting on to the mezereon, a deciduous member of the genus. Though cuttings take some time to strike, young plants can be obtained in this way.—W. T.

## CORNUS MACROPHYLLA.

Several species of cornus have little to commend them except that their bark is conspicuous during winter by reason of its bright red colour. This, however, cannot be urged against the species under notice, for its commanding appearance warrants it receiving attention amongst other woody plants, whether in bloom or in leaf. Unlike many of the other kinds, which are conspicuous by reason of masses of stems which spring from a common root-stock, this usually assumes a tree-like habit, rising to a height of 18 or 20 feet, with a stout central stem from which a flattened head of branches is borne. The leaves are large, ovate, and accuminate, green above and glaucous beneath. Individually, the cream-coloured flowers are small, but as a large number are borne together to form flat heads, 3 to 5 inches across, they are very conspicuous when at their best about the middle of summer.

C. macrophylla is widely distributed in China and Japan, and is suitable for general cultivation in Great Britain, except in the very coldest places. It must, however, be so placed that it is sheltered from cold east winds, by which the young leaves are liable to be damaged. Loamy soil is suitable for its successful cultivation, and to keep the leading shoot vigorous it is necessary to check strong side branches occasionally. W. D.

## SUBURBAN FRUIT PRUNING.

Attached to the villa and semi-detached residences which collectively go a long way to make up the well-to-do suburbs found on the outskirts of every large town, there are gardens, and in most of these gardens there are fruit trees, chiefly such things as bush apples and pyramid pears, with here and there a plum, and occasionally a cherry, which looks very beautiful when in bloom in the spring, and now and then it produces a solitary cherry or two which makes a dainty morsel for the birds.

In a general way these suburban gardens, which house agents describe as being "well stocked with fruit trees," are arranged very much on the same plan, and the age of the fruit trees can be estimated by the time the house has been built. The trees, by the way, are generally planted by the first tenant or by the owner if he builds the house or purchases it brand new. In either case, the circumstances are very much the same, and the business or professional man in town, who has the ambition and the necessary means to enable him to live in the suburbs, surveys the plot of ground at the back of his newly-built residence—which the speculative builder has been good enough to allot to him under the title of a "spacious garden"—and he sees a vision of a future day when he can step out through his French window and pick his fruit for dessert direct from the trees. In his happy dream he sees himself picking baskets of apples and luscious pears to send as presents to those less fortunate, who have no garden, and he feels as enthusiastic about it all as an Australian settler when he first begins to clear the scrub from his claim.

The garden is bounded on three sides by the orthodox paled fence, and on this side and that there are gardens just like it. Whether there is anything infectious about the arrangement of them, I do not know, but the gardens are all laid out very much the same, which may be due to the fact that the initial work is mostly done by the local expert, who has a sign over his premises which informs the inhabitants of suburbia in general that he is a landscape gardener.

Parallel with the fence there is a walk, and beyond this a border, along which the fruit trees are planted, mostly, as I said before, bushes and pyramids, though in some gardens horizontal espaliers skirt the sides of the walks. The ambition of the owner is to see these trees grow about as high as the paled fence, and, in many cases, being a business man and not knowing much about it himself, he places the whole matter in the hands of the individual who comes one or two days a week to "do" the garden, and leaves it to him, just as he would entrust his personal health to the local practitioner if he happened to get influenza. It is with some pride, however, that our friend watches his trees growing into bearing, and when they produce their first few apples or pears, his cup of happiness is full. No hands but his own are privileged to pick those precious fruits, which are placed in positions of honour on the sideboard, where every caller is expected to admire them, while the fruiterer round the corner provides apples for the family consumption. When at last, however, these first fruits of the "fruitful" garden are beginning to show signs of wear, the owner reluctantly cuts them up, divides them between the members of his family, who in turn protest that they have never tasted such apples or pears in their lives, and our friend feels that he has not lived and planted and grown fruit in vain.

So the small trees get bigger, the young specimens grow older, they are operated on every year by the local expert already referred to, and you will imagine them now as fairly matured specimens, with thickened stems and furnished with a fair complement of main branches. There are hundreds of trees of this kind in suburban gardens, and every spring they go through the annual process of amputation, which is called pruning. If you peep into the garden a day or two before the event you will see each tree covered with scores, yea, hundreds, of young shoots, anything from a foot to a yard long, but after the pruning they present a different appearance. The fixed idea of the local expert is to cut, and he sets about it with the air of a man who is entrusted with a task about which his client knows nothing, and it would be presumption on the part of the latter to offer any suggestions. There is one thing, however, the annual pruning is done systematically. The branches are taken one by one, every young shoot is cut back close to its base; by the time the work is completed the ground beneath is strewn with twigs that are admirable for flower stakes, and as the pruner gets down from his steps he seems to say to the tree, "There now, I've stopped you; don't grow like that again, or I'll treat you more severely the next time."

For a while, the trimmed in, artificial-looking tree present quite a stiff, not to say, neat, appearance; it has been professionally pruned, of course, and to ask any questions would be presumptious, but when the warm days come it takes its revenge by pushing up a forest of young vigorous shoots like willow growths, and before the end of the summer the tree is so thick that it is impossible to see through it. In other words, the tree is producing its annual crop of flower stakes, and hidden away amongst the leaves on the lower parts of the branches there are a few fruits, which collectively are honoured by the name of the crop.

Sometimes the owner nervously suggests something about the trees being very thick and making a lot of wood, and his professional adviser at once points to the necessity of root pruning to counteract the exuberance, but root pruning means labour, which in turn means expense, and the business man in town, with his "fruitful" garden in the suburbs, concludes that there is no help for it; his neighbour, at any rate, is in the same fix as himself, so he leaves the local expert to continue his annual process of amputation.

If only someone could take the man on one side, and advise him to give the local expert a holiday just one season, even if he paid him his wages, and then instructed him to be content with thinning out superfluous shoots, but let the tree grow for a year, he would see the next season fruit buds form on the young wood, the vigour of growth reduced, and he would get an ocular demonstration that this annual butchering which so many suburban fruit trees undergo is excellent if the object of the apple trees is to produce flower stakes, but not if they are wanted to grow fruit.

Day after day at this season one sees trees that are undergoing their annual "cropping," just as a shepherd shears his sheep by a process of rule, all varieties treated alike; a few months hence they will be furnished again with a forest of summer shoots, and a year hence the whole routine will be gone through again. I do not hesitate to say that a large proportion of the fruit trees in suburban gardens are growing a superabundance of wood, but not half the fruit they might through being brutally over-pruned. When will the individuals who are responsible for this unnatural treatment depart from rule-of-thumb methods, bring common sense to bear upon the work, and realise that pruning is a multiplication sum: the closer you cut back the stronger the tree will grow? H.

## ROSE NOTES.

The end of January and early in February reminded us of the advantage of having some protective material to hand, as recommended in my last notes, and I trust readers were not so unprepared as many undoubtedly were. The severe weather that was experienced came on so suddenly, and was all the more noticeable because of the soft growth generally, which had felt no appreciable frost previously.

Some of our own plants are caught rather severely; more especially the wichuraianas, which had hardly ceased growing all through the winter. The heads of tender varieties as standards probably suffered the most; but, in our case, this appears to have been mostly from the keen frost-laden wind. However, it is much too early yet to talk of how our roses have come through the winter. In due season I may give a few notes upon their condition in this district.

Roses in pots are moving satisfactorily and coming on apace with the greater sun influence. Naturally, the many insect foes have done likewise, and they should be kept well under. Constant attention, so that they cannot gain a start is much better than neglect to take prompt measures; for only a couple of days makes a vast difference in their number. I have found changes of liquid manure, given freely but weak, most useful.

Dwarf stocks for the purpose of budding in summer may be planted out by the end of the month. But I would not be in any hurry if the ground does not appear in good condition, and a little soil is not able to run among the roots. Planting dwarfs late is quite distinct from the case of those intended for standards; the latter having no roots to speak of, while the dwarfs should have a fair amount. Indeed, I prefer later planting with the dwarfs in the case of cuttings, because the stems of these are more soft and tender than the crowns of seedlings. The cuttings having been deep in the ground all one summer, and almost a couple of winters, while the seedlings have been exposed the whole time of their existence.

Always earth up cutting stocks as soon as they are planted. It helps to stay them against wind, and, with the aid of soil drawn against them, we can put them in a little less deeply; a great help when the budding season returns. By removing the soil in summer we can get the rose bud close down upon the root, and, needless to say, this is a great factor in the avoidance of suckers.

Rosarian.

## NEW PLANTS.

### ODONTOGLOSSUM MERLIN.

This beautiful odontoglossum was figured in our issue of February 10. It is of hybrid origin, but of unrecorded parentage; it closely resembles an O. crispum, but is probably a form of O. eximium. The shapely flowers with broad, substantial white segments, are very attractive, and rendered the more so by the red-brown markings on the sepals, and the crimson spottings on the petals. A fine spike, carrying thirteen beautiful blooms, was exhibited. F.C.C., R.H.S., February 6. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### ODONTOGLOSSUM MEMORIA LILY NEUMANN.

A very handsome hybrid of unrecorded parentage, with large, shapely flowers, tipped with rose, and with a white ground. Very showy are the heavy red-purple blotches and spottings on the sepals and petals, and the smaller markings of a similar colour on the golden-crested lip. A.M., R.H.S., February 6. J. Gurney Fowler, Esq. (Gardener, Mr. J. Davis), Glebelands, South Woodford.

### CARNATION TRIUMPH.

A good perpetual variety, the flowers of fair size and good substance. The colour is deep glowing crimson, and the petals are fringed. To its other good qualities must be added the merit of fragrance, as it is distinctly clove-scented. A.M., R.H.S., February 6. Mr. C. Engelmann, Saffron Walden.

### LISSOCHILUS STYLITES.

An erect, strong-growing terrestrial orchid from tropical Africa, it has been found in Angola and in Southern Nigeria, and appears to delight in hot, moist conditions while growing, but drier conditions while resting. L. stylites carries a spike 3ft. to 5ft. high, bearing six to nine flowers each, two or three inches across, pale rose-purple, the large, pouched lip being purple, yellow, white, and spotted with brown. A specimen was flowered in this country at Packham, Fordingbridge, in the Hon. Mrs. Foley's garden, in June, 1909. Bot. Mag. t. 8397.

### APHELANDRA FASCINATOR.

This very handsome acanthad from Columbia was introduced by M. J. Linden, of Brussels, in 1873, but it appears to have been also discovered by Bowmann, about 1866-68, when he was collecting in South America for the Royal Horticultural Society. It is a good garden plant if grown under somewhat similar conditions to that afforded the tropical begonias, and raised from cuttings each spring. The dense terminal spikes carry large numbers of brilliant scarlet flowers, and these are well set off by the green, silver-banded leaves. Bot. Mag., t. 8398.

### SPIRÆA WILSONI.

A beautiful shrubby spiræa from Central China, and closely allied to S. Veitchi and S. Henryi. It is of graceful habit, and grows to 8ft. high, is deciduous, and produces its clusters of white flowers, on lateral branchlets, during June. A useful hardy flowering shrub. Bot. Mag., t. 8399.

### RHODODENDRON AMBIGUUM.

Yellow rhododendrons are none too common, hence R. ambiguum, found in Western China by Mr. E. H. Wilson, is the more welcome. It makes a closely branched shrub, and promises to be quite hardy in British gardens. The flowers are widely bell-shaped, two inches across the mouth, and light yellow. Bot. Mag., t. 8400.

### BUDDLEIA OFFICINALIS.

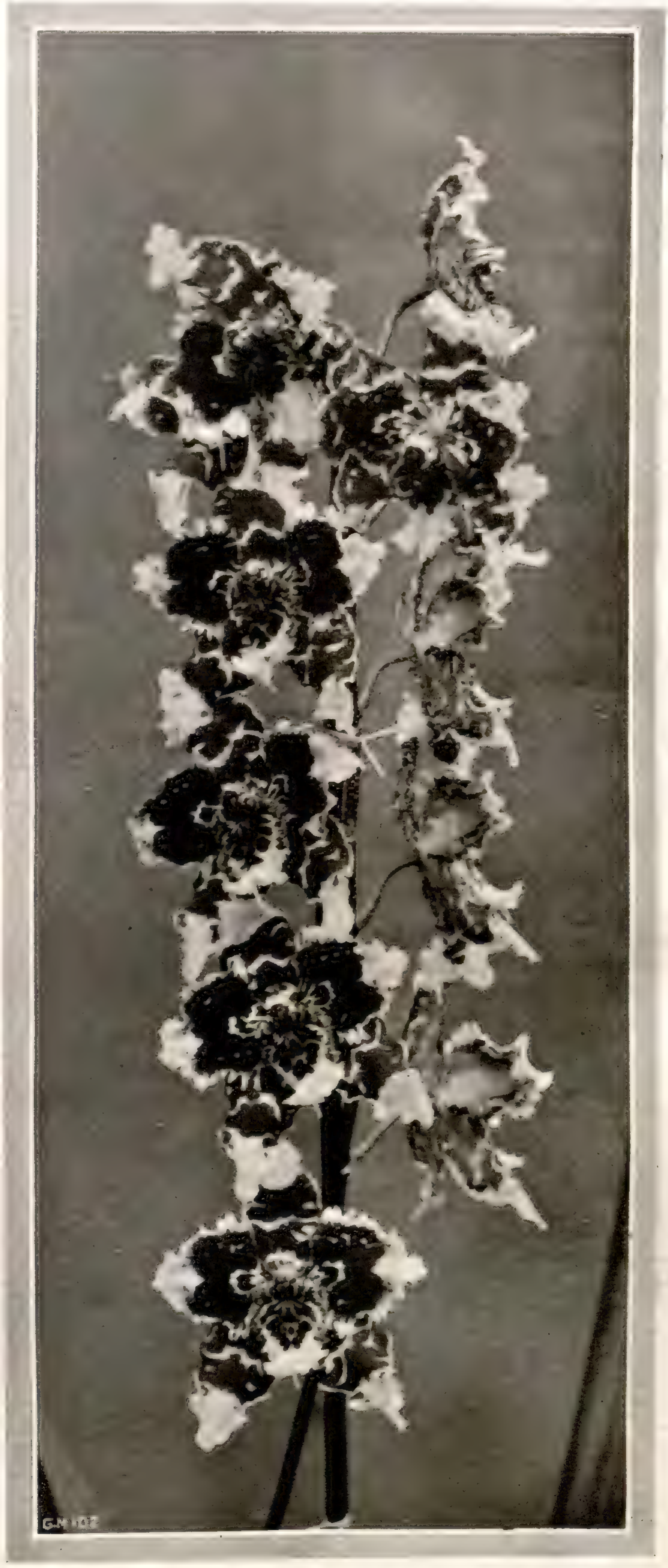
This may be useful for greenhouse decoration, as it flowers during the winter, and is then sweetly fragrant. Stems and leaves are pubescent, and the small flowers, borne in small clusters on a terminal spike or thyrse, are pale lilac. The species is hardly so attractive as B. asiatica, and falls far short of B. variabilis in beauty. Bot. Mag., t. 8401.

## GESNERAS.

These lovely plants may be regarded as companions to gloxinias, and their treatment may follow that generally given in the case of the last-named. One of the finest batches of gesneras I ever saw were growing and flowering profusely on the floor of a conservatory in partial shade. Although the flowers were lovely, and there were so many of them, the leaves seemed to me equally attractive.

Seeds should be sown on the moist surface of sandy compost in pots or pans, in preference to boxes. A very slight sprinkling of silver sand will suffice, and if the pans are kept in a warm moist atmosphere, the seedlings will soon appear. A suitable compost is one of fibrous loam and leaf-soil in equal proportions, with sand to ensure porosity; for the first potting the compost should be finer than for subsequent ones, and for the final potting a small quantity of old mortar rubble may be mixed with the soil. While growing the plants should have a summer temperature, but not as close an atmosphere after the flowers develop.

When the flowers have faded, place the plants under glass lights in the open air, or in a cold frame, with lights well tilted, so as to secure gradual but complete ma-



ODONTOGLOSSUM MEMORIA LILY NEUMANN.

Flowers white, tipped with rose, and heavily blotched and spotted with deep red purple. A.M., R.H.S., February 6. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

turity of the tubers. Store the latter in their pots during the winter in the same way that gloxinias are.

If a few old tubers are started very early in spring in two batches, the flowering period will be considerably prolonged. Red, yellow, and orange are the prevailing colours. The flowers are borne on stout stems, well above the leaves, and do not look at all stiff or formal. A light syringing will be beneficial occasionally up to the flowering stage. As the roots are fine—very fibrous—do not give strong stimulants. GEO. GARNER.

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## FINELY-FLAVOURED PEARS.

We grow over seventy varieties of pears, and most of these are useful in their season, though, of course, some are better than others, and in some seasons certain varieties do better than others.

One of the earliest and best is Beurre Gifford, a pear of medium size, melting, and very juicy, and in a good season it has a beautiful colour; this does well on pear or quince stock, and either as a bush, cordon, or horizontal trained tree. Clapp's Favourite is a very large and handsome pear, and when taken from the tree in the proper condition is decidedly an acquisition. It is highly coloured and a fine fruit for exhibition. To ripen it on the tree it must be secured with ties, when it will develop a splendid flavour, but it will not keep long after being gathered, while, if gathered before it is ready, it never develops its true flavour. This is an August pear.

The two earliest pears are Doyenne d'Ete and Citron des Carmes, but both are small, round fruits, and not of much value. Targonelle and Williams' Bon Chretien are two remarkable pears, both very old, and both unsurpassed in their season. The former is best when eaten as gathered from the tree on a west or south-west wall. If gathered about twenty-four hours before ripe this pear will ripen well, and the flavour be good. If required for packing, it will stand gathering two days ahead, and still be passable. Williams' Bon Chretien, if the true type is secured, is a really first-rate pear, and I daresay the most popular, as the familiar "William" is amongst us from France long before our own fruits are ready. The English type is by far the best, and I have gathered fruits of it over a pound in weight from a west wall. The end of August and the first half of September is the time for these pears, and they are of the finest flavour, but the "William" may be gathered and ripened quite easily by artificial means, and thus give a longer season. It should be grown in several positions to doubly ensure a long supply. The tree bears well as a cordon, bush, espalier, or fan-trained. There are two varieties; one is much smaller and earlier than the other, and striped.

In September and October there is rather a glut of pears, and for general use many are not really necessary. Yet where one variety fails, another one does well. One will do probably better on a light soil and another on a heavy soil; so it really takes some time for one to discover which varieties are likely to do well, and vice versa. The best method would be to have a look around the district, and see what varieties do well under normal conditions, plant accordingly, and then compare notes.

Marguerite Marrillat is one of the very best pears in the month of September; it is a strong grower, and has very large fruit, juicy, and of good flavour. It is fine for home use and exhibition, grows extra large on walls, and does well as a bush or pyramid. Souvenir du Congrès is another good pear, very large and highly perfumed; splendid on a south-west wall, does fairly well as a pyramid or bush, and is a very consistent cropper. The fruits require to be heavily thinned. Fondante d'Automme is a fine old pear; large and deliciously flavoured; does well in any form, and is most useful for orchard culture. Dr. Jules Guyot is a large fruit, much resembling a Williams', but with more colour. It is of good flavour, and the tree is a rare cropper. Triomphe de Vienne has very large and handsome fruits of fine flavour, and is quite one of the finest pears for all purposes, but does not last long in good condition.

Beurre Hardy is, I consider, one of the best of October pears when well grown and the fruit well developed. It is both large and handsome, and of very rich flavour. Beurre Superfin is of a similar character and an excellent bearer in all forms. Comte de Lamy is small, but of excellent flavour, and requires a wall to do it justice. It does well as a cordon, fan, or horizontal trained tree. Great care must be taken in pruning, as it fruits on the ends of the branches. This tree is not a strong grower, but, nevertheless, Comte de Lamy is one of the best dessert pears. Emile d'Heyst is a finely-flavoured, moderately sized fruit, quite in the front rank, and after the style of Marie Louise. It often fruits when the latter fails, and should always be planted, as it is very free; the fruits require severe thinning. Marie Louise is now considered by many to be the best pears of its season. Unfortunately, it is rather tender, and not a very robust grower on some soils.

Louise Bonne of Jersey is both large and very handsome, quite hardy, and is first rate on walls. The best of all autumn pears, it keeps a long time in perfect condition, and the tree is an abundant bearer. This variety does well in most places as a standard, and is usually so grown in Wiltshire, and at Compton Basset there are the largest and best trees of the variety I have ever seen.

Coming to November pears, Doyenne du Comice, when grown well and from walls, is second to none, being large, of good shape, sweet, juicy, and very handsome when the fruits are exposed to the sun. I have grown this up to 1¼lb., but the best fruits for general purposes are those that weigh about half a pound. The variety does well as a single cordon or a trained tree, but it should be grown in several positions and aspects to secure as long a season as possible, because the fruits are always in demand. Fondante de Thirriot is a very fine pear of the finest flavour, a real good grower, and abundantly prolific. Charles Ernest is a fine large yellow fruit, with faint red colouring next the sun. It forms a good pyramid, but is best on walls, bears freely and quickly on the quince stock. Thompson's is small to medium sized, sweet, aromatic, of excellent flavour, and considered by some to be the best of pears. It requires a wall to do it justice. Beurre Alexandre Lucas has large golden fruits, melting, and of rich flavour, something like Louise Bonne, keeps well, and is very prolific.

Among December pears Glou Morceau is an old favourite, and generally crops well, especially near the sea coast. The fruits should be thinned, and not gathered until really ripe, or they will shrivel. I have left them on the trees until November has well advanced, netting them over to give shelter from frost. Winter Nelis is a rather small pear, but of most delicious flavour, being quite of the front rank, and probably the very best in its season for private use; a rather shy grower until well established, and should be grown against a warm wall, as it is not so hardy as some pears. Santa Claus is a new introduction, and regarded as the Doyenne du Comice of its season. This pear is destined to have a great future.

Easter Beurre, on light, well-drained soils, is an ideal pear for use from January to March; it crops well, and is of most refreshing flavour; requires a warm wall and plenty of water during the growing season. On clay soils I have not found it do very well. Beurre de Naghin is a large pear of the highest excellence for January and February, and makes a fine addition to late pears. It bears freely, and requires thinning to allow the fruits to properly develop. Josephine de Malines is a first-class dessert pear when well ripened, and its season extends from February to April. It takes a long time to ripen, and should not be gathered until it comes away easily, or it will not keep well. Olivier des Serres is an old variety, but a good grower and cropper, and often succeeds when others fail; an excellent pear of the finest flavour; February to March.

Le Lectier is a fine late pear, and a real good grower and cropper, and is quite one of the best introductions of recent years. Ne Plus Meuris is rather small, but one of the best pears for April use. It bears freely and in large clusters which should be severely thinned. This pear also should be left on the tree to the last possible moment; it requires a wall, but in warm localities will grow well as a bush. Doyenne d'Alencon gives good-sized fruits for use in January; a good bearer, requires high culture to bring out its merits, and a warm wall to grow against. Bergamotte Esperen is a good pear after a hot season, small, but of nice dessert size; requires severe thinning, is a good grower, and a very dependable cropper. Duchess de Bordeaux is a good bearer, and when well developed is a very fine late pear; requires high culture and attention during the growing season; good in March and April. Knight's Monarch, a rather small, round pear, is a very hardy and a great bearer; must be thinned early, or it casts a lot of its fruits; should be allowed to hang on the tree as long as possible, when, if properly matured, it lasts to May and June. This variety should be more generally grown; must be very carefully pruned, as it bears on the extremities of the shoots. Blickling is an old pear that has recently come to the front; of very fine and rich flavour, and most valuable in January.

The best-flavoured stewing pears are Cattillac, Grosse Calabasse, and Uvedale's St. Germain.

Most pears, more especially those on the quince stock, require a good deal of feeding when the fruits are swelling, and especially is this necessary during July and August. Against walls the roots are liable to become very dry, and therefore the crop fails. Pears on the pear stock should be root pruned or the roots will push down into the cold subsoil and suffer in that way. A good mulching is very beneficial, and a liberal watering with liquid manure several times during the growing season is valuable, and if soot, bone-meal, and kainit are pricked into the soil during the growing season, or just as the roots are moving, it will work wonders, and in a very short space of time. All pears require to be most carefully gathered; in fact, one cannot be too careful that the fruits do not become bruised. Many failures with pears are bruised by incorrect harvesting, or they are not sent into table at the proper time.

Leonardslee Gardens. W. A. COOK.

# SOME OF THE NEWER HYBRID TEA ROSES.

Of the many types of roses none are more popular or useful than hybrid teas, and any deserving new variety that blossoms freely and continuously is sure of a welcome. Roses are so much employed nowadays for garden decoration and for supplying cut flowers that many of them which are not suitable for exhibition find a place in even a limited collection where they would have had no chance a few years ago.

Duchess of Westminster (A. Dickson and Sons, 1911) should be much grown, both as an exhibition and as a garden rose. It is a dainty clear rose-madder, with full-sized blooms of splendid shape. In growth it is vigorous, erect, and free-flowering.

Melody (A. Dickson and Sons, 1911) is deep saffron-yellow, with lighter edges, strongly perfumed, and very free; the deep purple wood and rich glossy deep green foliage make a harmonious setting for its blossoms; it is said to be mildew-proof, which, if correct, will be a distinct gain, especially as it is purely a garden rose.

Dorothy Ratcliffe (McGredy 1911) is coral red, shaded with yellow and fawn, becoming paler as the flowers expand; a decorative variety of much value.

Lady Katherine Rose (S. Bide and Sons, 1911) is a delicate pink, with richer markings in the petals, very shapely, free and vigorous in growth, with a strong perfume.

Mrs. Amy Hammond (McGredy, 1911) has a colour blend of ivory, amber, and apricot, and is of good shape, with long-pointed petals; likely to become a good exhibition rose.

Lady Downe (W. Paul, 1911) produces large shapely flowers quite late in the autumn; it is buff, with a deeper centre of yellow, paling with expansion; it is of strong growth, and carries its flowers on stiff stems.

Leslie Holland (H. Dickson, 1911), I consider to be the finest exhibition variety introduced for many years; it is a deep scarlet-crimson, heavily shaded with deep velvety crimson. The large blooms have shell-like petals, and are quite sweetly perfumed.

Lady Reay (B. R. Cant, 1911) should prove to be a really good garden rose; the colour is a deep rich pink in the centre, shading off to a mother-of-pearl white.

Countess of Shaftesbury (Hugh Dickson, 1911) should become a popular exhibition rose, as it has good lasting properties. In colour it is silvery-carmine, mottled and flushed with pale pink.

Edward Mawley (McGredy, 1911) made a deep impression when first seen because of the marvellous substance of its petals. The colour, deep crimson, with a rich velvety shade, is most attractive. Whether it will prove valuable for garden use remains to be seen.

Jonkheer J. L. Moct (Leenders, 1910) I regard as a magnified La France, which it resembles in colour and form very much, but is more massive; it should be added to every collection.

Claudius (B. R. Cant, 1910) is one of the best roses of recent introduction, and, though classed as a H.T., it favours the hybrid perpetual section, both in shape of bloom, habit of growth, and remarkable perfume. It is bright rose.

Ethel Malcolm (McGredy, 1911), ivory-white, shaded peach, has shapely, full-sized blooms, and is in every way desirable.

Lieut. Chaure (Pernet-Ducher, 1910) is of remarkable colour, standing quite alone for its velvety crimson-red shade; it has large, full, shapely blossoms, and should become a popular exhibition variety.

Lady Pirrie (Hugh Dickson, 1910) should become very popular in the garden for massing. The colour is deep coppery, reddish-salmon, with a flush of apricot-yellow inside.

Portia (W. Paul and Son, 1910) is sure to become a good exhibition flower; pale rose, with a flush of yellow when unfolding.

Margaret (W. Paul and Son, 1909) has thick fleshy petals, which build up a full-sized bloom, soft pink, with the centre a trifle deeper in colour.

Carine (A. Dickson and Sons, 1911) should become a favourite as a garden rose; the growth is vigorous and erect, carrying the blossoms on rigid stems; the colour is orange-carmine, flushed fawn.

Mrs. Amy Hammond (McGredy, 1911) I should describe as an improved Madame Abel Chatenay in size and form, but with a flush of yellow in the centre; quite free in growth and flower.

Mrs. Cornwallis West (A. Dickson and Sons, 1911) shows a mixture of shell-pink and rose-pink on a white base; in growth it is very satisfactory.

Elaine (W. Paul and Son, 1908) opens pale lemon-white, and when fully developed is pure white; it has massive petals that build up a handsome bloom.

Mrs. E. J. Holland (McGredy, 1909) is pale rose on the outer portion of the flower, with a deeper centre; shapely and good.

Arthur R. Goodwin (Pernet-Ducher, 1909) is coppery orange, red in the bud, passing to salmon-pink as the flowers expand; it flowers well into the autumn, and is quite one of the best of garden varieties of a dwarf habit.

Sunburst (Pernet-Ducher, 1911) is undoubtedly very like a combination of Prince de Bulgarie and Gustave Regis in formation of the flowers. In colour yellow-carmine, deepening to orange-yellow in the centre. For culture under glass this must be a good rose.

E. Molyneux.

CARNATION TRIUMPH.

A deep crimson perpetual variety, with fringed petals and clove-like fragrance. A.M., R.H.S., February 6. Mr. C. Engelmann, Saffron Walden.

CHRYSANTHEMUMS.—For full instructions on the Culture of Early-flowering Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of Chrysanthemums for Garden and Greenhouse, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## WENNINGTON HALL.

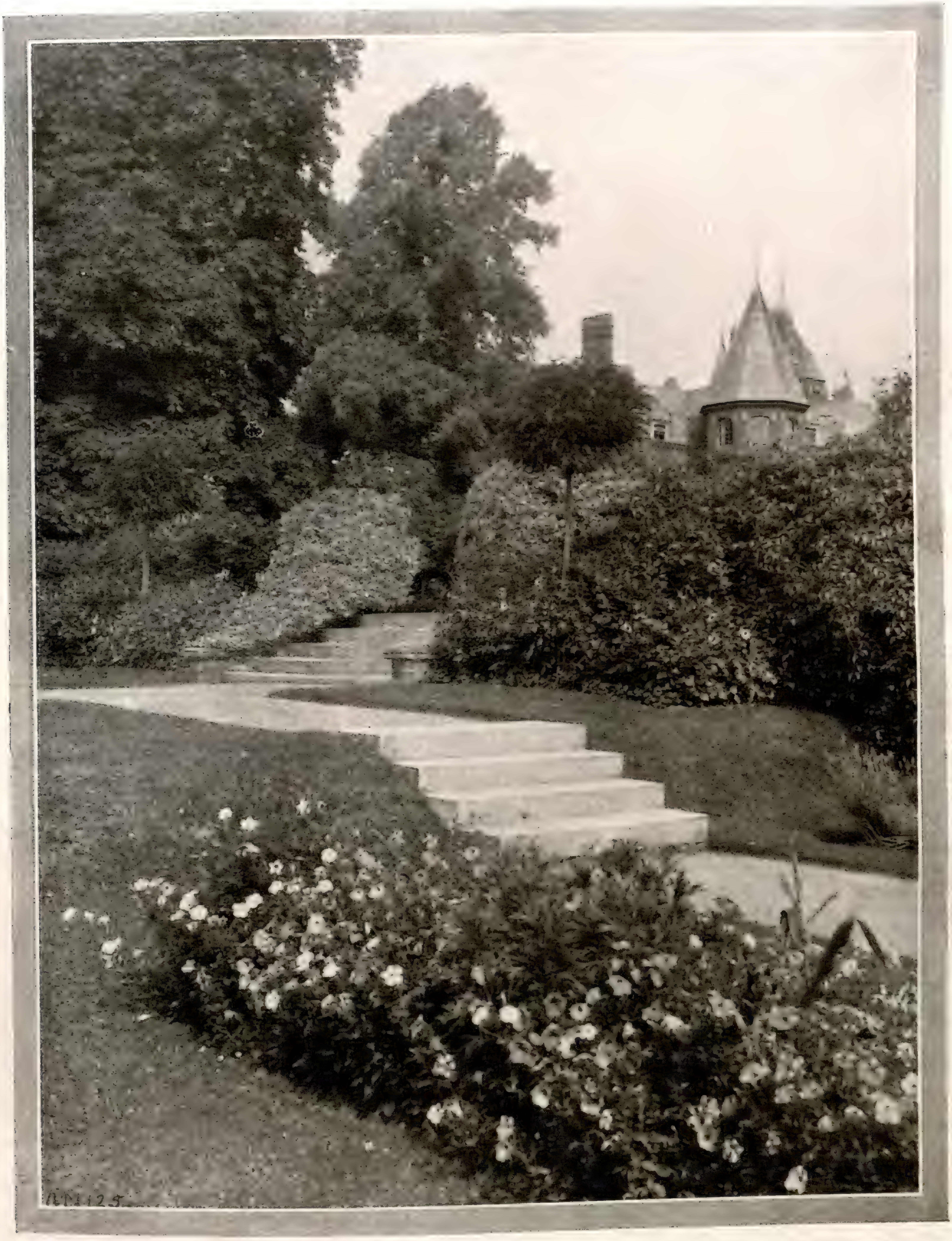
Wennington Hall, the seat of Colonel Saunders, is prettily situated near the picturesque village of Wennington, on the railway between Carnforth and Hellifield. The mansion itself is a fine one, and is surrounded by noble trees and spacious grounds. From the house to the garden entrance there stretches a long, broad border of hardy flowers of great variety and excellently grown. Backed by a wall covered with good climbers this border looks extremely well, especially as it is planted with due regard to a succession of bloom, from early spring until late autumn. The best genera and species, together with excellent varieties, in the most valuable classes of herbaceous flowers, are here represented, although Mrs. Saunders, who is the presiding spirit of the garden, does not lay claim to owning any special collection of border flowers.

ENTRANCE GATEWAY, WENNINGTON HALL.

It is mainly to alpine flowers that Mrs. Saunders is devoted, and when we enter the garden we are at once confronted by evidences of her taste and skill in the direction of these charming subjects. Mrs. Saunders spends a good deal of time in the Alps, and, while staying at Pontresina and other places, has been an earnest student and collector of the best of the plants to be found there. She has selected her finds with keen critical taste, with the result that there is hardly a poor form, and there are many of special beauty among the alpines brought home to Wennington. Not only, however, are the plants well chosen, but they are cultivated in a manner, which, possibly too artificial for many, yet by its results fully justifies Mrs. Saunders' departure from the conventional way of cultivating alpines. This is neither by growing them on natural-looking or formal rock gardens, although there is one small rockery, where, by the way, are a number of the easiest subjects doing as well as they can be seen anywhere, but by a method intended to secure that the flowers will have their requirements fully met. It may at once be said that this is done in a manner far surpassing the writer's anticipations, although his companion—a keen grower and experienced cultivator of alpines—had held out high expectations. These were more than fulfilled, for there are few places where one can see these flowers so well grown, looking healthy, happy, and flowering with freedom.

The arrangement for the cultivation of the alpines at Wennington is by means of a series of raised beds, built up with low, dry stone walls, about two feet high in some, but in others a little more lofty, and raised higher at the back than in the front, so that the compost slopes gradually. The crevices of these walls are left open and unplastered, so that there is the freest possible drainage. The space is then filled so far up with drainage; then rough material, such as stones, grit, and sand, and the whole finished off with a good layer of free soil, such as loam, peat, or leaf-soil, sand, grit, and small stones, with a surfacing of an inch or two of small stones, the general idea being to form what might be called a moraine on artificial lines, the leading consideration being the welfare of the plants. These are kept well supplied with water, and the treatment produces the happiest possible results. The garden was visited a year ago by M. H. Correvon, who was delighted with the condition of the plants, many of which were in better condition than they can be seen at home in the Alps.

Looking through these flowers one was struck with the fine representation of the charming gentians, some of which are seldom seen, and those which are seen are seldom in as good condition. Thus we saw Gentiana brachyphylla doing well, G. verna, a pattern for other growers, G. acaulis, G. acaulis var. dinarica, G. cruciata, G. ciliata, G. Allioni, and several others. Androsaces are also wonderfully grown, among those observed being A. glacialis, A. carnea, A. foliosa, very finely grown; A. arachnoidea, A. Chumbyi, A. lanuginosa, and a good representation of other species. The hardy primulas are excellently, and some superbly grown. For example, P. marginata was simply wonderful, making enormous rosettes of its handsome leaves for this species, and a picture of beauty in itself. Primula farinosa alba is a special plant here, as it may well be, for this white variety of our native Bird's Eye primrose was originally found by Mrs. Saunders in a meadow on Colonel Saunders' own estate of Wennington. This pretty form was just over, but it is an excellent one. Of course, the typical P. farinosa is also grown, and we observed among others P. Clusiana, P. graveolens, and a wide selection of the best of the European and other species. It was a pleasure to see the campanulas so well done with this treatment, and a wonderful feature was the manner in which the lovely little C. excisa is growing in the artificial moraines here. It is spreading freely, and is very beautiful with its little blue bells, deeply cut so as to be appropriately named excisa. C. G. F. Wilson, C. pumila in



THE GARDEN STEPS AT ELVETHAM PARK, LORD CALTHORPE'S SEAT, NEAR WINCHFIELD.

(See Page 138.)

variety, C. nitida, C. waldsteiniana, C. Raineri, C. barbata, and C. b. alba, a very fine form of C. Hosti, C. pulloides, and many more of this charming race of alpine flowers. A good feature were the daphnes, which thrive well under the same conditions, among them being D. fioniana, D. alpina, D. cneorum, very fine, D. Blagayana, and others. We naturally expect to find the dianthuses well represented, and we see such good species as D. neglectus, D. alpinus, D. glacialis, with a good many more. Anemones are in considerable variety, and, with the alpine ranunculi, are of much beauty. A. alpina and A. sulphurea are doing extremely well, and we see the pretty ranunculus crenata and R. glacialis among the ranunculi.

Quite a host of good saxifrages of different sections flourish, but the tale is too long to permit of detail of these favourite flowers as seen here. There is also an unusually good collection of sempervivums, while sedums are cultivated in the neatest and finest forms. New Zealand and other veronicas are in goodly numbers, and among other plants seen were Geum reptans, Œnothera cæspitosa, Viola calaarata in variety, Nigritella angustifolia, Mertensia lanceolata, Potentilla nitida, Mitellas diphylla and pentranda, edelweiss, Cherleria sedeoides, several phyteumas, Linnea borealis, silenes in variety, Pædorota Bonaroti, Shortia uniflora and galacifolia, Galax aphylla, Dryas octopetala, Iris gracillipes, Aquilegias alpina and glandulosa, Heliopsis breviscapa (doing extremely well), Anemonopsis macrophylla, and a magnificent plant of Onosma taurica, with O. alba-rosea. Many other plants were noted, but cannot be now detailed.

Among other good features in this garden is the rose borders and beds. Mrs. Saunders shares her love for her alpines with that for the rose, and the best of the new varieties are added in the hybrid teas and others.

There are also good herbaceous borders in this garden, and the other departments are excellently cared for by Mr. Moffat, Colonel Saunders's gardener. He evidently takes a thorough interest in the garden under his charge, and has a great pride in the alpines which Mrs. Saunders herself cultivates with such sedulous and successful care. Few collections of alpines are more deserving of a visit than this at Wennington Hall. S. Arnott.

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**Hardy Fuchsias.**—Are the value of these in the garden realised to the extent that they might be? I think not; for when summer is on the wane they are most beautiful. This refers even in districts where they are cut down to the ground during the winter, as with a little protection from leaves or something in that way they will push up again vigorously in the spring, and bloom as the season advances. As is well known, in many parts of the country they are little, if at all, injured by frosts, and are then consequently regarded as permanent shrubs. In a selection of hardy fuchsias the two commonest forms, namely, Fuchsia gracilis and F. Riccartoni, must on no account be omitted, as they are so beautiful and trustworthy in every way. Of those with white corollas, Madame Comellison is the only one to be considered as hardy. An autumn exhabit of these fuchsias at the Horticultural Hall contained, among others, Elysée, a plant of upright growth with fair sized dark coloured flowers; Enfant Prodigue, of looser growth, with semi-double blossoms; Thompsoni, like a small gracilis; Brightoniensis, a little globular bush with dark coloured flowers, the corolla being crinoline-shaped; Globosa, remarkable for its globular buds; and pumila, a bushy grower.—W. T.

## GARDEN STEPS.

It is a curious and hardly recognised fact that amid the wealth of advice on adornments of gardens and pleasure grounds, large and small, contained in the literature devoted to these subjects in the present day, useful or artistic suggestions on garden steps have been either totally ignored or dismissed with scant courtesy.

Prominence is given to the designing of terraces, lawns, pergolas, wall, rock, and water gardens, but few of the present-day landscape gardeners give any help on the idea suggested by our illustration.

Yet, when we come to consider the matter seriously we realise that much of our pleasure in a country house or villa residence is bound up in its "stair and stepways." Whether it be the grand sweep of some marble approach to one of the stately homes of England, from the rose garden, or the severe stone or brick ascent, leading from the yew-tree walk to the peacock-haunted balustrade, verging the paved alley under the southern windows of some ancient manorial mansion, that affords delight, or the moss-grown flight of steps in a more secluded woodland paradise, or hidden garden way, that thrills us with pleasure as we near the breadth of still water or old-time well to which they conduct us, the fact of enjoyment remains, and we sometimes realise that in former days garden steps evoked a keener interest than is the case in our prosaic twentieth century life.

"The long, low grass stairs that led me from the allée verte to my lady's fantasie, and following through her rose pleasaunce, I do find myself above the mossy steps that bring her little feet down to her dipping well," is a fitting appreciation from an old-world lover, and we see in fancy the lichens and the ferns that lovingly clothe the steps to-day.

Bacon, in his "Essay on Gardens," advises "for a fountaine that there be also some steps up to it and some fine pavement about it." In the work just completed on the Sussex home of the Master of English flower-gardening, there is an interesting entry. "Formed in the spring of the year 19—, the steps laid in earth with rock plovers beneath them and the pathway," and no one who has had the privilege of visiting Gravetye Manor at any season can forget the enchantments of all Mr. Rominson's stairways.

In our ever-abused climate we cannot expect to attain to the glorious effects of the Italian garden steps so aptly described by Sir George Sitwell in his book on "Making of Gardens," or to adapt the "broad, stately steps and open-air staircases of cold-blooded marble leading to sombre conclaves of silent cypresses in tragic gardens," ever present at the water approaches to villas and chateaux in warmer climes, but in every country and on every estate, even in the humblest suburban garden, ways may be beautified by the artistic arrangement of ascent and descent where practical and artistic help is desired.

As with entrances and gates, the primary object to be considered is the meaning of the steps with regard to their situation and practical use. The material to be employed rests with the owner or occupier of the property, and should be decided by local surroundings and quarries, though there can be no veto on the employment of foreign stone and marbles. Yellow and red sandstone are picturesque in their own localities, and of Ham Hill and Bath stone, grey granite and red brick, the same may be said. Grass stairs are eminently adapted to roseries in some situations, but climatic influence has always to be taken into consideration and sodden conditions of turf in damp places and the pathetic brown in very dry sites may prevent its use in either.

In many terrace gardens no vegetation is allowed to grow on the walls and steps, but the older and more beautiful way is to garland all such surfaces with living plants. With the large number of subjects that we have it should be easy to find some handsome and really effective climbers to drape our walls and steps with. Stone steps are often an ugly blot in the garden, not always owing to their position, but their bald aspect, but they may be made attractive to look at if the surroundings are carefully planted. Steps without a margin of fern and flower are by no means pleasing to the eye, but, with a setting of hardy plants, they have a very changed aspect. To obtain such an effect is very simple, as, if the steps are in the shade, it is easy to grow ferns by the side or shade-loving plants. Cotoneaster microphylla is a delightful plant for such a position. It sends its wiry, crimson-berried shoots over the facings, and produces a charming picture. Primroses, saxifrages, sedums, and the little sandwort, Arenaria balearica, may be grown in a simple way against steps and in the crevices and chinks.

Much care and taste is needed in building rustic steps in gardens. The mason's art should be concealed, and the work made to look as if it grew out of the ground. Any necessary cement joints should be kept out of sight, and the stones laid in natural-looking courses, much as they occur in the quarry. In building a chink should be left here and there for some tiny plant to grow in, the better to connect the steps with the masses of plants hard by, and the stones of the wall.

Flights of steps, always beautiful if easy and well-proportioned, are of the greatest value in terraces. There is no reason or excuse for the steep, ugly and often dangerous steps one so often sees. Every step in the garden should be nearly two feet broad, and never more than five inches high, no matter how steep the incline. Where the stairway cuts through the bank and is lined on both sides by dry-walling, the whole stonework may become a garden of delightful small things. Little ferns may be planted in the joints on the shadier side as the wall ascends, as well as numbers of small plants. Then there will be drooping veils of arabis and aubrietia, iberis and cerastium that will find a happy home in the cool shelter of the rocky pocket. Wallflowers, thrift, and antirrhinums may often be established, and, as they ripen their seed, it lodges in the crevices of the wall and forms plants of robust vigour that are longer-lived than the softer-grown plants in the rich flower borders.

In making steps to go with dry-walling it is not necessary that they should be entirely paved. If the front edge is formed of carefully-fitted stone, the rest can be levelled up with earth, and the sides and angles furnished with small plants. The steps themselves will then become flower gardens, and if the stones are large and heavy enough to be quite firm there need be no cement.

Wyndham Fitzherbert.

GRAPE CULTURE.—An illustrated guide to the culture and management of vines in greenhouses and in the open air is published at Gardeners' Magazine Office, 148, Aldersgate Street, London, price 1s. net (by post 1s. 2d.), or bound in cloth 1s. 6d. (by post 1s. 8d.). Full particulars are also given as to renovating old vines, and the best varieties to grow.

## CYDONIAS.

When visiting Oxford early in the spring of last year, I was greatly impressed by a striking example of Cydonia trained on a wall in the Botanic Gardens there. The plant was fan-trained, each stem being carried straight from the centre and with all the side shoots spurred in. The wood was thickly clustered with flower buds, on the point of breaking into bloom. Such a specimen reveals great latent beauty, and suggests how much our gardens lose by neglecting some of our commonest shrubs. One could not readily conceive a more admirable shrub for garden decoration. Yet how frequently do we find Cydonias relegated to some obscure corner of the garden, where the cultural attention bestowed upon them is of most indifferent character.

Cydonias succeed in ordinary garden soil, and flower best in positions where they obtain a reasonable amount of direct sunlight; pruning is generally necessary, as some varieties have a tendency to overcrowd their branches, and these should be thinned out, allowing ample space to each, so that sun and air may have access to the centre of the bush. At the same time, the lateral branches may be spurred in, as this assists the formation of buds.

Cydonia, or Pyrus japonica—the Japanese quince—is the oldest species known to gardens, and it forms a rounded, spreading bush, which when growing in the open, attains a height of 6 to 8ft. The type produces bright scarlet flowers; Simoni, rich deep crimson flowers; Cardinalis, scarlet-crimson; alba, white tinted flowers; and nivalis, snow-white flowers.

Cydonia Maulei is not so vigorous in growth as C. japonica, and forms low, rounded bushes, with slender branches, on the laterals of which the flowers are freely produced, even in a young state; in this the flowers are succeeded by orange-yellow fruits that remain on the plants right into the winter months. Cydonia Maulei produces scarlet flowers; the variety alba is a very beautiful form, with pure white flowers; atrosanguina has rich deep blood-red flowers, and produce a most telling effect; superba is an improved form of the type, with large deep scarlet-crimson flowers, and the variety Sargenti produces bright red flowers on plants that are particularly dwarf in habit.

It may also be noted in passing that all the cydonias are admirably adapted for house and conservatory decoration. So readily does this genus respond to forcing that plants potted up from the open ground and placed in a temperature of 50 to 55 degrees will open their flowers in from six to seven days, and these retain their beauty for a period of three weeks; the rich colour and quaint character of the plants make them most acceptable additions to the ordinary run of flowering plants at this season.

Thomas Smith.

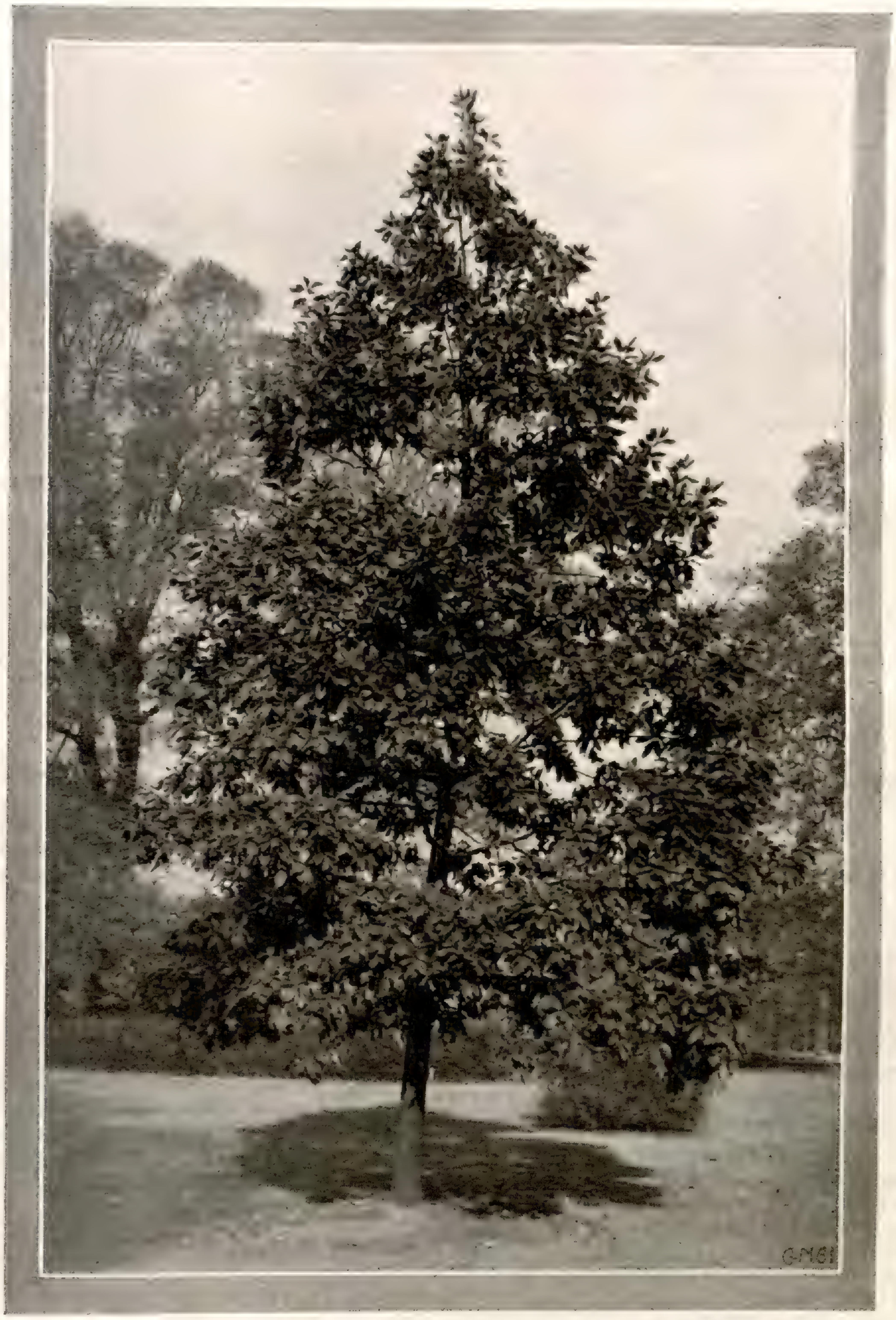
Coombe Court Gardens.

**Eranthemum pulchellum.**—This plant does not necessarily require stove treatment all the year round. Cuttings rooted in March and April, with due attention to potting, watering, and stopping, will by the beginning of August be nice bushy plants. After that date remove them to any cool, airy house, such as an early vinery cleared of its fruit, with full sunlight, where, with liberal feeding, they will develop strong dark leaves, and each branch will by the end of October be bristling with flower buds. Such plants introduced into heat in batches from November onwards will keep up a supply of rich blue flowers, a colour rather scarce during the winter months, till late in spring; and, being so treated, will retain their beauty for some time.—R. J.

## MIRBECK'S OAK.

The number of oaks that are now available for planting in parks and pleasure grounds is considerable, and planters have therefore full scope for the exercise of taste in the making of a selection for a special purpose. There are, for example, the Scarlet Oak, so well known and highly appreciated for the brilliant colouring assumed by its leaves when "touched by the breath of autumn"; the Lucombe Oak, a handsome sub-evergreen tree, which was raised by Lucombe at Exeter one hundred and fifty years ago; the Hungarian Oak, a medium-sized round-headed tree, remarkable for its distinctness and attractive appearance; the Glabrous Oak, an evergreen species that possesses much beauty in all stages of development; and Mirbeck's Oak, a sub-evergreen tree, distinct in character and handsome in appearance.

All the oaks mentioned are deserving of a place in parks and pleasure grounds, where suitable positions can be found for them, but at the present time we are only concerned with the last-named, which has strong claims upon planters who are specially interested in trees that can be used with good effect in the creation of garden and park scenery. Quercus Mirbecki is a native of Spain, Portugal, and North Africa, and in its native habitat forms a tree of considerable proportions, and its general character is admirably shown in the accompanying illustration of a specimen growing in the Royal Gardens, Kew, not far distant from the Wood Museum at the northern end of the Broad Walk. The leaves are six or more inches in length, about three inches in width, and regularly dentate; they are stout and leathery in texture, and retain their rich green colour until such time as they are subjected to a severe frost, when, as was the case a fortnight since, they are browned at the margin; but this change in the colour is not sufficient to greatly detract from the appearance of the trees when seen from even a short distance. Mirbeck's Oak is evidently well adapted for planting alongside carriage drives, for with but little aid from the pruning knife a pyramidal outline can be maintained. It has several synonyms, and in some English catalogues will be found under the name of Quercus Zang.



QUERCUS MIRBECKI.
A handsome sub-evergreen oak, of much value for gardens of moderate size.

## BOUVARDIAS.

During the early winter months bouvardias are always useful, as their neat, compact clusters of flowers can be used in a variety of ways, where those of a larger and heavier type would be out of place or could not be employed to advantage.

### Propagation.

In order to have good sturdy plants that are capable of sending up fine trusses on long stems, it will be necessary to commence propagating as early in the spring as possible. When the old plants have ceased flowering they should be cut back and placed in a brisk heat to induce them to make young growths, and when these are about an inch long they will be large enough for cuttings. Prepare some small pots, such as 72's, and fill them with light sandy soil well-warmed. Take off the cuttings with the heel of the old wood attached, and insert them near the edge of the pots; then place in a propagating case where a temperature of about 75 degrees can be maintained, and shade from bright sunshine until rooted.

As it is not always possible to get sufficient cuttings in one batch to supply the requisite number of plants, a second lot may be taken and treated in like manner. When these small pots are filled with roots stand them out of the propagating case for a few days to harden off a little, previous to potting them. Those who are desirous of obtaining large specimens may shift the plants as they are into larger pots, but where only moderate-sized ones are required then the small plants may be shaken out of the soil and potted up singly, using a light rich compost and ample drainage. After being potted they should be returned to the hotbed, where a temperature of from 70 to 75 degrees can be maintained.

Propagation may also be effected in the following manner. After the cuttings have been removed, shake the old plants out of the soil and take off all the roots, and cut the strongest and most fleshy of these into pieces about an inch in length. Fill some pans with light sandy soil, then place these pieces of roots evenly over the surface, sprinkle a little sand over them, give a gentle watering to settle the soil, and place the pans in the propagating case, giving shade from the sun. In the course of a few days young growths will appear all along the roots, and when this occurs more air should be admitted to strengthen them. When the growths are about an inch long the plants should be potted off singly, using small pots, and returned to the hotbed until established.

### Frame Culture.

Bouvardias grow best in a light rich soil, and if ample root room can be afforded them will make large plants in a very short period, as may be seen by those raised from cuttings in the spring and used for planting in the flower beds during the summer months. If bouvardias are specially needed for cut bloom they should be planted out in pits, about eighteen inches apart. If such structures have a couple of hot-water pipes running round them, so much the better, as the requisite temperature can be maintained during the autumn and early winter months to keep the plants blooming. If it is intended to bed them out there will be no need to give the plants a shift after the middle of April, as by the time those pots are filled with roots, which should be towards the end of the second week in May, it will be safe to transplant them to the pits. The lights should be kept on, and if the nights are cold, a little heat should be given to maintain a genial temperature, but they should be gradually hardened off, so that by the middle of June they may be fully exposed to the weather both day and night. We have had plants so treated that made growths three feet in length and as thick as a lead pencil, carrying trusses of bloom from three to four inches across, which we found most useful during the dull months. When grown in this manner bouvardias do not require half the usual attention, either in the way of watering or keeping them clean; it may, however, be necessary to stake some of the growths to prevent their being broken by rough winds in the early autumn.

### Culture in Pots.

If grown in pots the final shift should be given about the first week in June, after which, if the plants are stood in a cold frame for a week or two, and shaded from the bright sun until new roots have formed, they may then be plunged in a bed of ashes in a sheltered position, where, if duly looked after, they will make good material by the autumn, when they should be housed for the winter. Treatment through the summer is very simple; all growths made should be pinched at the third or fourth joint, and on no account should they be allowed to bloom, as this would weaken them. When they have their final shift, it is a good plant to peg all growths down level with the soil, as the young growths that spring up from the centre will then have ample room to develop. If the plants are healthy and in a flourishing condition, they will send up a quantity of such growths from buds underneath the soil, and as these will be much stronger than those made from the axils of the leaves above ground, they should be encouraged, especially those made during the latter part of July and August; some of these shoots will grow eighteen inches high or more, if liberal supplies of liquid manure are given to keep them growing.

### Varieties.

Bouvardias, like all other plants, are subject to the attack of insect pests, but these are easily kept under if the plants are in a healthy condition, but once allow them to suffer for want of nourishment, and there is sure to be difficulty. Varieties are not numerous, and there is no need to grow many. Three or four of the best singles, and the same number of doubles, are enough. The following are all good, and may be relied on as free-flowering. Singles—Jasminiflora, white; Mrs. Robert Green, pink; President Cleveland, scarlet; and Humboldti corymbiflora. Doubles—Bridesmaid, pink; Alfred Neuner, white; and Hogarth flore pleno, scarlet. There are others, such as Scarlet King, President Garfield, Sang Lorraine, The Bride, etc., which are good, and should be grown where a collection is required.

When bouvardias are housed in the autumn, no attempt should be made to force them into bloom, as plants grown in strong heat are quite useless. A free circulation of air is necessary to keep the plants sturdy, but the temperature should not be allowed to fall below 50 degrees or the flowers will not expand properly or be of fine colour.

H. C. PRINSEP.

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"CHRYSANTHEMUMS AND HOW TO GROW THEM FOR EXHIBITION," by J. B. Wroe.—Full details on timing and stopping for Northern, Southern, and Midland growers, selections of the best varieties, illustrated instructions on taking the buds, cuttings, staging, etc. Prices 1s. net, by post 1s. 2d.; cloth, 1s. 6d., by post 1s. 8d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

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## PERENNIALS GROWN AS ANNUALS.

The cult of annual plants for decorative summer display in English gardens has reached amazing proportions, and doubtless 1912 will see even greater progress made. The special attention which is now given to annuals is very different to the starved conditions which used to be accorded them in many gardens. Thorough cultivation in well-prepared beds and borders has resulted in a high degree of excellence, and this, combined with the raising and selection of new and improved varieties by the florists, have given annual plants a very exalted place in the horticultural world.

In these few notes I wish to briefly discuss the merits of certain perennial subjects from an "annual" point of view; that is, the growing and flowering of perennial plants effectively, within the limits of a single season. It is noteworthy that many of the ordinary annuals have a very short flowering season, consequent upon the rapid maturing of seeds, and it is to obviate this, and to gain the greater effect, that I have had recourse to perennials in their place.

The first point in this direction is to sow early, choosing just those subjects which will give one the greatest pleasure and the most effective display. Secondly, one must resort to frame culture for a short period to ensure unchecked growth, and follow this up, if possible, by early planting, putting all the young plants out before "bedding out" commences. From this point, growth becomes both quick and vigorous, and many subjects will be coming into blossom in June or early in July, when, if proper selection has been given, and good cultivation maintained, will go on in beauty until autumn.

One of my most-favoured subjects is Delphinium Belladonna, which gives such a delightful display, with its dainty spikes of soft blue blossoms, and raised from seed each season, one is able to secure a long, continuous display good alike for cutting or for garden decoration. Chrysanthemums, particularly the single forms, are now so generally grown as annuals that any remarks of mine may seem superfluous, though a good bed, or, better still, a sloping bank, planted up with an array of seedling singles, provides a feast of colour for quite two months before the frosts come.

Chrysanthemums of the C. maximum group and those C. leucanthemum forms, known as the Shasta daisies, can be well grown as annuals. A series of seedlings of Mrs. Lowthian Bell were grown by us last year with marked results, giving plenty of long-stemmed, large-sized flowers during the latter half of summer and early autumn. Lupines were treated in the same way; both L. polyphyllus and L. arboreus sections were grown, though the greatest success was gained from hybrid forms between the two groups mentioned. These formed neat bushes, well-flowered, and of considerable decorative value.

Gauras, as may be well imagined, come grandly as annuals, these being almost indispensable for giving waving misty masses of snowy blossoms in the more informal spaces. Montbretias may not be regarded as annuals, nor are they, but I have been struck with their utility when treated as such. Few summer flowers are more charming or more valued for cutting than these, and I say with all sincerity that I believe the montbretia has a great future treated as an annual subject. Campanulas, particularly those of the C. carpatica and kindred sections, came well as annuals last season. But the taller forms, especially those of the C. persicifolia type, are useless in this direction.

Hybrid pyrethrums can be treated so as to have an early autumn display from a spring sowing, and the value of Gaillardia grandiflora, and, in a lesser degree, Coreopsis grandiflora is sufficiently notable to be taken into account, especially where large quantities of cut flowers are required. Then again, Michaelmas daisies make fine bushy plants from spring-sown seeds, and furnish a grand display of blossom, without attaining the weedy, over-grown appearance of plants which remain year in and year out in the same situation. Other subjects (perhaps equally good) might be mentioned, but the foregoing will prove the possibility of treating "perennials as annuals."

P. S. Hayward.

## CYMBIDIUM LOWIANUM AT DUNORLAN.

Few orchids are so useful as Cymbidium Lowianum, and certainly no member of the cymbidium family is so easily or so widely cultivated. We make no pretence to be orchid growers at Dunorlan; that is to say, we have not a collection of orchids, but grow batches of some of the commoner kinds, because of their value for cutting. We find Cymbidium Lowianum extremely useful. The flower spikes usually begin to open their flowers in February, and remain fresh for fully two months, but it is not wise to leave them so long on the plants. This year, owing possibly to keeping the flowers on the plants longer than usual in 1911, our specimens are neither flowering so well or so strongly as usual.

Once established in a good compost of fibrous loam, peat, and sand, and given plenty of drainage and ample root room, this cymbidium grows and flowers freely in a cool house, and is a capital orchid for an amateur to cultivate. Potting should be performed only when really necessary, as the thick fleshy roots are sure to be damaged somewhat during the process, with the result that flowering is deferred or is poor for a season. Plenty of water is needed when the plants are growing freely, and a little weak liquid manure is beneficial at this stage if the pots are well filled with roots. Under no consideration must Cymbidium Lowianum be allowed to become dry at the roots.

Some of the plants shown in the accompanying illustration I secured at a sale many years ago, and for some years previously they had been freely exhibited as specimens, and had always flowered finely and regularly. It will thus be seen that Cymbidium Lowianum is long lived, an easy plant to manage, and a very useful subject.

E. H. Caterer.

Dunorlan Gardens, Tunbridge Wells.

**Self-clinging Vines.**—A great deal of the popularity of Ampelopsis Veitchi, or Vitis inconstans, as it is also called, is owing to the fact that, once planted it takes care of itself, and mounts upwards without further attention. A fact, however, not so generally recognised is that there are several forms of this popular climber. The strong-growing kind, known sometimes as robusta, does not colour so well in the autumn as the more slender one. Beside these there is a form (purpurea), whose freshly-expanded leaves are of a pretty bronzy hue, and the distinct Lowi, whose small leaves are deeply cut. There is a variety of the common Virginian creeper known as muralis or Englemanni, which supports itself almost to the same extent as the Japanese kind. It might with advantage be more often grown than it is.—T.

## MAGNESIA.

We always used to be told in books, lectures, and papers, that the four essential plant foods we need concern ourselves with were nitrogen, phosphorus, potash, and lime, and that, although iron, soda, magnesia, sulphur, etc., were almost always present in the ash of plants, it was never necessary to consider them or apply them as a manure, because all ordinary soils contained enough of them for plant nutrition.

The last few years, however, we have been hearing a good deal from certain quarters about the necessity of applying magnesia to the soil. One pamphlet which is distributed freely says that the use of carbonate of magnesia is of great importance in potato and fruit culture, while a recent booklet on garden manuring says that in exceptional cases its application has proved beneficial, and that where there is an insufficient supply of it in the soil the leaves will be of a pale yellowish-green, and consequently the manufacture of food in the leaves will go on slowly. It seems to be a fact that vines do best in soils which are rich in magnesia, while it is stated that roses have been found to grow weakly in a soil which is deficient in this substance, and in such circumstances have derived great benefit from its application. If it is a fact that any soils or plants need the application of magnesia to ensure the best results, it is a little curious that, notwithstanding the fine produce displayed on the exhibition tables, we have until recently heard little or nothing about it.

It is doubtless true that good results have followed from an application of magnesium salt, such as carbonate of magnesia, but it seems that it was not because that particular salt was necessary, but because it, like the salts of soda, potash, and lime, has the effect of setting free stores of potash which are locked up in the soil in an insoluble condition. Experiments at Rothamsted prove this pretty clearly, and Mr. A. D. Hall, in his recent book on "Fertilisers and Manures," says that, while magnesia would render "available some potash in the soil, common salt would do the same thing more cheaply. Carbonate of magnesia has from time to time been suggested and even put upon the market as a manure, but there is no evidence to show that its action is in any way different from that of calcium carbonate; that is, it behaves as a base, and is not of any further value as supplying magnesia to the plant."

[Photo: J. Richards.

CYMBIDIUM LOWIANUM AT DUNORLAN, TUNBRIDGE WELLS.

That seems pretty conclusive, but those who think magnesia is necessary in their gardens should try it in comparison with, say, salt and lime, one of each of the three on a given plot carrying the same crop. The results would certainly be interesting, not only to the experimenter; but to a wider circle as well.

Alger Petts.

**Epacris onosmiæflora flore plena.**—This is interesting in being, as far as I know, the only double-flowered member of the genus, and withal a pretty flowering plant for the greenhouse. This species, which is, by the way, also known as Epacris purpurascens, is a stouter grower than most of them, and branches but sparingly. The long shoots are, when at their best, wreathed for the greater part of their length with white rosette-like blossoms.—T.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

THE MEXICAN HOUSE.—In this house Odontoglossum citrosmum is starting into growth, but the plants must not be disturbed by repotting, nor unduly excited by watering, or they will produce no flower spikes. They should be kept at the cool end of the house, and receive no water until the spikes are seen to be pushing up through the centre of the young growths. When this occurs they may receive abundance of water both at the roots and in the atmosphere. Those plants which show no signs of flowering within the next few weeks, should not be rested longer, for no further amount of resting will induce them to bloom.

LÆLIA ANCEPS.—In the same house Lælia anceps, and its numerous varieties, will have passed out of bloom, and after they have enjoyed a short rest, and new roots are seen to be pushing from the rhizome, no time should be lost in supplying fresh rooting material, or larger receptacles to those requiring them. I prefer pans to pots, and these must be well drained. Do not disturb the plants more than is necessary, but any that have overgrown their receptacles, or that are unsightly, should be made up again into compact specimens. All useless backbulbs should be cut away, as it is not necessary to have more than three or four behind the leading growth. Should these backbulbs come from any variety which it is deemed necessary to increase the stock, they may be placed in a box or pan, upon a layer of sphagnum moss, and sprayed from time to time, when those which have good buds will push forth new growths; they may then be potted up. The compost I find them succeed in consists of equal parts peat, polypodium and osmunda fibre, and clean sphagnum moss, with a fair sprinkling of half-decayed oak leaves, which have been rubbed through a half-inch sieve. All the earthy particles must be taken from the fibres. The newly-potted plants must be watered cautiously until new roots are moving in the compost. They may be sprayed overhead occasionally on bright days, and they delight in the lightest and brightest position in the house. For the present the night temperature should range from 58 to 60 degrees, increasing gradually as the days lengthen. It matters little how high the temperature rises by sun-heat, providing plenty of fresh air is admitted. When young roots push from the rhizome, they must be carefully protected from woodlice and cockroaches, which do considerable damage, even in a single night. The above conditions answer the requirements of all the Mexican lælias.

SHADING.—Although up to the present it has not been necessary to use any shading, it will become a necessity at any time now; therefore all blinds should be thoroughly overhauled and put into working order, so that whenever the sun puts forth its power everything may be ready. We find lath rolled blinds answer our requirements in all cases, but during the abnormal summer of last year it was found necessary to use additional shading of thin canvas. The usual kind of shading for the ends or sides of the various houses must soon be brought into use; either stippling, or frames covered by canvas, or the foliage of the plants may easily be scorched.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

TEMPERATURE. — As the days are now lengthening, and the sun's power appreciably increasing, a temperature a few degrees higher should be maintained both day and night; but the rise must be gradual, and in accordance with the conditions prevailing outdoors. Utilise the sun heat as much as possible by closing early in the afternoon, thus saving excessive fire heat at night.

INSECT PESTS.—Wage constant war with these at this season, when the conditions favour an increase of insect life. In these days there are numerous preparations on the market for the extirpation of pests, thus making it easy to keep the plants clean by timely applications.

BEGONIAS.—Begonias of the Lorraine type that have passed out of flower should be cut down to within four inches of their base, and kept rather dry for a time, then placed in heat and supplied with water to induce them to produce cuttings. These should be taken off with a heel when two or three inches long, inserted in sandy soil, and placed in the propagating frame. If potted on friable soil, used as soon as rooted, these will provide good specimens for the earliest batch of flowering plants next winter. Where extra large specimens are desired it is good practice to strike three cuttings in a thumb pot, and shift them on into larger pots when rooted without any disturbance. Excellent plants may be grown by selecting mature leaves at this time, and after passing the knife lightly over the ribs of the leaves, peg them on to sandy soil in pans. Plants raised by this method will bear comparison with those raised from cuttings. The Rex varieties are also particularly amenable to leaf propagation, and the present is a good time to raise the required number of plants.

ACHIMENES.—These are not so frequently cultivated as their merits deserve. The tubers should now be shaken from the old soil and restarted into growth. In gardens where these plants are grown in quantity it is good practice to start them in batches to form a succession. Grand specimens may be grown in ordinary round seed-pans, or the tubers may be started in a seed box, and when the young growth is two or three inches high, be transplanted into hanging baskets. The soil most suitable for achimenes is one consisting of two parts peat to one each of loam, and flaky leaf-soil, plenty of sharp sand, and a sprinkling of bone-meal and dried cow or sheep manure. The pans, or pots, should be three parts filled with the compost, the tubers laid flat on the surface, and then covered with half an inch of soil.—H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY VINES IN FLOWER.—The sharp frost and snow, which we have recently experienced, accompanied by dull, sunless days, has had a deterrent effect upon early forcing. During the flowering period of vines the atmosphere of the house should be kept fairly dry, and we like to leave a crack of ventilation on the top ventilators night and day, but this has been almost impossible during the severe weather we have experienced, and at the same time maintain a steady minimum temperature of 60 to 65 deg., without overheating the hot-water pipes. We discontinued syringing and reduced the damping-down to a minimum for a few days during the flowering period to allow the flowers to set, but immediately a "set" has been obtained, syringing and damping-down will be commenced again, or red-spider will probably make its appearance. Pollinate the bunches with a camel's hair brush, or rabbit's tail, every day, when the pollen is dry, and easily dispersed. We find this is the safest plan to adopt at this early season of the year to ensure a good set. Later on in the season it is not necessary to adopt these means with free-setting varieties, but with Muscats and several shy-setting grapes it is imperative that it should be done.

THINNING GRAPES.—It is a great mistake to allow the berries to grow to the size of small peas, before commencing to thin them. A commencement should be made immediately they are set. The small berries grow with remarkable rapidity, and constant attention should be given; use a good sharp pair of thinning scissors, and exercise great care not to rub the berries in any way. Maintain a night temperature of 65 degrees, with a day temperature of 70 to 75 degrees, allowing a rise of 10 degrees with sun heat. Applications of weak liquid manure, and some approved chemical fertiliser should be given, and well watered in occasionally to accelerate the swelling of the berries, and to promote good healthy foilage. Continue to damp down the house late in the afternoon with weak liquid cow manure.

PEACHES AND NECTARINES.—Endeavour to finally disbud the earliest trees, and exercise due care to thin them sufficiently, and allow plenty of room to develop, so that later on no confusion will follow; commence to tie in the shoots as they advance in growth. The fruits will now be set, and a start should be made to partially thin them; proceed with due caution, first removing all badly-formed fruits, and also those that are too close to the wires. Administer some liquid or chemical stimulant to the roots, to assist the young fruits to grow away freely. Close the house, and syringe the trees thoroughly early in the afternoon, and maintain a night temperature of from 60 to 65 degrees. Close the second early house for successional fruits; give the borders a good soaking with clean water, and proceed on exactly the same lines as that recommended for forcing the early house.

MELONS.—Plants raised from seeds sown as recommended, early last month, will be ready to plant out into firm mounds of soil; give the plants a good watering to settle the soil around the roots after planting, and place a strong stake to each, to which it should be carefully tied.—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

LAWNS.—These should be kept in good condition by frequently sweeping and rolling them during favourable weather, otherwise worm-casts render them unsightly. It often happens that lawns become impoverished from various causes, and where this is the case a good dressing of bone-meal, or some approved lawn manure, should be given at the present time. Weeds like dandelions and plantains must be taken out, and the holes be filled with some fine soil. Towards the end of March these places, and other bare parts of the lawn, can be sown over with some good grass seed, which should be well rolled in; but means must be taken to guard it against birds.

SWEET PEAS.—Autumn-sown plants that have been wintered in cold frames must be well supplied with air on favourable occasions to promote sturdy growth. For ordinary garden adornment seeds can be sown at the present time in 60-sized pots, three seeds in each pot, and placed in a house with a temperature of 55 degrees to germinate. When the seedlings are above the soil, give them a position near the glass, and finally remove them to a cold frame where they can be hardened off, to plant out early in April. When they need support, place a few twiggy sticks around them to keep the plants erect.

BORDER CHRYSANTHEMUMS.—Those boxed up in the autumn are now producing an abundant supply of cuttings, which should be taken off with a sharp knife and inserted in small pots filled with a light sandy compost. If placed in a brick pot with a temperature of about 50 degrees, and kept near the glass, they will soon take root, and can then be potted separately. They should be given a good watering, and kept close for a few days until they take root in the new soil, when more air can be given with advantage.

DELPHINIUMS AND PHLOXES.—These are both handsome border plants worthy of extensive cultivation, and they delight in a rich and deep rooting medium. When it is desired to increase choice varieties, this can readily be done at the present time by detaching small side shoots with some roots attached. Pot them up separately in small pots, and place in a cool house or frame, which should be kept fairly close for a time until growth commences. Later on they can be planted out where required, in bold groups for preference, or, if it is desired to still further increase any of the phloxes, they should be grown on in pots, and have cuttings taken from them.—J. GARDNER, Batsford Park Gardens.

NATIONAL SWEET PEA SOCIETY. Great Exhibition at Royal Horticultural Hall, Westminster, July 9 and 10. Join now. Minimum Annual Subscription, 5s. Schedule on Application. "Sweet Pea Annual," free to members; 2s., post free, to non-members. "List of Sweet Pea Names," free to new members. CHARLES H. CURTIS, Hon. Sec., Adelaide Road, Brentford, Middlesex.

NATIONAL VEGETABLE SOCIETY.

Schedule of Classes and Prizes offered at the Society's
GREAT EXHIBITION OF VEGETABLES,
to be held in the
CLARENDON HALL, WATFORD, OCTOBER 2 next,
Are now ready, and can be had on application to
E. G. QUICK, Hon. Sec.
Kelmscott, Harrow View, Wealdstone, Harrow.

# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

The blackness of darkness overshadowed Westminster on Tuesday afternoon last, when, at three o'clock, Sir Trevor Lawrence, Bart., took the chair at the society's annual general meeting. Sir Trevor was supported by Sir Albert Rollitt, Lord Balfour of Burleigh, Sir J. T. D. Lewellyn, Bart., Lieut.-Colonel Sir George Holford, Mr. J. Gurney Fowler, Mr. Harry J. Veitch, Mr. H. B. May, Mr. E. A. Bowles, Mr. Jas. Hudson, Mr. W. A. Bilney, etc., and among those present at the meeting we noticed the Rev. G. H. Engleheart, Messrs. H. J. Cutbush, W. Howe, J. F. McLeod, G. Gordon, R. H. Pearson, J. T. Bennett-Poe, Alexander, R. Pinches, J. Green, G. J. Ingram, J. Cheal, Thos. Bevan, E. F. Hawes, C. H. Curtis, J. H. Dick, and A. Bartlett.

The usual formalities having been disposed of, the President expressed the regret all felt at the absence of the Rev. W. Wilks, owing to indisposition.

The report of the Council, of which we give an abstract, having been circulated, was taken as read.

### EXTRACTS FROM ANNUAL REPORT.

WISLEY GARDENS. — In common with most gardens having sandy soils in the South of England, the Society's Garden at Wisley suffered from the exceptionally hot and dry summer. The heavy rains of October, November, and December have been most welcome. A large rock garden, including a small bog garden and a miniature moraine, has been constructed by Messrs. Pulham. It covers what was formerly a rough grass-grown hill above the water lily pools in the south-west corner of the old garden, to which it will, when fully planted, make a most attractive addition. The planting has been begun, but is necessarily a somewhat lengthy proceeding, and the full effect of the new work will hardly be apparent until the plants have had some years growth. It should be remembered that the garden is not designed to afford the most artistic arrangement of stonework, so much as a suitable home for rock and alpine plants. The Council gratefully acknowledge the gifts of rock plants from Sir Frank Crisp and Mr. E. A. Bowles, and of ferns from Mr. W. Marshall, V.M.H. A special foreman, Mr. D. Sarsons, lately rock gardener at Wretham Hall, Norfolk, has been placed in charge of this department, and the Council have full confidence that under his superintendence it will soon be an object of interest and instruction to the Fellows.

SCHOOL OF HORTICULTURE AND LABORATORY.—The valuable practical and scientific educational work being conducted at Wisley, is becoming more and more widely recognised. Its position is in some respects unique, there being in many places too great a tendency to look upon information about gardening as the one thing to acquire, instead of a knowledge of gardening. The Council are convinced that the young horticulturist to be started on the right lines for his future development should both be equipped with (1) a sound knowledge of the scientific principles underlying his craft, and also have acquired (2) a considerable degree of and appreciation for technical skill, which can only be derived from the actual and continual performance of the various operations. The more closely these two are connected with one another in time and place, the more capable each is of aiding the other, and this is the aim of the students' course inaugurated at Wisley in 1907.

During the past year Sir Albert Rollit, as a member of the Senate of the University of London, and also a member of the Council of our society, has been endeavouring to secure the University's recognition of our School of Horticulture at Wisley. The matter has made considerable progress and hopes are entertained of its reaching a successful issue, though as yet it is too soon to speak at all confidently.

The increased demands upon the time of the director, and the necessity for his constant presence at the gardens to watch experimental work, has necessitated both the appointment of an assistant lecturer—Mr. Arthur S. Horne, B.Sc., F.G.S.; and also the building of a house on the spot for the director.

THE CORONATION CUP.—In celebration of the Coronation of their Majesties King George and Queen Mary, patrons of the society, the Council caused a special silver-gilt challenge cup to be designed at a cost of sixty guineas. It will generally be offered for competition at the summer show, and will be adjudged directly by the Council to whatever in their opinion is the best exhibit in the show. A small replica of the cup will each year be given to the winner, together with the custody of the larger cup for twelve months.

LIBRARY.—The annual report for 1910 recounted the steps which had been taken by the Council and trustees to secure a closer identification of the Lindley Library with the society, whilst at the same time preserving it as a perpetual trust. This action paved the way for the appointment of a Special Library Committee, which now consists of Messrs. J. T. Bennett-Poë, E. A. Bowles, E. A. Bunyard, J. Gurney Fowler, Dr. Daydon Jackson, J. R. Lowe, Arthur Paul, C. H. Payne, H. J. Veitch, and Rev. W. Wilks The committee meets fortnightly and recommends to the Council the acquisition of desirable new or rare old books which may happen to be obtainable at the moment, together with those suggested by any of the Fellows. About 300 volumes have been purchased this year, amongst them being Redouté's "Les Liliacées," Dr. M. C. Cooke's "Original notes and drawings of Parasites of Cultivated Plants," Sibthorp's "Flora Graeca," Mas' "Pomologie; Pomologie de la France," Mas' "Le Verger," Besler's "Hortus Eystettensis," Bury's "Hexandrian Plants," Trew's "Plantæ Selectæ," Descourtilz's "Flore des Antilles," Maund's "Botanic Garden," Andrews' "Heathery," and many others. The amount expended on books has been between £800 and £900. The whole library is being rearranged, classified, indexed, and catalogued, under the supervision of Messrs. Wesley.

The necessity of putting up additional book cases having come to the knowledge of Baron Bruno Schröder, nephew of the late Baron who so generously fitted up the library at his own expense, Baron Bruno offered to take upon himself the provision of the new oak cases, in order that the whole of the furnishing of the library might continue to be identified with his family's name. The total cost exceeded £100. The Council greatly appreciate this most kind generosity.

PLANT COLLECTOR.—The appointment of a Plant Collector will be considered by the Council at an early date.

TRANSACTIONS.—At the last annual meeting it was suggested that, in addition to the present "Journal," "Transactions" should be issued from time to time, devoted exclusively to scientific matter, and sent to those only of the Fellows who would like to subscribe an additional £1 1s. a year for the purpose. A communication was therefore sent to all the Fellows of the society setting forth the proposal, but as less than sixty favourable replies were received out of 12,000 Fellows, the Council have decided to allow the proposal to stand over at least for the present.

PRESENTS.—Many gifts have been made to the society during the year. Baron Bruno Schröder's munificent gift to the library has already been mentioned; as have also the plants from Sir Frank Crisp, Mr. Bowles, and Mr. Marshall. 220 books for the library have been received under the bequest of the late Mr. Gumbleton; 150 volumes from the late Colonel Beddome's library, presented by his widow; a collection of dried specimens of British plants from Miss F. M. Hudson; a fine old steel engraving of Linnaeus from Mr. Christopher J. Sandberg; an original autograph engraving of William McNab, of Edinburgh, from Mr. Chas. Ross, V.M.H., and two silver cups, one from Mr. A. L. Wigan as an annual prize for roses at the summer show, the other for Alpines presented by Mr. Reginald Farrer. The Council take this oppotunity of expressing their cordial thanks to the donors.

### REVENUE AND EXPENDITURE ACCOUNT.

#### Expenditure.

| | | | |
|---|---|---|---|
| To Establishment Expenses, Hall, Salaries, Wages, Printing, Postage, etc ... | £5,915 | 10 | 6 |
| ,, Journal, Printing, and Postage ... | 3,465 | 8 | 4 |
| ,, Staff Pension ... ... ... ... ... ... | 273 | 6 | 1 |
| ,, Shows and Meetings ... ... ... ... | 3,443 | 10 | 8 |
| ,, Prizes and Medals ... ... ... ... ... | 495 | 17 | 7 |
| ,, Wisley Gardens ... ... ... ... ... ... | 2,250 | 5 | 6 |
| ,, Cost of Distribution of Plants ... ... | 272 | 11 | 0 |
| ,, Laboratory, Wisley ... ... ... ... ... | 469 | 18 | 0 |
| ,, Contribution to Lindley Library ... | 979 | 8 | 10 |
| ,, Cost of New Rock Garden, Wisley ... | 1,302 | 18 | 9 |
| ,, Cost of New Road, Wisley ... ... ... | 72 | 15 | 0 |
| ,, Depreciation ... ... ... ... ... ... | 554 | 14 | 0 |
| ,, Balance, carried to Balance-sheet ... | 8,454 | 10 | 2 |
| | £27,950 | 14 | 5 |

#### Receipts.

| | | | |
|---|---|---|---|
| By Annual Subscriptions ... ... ... ... | £17965 | 12 | 0 |
| ,, Entrance Fees ... ... ... ... ... ... | 376 | 19 | 0 |
| ,, Dividends and Interest ... ... ... | 2,031 | 10 | 9 |
| ,, Shows and Meetings ... ... ... ... | 3,448 | 11 | 9 |
| .. Journals and other Publications ... | 948 | 7 | 10 |
| ,, Hall Lettings ... ... ... ... ... ... | 2,008 | 18 | 7 |
| ,, Prizes and Medals ... ... ... ... ... | 226 | 14 | 0 |
| ,, Examinations in Horticulture ... ... | 57 | 0 | 0 |
| ,, Wisley Gardens ... ... ... ... ... ... | 382 | 0 | 6 |
| ,, Educational Grant, Wisley Schools ... | 400 | 0 | 0 |
| ,, Life Compositions ... ... ... ... ... | 105 | 0 | 0 |
| | £27,950 | 14 | 5 |

Sir Trevor Lawrence referred briefly to a few points in the report, and said that a rock garden at Wisley was now in being, and was being steadily furnished, thanks to the generosity of many members. The School of Horticulture at Wisley was progressing, as would be gathered from the report, in the most satisfactory manner. The society's exhibitions had, with one exception, Olympia, been a success, but the intensely hot weather had a trying effect upon both flowers and visitors at Addison Road. The library was progressing, nearly £1,000 had been expended upon rare books during the year, and the Council was prepared to do all it could to make the library one of the finest of its kind in the world. Baron Bruno Schröder had generously given new shelves for the library. The President expressed regret that in the report, in connection with library matters, the name of Mr. C. Harman Payne, who had rendered able service, had been accidentally omitted. Sir Trevor had nothing further to say about the appointment of a plant collector than is contained in the report. In the present year, he said, a new departure would be a two days' orchid show in the autumn. The society had sustained a great loss by the death of Sir Joseph Hooker, a great botanist and a foremost scientist. The passing of M. Lemoine, of Nancy, who had done so much to improve garden plants, such as syringas and begonias, was sympathetically adverted to. The President pointed out that the financial position of the society was excellent; he remembered the time when the society could not pay its tradesmen's bills; but in the past year they had finished up with a surplus of £8000. Sir Trevor concluded with a very hearty appreciation of the services of the staff at Westminster and Wisley, paying special compliments to the Rev. W. Wilks, Mr. S. T. Wright, and Mr. F. Reader. The motion for the adoption of the report and balance-sheet was then moved by the President.

Mr. J. Gurney Fowler, the treasurer, seconded the adoption of the report and balance-sheet, and referred to the building of a new house for the director at Wisley, and the investment of £6,000. At present the society was putting on one side about £500 a year as a depreciation fund, so that when the lease of the hall, etc., fell in there would be a large capital sum to provide new premises. Income from subscriptions and the Government Educational Grant had increased considerably in the year, but the takings at the hall were lower than usual, because the hall was closed for redecoration for some time. General expenditure had increased somewhat owing to the increase of Fellows, and the "Journal" had cost about £400 more than in previous years.

One gentleman tendered congratulations to the Council, and spoke very highly of the kindly services always rendered to Fellows by the society's librarian, Mr. Hutchins.

The Rev. G. H. Engelheart made reference to the granting of awards. In past years, he said, the Council had suggested that awards were being made rather freely, and therefore their value was likely to be reduced as a consequence. He thought the society should be very jealous of its awards, and he urged that the award of a gold medal should never be cheapened. He referred to a large group of Chinese plants, collected and brought home at great risk and cost; to this a gold medal was rightly awarded. At a meeting shortly after a similar award was granted to a fine group of ornamental gourds, which, he thought, was not of equal value to the Chinese plants. To meet the case he suggested a small gold medal and a large gold medal. Again, there were anomalies in the awards of First-class Certificates. He understood that this higher award had sometimes been given to a florist's flower, and he asked, Are orchids florists' flowers now? During the year forty-five First-class Certificates were awarded, and thirty-seven of these, he believed, were granted to orchids. He did not depreciate orchids, but thought the awards of so many F.C.C.'s was apt to confuse the mind of the public. Surely a rose or a hardy plant available for every garden was deserving of as high an award as an orchid that could be grown only in a hothouse. He considered the Council's monition regarding awards should be repeated, and, if necessary, enforced.

The President said they could only leave the awards of plants, groups, etc., to the judgment of the members of the various committees, and, referring to the exhibit of gourds, he said it was a quite unique display of its kind.

The motion was then put, and the report and balance-sheet were adopted unanimously by sixty or so of Fellows present.

The members of Council elected were: Baron Bruno Schröder. Mr. Harry J. Veitch, and Mr. W. A. Bilney. Sir Trevor was re-elected president, Mr. J. Gurney Fowler re-elected treasurer, and the Rev. W. Wilks secretary.

On the motion of Sir John T. D. Llewelyn, Bart., and the Rev. J. H. Engleheart, a very hearty vote of thanks was accorded the president for his services. Sir Trevor suitably responded, and said he had just celebrated his 80th birthday.

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## Royal Scottish Arboricultural Society.

The fifty-ninth annual business meeting of this society was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 9th inst. The President, Sir John Stirling Maxwell, Bart., occupied the chair, and there was a fair attendance. According to the report by the council, 115 new members were admitted during the year, the net increase being 42, and the number on the roll was 1,411. The abstract of the accounts showed that, after providing for the ordinary, and about £470 of extra expenditure, the balance of income over expenditure was £51 3s. 1d. The extra expenditure had been heavy, the cost of publishing the report of the Glen Mar survey being £319 15s. 1d., and the expenses of the society's exhibit at the Scottish National Exhibition being £149 7s. 5d. The funds at December 31 last stood at £1,822 18s. 4d.

In moving the adoption of the reports, the President made some reference to the report of the Aberdeen branch, and expressed the opinion that it would be a good thing to have more of these branches. He thought that, although the Glen Mar Forest Survey had cost a good deal of money, it was nevertheless money well spent, and when, in the next half-century our Highland hills were covered with woods, as they no doubt would be, it would be a matter of much satisfaction to the society that they had taken the lead. Referring to Lord Pentland's announcement that there was to be a Forestry Department attached to the Board of Agriculture in Scotland, Sir John thought that Lord Pentland was right in doing this, but forestry could not be run by people who were ignorant of it, and it was very necessary, as Lord Pentland had recognised, that this department should be in the hands of skilled persons.

Sir John Stirling Maxwell was re-elected president; Lord Lovat and Mr. Charles Buchanan, Penicuik, were elected vice-presidents; and the following were elected to the council: Messrs. A. T. Gillanders, F.E.S., Alnwick; Jas. Whitton, Glasgow; Wm. Davidson, Panmure; and W. H. Massie, Edinburgh; Lord Balcarries, M.P., Captain Archd. Stirling, of Keir, and Mr. A. D. Richardson, Edinburgh. The Right Hon. R. C. Munro Ferguson, M.P., was re-elected hon. secretary, and Mr. R. Galloway, S.S.C., was re-elected secretary and treasurer. The other honorary officials were re-elected.

At the conclusion of the business part of the meeting, an address (illustrated by lantern slides), was delivered by Mr. John F. use of the students attending the Armstrong College, Newcastle-on-Tyne, and acting agent and manager for the Crown Woods at Chopwell, Co. Durham, on "Some Uses of Demonstration Forest in Forestry Education." The lecturer dealt with what Mr. Annand was doing in order to bring these woods into the condition of a demonstration area for the use of the student attending the Armstrog College, and it was of great interest. On the motion of the President, Mr. Annand was very cordially thanked.

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## Manchester and North of England Orchid Society.

At the meeting held on Thursday, February 8, the members of committee present were: Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, W. R. Lee, C. Parker, H. Thorp, Z. A. Ward, J. C. Cowan, J. Cypher, J. Evans, W. Holmes, A. J. Keeling, D. McLeod, W. Stevens, and H. Arthur (secretary). The contributions were numerous and of much interest.

Z. A. Ward, Esq., Northenden (gardener, Mr. Weatherby), was awarded a Silver-gilt Medal for a group composed principally of odontoglossums in variety. The plants were well grown, and the most noteworthy were O. Wilkieanum Jasper (A.M.), O. Adrianæ var Vulcan (A.M.), O. Jasper (A.M.), O. amabile Mrs. Buckley, O. Rolfæ Ward's var., O. Northenden Beauty, O. Wardi, O. ardentissimum Ward's var., O. crispum Luciani, with Cypripediums Beechense, aureum Virginale, Leeanum Avalanche, Minos Youngi, Berryanum, and a pretty variety of Lycaste Skinneri.

W. R. Lee, Esq., Heywood (gardener, Mr. Branch), staged a nice group of choice plants, to which a Silver-gilt Medal was awarded. Among the odontoglossums were O. percultum purpurescens (F.C.C.), Euterpe, Lucianni, Lindeni, and Mirandum, Miltonia Blueana, Dendrobiums Leechianum and nobile Hardy's var., Brasso-cattleya Mendeli-Digbyana, with cypripediums in variety, C. Trollius Craveniianum being very fine, the dorsal sepal measuring three inches Cybridium Holfordianum were also of much merit.

R. Ashworth, Esq., Newchurch (gardener, Mr. Gilden), was awarded a Silver Medal for a nice mixed group, the odontoglossums in variety, crispums, and hybrids being very fine, one in particular, named Orphanum (A.M.), of unknown parentage, and the pretty O. Cervantesi decorum. Dendrobiums Ainsworthi and Burberryanum superbum, cattleyas of the Trianæ section, Miltonia Blueana, Lycaste aromatica, and the choice Cymbidium Holfordianum.

Colonel J. Rutherford, M.P., Blackburn (gardener, Mr. Lupton), staged a miscellaneous group to which a Silver Medal was awarded, odontoglossums being well represented, some very nice blotched crispums and hybrids, including Luci Masereel, together with some nice plants of O. Rossi majus, Cypripediums Merlin magnificum, Harefield Hall, and aureum Ædippe, with varieties of the Leeanum section were also remarkable.

A. Warburton, Esq., Haslingden (gardener, Mr. Dalgleish), was awarded a Silver Medal for a choice group, in which were fine examples of Odontioda Bradshawæ Warburton var. (F.C.C.), Odontoglossums Victoria Regina, Emperor Rex, King Emperor, Her Majesty, Albert Warburton, The Lady, and Lambeouianum, with Cypripediums Lucernale (A.M.), and Leeanum varieties making a fine display.

Rev. J. Crombleholme, Clayton-le-Moors (gardener, Mr. Marshall), was awarded a Bronze Medal for a small group of cypripediums, comprising such fine forms as Mrs. W. Mostyn, G. F. Moore, Mons. de Curte, Mortoni, Lord Ossulton, and Statterianum.

J. McCartney, Esq., Bolton (gardener, Mr. Holmes), was also awarded a Bronze Medal for a group comprising Cattleyas Holmesi and Trianæ (in variety, Lælies anceps Sanderiana and Schroderiana, Dendrobium nobile Balliæ, Calanthe Wm. Murray, Cypripedium Leeanum Clinkaberryanum and seedlings.

W. J. Hargreaves, Esq., Burnley, contributed a small group of cypripediums, to which a Bronze Medal was awarded, the best being Harbourni, Grovesianum, Rossetti, Maudiæ, Evelyn Ames, Fowlerianum, Minos Youngi, Thalia, aureum Virginale, and other hybrids.

Wm. Thompson, Esq., Stone (gardener, Mr. Stevens), staged Cypripediums Hercules (A.M.), Draco (A.M.), and Nubia (A.M.).

From J. J. Holden, Esq., Southport (gardener, Mr. Johnson), came Cypripedium Birkdalense (A.M.) and a fine, well-flowered plant of Lycaste x Mary Gratrix.

G. H. Pearce, Esq., Monton Grange (gardener ,Mr. Mace), submitted Odontoglossum Phœbe Monton Grange var., a well-grown plant with a fine branched spike.

Messrs. J. Cypher and Sons, Cheltenham, were awarded a silver medal for a remarkably fine group, in which L. anceps Barkeri and Sanderiana, Brassovola Digbyana, Brasso-cattleya Maroni, cattleyas in variety, Lælio-cattleyas calistoglossa and Welleysiana, Cypripediums Curtmani, Alcibiades superbum, Vandyke, Gigas Corndean Hall var., Beechense, and Calanthes William Murray and Bella were, with others, splendidly represented.

Messrs. Sander and Sons, St. Albans, contributed a fine group, to which a silver medal was awarded. Especially noteworthy were Cattleyas Gaskelliana, Exquisita, Trianæs Vivicans and Corona, Brasso-cattleyas Fourneri picturatum and Sirens, and Cypripediums Stephanos, aureum Surprise, Pyramus, Flamingo, Goldfinch, and Helen Pulchrissima.

Messrs. Hassall and Co., Southgate, sent Odontoglossums Endresi majus, percultum. Solon, Lawrenceanum, Cypripedium aureum The Pearl, and Lycaste Skinneri alba.

Messrs. A. J. Keeling and Sons, Bradford, staged Odontoglossums Lambeauianum and Virginale, and two seedlings; and Mr. W. Shackleton, Great Horton, showed three plants of Odontoglossum crispum, one very fine variety with large white flowers.

### AWARDS.

First-class Certificate. — Odontoglossum percultum var. purpurescens, from W. R.

Lee, Esq., distinct variety with fine round flowers, bronze-purple, the segments edged with white.

Awards of Merit.—Odontoglossum crispum Euterpe, from W. R. Lee, Esq., a nice variety with well-formed and brightly-coloured flowers; Odontoglossum Wilkieanum Jasper, a fine large flower, O. Adrianæ Vulcan, nice dark spotted variety, and O. Jasper, parentage unknown, all from Z. A. Ward, Esq.; O. Orphanum, a brilliantly-coloured form, from R. Ashworth, Esq.; Cypripedium Birkdalense, a distinct variety with finely-formed flowers, from J. J. Holden, Esq.; C. Hercules, C. Draco, and C. Nubia, all fine varieties, from Wm. Thompson, Esq.; and C. Lucernale, a very fine form, well spotted, from A. Warburton, Esq.

## Scottish Horticultural Association.

The first monthly meeting of this association for session 1912 was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 6th inst., when Mr. Massie, the president, delivered his opening address to a large audience, taking as his subject "Garden City Problems." The address was highly interesting and of much practical importance, and we hope to publish it in our next issue.

The after discussion was taken part in by Mr. Fife, Mr. Todd, and Mr. Whytock; and, on the motion of Mr. D. W. Thomson, the president was very cordially thanked for his address.

At the meeting on March 5, Dr. J. H. Wilson, of St. Andrew's University, will deliver a lecture on "Fruit Growing in Australia" (with lantern illustrations).

## Croydon Gardeners' Association.

The members of the Croydon and District Horticultural Mutual Improvement Society attended in good numbers to hear the lecture on "Water and the Wild Gardens," given by Mr. A. Smith from the Royal Horticultural Society's Gardens, Wisley, at the last fortnightly meeting of the society.

The cultivation of the various subjects suitable for water and wild gardening was well expounded by Mr. Smith, and he was able with lantern views to show his audience many of the beauty spots contained in Wisley Gardens.

To the casual observer these spots might appear a part of Nature's garden, and that each flower, plant, or tree, had been deposited in its position during years of natural growth without attention from the hand of man; but this is not so. True that was the ideal arrived at, and it is a compliment to the cultivator when he gives this impression, but in doing this the art of landscape gardening is brought into requisition, and in Mr. Smith's lecture one was carried through a complete transformation of a waste tract of land into a beautiful picture.

Mr. Smith explained that Nature must be the one copy in laying out the garden. In choosing the site the lower levels of the landscape must be used; building a water garden on a high elevation may be accomplished, but the natural effect is missing, and the beauty is lost. If one has the advantage of a natural stream then by all means make use of it, but where artificial means of water supply are used this must be taken into account. Clearing the space around the intended water course must be done thoroughly and all roots removed. Levels and gradients must be observed and the bed of the water course must be irregular in shape. For a big pond puddling with clay may be done, but in smaller gardens it will be found of great advantage to cement the bed of the stream as well as the sides. This will prevent some of the plant enemies like water rats, moles, etc., getting through the sides, and facilitate the work of clearing out the water area. The surrounding ground on either side of the stream should be well dug and manured ready for the plants intended to grow. To build rockeries with huge boulders on either side of the water course was deprecated, for from a natural view the effect is spoilt. Far better to plant down to the water's edge such subjects as will grow, and there are plenty to choose from.

Generally one finds in a water garden a rustic wooden bridge standing high above the stream; but, in the lecturer's opinion, this is an eyesore, for, as he remarked, one can see on approaching it everything up to the bridge; but the full picture is hidden, and a view has to be taken from the bridge itself to obtain the remainder of the picture. A few stepping-stones would provide the means of crossing, and at the same time the complete picture could be seen. Planting the pond or stream can be done from early in the spring till autumn, and when the pond is full of water. Shallow baskets filled with prepared soil will give the plants their food supply, and the building up of these baskets was a detail not missed by the lecturer.

A long list of suitable plants for the stream was given by Mr. Smith. From the water garden on either side of the stream a gradual rise should be aimed at by planting specimens in bold groups of flowering and foliage subjects, and the ground previously prepared will soon be covered with a collection of plants giving form and colour through all seasons of the year.

At the close of the lecture Mr. Smith was accorded a hearty vote of thanks. A few exhibits were staged by members. Mr. T. Butcher put up a collection of miscellaneous plants. Mr. West brought a dish of Ailsa Craig onions, and two dishes of apples and one of pears were staged by Mr. M. E. Mills, the hearty thanks of the meeting being given to each exhibitor.

## Bournemouth Gardeners' Association.

The annual meeting of this society was held at the Town Hall Avenue Assemply Rooms, on the 6th inst. The President, J. H. Ralph Smythe, Esq., J.P., presided, and there was a good attendance of members.

The report showed a very satisfactory state of accounts, a better balance being in hand than was the case last year. There is an increased membership, and much more interest taken by members generally, in the doings of the society. The librarian, Mr. Barge, has charge of a very good collection of books, which are well studied, especially by the new members.

During the past year some very fine plants and garden produce generally have been staged at the fortnightly meetings, and special mention should be made of the grand collection of orchids, which nearly filled one side of the large room, staged by Mr. Jones, gardener to J. H. Rolls, Esq., J.P.; and the collection of miscellaneous stove and greenhouse plants brought at the same time—in November—by Mr. Welch. Certificates of Merit were awarded in both cases. The cypripediums in Mr. Roll's group were magnificent.

In one special class prizes were awarded to exhibitors who gained the highest number of points for produce staged in it during the whole year. This is called the "points" prize class. Certificates of Merit and other prizes are awarded for other exhibits quite distinct from it. Mr. Nippard, gardener to J. J. Norton, Esq., J.P., Ashton Court, Bournemouth, won the "Points" first prizes, namely, an "Abol" syringe, and a beautiful framed water-colour painting by Miss Roper, who presented it. Mr. Tompkins, head gardener to the Dowager Lady Miller, Ladywell House, won second honours, a lovely water-colour painting, by Miss Roper, who was again the donor. Mr. Charles Pearce, gardener to Mrs. Ormond, Astney Firs, Bournemouth, won the third prize, a book on sweet pea culture, presented by the hon. secretary and hon. treasurer.

A list of papers on very interesting subjects is arranged for the first session of the year, and in July the committee intend holding a sweet pea and rose show in the Central Hall, Bournemouth; and, although entries will be confined to the members only, a fine show is looked forward to. Special prizes are to be devoted to the classes provided. The fortnightly exhibitions will be held as usual. The "Points" prizes class is being considerably extended; more prizes are to be offered, and classes are so arranged that the majority of the members can enter in them.

The president, vice-presidents, hon. and assistant secretaries, trustee, treasurer, and librarian were all re elected, and to the committee some new members were added. Altogether, the future prospects of this old and important society are very encouraging, as much influential support by noted horticulturists is being given.

A cordial vote of thanks was voted the president at the close of the meeting.

## Reading Gardeners' Association.

The fortnightly meeting of the association took place in the Abbey Hall on Monday. Owing to the inclement weather the attendance suffered from the absence of members residing at a distance from the town, but the paper for the evening was most attractive. Mr. F. B. Parfitt presided over what must be regarded as a fairly good muster of members.

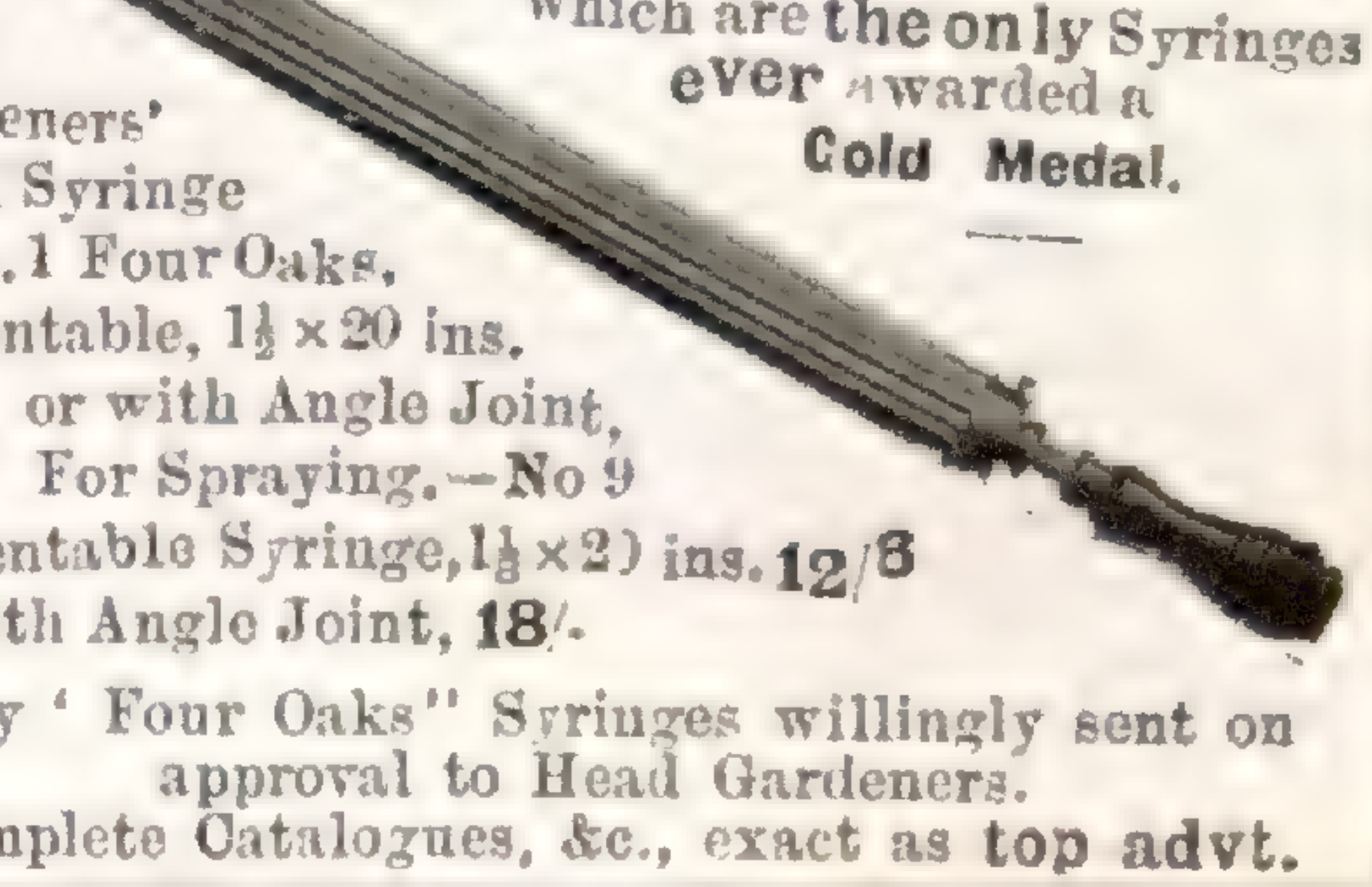
The lecturer was Mr. J. O. White, one of Messrs. Sutton's experts in floriculture, and his subject was "A Chat on Sweet Peas." Mr. White is an authority on the culture of sweet peas, and he was followed with close attention throughout his remarks. The lecture was illustrated by a fine collection of beautiful slides, many of them faithfully depicting the better-known and favourite varieties of the ',Queen of Annuals," as well as pictures of many fine exhibits staged by prominent growers, and the appearance of these on the screen evoked frequent applause. The lecturer, however, did not confine his slides to beautiful flowers only; a large number were altogether of the utilitarian order, and included object lessons with regard to preparing the ground, sowing in pots, sowing in the open, in borders and in trenches, the transplanting of seedlings, and the various distances they may be set apart in order to secure the desired result. Staking, too, in different forms also came in for illustration. Apart from the instruction which the slides conveyed, Mr. White also gave those present the benefit of his experience as to the preparation of the ground for sweet pea culture, trenching, manuring, watering, feeding, all being most fully and carefully dealt with.

At the conclusion of the paper an excellent discussion took place and the many questions put to him were answered by the lecturer in the most lucid fashion. On the proposition of the President, Mr. White was accorded a hearty vote of thanks.

## GARDENING ENGAGEMENTS.

Mr. Fred Francis, of Isleworth, has been appointed head gardener at the Royal Naval School, Twickenham.

Mr. F. Russell, foreman at Coombe Court Gardens, Kingston, Surrey, has been appointed head gardener to Major Renton, Naseby Hall, Warwickshire.



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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

WHAT IS A GLAZED FROST?—M. J., Streatham: Kindly give me an explanation of the term "Glazed Frost."—In further answer to the above question, appearing in our issue of February 3, Mr. W. Gardiner, Horsham, writes: In addition to the answer already published, it may be interesting to your correspondent and other readers to know that on January 18 a glazed frost was very much in evidence at Horsham and the neighbouring districts of Sussex, and upon enquiries I cannot ascertain that a similar occurrence had been noticed during the last seventeen years. Seventeen years ago the lake at Warnham Court was sufficiently frozen over for skating, but never again since until this year. The last glazed frost was, I have been informed, so sharp and general in this part of Sussex that the very highways afforded excellent skating, but, so far as I can gather, no material damage was done to vegetation by it.

FILLING A LONG FLOWER BED.—Strathmore, Cambs.: I have in my garden a bed about 18 or 20 yards long, backed by a hedge, ornamental trees, and some herbaceous plants. The front of the bed, which comes down to a lawn, I thought of planting something as follows, and shall be pleased to have your opinion of the correctness of it, or any suggestion for improvements: First row, echeverias; second row, lobelias; third row, yellow violas; fourth row, Cineraria maritima or Dactylis glomerata variegata; fifth row, Pentstemon Newbury Gem; sixth row, Yellow Queen antirrhinums; seventh row, Zonal Pelargonium King of Denmark. I have all these plants by me, and hence would like to use them, but would gladly consider your suggestions for addition or substitution.—Although it is no uncommon thing to find hardy and very tender subjects associated in beds and borders for a summer display, it is much better to keep the two distinct, if possible; hence the echeverias, lobelias, Cineraria maritima, and Pelargoniums King of Denmark should be associated in beds or borders near the house, while the bed referred to could be devoted to the hardier subjects. Use an edging of sweet alyssum, and cover the ground behind it with the yellow violas. In this groundwork set the pentstemons and antirrhinums in groups, each group about a yard across, adding groups of pink, white, and yellow early-flowering chrysanthemums of various heights, some annual chrysanthemums (sown now under glass), and some chamois and pink antirrhinums. These additions would not add very materially to the expense. Each group might have an encircling ring of the variegated Cocksfoot grass.

PINK EARLY-FLOWERING CHRYSANTHEMUMS.—H. P., Gamlingay: You will greatly oblige me by giving a short list of pink or pink shaded chrysanthemums of the early-flowering section in your "Answers to Correspondents" column.—The following are all excellent varieties in various shades of pink: Ada, Dainty, Dolly Reeves, Dora Blick, Dorothy Humphery, Elenore, Goacher's Pink, Glory of Merstham, Hector, Jas. Bateman, L'Aube, Lillie, Nellie Hemsley, Normandie, O. J. Quintus, Provence, Patricia Rabbie Burns, Ryecroft Beauty, Satin Rose, and September Belle.

LENTEN ROSES.—H. E. B., Berkhampstead: Having greatly admired the improved forms of Lenten roses exhibited during late years, I am anxious to secure some of the best varieties. I fancy some are named, and should therefore be glad if you will give a selection of these, and some suggestions for planting, in an early issue.—Hellebores do well in rich loamy soil, inclining to heaviness, and are usually best managed in a semi-shaded position where their roots will be constantly moist. To produce a good effect, the plants should be grouped in considerable numbers. When new growth is being made, a top-dressing of decayed manure and leaf-mould will add strength to the plants, and result in a finer crop of flowers. The true Lenten roses are varieties of Helleborus orientalis, but this latter has been crossed with other species for the production of new colours. Excellent varieties of this section are Abel Carriere, dark purple; Albin Otto, white, spotted with deep purple; Apotheker Bogrin, purple, spotted with crimson, very fine; Councillor Benary, white, with purple spots; Diadem, rose, spotted with purple; Duchess of Cleveland, rosy-lilac; Gretchen Heinmann, rosy-purple, with crimson spots; Norma, white, faintly spotted; and W. E. Gladstone, rose, shaded pink.

BIGENERIC ORCHIDS.—S. C., Chippenham: Kindly tell me the chief bigeneric combinations that have been effected by hybridists among orchids. The names of individual results I do not need at present, but simply the generic combination.—The following combinations have been effected successfully among orchids: Ada and Cocklioda, Brassavola and Cattleya, Brassavola and Lælia, Cattleya and Lælia, Cochlioda and Odontoglossum, Cochlioda and Oncidium, Cochlioda and Miltonia, Odontoglossum and Oncidium, Odontoglossum and Miltonia, Diacrium and Cattleya, Diacrium and Lælia, Epidendrum and Cattleya, Epidendrum and Lælia, Epidendrum and Sophronitis ,Epidendrum and Brassavola, Sophronitis and Cattleya, Sophronitis and Lælia, Phaius and Calanthe, Phaius and Cymbidium, Schromburgkia and Cattleya, Zygopetalum and Batemannia, Zygopetalum and Colax, and Zygopetalum and Aganisia.

TUBEROUS BEGONIAS. — A. E. C., Chislehurst: In the course of the next week or so I propose to place my begonia tubers in sandy leaf-mould, in boxes, over gentle bottom-heat, to start them into growth. Is this right? So far, I have not been so successful in the general cultivation of these handsome flowers, and should, therefore, be glad if you could give an article on this matter in an early issue, as doubtless other readers are interested in begonia culture as well as I.—Your proposed method of starting the tubers into growth is a good one, but there is a little danger lest they are left too long in the boxes, and the roots become entangled, and consequently become damaged when potting becomes necessary. In our issue of March 2 we shall publish an article on tuberous begonias, which we are sure, will prove very helpful to you.

LOPPING AN ELM.—J. D., Atherstone.—Two large elms, each with huge branches, occupy a position near a cottage, and I am told that such trees are dangerous as big limbs are apt to fall during summer-time without warning. Please say whether I am rightly informed; and, if so, what do you suggest I should do?—Old elm trees with large limbs are undoubtedly dangerous, and should be lopped. To properly lop a big elm is itself a dangerous proceeding to any but those used to such work; moreover, without seeing the trees it is not possible to advise you as to how much of the tree should be cut back. Your best plan will be to place the matter in the hands of a woodman, forester, or nurseryman after obtaining from either an estimate of the cost.

DIMORPHOTHECAS.—P. R. D., Bishopstoke: Last year I grew a number of plants of the beautiful Dimorphotheca aurantiaca, and have purchased seeds this year of that species and also of dimorphotheca hybrids. But, athough the plants I was successful in raising during the spring of 1911 proved most delightful subjects for positions on a low piece of rockwork, I was not able to raise more than about 30 per cent. of the seedlings that appear. When transferred to the open air, they failed unaccountably and in considerable numbers, but the few that pulled through all right were, as I have said, splendid. Can you give me any cultural hint that would enable me to secure a larger number of the plants after germination —We had a similar experience two years ago with one pan of seedlings. From some cause or other, the plants were not pricked out promptly while quite tiny, and so they never did any good, while seedlings from another pan, transferred singly into small pots as early as possible, made capital plants, and did not suffer in the least when transferred to their flowering quarters. We noticed that the seedlings were inclined to make top roots and very few fibrous branching roots, and so, instead of pricking them out into other pans and boxes, we gave each one a large thumb pot, and in due course a large 60-sized pot, and by this means every plant so treated was a success. We imagine the new hybrids will prove successful under similar conditions.

### NAMES OF PLANTS.

E. M. H., Ulverston.—Odontoglossum excellens.

P. P., Hayward's Heath.—1, Acacia Drummondi; 2, Helleborus colchicus; 3, Erica carnea.

M. T. L., Hornchurch.—1, Saintpaulia ionantha; 2, a garden form of the achimeneflora section of streptocarpus.

M. C. G., Hitchin.—1, Pleroma macrantha; 2, Peristrophe speciosa; 3, a fairly good form of Cypripedium Actæus; 4, Nephrolepis Duffi.

F. J. C., Chelmsford.—1, Euphorbia splendens; 2, appears to be a piece of Æschynanthus, send when in flower; 3, Debregæcia velutina; 4, Virburnum Tinus; 5, Cydonia japonica; 6, Ruscus aculeatus.

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# OBITUARY.

◆

### MR. GEORGE MAW, F.L.S.

We regret to record the death of Mr. George Maw, F.L.S., which occurred on the 7th inst at his residence, Benthall, Kenley, Surrey, in his 79th year. Mr. Maw was a member of many scientific societies at home and abroad, and was elected a Fellow of both the Linnean and Society of Antiquaries in 1860. He was for upwards of fifty years a frequent contributor on botany, geology, and allied subjects to the transactions of the societies to which he belonged and to technical journals. Mr. Maw is best known to horticulturists as the author of "A Monograph of the Genus Crocus," to the preparation of which he devoted upwards of ten years. In studying the several species and their varietal forms, he travelled in Asia Minor, the Levant, Greece, Italy, Spain, the Swiss Alps, and the Pyrenees. He also formed a comprehensive collection of croci, the major portion of the species and varieties being collected in the course of his travels. His great work was published in 1886, and contained 81 hand-coloured plates, the drawings for the majority of both flowers and fruit being made by himself. Some years previously Mr. Maw, in company with the late Sir Joseph Hooker and Mr. John Ball, made a tour in Morocco and the ascent of the Great Atlas, and the results of the tour were given in a work published in 1878, the geological sketch of the country visited contained therein being contributed by Mr. Maw. Sir Joseph Hooker dedicated the 30th volume of the "Botanical Magazine" (3rd series) to Mr. Maw as a tribute to the value of his exertions in introducing unknown plants to English gardens. Mr. Maw, who for a long period resided at Benthall, Broseley, Shropshire, came to Kenley in 1886.

### MR. THOMAS SWIFT.

We regret to learn of the death of Mr. Thomas Swift, who for so many years was principal book-keeper at Messrs. Hurst and Son's establishment at Houndsditch. Mr. Swift was also one of the auditors of the Gardeners' Royal Benevolent Institution for many years. On his retirement from business in 1909, a staff dinner was given in his honour, and he was presented with a silver centre-piece, and two silver vases by his fellow-members of the staff. Mr. Swift entered service at Houndsditch in 1869. He died at the age of 65.

# FORTHCOMING ENGAGEMENTS.

TUESDAY, February 20.—Royal Horticultural Society. Fruit, Floral, and Orchid Committees, 12 noon. Lecture at 3 p.m. on "New Sweet Peas," by Mr. Wm. Cuthbertson, J.P. Scientific Committee, 4 p.m.

North of England Horticultural Society. Meeting Queen's Midland Hotel, Leeds. Council Meeting, 2 p.m. Lecture on the Wisley Rock Garden, by Mr. Pulham, jun., 3.30 p.m.

THURSDAY, February 22.—Manchester and North of England Orchid Society. Meeting, Manchester Coal Exchange, 12 noon.

North of England Horticultural Society's Orchid Show, in conjunction with the Manchester Orchid Society.

TUESDAY, March 5.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "The Stimulation of Plant Growth," by Professor H. E. Armstrong. Scientific Committee at 4 o'clock.

Royal Horticultural Society's Spring Bulb Show; two days.

THURSDAY, March 7.—Linnean Society Meeting.

Manchester and North of England Orchid Society.

MONDAY, March 11.—United Horticultural Benefit and Provident Society, Annual Meeting at Royal Horticultural Hall, at 8 p.m.

THURSDAY, March 14.—North of England Horticultural Society meets at Bradford.

TUESDAY, March 19.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "Ferns," by Mr. H. B. May, V.M.H. Scientific Committee at 4 o'clock.

THURSDAY, March 31.—Perpetual Flowering Carnation Society, at Royal Horticultural Hall, Westminster; two days.

Linnean Society Meeting.

Manchester and North of England Horticultural Society.

TUESDAY, March 26.—Bournemouth Spring Flower Show; two days.

WEDNESDAY, March 27.—Liverpool Spring Show; two days.

Royal Horticultural Society's General Examination in Horticulture.

Royal Botanic Society Meeting.

THURSDAY, March 28.—Torquay Spring Show.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. February 4 to February 10. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | Temperature of the Air. At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Feb. 4—Sunday ...... | 0 36 | 26 | 26 | 29 | 21 |
| ,, 5—Monday ..... | 0 12 | 24 | 22 | 24 | 22 |
| ,, 6—Tuesday...... | — | 34 | 34 | 47 | 23 |
| ,, 7—Wednesday.. | 3 24 | 43 | 41 | 50 | 34 |
| ,, 8—Thursday.... | — | 46 | 44 | 53 | 43 |
| ,, 9—Friday........ | — | 49 | 48 | 51 | 46 |
| ,, 10—Saturday..... | 5 42 | 44 | 43 | 51 | 42 |
| Means | (total) 9 54 | 38 | 37 | 45 | 33 |

| Date. 1912. February 4 to February 10. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | Temperature of the Soil at 9 a.m. At 2 ft. deep. | Temperature of the Soil at 9 a.m. At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Feb. 4—Sunday ...... | 0 01 | 34 | 36 | 42 | 11 |
| ,, 5—Monday ...... | trace | 34 | 36 | 42 | 15 |
| ,, 6—Tuesday...... | 0·07 | 34 | 36 | 42 | 21 |
| ,, 7—Wednesday.. | — | 34 | 36 | 41 | 28 |
| ,, 8—Thursday.... | 0·42 | 35 | 36 | 41 | 30 |
| ,, 9—Friday.. ..... | 0·12 | 39 | 37 | 41 | 35 |
| ,, 10—Saturday .... | 0·06 | 41 | 39 | 41 | 32 |
| Means ... | (total) 0·68 | 36 | 37 | 41 | 24 |

Snow fell on Sunday morning.

# CATALOGUES RECEIVED.

HALLAMS, MOSELEY, BIRMINGHAM.—In a gay cover, abloom with sweet peas, this enterprising Moseley firm issues a pocketable list of seeds and plants, the former occupying chief place, and sweet peas are a special feature.

WILLIAM DEAL, BROOKLANDS, KELVEDON.—A capital catalogue of sweet peas, including many novelties raised by Mr. Deal. A pathetic interest attaches to the list as it contains a portrait of Mr. W. Deal, who so lately passed away, but it also contains a portrait of Mr. Bertrand Deal, Mr. Wm. Deal's elder son, who is continuing the business.

H. E. WARD, CARTREF, VICARS CROSS, CHESTER.—A very modest sweet pea list, containing descriptions of only four varieties.

W. E. SANDS, HILLSBOROUGH, IRELAND.—A small and useful catalogue of Irish-grown seed potatoes, including some new varieties.

J. JEFFERIES AND SON, LIM., CIRENCESTER.—Novelties of merit, both among vegetables and flowers are included, and mostly illustrated, in the seed catalogue issued by this long-established Cirencester firm.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

ADVERTISER (22), married, seeks permanent SITUATION in good Nursery; 7½ years' experience in Plant and Fruit Houses, also Shop work; good general knowledge of all Greenhouse Plants, Bulbs, and Seeds; can assist Making-up; excellent testimonials. NORRIS, 31, York Road, Walmer, Deal.

COL. MULLENS highly recommends his GARDENER (Second of 5 gardeners) for a similar position, or Single-handed; age 26; single; abstainer; excellent references. Apply, E. DAMANT, Oaks, Langham, Colchester.

FRENCH GARDENING. — Married man requires Situation as FOREMAN (Working); four years' practical experience on Intensive system; excellent references from past and present employers. GOODMAN, Winkton, Christchurch.

FOREMAN (Inside).—W. THEOBALD can thoroughly recommend H. HICKS for above position; well experienced in the cultivation of Plants and Fruit under glass. Hatchford Park Gardens, Cobham, Surrey.

GARDENER (Head) seeks SITUATION where two or more are employed; age 36; married, no family; life experience, Inside and Out, Roses and Carnations; excellent references. J. SMITH, 2, Lyncombe Vale Farm, Bath.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married.—G. HALL, Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working), 14 years' thorough practical experience; five years last place; good references; disengaged; age 29; married when suited. D. NORMAN, Botolph Claydon, Winslow, Bucks.

GARDENER (Head Working). —CAPT. C. BEHRENS wishes to strongly recommend R. GOODALL, who has been five years in his service, as Gardener (Second of seven), with six years in previous situation; life experience in all branches of garden work. Apply R. GOODALL, The Gardens, Swinton Grange, Malton, York.

GARDENER (Head Working, or Single-handed); life experience in all branches; Inside and out; age 40; married, no family; good references. W. CURD, 36, Clarence Place, Gravesend, Kent.

GARDENER (Head Working); thoroughly experienced in all branches; excellent references, and can be highly recommended; age 32. F. BRINICOMBE, Vaynor Park, Berriew, Montgomeryshire.

GARDENER (Head Working), age 37, married, no family; life experience, Inside and Out; good references; abstainer. ELLIOT, 316, Gloucester Road, Bristol.

GARDENER (Head Working, where three or more are kept); 15 years' experience in all branches; age 31; highly recommended. H. CRAKER, 1, Hawthorne Road, Bickley, Kent.

GARDENER (Head, or good Single-handed); life experience; age 34; married, 1 child aged 8; two years' excellent character, and eight years' previous. BRIGHT, Vaughan Cottage, Thornhill Road, Long Ditton, Surrey.

GARDENER (Head, or good Single-handed).—G. P. LEWIS, Esq., highly recommends his Gardener; life experience, Inside and Out, Grapes, Peaches, Melons, Stove and Greenhouse Plants; excellent references; 7 years, present; 32; married. PERRY. Heathfield Cottage, Nailsea, Bristol.

GARDENER (Head Working). — Miss E. ROBERTSON, Sele Grange, Hertford, high recommends H. BATES, who has been with her eight years, to any Lady or Gentleman, where about four are kept; life experience in all branches; winner of Silver Cups for Vegetables; age 36; married, two children, ages 14 and 12. Apply H. BATES.

GARDENER (Head of two or three, or good Second) seeks SITUATION; life experience, Inside and Out; excellent references; age 28 years; married when suited. Address, A. B., c.o. HOLLOWAY, 17, Windsor Road, Teddington, Middlesex.

GARDENER (Head of three or more); more than 20 years' experience in large and well-kept establishments; eight years as Head; age 46; married, no family; Gentleman will recommend. F. DUNK, Broughton Astley, Leicester.

GARDENER (Single, or Under), can be well recommended; life experience; age 25; single; abstainer; live on the place preferred. Apply H. GOODING, Firbeck Hall Gardens, Rotherham, Yorks.

GARDENER (Single-handed or otherwise), seeks SITUATION; 10 years' good experience Inside and Out; age 25; good references. H. DUDLEY, Remenham, Henley-on-Thames.

GARDENER (Single-handed, or help given), 12 years' experience; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER, Single-handed, or where help is given; thoroughly experienced; middle age; married, no encumbrance; wife would take charge of house during absence of family. J. G., 101, Liverpool Road, Watford, Herts.

GARDENER (Single-handed) seeks Re-engagement; life experience; can be well recommended; good references; age 26; single. W. SEAR, 51, Sumatra Road, West Hampstead, N.W.

GARDENER wants SITUATION (second), age 25 years; Single; 7 years' practical experience Inside and Out; Vines, Peaches, Chrysanthemums, Roses, etc.; abstainer; good refs. W. COOPER, Bell Lane, Alconbury, Huntingdon.

GARDENER, age 27, single, life experience, seeks SITUATION in London suburbs or near; good references; as good Single-handed or help given; will bear own expense. Apply, stating wages, to A. WHATMORE, Troed-y-rhiw, Merthyr.

GENTLEMAN wishes to recommend his GARDENER (Head Working) to any Lady or Gentleman; 15 years' experience in all branches; age 30; married, no children. G. BRUNTON, Charlesfield Road, Horley.

GARDENER, PLEASURE GROUNDS or KITCHEN GARDEN; age 35 years; married, no family; leaving through death; well recommended. Apply W. BROOKS, The Cottage, Gloddaeth Hall, Llandudno.

GARDENER (Single-handed, or Second); life experience in all branches; good references; single; age 25; abstainer. JOSEPH A. WINTLE, 7, Avenue Road, Weymouth.

GARDENER (Under) or Garden LABOURER.—Man, 30, wants Situation; excellent character; wages 18s.; used housework; willing, hard working; early riser. C. S., 27, St. Dunstan's Hill, City.

GARDENER seeks SITUATION, where one or more are kept; life experience in all branches; married, no family; highly recommended from past and present employers; 5 years head of three; disengaged when suited. A GEORGE, East Knoyle, Salisbury, Wilts.

IMPROVER (17) seeks SITUATION (Inside and Out; two years in present situation; excellent reference; Bothy preferred. Apply, H. F. PROBERT, Litley Nurseries, Hereford.

GARDENER, age 35, married, 2 children, seeks SITUATION as Single-handed, or where help is given; 18 years' experience; highly recommended by last employers. Address G. PEARLE, Station Road, West Byfleet.

J. E. PEAT, Esq., wishes to highly recommend his HEAD GARDENER (Working), who has been with him 9½ years; 6 and 7 years' previous references. H. DOVE, The Lodge, Cranmer, Mitcham, Surrey.

JOURNEYMAN (Inside, or Inside and Out); seeks Situation; age 20; four years' good experience; Bothy preferred; good references. GOLDSMITH, Bonds Cottage, Broadwater Forest, Tunbridge Wells.

JOURNEYMAN seeks SITUATION; Second or Third, under glass; age 20; Bothy. W. GARWOOD, Clay Hall, Fornham All Saints, Bury St. Edmunds, Suffolk.

JOURNEYMAN (smart).—P. McLAREN, Head Gardener, Sandhills, Christchurch, wishes to recommend E. GUNTER as same; age 21; five years' good experience; Bothy preferred.

JOURNEYMAN (Second, Inside), age 20; good establishment; 5½ years' experience; good references; Bothy preferred. G. PAPWORTH, Great Barrington, Burford, Oxon.

JOURNEYMAN (Inside, or Inside and Out); three years present situation; used to duty; age 18; Bothy preferred. DUNSTAN, The Gardens, Sudbury Hall, Derby.

JOURNEYMAN (Second, Inside); age 20; experienced in Fruit and Flowers, Inside; good references; disengaged when suited. CLARKE, 1, Pinewood Cottage, East Heath, Wokingham, Berks.

JOURNEYMAN (Inside or Inside and Out); six years' experience; two years Inside here; recommended by Mr. Lintott. O. HIGGINS, The Gardens, Marden Park, Woldingham, Surrey.

LAD, age 17, seeks SITUATION in Garden; some experience; wish to improve; good character; Bothy preferred. S. RAYNER, Chart Road, Sutton Valence, Maidstone.

MRS. JOHNSON, Silkmore Hall, Stafford, will be pleased to highly recommend W. CURTIS to any Lady or Gentleman requiring a good all-round Gardener, where two or three are kept; 13 years' practical experience; total abstainer.

MR. F. W. NICHOLSON wishes to highly recommend his GARDENER (Head) as a thoroughly capable hard-working Man; understands his work, both Inside and Out, and good at Table Decorations; leaving solely through establishment being reduced; excellent testimonials; age 36; married, one boy, 9. J. SHIPLEY, The Old Vicarage Lodge, Shiplake, Henley, Oxon.

MR. H. DYSON, Rickmansworth Park, Herts, highly recommends A. BACON as Head Working GARDENER, where more are kept; life experience Inside and Out; excellent references; married; age 34; three children. Address as above.

MR. G. MARLOW, The Oaks Gardens, Walton Heath, Epsom, wishes to recommend L. BAGG; been with him 2½ years as Second; Inside and Out; age 25; abstainer. Apply, BAGG, Freshfield, Scaynes Hill, Haywards Heath.

MR. W. MORRIS, The Dingle, Sydenham Hill, Sydenham, highly recommends his GARDENER (Single-handed); life experience, Inside and Out; age 24; married when suited. C. CULVER, 17, Peak Hill Gardens, Sydenham.

W. BEALE, Head Gardener, Camfield Place, Hatfield, Herts., wishes to recommend J. DOVER as IMPROVER or JOURNEYMAN in good establishment; been here 3½ years, chiefly Inside; age 18; Bothy preferred. J. DOVER, North Mymms, Hatfield, Herts.

## SITUATION COUPON

**For FEBRUARY 24, 1912.**

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**Please Repeat my Advertisement.**

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MR. SUTTON, Onslow Hall Gardens, Shrewsbury, can with confidence recommend F. KING, age 20, as JOURNEYMAN (Inside) in good establishment; five years' good experience; Bothy preferred.

YOUNG MAN, age 18, seeks SITUATION in general, either outdoor or under glass; has had experience in gardening since schooldays. G. W. BENTON, 161, Duke Street, St. Helen's, Lancs.

YOUNG MAN seeks SITUATION in Kitchen Garden and help in Pleasure Grounds; age 26; good reference. W. WICKS, Rockshaw Cottage, Merstham, Surrey.

YOUNG MAN, age 19, seeks SITUATION in garden as Journeyman, Inside or Inside and Out; 4 years' previous experience; can be well recommended by head gardener. F. BURDETT, Holdenby, Northampton.

YOUNG MAN seeks SITUATION as GARdener; can take charge of pony; age 25; Inside or Out; good character. Apply to J. SCOTT, 48, Manor Park Road, East Finchley.

YOUNG MAN, age 20, seeks SITUATION, Inside and Out; good references; Bothy preferred. H. LARLEY, Wayside, Churt, nr. Farnham, Surrey.

YOUNG MAN, as good Single-handed; all-round experience; good references; age 27; 9 years' experience. H. T., 360, York Road, London, N.

CARPENTER wants permanent job; Household, Nursery, or Estate; age 30; married, no family; good references. Apply, H. WATERS, Bifrons Estate, Bekesbourne, near Canterbury.

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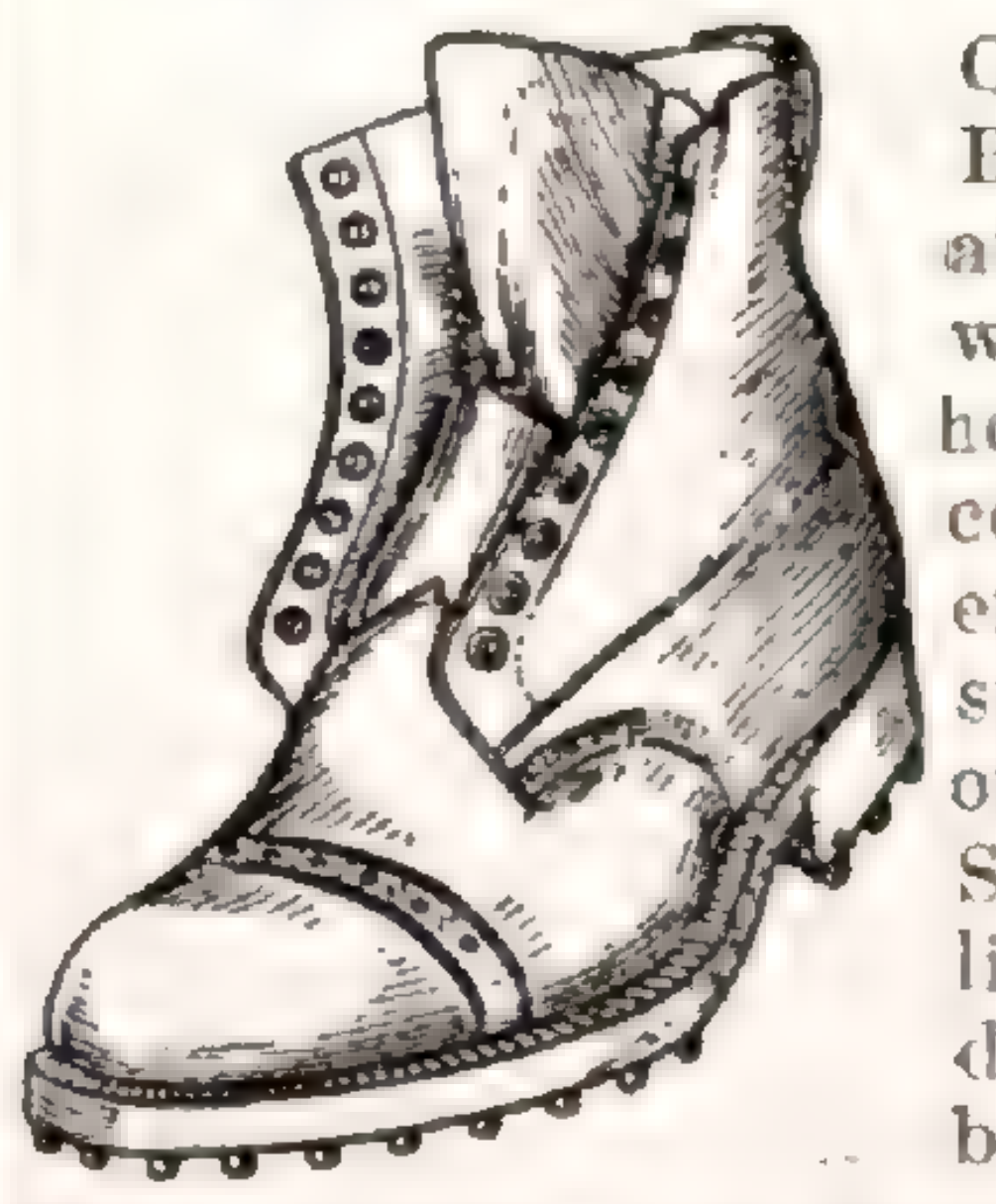

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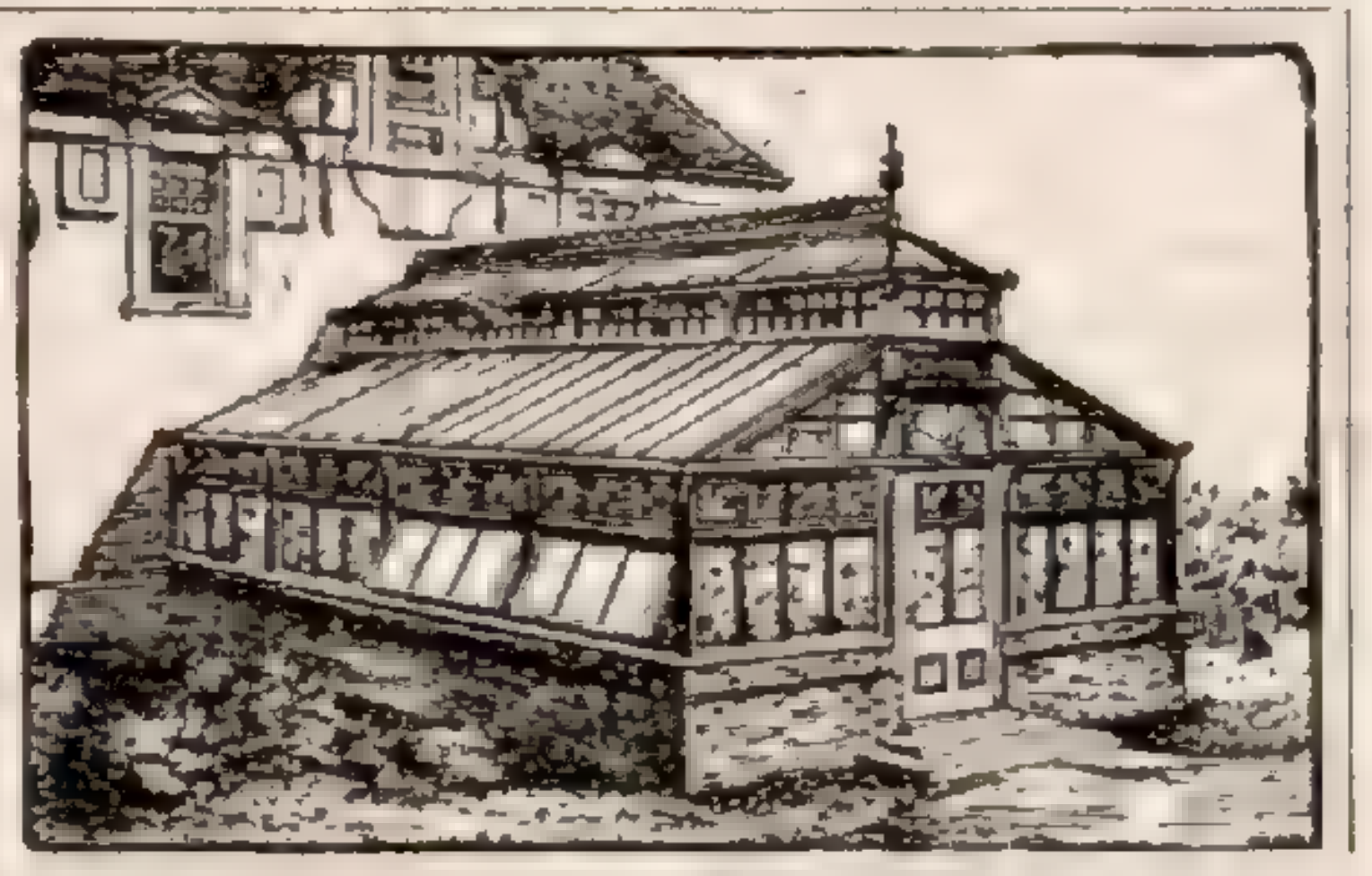

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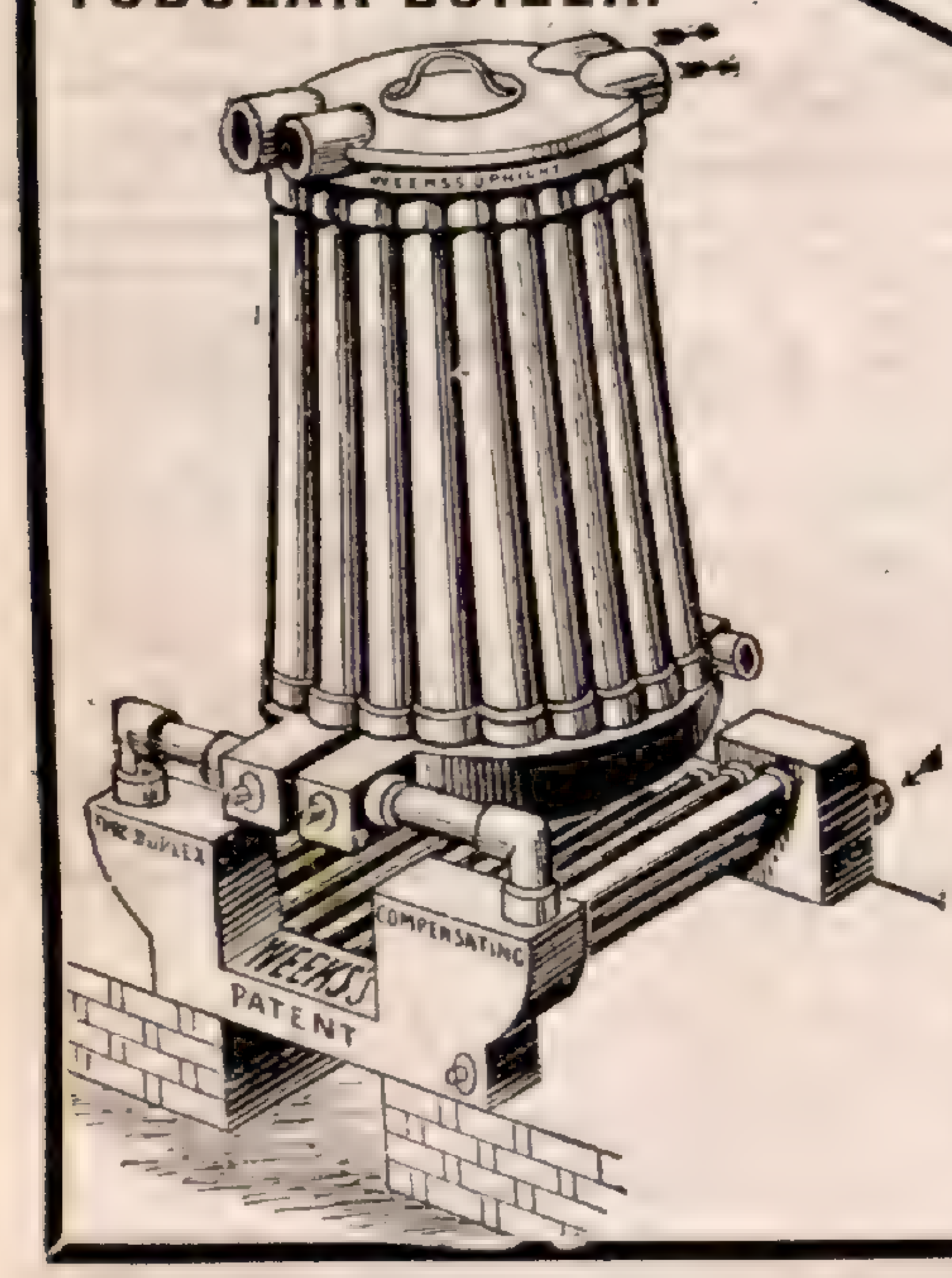

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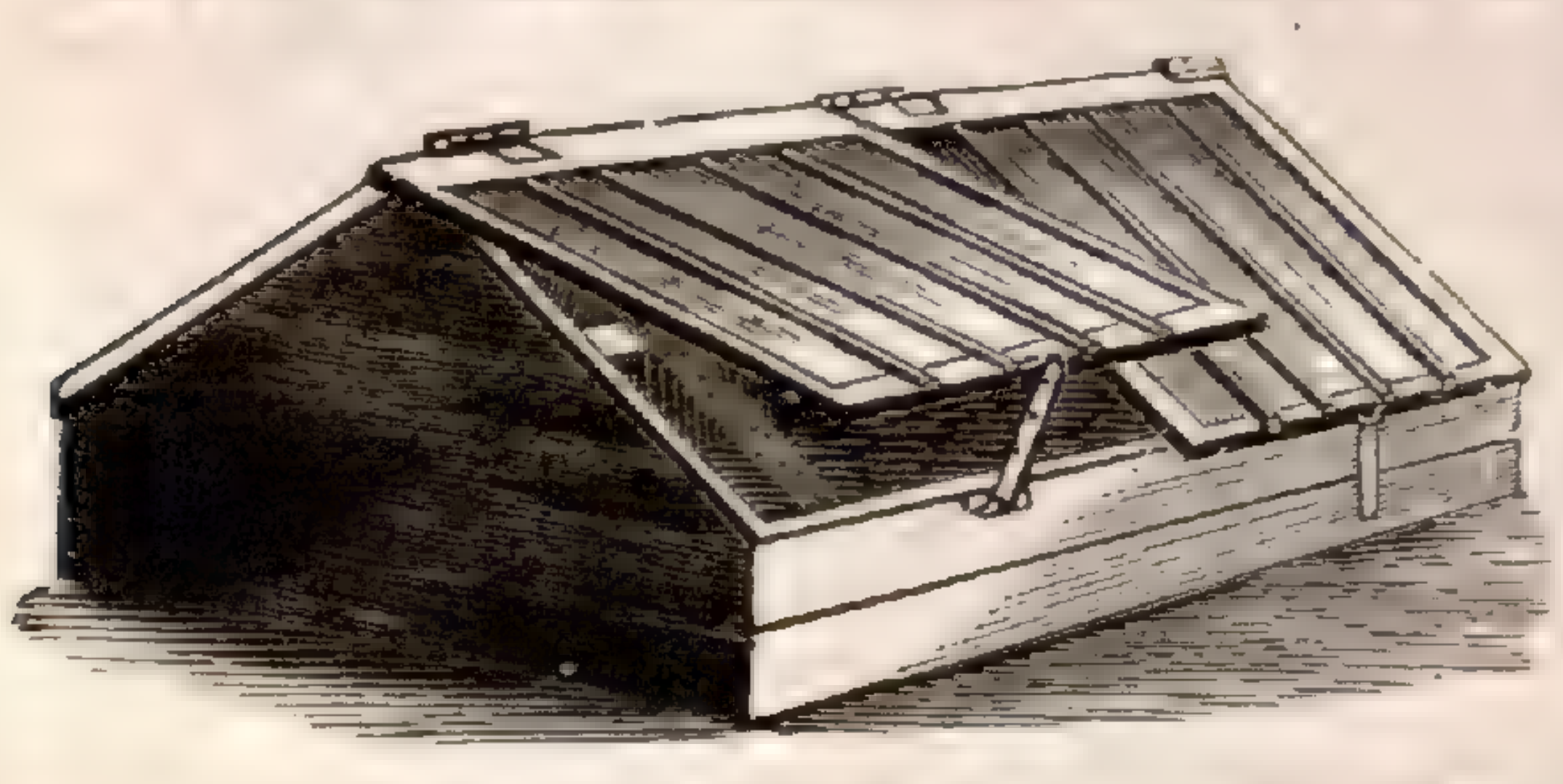

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# THE GARDENERS' MAGAZINE.

No. 3,043.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
SATURDAY, FEB. 24, 1912.
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VOL. LV.—No. 3,043. SATURDAY, FEBRUARY 24, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Streak Disease of Sweet Peas.

The disease of sweet peas, commonly known as streak, has within the past few years been so destructive in its effects in many gardens, and thereby caused much disappointment to cultivators of these fragrant flowers, that any information likely to prove useful to growers in their endeavours to avert its attacks should have the careful attention of those who are concerned with the sweet pea and its culture. Holding this view, we take an early opportunity of directing attention thus prominently to the important contribution to the literature of the subject that has been made by Mr. G. Massee, V.M.H., an abstract of which we shall give in an early issue. We need not refer to Mr. Massee's eminence as an authority on plant diseases, for that is widely known and generally acknowledged; but it may be mentioned as a matter of importance that his investigations possess additional value from the fact that in making them he does not at any stage lose sight of the practical side of the question involved. The views to which Mr. Chittenden, the Director of the Wisley Laboratory, gave expression in his address at the conference held by the National Sweet Pea Society in December last, on the cause of the disease and the value of soil sterilisation as a preventive, have been amply confirmed by Mr. Massee's investigations. This is exactly what would be expected by those who are acquainted with the work of these two scientists. They, of course, deal with the subject in a quite different manner, and necessarily so. Mr. Chittenden, when giving particulars of the results he had obtained in the course of his investigations, was addressing an audience consisting almost exclusively of those who are engaged in the cultivation of sweet peas, and dealt with the subject in a popular manner. On the other hand, Mr. Massee so records the results he has obtained as to render them of the greatest possible value for purpose of reference, but there is nothing of the dry-as-dust character about his description of the disease and the cause thereof. Those cultivators who are anxious to obtain the best possible results from their strenuous endeavours, whether engaged in the production of flowers for market, for exhibition, or for the decoration of the garden and home, should take the two papers and study them together. They should be closely studied, for while necessarily they do not contain a panacea for the restoration to health of a disease-stricken crop, they afford information of immense value on the prevention of the attacks of the fungus by which the disease is caused. This information is hardly of less value to cultivators of culinary peas, for these, under certain conditions, are equally as liable to infection as the sweet pea; and the Rev. J. M. Berkeley, who was the first to observe the fungus in this country, found it on the nemophila and also on the peas that belong to the kitchen garden. The readiness with which the scientists have come to the aid of cultivators in this matter is of interest, as evidence of a fuller appreciation than was for a long time the case of the value of the co-operation of cultivators and scientists in the solution of difficult problems. This association of science with practice is useful in another way. It assists the cultivator to understand how necessary it is that important questions should be fully considered from all points of view before an answer is attempted. The difficulties that beset investigators, more especially of diseases of fungoid origin, is very clearly shown by Mr. Massee, who states at the commencement of his report that in his earlier investigations of Thielavia basicola, the fungus causing the streak disease, he found the fungus in what is known as the Milowia stage, and, regarding the delicate white mould at the base of a dying plant as an entity, and worthy of generic rank, he published it as Milowia nivea. We mention this as an illustration of the necessity for not readily accepting a statement that a disease of which little is known is due to this or that cause, unless made by a well-known authority. It is not less necessary that care should be shown in accepting statements to the effect that injury to vegetation has been caused by a certain set of circumstances, and of this we had a remarkable proof at the conference referred to in the great diversity of opinion expressed by those who took part in the discussion. Cultivators have now the most conclusive proofs that the cause of "streak" is Thielavia basicola, and sufficient information with regard to its life cycle to enable them to adopt methods of culture that will not favour the development of the fungus. The point that it is both saprophytic and parasitic, and that it can pass through its complete course of development as a pure

MR. JAMES VERT.

saprophyte, feeding on the humus present in the soil, is of great practical importance. With a full knowledge of this fact it is not difficult to understand that when large quantities of animal manure are buried in the soil, in layers or otherwise, the fungus rapidly spreads through the rich material, and soon makes its way into the tissues of the plants. The entrance of the mycelia is greatly facilitated when the roots have the run of a rich medium, because of the greater softness of their outer covering. Humus is, of course, essential to the healthy growth of the plants, but there can hardly be any doubt that a reduction in the quantity of animal manure that is sometimes employed might with advantage be effected. It should be remembered that sweet peas, in common with other leguminous plants, can, with the aid of nitrifying organisms, obtain the greater part of the nitrogen they require from the atmosphere, and also that when this is given in excess it encourages a soft sappy growth and coarseness both in the flowers and flower stems. It is of importance also to avoid, where practicable, growing sweet peas on the same ground for several consecutive years, and to utilise as far as possible the aid soil sterilisation is able to give. To sterilise beds and borders may not be practicable, but there should be no great difficulty in providing a sufficient quantity of sterilised soil for raising stocks under glass, and thus enable the plants to pass through a vulnerable stage with at least some degree of immunity.

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**Mr. James Vert** is well known to our readers because of his great success as a cultivator of perpetual carnations and plums—widely differing subjects. Mr. Vert has charge of a famous garden, that of Audley End, Saffron Walden, but ere he reached his present position there were many years of working and waiting. In 1871 he left his father, who was then head gardener and land steward to the Hon. Arthur Lascelles, to serve an apprenticeship of four years under the late Mr. James Fowler, head gardener to the Earl of Harewood, Harewood Hall, near Leeds. His apprenticeship served, Mr. Vert went to Knowsley, under Mr. Harrison, to take charge of the fruit houses, and from Knowsley he entered service with Messrs. Fisher, Son, and Sibray, of Sheffield, where he had charge of the stove and greenhouse plants. Wishing to extend his experience, he then served under Mr. Hudson, gardener to Godfrey Wentworth, Esq., at Woolley Park. His next move was to the celebrated gardens at Burghley, the Marquis of Exeter's seat, where, under the famous Mr. Richard Gilbert, he stayed four years, and rose to be general foreman. In 1880 Mr. Vert was appointed head gardener to Lord Braybrooke, at Audley End, and occupied that position for twenty-four years. On the death of Lord Braybrooke, in 1904, Audley End was taken by Lord Howard de Walden, whose marriage this week was one of the great events in society. Lord Howard de Walden is a great lover of gardens and gardening, and is president of the Perpetual Carnation Society; so that, with the encouragement he gives and the great interest he takes in them, the gardens at Audley End are now occupying a higher position than ever under the skilful management of Mr. James Vert, who, we might add, has for many years been a member of the R.H.S. Fruit Committee.

**"The Gardeners' Magazine" Spring Number.**—Our annual issue that is specially associated with the season of spring in its relation to the garden will be published on March 2, and will not be less interesting and useful than corresponding issues of previous years. The subjects that will be dealt with have been selected with special reference to the requirements of the season, and the needs of readers. Chief among the contents will be articles on the finely-flavoured peas, maincrop potatoes, summer lettuces, a valuable dry weather vegetable, melons and melon culture, tuberous begonias, greenhouse flowers from seeds, annuals for beds and borders, the usefulness of asters, fine foliage plants from seed, and seasonable notes on sweet peas. The number will be profusely illustrated.

**The Botanical Magazine** for the current month contains illustrations of several remarkable plants. The first of these is Stanhopea peruviana, a yellow-flowered species allied to S. Wardi. Then come Stranvæsia undulata, a Chinese tree, found by Mr. E. H. Wilson; this is an evergreen species that bears a profusion of orange-coloured fruits, after the fashion of the popular Cratægus Lelandi; Leptospermum scoparium Nicholli, a New Zealand plant, and an elegant greenhouse subject, with deep carmine-coloured flowers; Olearia Chathamica, a rare half-hardy species, bearing white, violet-tinted flower heads two inches broad, the disc being violet-purple; and Crassula Barkleyi, a curious little succulent plant with imbricating leaves clustering round the two-inch high stem so as to form a little column; the small white flowers are produced in a little cluster at the apex of growth.

**Botanical Research at South Kensington.**—The building of the Botanical Institute in Prince Consort Road, South Kensington, has been commenced, and has the promise of being an important addition to the Imperial College of Science and Technology. The architect is Sir Aston Webb, R.A., and the four-storey building has a length of 120 feet and a depth of 50 feet. The two lower floors will be devoted to the general botanical work of the college, which is now carried on at the Royal College of Science in Exhibition Road. On the two upper floors will be located the new Department of Plant Physiology and Pathology, and these, it need hardly be said, have been designed with special reference to the work that will be carried on by those engaged in botanical research. The greenhouse-laboratory on the top floor will be a distinct feature; it will have a length of 25 feet and a width of 20 feet, and is the first of its kind that has been erected in the United Kingdom. With a cement floor and a glass roof, it will combine the advantages of a greenhouse and a laboratory. A physiological laboratory and a research laboratory for the professor will be located on the same floor, and also a professor's room. In addition there will be a research laboratory for his assistant, and five research rooms. A bio-chemical laboratory, a pathological laboratory, a bacteriological laboratory, a constant-temperature room, and two more research rooms will occupy the third floor. The estimated cost of the building is £14,000. As our readers have been informed, the Professorship of Plant Physiology and Pathology was established last year, and Professor V. H. Blackman, of the Leeds University, was appointed. There are at the present time seven students at work, namely, a graduate of Aberdeen, a graduate of Edinburgh, a student who has been a chemist and bacteriologist in Jamaica for three years, two students of the Imperial College in their fourth year, two students working under the John Innes Trust at Merton, one of whom holds the Cambridge Diploma in Agriculture, and is a Development Commission scholar in plant physiology, and a lady who has taken the London B.Sc. degree. The aim is to make the department a centre for research of scientific and economic importance in relation to plant life as well as to qualify students for appointments throughout the British Empire.

**Horticultural and Agricultural Research.**—In reply to a question in the House of Commons on Tuesday Mr. Runciman, the President of the Board of Agriculture, stated that a grant of £30,000 per annum will be made from the Development Fund for work at research institutes in the following subjects, viz.: Plant physiology, plant pathology (Mycological side), plant breeding, fruit growing, plant nutrition, and soil problems, animal nutrition, animal breeding, animal pathology, dairy investigation, agricultural zoology, and the economics of agriculture. Negotiations are proceeding as to the places at which the work will be carried on. It is proposed to allocate an additional sum of £5,000 for investigations of a special character during the ensuing financial year, and Mr. Runciman hopes shortly to be in a position to announce the purposes for which this sum will be expended.

**Gardeners' Royal Benevolent Institution.**—The committee of the Liverpool Auxiliary, in notifying their eleventh annual concert and social gathering, have the pleasure of announcing that the Right Hon. the Earl of Derby, G.C.V.O., C.B., etc., Lord Mayor of Liverpool, has kindly consented to preside. This function takes place at the Bear's Paw, on Tuesday, the 27th inst., and the committee is straining every effort so that the high character of these re-unions may be fully sustained. It is hoped that the meeting will be a record one, and that increased patronage may indicate appreciation of his Lordship's valued assistance. Mr. R. G. Waterman, Woolton, is the hon. secretary, and he will be glad to answer any inquiries and acknowledge donations.

**The Journal of the Kew Guild.**—The nineteenth issue of the ever popular and interesting "Journal" of the Kew Guild is a double number, and serves for the year 1911 and 1912. It is edited by the new secretary-editor, Mr. H. Cowley, who has provided material that cannot fail to find favour with Kewites the world over. Even to a man who is not a Kewite the contents are so interesting that the issue will not be placed on one side until read right through. Mr. R. Allen Rolfe, the orchid expert, figures on the frontispiece, and the accompanying appreciation shows that Mr. Rolfe commenced his working life as a young gardener at Welbeck Abbey, thirty-two years ago. Mr. A. S. Galt tells some amusing experiences in connection with county lecturing; Mr. E. J. Thomas discourses on the pronunciation of plant names, and Mr. J. R. Jackson, formerly curator of the museums, gives his recollections of forty-three years' service at Kew. The notes from Old Kewites are always of special interest, and in these Mr. W. H. Paine's description of a hunt after alpine plants in the Pyrenees; Mr. W. H. Etterley's account of life in Shanghai; Mr. J. D. Snowden's impressions of Uganda; Mr. C. E. F. Allen's experiences with his coloured men in Portuguese East Africa, and Mr. A. E. P. Griesson's story of the Delhi Durbar and its gardens, with the latter of which he had a great deal to do, are all excellent reading. Kindly references to Kewites who have died during the year, a list of appointments and retirements, a half-page of weddings, accounts of annual meeting and annual dinner, cricket news, and a list of names and addresses and positions of Old Kewites, all go to make the "Journal" that cementing power so essential in a guild with members spread over the whole world.

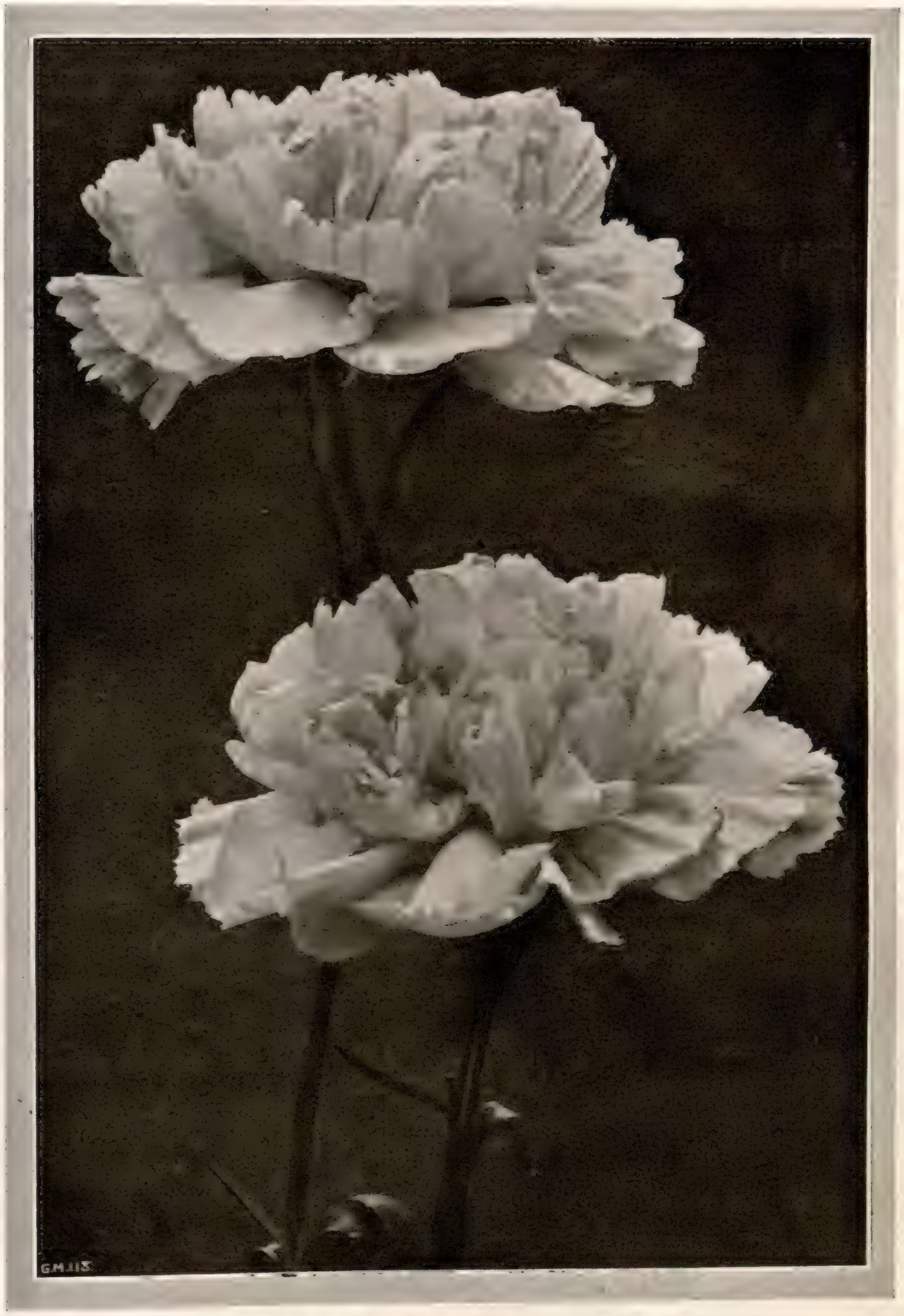
**Gilbert White Relics.**—The exhibition of relics of Gilbert White, the naturalist, and of objects associated with his writings, organised by the Selborne Society at the offices of the Civil Service Commission, Burlington Gardens, was of quite exceptional interest. The exhibition was opened on the 15th inst., and extended over several days, and among the more important of the contributions were the MSS. of "The Natural History of Selborne" and of the "Nature Calendar" for 1766, which has recently been published in facsimile by the Selborne Society. Of much interest was the natural history notebook, kept by his future brother-in-law, Barker, which is probably the earliest existing record of Gilbert White's taste for natural history. The initials "G. W." are appended to some of the entries, and these, it is assumed, record observations of his own, some early in 1736, when he was in his sixteenth year. Leaves were also exhibited of the "Garden Kalendars," in which, from the year 1751, he recorded his gardening operations and events of interest in the garden, interspersed with natural history notes. There was also exhibited his copy of Hudson's "Flora Anglica," which led him in later life to take great interest in botany, and induced him to expand the garden calendars into the "Nature Calendar" for 1766, which at one time he intended to make the groundwork of his "Natural History of Selborne." Of this work there was a large collection of editions, of which upwards of 100 have appeared since his death, and many illustrations of Selborne.

**Testimonial to Mr. Silas Cole.**—Mr. Silas Cole, the raiser of Countess Spencer Sweet Pea, has left the service of Lord Northcliffe, and intends to commence business for himself in a small way. It is considered by many that the present would be an opportune time to do Mr. Cole a good turn. Although Mr. Cole has helped, by his introduction, many sweet pea growers and dealers to enlarge their trade profitably, he has not reaped much of the golden harvest himself. Mr. Mackereth, with whom the idea originated, approached a few friends in America and at home, and received promises of support. Any of the signatories will be glad to hear of promises of help, but it will be most convenient to communicate with Mr. Mackereth. Mr. W. Atlee Burpee, Mr. R. Bolton, Mr. C. H. Curtis, Mr. W. Cuthbertson, Mr. Hugh Dickson, Mr. Alex. Malcolm, Mr. R. Sydenham, and Mr. G. H. Mackereth, Market Place, Ulverston, are the signatories. About £123 has already been paid or promised.

**Presentations at Beverley.**—A few evenings since Mr. Hodgson, the chairman of the Beverley Chrysanthemum Society, entertained the officials and members at dinner, and advantage was taken of the opportunity for acknowledging the services rendered by the secretary and treasurer. Following the dinner the Chairman, on behalf of the members, presented Mr. F. Pape, the hon. secretary, and Mr. R. Smith, the hon. treasurer, with gold and silver mounted umbrellas respectively. Mr. Pape has held the position of secretary for eighteen years, and Mr. Smith that of treasurer sixteen years, and have discharged their duties with so much ability as to have obtained the respect of all concerned with the society.

## ROYAL HORTICULTURAL SOCIETY.

There was a crowded meeting on Tuesday, February 20; the exhibits were numerous and good, and the attendance large. One end of the hall was occupied by the stage used in connection with a pageant dealing with the History of Nonconformity, and there were many expressions of dissatisfaction with its presence, chiefly because it curtailed the exhibition space, and because the dull red curtain was the worst possible colour for the flowering plants on view. It appears that the pageant should have finished on the previous Saturday, but the attendance was so good that the pageant authorities wished to retain the use of the hall for another week; this not being possible, owing to the Tuesday meeting, the pageant was held over until Wednesday, February 21, and, we understand, the financial result of this arrangement was excellent. If such a curtailment as this were a matter of common, or even frequent, occurrence, we should add our protest, but the grumbling on this occasion was scarcely to the point, unless, maybe, it prevents a similar happening in the future.



PERPETUAL CARNATION LADY MEYER.

Flowers bright pink. A.M., R.H.S., February 20. Mr. E. Guile, Newport.

### FLORAL COMMITTEE.

A superb exhibit of carnations, from Mr. W. S. Wallace, Eaton Bray, Dunstable, was a great attraction. It was a grand display of fine flowers, all splendidly arranged in vases of various sizes, in baskets and tall stands, the whole associated with Asparagus Sprengeri, A. plumosus, and smilax. There were dozens upon dozens of such varieties as Gloriosa, Marmion, Lady Audley Nield, Carola, Mrs. H. Burnett, Pink Delight, Winsor, Enchantress, Una Wallace, May Day, Bonfire, Beacon, and White Wonder. A few baskets and vases of lovely Richmond roses completed this fine exhibit, which was a centre of attraction all day long.

Indian azaleas, charming flowering plants of the double rose-coloured peach, and of the popular wistarias, were pleasingly grouped by Messrs. James Veitch and Sons, Chelsea; this firm also arranged a bank of Azalea amœna Hexe, the fragrant Boronia megastigma, Tillandsia Lindeni, with vivid blue flowers, Coleus thyrsoideus, Libonia floribunda, cyclamens, etc.

Messrs. H. B. May and Sons, Edmonton, contributed a most interesting group of ferns, many of them trained over small tree stems. Polypodiums were very much in evidence, notably P. piloselloides, P. vaccinifolium, P. repens, P. nitida, and P. squamulosum.

Messrs. Allwood Brothers, Hayward's Heath, presented large vases of Lady Alington, La Rayonnante, Marmion, R. F. Felton, and other good varieties of perpetual-flowering carnations.

Many dainty early spring flowers were exhibited by Mr. Maurice Prichard, Christchurch, such as Saxifraga Elizabethæ, Anemone blanda, Iris Krelagei, Gentiana acaulis, Adonis amurensis plena, Primula cashmenana Lavender Gem, Daphne Genkwa, and Orobus vernus.

Mr. A. F. Dutton, Iver, Bucks, made a good show of carnations, setting these up in large bouquets in tall vases; Enchantress, Mrs. C. W. Ward, White Enchantress, Niagara, Mikado, Rose Pink Enchantress, May Day, and Scarlet Glow were all capitally represented.

Messrs. Sutton and Sons, Reading, filled a long table with well-arranged grouplets of their fine strains of Chinese primulas, well grown, and of splendid colour, and freely-flowered cyclamens, the whole making an effective and fragrant exhibit.

The spring flowers from Messrs. Barr and Sons, Covent Garden, included a delightful set of crocus species, little saxifragas, snowdrops, miniature daffodils, and freesias.

The bright pink Coronation carnation, a free perpetual variety, was again shown well by Mr. Bertie Bell, Guernsey.

An interesting exhibit of cyclamens, Acacia Baileyana, A. ovata, Daphne indica, and carnations came from Messrs. Stuart Low and Co., Enfield.

Some lovely Richmond roses from Messrs. George Mount and Sons, Canterbury, were a centre of admiring visitors.

Mr. G. Reuthe, Keston, had a quite big exhibit of crocuses, anemones, snowflakes, hepaticas, lovely little irises, heaths, etc. Messrs. Pulham's, Elsenham, Essex, also contributed alpine plants. Mr. Clarence Elliott, Six Hills Nursery, Stevenage, showed a small rock garden, with colonies of Saxifraga Burseriana, Hepatica triloba, Draba aizoides.

A glorious group of carnations was staged by Mr. H. Burnett, Guernsey, who, as usual, put up grand flowers of Britannia, Fortuna, Mikado, R. F. Felton, Mr. C. F. Raphael, May Day, Mrs. H. B. Clode (finely clove-scented), Marmion, Mandarin, and White Wonder.

Messrs. Whitelegge and Page, Chislehurst, made a speciality of Primula malacoides, and staged these with saxifragas, etc.

A bright exhibit was one of cyclamens, cinerarias, and zonal pelargoniums, from Messrs. H. Cannell and Sons, the latter being particularly effective, and representative of the finest varieties.

Crocuses, anemones, Narcissus cyclamineus, hellebores, heaths, and Japanese maples made up a pretty exhibit from Mr. James Box, Lindfield.

The little rock garden arranged by Messrs. J. Cheal and Son, Crawley, was bright with irises and primulas; models of garden furniture proved very attractive.

Messrs. Young and Co., Hatherley, Cheltenham, put up a capital lot of carnations, their Royal Purple, Mrs. Greswolde Williams, and Lady Audley Nield, being especially good.

Messrs. W. Wells and Co., Merstham, showed some new perpetual carnations; Wodenethe, white; Merstham Beauty, rose-pink; Princess Charming, pink; and Bonfire, red, were among the best.

A very fine exhibit of flowering shrubs, forced into flower, was set up by Mr. L. R. Russell, Richmond, and herein the lilacs, Mollis azaleas, and Prunus triloba were especially beautiful.

Messrs. R. and G. Cuthbert, Southgate, filled a corner with forced azaleas, lilacs, wistarias, and magnolias.

Messrs. C. Brooks and Son, Worting, Basingstoke, showed single flowers of primulas, set out in blocks of a variety on black velvet; the colours showed up finely in this way, and Giant Salmon, Giant Pink, King George V., Orange King, and Ruby Queen were especially effective.

Messrs. Thos. S. Ware, Feltham, brought up anemones, saxifragas, Adonis amurensis plena, Iris stylosa, I. reticulata, and Bletia hyacinthium.

Crocus species, notably C. versicolor, C. Sieberi, and C. aureus were delightfully shown by Messrs. R. Wallace and Co., Colchester, together with Fritillaria chitralensis—quite strong and bright, Iris reticulata, Tulipa Kaufmanniana, and T. Fosteriana.

Messrs. W. Cutbush and Son had a beautiful lot of carnations, spring bulbous flowers, and a great variety of forced flowering shrubs; the colonies of Iris reticulata, hepaticas, Iris sindjarensis, and I. histrioides were greatly admired.

Freesia Chapmani aurantiaca was capitally shown by Messrs. Walter T. Ware, Inglescombe, Bath; this was much stronger and finer than we have seen it before.

Mr. C. Engelmann, Saffron Walden, was represented by a group of perpetual carnations that included Carola, Triumph, and Lady Northcliffe.

Mr. A. Hemsley, Crawley, had a rock garden exhibit, with alpine shrubs, primulas, heaths, and saxifragas much in evidence.

Messrs. G. and A. Clark, Dover, had several good things in their little rock garden exhibit; especially notable were Juniperus pachyphlœa elegantissima and J. p. conspicua, each of a bright bluish-green or rich glaucous green leaves and branchlets; they are said to retain their striking colour up to 4ft. high, and if this is so the plants have a distinct garden value; for the rock garden they should be in great request. Anemones, crocuses, and Iris stylosa were other good things on view.

Ribes laurifolium (A.M.), shown by the Hon. Vicary Gibbs (gardener, Mr. E. Beckett), was more interesting than beautiful; it has broad dark leaves, and little drooping axillary spikes of small light green flowers and bracts.

Some charming floral studies by Miss Gundry, Foots Cray, attracted a great deal of attention, especially the rock garden, flower border, and wild garden scenes.

## ORCHID COMMITTEE.

A superb exhibit of orchids, finely arranged by Mr. H. Alexander, orchid grower to Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester, was the great feature of the meeting. It occupied the whole space next the wall, betwen the entrance and the orchid annexe, and, as usual, the arrangement was such that every plant stood clear of its neighbour. The display was a splendid one, the long spikes of Lælia anceps, in variety, adding elegance and lightness to it. Lælia anceps Dawsoni carried eight spikes and twenty-four flowers; L. a. Alba, nine spikes and twenty-one flowers; L. a. Ashworthæ, seven spikes and sixteen flowers; L. a. Williamsi, five spikes and twenty-three flowers; and L. a. Sanderiana, six spikes and twenty-five flowers. Lælia-cattleya Cappei and L.-c. Tigris, with their tall spikes of bright flowers, were very conspicuous, while the graceful spikes of Odontoglossum crispum Egret, O. c. Peacock, O. c. Miraud—very beautiful—and O.c. Rosemary were very fine. Cattleya Percivaliana, Charlesworth's var., with four lovely blush flowers; C. Trianæ Hydra, C. Maggie Raphael, Sophro-lælio-cattleya Danæ, Holford's var., Brasso-cattleya Pluto, B. c. Thorntoni, B. c. gigas-Digbyana, Miltonia Bleuana, and Vanda Watsoni were other fine things. Among cypripediums a few of outstanding merit in a grand set were C. Rosetti magnificum, C. Œdippe, C. Alabaster, C. Alcibiades magnificum, C. Mandiæ, C. Minos Youngi, and C. Helen II., Holford's var.

From Messrs. Sander and Sons, St. Albans, came a bright group of orchids, wherein graceful spikes of Phalænopsis Schilleriana were conspicuously beautiful. Some dendrobiums, cypripediums, Brasso-cattleya Vilmoriana magnifica, Renanthera Imschootiana, and the handsome Cattleya Trianæ Ralph Sander were also included in the display.

Angræcum sesquipedale, with seven flowers, Trichosma suavis, Angræcum citratum, Cymbidium insigne, and Masdevallia triangularis, smothered with flowers, were associated with dendrobiums and cypripediums by Messrs. Stuart Low and Co., Enfield.

Messrs. J. and A. McBean, Cooksbridge, showed some fine white forms of Lælia anceps, the old Dendrobium speciosum, Cymbidium eburneum, C. eburneo-Lowianum, and some well-grown odontoglossums.

A position in the orchid annexe was filled by Messrs. Armstrong and Brown, Tunbridge Wells, with some finely-grown cypripediums, such varieties as C. Cupid, C. Baron Schroder, and C. Euryades, C. Venus Orchidhurst var., being conspicuous. Other good things were Cattleya Maggie Raphael hybrid odontoglossums, Lælio-cattleya Ernesti, and Odontioda Bradshawiæ.

The little display set up by Messrs. Mansell and Hatcher, Rawdon, Leeds, included the graceful Ionopsis paniculata, some good forms of Odontoglossum crispum, Vanda Moorei—a rare plant, and Phalænopis Schilleriana.

The contribution from Messrs. J. Cypher and Sons, Cheltenham, was composed largely of cypripediums, such as C. Van Dyke, C. Alcibiades, C. Morganiæ, and C. Minos Youngi. With those were Calanthe Bella, of lovely blush colour, some fine forms of Lycaste Skinneri, including L. S. alba, and the graceful Angræcum citratum.

Lycaste Balliæ, with no fewer than thirty flowers, was brought up by Mr. Thorne, gardener to Mrs. W. J. Joicey, Sunningdale Park, Sunningdale, and was greatly admired.

Some white forms of Cattleya Trianæ were submitted by Mr. W. A. Manda, St. Albans.

Mr. C. J. Salter, gardener to W. Cobb, Esq., Rusper, Horsham, showed Cypripedium Euryades, New Hall Hey var., one flower having two well-developed dorsal sepals; Odontioda Bradshawiæ, Odontoglossum blendum, and the brilliant crimson-scarlet Sophrolælia Psyche were also sent from Mr. Cobb's collection.

Mr. E. V. Low, Hayward's Heath, presented a number of spikes of Cymbidium insigne, white forms of Lycaste Skinneri, Cypripedium Œdippe, a fine form of C. Harefield Hall, and Odontoglossum Rolfeæ.

Calanthe Baron Schroder was shown by Mr. Metcalfe, gardener to Sir Julius Wernher, Bart., Luton Hoo, who staged thirty-three spikes. Calanthes Baron Schroder var. albiflora (A.M.), a variety with fine white sepals and petals, and carrying two splendid spikes, came from Baron Bruno Schroder (grower, Mr. Shill), The Dell, Egham.

Messrs. Charlesworth and Co., Hayward's Heath, presented a delightful display composed chiefly of odontoglossums and odontiodas. Of the former, the most prominent were O. Lambeauianum, O. Wilckeanum, O. armainvilliersense xantholes, and O. Phoebe. The odontiodas were O. Cooksoniæ, O. Bradshawiæ, O. Keighleyense, O. Charlesworthi, O. Lutetia, and O. Craveniana. Miltonioda Ajax and Brasso-cattleya Maroni were also very well shown.

## FRUIT AND VEGETABLE COMMITTEE.

Messrs. Sutton and Sons, Reading, exhibited an interesting collection of hardy winter vegetables, the set including salsify, turnips, Stachys tuberifera, artichokes, Kohl rabi, leeks, broccoli, savoys, Brussels sprouts, kale, scorzonera, carrots, and winter radish.

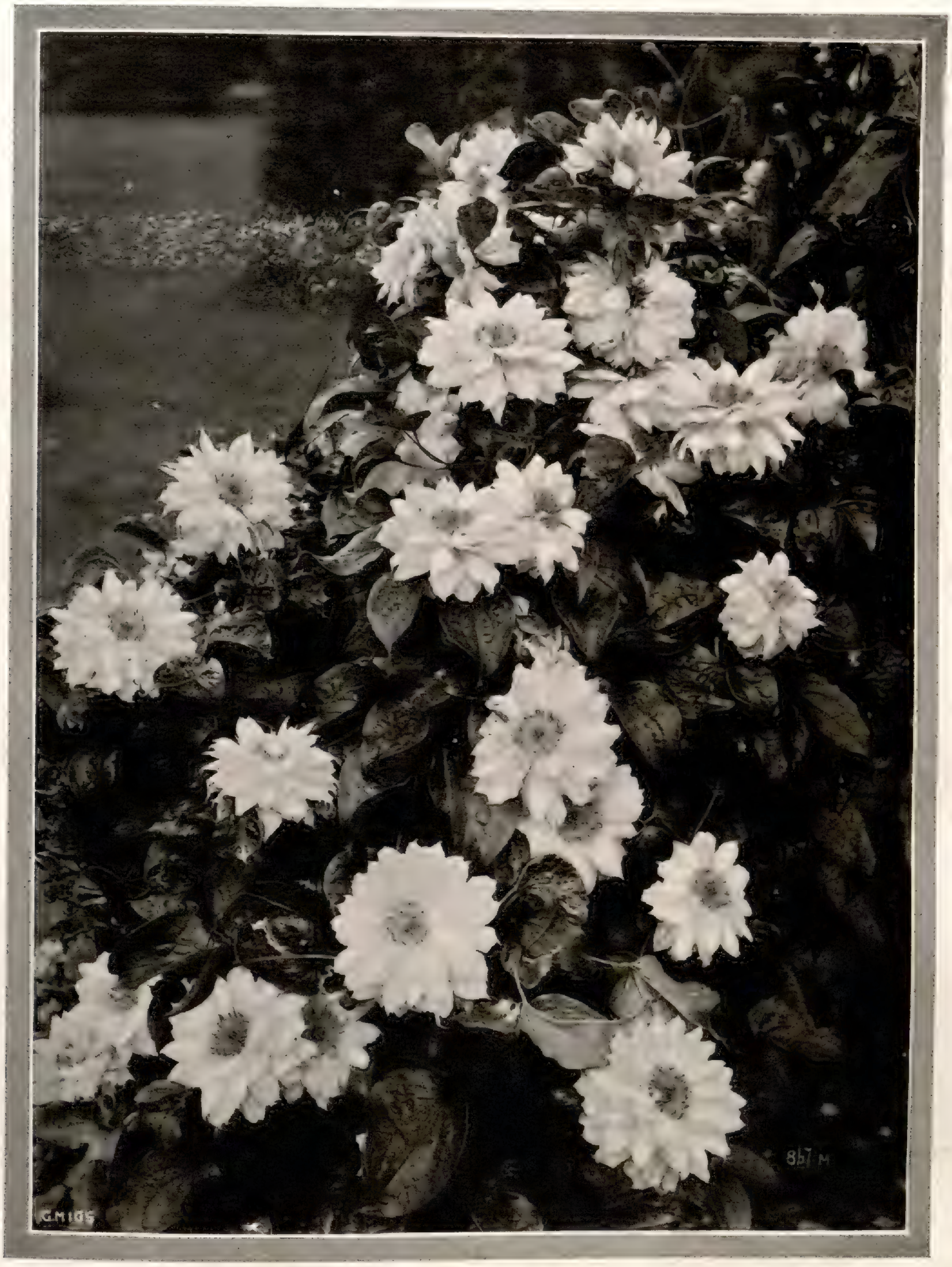
Mr. Hogbin, gardener to Lord Falmouth, Castle Mereworth, set up two dozen dishes of apples; Smart's Prince Arthur, Annie Elizabeth, Newton Wonder, and Shephard's Pomona were the best examples.

Some excellent apples, fine in colour and size, were exhibited by Mr. A. W. Metcalfe, gardener to Sir Julius Wernher, Bart., Luton Hoo, Luton; the varieties were Annie Elizabeth and Lane's Prince Albert, preserved in the new fruit room erected at Luton Hoo last year.

For Awards and Medals see page 165.

## GARDEN CLEMATISES.

The various kinds of garden clematises are amongst the most showy of hardy climbers, and the only point that can be urged against their general cultivation is that they sometimes die suddenly without any apparent reason when in full growth, and, to all appearances, in first-rate condition. In some gardens this has occurred repeatedly, and it is difficult to assign a reason. It may be that high breeding and intensive propagation have weakened the plants, thereby making them peculiarly susceptible to disease, or, what is quite likely, they may be liable to sunstroke. Whatever is the cause, species and botanical varieties, planted under exactly similar conditions, grow freely, and it is rarely that one dies in the same manner.



CLEMATIS DUCHESS OF EDINBURGH.

A beautiful garden hybrid with large white, sweetly scented double flowers.

The most satisfactory results appear to be obtained from planting these clematises in positions where the soil is cool, and where the lower parts of the stems are not exposed to bright sun, for it has been observed that plants which are planted against the shady side of a trellis or wall, but have their upper parts exposed to full sun, thrive well; thus it would appear desirable to shade the roots and lower parts of the stems, but let the upper parts have as much sunlight as possible. Suitable positions for clematises may be found in most gardens, for they may be grown against walls, on trellises, pergolas, fences, arbours, on old bushes, or over rough posts. Wherever they are grown it is necessary to provide fairly good loamy soil; the addition of chalk, if the soil does not naturally contain much lime, is attended by good results.

The annual pruning of many clematises is a necessary business, for the best results are only obtained when there are plenty of strong, vigorous young growths. As the pruning of the several groups requires to be done somewhat differently, attention is directed to the work under each group as it is described. The propagation of the various garden clematises is usually carried out in one of two ways, either by grafting upon pieces of root of the common C. vitalba in spring, or by means of cuttings. They are grown in pots until ready to place in permanent positions, which is usually within twelve months of the time of propagation.

In addition to their being grown out of doors, a large number of young plants are flowered in pots for greenhouse decoration in spring, while now and then one finds large pot plants, trained on wire balloon-shaped trellises, which blossom very freely. In the northern parts of the country, it not infrequently happens that the latter varieties are used as cool greenhouse climbers, and as such they give excellent results.

The garden varieties of clematis are divided into the following groups: Patens, florida, lanuginosa, Jackmani, viticella, and coccinea.

C. patens, the type of one of the earlier-flowering groups, is a native of China and Japan, from whence, according to Loudon, it was introduced in 1836. Its large blue flowers are freely produced during May and June. Any pruning which may be necessary must be left until after the flowers have fallen. Of the numerous varieties the following is a selection: Albert Victor, lavender; Edith Jackman, white, with a mauve tinge; Fair Rosamond, white; Lady Londesborough, silver-grey, with a reddish bar to each sepal; Mdlle. Torriana, rose, flushed purple; Mrs. George Jackman, white; Mrs. Quilter, white; and The Queen, mauve.

C. florida differs from the last-named by flowering two or three weeks later, and by having more formal-shaped, and sometimes double, flowers. It, like C. patens, flowers on the old wood, hence it must not be pruned until the flowers are over, and even then neither kind needs severe pruning, a little thinning being usually all that is required. It is a native of Japan, and has been in cultivation for more than a century. The flowers may be white or blue. Good varieties are: Belle of Woking, silvery-grey, double; Countess of Lovelace, bluish-lilac, double; Duchess of Edinburgh, white, double; and John Gould Veitch, lavender.

C. lanuginosa, a native of China, is the type of a group which is characterised by bearing very large flowers. These, in some instances, are from six to eight inches across, and the colour may be white, mauve, blue, or white, with stripes of other colours. As it blossoms in July and August from the current season's wood, pruning may be done in February. This must be fairly hard, for the previous year's shoots require cutting back to within a few buds of the older wood. There is a wide selection of varieties, and of these the following will be found worthy representatives: Alba magna, white, with a faint blue tinge; Anderson Henryi, creamy-white; Beauty of Worcester, bluish-violet, sometimes double; Duchess of Teck, white; Fairy Queen, flesh; Gloire de St. Julien, lavender-blue; Lady Caroline Neville, pale lavender; La France, violet; Louis Van Houtte, violet-purple; Madame Van Houtte, white; Marcel Moser, pale lavender, with reddish bars; and Nellie Moser, white, with red bar on each sepal.

C. viticella is a European species, which gives its name to a group that is rendered conspicuous by reason of its large quantities of elegant purple flowers, which are smaller than those of the other groups. The flowering time is from late in July until October, and the flowers are borne from young wood, therefore the branches may be pruned back to within a few buds of the base in February. There are varieties with red, white, and double flowers. Good ones are: Bicolor graveolens, yellowish-white; La Nancienne, violet, double; alba, white; rubra, red; Lady Bovill, blue; Madame Grange, crimson-violet; grandiflora, red; and Thomas Moore, violet.

C. Jackmani, the type of one of the most extensive groups, is a hybrid between C. lanuginosa and C. viticella. It blooms freely from July to October, the flowers being of a rich purple colour. It requires hard pruning in February, for the flowers are produced on the current year's wood. Among the many varieties, red, white, and purple-flowered kinds may be obtained. The following is a selection: Alexandra, purple; Earl of Beaconsfield, purple; Gipsy Queen, purple; Jackmani alba, white; J. rubra, red; J. superba, deep purple; Madame Edouard Andre, red; Othello, purple; Snow White, white; and velutina purpurea, purple.

C. coccinea differs from the other kinds by dying to the ground annually, and by its scarlet flowers being urn-shaped. Crossed with other varieties several showy hybrids have been obtained. Of these Countess of Onslow, purple, with red bands; Duchess of York, blush-pink; Duchess of Albany, pink; and Sir Trevor Lawrence, crimson, are showy kinds.

W. Dallimore.

## EARLY-FLOWERING CHRYSANTHEMUMS.

It is impossible to over-estimate the importance of early-flowering chrysanthemums. They are of immense value for beds and mixed borders, and for providing an abundance of flowers for cutting during the late summer and autumn months, they are indispensable. For this latter purpose a good number of plants should be put out in the reserve garden, which will prevent the necessity of cutting flowers from those in the beds. It is also advisable to retain a good stock of plants for refilling spaces which occur in the borders through the removal of plants that have ceased flowering. Occasionally failures happen with other subjects after being bedded out, and it is at such a time that the value of these early-flowering chrysanthemums is appreciated. They are very accommodating, and lift well if dull, showery weather can be chosen for the operation, and even in bright weather they stand the ordeal wonderfully well, providing a slight shading is afforded, and the plants are syringed for a few days.

### Propagation.

The most suitable time to take the cuttings is from the middle to the end of February. The stock roots, which have been in cold frames since being lifted and boxed, are placed in a newly-started fruit house in January, where abundance of material for propagating purposes will be in readiness by the time mentioned above. The cuttings are dibbled into seed boxes, which have been previously filled with light soil, having a layer of sand on the top. After being inserted, the cuttings are given a good watering, and allowed to remain in a little warmth to root. When top growth commences the tops are pinched out to induce side growths, the idea being to form bushy plants. As soon as the side shoots are in evidence, remove the boxes to cold frames, keeping them fairly close until they become accustomed to the change of temperature. After being in the frames for about a fortnight the young plants should be planted out in frames. Place about six inches of good soil in the frames, and plant at least six inches apart. A good watering should be given when planting is completed, and it is necessary to keep the frames shaded and fairly close until the plants are established. After this the shading can be dispensed with, and air gradually given until the weather allows full exposure. The extra trouble caused by the frame culture is well repaid, and splendid plants will be in readiness for putting out.

### Planting.

The most suitable time for putting the plants into their outside quarters depends a great deal on locality. In the southern counties, the end of April is generally safe, but in the colder districts the planting must necessarily be delayed until later. If possible, a fresh site should be selected annually, for there is nothing more conducive to the welfare of these chrysanthemums than new ground. The distance they are to be put apart must be governed by the habit of the varieties grown, generally speaking, from two feet to two feet six inches between the plants will be found ample space.

One stake is quite sufficient for supporting the plants, and, as growth advances, the shoots must be looped to it. It is very beneficial to the welfare of chrysanthemums to stir the surface of the soil frequently, and a slight dressing of some approved artificial manure given occasionally will prove of great assistance.

### Varieties to Grow.

The list of early-flowering chrysanthemums now on the market is an extensive one, and those varieties mentioned below are only a few of the many obtainable: Bronze Goacher, bronze; Carrie, yellow; Crimson Marie Masse, crimson-bronze; Crimson Queen, crimson; Goacher's Crimson, bright crimson; Goacher's Pink, fine pink; Harrie, orange; Harvest Home, orange and crimson; Horace Martin, yellow; Improved Masse, lilac; Le Cygne, white; Market White, good white; Mrs. W. Sydenham, dark crimson; Norbet Puvrez, salmon; Ralph Curtis, creamy-white; Robbie Burns, rose; Roi des Blancs, white; Roi des Precoces, bright crimson; and Wells' Scarlet, scarlet terra-cotta.

Gnaton Gardens. E. C. Pooley.

## REVIVAL OF THE HULL CHRYSANTHEMUM SHOW.

It is pleasing to hear that this show is to be revived after a lapse of eight years; it would be better news to hear of more revivals, but I fear the opposite is rather the tendency. The Hull show is to extend over two days, and I am sure all will wish it a long term of prosperity.

There were four outstanding features in the late shows that are worthy of special mention. Firstly, the extraordinary punctuality and readiness for the judges; at two minutes to 10 a.m., Mr. Dixon could be found in front of the clock with bell in hand to give the signal to clear. If some other societies would copy this system, it would be the better for exhibitors and judges alike. Secondly, this society was the pioneer of showing how effectively large-flowered chrysanthemums could be disposed along with foliage plants to produce a bold, yet artistic and harmonious effect. Thirdly, it initiated the idea of table decoration by artificial light, thus thoroughly representing what a dinner-table design should be, and how effective chrysanthemums could be employed in conjunction with any natural foliage. This is all too often a source of argument and dissatisfaction at autumn shows, as exhibitors are at a loss to know how to arrange their tables, whether for daylight effect or for artificial light. With good prizes and stringent regulations, there was no room for argument at the Hull displays. Fourthly, the extreme courtesy and consideration that was shown to all concerned was especially noticeable.

Many persons may wonder how, with all these good qualities, the Hull Society ceased to progress, and indeed closed down. I may or may not be right in my answer to such an enquiry, but, having acted as one of the judges for many years, I saw exhibitors gradually dropping off, and this undoubtedly was the principal cause of decline in the receipts. Fifteen years ago there was a strong tendency all over the country to offer extra large and tempting prizes for cut blooms; these were naturally sought after by the leading exhibitors, and as Hull is geographically situated out of the direct line from one large centre to another, the society suffered, as exhibitors found it easier to get to York, Sheffield, Bradford, Leeds, etc., than to Hull; hence the show lacked the support of exhibitors, and this had an adverse effect upon the attendance.

E. Molyneux.

## CARNATION MAY DAY.

During the past two or three years a considerable number of perpetual carnations of quite exceptional merit have been introduced to cultivation, and prominent among them is the charming variety, May Day, which at once obtained attention, and is regarded with much favour by cultivators. This excellent carnation is of American origin, and was introduced to this country in 1909, and made its appearance at the English exhibitions in the year following, when it was recognised as possessing merit of a high order. At the exhibition held by the Perpetual Carnation Society, on June 9, 1910, it received the award of a First-class Certificate, and was one of the three varieties with which Mr. W. Wallace, of Eaton Bray, won the American Carnation Society's silver cup, offered as the premier award for three vases of American novelties.

The flowers of May Day are large in size and of fine form, with shell-like petals and borne on long, stiff stems. The colour is salmon-pink, with satin-like finish. Its free growth and abundant and continuous flower production render the variety equally valuable in private gardens and commercial establishments.

## COLOUR.

The question of which of the two organic worlds, the vegetable or the animal, presents the wider range and greater brilliancy of colour, is a very open one. The flower lover would, at first sight, be fully justified in claiming pre-eminence in that respect for his pets, but both the ornithologist and the entomologist could cite plenty of ground for, at any rate, an equality, and when we come to the sea anemones, many seaweeds, and also many fish, especially tropical ones, we shall certainly find that even our richest rainbows of the floral world find worthy rivals in many sections of the other realm of life. How colour is produced is, in many instances, somewhat of a mystery. Actual pigments are by no means necessary, as the very rainbow itself proves. The most brilliant and the purest tints can be produced by mere molecular conditions which tend to break up the pure white light of the sun into its constituents and convey them to the wonderful nerve system of our eyes in such a way as to produce the most diverse effects. Thus it is with the beautiful tints displayed by the opal, mother of pearl, etc., in the inorganic world, and many of the tints of feathers of birds, and scales of butterflies, are doubtless due to light refraction more than actual pigmentation or presence of actual colouring matter. Whether, however, the colours we perceive are due to refraction or pigments is rather a distinction without a real difference, since even in the pigments their colour is only due to decomposition of the white light rays, part of whose component colours they absorb and reject the rest to act upon the optic nerves and so convey a special colour impression to the brain.

Therefore it is obvious that the colour we perceive is not really an innate quality of the object seen, but a quality which it refuses to retain. In the plant world the prevailing colour is green due to the general presence of those tiny grains of chlorophyll which practically do all the vital work of the world by utilising the vital forces inherent to the sunbeam, and by its aid working up gas and inorganic material into assimilable nutrition for the animal world which cannot do such work for itself. It is mostly in the flowers that other colours are displayed, generally in their petals and corollas, but sometimes, as in poinsettias and hydrangeas, associated leaves are so modified as to display brilliant colours instead of chlorophyllic green, and thus indirectly produce the same effect as brilliant petals by attracting the insect world to act as fertilising intermediaries. The infinite delicacy of the evolution of colour in flowers is seen in the fact that their tints often pass through various grades of change during the transient life of the blossom. Each of these changes means some subtle alteration in the power of selection of the light rays to be absorbed or rejected as explained above. As a result of selective cultivation, flowers have often been induced to assume quite other tints than the normal wild ones, and occasionally, and not rarely, we find one and the same plant suddenly producing "sports" quite distinct in hue from the type.

CARNATION MAY DAY.
A distinct American perpetual-flowering variety, with finely-formed flowers of a bright salmon-pink hue.

Mr. E. A. Bunyard, in a very interesting lecture at the Horticultural Club, demonstrated that such changes may not be due to the actual introduction, as it were, of differently coloured pigments, but that colours were often due to varied pigments arranged in superposed cell layers. These pigments consisted of coloured grains, with interstices between them, and a very slight change in the position of the containing cells sufficed to show one layer through the other or to hide one entirely beneath the other, as the case might be, and thus produce a quite different colour effect upon the eye, though the actual materials present were identical. From this we can see that very slight constitutional changes in a plant may produce very marked differences. It is a curious and interesting fact that, although, as we have said, chlorophyll in its normal green state is the prevalent tint of vegetation during the active period of growth, it is yet capable when that period ends, and its work is finished, of displaying in its decay in the autumn such a brilliant and varied garment of colour as then clothes our landscapes in a myriad other tints, as if it almost seems tired of its unassuming working vestments.

C. T. D.

## FOLIAGE BEGONIAS.

Though many of the begonias that are grown for the sake of their beautiful flowers have very ornamental foliage, the section to which the term "foliage begonias" is generally applied consists of the numerous garden forms of Begonia Rex and hybrids obtained between it and a few other species.

Begonia Rex itself is a native of Assam, and was introduced by M. J. Linden, of Brussels. In an interesting catalogue now before me, namely, that of Messrs. William Rollinson and Sons, of Tooting, containing the new and rare plants for distribution during the spring of 1858, Begonia Rex is there offered for the first time at a price of two guineas each. Accompanying the description is a notice to the effect that the above-named firm had purchased the above plant for distribution throughout Great Britain and Ireland from that eminent botanist, M. J. Linden, of Brussels. Despite the fact that Begonia Rex was at the time of its introduction so much admired for the beauty of its foliage, it was not until 1884 that it was given a First Class Certificate by the Royal Horticultural Society.

Now it has proved so variable in itself, and has been crossed and intercrossed in such a manner that these "foliage begonias" form an extensive class in which the markings of the leaves, the size thereof, and the rate of growth differs considerably. Among the more delicate, yet at the same time exquisitely coloured, forms, are some varieties raised on the Continent between the members of the Rex section and the pretty little Begonia decora, which was introduced from Penang by Messrs. J. Veitch and Sons, and sent out in 1893. Messrs. Sander, of St. Albans, also raised and distributed, about ten years later, some fine varieties, the result, I believe, of crossing B. Rex and B. Bowringeana. Noteworthy among these last are His Majesty, Fearnley Sander, and Mrs. H. G. Moon.

These foliage begonias are of considerable value for various decorative purposes. In the first place, where there is an arrangement of rockwork in a warm house, they are seen to considerable advantage thereon, while for furnishing a back wall they are equally useful. The fact that they will thrive in a somewhat heavily shaded position stands them in good stead for this purpose. In order to clothe a wall it should be faced with wire netting, standing out a little distance therefrom, and the intervening space filled with a mixture of fibrous peat and sphagnum moss. In this small plants should be inserted as the rooting material is gradually built up, this method being preferable to sticking in the plants after the soil is placed in position.

Grown in pots five inches or six inches in diameter these begonias are available for the edging of groups or for decorative purposes in different ways, while in small pots the bronzy tinted varieties have an extremely pretty effect when dropped into some of the small metallic jardinières now so much in vogue. Although they will not stand a great deal of exposure, yet the plants quickly recover from any injury when they are returned to more favourable quarters.

As is well known, their propagation by means of leaf-cuttings is a very simple matter, and if the mature leaves are laid on a pan of sandy soil, held in position by a peg or two, and the midrib and principal veins divided in a few places, young plants will be quickly pushed up from the surface of the cuts, and when large enough they can be potted singly. Where a bed of cocoanut-fibre refuse, with a supply of bottom-heat, is used, in which to plunge plants of different kinds, the leaves may be laid on the surface of the bed without any covering, and under these conditions a stock of young plants can be readily obtained.

I was particularly interested last autumn in a house of these begonias at Chelsea, the plants being neat, well furnished examples in 5in. pots. With such a number of beautiful forms, it was difficult to make a selection, but the following were recorded in my note-book: Adolphe Pollock, bronzy-green, with silver markings; Brian Boru, bright green and purple, with silvery band; Catherine Schmitt, bronzy-green, dark margin, blotched white; Chicago, silver ground, green edge, dotted silver; Etoile d'Argent, silvery-pink; Finette, curiously freckled; Gaspard Crayer, dark green, heavily spotted white; His Majesty, carmine-rose; Lecontre, silver ground, spotted green; Isabella Bellon, silvery-red, purple shading; Masterpiece, silver ground, dark purple centre; Mrs. H. G. Moon, silver ground, carmine centre; President Carnot, bronzy-green, spotted silver; Remily, silver ground, rose margin, green centre; and The Queen, bronzy-purple, margin and centre edged green, with silver dots. W. T.

## GRASS ORCHARDS.

Recently the oft-recurring subject, whether or not a verdant covering of grass over the roots of fruit trees, but more particularly apple trees, is a disadvantage, has again been discussed in the horticultural Press. Much has been advanced, both for and against the system of grass culture, and the whole question would have, in all probability, again relapsed in the same indecisive state as before had not the results of the Woburn experiments been made known. These experiments, which, by the way, are far more conclusive and reliable than any that could be conducted in a private establishment, go to prove that a thick covering of grass is detrimental to the health and fruitfulness, as well as to the longevity of fruit trees. That rank herbage covering the entire surface of the soil should have an adverse effect upon the health and fruitfulness of the trees is easily conceived, but that this should cause their untimely death seems a more dubious point, especially when it is considered that there are great numbers of old trees in all parts of the country, in health and vigour, whose roots have been covered by grass, close cropped by animals, it may be, for the greater part of a century. Many of these, of course, may be survivals of extensive plantations, their companions having succumbed to untoward circumstances; still it would not be difficult to discover regularly planted plots of thriving trees, with, to all appearance, soil enveloping their roots, that had remained untouched by any implement since the time of planting many years ago.

A grass-covered orchard of fruit trees has a great fascination for most persons, and, to my view, a no more fitting adjunct to a farm house could be imagined, as, apart from its value for fruit producing, it only requires surrounding by a substantial hedge to make it an ideal nursery for young stock in the early and most trying months of the year.

Allowing that a long-continued covering of grass-turf is injurious to the trees, still it is not difficult to compromise the matter by cultivating a portion of a given area each year, or, if little or no value is set, as stated, upon the grass in early spring, the whole plot may be done at one time. This at first sight suggests a complete change from grass to fallow, but, except for a short time, it really is not so. Turf turned with a spade at any time through the winter months, or even as late as April, completely hiding from view all trace of verdure, will by midsummer have regained all its wonted greenery, and, if not fed off by animals, will require the aid of the scythe to render it comfortable to traverse.

There are here two plots or orchards adjoining, each about an acre in extent. One of these was planted about thirty-five years ago, the other scarcely twenty years. The former was cultivated upon the surface for about ten years, when the task that keeping down weeds implied led to its being sown out with grass seeds. The latter has always been cultivated—that is, the hoe and rake are used during the summer and autumn, and in spring, when pruning and cleansing of the trees is accomplished, the whole surface is pointed over with a fork, this latter process being done to facilitate the summer work rather than from any good results supposed to arise through disturbing the soil more deeply. Upon the first-named plot the turf is turned at intervals, sometimes two or three years intervene, but, other work permitting, every alternate year is favoured. Last winter the whole orchard was thus turned, and at present, except for a slight roughness of surface, no one would suspect that it had been disturbed. As hinted, time cannot be found annually for this, though the work can be proceeded with when most other garden operations are at a standstill. Where any fear exists of grass being injurious to fruit trees, a space from four to six feet around the bole of the tree treated in this way will, I think, set all fears at rest. In carrying out the work the workman should be instructed to insert the spade in a sloping direction, whereby a turf about two inches in thickness throughout is raised, and is then turned into the space it was taken from, but the reverse side uppermost. A good workman will do this in such a way that an almost level surface is presented when all is finished.

The greatest advantage gained, so far as I have been able to observe, is that of moisture to the tree roots, for a thick mass of grass and its fibrous roots absorbs so much of the rainfall, especially after seasons like last that the trees suffer accordingly, and have no chance to recuperate their energies until the winter is far advanced. With upturned turf, however, this is reversed, and the decaying herbage must be very helpful as a manurial agent.

In conclusion, I may add that, between the trees and the crops produced in the two plots mentioned, little or no difference is manifested, when the disparity between their age is allowed for; while the grass-covered area takes considerably less time and labour to keep in order compared with the other. James Day.

Galloway House, Wigtownshire.

**Fruit Trees** of all kinds intended for walls or wires should, where space permits, be bought in as maidens and trained according to one's own ideas. Peaches, plums, apricots, and cherries may be built up to fair sized trees, and by moving them every two years the roots are in a splendid condition when required to fill a vacancy on the walls, and if transplanted early in the autumn there is a reasonable prospect of a light crop the following year. The future well-being of the tree depends upon the stock; the union of stock and graft must be clean and without blemish; failing this the tree may as well be consigned to the garden fire.—W. Messenger.

## FAIR BLOSSOMS OF SPRING.

First comes the almond, wild-rose pink against the skies of blue, though the ground beneath may be snow covered, for the tree remains true to its Hebrew name of "shakad," which means "wake early." On the reverse of every petal lies a metallic sheen, that caused the poet Moore's description in the lines:

> "The dream of a future happier hour
>   That alights on Misery's brow
> Springs out of the silvery almond flower
>   That blooms on a leafless bough."

There is a classic legend about this tree, well meriting remembrance. After the siege of Troy, Demophoon, the son of the famed Theseus, was shipwrecked on the coast of Thrace, and there fell in love with the beautiful Thracian queen, Phyllis, whom he wedded. The royal consort went back to Athens on his father's death, promising to return to his wife within a month. On his failing to appear, the young bride died of grief, and was transformed into an almond tree. The husband, when at last he revisited Thrace, petitioned the gods, and offered sacrifices, but the only consolation vouchsafed to him was that the almond immediately blossomed in midwinter, and continues to do so to this day.

A more practical fancy is that when the tree has an unusual amount of bloom it presages a very good season for all fruits of the earth.

The poetic symbol of the snowdrop is generally supposed to be Hope, but most ancient writers on the language of flowers give it as "a friend in need," or "consolations of friendship." There is a tradition that snowdrops are always to be found in bloom on Candlemas Day, the second of February; that they represent the white doves offered by the Virgin Mary in the Temple. The Latin name, Galanthus, merely signifies milk-flower.

Who does not love the daphne, which, like the almond, blooms in February along boughs devoid of foliage, but afterwards becomes clothed in splendid green garments embroidered with scarlet berries? The scent is indescribably sweet, one little bush making its presence known half across a garden. Mezereon is its old-world name, and, alas! it is the emblem of coquetry. It is a dangerous beauty to grow where children play, for the fruits are poisonous, though a valuable medicinal drug is manufactured from its bark. There is a wonderful variety known as the "lace-wood" of Jamaica, the inner bark of which can be pulled out in lengths until it resembles lace of finest kind. Charles II. used to wear a cravat of this, which had been sent to him by a Governor of Jamaica.

How strangely pathetic is the record of the Laconian festival of Hyacinthus, the beautiful youth who was killed by the throwing of a quoit by Apollo, but directed out of its proper course by the jealous blowing of the breath of his rival, Zephrus. We are bade believe that the familiar flower sprang up out of his blood. The festival was an annual one of grief, lasting three days, during which time prevailed the peculiar custom of eating sweetmeats instead of bread, while the wearing of garlands was strictly forbidden.

Then there is the beloved "polyanthus of unnumbered dyes," believed by the Greeks to have sprung from the ashes of Paralisas, a youth who pined to death for love; the nodding daffodil, containing the tears of vain Narcissus; and the primrose, known to the Swedish villagers as "the Key of May."

We may note, too, in our gardens the wallflower, "faithful in misfortune"; the tear-decked Crown Imperial, or "mourning widow"; while later blossoms the lilac, the beauty of which caused the Dutch painter, Van Spaendoul, to throw down his brush and nearly die of melancholy.

M. H.

## SAINTPAULIA IONANTHA.

This beautiful and useful little plant is of comparatively easy culture, and, grown in successional batches, will make an equally fine display at any season. Having selected a finely-coloured form from a batch of seedlings raised some time ago, I now prefer to raise the plants from leaves. On a small space under the stove staging and towards the light, covered with about an inch of loam, leaf-mould, and sand in equal parts, the petioles of the leaves are inserted fairly firmly, after being broken from the plant. I find that cutting seems to induce damping.

The damping down of the stove provides sufficient moisture, and in a month plants have formed sufficiently large to pot into small 60's. The compost used consists of two parts good loam, one of peat, one of leaf-mould, and one of sand and burnt earth or wood ashes in equal proportions. If the soil is in good condition they will not require watering for a few days, nor should they be watered at any time unless they are approaching dryness. The stove shelf will provide a good place for them. While in the small pots keep them to a single crown, for probably many crowns will form. When well rooted, pot rather firmly into 54 or 48-sized pots, using the same kind of compost as before; still water carefully until the pots are well filled with roots, when an occasional watering with water containing a little fertiliser will materially assist them.

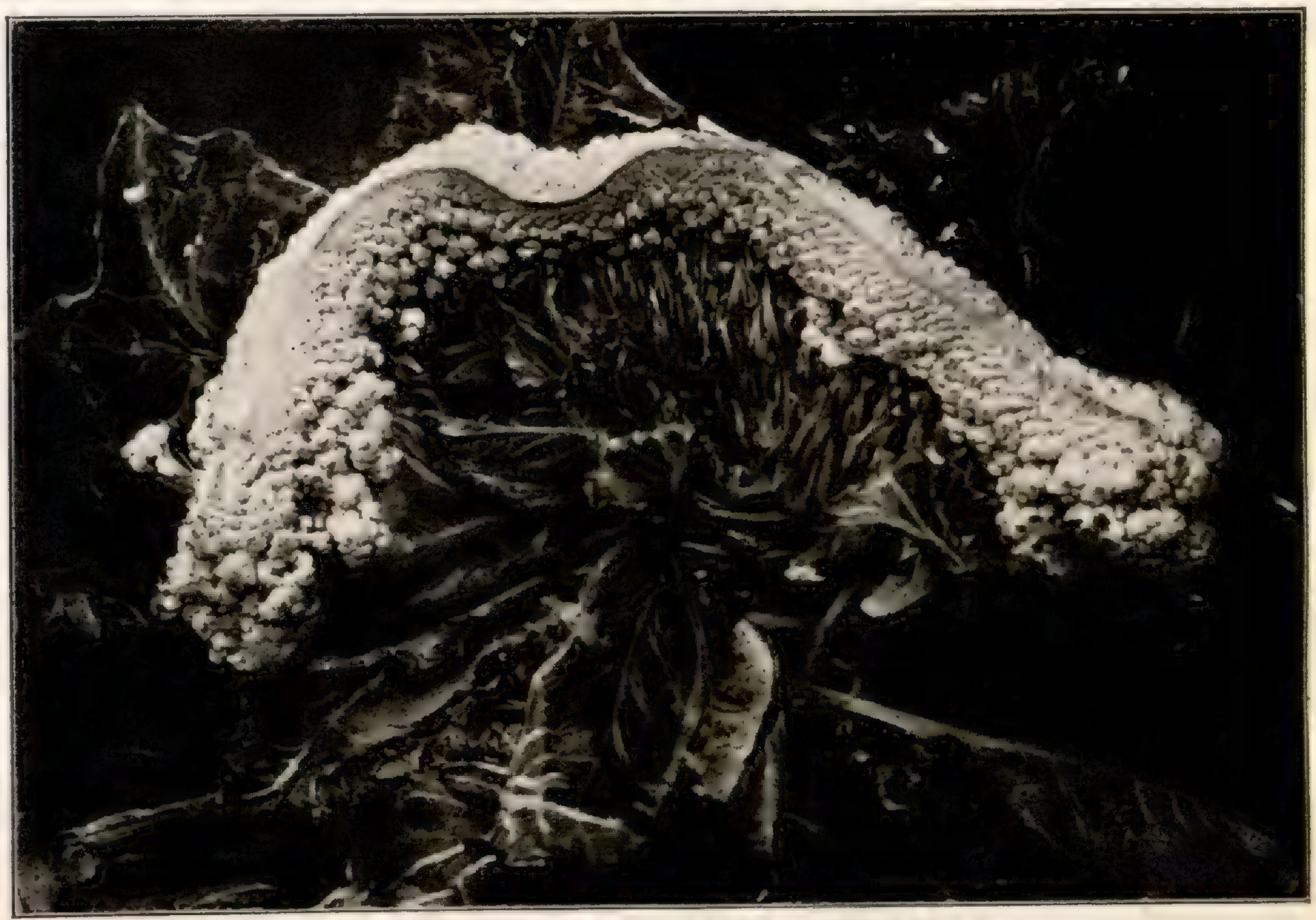
Keep the flower spikes picked off until the plants have well developed, and they will be in full flower within a month of the time picking out ceases, and will last good for fully two months if fallen blooms are not allowed to remain on the plant to cause damping. Propagate in January or February for autumn flowering; in May for winter-flowering; and for flowering in April and May propagate in September.

H. Prime.

Hatfield House Gardens.

## A QUAINT COCKSCOMB BROCCOLI.

Nature performs some quaint tricks, and not seldom takes advantage of man's most careful developments and improvements to carry them out. Fasciation is one of the commonest of these tricks. Members of the cabbage family often seem to go out of their way to be funny, and most of us have seen cabbages producing funnel-shaped leaves instead of the ordinary ones. A short time ago Mr. S. B. Dicks, of Messrs. Cooper, Faber, and Co., Southwark Street, kindly sent us a photograph of a Cockscomb Broccoli that appeared in the garden of Mr. C. Knight, of Cranley. In this instance the head, instead of growing in a cockscomb fashion, as illustrated, and at a little distance was remarkably suggestive of some weird antediluvian reptile.



A CURIOUS COCKSCOMB BROCCOLI.

## LONICERA FRAGRANTISSIMA

This is one of the earliest honeysuckles to blossom, for its flowers appear with the earliest days of the year when the weather is favourable. It is a Chinese shrub growing to a height of 5ft. or 6ft., suitable for planting in a sheltered position in a shrubbery. Although in mild winters it may assume a semi-evergreen character, the leaves usually fall before mid-winter, consequently the flowers are seen to greater advantage if an evergreen background is afforded. The flowers are usually borne in pairs from the leaf axils, and they are white in colour and fragrant.

A second species, L. Standishi, blossoms about the same time. It is also a Chinese plant, and the two are sometimes placed under the same name, although they are distinct in every way, except that they bloom at the same time. L. Standishi bears much larger leaves, which are hairy, whilst those of the other species are almost glabrous. The leaves of L. Standishi fall at the normal time, about October, while those of the other species are retained much later. The flowers of L. Standishi are cream-coloured, but, like those of L. fragrantissima, are sweet scented. Both plants thrive in loamy soil, and are suitable for lifting and placing in pots for greenhouse decoration in winter. Sprays of flowers are useful for arranging with more showy subjects, on account of their fragrance.

W. D.

## THE KAMTSCHATKA STONECROP.

The stonecrops are so numerous and diversified in character and colour as to form a large and highly interesting group of plants, and a selection of the more distinct and beautiful kinds would, if placed under the conditions favourable to their full development, constitute an attractive feature. Stonecrops are of much value in gardens that are naturally warm and dry, and they are especially adapted for the furnishing of hot, dry corners, in which it is difficult to successfully cultivate plants otherwise than those of a succulent nature.

THE KAMTSCHATKA STONECROP (SEDUM KAMTSCHATICUM).
A handsome free-growing species, bearing a profusion of yellow flowers.

Some of the stonecrops grow freely and appear to the greatest advantage when growing on the ledges of the rock garden, while others thrive in the hardy flower border, provided the soil is well drained and they are not allowed to be overrun by strong-growing kinds belonging to other classes of hardy plants. The Kamtschatka Stonecrop (Sedum Kamtschaticum), of which a fine group is herewith illustrated, belongs to the second of the two sections, and when growing under suitable conditions is so attractive as to fully justify the high estimation in which it is held by those who are acquainted with its merits. This species grows from six to eight inches in height, the stems purple-green, and the ovate leaves with which they are furnished are green and dentate towards the apex. It blooms in September, and the comparatively large flowers are bright yellow, and borne on flower stems four or five inches in length.

There is no difficulty in growing this stonecrop to a high degree of perfection. The bed or border should be sufficiently drained to allow the surplus water to pass away readily, and, if the soil is close and tenacious, a liberal dressing of leaf-mould and coarse grit, such as the sweepings of gravel walks, will be beneficial. In common with other stonecrops, this species is readily propagated by division, in the spring, when new growth is commencing.

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## RANUNCULUS RUTÆFOLIUS.

A graphic writer of works on alpine plants has gone into ecstacies about the Rue-leaved Crowfoot, and has been impelled by his admiration for it to bestow upon it the name of the Rue-leaved "Beauty Flower." One is not disposed to deny its beauty, but, on the other hand, one has met with many more delightful alpines of its class. Yet this Rue-leaved Ranunculus, Buttercup, or Crowfoot, has a charm which appeals to all who take pleasure in such plants as this, and when it is growing happily in the garden, its flowers are incontestably pretty enough, especially when we associate with them the dainty, rue-like foliage, to command and deserve a place in the garden.

This is a pleasing, rather prostrate, little plant from the high Alps, with neat, very finely cut, glaucous leaves, and wonderfully large flowers of white, with golden anthers, and reminding one of a glorified daisy at the distance, yet with all the character of the Crowfoots when seen near.

It is a slow-growing plant, especially if not supplied with all it prefers in the way of moisture. Planted on a bog, by the side of a stream, in shingly soil, or by a pond, it thrives much better than when in a drier position. Yet it can be cultivated quite well in a low part of the rockery, provided that it receives frequent soakings of pure water in dry weather in spring, summer, and even early autumn.

For its cultivation in such a place it should have a well-drained position, and preferably one which can be flooded at times, but will soon allow the water to percolate through the soil, and be carried away by the drainage. This appears somewhat paradoxical, but R. rutæfolius does not like stagnant moisture. It is a slow grower, and is a long time increasing much in size, so that division is not always possible, nor is it advisable. Where seeds can be obtained these may be sown as soon as they are ripe. The roots look as if they would lend themselves to propagation by root cuttings, but the writer has tried this unsuccessfully, and prefers raising from seeds to attempting this experiment again.

Growing only a few inches high, and having wonderfully large and pleasing flowers and foliage, Ranunculus rutæfolius deserves the consideration of alpine growers.

S. ARNOTT.

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**Perennial Asters.** — Michaelmas daisies can advantageously be planted now, and, if space permits, a border should be set apart entirely for them. A partially shaded position suits them well, and the ground should be deeply cultivated and well enriched for their reception. Roots that are capable of producing five or six strong stems are large enough to plant at each station, and it is well to allow from three to four feet between each plant. Many of the varieties introduced during recent years are very charming, as in numerous cases they produce flowers from almost the whole length of their stems, and they will well repay the grower for any pains taken with them.—J. GARDNER, Batsford Park Gardens.

## CATTLEYA LABIATA.

There is no cattleya more serviceable for decorative purposes than Cattleya labiata autumnalis, as it flowers principally through the months of November and December, when house and shooting parties are plentiful. The flowers are most acceptable for dinner tables and other decorations, and the cut flower growers in this country, on the Continent, and in America grow C. labiata more extensively than any other orchid, which alone is sufficient to justify its merits as being one of the most serviceable orchids in cultivation.

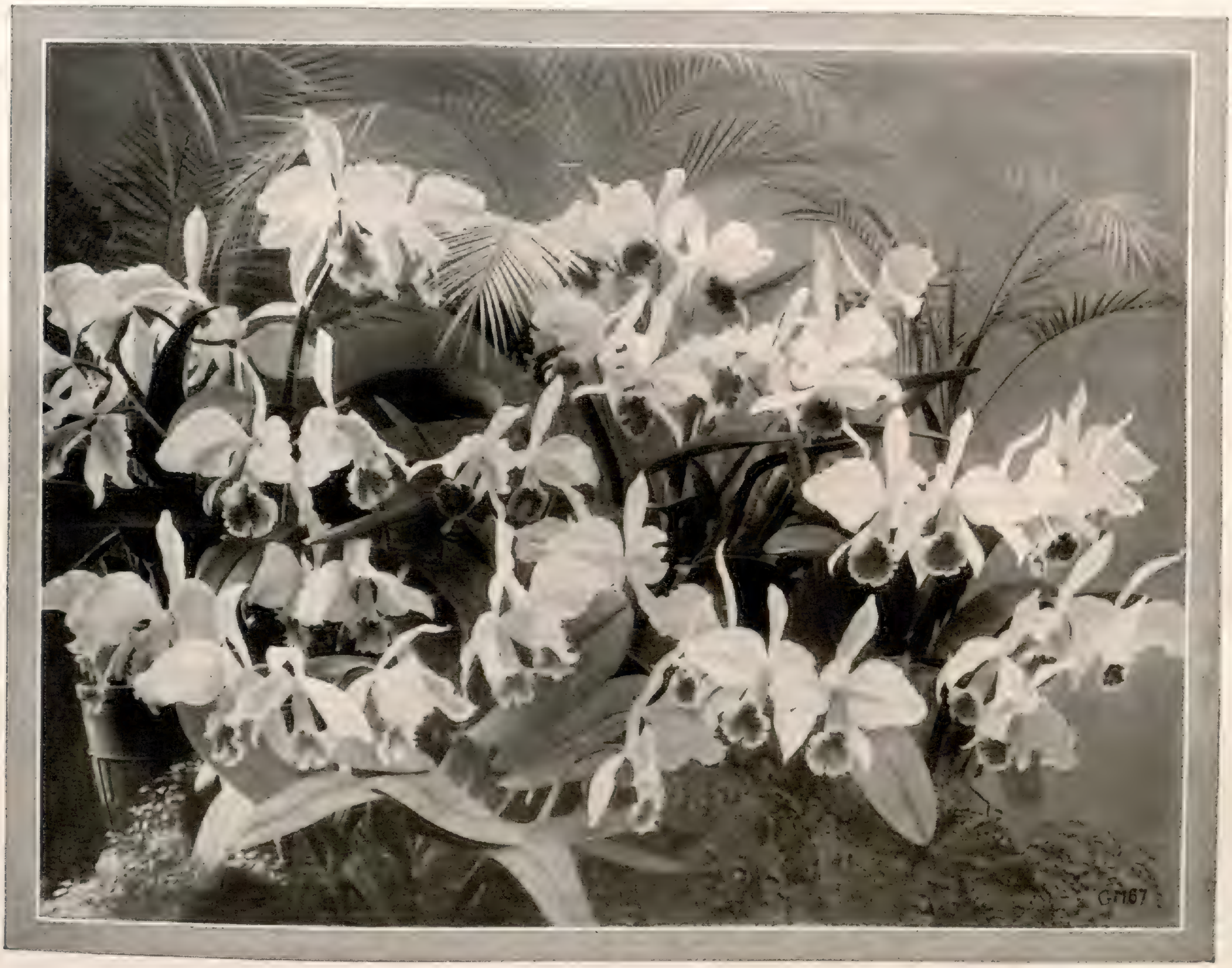
Since its re-introduction some twenty years ago, annual importations have arrived in this country at different seasons of the year, and it is really remarkable where the thousands of plants that have been imported have disappeared, and, what is still more wonderful, is the ready way in which the plants find purchasers annually, especially when the plants arrive in good condition and at a suitable season of the year. There can be no doubt but that the tractability of the plants when newly imported has had a considerable effect on the popularity of C. labiata. One finds plants growing satisfactorily for a season or more under the extremely diverse conditions and most unorthodox methods of cultivation. On one occasion, I remember seeing a number of plants suspended from the roof of a vinery, where they flowered most satisfactorily for the one season only, the cold resting conditions proving fatal to further experiments.

I have mentioned the ease with which the plants are managed when first imported for the special purpose of pointing out that after a few years' growth, under artificial conditions, as provided in our best equipped orchid houses, the coloured forms lose the vigour displayed when first imported, and this may, to some extent, be attributed to the free-flowering character of the species. We are not content with reasonable flowering and taking precautions to relieve the plants of their flowers within a reasonable time after they have become expanded. This does not apply to C. labiata alone, but to other cattleyas, etc., which are subject to deterioration after a few years' cultivation.

With the possibility of such deterioration it is advisable to procure a few imported plants annually. The plants are procurable for a modest outlay, well within the reach of the most humble amateur, and this offers opportunities of securing different varieties, as the range of colour, form, and substance in the flowers is very considerable. The extremely dark forms are almost as rare as the varieties with pure white flowers, or with white sepals and petals and a crimson front lobe to the lip, as seen in C. l. Cooksoniæ, etc. This expectation of good things gives added charm to cultivation. It creates a living interest that can scarcely be described, and it is this interest which has so greatly popularised orchid cultivation during the last few years.

The accompanying illustration is reproduced from a photograph by the writer, taken a little while ago in an amateur's collection. H. J. CHAPMAN.

Oakwood Gardens.



A GROUP OF VARIETIES OF CATTLEYA LABIATA.

## JAVANESE RHODODENDRONS.

No hard-and-fast line can be assigned for the flowering period of this group of rhododendrons, as, providing their requirements are understood, they will bloom more or less continuously throughout the year. In the first place, it must be borne in mind that, though frequently referred to as greenhouse rhododendrons, yet for their successful culture a temperature above that of an ordinary greenhouse is necessary. During the winter the thermometer should, if possible, not fall below 50 degrees, and this may rise 10 to 15 degrees in the daytime.

In summer no fire-heat will be required. It should also be borne in mind that the original species, from which the present-day garden varieties have sprung, are in a state of nature mostly epiphytes. Owing to this, it will be at once understood that dense masses of soil around the roots will be decidedly injurious; in fact, the pots should be efficiently drained, and the compost must consist chiefly of fibrous peat and sand. It should in potting be pressed down firmly.

Another point to bear in mind is that on the mountains of the Malayan Archæpelago, where the original species grow, there is a liberal amount of atmospheric moisture; hence, under cultivation this should, as far as possible, be maintained. Among the varieties there is now a wide range in the colour of their blossoms, from white to deep crimson, while in habit the plants vary greatly. W. T.

## SPRING TREATMENT OF LAWNS.

With the advent of springlike weather the grass on our lawns will show signs of returning life, and its encouragement will demand attention and care. During the autumn and winter months some lawns will have been top-dressed with horse-droppings and sand, to increase the fertility of the soil, some surfaced with other materials, and not a few left to the lowly worms to enrich with the earthy matter they have passed through their bodies. In all cases, advantage should be taken of a dry spell to brush harrow the lawn, and by this means spread the materials and work them in amongst the grasses. The usual method of brushing is to fasten a number of birch brooms on a gate-like contrivance, and draw this lengthways and crossways over the ground. Small depressions will be brought up to the level in the process, and strawy matter left in rolls ready to be raked off when the brushing is finished.

At this early stage of the grasses' growth it is not advisable to roll the ground, unless it is of a sandy nature. In this case solidity is wanted, and rolling is beneficial to that end. With soils of a tenacious nature, rolling, especially when the surface is at all moist, is most detrimental to the well-being of the finer grasses, as it seals up the air pores in the soil, and prevents either air or water passing through them. In this condition soil quickly becomes soured, the finer grasses die out, and coarse herbage, moss, and weeds, are the resulting survivors, making the lawn unsightly and unsuitable for games. I have frequently found that the unsatisfactory state of a lawn was due more to excessive rolling, or rolling when the soil was too soft, than to exhaustion of plant food. It is therefore advisable, when dealing with a lawn on a heavy formation, to exercise some judgment in rolling it.

Lawns in good condition, and those that have been surfaced with a rich organic material, will benefit from a top-dressing of 4oz. of slaked lime to the square yard in March. This should be passed through a fine sieve before it is applied, to secure evenness in its distribution. Where the herbage is thin, or the finer grasses scarce, a decided improvement can be effected by sowing seeds between the middle and end of April. For this purpose, the lawns that have been surfaced in autumn or winter, with rich manurial materials and brush-harrowed in the spring, will be in a condition to receive the seeds. The quantity of seeds to employ should, to a certain extent, be determined by the amount of herbage on the lawn, but, in any case, not less than 1lb. to 50 square yards (in sowing down a new lawn allow 1lb. of seeds to 30 square yards). Where seeds are to be used, the lime dressing should not be applied until the seeds are sown and rolled in. Lawns that have not been top-dressed should be scratched with a sharp-toothed rake to secure a bed for the seed, then sown, rolled, and dressed with lime.

Lime is advantageous to the seed in two ways, and sometimes three. It breaks up the plant food constituents in the soil, and makes them ready for the roots of the young seedlings; it tends to neutralise any acid formation in the soil, and is an excellent protection against the depredations of birds. Besides converting soil constituents into an available form of plant food, lime is itself a very essential grass food, and should be supplied annually where the soil formation is deficient in calcareous matter.

Pedestrian.

## CROAKERS.

What has produced the pessimistic tone pervading the horticultural world just now? Goodness only knows. But, read where you may, there is always someone bewailing the so-called fact, that things are not so well grown or exhibited now as they were when the writers themselves were in the arena; and deploring that there is nobody to take the exalted positions they occupied in their day.

Sometimes, Mr. Editor, I put it down to pessimism; at others, to failing eyesight and the need of new spectacles; while at other times I think they must have a fit of the "blues," and not content with themselves, and so sit down and write a tirade against modern things in general, and some subjects in particular.

Take a few recent instances—"the decline of the big chrysanthemum" will do for a start. We have had this bogey hustling around now for the past ten years, but the only result I can see is that exhibition Japanese blooms are grown and exhibited better than ever they were. No doubt the varieties have improved greatly during this period, but the cultivation has improved, at least I think so, and I have attended most of the Metropolitan shows for the last thirty years, besides a fair number farther afield. I do not say we have so many "giants" carting their flowers about from show to show as we used to have, but if we take each district we shall find just as many exhibitors in their respective places as formerly, but they do not travel so much about doing the National, Birmingham, Liverpool, Sheffield, Southampton, and Belfast shows all in one season, a tour one would describe as fashionable a decade or so ago. But because this class of exhibitor is a little out of date, it does not prove the decline in the big Japanese chrysanthemum.

Then take the dahlia world. Here we are constantly being told by the "croakers" that the introduction of the garden cactus varieties, the pæony-flowered form, and the collarette type, is going to ruin the prospects of the dahlia shows; and that, if it is persisted in we shall lose the exhibition cactus varieties altogether. But there is not the slightest prospect of this calamity in view, so far as I can see, for the popularity of the newcomers will only tend to still further efforts on the part of raisers and introducers to raise the standard of their exhibition forms.

Now we come to the fruits. If we only believed what we read, and not what we see, one would come to the conclusion that the art of grape growing was lost in the early seventies, and has never been found since. It is all very well to quote the huge bunches of those days, but when we remember they were mostly Gros Guillaume with their 23lb. weight, or Trebbiano, somewhat approaching 26lb., we ought to be thankful that such varieties are so rarely seen now. In spite of the "croakers," however, we can see a pretty good competition any season at Shrewsbury Show, or at any other show, provided the prize money offered is sufficiently tempting. The fine grapes are growing in the kingdom just as gloriously nowadays as they were thirty years ago—perhaps better on the average.

Now the poor old Primula sinensis comes under the ban. Why are primulas not grown so well as they were twenty years ago? This is becoming one of those hardy-annual questions we hear so much about. I maintain they were never better grown than at the present time; but times have altered, and instead of the large plants we used to grow in eight-inch pots, they are now mostly cultivated in the five-inch size. True the plants are not so large, but in these days of so much house decoration the old specimens would be too cumbersome to move about; and the handy plants in forty-eights, well grown, will give quite as good an effect. One might just as well argue that we do not grow ericas so well now as we did in the giant specimen days. But I maintain that those we cultivate to-day are far more difficult to manage, and grow satisfactorily, than were their gigantic forefathers, while they are far more suited to present-day requirements than were the specimen plants.

It is to be hoped, Mr. Editor, that with the coming spring these croakers will see matters more clearly and in a brighter light.

R.

## ROCK BORDERS.

The making of rock borders as a garden attraction is by no means to be despised, especially in gardens where no main rock garden exists. A border, set with small rocks, where one can grow many alpine plants within easy reach of hand and eye, and where one can utilise a background of bolder subjects, possesses many possibilities to the garden-maker.

For small gardens, or for edgings to herbaceous borders, there is nothing that gives more interest than low rock work of this description, and one may grow a wide and varied collection of plants, or specialise in just a few particular species and varieties. I have only to ask readers to recall the beauty of violas, of arabis, of saxifrages, cerastiums, rock pinks, thymes, and a hundred and one other subjects, to assure them that an effective display of beauty is readily possible. Indeed, it is often a very simple combination that produces the most pleasing effects. For instance, a combination of Iberis superba and I. corræfolia, with Alyssum saxatile is wonderfully pleasing in drifts of white and gold. Or equally charming would be masses of white mossy saxifrages, with the violet hue of Viola gracilis as a contrast.

The simple masses of floral beauty creeping over the grey stones to the pathway has much to commend it, and to those who tire of tiled edgings and box edgings I commend an edging of low rocks, laid informally on their natural bed, as being in all ways a pleasing change.

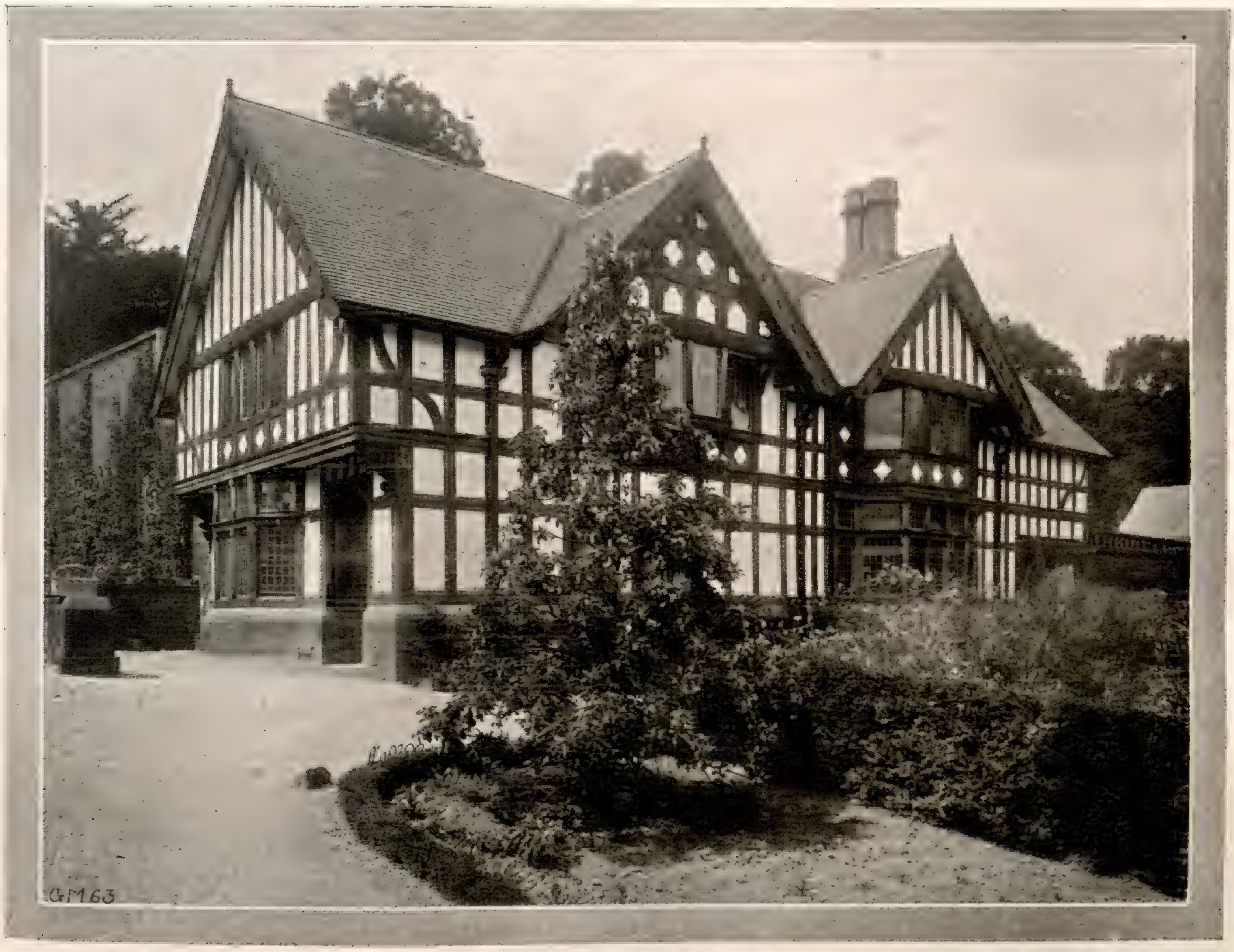
Another point, and this is illustrative of our own mode of working, is to utilise the rock border as a testing or trial ground for the rock garden. We raise so many plants to secure improved varieties that it has become impossible to give them full trial in the rock garden itself, so we have recourse to the border to give the novelties a fair trial and to enable us to make a selection of the best forms. A main feature this season will be a trial of violas and aubrietias, of which the plantings are fairly large; a run of 150ft. will be covered, and the effect should be distinctly pleasing. We hope to secure a few novelties in aubrietias which will be in advance of our last season's varieties, and in violas we hope to secure other improvements which shall be as pleasing and original as the yellow varieties of Viola gracilis were last year. It may be of interest to note that the whole of the violas we are testing will be of the V. gracilis type.

P. S. Hayward.

**Jasminium primulinum under Glass.**—In most parts of the country this comparatively new Chinese jasmine is of more value for flowering in the greenhouse than for out of doors. Generally speaking, it has not proved to be quite as hardy as it was thought likely to be, but at the same time it is very beautiful when the blossoms develop under glass. When grown in pots it needs a good sunny position during the summer, and in autumn when frosts appear it should be removed under cover. In a structure kept at 50 to 60 degrees it will commence to bloom by Christmas or thereabouts, and continue to be an object of attraction for some time. This jasmine can be readily struck from cuttings, and the young plants so obtained soon reach flowering size.—W. T.

# THE BOTHY AT POWIS CASTLE.

No doubt there are bothies in existence which are a menace to the health of those young gardeners who are compelled to live in them, and not a credit to the gardens in which they are situated. But, fortunately, there are garden lovers who believe that it is their duty to properly house their garden employees; and, we are glad to add, there are those who go beyond the strict line of duty, and add comforts to the mere necessities of the case.



THE BOTHY AT POWIS CASTLE.

In the accompanying illustration is shown the bothy at Powis Castle, Welshpool, the seat of the Earl of Powis. Mr. Lambert, who has recently retired from the management of the gardens at Powis, writes: “The bothy was built about twelve years ago, taking the place of a structure that provided very poor accommodation. The plans for the building were prepared by Messrs. Ethcote, of Manchester, but the bothy was built by the workmen on the Powis Castle estate. The oak used in its construction was grown on the estate, which is, and always has been, noted for its fine timber. On the ground floor there is a large dining-room or mess-room for the outside garden men, with the usual and necessary conveniences. Adjoining this is a large and commodious dining-room for the young men living in the bothy, with a scullery, pantry, and usual offices conveniently attached. Upstairs there are five large cubicles, with a separate room capable of holding two beds, which is used in case of sickness. A bathroom, which is greatly appreciated by the men, completes this floor.

“The bothy is not enclosed or hidden away, nor is it erected in an unhappy position. It has a southern aspect, commands fine and extensive views, and no reasonable expense has been spared to make its occupants comfortable.”

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# BRIDGESIA SPICATA.

Some people do not favour ivy as a covering for walls, because it is so commonly used for the purpose. They require a close-growing, self-clinging plant, and try several kinds, often enough without success —unless they have selected the one above-named. This is, undoubtedly, a grand substitute for ivy.

Some years ago, I had occasion to plant many evergreen and other climbers to cover a very long wall, facing north and north-east. The portion facing north was overshadowed by large oak trees, the branches, in a few instances, crossing the top of the wall. I put in a number of kinds of climbing plants, among them the Bridgesia. It made splendid growth, and its glossy, thick leathery leaves, growing close together, made a capital covering which looked very neat, as much so as the ampelopsis does in this respect. A great point in its favour was the fact that the growth was so clean and healthy under the branches of the oak trees. I found that a little old mortar rubble mixed with ordinary soil suited the plant very well.

G. B.

# GARDEN CITY PROBLEMS.

The following is the presidential address by Mr. W. H. Massie, on the occasion of the annual meeting of the Scottish Horticultural Association:

Twelve months ago I selected as my subject, “Looking Forward, or the Future of Our Association”; and, on that occasion, I took the opportunity of laying before you some proposals regarding the future management of the association which I considered necessary in order to enhance its usefulness, and to make it more secure financially. These proposals you received most cordially, and now that they have become incorporated in our constitution, I trust they will, with your hearty co-operation, bring that success to the association which I feel it so well merits.

On this occasion I have taken as my subject, “Garden City Problems.” I have selected that subject not only on account of its grave national importance, but also because I consider it is one about which an association such as ours ought to have something to say.

The subject is one in which we are all more or less deeply interested, for the social welfare of the dwellers in our cities and towns, as well as in country districts, is a matter which affects us all either directly or indirectly. If the slums in our cities were wiped out, and the dwellers therein placed in a suitable environment, it would have such a marked influence in the diminution of poverty and crime, and probably also in the diminution of the burden of taxation, and on the improvement of the physical and moral condition of the people generally, that we ourselves would be astonished at the result; and, further, I believe it is a subject in which we, as horticulturists, must take the deepest interest, for it is largely to horticulture that we must look as the great ameliorating and refining agent which will raise to a higher moral plane the masses of our fellow mortals who are, perforce, compelled at present to live under conditions which are not only a menace to public health, but a disgrace to our civilisation, and which is rapidly causing the deterioration of the race.

### Town Planning Act.

But all this may in time be changed, for with the passing three years ago of the Housing and Town Planning Act, there has now been placed in the hands of local authorities a system of administrative machinery which can wipe out slums. It now only rests with those who elect these bodies to see that the right men are placed upon them to carry out the work. If the powers with which these bodies are now armed are fearlessly administered, slums are bound to disappear, for under the Town Planning part of the Act, their reproduction has become impossible. The first part of this Act (which consolidates former Housing Acts) deals with the housing of the working classes, and under clause 17 very drastic powers are placed in the hands of local authorities to deal with slum properties.

The second part of the Act deals with town planning, and it is to this that I wish more particularly to draw attention here. The object of this part of the Act is to prevent a recurrence of the conditions which have done so much in the past to disfigure our cities and towns, more especially our manufacturing towns. Under this part of the Act municipalities may have the power conferred upon them to prevent haphazard building, and to control the widths of streets and roads, the number of houses to the acre, the height of houses, and the provision of open spaces, gardens, etc. All that is necessary by way of procedure is for the local authority to place before the Local Government Board a prima facie case for the preparation of a town plan, after which a preliminary enquiry is held regarding the need for action, followed by the authorisation of the local authority to prepare a detailed plan; the issue of provisions relating to co-operation on the part of the local authority with the owners and other persons interested in the land, and the formation, if necessary, of a joint body of local authorities, where the land to be planned is in the area of more than one local authority; the holding of a local and public enquiry to fully consider the plan when prepared; and, finally, the placing of the plan as approved by the Local Government Board on the table of both Houses of Parliament for thirty days, and its formal authorisation and publication. Hitherto the only control exercised over the planning of new areas has been by means of local bye-laws, and, excepting in areas where the well-to-do have made demands for garden space, the "jerry" planner has taken good care to give the minimum of street width, and the minimum of open space, with the maximum of height for his buildings.

In the event of the plan being adopted, the Local Government Board may suspend the ordinary bye-laws, and replace them by regulations providing for the limitation of the number of houses to the acre, etc., as I have already mentioned. There is no reason, therefore, why municipalities should not now build garden cities like Port Sunlight, Bournville, Letchworth, or New Barswick under any new town planning scheme which they may promote.

### The Garden City Movement.

Though the Garden City idea is by no means new, the "movement" is of comparatively recent date. In England the commencement of the movement was due to the success which had attended the formation of model industrial villages, more particularly those of Messrs. Cadbury at Bournville, near Birmingham; of Messrs. Lever Brothers, at Port Sunlight, near Birkenhead; and, later, of the Joseph Rowntree Village Trust at New Earswick, near York.

Attention was first directed to the question of forming garden cities in connection with industrial towns by Ebenezer Howard in his book "To-morrow," published in 1898, and in the following year (1899) the Garden City Association was founded, its object being to establish industrial towns on Garden City lines, as advocated in Howard's book. In 1903, a pioneer company was formed under the title, "First Garden City, Limited," with a capital of £300,000 to acquire and develop an estate which had been selected at Letchworth, near Hitchin. This estate consisted of 3,818 acres, and the purchase price was £40 per acre. When the ground was purchased, the population was approximately 450, and a population of 35,000 is ultimately aimed at. It is an industrial town, with factories, railway sidings, water works, gas works, etc., but all laid out on Garden City lines. Each house has a separate garden, and there are parks and open spaces, recreation grounds (cricket, golf, etc.), schools, churches, halls, etc., while the outlying parts of the estate, comprising about 2,500 acres, are devoted to small holdings for agriculture. The land will ultimately be transferred to the community, or to a trust on its behalf, and the rents, which will increase with the city's progress, are expected to provide interest on the purchase money and the cost of all necessary municipal undertakings, so that there will be no rates. In France a Garden City Association (Association des Cities-Jardin de France) was formed in 1905, its object being "to provide healthy homes for working men, encourage agriculture, check migration to towns, secure for communities unearned increment on building land, and cheapen industrial production," and, under the recent Town Planning Act before referred to, quite a number of town planning schemes on Garden City lines are being prepared under the direction of local authorities in various parts of the United Kingdom.

### Cheap Land and Cheap Houses.

In Garden City schemes in connection with existing industrial towns, the most important factors are therefore cheap dwellings, cheap, easy, and rapids means of carrying the workers to and from the scene of their daily toil, and, above all, cheap land, for on the last factor the whole thing hangs. Cheap dwellings and cheap means of transit present no insuperable difficulties, but the question of building sites is a more serious one, for under a Garden City plan the number of houses to the acre will not exceed from eight to twelve, whereas under some of the existing bye-laws as many as fifty-six may be erected. The difference in the rental and rateable values of the two systems is obvious; therefore, to begin with, the land must be cheap enough to justify the scheme as a financial undertaking. This means, of course, that Garden Cities in connection with already existing towns must be removed some considerable distance out into the country, but this very necessity will in many ways benefit the dwellers, for it will ensure to them more healthy conditions, as well as more healthy conditions for plant life, without which the term "Garden City" would be meaningless.

### The Ideal Garden City.

It goes without saying, I think, that the ideal Garden City must have all the attributes of a garden. I doubt if the ideal Garden City is yet in existence. It certainly cannot come into being all at once, for where plants come into the plan, as they must do in this case, Nature requires time to finish the work. Even the plainest of brick buildings—the "little brick boxes with slate lids," as Mr. Burns, the author of the Town Planning Act, once called the brick-and-slate roofed houses we see so often in mining villages—may sometimes be made to look prettier objects in the hands of an enthusiastic gardener than the more substantial dressed stone buildings with which we are familiar, and this is one of the most cogent reasons why money should not be wasted on mere outward show in the construction of houses of this sort.

At New Earswick, the property of the Joseph Rowntree Village Trust, the most rigid economy had to be studied. The founder desired that, while they should be kept as low as possible in order to bring them within the means of ordinary working people, the rents should yield a net return on the capital of from 3 to 3½ per cent., so that the tenants should not be placed in the position of being recipients of a bounty. Many of the designs submitted by the architect were rejected solely on the ground of cost. The problem, too, was rendered more difficult and costly owing to the want of a sewerage system, and to the flatness of the ground adding to the difficulty of its disposal. Notwithstanding this, the desire of the founder, Mr. Joseph Rowntree "to make a practical contribution to the housing question" has been successfully realised, for here we have cottages of substantial construction, each with a garden of 350 square yards (which is the size the experience of the trustees has shown to be what a man can properly cultivate by spade labour in his leisure time), the cheapest of which are rented at 4s. 6d. per week, or with rates (including water) 5s. 6d. per week (£14 1s. 8d. per year). A house of this sort contains a living-room 14ft. 6in. by 10ft. 9in by 8ft. high; a scullery 10ft. 6in. by 6ft. 9in.; three bedrooms (1) 11ft. 6in. by 10ft. 9in.; (2) 11ft. 6in. by 6ft. 9in.; and (3) 10ft. 9in. by 6ft. 3in., all 8ft. high; and larder, coalhouse, and w.c.; with, of course, a garden of 350 square yards. The cost of building a house of this sort, inclusive of cost of land (£10), share of sewerage and roads (£28), and architects and clerk of works' and other expenses (£19 6s. 9d.), is £240 14s. 5d., and there are 12 to the acre. The highest rented of these houses is 7s. 6d. per week, or with rates 9s. 3d. (£24 1s. per year). A house of this sort contains a living-room, 15ft. by 12ft. by 8ft. high; a parlour, 11ft. by 10ft. 9in.; a scullery, 8ft. 9in. by 8ft. 9in., and three bed-rooms (1), 12ft. by 15ft.; (2) 11ft. by 10ft. 9in.; and (3) 13ft. 6in. by 8ft. 9in., all 8ft. high; bath-room, 9ft. by 5ft. 6in. (with hot and cold supply); larder, coal house, and w.c.

### The Gardening Aspect.

Having said this much about the houses, let us now turn to their surroundings. I do not hold out to you such Utopian ideas as were put before you by one of my predecessors in this chair six years ago, when, in referring to the changes of climate which he imagined were then in progress, he stated that he might live to see the day "when Princes Street may be turned into a tropical boulevard, planted with exotic palms, and the air scented with the sweet fragrance of the stephanotis, the allamanda, and the bougainvillea; when the Castle Rock would be covered with jasmine, the honeysuckle, and the wistaria; when Arthur's Seat would be covered with Eastern pagodas, and when the roof garden of the Waverley Market would be fragrant with the scent of the orange and the lemon," but I do think that horticulture has a very important part to play in the development of these garden cities, and it is to associations such as ours that people will naturally turn for light and leading in their development. This association has already made a move in this direction, for a proposal to offer a prize for villa gardening and one for window gardening in the city has been adopted by the committee which deals with these matters, and we are to have papers read on these subjects at our November meeting by our friends, Messrs. Eddington and Hay.

These are steps in the right direction, and by action of this sort, and in other ways stimulating a taste for floriculture among the citizens, this and other associations can do much to forward the Garden City movement. In a city like Edinburgh, or, in fact, any other large city, the Garden City must be largely of the character of a garden suburb surrounding the civic centre. As a matter of fact, Edinburgh does already possess some of these garden suburbs, but, alas! they are disappearing, and there seems to be no power to stay the hand of the despoiler.

(To be continued.)

## MANURES AND MANURING.

(Concluded from page 110.)

For plants requiring phosphatic manures, as, for example, tomatoes, chrysanthemums, and carnations, basic slag is undoubtedly one of the most serviceable manures. It is very well suited to the requirements of these particular plants, and should be applied to flower borders and vegetable plots at the rate of 4oz. per square yard; larger quantities than this are sometimes given with advantage. On chalky soils, containing a large percentage of lime, superphosphate is probably preferable to basic slag. The peculiar property of this fertiliser is that most of the phosphates in it are soluble in water; thus it soon dissolves, and becomes thoroughly mixed with the soil particles. Very soon after application to the soil it reverts to a condition no longer soluble in water, and is then precipitated and fixed in the soil beyond risk of loss.

It may be assumed that the rate of action of superphosphate is quicker than that of any other form of phosphatic manure, and for rapid work it is therefore to be preferred. On soils deficient in lime, or those which contain a too small percentage of lime to keep them alkaline, superphosphate has a tendency to increase the acidity; and for this reason basic slage is to be preferred. Superphosphate should be applied in conjunction with stable manure at the rate of 3oz. or 4oz. per square yard; it can be mixed quite well with sulphate of ammonia, Peruvian guano, potash salts, bone meal, fish guano, dried blood, or any substances which do not not contain nitric acid. Superphosphate and steamed bone flour are splendidly adapted for light soils, and are also beneficial to stiff soils where spring manuring is unavoidable. The latter substance, it may be remarked, has much to recommend it for garden purposes.

Potassic manures include kainit, sulphate of potash, muriate of potash, and wood ashes. The first two are most commonly used; they are all soluble in water, and are washed into the ground with the first shower of rain, and become at once available for the plant. On light, sandy, and chalky soils, kainit is to be preferred, and should be applied either early in autumn or winter. There should be at least 12 per cent. of pure potash, and, in addition to this, kainit will contain something like 33 per cent. of common salt, which property renders it peculiarly suitable for light sandy soils. Sulphate of potash, 90 per cent., should contain at least 50 per cent. of pure potash; it is the most suitable potash manure for clay lands and potatoes, and may be applied either in the autumn, winter, or spring, as may be most convenient.

For the guidance of the grower, it may be noted that potash salts, especially kainit and muriate of potash, make heavy inroads on the lime in the soil; hence it is important to see that there is no deficiency of this constituent. Further, it is recommended that superphosphate, basic slag, phosphatic guano, bone manure, or some other form of phosphate of lime, should be applied in conjunction with potash salts. Asparagus is a good example of a crop which responds to special dressing of potash, and gooseberries may be classed in the same category, about ½oz. per square yard sufficing for the latter crop. All root crops, including carrots, beet, parsnip, etc., are benefited by liberal applications of potash. Nitrate of potash, or common saltpetre, is used by some growers as a fertiliser for onions; in fact, those accustomed to grow onions for exhibition regard it as excellent manure for the production of first-class bulbs, because it supplies both nitrate and potash in the same manure. In addition to the ordinary manure, ½oz. of common saltpetre per square yard may be sprinkled on three different occasions; once soon after the plants are up, and lastly not later than the middle of June.

Of so-called "complete" fertilisers for garden crops there is no end; and, generally speaking, for pot plants and for use in small quantities, they may be recommended. At the same time, however, it is doubtful whether they can be regarded as economical for general use, and where the question of economy is an important one, it is better to mix one's own manures. The principal forms in which nitrogenous, phosphatic, and potassic manures can be obtained have been enumerated in the former part of these notes. If they are to be mixed together to form a "complete" manure, it is, of course, necessary to take into consideration the tendency of the soil and the nature of the crops to be grown therein.

When applied separately, the phosphates and potash should usually be given in the autumn or early spring, and the nitrates in two dressings, one after the seedlings push through the soil, and the other a few weeks later. Of course, in order to become well acquainted with the actual manurial requirements of the soil in any particular garden, it is well to conduct trials on small plots, giving a certain manurial treatment to one plot, and withholding it from another; the results will indicate fairly correctly what manures are required. Practical growers will have no difficulty in arranging suitable tests, and the knowledge so gained will be of exceeding value; far more useful, at any rate, than the knowledge of any results gained elsewhere.

The necessity arises in many gardens to supply an organic manure, and for this purpose fish guano is to be recommended. It is an economical fertiliser, and contains from 7 to 8 per cent. of nitrogen, 12 to 14 per cent. of phosphates, and 2 or 3 per cent. of potash. Market gardeners speak well of it, especially for vegetable crops, and it is now considered an excellent organic source of ammonia. But from the above figures it will be clear that the percentages of phosphates and potash are comparatively small, and to make it a complete manure these two ingredients must be added.

J. C. N.

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**Cordylines or Dracænas.**—The present is the best time to overhaul this class of plants; the roots have now become active, consequently those wintered in small pots will need a shift into 48's—the most useful size for house and table decoration. It will be noticed that dracænas have fleshy roots, which always grow downwards, and in some cases protrude through the hole in the bottom of the pots; these roots may be shortened back without any injury to the growing plant, and used for propagating. Old plants which have become leggy may be used for stock. Old dracænas may be shaken clear of all potting compost, and the fleshy roots cut up into inch lengths; the whole stem of the plant may also be cut up and used for the same purpose. Prepare a pan, well crocked, by filling with sandy loam and peat, place the lengths evenly over the surface, and cover them with one inch of the compost; plunge the pan in a propagating frame. Growth will soon appear, and when the plantlets are large enough put them singly into small pots. Old plants having fine heads may be "rung," a pot which has been broken equally in two vertically being placed together again around the stem close up to the foliage, tied in position, and filled with sandy compost. If the compost is kept moist roots will soon be emitted from the ring or notch round the stem. When the pots are full of roots, the stem may be severed below the pot.—Lewis Smith.

## CLEMATIS JACKMANI.

This old purple clematis has been one of the most popular of all climbers, and by reason of its hardiness and freedom of flowering has suffered very little in competition with the multitudes of clematis species and varieties, which have been introduced during the last twenty years. It has given its name to a whole section, and there are two varieties of it which have finer flowers, and are almost as hardy and as free in flowering and growth as the type, and these are C. J. alba and C. J. superba, the white flowers of the former having an occasional tinge of mauve, but becoming whiter as the plant gets older, and the purple flowers of the latter differing from the type in their greater depth of colour and better quality. The former, too, often produces a few immense double flowers in the early summer before the main crop of buds is in sight.

This clematis will grow in any ordinary garden soil, and the richer it is the better. Like our native travellers' joy (C. vitalba) it is essentially a plant of the chalk, and if the soil is not rich in this constituent, chalk, slaked lime, or mortar rubbish should be mixed with the soil at the time of planting, and further dressings applied every year or two, the result being seen in sturdier and more vigorous growth and flowers of better substance. When young plants are received from the nursery they should always be put in the soil three or four inches deeper than in the pots at the time of purchase as they will then have some little protection from the frost, and will throw out roots along the buried portion of the stem as well as strong young growths. A mulch of manure before the winter comes is beneficial.

Clematis Jackmani would often be improved by more pruning than it commonly gets, many being afraid of sacrificing any length of stem. If it has an unlimited growth over trees it may be treated as a wilding, the effect produced in this way being very good, though the individual flowers will not be fine. When, however, the space is limited, as on walls, arches, pergolas, etc., it is best cut down to within three or four feet of the ground, when the young growths will be very strong, and will grow during May and June with marvellous rapidity, producing an abundance of bloom in July and August. Some recommend doing this pruning in November because of the earlier bloom obtained, but this means early spring shoots with the risk of having them cut off by the frost, as with roses. A better way is to cut back as far as is necessary for a certain amount of tidiness in November, and to defer the final cutting back till late March or early April, when a good deal of weak growth will be cut away, which is very likely to be destroyed by frost, the greater part of the flowering shoots for the year breaking out lower down. The morning sun in early spring shining on the frozen shoots will often cause their destruction, and this should be considered when planting. It will grow in almost any situation, but it objects to cutting winds.

C. Jackmani can be best propagated by taking young growths with a heel of old wood from below the surface of the soil, and such will sometimes have a piece of root to start with. The best time for this is early spring before growth is far advanced. Similar cuttings, however, may be taken from any part of the plant and struck in heat. Clematis should never be moved in the autumn, as this renders them very liable to succumb in a sharp winter, the best time being March or early in April.

Alger Petts.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

ANGULOAS are now becoming active after their long, dry rest, which they so much appreciate. They should be grown in a compost of one part osmunda fibre, one part peat, one part polypodium fibre, and one of sphagnum moss and fibrous loam, all used in a fairly rough condition. Should it be considered necessary to repot any of these plants, this is best done when the new growths are a few inches high, before the flower spikes appear; as, if left until the flowering period is over, the roots are often far advanced, and easily damaged. The flower buds will appear from the base of the new growths. Anguloas succeed either at the cool end of the intermediate, or the warm end of the cool house. When in full growth, and the pots are full of roots, they delight in an abundant supply of water, and an occasional watering with weak liquid manure or soot water.

LYCASTES.—The same remarks also apply to these, many of which will now be in bloom. They produce their flower buds in exactly the same manner, and therefore require repotting in the same way. They recover very quickly, as the new roots soon enter the new compost, and become firmly established. When potting, keep the plant well below the rim of the pot, so that in the growing season a plentiful supply of water can be given.

ZYGOPETALUMS.—Z. Mackayi and Z. crinitum, as they pass out of flower may be repotted should this be necessary. These plants resent being disturbed at the roots, and potting must be done with care. They will thrive in the same kind of compost as lycastes and anguloas, and the general treatment laid down for those species is also suitable for these. Such zygopetalums as Z. Perrenoudi, and others, that are pushing up their flower spikes, had better not be potted until the flowering period is over. They must not be potted too firmly, and they delight in abundance of water when in full growth. During the summer months they must be shaded from strong sunshine, and their proper place is at the warm end of an intermediate house.

CYMBIDIUM TRACYANUM, C. Hookerianum, etc., as they pass out of bloom and the young growths push up and begin to put forth roots, may be repotted, using the same sort of compost as for anguloas, etc. If the loam is of good quality, a little more can be used for this species, but I prefer a good free rooting medium in preference to a heavy compost, relying on frequent uses of liquid manure when well rooted and in full growth. These plants do not like disturbance at the roots, therefore it is not desirable to pot them unless it is an absolute necessity to do so. Do not use pots too large, as cymbidiums flower much more satisfactorily when their roots are restricted, and the pots are well-filled with roots. They delight in an airy position in the intermediate house, and must be shaded from strong sunshine.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

FERNS.—Adiantums, etc., should be examined forthwith. Plants in small pots will need a shift. Before repotting scratch the ball of soil around the sides with a pointed stick to free the roots somewhat. Old plants which are bare in the centre should be divided with a knife and potted, using smaller pots. Adiantum Farleyense will not remain in good health for many years unless treated in this way. Plants which do not need a shift should be tidied up by picking off old fronds, and encouraging the young fronds with applications of tepid soot water and liquid monure occasionally.

SCHIZANTHUSES.—These useful annuals are excellent subjects for the conservatory. Young plants raised in the autumn and grown in small pots will now be ready for potting on into 32's. Loam, leaf-soil, and coarse sand make an excellent compost. Schizanthuses must be grown cool to maintain sturdy, bushy plants; they resent coddling, and so long as the house or frame is frost-proof, with plenty of light, it will suit the plants admirably. When well rooted in their flowering pots the plants like plenty of liquid manure.

PRIMULAS.—The members of the primula family are favourites for conservatory decoration, and the cultivation of P. sinensis, P. stellata, P. Kewensis, P. obconica, etc., is well understood. It is of a later arrival I should like to add a note, namely, P. malacoides; I have now a batch of about 100 plants, and their dainty rosy-lilac flowers, produced on spikes one foot high, after the style of Primula japonica, present a charming appearance. The abundance of flower spikes in comparison to the size of the plants is extraordinary. It has been spoken of as being quite hardy, but I have not found it so. True, it will stand a great deal of cold, but it is liable to damp off at the collar in wet weather, and hard frost will kill the plants. It is a perennial, but the plants are best raised from seed each year. If seeds are sown at intervals of three months a succession may be kept up. The cultivation is also very simple. Seeds should be sown now, choosing pots or pans well crocked. The compost should be two parts loam, one part leaf-soil, and one part silver sand. The compost should be sifted finely, and the pos or pan filled to within one inch of the rim; sow the seed evenly, and sprinkle it over with silver sand. Put a piece of glass over the top, and place the pan in a structure with a temperature of about 50 degrees. When the seedlings are well up, prick off and place them in cold frames. As the plants grow shift them into larger pots, but they are not strong rooting subjects, and the largest specimens can be grown in a 48-size pot. Grow the plants cool and near the glass always.—Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

STRAWBERRIES.—Owing to the mild weather weeds have grown apace; with so much wet it has been practically impossible to keep them down. Old plantations will need manuring, but previous to applying the dressing remove all dead leaves and weeds from the plants, then spread the manure between the rows and point it in with a fork, working it well up to the collar of the plants, but the less the roots are disturbed the better. Spent mushroom bed material is the best for this purpose; failing this use well rotted manure. The addition of some old potting soil is an advantage where the soil is of a tenacious character. Where the above manures are not to be had, artificial fertilisers may be used. Soot is an excellent stimulant, and at the same time proves distasteful to slugs and other pests. Young plants put out last autumn should be examined, and faulty ones replaced from the reserve bed; a dressing of soot will be beneficial, and supply sufficient nutriment to the plants. New beds may be formed from runners which were set out in nursery rows, but I do not advocate this method of culture. Planting should only be carried out when the soil is in a suitable condition.

ESPALIER TREES.—The pruning of espalier apple and pear trees should be completed without delay. Where there is a superabundance of fruit spurs (this often occurs on espalier-trained trees) they should be boldly thinned out; long, unsightly spurs should be removed by degrees, and by sawing off each year those spurs which can be spared it is possible to recover the branches with a fresh set of healthy, plump fruit spurs in the course of a few years. Extension wood should be cut back according to the vigour of the tree, and young growths laid in where necessary to take the place of old or diseased growths. Tie in the branches with tar twine, and spray the trees. If growth is too vigorous, and the trees fail to form fruit spurs, attention must be directed to the roots; it is now getting late to completely lift the trees, but by doing one-half now and the remaining portion early next autumn, sufficient check will be administered to bring the trees into a fruitful condition. Apples on the paradise, and pears on the quince stock, seldom require attention to the roots unless the tree is in an unhealthy state, when it should be carefully lifted and the border renovated with fresh loam. Trees on these stocks should have their roots disturbed as little as possible. Fruitful trees may now have a dressing of artificials, lightly pointing it in; a dressing of bone-flour, 3 or 4 ounces to the square yard, will prove a great help, and if to this is added 2 ounces of sulphate of potash, better results may be anticipated. A mulch of good manure later on will supply the necessary amount of nitrogen to trees which have set a full crop.

Apricots should be protected against frost and cold winds. Choice plums are worthy of protection alike from birds and severe weather. Three thicknesses of one-inch mesh netting provides a fair cover, but it pays to have blinds made up of either No. 3 or No. 5 shading, stout hessian or cotton canvas; these with care will last for years. No. 3. shading I consider to be an excellent protective material, but whatever material may be used must be so fixed that strong winds cannot dash it against the trees.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

PARSNIPS.—Should the ground be in a suitable condition, the seed should now be sown. Parsnips delight in a deeply-dug soil, and may follow leeks or celery; beyond a dressing of burnt garden refuse, or soot, and the surface well raked and levelled up, very little else will be necessary previous to sowing the seeds. Draw drills eighteen inches apart, and one inch in depth, and sow two or three together at intervals of six inches to ensure an even crop; later on thin out every alternate station, and leave the plants one foot apart. To obtain fine roots, holes must be bored eighteen inches apart, and four feet deep, filling them in fairly firm with finely sifted soil; old potting soil forms capital material for this mode of culture.

ONIONS.—Those sown early in the year must be pricked off; nothing is gained by pricking off too early, but much is gained if the seedlings are left long enough to become strong, with three and four nice roots, as they then grow away sturdily and root more quickly. Use boxes of soil containing three parts loam, one part mushroom bed manure, and a little road grit; place the seedlings three inches apart, return to a temperature of 55 degrees, and well water them in. When the seedlings are established, gradually inure them to more airy surroundings, aiming at a strong plant by April.

LEEKS should be treated as advised for onions, giving them occasional light sprayings of tepid water on all favourable occasions.

PEAS.—Good sowings should be made on sheltered borders to succeed those now comfortably inside, in boxes. Draw drills not less than nine inches wide and four inches in depth, and cover the seed with one inch of fine soil. This trench-like drill, when completed, will make things snug, by warding off the cold wind when the little seedlings appear; and later on will hold the usual top-dressings and waterings. Should much rain occur after sowing, lay boards temporarily over the trenches; and, again, should the ground still remain wet and pasty (as it is at the time of writing), make another sowing in boxes and place in the greenhouse, or any fruit house, to germinate. Profitable varieties for this sowing are Early Giant, Edwin Beckett, and Duke of Albany.

GENERAL REMARKS.—Prick off early-sown parsley, when ready, in boxes of rich soil; make small sowings of maincrop cauliflowers, cabbage, lettuce, French beans, etc., in pots and boxes. Introduce more chives, mint, and tarragon into the forcing pit; blanch endive and chicory as required, and sow spinach on a south border.—Geo. Ellwood, Swanmore Park Gardens.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

FEBRUARY 20, 1912.

### AWARDS.

No certificates were granted on this occasion.

Award of Merit.—To Ribes laurifolium, from the Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham House, Elstree; to Carnation Lady Meyer, from Mr. E. Guile, Newport Carnation Nursery, Newport; to Odontoglossum Vulcan, from De Barri Crawshay, Esq. (gardener, Mr. Stables), Rosefield, Sevenoaks; to Cattleya Brenda, from Lt.-Col. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester; and to Calanthe Baron Schroder alba, from Baron Bruno Schroder (gardener, Mr. Shill), Egham.

### MEDALS.

Gold.—To Lt.-Col. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester, for orchids; to Mr. W. E. Wallace, Eaton Bray, Dunstable, for carnations.

Silver-gilt Flora.—To Messrs. Charlesworth and Co., Hayward's Heath, for orchids; to Miss Gundry, Foot's Cray, for paintings.

Silver-gilt Banksian.—To Mr. L. R. Russell, Richmond, for forced flowering shrubs; to Messrs. Sutton and Sons, Reading, for vegetables.

Silver Flora.—To Mr. H. Burnett, Guernsey, for carnations; to Messrs. W. Cutbush and Son, Highgate, for miscellaneous flowering plants; to Messrs. S. Low and Co., Enfield, for cyclamen and carnations; to Messrs. H. B. May and Sons, Edmonton, for epiphytal ferns; to Messrs. Sutton and Sons, Reading, for primulas and cyclamen; to Messrs. J. Veitch and Sons, Chelsea, for miscellaneous flowering plants; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; to Messrs. S. Low and Co., Enfield, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Messrs. J. and A. McBean, Cooksbridge, for orchids; and to Messrs. Armstrong and Brown, Tunbridge Wells, for orchids.

Silver Banksian.—To Sir Julius Wernher, Bart. (gardener, Mr. A. Metcalfe), Luton Hoo, Luton, for calanthes; to Messrs. Mansell and Hatcher, Rawdon, Leeds, for orchids; to Mr. E. V. Low, Hayward's Heath, for orchids; to Mr. A. F. Dutton, Iver, Bucks, for carnations; to Mr. G. Reuthe, Keston, for alpine and bulbous plants; to Messrs. R. Wallace and Co., Colchester, for alpines and bulbous plants; to Mr. Metcalfe, Luton Hoo Gardens, for apples; and to Mr. Honess, Dorking, for lettuces.

Silver Flora.—To Messrs. H. Cannell and Sons, Swanley, for cyclamens and pelargoniums.

## Horticultural Club.

The annual meeting was held in the Club Room, Hotel Windsor, under the presidency of Sir John T. D. Llewelyn, Bart. There was a fair number of members present.

After the opening proceedings, Mr. R. Hooper Pearson read the report of the committee.

The committee had the satisfaction of being able to point to a year in which the basis of the club has been broadened, and its influence strengthened by the election of forty-six new members. The losses by death and resignation number five, leaving a net gain of forty-one. The membership is now 161, this being the largest number the club has recorded since its establishment in 1875 by the late Rev. H. H. D'Ombrain, Dean Hole, Dr. Maxwell Masters, Mr. Harry J. Veitch, Sir Edward Lee, and others.

A separate report, prepared by Mr. Harry Veitch, the honorary treasurer, shows that the income of the club for the year amounted to £172 18s. 9d., and the excess of income over expenditure to £12 18s. 1d., notwithstanding the fact that considerable sums have been spent on printing (list of members, rules, etc.), and an honorarium of £25, presented to the late secretary on his leaving this country for Canada. The present funds amount to £450 in Consols, and £100 18s. 11d. bank balance.

Concerning the management of the club, the committee had to record the resignation of the hon. secretary, Mr. E. T. Cook, which took place at the last annual meeting. Following this resignation, the committee obtained the consent of Mr. R. Hooper Pearson to fill the position. Another change in the personnel of the club has now to be made. The committee regretted to state that the esteemed president, Sir John T. D. Llewelyn, has felt it necessary to resign the position which he has occupied since 1892, as he finds it no longer possible to attend evening meetings. Members will desire to offer Sir John Llewelyn their thanks for the services he has rendered the club for so long a period.

Following the resignation of the president, the committee asked the vice-president, Sir Frank Crisp, to allow them to nominate him for the office of president, and Sir Frank kindly acceded to that request.

Sir John Llewelyn moved the adoption of the report and accounts, and expressed the great pleasure and profit he had derived from his twenty years' connection with the club as its president. Advancing years made it increasingly difficult for him to be out at night, and so, to serve the best interests of the club, he thought a younger man should fill the post he had so long occupied. He himself would still hope to retain his membership, and come to the meetings whenever possible. Mr. C. T. Druery seconded the motion, and it was carried.

The Management Committee was re-elected, and a cordial vote of thanks to Sir John Llewelyn for past services was passed, on the motion of Mr. Harry Veitch, the treasurer. A similar vote to the secretary concluded the proceedings.

### ANNUAL DINNER.

An unusually large number of members and friends, including many ladies, gathered at the annual dinner under the chairmanship of the new president, Sir Frank Crisp, who kindly provided, a capital musical programme. The function was an unqualified success, and to this success the presence of ladies and the charming floral decorations by Messrs. James Veitch and Sons contributed materially.

After dinner and the honouring of loyal toasts, "The Horticultural Club" was proposed by Mr. W. A. Bilney, who referred to the excellent management of the club and the large accession of members since Mr. R. Hooper Pearson became secretary. He made a graceful reference to the resignation of Sir J. T. D. Llewelyn from the presidency of the club, and to the accession of Sir Frank Crisp to the position Sir John had held for a score of years. Success to the club was then heartily accorded. Sir Frank Crisp responded in humorous vein, and said the club was an unique one. He said he felt a president was to be made use of, and, as he understood, he had been elected president that afternoon.

Mr. R. Rudolph Barr gave "The Royal International Horticultural Exhibition," and said we were all looking forward to the great event, with great hopes, tempered by some fears. The managing body was composed of well-known horticulturists, and in their hands he hoped the great show would be an unqualified success. Mr. J. Gurney Fowler, chairman of the Board of Directors of the International Exhibition, responded.

Sir Frank Crisp then offered on behalf of the club a 25-guinea cup to the Council of the International Horticultural Exhibition, an offer promptly accepted by Mr. Fowler.

Mr. W. Cuthbertson very neatly proposed "The Visitors," and said that the ladies were the principal visitors on this occasion, and to them he extended a very hearty welcome on behalf of the club. Mrs. H. Nutting made a charming response.

Mr. H. J. Veitch, who had a warm reception, very ably proposed "The Chairman," a toast that was accorded with musical honours. When responding Sir Frank proposed the health of the secretary, Mr. R. H. Pearson, and this toast being honoured the proceedings were brought to a pleasant and early conclusion.

## National Chrysanthemum Society.

The meeting held on Monday, February 19, was well attended. The financial statement showed a balance of £73 18s. 9d. It was agreed to issue an annual publication, to be called "The Transactions of the National Chrysanthemum Society," and estimates for printing were accepted. It was decided that a conference should be held on the occasion of the exhibition at Essex Hall in November, and "Soil Sterilisation" and "What is a Spray of Chrysanthemums?" were suggested as subjects for consideration. The report of the Floral Committee concerning the new classification of chrysanthemums was presented, and it was agreed that the classification scheme be published in the "Transactions," and that the Floral Committee would base its awards in the coming season on this new scheme.

Messrs. P. A. Cragg, J. W. Moorman, W. Newton, J. B. Riding, A. W. Seabrook, and W. Wells were re-elected as members of the Floral Committee. Messrs. P. A. Cragg, D. Ingamells, and J. W. Moorman constitute the Finance Committee; and Messrs. C. H. Curtis, P. A. Cragg, D. B. Crane, W. Howe,

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D. Ingamells, H. J. Jones, F. W. Ladds, J. W. Moorman, and G. Prickett form the Schedule Committee; while Messrs. C. H. Curtis, D. B. Crane, A. J. Foster, D. Ingamells, J. B. Riding, and F. W. Ladds form the Publication Committee.

The secretary, Mr. R. A. Witty, presented a budget for 1912, which showed an estimated balance of about £20. Outings and annual dinner were matters left for further consideration.

Following this meeting the members of the Floral Committee dined together at Carr's Restaurant, as is their annual custom, and, with a few friends, made up a party of about three dozen. Mr. D. B. Crane presided. After the loyal toasts the Chairman proposed "Success to the National Chrysanthemum Society," and to this Mr. T. Bevan responded. Mr. C. Harman Payne gave "The Exhibitors," to which Mr. H. J. Jones replied on behalf of the trade, and Mr. W. Howe on behalf of private growers. Mr. McKercher very ably proposed "The Floral Committee," and in response the Chairman reviewed the work of the committee during the year 1911, and remarked that he had just completed twenty-five years' connection with the committee, and had had the honour of being chairman for ten years. "The Market Growers," proposed by Mr. E. F. Howes, was very suitably replied to by Messrs. P. A. Cragg and F. W. Ladds. Mr. John Green gave "The Press," and the response was in the hands of Mr. C. H. Curtis, of the GARDENERS' MAGAZINE, and Mr. J. B. Riding.

## Bristol Gardeners' Association.

The usual fortnightly meeting was held the other evening at St. John's Parish Rooms, and Mr. A. Perry presided over a good attendance. Mr. Sydney Hills, of Newport, read a paper entitled, "Would they have been pests if left alone?" The lecturer took an unusual course in defending the birds which the ordinary gardeners generally look upon as enemies to be relentlessly destroyed. He said man only sees the evil in them, and does not take into account the great amount of good they do. In destroying owls, hawks, sparrows, starlings, and other birds, the lecturer said, the balance of Nature had been upset, and man had only made things more difficult through having to adjust that balance as best he could.

A lively discussion followed, and this was taken part in by Messrs. Perry, Ayres, House, Jennings, Young, Springham, Garnish, Binfield, Woodward, Lee, Hayball, and Zhoday. Mr. T. Clark was awarded a first prize for two bunches of violets.

## Dundee Horticultural Association.

The ordinary monthly meeting was held in the Technical College, Dundee, on the evening of 8th inst., when Mr. George Scott, Leathwood Gardens, was the essayist, his subject being, "Floral Decorations." As might be expected from so successful a competition, the essay contained admirable word-pictures of the decorative art in bouquets, wreaths, baskets, and table decoration set up by the essayist in competition at Edinburgh, Dundee, and Dunfermline flower shows. An ardent admirer of bronze and yellow shades in combination for baskets and bouquets, and table decoration, Mr. Scott practices what he preaches, and preaches what he practices, particularly during the chrysanthemum season, when these shades are perhaps more appreciated, and show to the greatest advantage.

The essay was exceedingly well read by the secretary, Mr. John Summers, while the only critics in discussion were Messrs. W. P. Lawes, Wm. Grant, J. C. Brown, and Alexander Macrea, the latter calling for a vote of thanks to essayist and president, Mr. Wm. Christison.

The annual social and dance came off on the 9th inst. The Hon. President, Bailie Melville, presided, and was supported on the platform by Messrs. William Christison, D. C. Hutcheson, William Grant, W. P. Laird, and James Bethel. After tea there was an excellent concert, which was enjoyed by the large company. Subsequently the young folk enjoyed the gaiety of the ballroom until the small hours of morning.

## The Leeds Professional Gardeners' Society.

The members of this society held their annual dinner at the Griffin Hotel on February 15. F. B. Hudson, Esq., presided, supported by Wm. Green, Esq., J.P., and the Rev. Bernard Hall, B.A., secretary of the North of England Horticultural Society.

There were about 50 members present, and after the usual loyal toasts were given, an enjoyable smoking concert was provided by Mr. J. R. Groundwell. During the course of the evening Mr. Carver, the secretary, appealed to gardeners, who, not being members of friendly societies, could with advantage fall into line with the above society, which would in due course become approved under the National Insurance Act, and thereby gain additional benefits which this society, being on a sound financial basis, would provide.

## East Anglian Horticultural Club.

This club still maintains its popularity. Over a dozen new members have been enrolled already this year. At the February meeting, before a very large audience, Mr. W. Messenger, The Gardens, Woolverstone Park, read a thoroughly practical paper upon "Chrysanthemums and their Culture." He said he thought that, even if the day of the large exhibition blooms was on the wane, the popularity of the chrysanthemum for decorative purposes was still as much alive as ever. That Mr. Messenger was a master of his subject was soon evidenced as the paper progressed. It is not difficult to note a practical man dealing with a subject he understands. All points of culture were ably treated, as were also pests, both insect and fungoid.

A capital discussion followed, in which Messrs. L. Smith, Frank Neave, H. Perry, C. Fox, J. C. Abel, T. Notley, J. Clayton, and others took part. The exhibits were good and in great profusion, special praise being due to Mr. W. Shoesmith, gardener to F. W. Harmer, Esq., for his fine specimen of Cœlogyne cristata, Mr. F. Williams, for bulbs in pots, and to Mr. S. Hunt, gardener to Mrs. Willis, for bulbs in pots, especially his pot of Iris reticulata. Mr. J. H. Willis sent his monthly weather report and also a most interesting photograph of his grass thermometer, taken on the morning of February 3, showing the reading at half a point below zero.

## Warninglid and District Gardeners' Society.

At the recent meeting of this association the president, G. Favork, Esq., occupied the chair.

A lecture on "Hardy Shrubs" was delivered by Mr. W. A. Cook, F.R.H.S., Leonardslee. Mr. Cook, before delivering the lecture, strongly advised young gardeners to interest themselves in this branch of gardening, which, year by year, is growing in popularity. Mr. Cook showed that with such a selection of choice shrubs procurable at the present time no part of a garden throughout the year need lack beauty or interest. He enumerated some of the choicest kinds of shrubs that are suitable for open, sunny, shady nooks, and dry and moist positions. He also pointed out that any difficulty with the few subjects that will not grow in the ordinary garden soil could be overcome by forming beds of a suitable rooting medium.

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# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

**Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.**

PERPETUAL CARNATIONS IN A MIXED COLLECTION.—F. H. C., Holmes' Chapel: We cannot devote a house entirely to perpetual-flowering carnations; but, nevertheless, we are anxious to grow a small collection, and should be glad to know how far we are likely to succeed with them in a mixed collection of greenhouse plants.—A cold frame, especially a span-roofed frame, will serve well to house the young stock during the summer months, and if a light, airy position can be provided at one end of the greenhouse when the time comes for housing the carnations, there is no good reason why you should not have flowers during the coming winter. The great trouble in a mixed collection is that the amount of water needed for many plants causes a moister atmosphere than is suitable for the carnations. Why not build a little carnation house? It would not be a costly business.

SULPHUR FUNGICIDE. — G. W., Horsham: The question is doubtless a common one, and has been answered many times, but even so, as I do not bind up the "G.M.," please tell me how to prepare the sulphur solution that is so useful as a preventive of fungus disease of many kinds.—Dissolve 1oz. of sulphide of potassium (liver of sulphur) in some hot water, and then add sufficient tepid soft water to make up three gallons of solution. The mixture will then be ready for use, and should be sprayed on to the plants.

SOWING SWEET PEAS.—H. H., Ascot: I should like to raise sweet peas, so that the plants will be strong and vigorous, by planting time in early April; and I should also like a handy book on sweet pea culture. Please give me your assistance.—Sow the seeds at once in a warm greenhouse, and as soon as the seedlings have pushed through the soil transfer the pots or boxes to a frame, keeping them close to the glass. Give air according to the conditions of the weather, but in any case do not coddle the plants in the belief that by keeping the frame close they will advance more rapidly. That way lies disappointment. "Sweet Peas and Their Cultivation," post free 1s. 2d., or 1s. 8d. (cloth boards), from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, E.C., will prove a most useful book.

POTATOES CERTIFICATED IN 1911.—M. B. C., Kildare: Will you kindly tell me in your "Answers to Correspondents" column the names of the potatoes which gained certificates during 1911, and also the introducers of the varieties?—We presume you refer to awards made to potatoes during 1911 by the Vegetable Committee of the Royal Horticultural Society. An Award of Merit (not a First-class Certificate) was awarded to each of the following varieties, after cropping tests at Wisley, and cooking tests at Westminster: Balgowrie Seedling, Mr. J. Lyule, Aberdeen; Dobbie's Prolific, Messrs. Dobbie and Co., Edinburgh; Erin's Queen, Mr. W. E. Sands, Hillsborough, Ireland; Great Scot, Messrs. Robert Veitch and Son, Exeter; and Tremendous, Messrs. Toogood and Sons, Southampton.

PRUNING LAURELS.—F. A. G., Nottingham: I have a bank of laurels wherein all the plants have grown much too high. I wish to cut them down so as to form a comparatively low, thick bank of glossy green foliage, but am rather fearful as to results if I cut back so severely.—The common laurel will submit to a great deal of hard treatment, and, if the top growth has been vigorous, there need be no fear as to results if severe pruning is carried out now. Cut or saw down the shrubs to a point rather below the level at which you wish the bank to be, as allowance must be made for the new growth. Having removed the top growth in this way proceed to cut out any dead or dying stems; clear the ground of decayed leaves, twigs, or rubbish, and give a good dressing of old manure, burnt garden refuse, road scrapings, etc., as this will encourage root action and keep the soil from drying quickly under the influence of sun and wind. With a comparatively small amount of care, it should be possible to keep the bank at the desired height for many years to come by annually pruning with a knife—not with shears.

RETARDING PRIMULA OBCONICA. — G. P. S., Derby: Circumstances are such that we need as many flowers and flowering plants as possible six weeks or two months hence, instead of at present. A fine batch of Primula obconica is just in full bloom, and I am wondering whether anything could be done to keep them until the period named. Perhaps you can suggest a means to the end in view.—Pick off all the flower spikes and remove old and in any way damaged leaves; pot each plant afresh, giving it the smallest possible shift and using a compost of good loam, old cow manure, sand, and a little leaf-soil. A fortnight hence put the plants into a frame or pit, from which frost is excluded, and then let them come again into flower. If dull weather prevails it may be necessary to again return the plants to the greenhouse to induce the flowers to open by the desired time.

## NAMES OF PLANTS.

A. C., Hamble.—Veltheimia viridifolia.

J. S., Abbey Wood.—Cymbidium eburneum.

H. S., Bexley.—1, Tillandsia usneoides; 2, Nertera depressa.

J. W., Epsom.—1, Odontoglossum Lambeauianum; 2, Cattleya Trianæ.

S. L., Bodmin.—1, Polygonium clorinda; 2, Nephrolepis Whitmani; 3, Correa cardinalis.

C. T. F., Cambridge.—1, Calceolaria Burbidgei; 2, Dracæna Godseffiana; 3, D. congesta; 4, Ophiopogon jaburan.

W. R. J., Horstead.—1, Rhododendron præcox; 2, Skimmia japonica; 3, Diplopappus chrysophyllus; 4, Abies Nordmanniana; 5, Sequoia sempervirens.

# OBITUARY.

◆

## MR. HAYWARD MATHIAS.

We regret to learn that Mr. P. Hayward Mathias passed away suddenly on February 10, death being due to heart failure. Mr. Mathias was a retired civil servant, but many years ago he entered enthusiastically into the cultivation of perpetual carnations, as an amateur, at Thames Ditton, and, seeing the great future of the flower, he entered business as a grower and formed an establishment at Medstead, Hants. He was largely instrumental in forming the Perpetual-flowering Carnation Society, and was the first secretary and treasurer of that body. Failing health compelled him to resign these offices, and he went to live at Lucerne, Stubbington, Fareham, Hants. A quiet gentleman, with a steady, unquenchable enthusiasm, he had also a pleasant manner that endeared him to all his friends and acquaintances.

# GARDENING ENGAGEMENTS.

Mr. C. J. Cradwick, previously foreman at The Gardens, Middleton Hall, King's Lynn, Norfolk, has been appointed head gardener to Colonel Grant, Sherborne House, Sherborne, Dorset.

Mr. R. D. Greenham, foreman at Joyce Grove, Henley, has been appointed head gardener to A. R. Motion, Esq., Upton House, Banbury.

# TRADE NOTES.

Messrs. John K. King and Sons, Coggeshall, Essex, have been awarded a Diploma and Commendation Medal in connection with their exhibit in the recent seed competition held at the Brussels International Exhibition.

From Messrs. Robert Veitch and Son, Exeter, we have received a few unusually fine sprays of the graceful Buddleia asiatica. This is a capital shrub for greenhouse and conservatory decoration during the latter half of winter, and, though not particularly showy, it is elegant, and very sweetly scented. We are informed that the long spikes sent were grown in a cool greenhouse.

# FORTHCOMING ENGAGEMENTS.

TUESDAY, March 5.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "The Stimulation of Plant Growth," by Professor H. E. Armstrong. Scientific Committee at 4 o'clock.
Royal Horticultural Society's Spring Bulb Show; two days.
THURSDAY, March 7.—Linnean Society Meeting.
Manchester and North of England Orchid Society.
MONDAY, March 11.—United Horticultural Benefit and Provident Society, Annual Meeting at Royal Horticultural Hall, at 8 p.m.
THURSDAY, March 14.—North of England Horticultural Society meets at Bradford.
TUESDAY, March 19.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "Ferns," by Mr. H. B. May, V.M.H. Scientific Committee at 4 o'clock.
THURSDAY, March 21.—Perpetual Flowering Carnation Society, at Royal Horticultural Hall, Westminster; two days.
Linnean Society Meeting.
Manchester and North of England Horticultural Society.
TUESDAY, March 26.—Bournemouth Spring Flower Show; two days.
WEDNESDAY, March 27.—Liverpool Spring Show; two days.
Royal Horticultural Society's General Examination in Horticulture.
Royal Botanic Society Meeting.
THURSDAY, March 28.—Torquay Spring Show.
SATURDAY, March 30.—French Horticultural Society of London. Annual Dinner.

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## A WELL-DESERVED HONOUR.

The trustees of the Massachusetts Horticultural Society, at a meeting on January 13, 1912, unanimously awarded another gold medal to Mr. E. H. Wilson, for a collection of photographs taken during his last and fourth trip to China for the Arnold Arboretum. The Massachusetts Horticultural Society is the most important, and one of the oldest, of its kind in the United States, and among its most ardent supporters is Professor C. S. Sargent, who is widely known in America and Europe for his important contributions to the literature relating to Dendrology, and also for the fact that the last two expeditions of Mr. Wilson to China were promoted by him. Mr. Wilson was also awarded a gold medal by this society for a collection of photographs taken during his third trip to China, but the collection which he obtained on his fourth expedition is perhaps of more importance, as it gives an excellent idea of the arborescent vegetation of Central and Western China, which was hitherto very obscure.

The photographs, about four hundred in number, adequately portray the trees of this part of the world in the adult stage, and when one considers that probably not more than a dozen members of the arborescent vegetation were known in gardens formerly, the importance of these photographs will be readily observed.

Owing to Mr. Wilson's indefatigable work in China, it is now known that more species of trees exist in that country than in the whole of North America, and more species of Picea have been collected there than exist in the remaining part of the world. These, and the majority of other trees found there, are now growing in the nurseries of the Arnold Arboretum and elsewhere, and will undoubtedly prove perfectly hardy and of great ornamental value to American and European planters.

The Massachusetts Horticultural Society has done well to confer its highest award upon Mr. Wilson, as his work is of world-wide importance; and, in honouring him, it fittingly honours the Arnold Arboretum, and the study of Dendrological science in general.

A. E. THATCHER.

## CATALOGUES RECEIVED.

H. J. JONES' NURSERIES, LIM., RYECROFT, LEWISHAM.—The chrysanthemum lover will find this hand list of chrysanthemum novelties of the greatest interest. There are no fewer than twenty-four illustrations of new varieties.

CHARLES TURNER, ROYAL NURSERIES, SLOUGH.—Garden tools and sundries, seed potatoes, and bulbs for spring planting are added, in this catalogue, to a large selection of flower and vegetable seeds.

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## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

The supplies are liberal, and command fairly good prices.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 | 0 | to | 8 | 0 |
| Arums | per doz. | 3 | 0 | | 4 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 15 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azalea | per doz. bun. | 3 | 0 | | 4 | 0 |
| Camellias | per box | 2 | 0 | | 2 | 6 |
| Carnations | per doz. | 1 | 6 | | 2 | 0 |
| ,, | per doz. bun. | 15 | 0 | | 21 | 0 |
| Cattleyas | per doz. | 10 | 0 | | 12 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Eucharis | per doz. | 2 | 6 | | 3 | 6 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Freesias | per doz. bun. | 1 | 6 | | 2 | 0 |
| Gardenias | per doz. | 5 | 0 | | 9 | 0 |
| Hellebores | per doz. | 1 | 6 | | 2 | 0 |
| Hyacinths, Roman | per doz. bun. | 4 | 0 | | 6 | 0 |
| Lilac | per bunch. | 2 | 6 | | 3 | 6 |
| Lilium auratum | per doz. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 2 | 6 |
| ,, longiflorum | per doz. | 3 | 0 | | 5 | 0 |
| Lily of the Valley | per doz. bun. | 8 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 0 | | 2 | 6 |
| Mignonette | per doz. bun. | 2 | 6 | | 3 | 0 |
| Narcissus | per doz. bun. | 1 | 0 | | 6 | 0 |
| Odontoglossums | per doz. blms. | 3 | 0 | | 4 | 6 |
| Pelargoniums | per doz. bun. | 8 | 0 | | 12 | 6 |
| Roses | per doz. | 2 | 6 | | 8 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 6 |
| Snowdrops | per doz. bun. | 1 | 0 | | 2 | 0 |
| Tuberoses | per doz. | 0 | 5 | | 0 | 9 |
| Tulips | per doz. bun. | 5 | 0 | | 12 | 0 |
| Violets | per doz. bun. | 1 | 3 | | 4 | 0 |

### Fruits.

Grapes are still plentiful, and moderate in price. Trade generally is brisk.

| | | s. | d. | s. | d. |
|---|---|---|---|---|---|
| Apples, English, cooking | per bush. | 4 | 0 | 7 | 6 |
| ,, Nova Scotia | per barrel | 12 | 0 | 22 | 0 |
| ,, Canadian | per barrel | 12 | 0 | 22 | 0 |
| ,, American | per barrel | 20 | 0 | 32 | 0 |
| ,, Californian | per case | 7 | 0 | 10 | 0 |
| Bananas | per bun. | 4 | 0 | 10 | 6 |
| Cob Nuts | per doz. lb. | 6 | 0 | 7 | 0 |
| Cranberries | per case | 9 | 0 | 12 | 0 |
| Grapes, English | per lb. | 1 | 4 | 7 | 6 |
| ,, Belgian | per lb. | 1 | 0 | 2 | 0 |
| ,, Almeria | per barrel | 12 | 0 | 18 | 0 |
| Lemons | per case | 6 | 0 | 30 | 0 |
| Nectarines, Cape | per box | 3 | 0 | 8 | 0 |
| Oranges, Denia | per case | 12 | 0 | 26 | 0 |
| ,, Jamaica | per case | 9 | 0 | 11 | 0 |
| ,, Californian | per case | 14 | 0 | 16 | 0 |
| ,, Mandarins | per box | 0 | 8 | 4 | 0 |
| Peaches, Cape | per case | 5 | 0 | 10 | 0 |
| Pears, American | per barrel | 25 | 0 | 26 | 0 |
| ,, Cape | per box | 4 | 0 | 6 | 0 |
| ,, Californian | per case | 8 | 6 | 16 | 6 |
| Pineapples | each | 2 | 6 | 5 | 0 |
| Plums, Cape | per case | 4 | 0 | 10 | 0 |

### Vegetables.

Business is fairly good, and prices, on the whole, satisfactory.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 | 0 | to | 4 | 0 |
| ,, Jerusalem | per ½-bush. | 1 | 6 | | 2 | 0 |
| Asparagus | per bun. | 3 | 6 | | 6 | 0 |
| Beans, Madeira | per basket | 4 | 0 | | 6 | 0 |
| Beet | per bush. | 2 | 6 | | 3 | 0 |
| Brussels Sprouts | per ½-bush. | 1 | 0 | | 1 | 6 |
| Cabbage | per tally | 3 | 0 | | 6 | 0 |
| Carrots | per doz. bun. | 2 | 0 | | 4 | 0 |
| Cauliflowers | per doz. | 2 | 0 | | 3 | 6 |
| Celery | per doz. bundles | 10 | 0 | | 14 | 0 |
| Chicory | per lb. | 0 | 4 | | 0 | 5 |
| Cucumbers | per doz. | 8 | 0 | | 12 | 0 |
| Endive | per doz. | 2 | 0 | | 2 | 6 |
| Horseradish | per doz. bun. | 10 | 0 | | 12 | 0 |
| Leeks | per doz. | 2 | 6 | | 3 | 6 |
| Lettuce | per doz. | 1 | 6 | | 2 | 0 |
| Mushrooms | per doz. lb. | 10 | 0 | | 13 | 0 |
| Mint | per doz. bun. | 5 | 0 | | 6 | 0 |
| Onions | per case | 8 | 0 | | 9 | 0 |
| Parsley | per ½-sieve | 2 | 6 | | 3 | 0 |
| Parsnips | per bag | 4 | 0 | | 6 | 6 |
| Radishes | per doz. bun. | 0 | 10 | | 1 | 3 |
| Rhubarb | per doz. bun. | 0 | 8 | | 1 | 3 |
| Savoys | per tally | 7 | 0 | | 10 | 0 |
| Seakale | per bun. | 0 | 9 | | 1 | 3 |
| Spinach | per bush. | 5 | 0 | | 7 | 0 |
| Tomatoes | per 12 lbs. | 2 | 0 | | 5 | 0 |
| Turnips | per doz. bun. | 2 | 0 | | 2 | 6 |
| Turnip Tops | per bag | 2 | 6 | | 3 | 0 |
| Watercress | per doz. bun. | 0 | 6 | | 0 | 6½ |

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| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Blackland | per ton | 60 | 0 | to | 65 | 0 |
| British Queen | per ton | 75 | 0 | | 85 | 0 |
| Essex | per ton | 70 | 0 | | 80 | 0 |
| Evergood | per ton | 50 | 0 | | 75 | 0 |
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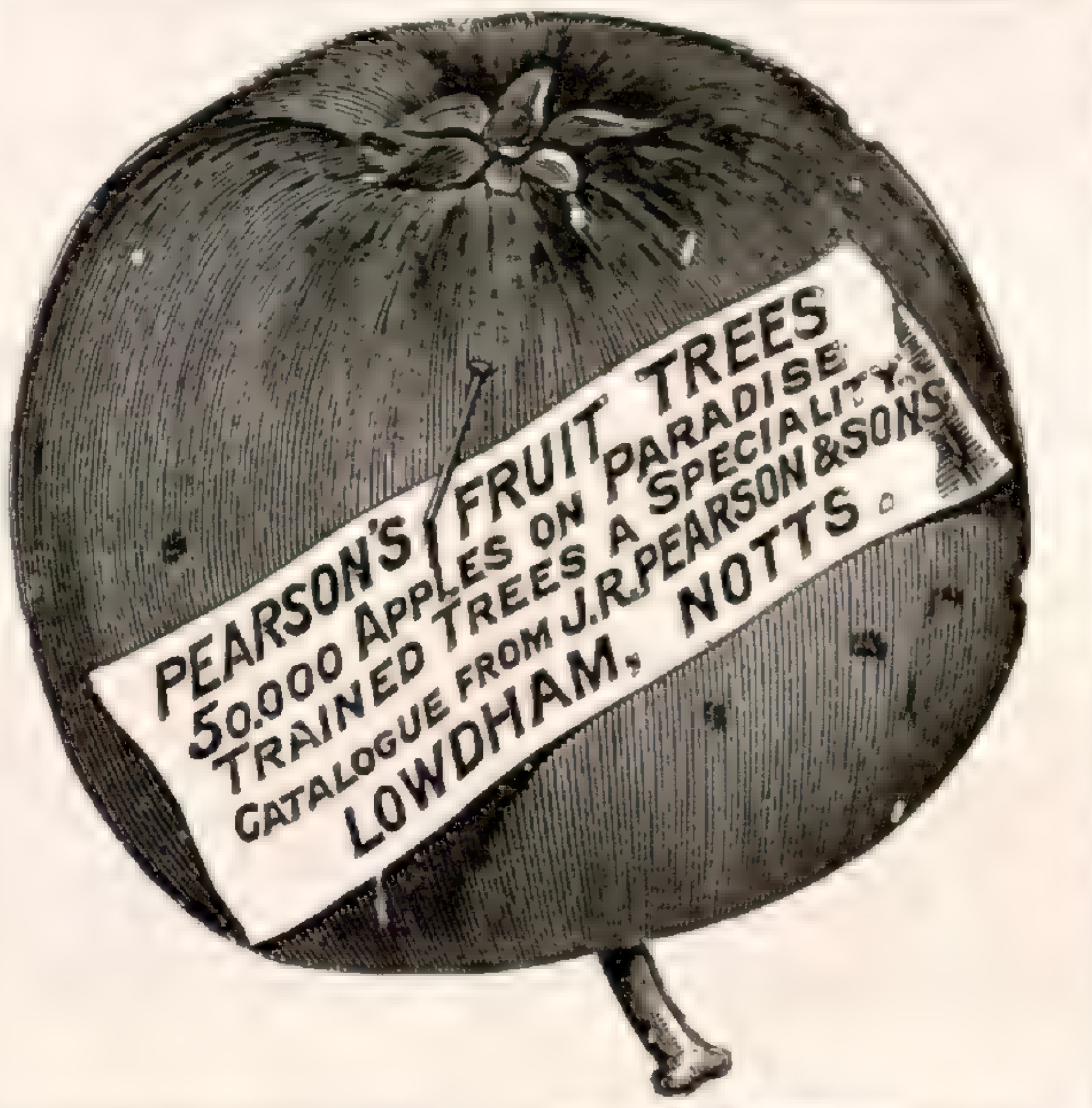

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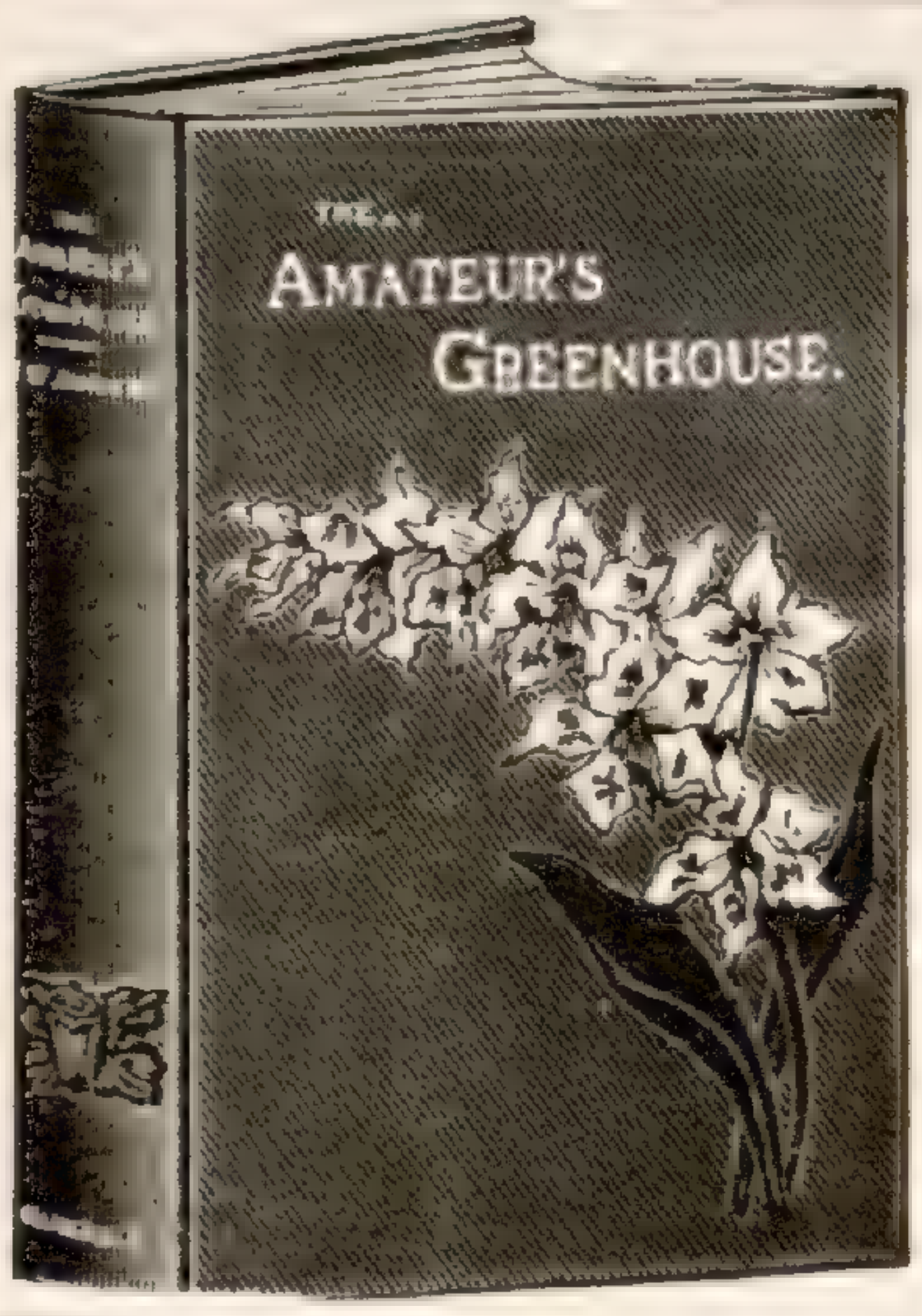
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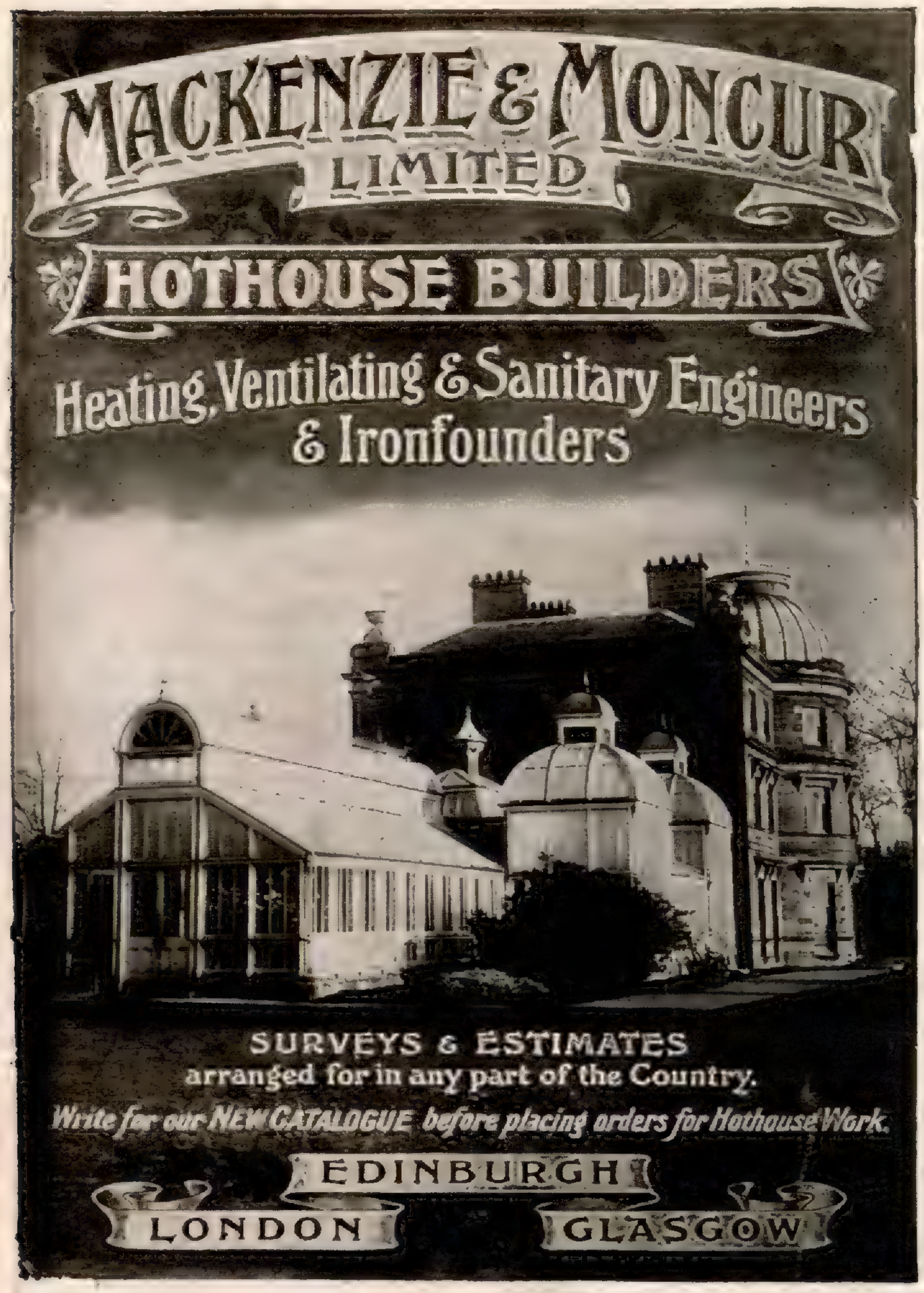

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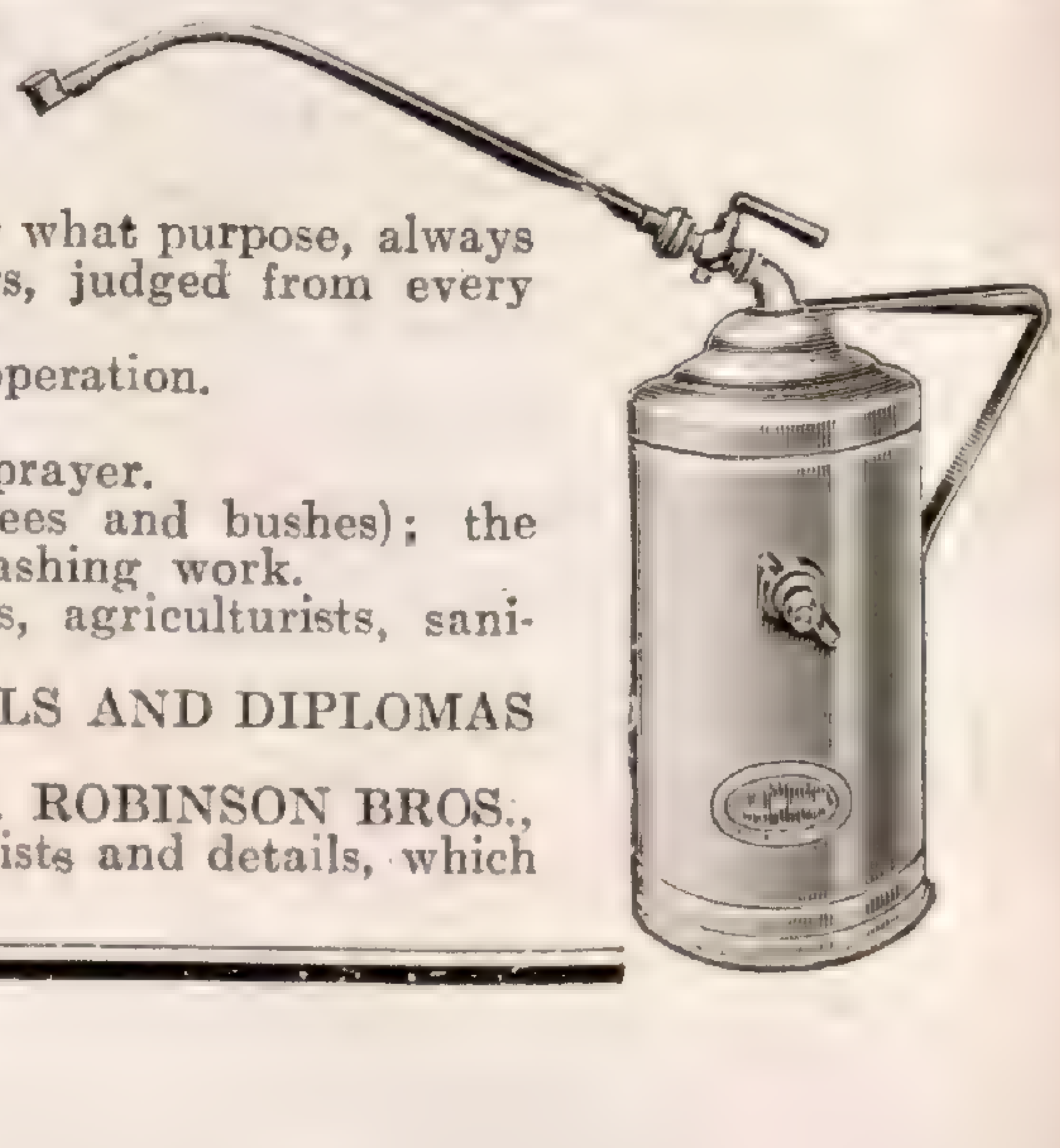

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VOL. LV.—No. 3,044. SATURDAY, MARCH 2, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Sterilisation of Soil.

A short time since we called attention to the report by Dr. E. J. Russell and Mr. F. R. Pethridge on the investigations they have made at the Rothamsted Experiment Station in the partial sterilisation of soil used in the cultivation of various useful crops and ornamental plants grown under glass. In our reference to the work that had been accomplished, we gave a brief summary of the conclusions of the authors of the report, but in view of the importance of the subject, and the interest evinced by our readers, we again refer to it for the purpose of directing attention to a few of the more important points with greater fulness than was previously possible. The sterilisation of soil used for cultural purposes is not a new feature of garden practice, and horticulturists will remember that from their youth upwards they have been advised to sterilise soil required for filling pots in which choice seeds or fern spores are to be sown by subjecting it to a high temperature, pouring water as near the boiling point as possible over the soil when the pots have been filled being the procedure usually recommended. The advice may not have been acted upon very frequently, or so often as it should have been, for, as shown by Mr. G. Massee in his investigation of the "streak" disease of sweet peas, the sterilisation of the soil in which the seeds of these flowers are sown will enable the plants to pass through the most critical period of their life free from the attack of the fungus by which the disease is caused. In their investigations of the partial sterilisation of soil Dr. Russell and Mr. Pethridge have taken a much broader view of the questions involved than the destruction of germs of the various forms of life likely to be injurious to plants in the earlier stages of their development. As so admirably stated in the report, the grower of crops under glass, working against time and season, is compelled to make every condition as favourable as possible for his plants. He provides such soils and manures as are the best suited to his crops, carefully regulates the temperature, ventilation, and water supply, and then finds that the warmth, moisture, and food that he so liberally supplied also encourages a host of other things, including eelworms and fungi. Not infrequently he finds his own crop faring badly through the activity of these parasites, the roots being invaded by eelworms, the stems and leaves by parasitic fungi, and the fruits by various disease-producing organisms. "Before very long," we are told, "his soil may be so infested with the germs of all these undesirables that it is little better than a death-trap for his plants, and has, therefore, to be thrown out." The active agents in promoting a healthy growth of crops under glass, as elsewhere, are the food-producing bacteria which teem in countless millions in cultivated soil. But large as are their numbers, they do not, as Dr. Russell and Mr. Pethridge are careful to point out, work at their maximum efficiency under natural conditions. They have other bacteria that are more or less injurious to them to contend with, and thus it comes about that neither the crops nor the food-producing bacteria can attain to their full development under the competition ordinarily going on in a glasshouse soil. The investigations made by the two scientists here mentioned have shown that it is possible to appreciably simplify the population of a soil. The different inhabitants have been found to vary very considerably in their susceptibility to heat and poisons, and, fortunately for the cultivator, the least susceptible to the effects of these are the spores of the food-producing bacteria. Thus it has been proved to demonstration that it is possible, by the use of suitable poisons, or of varying degrees of heat, to kill off various groups of organisms in the soil. It has been found also that certain other effects are produced, for the poisons have some chemical or other action on the soil, and heat causes some decomposition, but, in the words of the investigators, "the net result of treatment with less violent poisons and degrees of heat, is that the food-making bacteria now have a clearer field, and can multiply and make much more food than before. Such heated soils are, therefore, well suited for glasshouse work, because they are free from harmful and competing organisms." The experiments have further shown that the food-making processes in the soil are increased, and the plants obtain a larger supply of food than before; but the food is not exactly the same as usual, and the plants grow somewhat differently; moreover, the disease germs are killed. The several classes of plants that were utilised in the course of the investigations included chrysanthemums, carnations, cinerarias, clarkias, verbenas, melons, tomatoes, cucumbers, and spinach, and all without exception gave better results in soil that had been partially sterilised than in that which had not been treated. In the case of the chrysanthemums the soil in which the cuttings were struck was divided into three parts, one being heated by steam to 200-210 degrees, one treated with toluol (½ per cent.), and the third untreated. During the earlier stages there was not much difference between the several sets of plants, but in the course of the summer the plants

MR. CHARLES WAKELY.

that were raised from cuttings rooted in the heated soil were the most robust, but were free from coarseness. Spinach grown under glass in soil that had been heated by steam to 200-210 degrees produced larger leaves, and showed less tendency to run to seed than did the plants in soil that had not been subjected to heat. The difference was most marked in the early spring crop, the relative weights of the produce in the untreated and treated soil being 100 and 447 respectively. The experiments with radishes are of special interest, and in these seven successive sowings were made under glass, but no manure was applied to the soil. The first three crops in the soil that had been heated to 200-210 degrees were much larger and earlier than the crops in the control bed, but the last three differed but little. After the seventh crop the soil was again heated and sown with radishes, and the weight of the resulting crop was nearly double that from the control sowing. The results obtained with tomatoes were of much interest because of the importance of the crop and the marked difference in the produce. Six sets of plants were grown for the purposes of the investigations, three in soil that had been heated, two in soil watered with chemicals in solution, and one in untreated soil. The relative weights of the crops, briefly stated, were: Untreated 100, soil heated to 200 degrees 342, heated to the same temperature plus an addition of basic slag 332, heated to 130 degrees 339, soil treated with toluol 336, and with carbon disulphide 346. The chemicals were used at the rate of ½ per cent., or one gallon per ton. The results obtained were throughout such as to show that the question involved is one deserving the most careful consideration of practical cultivators, more especially those engaged in market culture. It is hardly necessary to say that if such increases can be obtained in practice, the returns will more than repay the cost of treatment. It is even more important to know, from investigations conducted on strictly scientific lines, that tomato and other soils that have become "sick" can be restored to a healthy state. The investigations of Dr. Russell and Mr. Pethridge have proved to demonstration that "sickness" of such soils is due to a lowered efficiency of the food-makers, and an accumulation of disease organisms. Also that both these causes are removed by partial sterilisation, and most completely by heating to 200 degrees.

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**Mr. Charles Wakely,** horticultural instructor under the Education Committee of the Essex County Council, is an exceedingly capable teacher of the gentle art of gardening, and his services are in great request for lectures and demonstrations throughout the county. Mr. C. Wakely is an Old Kewite, who, besides being an excellent cultivator, has always been studiously inclined, and so has added a wide theoretical knowledge to practical skill. Special attention has been given at Chelmsford to the training of young gardeners, and many of the young men so trained have passed local and R.H.S. examinations in horticulture, and are now occupying good posts in the horticultural world, and in their training Mr. Wakely has taken a very active part. When some local difficulty in connection with horticulture arises in Essex Mr. Wakely is the man usually sent to solve it. The Essex County Council long ago encouraged school gardening, with the result that quite a hundred schools now give instruction in this subject. This has naturally led to a need for classes for teachers, on Saturdays and during the summer vacation. This work, and also that of selecting plots for school gardens, and the superintendence of the plots under cultivation, occupy a good deal of Mr. Wakely's time. An experimental garden of three acres is also largely under his care, and this has been arranged and planted for the purpose of experiment, and also for practical instruction in connection with the various classes held at Chelmsford. Mr. Wakely is very happy in his work, and his quiet manner and readiness to help all and sundry make him very popular in the county of Essex.

**Dahlia Conference.**—A conference organised by the National Dahlia Society will be held at Carr's Restaurant on Friday, March 8, 1912, at 6.30 p.m. Mr. George Gordon, V.M.H., president of the society, will preside, and papers will be read by Mr. George Davidson on "The Cultivation of Dahlias in Suburban Gardens," and Mr. J. B. Riding on "Collarette, Pæony-flowered, and Decorative Dahlias." Members of the society and others interested in the dahlia are invited to send in questions relative to dahlia matters, and these will be answered by experts after the papers have been read. The questions should be written out and sent to Mr. E. F. Hawes, hon. sec., Ulysses, Fortune Green, N.W.

**Tree Pruning in the Mall.**—Towards the close of the winter of 1910-11 there was considerable criticism in the general Press of the manner in which the young plane trees in the Mall were being pruned, and much was written that indicated on the part of the writers an imperfect acquaintance with the pruning of such trees. Pruning operations have again commenced in the Mall, and with reference to the manner in which they are being carried out, a correspondent of "The Times" writes: "The authorities who have charge of the Processional Avenue in the Mall are again at their fell work lopping and hewing young trees into a kind of hedge. The work is being done by three apparently labouring men with no expert to advise them. They have nearly finished the south side of the avenue, on which they have, as far as they have gone, cut off the leading shoot of every tree, and generally stubbed them into the appearance of doll's-house trees. Now, no doubt trees in an avenue require some cutting for the prevention of surplus leads, the removal of surplus shoots, etc., but I am confident that no aboriculturist of experience in the Kingdom could be found who would permit the leading shoots of trees in a processional avenue to be cut off." This is the critic's statement with regard to the manner in which the pruning is being done, it is therefore of special interest that the facts of the case should be known. The work is being performed on exactly the same lines as last year. As already intimated, there was then considerable criticism of the manner in which the trees were pruned, and, in consequence thereof, Professor Bayley Balfour, F.R.S., Regius Keeper of the Royal Botanic Gardens, Edinburgh, was asked to inspect the trees and report upon them. He complied with the request, and the result of his investigation was published as a Parliamentary Paper, to which we referred at some length on its publication. Professor Bayley Balfour stated that he found nothing to justify the adverse criticism of the pruning, or of the result obtained from it. So far from this being the case, he was impressed by the evidence of the application of sound practical knowledge combined with scientific principle in the pruning of the trees in relation to their surroundings. The pruning operations that are now in progress are being conducted by expert workmen, under the supervision of those who are fully acquainted with both principles and practice of tree pruning.

**Proposed Gardeners' Dinner.**—Mr. Alex. Dean, V.M.H., informs us that hopes have been entertained that a big dinner and social gathering, similar to that which took place at the Holborn Restaurant in 1903, could be arranged in the interests of British gardeners in connection with the forthcoming International Horticultural Exhibition in May. The old Gardeners' Committee, considerably enlarged, met at Vincent Square on Tuesday, February 20, to give the matter full consideration. Ultimately, after considerable discussion, it was resolved to abandon the project for several and sufficient reasons, as the conditions which made for success in 1903 did not present themselves now. The committee came to the decision regretfully but realised that unless there was reasonable prospect of success it was useless to proceed further in the matter.

**The Yellow-flowered Cherry.**—Messrs. Paul and Son, Cheshunt, write us: "Your notes on page 114 of the GGARDENERS' MAGAZINE, and the accompanying illustration of Prunus pseudo-cerasus flore luteo pleno, interests us considerably, because our attention was drawn to it some ten years ago by the late Mr. George Nicholson. We have grown it ever since under the name of P. lutescens. The colour is, as you suggest, buff tinted or cream. This cherry has been very effective some seasons with us, but the remarkable thing is that customers so rarely enquire after the yellow-flowered cherry."

**Advisory Committee on Woods and Forests.**—The President of the Board of Agriculture has appointed a Committee to advise the Board on matters relating to the development of forestry. References will be made to the Committee from time to time as occasion arises. The Committee will be asked in the first instance: (1) To consider and advise upon proposals for a forestry survey; (2) to draw up plans for experiments in sylviculture, and to report upon questions relating to the selection and laying out of forestal demonstration areas; (3) to advise as to the provision required for the instruction of woodmen. The Committee is constituted as follows: Sir Stafford Howard, K.C.B. (chairman), Mr. F. D. Williams-Drummond, Sir S. Eardley-Wilmot, K.C.I.E., the Right Hon. R. C. Munro Ferguson, M.P., Lieut.-Colonel D. Prain, C.M.G., C.I.E., F.R.S., Mr. E. R. Pratt (President of the Royal English Arboricultural Society), Professor Sir W. Schlich, K.C.I.E., F.R.S., Professor William Somerville, D.Sc., and the Hon. Arthur L. Stanley. Mr. R. L. Robinson, of the Board of Agriculture, will act as secretary.

**Royal Gardeners' Orphan Fund.**—We have much pleasure in announcing that Sir Edwin Durning-Lawrence, Bart., has kindly consented to preside at the twenty-fourth annual dinner in aid of this fund, which has been arranged to take place at the Hotel Cecil on Wednesday, May 8.

**Northern Counties' Fruit Congress and Show.**—The four Northern Counties will hold a Fruit Show and Congress at Carlisle on September 4 and 5, in conjunction with the Carlisle and Cumberland Horticultural Association's exhibition. Mr. W. B. Little, Petteril Street, Carlisle, the hon. secretary of the Congress, writes: "The dates may appear early, but this could not be avoided as the Carlisle Society specialises in sweet peas, etc., and they afford us an opportunity of displaying early apples, which could not be shown at Newcastle in November, 1911, or at Hexham in October, 1910. The fruit section is classified according to the season of the varieties specified in the schedule, and, with one or two exceptions, only those varieties are specified which are known to do well in these Northern counties."

**The Gardeners' Royal Benevolent Institution.**—Sir Jeremiah Colman, Bart., has kindly consented to preside at the 73rd anniversary festival dinner in aid of the funds of the Gardeners' Royal Benevolent Institution, on June 25, at the Grocers' Hall, City, kindly lent by the Guild.

**Presentation at East Ham.**—At the annual meeting of the East Ham Amateur Chrysanthemum Society the hon. secretary, Mr. H. J. Kybert, was presented with a purse of gold in recognition of the ability with which he has discharged the duties of his office.

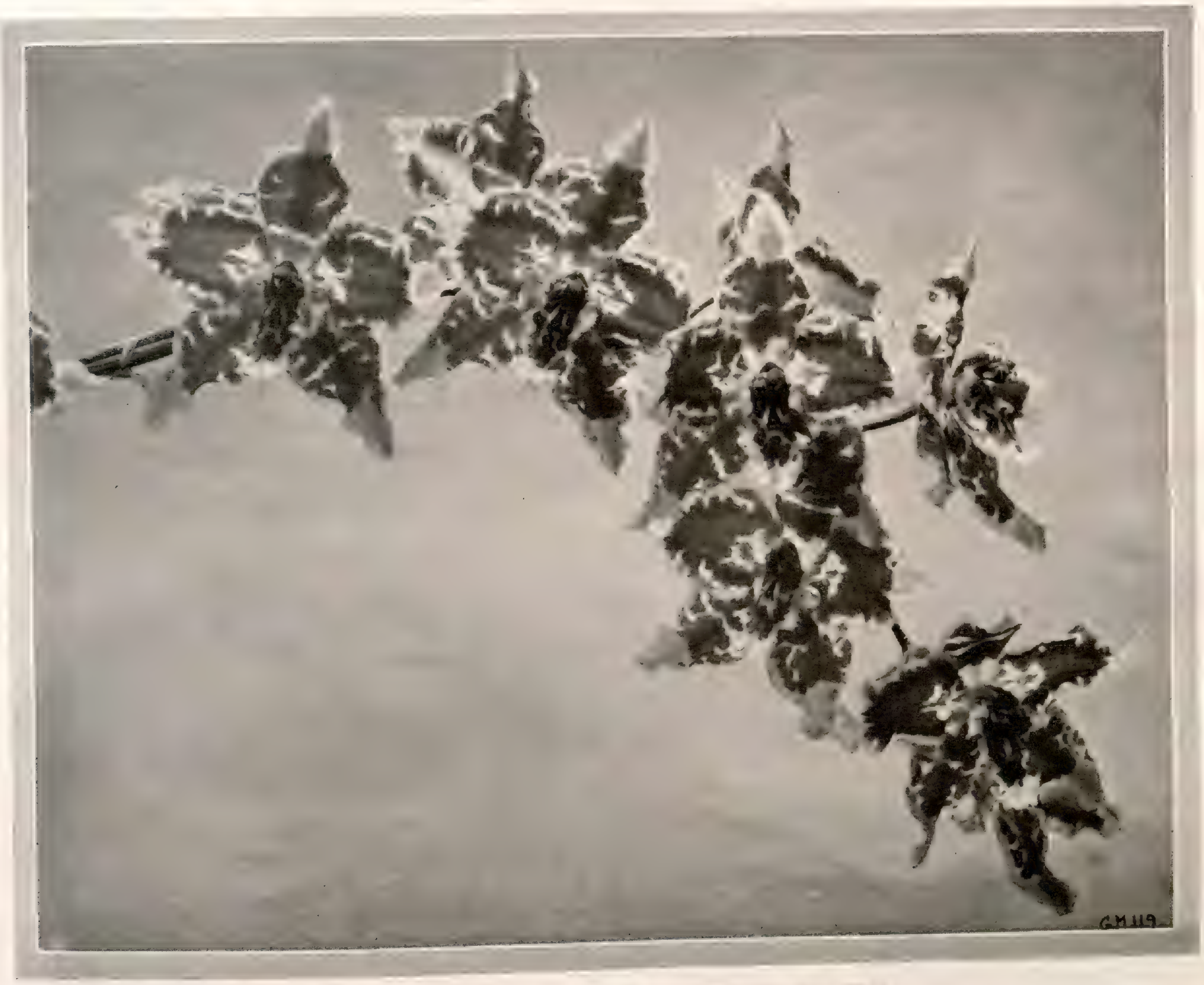
**Valentine's Park, Ilford.**—We have much satisfaction in learning that an attempt is being made to save for the public use a beautiful expanse of meadow and garden adjoining Valentine's Park, at Ilford. This is one of the most picturesque of London's suburban parks, but much of its charm will be lost if the adjoining land is sold for building purposes, and dwelling-houses brought close up to its boundaries. The owners of the land have made an offer that will enable this special area to be purchased for a price some £200 or £300 per acre less than was paid for the park land. To complete the purchase it will be necessary to raise about £3,000 by public subscription. Occupying a position on the land to be purchased is a vinery containing the stump of the Black Hamburgh grape which was the parent of the Hampton Court vine.

**Lady Doctor's Legacy to her Gardener.**—Dr. Sophia Jex-Blake, the first lady to qualify as an M.D. in England, left estate valued for probate at £14,196 gross. She resided at Windydene, Mark Cross, Sussex. Among various legacies was one of £100 to her gardener, Mr. David Beale.

## NEW PLANTS, ETC.

### ODONTOGLOSSUM VULCAN CRAWSHAYANUM.

A handsome and large-flowered hybrid between O. crispum and O. Vuylstekei. The shapely blooms are pale yellow, with a salmon sheen and numerous large bright red-brown blotches. A.M., R.H.S., February 20. De Barri Crawshay, Esq. (gardener, Mr. Stables), Rosefield, Sevenoaks.



ODONTOGLOSSUM VULCAN CRAWSHAYANUM.
Flowers large and shapely, yellow, with a pink or salmon tinge, and with large blotches of bright red-brown. A.M., R.H.S., February 20. De Barri Crawshay, Esq. (gardener, Mr. Stables), Rosefield, Sevenoaks.

### CARNATION LADY MEYER.

A beautiful large, perpetual-flowering carnation, of a charming shade of bright rose-pink. The flowers are very double, and are carried on stout stems. We understand the variety is very free-flowering. A.M., R.H.S., Mr. Guile, Newport Carnation Nursery, Newport.

### APPLE OATLANDS SEEDLING.

A very late-keeping dessert apple, of medium size, roundish, but flattened somewhat at top and base. The skin is green, russety, and but very slightly coloured; the flavour is excellent. Cox's Orange Pippin and Sturmer Pippin are said to be the parents. A.M., R.H.S., February 20. Mr. F. G. Gerrish, Pendley Manor Gardens, Tring.

### CALANTHE BARON SCHRODER ALBIFLORA.

A fine form of the late-flowering Calanthe Baron Schroder, and, as shown, it was in splendid condition, the plant carrying two large spikes. The sepals and petals are white, and throw into great relief the rich rosy-crimson lip. A.M., R.H.S., February 20. Baron Bruno Schroder (grower, Mr. J. Shill), The Dell, Egham.

### CATTLEYA BRENDA.

A white hybrid cattleya, with a very pale lemon-yellow tint in the throat of the lip. The flower is of fair size and shape. The parents are C. Dursuldorfi var. Undine and C. Gaskelliana alba, and the hybrid is most nearly like the first-named. A.M., R.H.S., February 20.

### RIBES LAURIFOLIUM.

This hardy Chinese shrub has been raised from seeds collected, we believe, by Mr. E. H. Wilson, in China. The three plants exhibited were small ones, with fairly broad dark green leaves that have suggested the specific name. From the axils of the leaves small drooping racemes, a couple of inches long, appear, and these are composed of very light green flowers, stems, and bracts. There is nothing bright or cheerful about the shrub as now seen, though doubtless a good bush would have a striking appearance when freely flowered. A.M., R.H.S., February 20. Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham House, Elstree.

### CALADIUM PUBESCENS.

A strong-growing species from Peru, with bright green ovate-cordate leaves about a foot long, pubescent on both sides; the rather large, white and green spathe is pubescent externally, and it is the presence of pubescence on the plant that makes it so distinct a species. "Bot. Mag.," t. 8,402.

## SUMMER LETTUCES.

It is generally admitted that the lettuce holds premier position for salading. Its blanched leaves alone are also very refreshing, and especially so during the summer months, when they are found on almost every tea table throughout the country. Each year seems to bring a greater demand for lettuces, and much skill and forethought are required from the gardener, especially in such a summer as we experienced last year, to keep up a liberal and constant supply of first-class produce. Lettuces grown on poor, light, shallow soils, and insufficiently supplied with moisture, are not worth eating, and stand as a great contrast to the properly cultivated plant; therefore it is of the utmost importance that good culture is given to attain success.

### Preparation of the Soil.

Although it cannot be said that the lettuce is particularly fastidious with regard to soil, it grows away most freely in a deeply-trenched, rich, and moderately open and warm soil. Fortunately, the freely-stirred, average kitchen garden soil is mostly within a small margin of meeting the requirements, and can be treated accordingly. Where it is found too stiff and cold, a thorough dressing of soil from the rubbish heap, first run through a sieve, is of prime value; while, where the land is too light, a desired medium can be brought about by adding marl or loam dressings, and forking these in lightly in such quantity as the case requires. Wood-ashes, if at hand, are a valuable addition to any soil.

### The First Sowings.

For the earliest summer cutting a sowing should be made in a bed of soil in a cold frame in early March. The frame should be kept close until germination has taken place; but as soon as the young plants are established, plenty of air, when the weather is suitable, should be given them, until the lights can be entirely removed, and the plants hardened off for planting out. The site selected to secure an early cutting in June must be a warm south border.

About the same date as the above sowing, and when the ground is found in a suitable condition, make a sowing on an outside south border in drills about 12 to 15in. apart. The germination and early growth will naturally be slower than in the case of frame-sown ones. The aim should be to select varieties for these sowings that turn in as early as possible, and the cabbage form is, without doubt, the most valuable in this respect. Golden Yellow, Early Paris Market, All the Year Round, and Buttercup—more especially the two first-named—are varieties that will give satisfaction.

### Mid-season and Later Sowings.

At mid-season extremes of temperature and drought have to be reckoned with, and the cooler and more open quarters of the garden are to be preferred for these sowings, and during the hottest part of the year north borders are very valuable for the crops. With the daily supply that is required for a private establishment, comparatively small and frequent sowings of seeds are better than few and larger ones. Every second week or ten days will serve, and then, whatever weather is experienced, there will be safety against broken supplies.

The lettuce seedlings are very amenable to transplantation. Yet in midsummer, when the weather is often very unsuitable, it is as well to err on the side of sowing where the plants are to remain, and thin them out to their proper distance apart. Top-dressings of old mushroom-bed manure or other decayed material which conserves the moisture to their roots is of great benefit. This, with deep cultivation, and ample supplies of water when the rainfall is light, cannot fail to produce succulent and satisfactory lettuces.

The question of which kinds to grow at this season, cos or cabbage, is, of course, a matter of individual taste; yet I think the majority would be on the side of the cos varieties. Dickson and Robinson's Little Gem turns in quickly, is nearly self-blanching, and is in every way a desirable lettuce; while other good kinds are London White, Mammoth White, Giant Market, and Webbs' Monstrous White. All these are well tried, and known to give solid and crisp leaves. A mistake that is often made by beginners is that of growing the cos varieties too thickly together. They should be allowed from 12 to 15in. from plant to plant, to permit full development. A detail with lettuces is that of blanching, for, however well grown, they are far from perfect if this has been omitted. Judgment should be used, as far as can be, so that the heads are tied up at least eight days before using them. Good varieties of cabbage lettuces for late summer use are Standwell, Continuity, All the Year Round, Summerhill, and Verdant Green.

C. Flack.

Cholmondeley Castle Gardens.

## MORE ABOUT SWEET PEAS.

The recent severe weather, coming as it did after such a generally mild spell, will, I am afraid, have played sad havoc with many autumn outdoor-sown sweet peas. The very moist state of the soil at the time of the frost has no doubt accentuated the evil effects. Many that I have seen in this neighbourhood are badly hurt, and the stems appeared quite bleached a day or two after the frost.

As autumn-sown peas are generally put in pretty thickly, some few may have survived, and as it takes very few plants to make a row, many that now look entirely done for may soon, under suitable weather, quite fill up the ground. Many that are cut down may even break up again, and make better plants than spring-sown ones. Given a few fine drying days a good hoeing between the rows will materially help the plants to make a fresh start, this being particularly necessary on the damp, cold soil, but it must not be done where there is danger of sharp frosts at night, as I have found plants damaged badly on freshly moved ground, whilst those that have not been hoed or disturbed in any way have not been touched. Where there is any fear of an insufficiency of plants, a sowing may be made at once, in boxes; the seeds will soon germinate in a little warmth, and, after careful hardening off, the seedlings may be pricked off into the rows to fill up gaps. The foregoing remarks apply chiefly to sweet peas being grown either for ordinary cutting purposes or for seeds.

The plants wintered in frames would, in many instances, also be frozen, but these being drier and partially sheltered should not be any the worse, though it sometimes happens that when the pots are not plunged the young roots are apt to suffer, but as this is easily preventable by plunging, when they have suffered it is the fault of the individual and not the system. With the lengthening days, and a little more power in the sunshine, these plants should now be growing freely, and if they are very close together they should be spaced out a little, and, where necessary, a few twigs put to the plants to keep them upright. Every opportunity of fine weather must be taken to remove the lights, not only during the daytime, but at night also, and there are not many weeks left in which to get them into a thoroughly hardy condition, as planting out should be commenced as early in April as the condition of the soil and weather will allow.

In the paper recently read by Mr. Chittenden, at the National Sweet Pea Society's Conference, he strongly urged the necessity of having the plants as strong as possible in the early stages, as the streak disease (Thielavia basicola) did not appear to attack the plants until they were in a generally debilitated condition through some other cause; with this in mind, it might be an advantage to give the plants in pots or boxes just one watering with sulphate of potash, 1oz. to two gallons of water.

Plants either planted out or growing in pots in the houses are now commencing to grow in real earnest, and careful watering and ventilating must be employed to keep them as steady as possible; it is not desirable to have them about six feet high before they commence to flower. The absence of sunshine during the early part of February has been all against sweet peas, but as we hope to see more of his majesty now, we shall expect a proportionate improvement in the plants; those of our friends who are growing sweet peas for the great International Exhibition, will be wanting all the sun possible to have their plants in the best possible condition for the month of May; it must be remembered that sweet peas will not stand forcing at the finish, as is the case with many other plants.

In warm districts and dry soils preparation should be made for sowing out of doors. There are many people who rely on this method of sowing for their main batch of flowers, therefore it is as well to do everything possible to ensure a good germination. Presuming the ground has been thoroughly well dug or trenched during the winter, a few drying days should be all that are necessary to bring it into good working condition. Where the soil is heavy a sprinkling of dry wood ashes over the surface should help to break it down finely, and this is essential, not only to allow of the free growth of the young seedlings through the soil, but to do away with the harbourage for slugs, which are probably the worst enemies of outdoor-sown sweet peas. With the soil in a fairly dry condition, and thoroughly well broken up, from two to three inches is none too deep to sow the seeds, varying it, of course, according to the texture of the soil, deeper in the case of light soil, and vice versa; this is deeper than many people recommend, and the late plants are longer in pushing through the ground, but I have proved they do better afterwards, and do not dry out so quickly in hot weather as those sown quite shallow.

Where birds are troublesome it is a wise plan to strain four or five rows of black thread about four inches above the soil, and this should be done at the time of sowing.

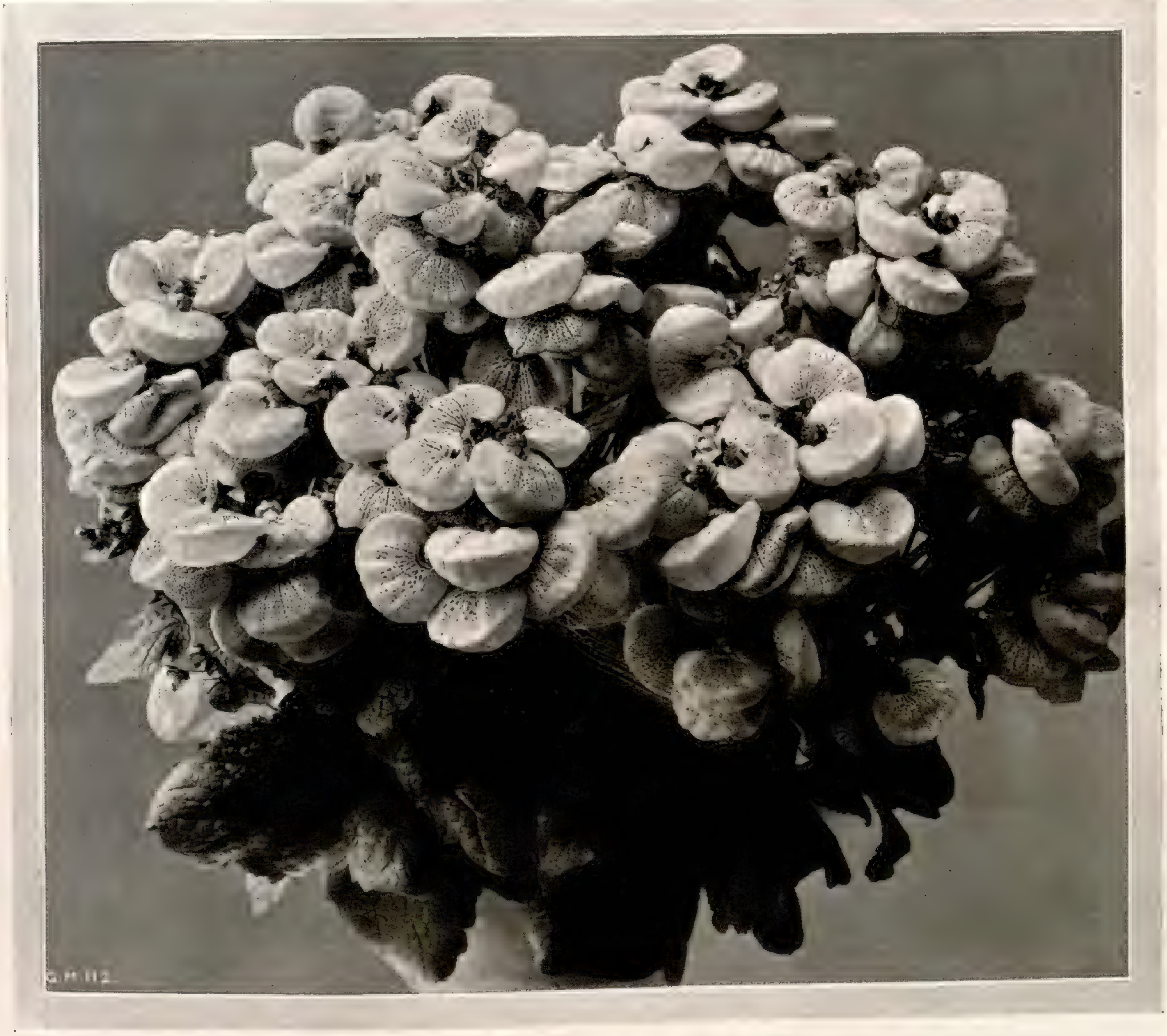
Thos. Stevenson.

Woburn Place Gardens.

**Chrysanthemum Madame R. Oberthur.**—This is one of the best of the late white chrysanthemums, either for culture as pot plants, or for the supply of cut blooms. In addition to its other desirable qualities, it is of easy culture, and the beautiful flowers can be depended upon to develop well.—W. T.

# GREENHOUSE PLANTS FROM SEEDS.

Probably in no phase of gardening has there been so many improvements effected in the past few years as in greenhouse plants that can be easily raised and grown from seeds. We can, at the present time, with a little care and forethought, produce plants in nearly every colour imaginable, that will charm the hearts of all true lovers of flowers; and, what is of infinitely greater importance, the plants, when well grown, lend themselves admirably to the beautifying of conservatories and the adornment of private rooms in large or small establishments. Seeds of these plants can be obtained in great variety at the present time, and consequently the demand for them is larger than it was many years ago. I purpose to give a few brief cultural details for a select list of plants grown easily from seeds, and which make a grand display of flowers and colour during many dull months of the year.



A WELL-GROWN HERBACEOUS CALCEOLARIA.

Admirably representing the fine strain of herbaceous calceolarias selected by Messrs. E. Webb and Sons, Wordsley.

## Schizanthuses.

Although the schizanthuses were neglected for many years, they have now become a charming and indispensable group for conservatory and house decoration. They have this great advantage over many other greenhouse plants, that the flowers are very lasting when cut, and are very effective and charming for dinner-table decorations.

To obtain fine plants to flower in March and April, seeds should be sown in August or September in pans of light soil, and placed in a warm greenhouse to germinate. When large enough to handle, put the plants singly into small pots, using a fairly rich, friable soil, for the best results will not follow if they are allowed to become starved at any time. For the flowering pots, 6in. or 7in. will be found large enough for plants intended to flower in the spring; but if large specimens are required, they can be given a shift into 8in. pots at the latter end of February. Soil for the final potting should consist of two parts good fibrous loam, two parts leaf-mould, a little pulverised cow manure, and a good sprinkling of sand. Pot firmly, and grow in a light, airy house or pit during the winter months, sufficiently heated to exclude frost. Pinch out the points of the shoots two or three times to induce the plants to make good bushy specimens. Sow seeds again at the end of January and the end of March to maintain successional batches, as the resulting plants will grow into fine, large specimens if potted into 8in. and 9in. pots.

Place one stake to each plant, and carefully tie in the shoots when required. Water sparingly during the winter months, but as the season advances larger quantities of water will be required, and when the pots are full of roots give weak liquid manure, soot-water, or some approved chemical stimulant in small quantities once or twice a week.

## Herbaceous Calceolarias.

It would be difficult to find more attractive subjects than well-grown and well-flowered plants of a good strain of calceolarias; but, alas! how often do we see poor, miserable specimens that are a disgrace to those concerned. The cause of many failures to grow this plant successfully is undoubtedly "coddling." A temperature of from 40 to 50 deg. should be maintained at all times. In penning these few remarks, I have in my mind's eye plants which were grown and flowered here in 10in. pots by the late Mr. Pettigrew, at Cardiff Castle, measuring from 2ft. 6in. to 3ft. through. These plants filled the two side stages and the centre bed of a 60ft. greenhouse, and were a sight not easily forgotten.

Seeds should be sown at the middle of June in pans of moist, light soil. Slightly cover the seed with fine soil, place in a cold frame with a piece of glass over the top of the pan, and shade from the sun. The young seedlings should be pricked off when very small into shallow pans or boxes, given a good watering, and placed in a frame, which should be kept close and moist for a few days. They will soon respond to this treatment, and in a few weeks will be large enough to place into small pots, using a light compost, with plenty of grit in it, and a good sprinkling of pulverised cow manure. Pot fairly firm, and spray the plants overhead on bright afternoons to freshen them up, and also induce the roots to push into the new soil. Admit air on all favourable occasions, and bear in mind that the less "coddling" they receive the better will be the results. At the same time, it must be clearly understood that careless treatment will likewise be disastrous; so avoid cold draughts when giving air. Calceolarias should be shifted into larger pots as more root space is required; and finally, by the middle of March, they should be in their flowering pots. A good compost consists of three parts good fibrous loam, one part leaf-mould, one part decayed cow manure rubbed through a fine sieve, a good sprinkling of coarse sand, soot, and lime rubbish. Pot the plants firmly, and stand them on sifted coal ashes, close to the glass, in a cool pit or a light, airy greenhouse. Water with great care, and keep a uniformly moist atmosphere by frequently damping the ashes and spraying the plants on all favourable occasions. Carefully stake the plants when they commence to throw up their flower stems, and tie out the growths to make good specimen plants. When the pots are filled with roots, give doses of weak liquid manure, or some approved chemical fertiliser occasionally, to accelerate the development of good strong, healthy plants.

The accompanying illustration represents a very fine specimen of Messrs. E. Webb and Sons' superb strain of calceolarias, which is equally remarkable for its brilliant colouring and excellent habit.

### Cinerarias.

The cultivation of cinerarias is comparatively easy, but they are indispensable as decorative flowering subjects for the greenhouse or conservatory. For ordinary requirements seeds should be sown in May or June; but, where cinerarias are required in bloom in December, seeds should be sown at the beginning of April. Choose a light, sandy soil, made moderately firm, and sow the seeds thinly in well-drained pans. Lightly cover them with fine soil, give a gentle watering, and place in a close, warm frame or house, with a piece of glass over the pans to assist quick germination.

Cinerarias grow very freely, and when the seedlings are large enough to handle they should be potted singly into 3in. pots, using a coarse, open soil. Place the plants in a cold frame on sifted coal ashes. Shade from bright sunshine, and lightly spray the plants over morning and evening until well established. Give the plants at all times plenty of room, so that the leaves will not become thin or weakly, and give another shift into larger pots before the roots become matted; and finally transfer them into their flowering pots. Six-inch pots are large enough to flower them in; but occasionally large specimens are required, when the best plants should be potted from 6in. into 8 or 9in. pots. A good compost for potting cinerarias is made up of two parts loam, one part leaf-mould, with plenty of sharp grit, sand, or sifted road sweepings added. Avoid using a rich soil, which will undoubtedly have a tendency to produce an abundance of soft foliage. Keep the plants in a temperature varying from 50 to 55 deg., as they are easily injured by frost. Give plenty of fresh air when possible, but avoid cold draughts. Shade the plants from excessive sunshine, and from the middle of August to the latter end of September, weather permitting, remove the sash-lights bodily from the plants at night, replacing them again the following morning. Carefully attend to the watering, and give liquid manure once or twice a week, as soon as the plants throw up their flowers.

There are a number of splendid varieties to select from, sent out by many of our enterprising seedsmen. Everyone is acquainted with the large-flowering types; but, in my opinion, the Star varieties should receive a great deal more attention. They can be obtained in separate or mixed colours, and at various heights. When in flower these have a most beautiful and graceful effect, and as cut flowers are greatly in demand, the long, elegant sprays making a most charming arrangement in vases.

### Primulas.

Probably no greenhouse plants have received more attention than these since their introduction into this country; hence their popularity as useful decorative flowering subjects.

Primula sinensis can now be obtained in splendid strains of single and double-flowered varieties, with a beautiful range of colours, strong in constitution, and very floriferous. The Star primula is a lovely type of more recent introduction, which commences to bloom early in December, and continues all through the winter months. The colours are pure white, pink, light blue, dark blue, crimson, and carmine, and the flowers are excellent for cutting, as they will travel a long distance without damage.

Primula obconica grandiflora is another very floriferous type, with flowers nearly as large as P. sinensis, and it is practically perpetual-flowering. Seeds can be obtained of white, pink, rose, crimson, and mauve varieties. As cut flowers these are as useful as the Star primulas.

Seeds of P. sinensis and P. stellata should be sown in May and June in a mixture of good loam and leaf-mould, with a good sprinkling of sand. Sow evenly and thinly upon the surface, cover the seeds lightly with fine soil, and gently press it down. Place the pots in a temperature of 60 to 65 deg., and shade from the sun. As a rule the seedlings come up very irregularly, and the largest should be carefully removed, without disturbing the smaller ones, and pricked out into small pots. Keep the plants close for a few days, and water with great care, and, when established, gradually admit air until the plants can be placed upon the shelf in the house, and near the glass. After a few weeks they will be ready to place singly in thumb-pots; and, once established in these small pots, they should be grown as hardily as possible, always, of course, avoiding cold draughts and frost. Shift the plants when necessary until the flowering size is attained, but repotting should on no account be done unless the pots are well filled with roots. Pot firmly up to the collar of each plant. During July and the two succeeding months a good place for the primulas is a cold pit.

Primula obconica seeds should be sown in February to produce good plants to flower early in the autumn and continue throughout the winter and spring months. The other cultural details are similar to that as recommended for P. sinensis and P. stellata.

### Celosias.

These are useful and highly decorative plants, their beautiful plumes of rich crimson, orange-scarlet, magenta, and yellow making them excellent subjects for conservatory and greenhouse adornment. Seeds sown in February and March produce excellent flowering plants in July, August, and September. Sow the seeds thinly in pans or pots in a light, rich compost, and place in a brisk heat to germinate. When large enough to handle pot up the seedlings singly into 3in. pots, attend carefully to watering, and grow in a temperature ranging from 60 to 65 deg. Shift the plants into larger pots as may be requisite, taking care not to allow them to become root-bound until they are in their flowering pots—in fact, they must not be allowed to receive a check at any time, or poor results will follow. Use a rich compost of three parts good fibrous loam, one part each of leaf-mould and well-decayed manure, with a good sprinkling of sand. Pot firmly, and commence to give weak liquid manure when the pots are well filled with roots, though this must be discontinued when the flowers are about half-developed. Gradually harden the plants off, admitting plenty of air at all favourable times, and flower them in a cool greenhouse, as here they will maintain their beauty for a considerable period.

Beautiful little specimen plants may be had in full flower in 5in. pots at Christmas if seeds are sown the second week in July. These will be found exceedingly useful, when their bright plumes make an attractive and brilliant display.

Henry R. Farmer.

Cardiff Castle Gardens.

## A GOOD DRY-WEATHER VEGETABLE.

In all too many gardens the merits of New Zealand spinach are not appreciated, and so a valuable dry-season vegetable does not become so popular as it deserves to be. It is a first-rate substitute for spinach, and in a dry, hot season like that of 1911 it is a great success, when ordinary spinach quickly runs to flower, and is disappointing.

New Zealand spinach (Tetragonia expansa) is a native of New Zealand and Australia, and, though a hardy perennial, its value lies entirely in its usefulness in the summer and early autumn. In the matter of flavour New Zealand spinach compares favourably with the common form; indeed, some people like it better because of the absence of bitterness. It is possible to obtain an early crop by sowing seeds in heat in March, pricking off the seedlings into boxes, and hardening them ready for planting out on a sunny site at the end of May, but such a method will be rarely necessary.

An outdoor sowing at the end of April on rich, light, well cultivated land that lies warm, will meet the demands in most cases, and the hotter the site the better. The drills for the outdoor sowing should be three feet apart, as it must be remembered that Tetragonia expansa is a trailing plant, and needs room to develop. Sow thinly in shallow drills, and thin the seedlings to 2ft. apart. Beyond hoeing, weeding, and picking the fully-developed leaves as they are ready, little attention is needed, although a few good waterings are appreciated, and result in stronger growth and more leaves.

In 1911 one of our market growing friends had several acres of New Zealand spinach, this crop following lettuces; we have never seen finer produce, and as fast as the pickers had worked right across the big field, there was plenty of leafage ready to pick at the original starting point. The crop must have been a very paying one in such a season.

C.

## MELON CULTURE.

To grow melons successfully—and by this I mean the production of fruits of the highest quality—it will be convenient to keep two things in mind, viz., forethought and preparedness. When once the seeds are sown, a constant, steady growth must be maintained, as a check will cause serious damage and a waste of time. It is an advantage to have both top and bottom heat, the latter to run directly beneath the bed, as this does away with the employment of fermenting materials to produce heat. Iron gratings used as a base for the bed will allow the heat to come through more readily than slate slabs.

The material for the bed should consist of good turfy loam, wood ashes or lime rubble. Some growers advise the addition of farmyard manure, but my contention is that this is not necessary except where the loam obtainable is poor, for the reason that manure is likely to produce an over-vigorous growth. When mixing the compost keep a sharp lookout for wireworm, as this pest will cause considerable damage by eating the young roots.

The bed should be made up in a ridge, allowing about 2ft. width at the base, and tapering it upwards to the required height, which may be from 12 to 18in. Ram the soil firmly in the process of formation. It is advisable to make the bed about a fortnight before the time for planting, to allow the soil to become thoroughly warmed through.

When sowing, the cultivator must be guided by the demand. May is considered the earliest period that well-flavoured melons can be expected, and for this purpose a sowing should be made in the first week of January. Subsequent sowings for a succession may take place about every ten days or a fortnight. One seed in a small 60-sized pot is sufficient, using pure loam only. Plunge the pots in a bottom heat of 75 deg., and as soon as the plants come up remove them to a shelf near the roof-glass, so that they may receive all the assistance possible in becoming strong and sturdy. At this early season more than ordinary care must be bestowed on the young plants. Watering must be done judiciously, the plants staked, and repotted into 54's as soon as they are ready. Above all, avoid cold draughts. A few more seeds should be sown than the number of plants required, in case of loss or damage. Sixteen weeks is considered the average time necessary from sowing seeds to the ripening of the fruit.

Planting may commence as soon as the plants are ready. Allow 1ft. to 18in. between the plants, and make the surrounding soil firm. Well water in, and stake immediately.

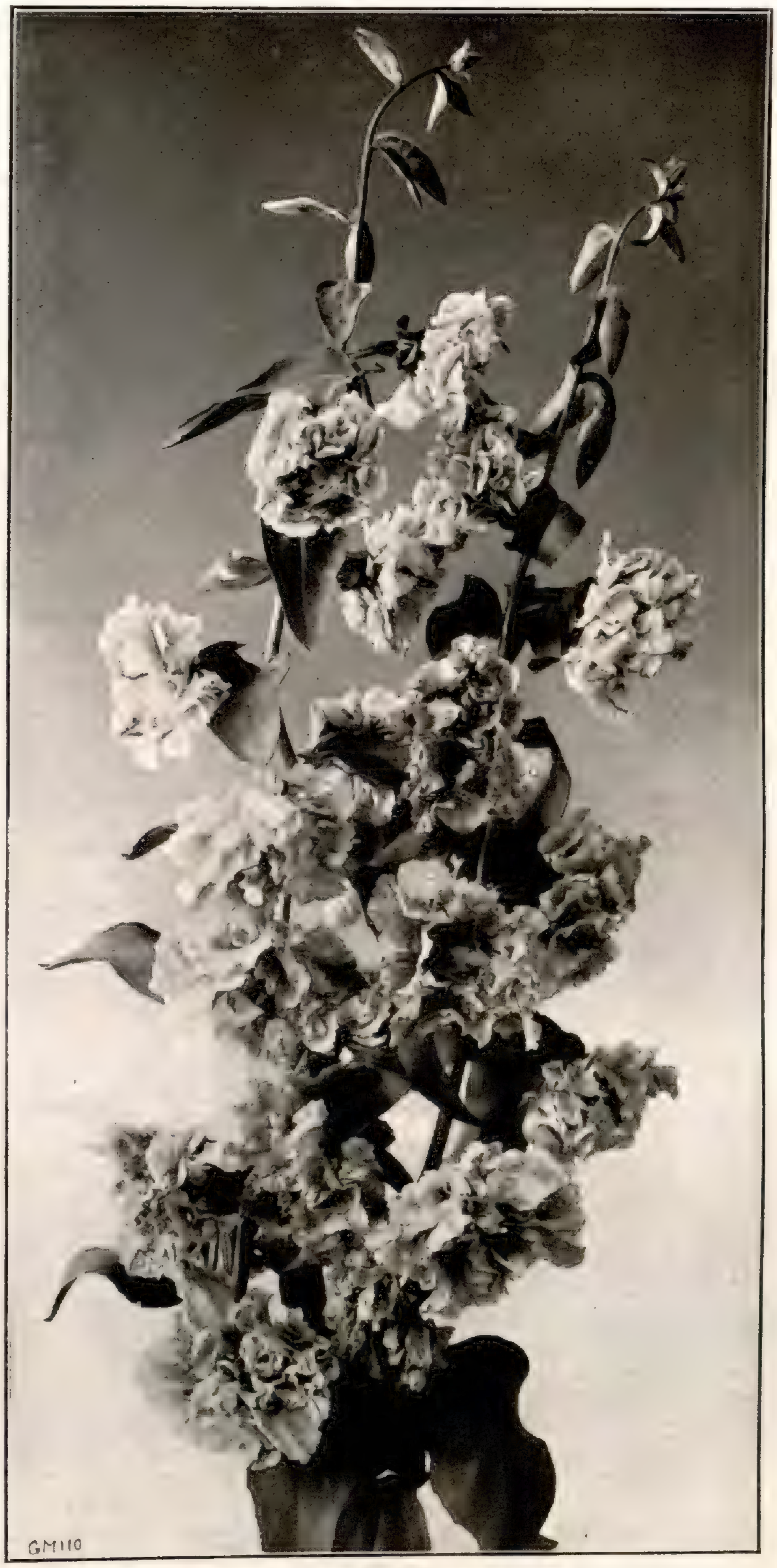
The method of cultivation which I advise is to limit each plant to a single stem, which is allowed to grow to the top wire before being stopped by removing the point. As the laterals grow they must be kept carefully tied up. The process of "setting" the female blossoms is an important one. Do not commence this as soon as the first flowers open, but rather wait until the plants have attained strength. The best fruits will be obtained from those flowers produced about half-way up the plant, and these should be set together as nearly at the same time as possible, so that they may swell together and become uniform. Two or three fruits on each plant is ample. The operation of setting is best performed on a bright day, when a little air can be admitted, midday being the best period, when the atmosphere contains the least moisture.

Melons delight in heat, and for the early sowing a minimum night temperature of 70 deg. should be maintained, this increasing as the season advances. Except during the time of setting, the atmosphere must be kept moist by damping the floors and surrounding walls. Stop all laterals at one leaf beyond the fruit, and remove all sub-laterals as they appear. Keep the plants carefully tied up and regulated, and give support to the fruits by nets when they have attained the size of an apple. Artificial feeding is necessary, but this must be given weak and often when the plants are in full growth, on account of the close proximity of the roots to the surface of the soil, as they may be easily injured by the sun's action and strong manure. Encourage plenty of root growth by top-dressings of loam.

As the fruits reach the ripening stage the water supply must be greatly reduced and air freely admitted. Each fruit will betray its readiness for cutting by cracking round the stem, and the beautiful aroma it gives off. The flavour of the melon will be greatly improved if it is placed on a shelf in the same house as grown, or perhaps in a slightly lower temperature, for about a week before use.

The question of varieties is one which must remain open for various reasons, but a few which I can strongly recommend are as follows: Green-fleshed varieties—Emerald Gem, Ringleader, Best of All, and Royal Jubilee; white-fleshed—Universal, Eminence, Countess, and Hero of Lockinge; scarlet-fleshed—Sutton's A1, Superlative, Blenheim Orange, and Sutton's Scarlet. I have grown all the above, and consider them equal to any varieties in cultivation.

A. Grubb.



CLARKIA ELEGANS FIREFLY.

A highly effective and beautiful variety, bearing large double flowers of a bright scarlet-crimson hue. Introduced by Messrs. Sutton and Sons, Reading. (See page 179.)

## FINELY-FLAVOURED PEAS.

The garden or culinary pea is undoubtedly the most popular vegetable grown, and the extent of profit which may or may not attend its cultivation, either in private or market gardens, will depend very much on soil and climatic conditions. Too often, peas are sown regardless of the special needs required to make their cultivation a success, and not infrequently we find that early varieties are sown on cold retentive soils, and main crops or later varieties are sown on land infinitely too rich in organic matter, with the result that the plants produce an over-abundance of haulm at the expense of pod formation. I have often noticed on trial grounds of many nurseries that larger and better filled pods are frequently produced than in many private gardens, where the seed is often sown on deeply trenched and liberally manured ground, the plants when established being still further nourished by the application of manure mulchings and manurial stimulants. Fine flavour in peas depends upon proper cultivation and a suitable selection of varieties.

PEA HARRISON'S AMEER.

An early and productive green marrow variety, growing about 3½ft. high.

### Soil and Situation.

Peas succeed on a wide variety of soils, but, as with the majority of other vegetables, a good rich and fairly retentive loam is preferable. Early crops require planting on lighter soils, which, in the early part of the year, contain an ample supply of moisture; but the latter is not sufficient to cause the plants to suffer from sharp atacks of frost. These lighter and sheltered soils are often found on warm borders with a south aspect in kitchen gardens and afford just that amount of warmth favourable to the growth of root and stem. It is thus seen that no hard-and-fast rules can be laid down as to when early varieties of peas may be sown; and experience proves that no real advantage is gained by sowing the earlier varieties under unfavourable conditions. There is no special need to study rotation in sowing peas, except that it is not advisable to sow the crop after any other pod-bearing plants; and the more often the situation can be changed the better, as if continually sown on the same ground, the soil becomes "pea-sick." Where kitchen garden soils are deeply trenched, it proves a wise plan to grow peas on soil that has been manured for a previous crop; a good friable seed-bed, accompanied by an equally good season, being preferable to richly-manured soil, which in cold and wet seasons becomes saturated and sour on the surface, even after having been trenched in autumn, and requires forking up in the spring as soon as it is possible to tread the ground without kneading it.

### Manuring.

It must not be understood from what has been previously said that no soils require manuring. Soils that are naturally hungry and not in "good heart" will undoubtedly require a liberal dressing of farmyard manure, as apart from the manurial constituents supplied, this manure produces a valuable mechanical action on such soils. Unfortunately, few gardeners can pick and choose in the selection of natural manures, but whenever opportunity affords, there is nothing to equal well-rotted dung produced from fattening animals, or, in fact, any stock receiving large quantities of concentrated foods. For the pea crop to obtain the full benefit of farmyard manure, either on light or comparatively heavy soils, such manurings are best applied at the time of digging or forking over the ground in spring. In market gardening, artificial manures enter largely into the cultivation of peas, more especially those manures rich in phosphoric acid. Peas, like other leguminous crops, make use of atmospheric nitrogen, which, in conjunction with the nitric acid obtained from the soil, is generally sufficient for their requirements. The form of phosphoric acid to be applied will depend largely on the character of the soil; and, if not acid, mineral superphosphate containing from 30 to 35 per cent. of soluble phosphates will be preferable to a similar kind of material of a lower grade or quality. Superphosphate, being an acid manure, is not so well adapted for soils which contain a large amount of humus; these soils usually become stagnant or sour after the winter rains. When in this condition a phosphatic manure such as basic slag or basic phosphate is best, and the higher the grade of fertiliser the better. As regards the application of potash, this will best be applied in the form of kainit, except on very heavy soils, as the salt in kainit often tends to make the latter saturated and difficult to work satisfactorily for a considerable period after its application. Lime should be applied in very small quantities, especially on heavy and sour land, as it acts chemically on inert vegetable matter, and also tends to make the soil lighter and therefore work better. On heavy land basic slag, kainit, or bone-meal, may be applied at the rate of from 2 to 4 ounces per square yard, for preference in February. On lighter and less acid soils superphosphate may be substituted in like proportion and at the same time. Light soils are always deficient in potash, therefore the amount of kainit may be slightly increased. There is no more economical method of manuring than that of supplying artificial or chemical manures in conjunction with farmyard manure.

### Selection of Varieties.

As in the case of potatoes so with peas—too much care cannot be taken in the selection of varieties, and it often happens, as with the former crop, that there is a vast deal of difference between various strains of the same variety. So much, therefore, depends on the manner in which the seed is grown and selected. It is not a wise policy to invest in cheap samples of peas, and one is impressed with this fact on visiting the trial grounds of some of our leading seedsmen in summer, and noting the care that is taken in selecting and testing the many and varied strains of the same and individual varieties; also at a later stage, when the stocks of seed are received into the warehouse and carefully graded, to ensure that the samples sent out are of a high standard of quality.

Unless grown for trial, it is unwise to sow too many varieties of peas, and it therefore becomes a matter of some difficulty to know what best to cultivate. Those who pride themselves on open-air pea culture are always anxious to obtain their first gathering in May and their last towards the end of September or October; but whether this can be accomplished or not depends very largely on climatic conditions. To obtain early crops, it is essential to select first early varieties for sowing early in February or March, while the month of March may be reserved for the second earlies. Main crop varieties are sown in April and May, while for late gatherings sowings can be made throughout the month of June. It is nothing unusual, however, to sow some of the early varieties in the first week in April, and to make gatherings from them in the second week of June; at any rate, given favourable soil conditions and a good aspect, the greater majority of early varieties can be gathered in April. For first sowings, Pioneer, Little Marvel, Hundredfold, Eclipse, Sherwood, Sutton's Reading Wonder, and Veitch's Chelsea Gem represent varieties from 9 to 20 inches in height: while Harrison's Ameer, Carter's Early Morn, Sutton's May Queen, Daisy, Excelsior, and Thomas Laxton are among taller varieties, ranging from 2½ to 4 feet in height. Second early and mid-season varieties of good repute are Sutton's Centenary, Discovery, Sutton's King Edward VII., Carter's Quite Content, Sharpe's Queen, Webb's Senator, and Telegraph; while for late supplies, Ne-Plus-Ultra, Continuity, Webb's Masterpiece, Matchless Marrowfat, Sutton's Perpetual, and Gladstone are among the best, the latter being a special favourite for late exhibition purposes.

J. C. N.

(To be continued.)

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**Grape Culture.**—An illustrated guide to the culture and management of vines in greenhouses and in the open air is published at Gardeners' Magazine Office, 148, Aldersgate Street, London, price 1s. net (by post 1s. 2d.), or bound in cloth 1s. 6d. (by post 1s. 8d.). Full particulars are also given as to renovating old vines, and the best varieties to grow.

## YOUNG CARROTS ALL THE YEAR ROUND.

Young carrots provide such a favourite and choice dish throughout the year that every endeavour should be made to obtain nice crisp roots the whole season through. Carrots, perhaps, are utilised in more ways than most vegetables, hence their special value.

Commencing early in the year slight hotbeds are required to mature the crop quickly, and this is easily accomplished where long stable litter is at hand, and a plentiful supply of any deciduous leaves, using two parts of the latter to one of the former in preparing the hotbed. The predominance of leaves will give a steadier and more lasting heat. Thoroughly mix the whole by turning thrice. When forming the bed build to a height of four feet, with a margin of two feet beyond the frames; over this margin an occasional lining of similar material will be required to maintain a steady heat. When completed place the frame squarely and firmly in position.

Have in readiness some light prepared soil, consisting of three parts finely-sifted garden soil or loam, one part road scrapings, and one part burnt garden refuse, old potting soil when available could be used in the place of the garden soil; place not less than six inches in the frame. Left thus for a few days to warm through, it will be ready for the seeds. Proceed by making the soil firm, as Shorthorn carrots will be found to form more quickly thus treated, and make less top growth. Sow in shallow drills, seven inches apart, just covering the seeds with fine soil, and when finished lightly damp the seed-bed over with tepid water, and close the frame until germination takes place; then admit air and syringe on all favourable occasions. The lights should be protected with mats or suitable material through all frosty and cold, windy weather. Later, when favourable spring weather arrives, the lights can be left off entirely.

Those not favoured with fermenting material need not hesitate to sow at once, providing a cold frame is available; place the frame in a sunny position, well sheltered from cold winds, and place therein the best soil available; sow the seeds as advised, and husband all the sun heat possible, well covering the lights, and frame sides early in the evening to retain the warmth throughout the night. Vegetables will be scarce a few weeks hence, therefore every endeavour should be made to fill up any break that must occur.

For succession to the above crops sowings will have to be made outside, the first on a south border during March, working the ground into a fine tilth, after giving a good dressing of burnt earth, particularly if the ground is heavy. It is a good practice to have a quantity of finely-sifted potting soil at hand to cover the seeds with previous to raking the bed over, as this promotes very quick root action. Make later sowings every five weeks, according to requirements. The last sowing should be made early in September, this time on a south or western border, and if all goes well, this will supply excellent young carrots until March, when hotbed carrots will be again available.

The crop to stand the winter, viz., those sown in August and September, must have the ground specially prepared. Choose a site not recently used for carrots, and add plenty of burnt garden refuse (if hot, so much the better), with lime. Bring it to a fine tilth, and sow in rows at one foot apart; this distance applies for all sowings outside. A free use of the hoe and light dustings of soot is all that will be required, but in frosty weather give protection with boughs and litter, so that the young roots can be daily drawn easily. We are now at the middle of February, drawing excellent roots from a border facing west, treated as mentioned above, and the crop will last well into March. Very little thinning is required for any of these sowings unless especially thick, the daily drawing sufficing for this purpose. Give water when required, ply the hoe freely, and give occasional dustings of soot.

Well-tried varieties are Inimitable for very early use; Parisian Forcing, French Horn, and Early Gem. For sowing in the open quarters in March for maincrop supplies, the intermediate type known as Scarlet Perfection can be strongly recommended.

Geo. Ellwood.

CARROT SCARLET PERFECTION.

An exceptionally fine intermediate type selected by Messrs. Dickson and Robinson, Cathedral Street, Manchester.

## CHICORY FOR WINTER SALADS.

In referring to the great value of the finer types of chicory for winter salads, it can hardly fail to be of interest to mention that, although the typical plant is a native of this country, the development of the cultivated forms has been effected on the Continent. In Belgium and in France the cultivation of chicory under the designation of Witloof and Barbe de Capuchin has assumed enormous proportions, more particularly in the former country, whence large quantities are exported to this country and other parts of the world. As proved by the produce exhibited at the Royal Horticultural Hall within recent years, chicory can be equally as well grown in England as in Belgium, but whether its commercial culture would be equally profitable in the two countries is yet to be demonstrated. Whether the production in England of supplies for market would be profitable or otherwise, there can be no question as to there being a large demand for the blanched crowns, or as to the freshly-gathered produce being superior to those which are imported. It should certainly be more largely grown in private gardens, for it is invaluable as a salading during the winter months, and useful for serving as a vegetable.

One of the broad-leaved types should be selected, and the best is unquestionably that known as the witloof, and found in the catalogues of the leading seed firms. For the production of the crop select a position in an open quarter that has been deeply dug, and otherwise prepared as for the ordinary root crops—carrots, for example. Make two or three sowings during the months of April and May, the first about the middle of the first of the two months, and the others at intervals of about a fortnight. For gardens that are small, or of moderate size, two sowings will suffice. Sow in drills twelve inches apart, and when the seedlings are large enough to admit of their being readily handled, commence the thinning, and proceed in such manner that when this necessary operation is completed the plants remaining are about ten inches apart. No other attention will be necessary until the autumn excepting an occasional hoeing for the purpose of keeping down the weeds and maintaining a loose surface.

The roots will have completed their growth by October, and may then be lifted for forcing and placed where they will be in darkness and assisted with just sufficient warmth to start them into growth. A mushroom house or warm cellar will be well adapted to their requirements, and it will be found convenient to place a couple of dozen or so of roots in a box about ten inches in depth with fine and rather moist soil packed about them. Previous to putting them in the box cut the leaves off about an inch above the crowns, and in filling the box the latter should be half an inch or so above the surface of the soil.

G.

# TUBEROUS BEGONIAS.

The tuberous begonias have been general favourites for many years as decorative subjects for the conservatory and the flower garden. Although fresh ideas and tastes are being continually expressed in the garden, resulting at times in some plants losing much of their popularity, so far the begonia has survived these changes, and is still holding its own amongst the best flowering plants for decorative purposes. The introduction latterly of the crested and frilled types has added greatly to the interest of this useful group, which has also been supplemented by Begonia Lloydi, a variety of slender and floriferous habit, suitable for growing in baskets. The different types are alike beautiful, and it chiefly depends on the individual taste of a person if any particular form is held in preference to the others.

A MAGNIFICENT DISPLAY OF DOUBLE-FLOWERED TUBEROUS BEGONIAS

In the nurseries of Messrs. Blackmore and Langdon, Twerton Hill, Bath, who have been highly successful in the improvement of these attractive flowers.

## Begonias in the Conservatory.

No other plant gives us such a wealth of blossom through the summer months for the flowering house and conservatory. When grown for these structures it is possible, with a little extra attention, to obtain some remarkably fine specimens with enormous flowers, and by starting the corms in batches, at intervals, the flowering season can be considerably extended. If an early display is required, it will be necessary to start the corms in good time. These quickly commence to grow when introduced into heat and kept moist. The usual practice is to plunge the tubers in shallow boxes which have been three parts filled with leaf soil, covering the top of the tubers slightly; afterwards they are put into a house or heated pit, where a temperature of about 55 degrees is maintained. The leaf soil being kept moist quickly encourages root action, and by the time young growths are an inch or two in height, and it becomes necessary to transfer them to pots, quite a ball of soil will be found adhering to the roots. Over-potting must be guarded against, and as the tubers usually vary so much in size, judgment must be used in choosing the size of pots. A compost consisting of equal parts loam and leaf soil, with plenty of sharp sand added, will be found suitable for them at this stage.

One of the most essential points in the culture of begonias is to keep the plants as sturdy as possible; this can only be done by giving them a light, airy position near the glass in a house or pit where the temperature does not fall much below 55 degrees. Admit air whenever favourable, and avoid cold draughts. As soon as the pots are filled with roots the young plants must be transferred into their flowering pots, and here again a little judgment must be used in choosing the size of the pot to correspond with the habit of the plant. Six-inch pots usually suffice under ordinary circumstances, but if large plants are desired, some of the most vigorous specimens can be shifted into eight, nine, or ten-inch pots, in which, if given good treatment, they will make fine specimens. An addition of dried cow manure and soot to the compost for this potting will be found very beneficial. Careful watering is necessary until the plants become well established, after which they require a copious supply, especially during bright, windy days. Begonias are gross feeders, and to have really good plants with large trusses of flowers to last in bloom for a considerable time, feeding becomes a necessity. In my own experience I have found good liquid manure and soot water to give better results than artificials, and safer to use. During hot, bright weather light shading, sufficient to break the direct rays of the sun, is necessary to preserve the colour of both flowers and foliage.

The plants will in many cases require stakes to support their stems, when they are becoming well advanced in growth, especially many of the double kinds with large heavy flowers. One neat stake to each stem usually suffices, and any trusses of flowers inclined to droop can be looped to this. As the plants come into flower, they can be removed to the conservatory or flowering house, arranging them with light foliage plants, such as Adiantum cuneatum or Asparagus plumosus, which will greatly relieve their heavy foliage. Colour blending should also be carefully considered, as if carried out tastefully the whole effect will be greatly enhanced.

## Begonias in the Flower Garden.

Tuberous begonias are also very accommodating for summer bedding, and when once sufficient tubers of flowering size are obtained it is not necessary to renew the stock annually from seeds, as is the case with many of the plants used for this purpose. Through the winter months the tubers may be stored in any dry place, free from frost. For brilliance of colouring and continuity of flowering begonias cannot be surpassed, and with such a variety of shades available it is possible to use them in any colour scheme. It is of great importance, to secure success in bedding out begonias, to have well-grown plants to put out, which have been carefully hardened off. Much time and labour will be saved by purchasing corms that were raised from seed last year, corms that have been selected according to their respective shades of colour should be bought.

Choose a position in which to plant them where they will receive full light and still be sheltered from rough winds, and where watering can be attended to in dry weather. To have the plants in readiness for their summer quarters by the last week in May or the first week in June, the tubers should be placed in boxes about the end of March, and started in a similar manner to that recommended for those to be grown in pots. When growth has commenced freely, plant out in a frame or pit on a partly spent hotbed, in some fairly light soil. In such quarters they will give but little trouble. At first they will require care in watering, but if watered in when planted they will not need any more for several days, but every opportunity should be taken to lightly damp them overhead when the weather is bright; and this, if carried out in the afternoon previous to closing the frames before the sun is entirely off them, will greatly assist the plants. Admit air sparingly at first until the plants are well established; then increase it gradually until the lights can be removed altogether through the day during fine weather, putting them on at night until all fear of frost is gone. When treated in this way the hardening-off process is gradual, the plants receiving no check.

STOCK WEBBS' NEW ADMIRATION.
A vigorous free-branching variety, effective in the garden, and useful for the supply of cut flowers. Introduced by Messrs. E. Webb and Sons.

The beds or borders in which begonias are to be grown will need attention, as usually they have been occupied previously for several months with spring bedding plants, some of which impoverish the soil very much. In such instances it will be necessary to work in a good dressing of decayed manure, and, if the soil is inclined to be heavy, add some light material, as begonias are not a success during a dry season in soil which soon becomes baked and hard. After planting is completed, the surface of the beds must be kept hoed as long as it is possible to get between them without injuring the leaves, and watering must be strictly attended to during dry weather. Occasional applications of liquid manure at such times will have a marked effect.

The variety of ways in which begonias can be used as bedding plants are innumerable. They form a carpet in large beds or borders under Lilium longiflorum, tall fuchsias, swainsonias, heliotropes, etc.; and when occupying beds themselves, planted in separate colours, or with two or more colours blending, they are then very effective.

T. B. Field.

Wych Cross Place Gardens.

## ANNUALS FOR BEDS AND BORDERS.

Annuals are deservedly popular, as they are very valuable either for massing in beds separately, or for planting in clumps in the mixed borders. Between the early summer and autumn-flowering herbaceous plants the annuals fill up a gap, and they continue flowering until cut down by frosts. As with other classes of plants, a great improvement has been achieved recently among annuals, and at the present time some magnificent strains of the various kinds are to be obtained.

Cultivation is comparatively easy. Many of the tender kinds can be raised with the aid of a cold frame. Some have to be sown earlier than others, and these require a little warmth, otherwise, if the sowing is delayed, the flowering season will be late. In the majority of cases the hardy types are sown in the open, where they are to flower, but it is advisable to raise as many as possible in boxes or frames, as the beds and borders are usually occupied when outside sowing should take place. If this sowing has to be delayed until the spring and early summer flowering plants are over, the beds must necessarily remain in a bare state for a long time, hence the advantage of having plants in readiness for putting out. Unless otherwise stated, the following methods of raising the plants will be found most suitable for all annuals mentioned in this article.

Boxes or pans will be found most serviceable for seed beds, and should be filled with a compost consisting of two-thirds loam, one-third leaf-soil, and a liberal quantity of sand. The end of March is quite early enough to sow the seeds, and when sown the boxes or pans should be placed in a cold frame, which must be kept close and shaded, until germination takes place. When the seedlings appear the shading must be gradually dispensed with, and air admitted carefully. Immediately the young plants are large enough to handle, they should be transplanted into frames, and afforded a slight shading, until they become fairly established. Of course, they may be transplanted into boxes, but the plants do not run such a risk of becoming starved when planted out into frames.

If one has not the advantage afforded by frames, the sowing must be postponed until the middle of April, and the seedlings transplanted into small nursery beds. Excellent results are to be obtained in this way, but the flowering period will be later. Some kinds of annuals must be sown where they are to flower, as they strongly resent any disturbance, and among these may be mentioned the beautiful Phacelia campanularia, mignonette, poppies, nemophila, and eschscholzia.

The following list of varieties does not claim to be an exhaustive one by any means, yet all those mentioned will be found most serviceable for creating a display in beds and borders.

### Asters.

For bedding purposes during August and September these popular and beautiful flowers hold an important position. The most effective display is obtained when they are massed in beds, in separate colours, and they are also indispensable for mixed borders. The single types have become great favourites, and are largely grown, the new Southcote Beauty being a grand acquisition. The variously-coloured forms of Callistephus sinensis are highly prized for their large single flowers, and they are most useful for cutting. The most popular of the doubles are the Comet, Plume, and Ray varieties, the latter having very large blooms of fine lasting quality. Besides these there are the Victoria, Pæony, and Chrysanthemum-flowered varieties.

DIMORPHOTHECA HYBRIDS.

These, introduced by Messrs. Barr and Sons, Covent Garden, range in colour from white to deep red, and have been obtained by crossing D. aurantiaca with D. pluvialis.

### Alonsoas.

Alonsoa Warscewiczi compacta and A. gracilis are beautiful subjects for small beds, or for grouping in the borders. They grow about twelve inches high, and have small scarlet blossoms, which are borne in such profusion that the plants are literally smothered with bloom.

### Amaranthus.

Amaranthus melancholicus, A. salicifolius, and A. tricolor, are prized for their ornamental foliage, and will be found extremely useful for dot plants for beds. Being rather tender, they should not be planted out until danger from frosts is over. The seeds should be sown in early March, in gentle heat, and the plants grown in pots ready for planting out.

### Clarkias and Candytufts.

Clarkias are remarkable alike for their graceful habit and attractive colouring, and are especially adapted for the formation of distinct groups in the mixed border. Five or six plants, arranged from eight to twelve inches apart, will make most effective groups if, as should be the case, each consists of a distinct variety. There are two distinct types, which are known as elegans and pulchella. The varieties of the first type are the more robust, and attain under good cultivation a height of about thirty inches, and the long, graceful sprays present a most pleasing appearance. There are white, pink, salmon, and scarlet varieties, all of which are more or less beautiful. Two of the finest of the varieties at present in cultivation are Sutton's Firefly, which has crimson-scarlet flowers, and Sutton's Scarlet Beauty, which has flowers of salmon-scarlet hue. The pulchella varieties range in height from twelve to eighteen inches, and include several beautiful shades of rose. The rose-coloured flowers with white margins are also highly attractive, and the white varieties are most useful.

The annual candytufts are of much value for producing bright and pleasing displays of flowers. The seed can be sown where the plants are to produce their flowers, and whether grown in clumps or lines the seed should be sown thinly, and the plants be thinned sufficiently to allow each one to attain its full development. Unless allowed plenty of room the candytufts have a rather short flowering season, and the flower spikes do not attain their full size. Dobbie's White Spiral is a remarkably fine strain, the plants being vigorous in growth and the flower spikes of immense size. The carmine and crimson varieties are also most meritorious.

### Celosia plumosa.

The yellow, scarlet, and crimson varieties of celosias are very effective in beds when massed in their separate colours. The seeds should be sown at the end of February, and the plants grown on in pots. A fairly rich soil should be afforded them, and the plants must not be allowed to become pot-bound.

### Chrysanthemums and Cosmeas.

The Morning Star and Evening Star varieties of this popular annual are all very beautiful, and most useful for grouping in the borders.

Cosmea bipinnata is a handsome plant with large flowers resembling single dahlias. It is a strong growing annual, reaching the height of about three feet, and having very fine and light foliage. To obtain a good display of blossom the seeds should be sown in February, otherwise the flowering season will be very late.

### Dimorpotheca aurantiaca.

This is one of the most gorgeous of annuals, the deep orange flowers producing a brilliant effect during August and September. It delights in full sunshine, and the colour does not burn or scald. Variously coloured hybrids of this flower have been obtained by crossing it with Dimorpotheca pluvialis. Messrs. Barr and Sons, of Covent Garden, have made a speciality of D. aurantiaca, and are now introducing these new hybrids. Seeds should be sown early in March, potting the young plants immediately they are large enough to handle into small pots, and repotting them if necessary into larger pots before planting out.

### Gaillardias.

The brilliant and rich colours of Gaillardia Lorenziana and G. picta create a grand effect when the plants are boldly grouped in the borders, and they remain in bloom for some considerable time. The seeds should be sown in gentle heat in February.

### Marigolds.

The African and French marigolds provide a wealth of blossoms, highly prized for their bright colours. The African varieties have large self-coloured flowers, whilst the French varieties are beautifully marked.

Tagetes pumila is a good edging plant, of neat and compact growth, literally smothered with bright yellow blossoms throughout the summer. It makes an excellent subject for ribbon borders, and requires a poor soil.

### Nasturtiums.

For clothing dry sunny positions, where the soil is poor, these plants (tropæolums) are indispensable, and when planted in such a place an abundance of flowers is obtained. When planted in rich soil, the foliage grows so strongly that the flowers are hidden by it.

### Nemesias.

The Suttoni varieties of Nemesia strumosa are most popular, and very important for bedding purposes. They possess an extensive range of colours, and hold a high position amongst our summer flowers. The seeds should be sown in gentle heat early in March.

### Phacelia.

Phacelia campanularia is a good subject for edging, and should be sown where it is to flower, as it dislikes any disturbance. The colour of the flowers is a lovely dark blue; it deserves to be grown more extensively than it is.

### Phlox Drummondi.

The various colours of this favourite annual are much appreciated, and for carpeting or edging beds these phloxes are very valuable. The plants should be pinched once or twice when in a young state, and as growth advances when they are planted out, the shoots should be pegged down.

### Salpiglossis and Schizanthuses.

Salpiglossis sinuata provides a variety of choice and elegant colours, the blossoms being beautifully veined and striped. Beds planted with these create striking effects during August and September. The seeds should be sown in a little warmth, early in March.

Schizanthus Grahami, S. sinnatus, S. retusus, and S. Wisetonensis are particularly fine subjects for outdoor cultivation during the summer, their dainty blossoms being borne in great profusion. The seeds should be sown in February, and the young plants grown in pots for planting out.

### Stocks.

The summer-flowering varieties are of immense value for providing a display during the summer months. For a succession of bloom the intermediate forms should be grown, which, if sown in March, will commence to flower in the autumn Princess Alice, New Admiration, Salmon Beauty, Mauve Beauty, and Mont Blanc are excellent examples of the summer-flowering types. Beauty of Nice, of the winter-flowering section, answers well for summer effects when sown in March.

### Sweet Sultans.

The new large-flowered forms are well adapted for the mixed borders. The flowers are large and fragrant, and borne on stouter stems than the older varieties. If necessary these annuals may be sown in the open.

### Zinnias.

The various colours of the double forms of these old favourites are very effective when massed in beds, the flowers lasting well. The single orange flowers of Z. Haageana are useful for the borders.

Gnaton Gardens. E. C. Pooley.

## FINE FOLIAGE PLANTS FROM SEEDS.

There are many very beautiful fine foliage plants that may be raised from seed sown in early spring. If a little taste is displayed in the arrangement of such plants, so that the colour of the foliage when fully developed during autumn is in perfect harmony with the floral surroundings, a charming and effective display is provided that will be much appreciated.

The general effect of many gardens and borders is much marred, and in some cases practically ruined, by the too liberal employment of flowering plants, and the evil of overcrowding.

### For the Garden.

Amaranthus tricolor splendens is best treated as a half-hardy annual, and will, if judiciously employed, as dot plants, or specimens standing boldly in a conspicuous position associated with a carpet of dwarf flowering subjects, look well. This amaranthus has large, handsome, bronzy-green and yellow foliage. In height it rarely exceeds two feet. A. salicifolius is one of the most effective fine foliage plants used as dot plants for carpet beds, and will be found to produce an unique display, adding elegance to this rather too formal style of gardening. It will attain a height of three feet under good cultivation.

Seeds of amaranthus must be sown thinly in the usual way. Avoid overcrowding and excessive applications of water. A warm greenhouse will prove suitable during the early stages of growth; pot off singly when large enough to handle, place the seedlings in a light position, and harden off as soon as the plants are established, and keep them as near the glass as convenient to insure short-jointed sturdy growth.

Centaurea ragusina, with silvery-white foliage, is a plant one may raise and successfully grow with very limited attention. Seed should be sown early in the year, and just sufficient water be given to keep the soil in a moist condition for a few weeks. It is a good plan to keep the seed pans covered with a sheet of brown paper and a layer of moss after sowing the seeds, until germination is effected. Transplant singly into shallow pans, boxes, or pots, keep the seedlings free from frost, and afford all the available light possible after the plants are well established.

Cerastium tomentosum, about six inches high, is a hardy perennial that may be used effectively as a carpet for showy flowering subjects, or employed as an edging plant for flower beds or borders; it is also invaluable in the rock garden, in which position its creeping habit and close-growing foliage are displayed to advantage. Seedlings should always be afforded cold frame protection, as they then develop freely and assume a good colour. It must be understood that "coddling," or the employment of fire heat, will have a detrimental, and, consequently, a disappointing effect.

Cineraria maritima is a splendid subject for beds or borders, where it is desirable to introduce light colours in foliage. It may be treated similarly to Centaurea ragusina.

Kochia trichophila, an exceptionally handsome foliage plant, should be treated as a half-hardy annual, as under such treatment it develops to a useful size for immediate effect after planting out in the flower garden. Under ordinary conditions, in the cool greenhouse, or a partially heated pit, it succeeds well, and grows most rapidly. It may not be generally known what an ideal plant Kochia trichophila is for seaside planting; the salt spray appears to have a curiously stimulating effect upon its development, and the bright bronze tint of autumn appears to be much enhanced near the sea. I noticed some remarkably fine specimens employed with taste in the flower beds on the Corporation Parade Grounds, Bridlington, under the care of Mr. Crofts, and during last season these were the centre of the many floral attractions provided for the education and pleasure of visitors.

### For the Conservatory.

For the adornment of the conservatory many beautiful and exceedingly handsome foliage plants may be easily raised from seeds sown during the early part of the present season, and they well merit more attention than is usually given them. Their comparatively easy culture, coupled with inexpensive production, commend them to our notice. During the hot summer weather it is often found very troublesome to maintain a successional display of flowering plants. On the other hand, foliage plants always produce a charming display, which, by contrast with the feast of flowering plants usually provided outdoors at that date, cannot fail to command appreciation.

Aralia Sieboldi is a useful conservatory or greenhouse plant, which is valuable for house decoration; it lasts in good condition for such purpose for a long time, and if occasionally changed, and replaced from the greenhouse stock, it will be found to retain its healthy glossy appearance. New seeds are not obtainable, as a rule, until April or May, when they should be steeped in water for a day or two previously to sowing. Very little attention beyond the ordinary routine of watering and repotting will be required.

Decorative asparagus are among the foliage plants that succeed extremely well when raised from seeds. A. deflexus, which produces long, drooping branches of a pleasing green colour, is admirably adapted for hanging baskets for greenhouse or conservatory, and it is also of much value for cutting. This species adds grace and elegance to table decorations if used tastefully among cut blooms.

Other kinds I have been most successful in raising from seeds are A. Sprengeri and A. plumosus, as well as the dwarf A. plumosus nanus; all these are valuable foliage plants, which retain their beauty throughout the winter. They may be easily raised from seeds, which should be immersed in water some time previous to sowing. After the seedlings are growing freely give liberal supplies of water and diluted liquid farmyard manure.

If one obtains a good strain of seeds of coleus good results are assured. Seedling coleuses are exceptionally free growing, and as a consequence fine symmetrical plants may be grown from seeds sown at this date. The undesirable colours which may be among seedlings may be discarded at an early stage. Treat on similar lines for ordinary seedlings, but after the shape, or foundation, has been formed, feeding should not be practised, as the colours of the foliage are much more pleasing when restriction of the roots is practised.

Cyperus alternifolius is an ornamental foliage plant, with deep green and glossy leafage, and is valuable for extensive house or conservatory decoration. The size of the plants is determined by the liberality of treatment provided. Seedlings may be raised any time, and after these are established must always be provided with ample moisture at the roots. Seedlings restricted to small 60-sized pots are exceptionally decorative for small vases or for edging the stages of a warm greenhouse. There is also a variegated form of this cyperus, but so far my efforts to raise variegated seedlings have met with practically no success.

Eucalyptus globulus will quickly grow up into useful-sized plants from seeds, and the glaucous-green leafage makes a striking contrast to the foliage of other plants. This is also a great success as a sub-tropical bedding plant, and if kept in pots for a few years it will become a specimen of large size.

Eulalia japonica variegata is a handsome and graceful decorative plant, that everyone ought to include in a collection, however small. When raised from seeds its variegation is scarcely so pronounced in the early stages, but as the seedlings develop and are subjected to root restriction, the variegation is all that may be desired, while the constitution of the seedlings is so robust that the plants will attain a height of five or six feet in one season under liberal treatment.

Grevillea robusta is a magnificent greenhouse shrub, with fern-like foliage, and it is easily raised from seeds, and available for decoration at any size. The seeds are often a long time germinating, and very irregular, consequently each seedling should be transplanted as soon as large enough, taking care not to disturb the rest.

John Donoghue.

Bardon Hill Gardens, Leeds.

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**Autumn-sown Onions.**—Whenever the ground is in a working condition, plant these without delay, as far better results are achieved by transplanting the onions now than leaving them where they were sown, as they bulb more quickly and come larger. Lightly fork over the site, apply a broadcast sowing of burnt garden refuse, and plant forthwith, in lines at one foot apart, and the same distance from plant to plant. All surplus plants should be planted thickly on a small border, firmly, as these are very good for early use.—G. Ellwood.

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## MAINCROP POTATOES.

Though the cultivation of the potato is carried out by almost everyone who makes any pretence at vegetable cultivation, there are, nevertheless, right and wrong methods, and my remarks hereafter are intended for those who may not be conversant with the best practice to obtain the most satisfactory results.

### Preparation of the Soil.

As is generally known, some localities and soils lend themselves much more readily to the production of tubers of good quality than others. Broadly speaking, the most suitable situations are those of fairly high elevation, with a natural drainage, and land also of a moderately dry character and of a chalky nature. Light sandy loam is also good for potatoes. Nevertheless, by adopting special means good results may be obtained even on soil which is less suitable and of a stubborn nature. It is essential that the plots be well drained, and the land turned up to a good depth by trenching or bastard trenching during the winter months, and wherever the soil is destitute of lime a good quantity should be strewn over the surface after the work is completed. Burnt garden refuse is also a useful addition, applied in the same way. Leave the ground in this condition until the time arrives for planting the sets.

### Preparation of the Tubers.

It is of the utmost importance that the seed tubers should be properly prepared by selecting medium-sized sets at this season of the year, and laying them out thinly in a frost-proof, fairly light building. This prevents that waste of growth which is bound to occur if the tubers are left in the clamps for a further period.

Change of seed is another matter in the cultivation of the potato which ought not to be overlooked, as it has been proved over and over again that fresh supplies from quite another district amply repay for their extra cost. Both Irish and Scotch grown sets are generally preferred here, and prove to be the best for most English counties; on our heavy land we have made many experiments in this way, and I do not hesitate to recommend purchasing seeds from one or other of the countries named.

### Planting.

Much will depend upon the locality in which one resides as to when planting is to begin, but, speaking generally, from the middle of March to the middle of April is the best time, and, if possible, the work should be carried out when the ground is in a fairly dry and workable condition.

More potatoes are ruined through overcrowding than from any other cause. It is simply a waste of seed and time to plant too thickly, and particularly so with varieties which make a lot of growth, as in wet seasons sun and air are practically excluded, and disease is almost certain to put in an early appearance, and ruin a great portion of the crop. From 2ft. 6in. to 3ft. should be allowed between the rows, and twenty to twenty-four inches between the sets. It is a capital plan after the trench is opened to place a little long stable litter or well-decayed leaf-soil in the bottom, and, after the tubers are placed thereon, add a slight covering of the same material before placing the excavated soil over them. Nothing further will need to be done until the young growth makes its appearance above the soil. If late frosts are likely to occur the growths should be covered over with a little fine soil during the afternoons, as it is well to remember that when the growths are injured by frost, even ever so little, they never give the same results as when unaffected.

Before earthing up the ground should be flat-hoed between the plants and rows three times, if possible, as this has a stimulating effect, and keeps weeds in check. When about from three to four inches in height the growths should be carefully moulded up with a draw-hoe, at the same time taking care to finely break up any lumps of soil. A dressing of soot at this period will be found of much assistance.

POTATO DOBBIE'S PROLIFIC.
A handsome and productive maincrop variety introduced by Messrs. Dobbie and Co., Edinburgh, which received an Award of Merit from the Royal Horticultural Society, September 26, 1911.

### Lifting and Storing.

I am strongly in favour of lifting the crop immediately the tubers are matured, as by so doing I am fully convinced many of the tubers are saved from the ravages of disease. Many cultivators hold the opinion that unless the tubers are thoroughly ripened their keeping qualities will be much impaired, but this is quite a mistaken idea, and practically no waste takes place, and the quality is none the worse. Last season, fearing a spell of wet after the long dry time, we lifted the whole of our main crop before the beginning of September, and the quality is everything that can be desired, with practically no disease. The best means of keeping potatoes is to clamp them in the ordinary way, making sure that plenty of ventilation is afforded them to prevent overheating, and a small quantity of slaked lime should be placed between each layer of potatoes, as this has a sweetening effect, and much improves the quality.

### Varieties.

Every year new varieties are added to the lists, and it is hardly safe to recommend any one variety for general cultivation, as some are especially adapted for certain districts where others are practically a failure. Probably no variety that has been raised has found such a worldwide reputation as that old favourite, Up-to-Date, or selections from it; this is a heavy cropper, of fine appearance, not subject to disease, as many others are, and of first-rate quality. Windsor Castle, wherever it does well, is, in my opinion, the finest maincrop potato for quality yet put on the market. Unfortunately it is very prone to disease, and especially so when left in the ground too long; therefore it should be planted and lifted early. Webbs' New Guardian is a most prolific variety, and one of the best disease resisters that has come under my notice. Dobbie's Prolific, a fine variety that has successfully passed the Royal Horticultural Society's cropping and cooking tests, promises to be a great addition to this section. As a coloured variety King Edward VII. finds much favour among cultivators in many districts. During the past season it did remarkably well, and realised high prices. It is quite the best coloured variety I know for table use, and as an exhibition variety is of much value, and very attractive.

Edwin Beckett.

Aldenham House Gardens.

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**Potatoes.**—To keep up a succession to those in pots and boxes, pits and frames on hotbeds must be prepared. Prepare a compost of three parts loam, a good quantity of leaf-soil, and burnt garden refuse; place in position a foot in depth, and when about the same heat as the pit, plant prepared sprouted tubers three inches deep at sixteen inches apart, observing a distance of eighteen inches in the lines. Sutton's Ringleader, Gladiator, and Webbs' Express are excellent sorts for frame culture. It is usual to sow a pinch of Early Forcing radish broadcast at the time of planting the potatoes. When tubers of maincrop varieties are stored in clamps, etc., they must be overhauled, placing those intended for seed in a light and airy structure, or much vitality will be wasted through blanched growths. The better plan is to place the seed tubers in boxes "eyes" upwards, packing them thickly in so doing; it is astonishing what a number can be placed in a box treated this way. Place the boxes in the best available position to form strong and short sprouts preparatory to the April planting. A change of seed is recommended strongly.—G. Ellwood.

## POTATO GREAT SCOT.

Potatoes for seed purposes are now receiving a large share of attention from those who are responsible for the maintenance of an abundant supply of tubers throughout the year. Not only is it necessary to give the finishing touches to the preparation of the soil and to prepare the seed tubers of standard varieties for planting, but due consideration has to be given to the question of selecting varieties of promise for trial purposes. As we have frequently stated it is not prudent to replace standard varieties of the potato, as of other vegetables, with novelties until they have been subjected to a thorough test; at the same time we have again and again suggested the desirability of annually making a trial of such novelties as have the promise of proving useful. Hence it was with much interest that we opened the package containing the tubers of Great Scot potato that Mr. J. W. Cross, Old Grammar School, Wisbech, had kindly submitted to us. This variety, which Mr. Cross is introducing this season, is classed with the mid-season potatoes, but evidently it might have a place with those specially adapted for late use, for the appearance of the tubers suggests that they would remain in the best possible condition for some months. It has unquestionably a long period of usefulness, a point of no small importance in a potato that is not less useful for market culture than for home supplies. It is evidently highly productive, for very heavy crops have been recorded. The tubers are of large size, round, shapely, and with distinct netted skin, while the quality is said to be high. The tubers are admirably adapted for baking, and also for boiling in their jackets. Our illustration has been reproduced from one of the tubers that were sent by Mr. Cross.

POTATO GREAT SCOT.

A distinct and remarkably prolific main crop variety, introduced by Mr. J. W. Cross, Wisbech.

# WORK FOR THE WEEK.

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### THE ORCHID HOUSES.

EAST INDIAN HOUSE.—Many occupants of this house will now require attention in the way of repotting, as, for instance, ærides, vandas, saccolabiums, and angræcums. The receptacles may be pots, pans, or baskets, the latter being preferable for the smaller growing ærides and saccolabiums. Plants of this class often appear leggy and unsightly through loss of the lower foliage, and if they are in a lanky condition they should be lowered, so that the bottom leaves are just clear of the compost. This operation must be done with great care and judgment, or much injury will follow, and should never be attempted unless it can be done without great root mutilation. Whenever the plants are seen to be pushing new roots, they may have attention as regards new compost. I find them succeed in equal parts of living sphagnum moss and clean polypodium fibre. I do not favour top-dressing at any time. The pots and pans must be well drained, with clean crocks, and the compost finished off with a surfacing of sphagnum moss. After the plants have been dealt with, water must be given with discretion, taking care the compost gets thoroughly dry between each application. Ærides Fieldingi, A. crassifolium, and A. odoratum require a shady position in the warm cattleya house; other kinds succeed best in the warm house.

ANGRÆCUMS. — Many of these are fast developing their flower spikes, amongst which may be mentioned A. Sanderianum, A. Ellisi, A. Leoniæ, and others. A. Sanderianum I find always succeeds better on the stage than when suspended. Any repotting necessary should be delayed until the flowering period is over. The plants should still receive water in moderation. The small-growing section does best grown in shallow pans; the larger growing ones, such as A. sesquipedale, A. eburneum, and A. Veitchi, should be grown in pots. A compost such as used for ærides will answer their requirements, as also it will for vandas.

VANDAS.—Some of these will require attention, notably V. Sanderiana, V. Roxburghi, V. insignis, V. Parishi, and V. lamellata, baskets suiting their requirements, especially if they are large for ordinary orchid pans. They should be suspended in a humid part of the house, and position is everything, as they will thrive luxuriantly in one part of the house, and fail absolutely in another. A plant that fails to grow satisfactorily should never be allowed to remain long in one position. V. gigantea and V. Batemaniana require pot culture, being strong growing species; afford them a light position and a moderate supply of water until the growing season is more advanced. V. tricolor and V. suavis delight in the temperature of the warm intermediate house. V. cœrulea, one of the most delightful of orchids, succeeds under somewhat cooler treatment than those previously mentioned; and, above all, must have pure atmosphere. Plants that have been kept cool and dry since they flowered, and are now emitting new roots, should have attention. I find they succeed in ordinary flower pots, and are best grown in the intermediate house, where they receive a plentiful supply of fresh air, light, and moisture when in full growth.

TEMPERATURE.—The temperature in the various departments may now be slightly increased with advantage from the figures given in January; an all-round increase of 4 degrees may be allowed both by night and day. With the increase of temperature, it follows that the atmospheric conditions should gradually become more conducive to new growth. The amount of water afforded may be increased without fear of injury, and damping down may be done more frequently; but a moist atmosphere together with a low temperature must be avoided. Also avoid urging the plants unduly into active growth by using over much heat and moisture, but rather allow them to grow in their own natural way. Take advantage of mild weather and bright days to give more air than hitherto, being careful that no draughts are admitted.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

EUCHARIS GRANDIFLORA. — Under good cultivation this bulbous plant produces three or four crops of fragrant blossoms in the course of the year. As is well known, eucharis revel in plenty of heat and moisture both at the root and overhead, therefore a heated pit or house should be devoted to them entirely. This is one of the few plants grown in our stoves that does not need an entire rest at any time of the year. Our plants luxuriate in a rather deep brick pit, heated by one 4-inch pipe running round it. The last crop of flowers was cut about mid-December, and the plants have since made good growth. We shall now keep them somewhat quiet until flower scapes appear, and then give a higher temperature accompanied by increased moisture, and frequent applications of liquid farmyard manure. Eucharis resent disturbance at the roots, and until the pots are becoming overcrowded with bulbs no repotting should be done, merely applying a top-dressing occasionally, and using a compost of loamy soil, leaf-mould, dried cow manure, and a sprinkling of sand and bone-meal.

GARDENIAS.—Plants that have been rested after yielding a crop of fragrant, pure white flowers last autumn should now be cut down, and the old ball of soil reduced; then repot in a compost consisting of two parts fibrous loam, one of peat, and one of dried cow or sheep manure, adding sufficient sand and charcoal to keep the soil open. Gardenias are gross feeders, and respond well to liberal treatment. Where large numbers of these flowers are in demand, and space is at command, I advise planting them out in a restricted border in a house or pit, and tying the growths to wires stretched six or eight inches from the roof-glass. Should mealy bug or other insects attack them, syringe heavily with paraffin, used in the proportion of a wineglassful to each gallon of clear rain-water. Keep the mixture well stirred during application. When the flower buds are observed the young shoots produced at the side of it must be pinched out, in order to concentrate the whole energy of the plant on the development of blooms. If this is neglected the buds become yellow and drop.

SHADING.—It is now time to fix the blinds or other shading to the houses. In all cases where possible this should be movable, and not painted upon the roof-glass, for during dull weather shade is harmful to the plants. Except in the case of the propagating house containing cuttings and tender seedlings, the blinds will only need to be let down for three or four hours in the middle of the day, and then only in very sunny weather.

GENERAL WORK.—Push on with the work of repotting, or top-dressing, and encourage new root action as much as possible by maintaining the proper temperature and humidity. Attend closely to pricking off and potting seedlings as soon as large enough to handle, so that they receive no check. A few days lost in this respect now cannot well be made good afterwards. The man on duty in the evening should keep a watchful eye open for slugs, etc. It is seldom these can be located except in the evening.—H. T. MARTIN, Warren Wood Gardens.

## THE FLOWER GARDEN.

THE ROCK GARDEN should be examined, and any of the strong-growing plants, like arabis and aubretia, that need restriction round the edges should have attention. Hardy alpines that have been wintered in cold frames may be planted out at the first favourable opportunity. Lightly stir up the vacant soil between the plants with a hand fork, and apply a top-dressing of a light compost, with which a little bone-meal should be mixed. Those species that are lime-loving subjects will benefit by having some old mortar rubble mixed with the soil. Keep a sharp look-out for slugs or they will do considerable damage.

PROPAGATION. — Cuttings of various tender bedding plants that it is necessary to increase will root readily now, if inserted in shallow boxes or pots filled with a light sandy compost. Give them a good watering in with tepid water, place in a fairly warm structure, and shade lightly from bright sunshine until they are rooted. Heliotropes and fuchsias growing in 60-sized pots will need shifting into 48's to make good specimens by bedding out time. Grow them near the glass to promote sturdy growth, and ventilate carefully when cold winds prevail.

STANDARD BEDDING PLANTS.—Those that have been kept from last year for use as dot plants in the bedding scheme must now be gently started into growth by placing them in a house with a temperature of about 55 deg. Spray them over frequently during bright weather, but give water at the root sparingly until growth is advanced. Any pruning required, such as shortening back the long, straggling shoots, can be attended to now. Young plants that are being cultivated to form standards must be given every encouragement, and be grown on single stems until the required height is reached, when the lead should be pinched out to induce the formation of bushy heads.

CLIMBERS.—Those growing on pergolas, arbours, or poles will now need pruning and training, and in doing this work care must be taken to retain a sufficiency of the growths on which the various species produce their flowers. Clematis Jackmani should be pruned fairly close, as it flowers on the young growths late in the summer. C. montana and its varieties flower on last season's wood, so all that is needed is a careful thinning of the growths. The various species of vitis may be pruned according to the amount of space at their disposal; they look very charming when allowed to ramble over forest trees in the wild garden. Loniceras and wistarias do not need much shortening back, an occasional thinning of their growths being all that is necessary. Choisya ternata, Chimonanthus fragrans, and Bignonia radicans grow well against walls in a sheltered position. The lovely orange-coloured flowers of the latter are very charming in September. Pergolas and arbours should be examined, and any decayed woodwork be repaired before the climbers commence growth.—J. GARDNER, Batsford Park Gardens.

## FRUITS UNDER GLASS.

YOUNG POT VINES. — "Eyes" which were placed in 3in. pots early in January will have made sufficient growth to be shifted into 5in. pots; use a compost of loam and leaf-mould, with a little lime rubble added; make this moderately firm, place a neat stake to each plant, and place them near the glass, so that they may receive as much light as possible. The temperature of the house should at all times be kept at 70 degrees with fire-heat, allowing a rise to between 80 to 90 degrees with sun heat; air should be admitted on all favourable occasions; close the house early in the afternoon, thoroughly syringing the plants and damping down the walls and paths of the house at the same time. The plants will soon respond to this treatment, and grow rapidly, and when the pots are filled with roots a shift should be given into 8in. pots. These latter must be clean and well-drained; ram the soil firmly as the work of potting proceeds. The compost for this and the final potting should consist of three barrow-loads of good fibrous loam, one barrowful of leaf-mould, half a barrowful each of lime rubbish and well-pulverised cow manure (rubbed through a fine sieve), and a 10in. potful of some approved vine manure. Water the plants carefully, until the roots have permeated the new soil, and place longer stakes to the plants, to which they should be carefully tied as required.

FINAL POTTING.—After this treatment the young vines will grow away vigorously from now onwards, and in a few weeks' time they will be ready to shift into 11in. or 12in. pots; again ram the soil firmly to within 3in. of the top. They must then be placed where they are to remain to grow for the season, which should be close to the front lights; stakes sufficiently long will be required to reach from the top of the pot to the first wire of the trellis, and the vines should be allowed to grow unchecked until they are about 13ft. to 14ft. in length. Remove all tendrils, and pinch the laterals and sub-laterals to one leaf. It is surprising the large quantities of water well-rooted vines require during the summer months, and it is often necessary, during hot weather, to water them three and four times a day. Liquid manure should be given, and some approved vine manure three or four times a week, to accelerate the development of good, strong, short-jointed canes. Towards the latter end of August, the vines will have finished growing, and should be removed to their outside quarters, fully exposed to the sun and air, to thoroughly ripen the canes.

FIGS.—Whether grown in pots or planted out, abundance of water should be given to the roots of figs as growth advances; maintain a night temperature of from 60 to 65 degrees, attend to the disbudding of the shoots to prevent overcrowding, and stopping the growths should receive careful attention; over-vigorous shoots should be pinched at once, or the young fruits will drop off; remove all suckers immediately, or the ultimate results will be a greater loss of fruits. Syringe the plants when the weather will allow, but guard against having wet foliage at night; maintain a moist, humid atmosphere, and should red spider make its appearance dust the affected parts with flowers of sulphur.—HENRY R. FARMER, Cardiff Castle Gardens.

NATIONAL SWEET PEA SOCIETY. Great Exhibition at Royal Horticultural Hall, Westminster, July 9 and 10. Join now. Minimum Annual Subscription, 5s. Schedule on Application. "Sweet Pea Annual," free to members; 2s., post free, to non-members. "List of Sweet Pea Names," free to new members. CHARLES H. CURTIS, Hon. Sec., Adelaide Road, Brentford, Middlesex.

NORTH OF ENGLAND HORTICULTURAL SOCIETY.

SPRING SHOWS.
BRADFORD: CENTRAL BATHS—Thursday, March 14th.
LEEDS: CORN EXCHANGE—Wednesday, April 24.
Secretary:—
(Rev.) J. BERNARD HALL, Rawdon, Leeds.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE.

### FEBRUARY 6.

Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Sir Everard im Thurn, Messrs. J. O'Brien, A. Worsley, G. Massee, W. Hales, A. Rolfe, G. Wilson, W. T. Ledger, A. D. Michael, and F. J. Chittenden (hon. secretary).

ABNORMAL CATTLEYA.—Mr. Manda, of St. Albans, sent a cattleya bearing several flowers, every one of which were abnormal, some much more markedly than others.

CATASETUM RANDI.—Mr. A. Rolfe drew attention to a catasetum shown by Messrs. Charlesworth, which he recognised as Catasetum Randi, Rolfe ("Bot. Mag., t. 7,470, where both male and female flowers are shown). This species differs from C. barbatum and its few allies in having the crest of the lip shortly truncate and broken up into many short filaments, not forming a single horn-like tooth. It is a native of the Amazons.

FLORAL DRAWINGS. — Miss Massee showed some excellent coloured drawings of various types of plants, faithfully coloured and showing dissections of the essential parts very clearly.

NEW HIPPEASTRUM. — Mr. Worsley showed a new hippeastrum, for which he proposed the name of Hippeastrum Forgeti in honour of the collector. The bulbs had been received by Messrs. Sander from Monsieur Forget, their collector in Bolivia, and is closely allied to H. pardinum, but without spots. A full description will appear in the society's "Journal."

CHRYSOPHLYCTIS ENDOBIOTICA. — Mr. H. T. Güssow, of the Central Experiment Farm, Ottawa, wrote: "From Mr. Horne's paper on 'Tumour and Canker in the Potato' in the society's last 'Journal' we may conclude that all efforts to secure confirmation as to the identity of the potato disease with Schilberszky's from the discoverer himself were futile, and that 'it is necessary, therefore, to rely upon Schilberszky's original, somewhat meagre description.' Early in 1905 I wrote to Professor Schilberszky, submitting a diseased tuber to him, but received no reply. Again in 1909, when I discovered the disease in Newfoundland, I wrote to Professor Schilberszky, and received a letter from him, which I very carefully kept. The following is a translation: 'Budapest, March 12, 1910. I have the honour to inform you that I have already sent you a little time ago a statement regarding the potato tuber which you sent me. I am now appealed to by Dr. v. Degen to write you again in the same connection. I beg to inform you that the potato tuber was infected by Chrysophlyctis endobiotica. The diseased portions alone made the identification very easy by their external characteristic appearance. I may say that in one of the infected foci I found masses of bacteria, which I have not examined any closer. It would interest me to have your observations on the spread of this disease in your country. (Signed) Prof. Dr. K. Schilberszky.'" In reference to the foregoing, Mr. A. S. Horne wrote: "It is interesting to find that Professor Schilberszky has identified the disease which was recorded by Dr. Güssow, of Newfoundland, as that described by himself in potatoes derived from Upper Hungary. There are two points at issue in Britain, concerned both with the disease and the organism: (1) Professor Schilberszky stated in his published description that crater-like depressions were formed in some tubers. Symptoms of this kind were not found in potato tumour in this country. (2) At first spores of only one kind were found in this country. It is a well-known fact that tumours of a similar form may be caused by different organisms. There was confusion between the tumour in beetroot, caused by Urophlyctes leproides, and potato tumour. It was possible, therefore, that the tumour in the British disease might have been due to a different organism, or perhaps to more than one organism. For these reasons investigators in England desired the personal assurance of Professor Schilberszky that potato tumour was due to his Chrysophlyctis endobiotica.'"

### FEBRUARY 20.

Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Sir John Llewelyn, Sir Everard im Thurn, Dr. Rendle, Messrs. J. O'Brien, W. Hales, C. Shea, G. Massee, G. Gordon, W. Cuthbertson, and F. J. Chittenden (hon. secretary).

OBERONIA SP.—Mr. J. O'Brien showed a species of oberonia from Uganda. It was referred to Dr. Rendle for examination.

ONCOBA ROUTLEDGEI.—Mr. Shea remarked with reference to seedlings of this plant, that of 17 raised by him from one fruit 15 were spiny and two quite without spines.

CŒLOGYNE VENUSTA.—Sir Frederick Moore sent an inflorescence of this interesting species from Glasnevin. It is a native of Yunnan. On the motion of Mr. O'Brien, seconded by Mr. Shea, it was unanimously resolved to recommend the award of a Botanical Certificate.

VIOLETS WITH BRANCHED PEDUNCLES.—Miss Dalton sent from Sway, Hants, a number of violets bearing branched peduncles, and apparently more or less fasciated. They had been cultivated in the ordinary way, but in some two or three double flowers were produced at the apex of the common peduncle; in others the peduncles separated lower down. Several examples of a similar nature have been sent to the committee during the present season from widely-separated localities, otherwise it appears that violets are but rarely fasciated.

NEW ORANGE.—Mr. H. S. Rivers sent a variety of orange newly introduced, known as "Ooushin," "Satsuma," and "Kü Seedless." It is a Japanese variety somewhat like a Mandarin. The somewhat flat fruits shown were from maidens, and the variety is said to be almost hardy, ripening its fruit very early. The skin is thin and deep yellow; the flesh juicy, sweet, and well-flavoured; quite seedless. One of the calyx lobes in one fruit was somewhat foliose, an unusual character in the orange.

PYRONIA ×.—Messrs. J. Veitch sent a fruit raised from quince × pear, "Bergamotte Esperen." A fruit from this cross has already been shown under the name Pyronia × "John Seden." The present example was borne on a second seedling from the same parent fruit. It was highly aromatic, and much more rounded than the fruit previously shown. The flesh was firm and cream in colour, the eye sunken and the cells open, one containing an apparently well-developed seed.

DISEASED TULIPS.—Messrs. Lowe and Shawyer sent some tulips having poorly-developed and brown blotched leaves, the vascular tissue being marked with brownish streaks. They were referred to Mr. Massee for further examination.

FUMIGATION WITH HYDROCYANIC ACID GAS.—Mr. Hales referred to same results obtained at Chelsea Physic Garden lately in fumigating with hydrocyanic acid gas. The fumigation had been done on a very dull day, and the house had not been damped down for two days previous to the operation. The fumigation was with material of ordinary strength, but it had failed to destroy all the mealy bug, and had caused considerable injury to many plants, especially those with somewhat succulent leaves, such as clivias.

## North of Scotland Horticultural and Arboricultural Society.

"Sweet Pea Cultivation" was the subject of a most instructive lecture delivered to the members of this association in the Botany Classroom, Marischal College, Aberdeen, on Wednesday evening, 21st inst., by Mr. John Grigor, head gardener, Seapark, Forres, Elginshire. There was an exceedingly large attendance, and Mr. John McKinnon, Haddo House, president, occupied the chair. In introducing the lecturer, the Chairman referred to the very prominent place Mr. Grigor had occupied in sweet pea culture during last season, he having carried off the chief prizes at the leading horticultural exhibitions in Scotland.

Mr. Grigor, having thanked the meeting for his kind reception, said his own experience was that a great deal of success in sweet pea cultivation lay in the preparation of the trenches, because if the soil were not properly prepared, one need never expect good exhibition blooms. Light, sandy soil suited the sweet pea very well, although it might remain longer in bloom in a heavy soil. It was essential to secure fresh soil or turf each year to fill the trenches, the turf being stacked for a month or two before use. Some growers dug out their trenches to a depth of five or six feet, and others to a depth of three feet. For his own part, he did not think anything was to be gained by deep trenching. He spoke from experience, and he favoured eighteen inches deep and eighteen inches wide. The lecturer then referred to the preparation of the soil used in filling the trenches, and said the composition he most favoured, and which he had found highly successful, was two parts fibrous soil, one part each of sand and old manure from mushroom beds, with a few handfuls of charcoal. The best time for sowing seed for exhibition purposes was early spring. They could either sow in pots or boxes, but he favoured the latter method, as in his experience he always obtained stronger plants from seeds sown in boxes. By the second week in March he had his peas transferred to a cold frame. The first week in April he found was the most favourable time to start planting.

Mr. Grigor then proceeded to deal with planting, staking, and feeding and watering, putting emphasis on the last two as points of great importance if real success were to be achieved. Mr. Grigor concluded his greatly appreciated lecture by stating that, under the method of cultivation he had described, his plants had always been healthy and free from disease.

Warm encomuims on the lecture were passed by Mr. Alexander Robson, vice-president, Mr. C. S. France, and others, and Mr. Grigor was heartily thanked for his very interesting and educative lecture.

Thereafter, the secretary, Mr. William Reid, read a paper by Mr. Clark, King's College Observatory, Aberdeen, entitled, "Meteorological Notes for the Year, and Lessons from the Drought of 1911." Mr. Clark treated his subject in a manner which indicated how thoroughly conversant he was with it, and characterised last summer as one of the brightest, warmest, and driest seasons on record, the mean temperature exceeding the usual average. The hearty thanks of the society were ordered to be conveyed to Mr. Clark for his interesting contribution.

A large number of new members were enrolled, and a most instructive evening closed with the usual votes of thanks to the chairman.

### Reading Gardeners' Association.

At the fortnightly meeting, held in the Abbey Hall, on Monday, Mr. F. G. Drew (chairman of committee) presided over an excellent attendance of members. The lecturer for the evening was Mr. F. Barnes, from the University College Gardens, his subject being "The Production of Early Vegetables and Salads."

Mr. Barnes, who is to be congratulated on a very able maiden effort in the rôle of lecturer, handled his subject with considerable ability, giving at the outset full information respecting the construction and upkeep of beds so as to ensure a proper conservation of heat. He passed on to the cultural details necessary to secure early and continuous crops of vegetables amenable to forcing, such as potatoes, carrots, turnips, beetroot, radishes, cauliflowers, rhubarb, asparagus, sea kale, peas, and beans. In dealing with early "saladings," lucid instructions were given as to the best methods of producing a supply of cucumbers, tomatoes, radishes, lettuces, dandelion, and chicory. At the conclusion of the lecture an instructive discussion took place, bringing out the experiences of the prominent vegetable growers among the members. Mr. Barnes was the recipient of a hearty vote of thanks.

Numerous really excellent exhibits were staged. Groups of Lachenalia luteola and cineraria (scarlet) by Mr. H. C. Loader, head gardener to Mr. M. H. F. Sutton, Erleigh Park, and a basket of sea kale, "Ivory White," by Mr. J. Wynne, head gardener to Mr. H. R. Beeton, Checkenden, were awarded the Association's certificate for cultural skill. Mr. E. Parker, Waltham St. Lawrence, was highly commended for his exhibit of apples. From the vice-president's gardens at Hillside (Mr. F. Townsend) came a fine collection of forced hyacinths and tulips; from Mr. J. Walker, Bear Wood Gardens (Mr. W. Barnes) branches of Berberis nepalensis, in bloom; while from the University College Gardens an exhibit of forced vegetables, lettuce (in pots), chicory, rhubarb, etc., illustrative of the lecture, was staged. Two new members were elected.

### Broughty Ferry Horticultural Association.

The ordinary monthly meeting was held under the presidency of Mr. James Bethel on February 20, when "A General Treatise on Forestry" formed the subject of an admirable lecture delivered to a large audience by Mr. Alexander Campbell, head forester, Strathmartine. In a practical and able manner, Mr. Campbell assumed a commission to plant the southern slopes of the Sidlaw Hills lying around "Craigoul." The project was undertaken as a paying concern, and from the draining of the ground and planting the young two-year seedlings, until the second harvest of "pit props" was removed, every detail in cultivation and management was lucidly dealt with. Larch, Douglas pine, and plane were the most remunerative timber trees for the district, and ought to be the leading features in new plantations where remunerative returns were expected. Quoting from prices obtained, his own records for plane and beech were 2s. 4½d. and 2s. per cubic foot respectively. After satisfactorily answering a number of questions put by members, Mr. Campbell was cordially thanked for his highly instructive and interesting lecture. The exhibits consisted of two dishes of Bramley's Seedling apples and a seedling from the Newtown Pippin, from Mr. John Machar, Pothrington Gardens; one vase of Primula obconica and one of Primula sinensis stellata, from Mr. Grant, Fernhall Gardens; one vase of Chrysanthemum Queen of the Exe, from Mr. Wm. Brown, Cambustay Gardens; and a pigmy Japanese tree, upwards of 100 years old, from Mr. James Slater, Panmure Villa Gardens; and two specimens of Dracæna Bruanti variegata, from Messrs. D. and W. Croll, Dalhousie Nurseries.

In accordance with arrangements made at the general meeting, the members present decided the merits of each exhibit by ballot, and the result was that the exhibit of Mr. Grant received the highest number of votes, and was entitled to the prize for the meeting. All the others followed in point of merit as named above, excluding the apples which did not come within the scope of the regulations.

### Basingstoke Gardeners' Mutual Association.

The fortnightly meeting of the members was held in the Town Hall on Monday evening, February 26, when an interesting lecture on winter-flowering begonias (other than Lorraines) was given by Mr. Cleed, the county instructor in horticulture. A feature of the meeting was a splendid exhibit of apples, remarkable for colour and finish, including well-known dessert and culinary varieties, Cox's Orange Pippin and Beauty of Kent being in excellent condition. This exhibit was staged by Mr. Learmonth, of Sherfield Manor Gardens. The fruit was backed up with some excellent amaryllis, carnation blooms, and euphorbia. A vote of thanks was accorded Mr. Learmonth, and also one to the lecturer.

### Weybridge Horticultural Society.

This society held its recent monthly meeting at the Village Hall, Sir Herbert Ellis (president) presiding. The lecturer was Mr. Smith, of the R.H.S. Gardens, Wisley, and his subject was "The Cultivation of the Vine." In a most practical manner he explained the different operations of pruning, thinning, stopping, formation of the border, planting, ventilating, and damping down. Mr. Smith paid special attention to ventilation, as he said he considered it one of the chief items in grape growing; he advised ventilating a little at a time, not reducing the temperature, but allowing it to rise steadily with the extra ventilation. Another item of special mention was the formation of the border. He considered 3ft. deep and 15ft. wide inside ample.

There was a good discussion, and a hearty vote of thanks to the lecturer concluded the meeting, at which some forty members were present, and a dozen new members were elected.

There were some splendid exhibits of cyclamens, lachenalias, primulas, Calanthe Veitchi, apples, and leeks.

## GOLD-LACED POLYANTHUSES

There is a revival in Lancashire in the cultivation of these flowers, and many good seedlings have been raised of late years. It is, however, a very sad fact that many old and good varieties are now extinct so far as the growers who exhibit are concerned, and as some of the old varieties were better than anything now existing, and as some of them may still be grown in gardens that one knows not of, I ask your readers to let me know if they can given any information as to the existence of Bullock's Lancer, Cox's Prince Regent, Maud's Beauty of England, Hufton's Lord Lincoln, Addis' Kingfisher, or any other old named variety. The old varieties that we still have are Saunder's Cheshire Favourite, Crownshaw's Exile, Buck's George IV., and Sir Sydney Smith. I have been emboldened to make this enquiry because recently a florist brought me a bloom of Nicholson's King, an old-time flower, the existence of which at the present time I had no knowledge of. Other old flowers may be surviving somewhat, and any genuine information about them will be gladly received. I use the word "genuine" advisedly, as a certain enthusiastic florist friend of mine was, a few years ago, supplied with common cowslips and primroses from an enterprising floricultural fraud. There is nothing more beautiful than cowslips and primroses, but even the most ardent florist feels disappointed when they appear instead of the rare, if not extinct, Bullock's Lancer.

James W. Bentley,
Late Hon. Sec. Northern Auricula Society.
Stakehill, Castleton, Manchester.

## TESTED SEEDS.

Time was when seedsmen sold "seeds," and sometimes those seeds, if record be true, were as uncertain of age as the dealers' eggs that were labelled "eggs," as distinct from fresh eggs and new-laid eggs. To-day, however, the gardener demands, and gets, seeds that are both cleaned and tested, which means that the risk of failure and disappointment with the resulting crops is reduced to a minimum.

Cleaning and testing is a huge task in a large seed warehouse, involving heavy outlay in elaborate machinery and labour. An insight into this interesting and highly important part of the seedsman's work was afforded on the occasion of a recent visit to the new and up-to-date establishment which Messrs. James Carter and Co. opened about a year ago at Raynes Park, S.W. A review of these splendidly equipped premises was published in the Gardeners' Magazine last year; but important additions have been made since that time, in the direction of more storage room to enable the firm to cope with their ever-increasing trade, new, and still more effective cleaning machines, and a every respect a model of what such a laboratory. It was the latter that occupied most of our attention on this occasion, it being in every respect a model of what such a laboratory should be. To the student, interested solely from the scientific standpoint, here is sufficient to absorb attention for hours, for one may examine minute seeds through powerful microscopes that will reveal the slightest deformity, or may study remarkable photographs portraying seeds in various stages of germination, and inspect an apparatus for pulping mangolds for the purpose of discovering by analysis the percentage of sugar contained.

To the practical gardener and progressive farmer the feature of more direct importance is the actual process of testing the germinating power of the seeds. For this purpose the laboratory contains a number of cases which are of Messrs. J. Carter and Co.'s own design, and constructed somewhat on the lines of an incubator, with a water tank, fitted with gas lamp, and a number of trays upon which the samples of seeds are placed, the small seeds on paper dascs, and larger seeds, such as peas and beans, on squares of thick felt. The cases are glazed, enabling an even degree of warmth and moisture to be maintained. Under these conditions germination takes place in a very short time, and with great care and precision a record is entered in the stock books of the percentage of every stock of seeds in the warehouse. Thus it becomes possible to ensure that every packet of flower seed, or every sack of barley, clover or swede seeds, shall be of satisfactory germinating power.

The testing for type and strain has, of course, to be carried out in the trial grounds, and this again is a task that involves an immense amount of labour, and extreme care and judgment.

Before leaving, we made a tour of the well-arranged dining-rooms and kitchens which the firm have provided for the use of their extensive staff of employees. The dining-rooms are four in number, accommodating from 150 to 160 at each midday meal, and there are about an equal number of employees who, living in the village, go home to their meals. It is very evident from what we saw that Messrs. J. Carter and Co. study the comfort of their employees, and doubtless it is largely due to this that the work of this large and busy hive of industry goes on smoothly and pleasantly, everyone taking a lively interest in his or her appointed task.

"Carnations, Picotees, and Pinks" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# A DISEASE OF SWEET PEAS, ETC.

We take the following account of Mr. G. Massee's important investigations of the "streak" disease in sweet peas from the "Kew Bulletin":

A disease attacking asters, sweet peas, and various other cultivated plants, more especially during the seedling stage, caused by a minute parasitic fungus, Thielavia basicola, Zopf, has become so prevalent during recent years, that in some localities their cultivation has been practically abandoned. The receipt at Kew of a considerable amount of diseased material in a condition favourable for investigation has led to the discovery of the cause of the disease, and also of measures whereby the danger can be prevented.

## Morphology, Etc.

The several very dissimilar forms constituting the life-cycle of Thielavia basicola, Zopf, has led to much complication and synonymy.

The mycelium first produced as the result of infection, permeates the tissues and remains slender and colourless. As a rule, the host shows decided signs of injury, or is killed outright before the fungus commences to produce its fruit on the surface of the injured portions. When this stage has been reached, if conditions are favourable, branches of the mycelium grow outwards and cover the surface of the diseased part with a plexus of mycelial branches, which soon give origin to the first or Milowia form of fruit, which consists of simple or branched, upright, septate branches, becoming gradually narrowed upwards, and remaining perfectly colourless. In due course the apical portion of each erect branch becomes ruptured, and the contents grow out through the torn apex as a chain of spores which readily separate from each other, and germinate at once. This form of fruit is very ephemeral, and is rarely seen in the field, although in pure cultures it forms a snow-white, mould-like stratum. It alone is responsible for the spread of the fungus in the form of an epidemic during the early stage of growth of the host-plant, but it does not appear to be capable of infecting the root of a mature plant. The sports retain their power of germination for a very limited period of time, not more than one month so far as my experience goes. I first met with this stage of Thielavia forming a delicate white mould at the base of a dying plant of Blysmus compressus, and at the time considered it as an entity and worthy of generic rank, and published it as Milowia nivea. Saccardo afterwards placed Milowia as the type of a new tribe of the Hyphomycetes which he established under the name of Milowieæ. The spores or conidia are somewhat variable in size, thin-walled, cylindrical with truncate ends, and average 15-25 × 4-6.

As the Milowia stage of fruit disappears, the mycelium developed externally on the host, becomes tinged brown, and gives origin to a second or Torula form of fruit. In fact, the Milowia and Torula stages may sometimes be met with on the same branch of mycelium; in such instances the Torula or second phase of the fungus always occupies the youngest or apical portion of the mycelial branch. The Torula spores are comparatively quite large, clavate and multiseptate, at first thin-walled and colourless, but gradually changing to a dark brown and eventually becoming quite opaque. The cell-walls also increase considerably in thickness during the growth of the spore. When the spores are mature they break up into their component cells, which resemble discs of varying thickness, and are circular, or more or less obtusely polygonal, in outline. These detached cells or chlamydospores cannot be induced to germinate at the moment of maturity, but do so readily after remaining in a passive condition for some months. This phase of the fungus is usually the only one observed, unless special watch is kept, being rendered conspicuous by the copious production of spores, which often form black, crust-like patches on the diseased root and collar of the host-plant. The spores vary considerably in size, and may be straight or curved, average size 40-65 × 12-20 at the widest part near the apex. This stage of Thielavia was first observed, in 1850, by Berkeley and Broome, who considered it as a member of the genus Torula, and described it as T. basicola. It was found at the base of stems of peas, and of nemophila. Respecting its propensities, the authors wrote as follows: "It is either destructive of the plant on which it grows, or is developed on it in consequence of previous disease." From an economic standpoint, this is the most dangerous phase of the fungus, as the resting spores enable the parasite to tide over that portion of the year when its host-plants, which are mostly annuals, are not in active growth. These resting spores germinate readily on dung, and produce the Milowia and Torula forms of fruit on this matrix; in fact, the fungus appears invariably to commence life as a saprophyte, and when conditions are favourable, as expressed by the presence of rootlets of seedlings, it assumes a parasitic habit; otherwise it can pass through all the phases of its life-cycle as a saprophyte. In fact, the fungus at best is but a very imperfect parasite, the vegetative mycelium first resulting from the germination of the sports being alone parasitic, but its action is sufficient to cripple, if not completely to kill, the host. The various forms of fruit are then produced externally on the host, which it has previously killed. I have repeatedly observed the Torula follow the Milowia stage, when the fungus was growing on pea seedlings infected with diseased portions of plants killed by the fungus, and have also observed the same sequence when a pure culture of Milowia spores was used.

## Distribution.

The fungus was first observed by Berkeley in England in 1850. It has also been recorded from France, Germany, Italy, Russia, the United States, and Cuba. It has proved to be very destructive to cultivated crops in Italy, Germany, and the United States, and is probably much more widely distributed in the soil than is generally suspected.

Now that a simple and certain method for determining its presence has been discovered we are in a position to anticipate it and to act accordingly, as the means necessary for its arrest are practical, inexpensive, and effective.

In England its distribution is certainly widespread; seedling asters and sweet peas, more especially, have been received at Kew in large quantities from practically every part of the country; many weeds also suffer from its presence. Excluding trees and woody plants, the fungus appears to be practically omnivorous.

It has been recorded as parasitic on plants belonging to the following genera: Apium, Aralia, Aster, Begonia, Beta, Blysmus, Cochlearia, Cyclamen, Daucus, Lathyrus, Lupinus, Cypripedium, Nemophila, Nicotiana, Onobrychis, Pisum, Scorzonera, Senecio, Trigonella, Viola. In some instances the injury caused by this fungus assumes serious proportions, and the tobacco crop, both in Europe and in the United States, has suffered to the greatest extent. In this country the disease has assumed the proportions of an epidemic in the case of asters and peas; in fact, during the past few years it has become practically impossible in certain districts to grow asters, the seedlings being destroyed wholesale. Sweet peas also suffer to a very serious extent in many places, and culinary peas to a less extent.

## Cultures of the Fungus.

The conidia of the summer stage (Milowia) germinate freely within twenty-four hours in water. As a rule, only one germ-tube is produced from one end of the conidium. In those instances where two germ-tubes are produced, one from each end of a conidium, one of the germ tubes continues to grow vigorously, the other remaining small and stunted, and eventually dying. The conidia only retain their vitality for about ten days, and no conidium was observed to germinate after it had been liberated for more than a fortnight. Germination is most vigorous immediately after the conidia are liberated, and the percentage of germination decreases daily with the increasing age of the conidia. As compared with a neutral medium, the presence of a slight amount of acidity in the nutrient solution favours germination and the development of mycelium, whereas, on the other hand, a trace of akalinity in the nutritive medium retards germination and subsequent growth of the mycelium. The conidia also germinate freely on moist stable manure, covering the surface within a week with the snow-white tufts of the Milowia stage of the fungus, which is followed by the black masses of conidia forming the Torula stage. The ascigerous condition was not observed. The fact that the fungus can produce its two conidial phases as a pure saprophyte is a point of great importance from an economic standpoint, and suggests the importance of burning all diseased plants, lest they should by any chance find their way to the manure heap, from whence the conidia of the Torula stage of the fungus would eventually be returned to the land in a condition favourable for germination. By such means the widespread occurrence of the fungus may probably be explained.

The chlamydospores resulting from the breaking up of the Torula form of fruit do not germinate until after a period of rest, and serve to tide the fungus over that period when living host-plants are not forthcoming.

Chlamydospores obtained from aster seedlings that had been dried for a year germinated in a very dilute solution of stable manure, at the end of four days, and another batch of chlamydospores obtained from the same source germinated on sterilised stable manure, and produced the Milowia form within a week, followed by the Torula form. Experiments prove that the Milowia conidial form constantly reproduces itself; this takes place so long as climatic conditions are favourable for its development, and the distribution of the fungus in space depends entirely on its Milowia conidial phase.

(To be continued.)

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# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

DECAYED BULBS.—A. B., Essex: Would you please tell me what is the cause of failure in the bulbs sent? Both narcissi and tulips are enclosed, and a sample of the soil in which they were grown. I have a large batch, and, with the exception of a stray plant here and there, the bulbs have made no roots whatever. They were potted in October in loam, leaf-soil, old mushroom-bed material, sand, and charcoal. They were covered with burnt earth and transferred to frames when heavy rains came, and then covered with old sawdust. I am entirely at a loss to understand the cause of failure, as in previous years I have had splendid lots of bulbs under exactly the same kind of treatment as accorded this season.—The bulbs sent were decayed at the base. They attempted to make roots, but the roots decayed, and the decay apparently spread inwards. With few exceptions, the bulbs were sound inside. It would appear that they became very wet and remained so, or that white worms, eelworms, and bulb mites, which were all present, brought about the decay. There are considerable numbers of larvæ of two-winged flies which are usually associated with soil either wet or sour, and containing too much organic matter. The use of old soil from a mushroom-bed and leaf-soil would tend to make the compost sour if there was any probability of water standing about it for any length of time.

COUNTY SECRETARIES FOR THE INTERNATIONAL HORTICULTURAL EXHIBITION.—H. S., Lichfield: In a recent issue of the Gardeners' Magazine, it was stated that application forms for cheap tickets of admission to the International Horticultural Exhibition could be obtained from the county secretaries. It would be interesting to know who are the county secretaries, and many, no doubt, like myself, have no information on this point. Perhaps you could obtain and publish a list of the county secretaries for the benefit of your readers.—We have obtained the following list of county secretaries from Mr. E. White, the Hon. Director of the exhibition: Bedfordshire, Mr. Edward Laxton, Bedford; Berkshire, Mr. J. T. Strange, Firlands, Sulhamstead; Bucks, Mr. W. J. James, Woodside, Farnham Royal, Slough; Cambridgeshire, Mr. Rupert Fuller, St. Andrew's Street, Cambridge; Cheshire, Messrs. Dicksons, Lim., Chester; Cornwall, Mr. W. H. Shilson, Trewhiddle, St. Austell; Cumberland and Westmoreland, Mr. H. Britten, Prospect House, Salkeld Dykes, Penrith; Devonshire, Mr. P. C. M. Veitch, Exeter; Derbyshire, Mr. Bailey Wadds, 101, Uttoxeter New Road, Derby; Dorset, Mr. T. Turton, Castle Gardens, Sherborne; Essex, Rev. J. H. Pemberton, Havering, Romford; Gloucestershire, Mr. W. Jefferies, Cirencester; Hampshire, Mr. E. Molyneux, Swanmore Park, Bishops Waltham; Hertfordshire, Mr. A. Graveson, Little Molewood, Hertford; Isle of Wight, Mr. A. Kime, Westhill Gardens, Yarmouth, I. of W.; Kent, Mr. Walter P. Wright, The Grey House, Lyminge; Lancashire, Mr. R. C. Waterman, Woolton, Liverpool; Leicestershire and Rutland, Mr. W. H. Divers, The Gardens, Belvoir Castle, Grantham; Monmouth and Herefordshire, Mr. T. Coomber, The Gardens, The Hendre, Monmouth; Norfolk, Mr. T. H. Cook, The Gardens, Sandringham; Northampton, Mr. F. Perkins, Queen's Parade, Northampton; Northumberland and Durham, Mr. H. J. Chapman, Oakwood, Wylam-on-Tyne; Nottingham, Mr. Jas. Gibson, The Gardens, Welbeck Abbey, Worksop; Shropshire, Rev. J. Jacob, Whitewell Rectory, Whitchurch; Staffordshire, Mr. J. H. Goodacre, The Gardens, Elvaston Castle, Derby; Somerset, Mr. F. W. Cooling, 11, Northgate Street, Bath; Suffolk, Mr. R. C. Notcutt, Woodbridge, and Mr. W. Norton, 71, Guildhall Street, Bury St. Edmunds; Surrey, Mr. Thos. Stevenson, Woburn Place Gardens, Addlestone; Sussex (East), Mr. W. Goaring, Elmdene, Lewes; Sussex (West), Mr. A. R. Harvey, Eastergate, Chichester; Warwickshire, Mr. T. Humphreys, Botanic Gardens, Edgbaston, Birmingham; Wiltshire, Mr. T. Challis, The Gardens, Wilton House, Salisbury; Worcestershire, Mr. W. Crump, Madresfield Court Gardens, Malvern; Yorkshire (East Riding), Mr. H. J. Clayton, Wharfe Bank, Ulleskelf, Yorks; Yorkshire (West Riding), Mr. Jas. Backhouse, Holgate, York; Scotland (East), Mr. J. W. McHattie, Parks Office, Edinburgh; Scotland (West), Mr. Jas. Whitton, City Chambers, Glasgow; Ireland, Sir F. W. Moore, Glasnevin, Dublin; Wales (North), Mr. H. W. McLaren, Belgrave Square, London, and Bodnant, Talycafn, R.S.O.; and Wales (South), Mr. W. W. Pettigrew, Roath Park, Cardiff.

WOOD LICE IN GREENHOUSE.—A. J. B., Cardiff: I should be very much obliged if you could give me some assistance in my efforts to rid two new houses of woodlice. These houses are swarming with the pests, and yet our old houses are fairly free from them. I have scoured the place with carbolic acid, laid Vaporite and quick lime over the floors, and fumigated with six times the usual dose of nicotine; I have also put grease bands on the bottom of each door inside, and laid down a number of freshly-cut potatoes and wads of dry moss as traps, but still the infestation goes on. Can you suggest a remedy?—Beyond fumigation with cyanide, which is a proceeding attended with some danger, there does not seem to be much you have left undone in your battle with woodlice. Woodlice are scavengers, and are usually found where there is decaying vegetable matter; but, unfortunately, they also take toll of juicy shoots, young orchid spikes and peaches. You must discover what the attraction is, and also the chief points of harbourage; lay some dirty boards all over the floor and under the staging, and let these remain for a day or two; on examination the undersides will be found swarming with woodlice, which should be swept into a bucket of very hot brine or carbolic mixture. In any trouble of this kind persistence is the great thing; use any and every kind of trap for a few weeks, and, we doubt not, success will attend your efforts.

GRASS DRESSING.—F. M., Epsom: Please advise me as to dressing a rather poor paddock with some artificial fertiliser.—Without some knowledge of the soil and general conditions, it is not easy to give you useful advice. For present application, a good general fertiliser consists of 5cwts. basic slag, 2½cwts. sulphate of lime, ½cwt. sulphate of iron, and 2½cwts. of common salt per acre. This is excellent for improving the quality of the grass, and also tends to keep down moss.

SUCCESSIONAL CROPS OF VEGETABLES.—J., Hereford: I am anxious to maintain a succession of vegetable crops, and shall be glad of your help in the matter.—In our "Work for the Week" columns we publish a calendar of kitchen garden work and operations each alternate week, and if you follow the instructions given therein you should have no difficulty in maintaining a supply of vegetables. We also publish special articles on the cultivation of special vegetable crops, and as these are from the pens of experienced growers, the information they convey cannot fail to be of the utmost service to you. Keep a book, such as "Vegetables and their Cultivation" (W. H. and L. Collingridge, 148, 149, Aldersgate Street, E.C., 5s., post free 5s. 6d.), handy, read the Gardeners' Magazine regularly, use your judgment as to weather, condition of soil, site, etc., and obtain your seeds from one or more of the firms who advertise in our columns. We shall be glad at any time to render any assistance in our power in connection with any special matter.

DISEASED PELARGONIUM LEAVES.—F. M., Epsom: The undersides of pelargonium leaves sent herewith have a rusty appearance, suggestive of red spider, but I cannot trace any signs of the latter pest. Kindly tell me what is the cause of the trouble and the remedy.—The leaves are not in the very best condition, and suggest a too free use of heat and moisture, but the rusty appearance is due to the presence of a mite like the one that causes rust on begonias. Apply tobacco powder by means of one of the little distributors, taking care that the powder is applied so that it reaches well in between the prominent leaf-ribs where these radiate from the leaf-stalk. Renew the application every few days until the pest disappears, and the new leaves come quite clean.

SEEDLING SNOWDROPS.—T. J. N., Kent: Two years ago I sent you a new snowdrop, and asked your opinion of it. The flower was spoilt before it reached you, and you asked for another specimen to be sent the following year. In 1911 I left the matter too late, but now send a couple of flowers, and hope they will reach you safely. Your opinion will greatly oblige.—The flowers arrived in excellent condition, and were remarkably pretty. The equal development of all six segments is very interesting, and a mass of the variety should present a finer appearance than an equal number in which the three inner segments are smaller than the outer ones. It seemed to us that one of the flowers had the faintest possible pink tint, but placed against dead-white paper no colour was evident. The variety is certainly well worth retaining, and an effort should be made to increase the stock.

SPRAYING FRUIT TREES.—Amateur: I sprayed my apple trees during the winter with caustic alkali wash, and would be glad to know if I may spray again with lime.—It is not necessary, or, indeed, desirable, to spray your apple trees with lime. The spraying of the trees with caustic alkali should have been sufficient to clear them of insect pests for which sprays of caustic alkali and lime are used, and it is now too late in the season for such sprays to be used with safety.

## NAMES OF PLANTS.

F. S., Northampton.—Lachenalia Nelsoni.

H. M. T., Jersey.—Muehlenbeckia complexa.

A. W., Poole.—1, Odontoglossum ardentissimum; 2, O. crispum; 3, Cypripedium longifolium; 4, Cattleya labiata.

C. T. G., Leicester.—1, Berries of the Fire Thorn (Cratægus Lelandi); 2, Cineraria maritima; 3, Hoffmannia Ghiesbreghti.

W. S. T., Chester.—1, Helleborus colchicus; 2, Iris histrio; 3, Hamamelis mollis; 4, apparently a leaf of Medinilla magnifica.

F. D., Petworth.—The seedling is a plant of Canterbury Bell. The apple we do not recognise, but will endeavour to have it named for you.

**Cœlogne Cristata** and its varieties are now pushing up their flower spikes, and must not be allowed to suffer from lack of water, or their flowers will be small and lacking in substance. This old but beautiful species is not easy to surpass. After the plants have passed out of bloom, it is desirable that they should be rested for a time, keeping them dry, but not allowing them to shrivel. Should any of the plants, through carrying a very heavy crop of flowers, shrivel, water must not be given them in excess to induce them to become plump again. While in flower, or at rest, a cool position in the intermediate house will suit their requirements.—J. T. Barker.

## Situations Vacant.

**BRITISH GARDENERS' ASSOCIATION.**

The Executive Council are prepared to receive Applications for the post of GENERAL SECRETARY, at a commencing salary of £104 per annum. Candidates must have a general knowledge of the various branches of horticulture, and be competent to Organise and Address Meetings, and devote their whole time to the duties. Age not to exceed 40 years.

For further particulars of the duties and forms of application, which must be returned not later than March 23rd, 1912, apply to Mr. A. E. CRESWELL, 44, Albert Road, Leyton, N.E.

CANADA.—Wanted, several GARDENERS or NURSERYMEN to complete orders. Definite situations. Apply early, UNION TRANSIT COMPANY, 381, Argyle Street, Glasgow.

LAD WANTED, understand Nursery Work; able to serve. Apply, with references, to COLE, 326, Camberwell New Road, London.

NURSERY OFFICE MANAGER, with good knowledge of sales department. Must be fully competent and ready to proceed to Canada in April-May. First-class salary. Address M. F., c/o Street's, 30, Cornhill, E.C.

WANTED, LAWN HAND; must be experienced in herbaceous borders, etc., alternate duty, good Bothy. Apply, stating particulars, JOHN M. HANBURY, West Hatch, Chigwell, Essex.

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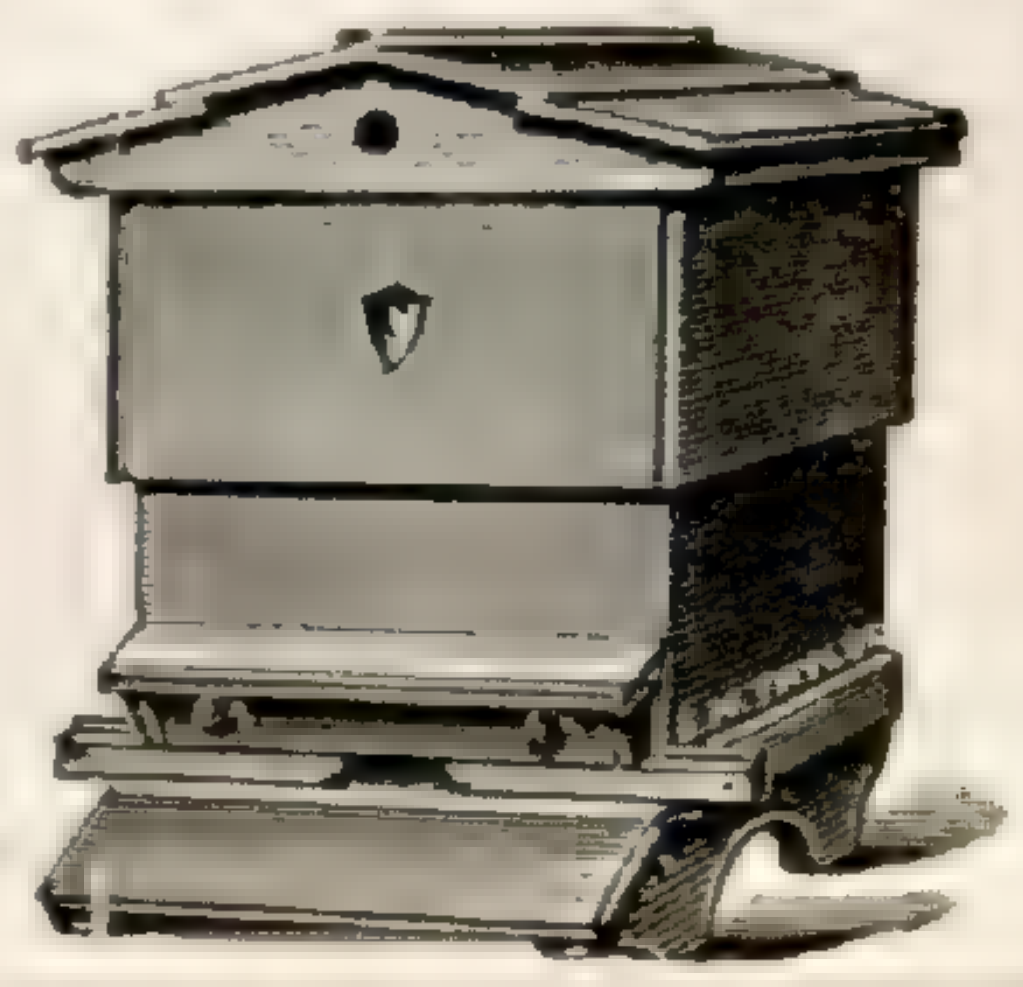

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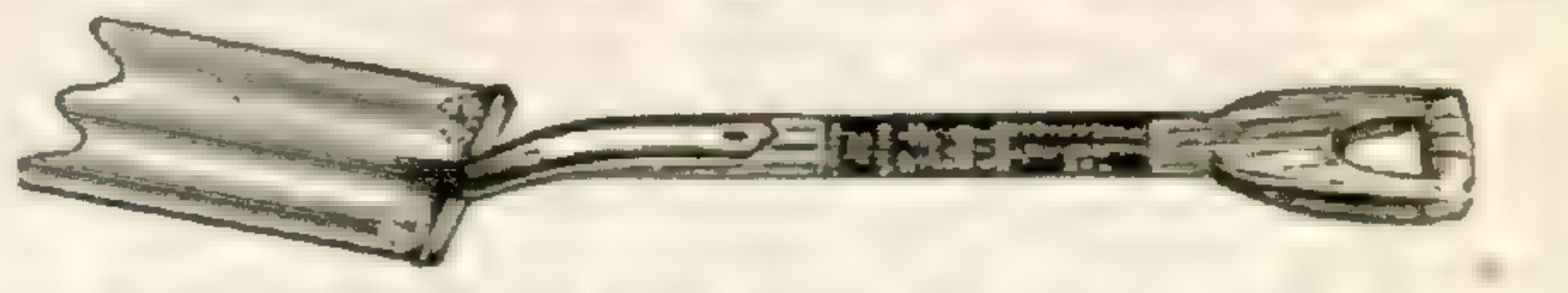

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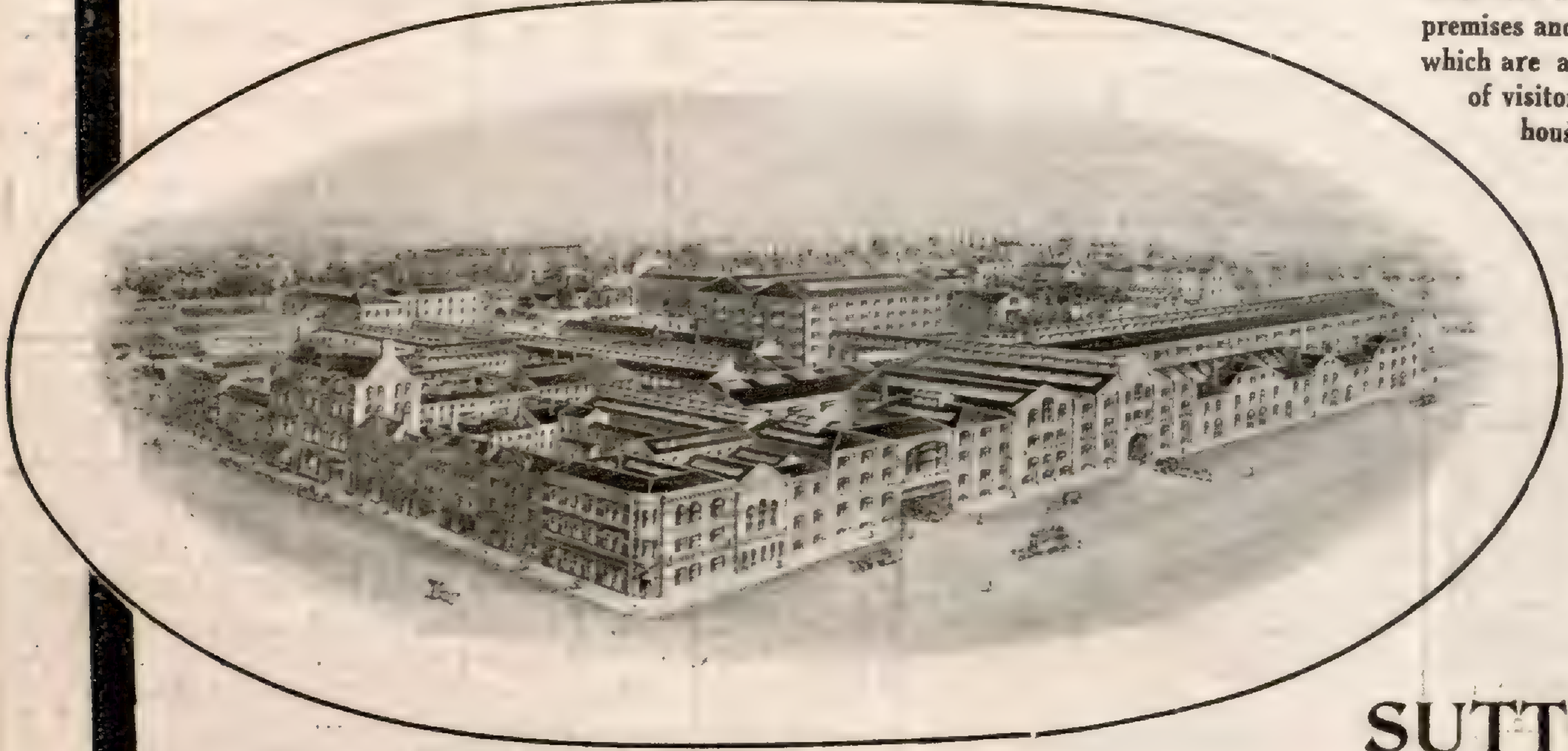

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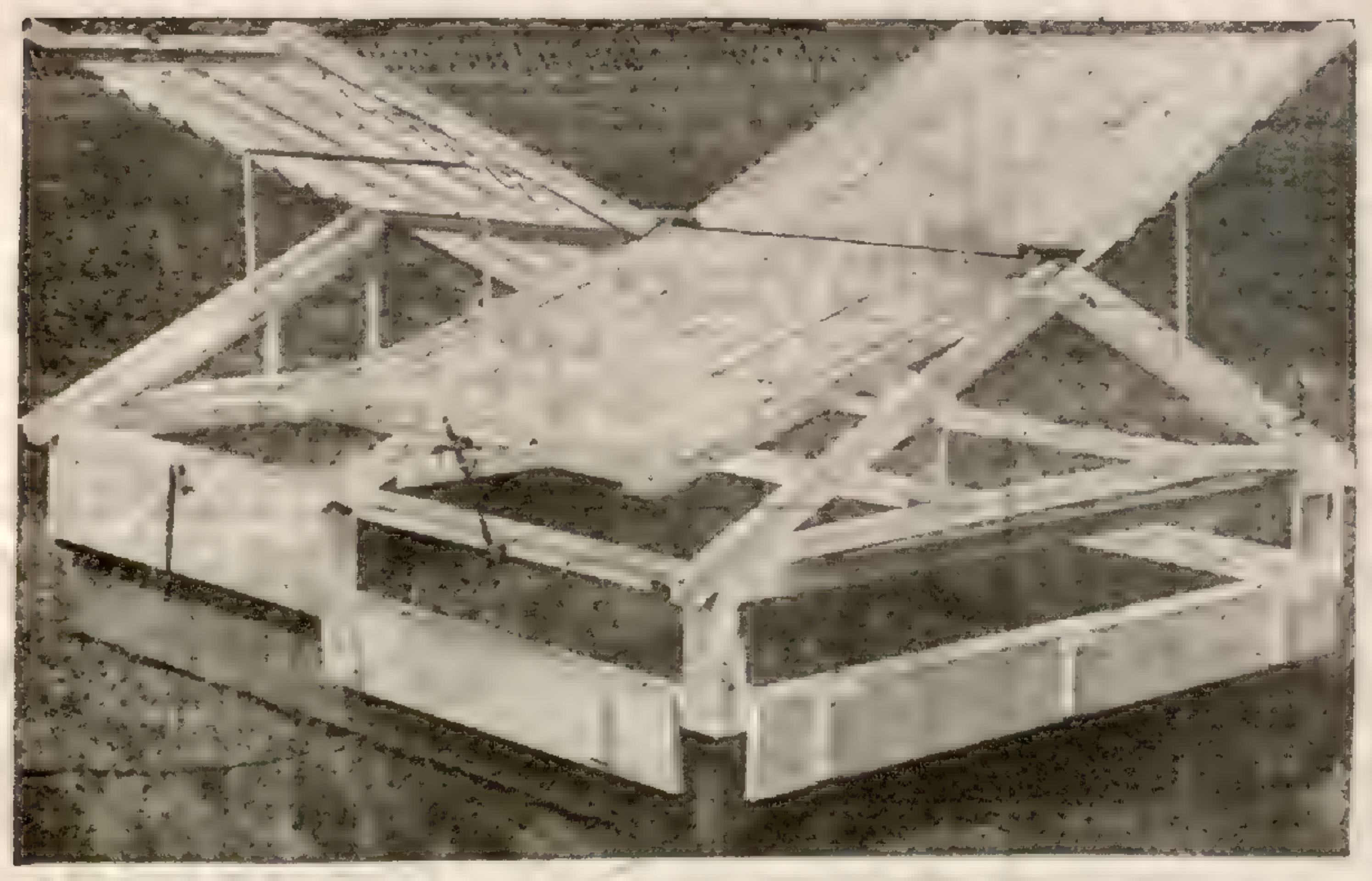

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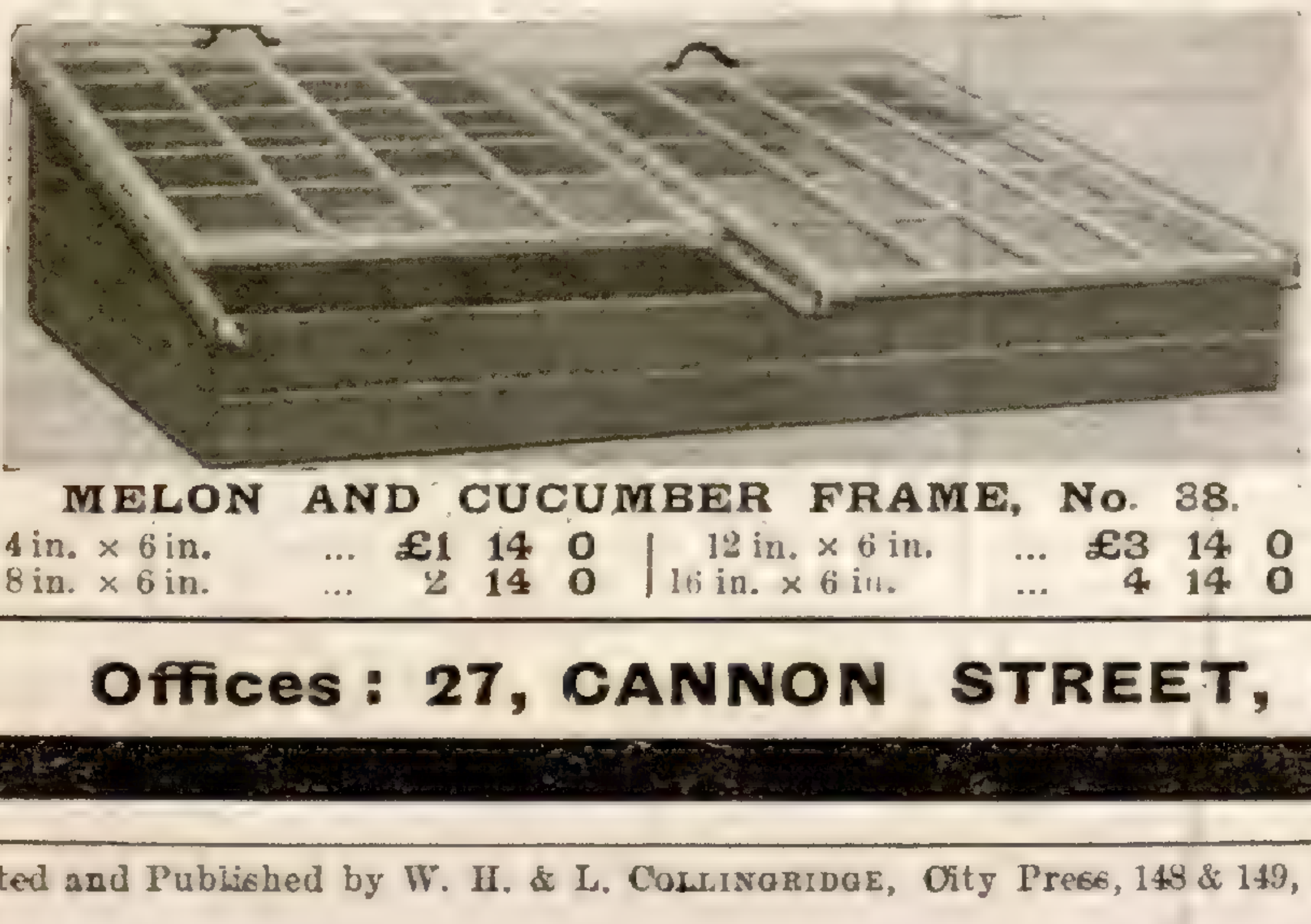

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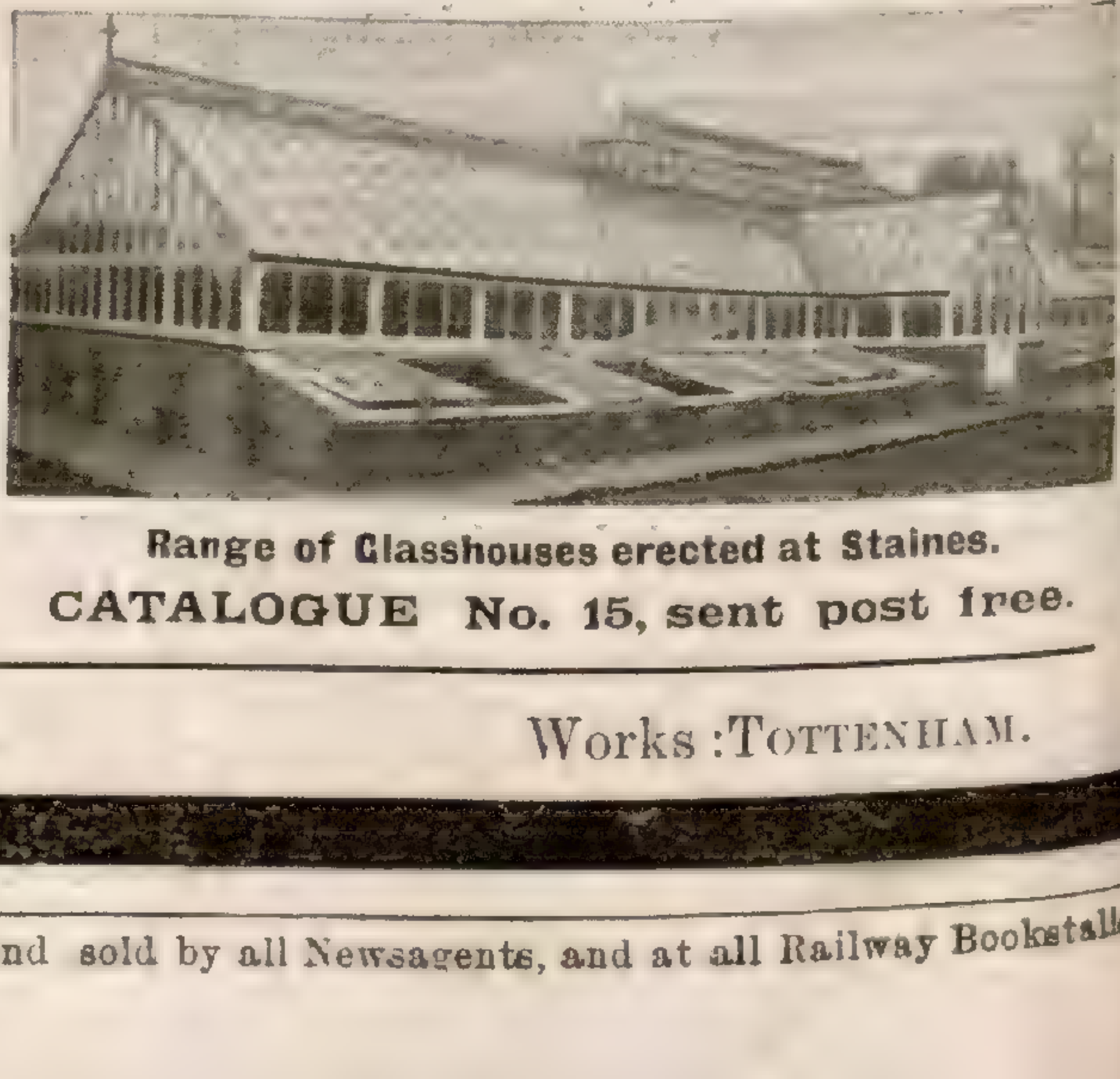

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# THE GARDENERS' MAGAZINE.

No. 3,045.
Vol. LV.
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| **Pioneer** ......... | 2/9 | 4/6 | **Scottish Triumph** | 2/9 | 4/6 |
| **Money Maker** | 2/9 | 4/6 | **Lord Dundonald** | 2/9 | 4/6 |
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VOL. LV.—No. 3,045. SATURDAY, MARCH 9, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Parasites.

In the history of the evolution of organic forms of life, both animal and plant, that of the parasites forms certainly one of the most interesting chapters. There are, however, parasites and parasites, some having reached such a degree of degradation that they do nothing for their own living, but exclusively prey upon their hosts, while others help a little. In the familiar plant world these two kinds may be typified by the Dodder and the mistletoe. The former is the relentless bloodsucker which does its very best to deplete its involuntary host of every drain of sap which it has collected for its own benefit and convert it into an intricate labyrinth and network of mere stalks and insignificant flowers, while leaves which, in a properly conducted and self-respecting plant would do some of the vital work, are reduced to mere rudiments. The mistletoe, on the other hand, although still a blood-sucker, does form a bunch of green leaves, and wherever that green is seen in vegetation, it is a sign of some self-supporting work which redeems the "sponge" character to some extent. In defining a parasite as an organism which lives at the expense of another, we must go further both botanically and zoologically by assuming a bodily association and connection, the parasite either living fixed upon or in the host, and in most cases unable to exist without it. In this sense we are invaded and ever pervaded by myriads of parasites, invisible, it may be, but none the less dangerous. The air is full of these germs, and every breath means an inroad of fresh hordes, which certain living bodies (phagocytes) in our blood are constantly engaged in meeting and destroying. With plants there is no such provision in their sap, nor do they need it so much, though they, too, have their battle to fight against invading fungi, ever ready to attack a wounded spot or take advantage of a weakened constitution, due to injudicious treatment or neglect. We have assumed a parasite proper to be fixed to its victim more or less permanently, but it is somewhat hard to draw the line between, say, the dodder and a brood of aphis or greenfly as regards capacities of parasitic suction. The baby dodder no sooner touches a growing plant with its slender fingers than it grips it fast, plunges a series of suckers through its epidermis, and commences to grow apace at its host's expense. The pretty, delicate-winged aphis, floating in the air, drops upon a tender plant, and in like fashion plunges a sucker through the epidermis, and sucks the sap beneath it. Being, however, an insect and not a plant, it is incapable of branching out in all directions and producing flowers and innumerable seeds, but instead it calmly proceeds to multiply itself on such an extreme scale that myriads result in a very short time, each one of which is busy all the time in its congenial parasitic task. In the plant world, however, there are parasites of a still more insidious type, inasmuch as they attach themselves, not openly, like the dodder and mistletoe, to the stems and branches above the ground, but surreptitiously to the root systems beneath it. Two species of this kind, Orobanche and Lathræa, are not uncommon, and often grow and show their inconspicuous flowers in places where their parasitical character is not known until it is attempted to transplant or eradicate them, when their absence of a proper root system betrays them. As regards plants, mere association with them by external attachment by no means implies parasitism. Under very damp and warm forestal conditions we shall find the larger tree trunks and even branches covered with innumerable plants, all growing without any connection with the soil, and therefore apparently dependent upon the tree for board as well as lodging, so to speak, which, however, is not the case. On examination, we shall find that all the roots, fibrous and other, simply travel superficially, and at the most pentrate crevices in the bark without going beneath it. The necessary plant food is supplied by falling leaves and vegetable débris, plus, of course, the liberal supply of humidity which such a habitat affords. It is such homes as these in tropical regions which have given us the bulk of our finest orchids. The giving of lodging, however, even minus board, may be fatal to the host. Many a fine tree has yielded under the fatal embrace of over-assertive ivy, and in the tropics the battle between the immense lianes or vines and the tall trees for a needful share of sunshine is ever drastically waged, the originally slender shoot of the "parasite" in one sense, though not in another, eventually invading a monster of the forest and strangling it in its perfidious embrace after robbing its foliage of theh needful light and air.

MR. J. B. RIDING.

**Mr. J. B. Riding**, of Forest Side, Chingford, has always been closely associated with horticulture, and at fifteen years of age he commenced the serious business of life under his father, who was gardener at Beech Hill Park, Waltham Abbey. Seven years later he went to Poles, near Ware, as foreman, and there stayed about four years, leaving to become manager to Mrs. Chapman's Bluecoat Nurseries, Ware. In 1890 Mr. Riding started business on his own account, and this he continues, chiefly on wholesale lines. Dahlias and chrysanthemums are special favourites, and of these he has a wide and intimate knowledge, and annually raises immense stocks of these popular flowers. He has been chiefly instrumental in bringing the collarette dahlias before the public, and from the first has believed in the future of this section. Mr. Riding is a staunch advocate of dahlias for garden decoration, and in this and other directions his own optimism becomes infectious. He has a seat on both the Executive and Floral Committees of the National Chrysanthemum Society, and is an irrepressible member of the National Dahlia Society's governing body. As a writer for the horticultural Press Mr. Riding has had a long and wide experience, his first article appearing when he was seventeen years of age. To our own pages he is a frequent contributor. Mr. Riding is a capable lecturer on horticultural subjects, and in this connection has acted as assistant lecturer under both the Surrey, Essex, and Kent County Councils, and, as he puts it, has "lectured in all sorts of places, from public-houses to churches." Forcible of speech, of genial temperament, generous to a fault, and a born optimist, Mr. Riding has a wide circle of friends, and deserves every bit of the popularity he enjoys.

**Attempt on the Life of Mr. Leopold de Rothschild.**—The attempt that was made on Monday evening to shoot Mr. Leopold de Rothschild as he was leaving his offices in New Square was a general subject of conversation among horticulturists present at the exhibition of the Royal Horticultural Society on Tuesday; and many were the expressions of gratitude that he should have escaped uninjured. Mr. Leopold de Rothschild is so keen a horticulturist, and so generous a supporter of all that tends to the advance of gardening and of the charities connected therewith, that there is no occasion for surprise that the deplorable occurrence should have evoked the warmest expression of sympathy for him in horticultural as in other circles.

**Frost and Flowers at Leonardslee.**—Mr. W. A. Cook, gardener to Sir Edmund Loder, Bart., Leonardslee, Horsham, writes: "In spite of the 20 degrees of frost experienced recently on the grass, and 16 degrees in the screen, Erica lusitanica is quite uninjured and flowering as freely as ever. Camellia blooms that were expanding were spoilt, but the unopened buds are now expanding well, and in a few days we shall have thousands of blooms out in the open. Narcissus palidus præcox opened its first bloom on February 15; N. minimus is quite gay, and has been for some time. Very little damage appears to have been done by the frost amonst choice trees and shrubs. Daphne japonica is charming on a south wall, and Rhododendron præcox is fast opening its flowers, and will be a fine sight in a few days. R. parviflora has recovered from the frost, and Edgworthia chrysanthia is fast unfolding its blooms.

**Gardeners' Notice to Leave.**—A case of interest to gardeners was heard at the Marylebone County Court a short time since, its importance being accentuated by the fact that the decision of the Judge differed from those that have been given in similar cases. The case, according to the "Journal" of the British Gardeners' Association, was a claim by Mr. Lewenden, a member of the association, for a fortnight's wages, amounting to £3, in lieu of notice. Mr. Lewenden had been head gardener to Mr. Spyer during a period of two years at a wage of 30s. per week, and one day was told that his services were no longer required, no reason being stated, and was given a week's notice. He claimed a month's notice, or wages in lieu thereof. Mr. Spyer gave him another week's wages, and the claim, as stated, was for the balance. In view of the importance of the principle involved the plaintiff was represented by counsel, and the case was argued at some length. In giving judgment Judge Selfe stated that, in his view, the weekly payment of wages was presumption of weekly hiring, and he failed to see that the plaintiff was entitled to a month's notice, or wages in lieu thereof; also that the custom referred to by the plaintiff's witnesses was not sufficiently known to deserve recognition. He accordingly gave a verdict for the defendant. The counsel for the plaintiff asked leave to appeal, but this was refused. In all the cases that have come under our notice the decision has been the other way, and it is, therefore, unfortunate that leave to appeal was refused, because there is now no opportunity of the association obtaining the decision of the Court of Appeal on the question. Leave to appeal is necessary when a contract is in question, and the claim is for a sum less than £20.

**The United Horticultural Benefit and Provident Society** holds its annual meeting at the Royal Horticultural Hall, Westminster, on Monday, March 11, at eight p.m. Mr. C. H. Curtis will preside. The meeting should prove a very interesting one, in view of the changes that must necessarily be made owing to the passing of the National Insurance Bill.

**Botanical Institute for South London.**—The South London Botanical Institute, at 323, Norwood Road, S.E., was informally opened to the public on the evening of February 28 with a lecture on "Folk Lore Connected with Familiar Wild Flowers," by Mr. W. H. Griffin, keeper of the herbarium. The institute, whose collection has been the work of some years, is the gift to South London of Mr. A. O. Hume, C.B., who has been a distinguished Indian Civil Servant, and was for many years Secretary of the Department of Agriculture. Shortly after his retirement and return to England in 1899, Mr. Hume took up the study of botany as a recreation, and the whole of the large collection of dried plants in the institute is wholly due to his exertions. It is hoped that the institute will prove useful to botanical students in South London by providing a centre where specimens, help, and advice are afforded to students and visitors.

**The Coal Strike,** which has engaged so much attention for some time, has become general since the publication of our last issue, and its terrible effects on industries of all kinds is now being felt in all parts of the kingdom. The effects of the strike may not yet have been seriously felt by those engaged in commercial horticulture, but there can be no question as to their being such as to prove disastrous to them should the strike be long continued.

**Messrs. J. Cheal and Sons, Lim.**—Messrs. J. Cheal and Sons, Crawley, have, for family reasons, formed their business into a private company, under the Limited Liability Act. The business was established in 1871, and the nurseries were commenced on ground at Lowfield Heath, on a portion of the common, and had an area of forty-five acres. The land was purchased by the late Mr. John Cheal on the enclosure of the common about sixty years ago. The business has from the first shown steady and continuous progress, and the landscape department has now become an important branch, as the result of the high reputation enjoyed by the firm for the designing and laying out of public and private gardens. The objects of the formation of the company are the facilitating family arrangements, the establishment of the business on a firm basis, and provision for its further growth. The directors are Messrs. Joseph and Alexander Cheal, who, with their late father, founded the business, with Messrs. Ernest and Arthur Cheal, sons of Mr. Joseph Cheal, who have for many years taken an active part in the management, and Mr. Reginald Dann, who has during the past eleven years been connected with the landscape department. We understand that all the ordinary and a portion of the preference shares are held by the directors, and that a few of the latter are being subscribed for by others.

**Crimson Sweet Peas.**—Mr. A. Malcolm, chairman of the National Sweet Pea Society's Floral Committee in 1911, writes: "The Gardeners' Magazine of January 27 was remarkable for the very beautiful illustrations of sweet peas; they were charming. I noticed in Mr. T. Stevenson's article a comparison between Maud Holmes and Dobbie's Sunproof Crimson, the former being favoured. In the struggle for supremacy the last-named gained the unanimous vote of the Floral Committee, when the two were growing side by side. Mr. Stevenson admits there is little to choose between the two. I would like to see varieties of superlative merit, but which fail to secure awards, valued by means of a sliding scale of votes, using seven as a maximum, and three as a minimum; all below the latter would be in a hopeless position."

**Kent Commercial Fruit Show.**—At the recent meeting of the Kent Commercial Fruit Show Association, held at Maidstone, Mr. M. J. R. Dunstan, Principal of Wye College, presiding, it was decided to hold the next show at Maidstone during the last week in October, to throw open the majority of the larger classes to fruit growers in Great Britain, and to introduce several fresh classes, especially for pears. Mr. F. S. W. Cornwallis was elected president, in succession to Lord Northbourne, who was cordially thanked for his services during the past year.

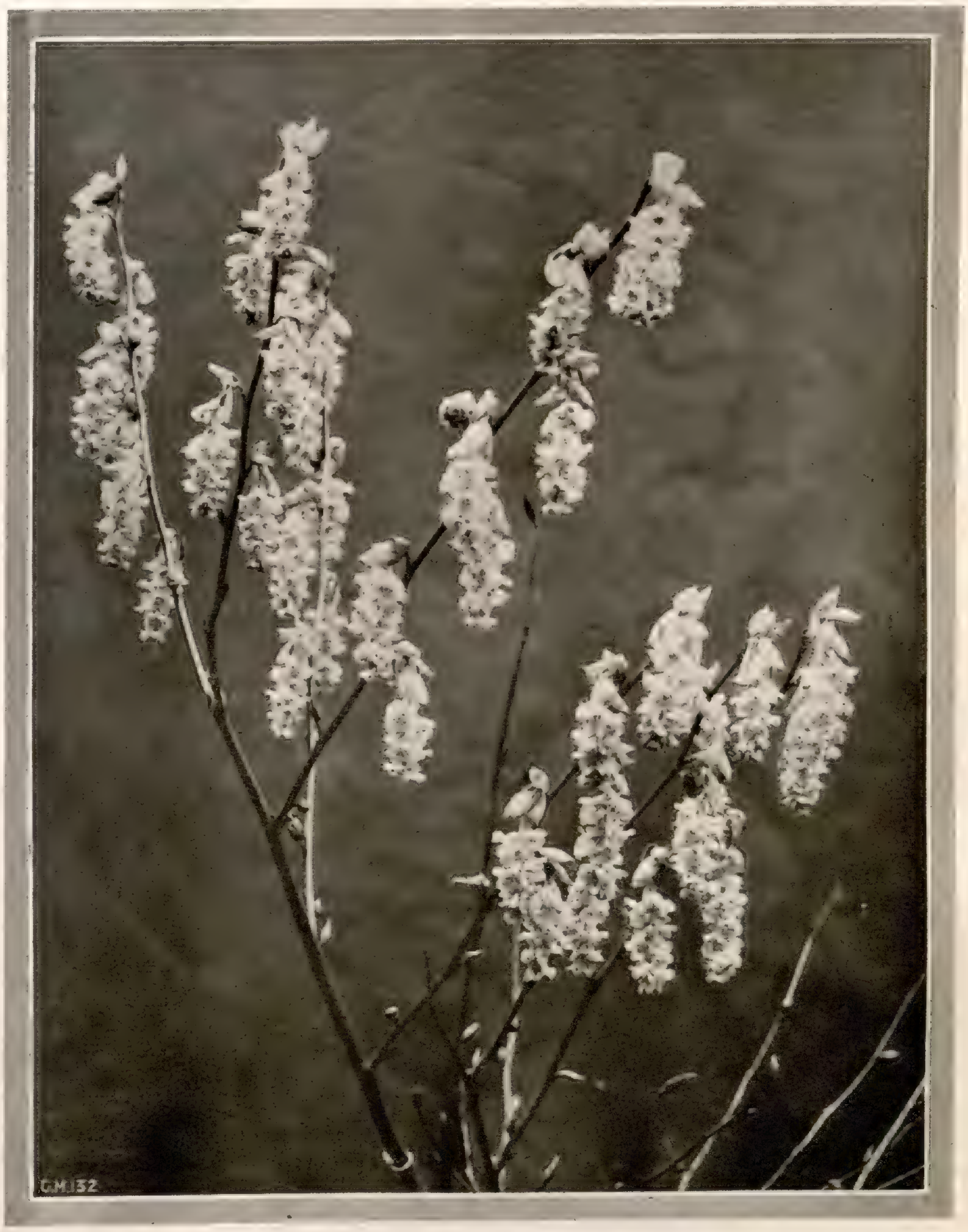
**National Dahlia Society.**—Instead of holding two exhibitions, as for some years past, the National Dahlia Society will this year concentrate its efforts on the great show that it will hold at the Crystal Palace on September 17 and 18. The schedule, which is now being issued, is more comprehensive than in any previous year; and, with a view to give the fullest possible encouragement to amateurs, the classes have been increased, and arranged in three sections. The classes in the first of the sections is open to all amateurs and gentlemen's gardeners, the second to amateurs who grow their dahlias unaided or have occasional help, and the third to those who have not won a prize at any previous exhibition held by the society. Ample provisions are made in both the amateur and trade divisions for cactus, show, fancy, single, and pompon dahlias; and, in addition, classes are provided for giant, decorative, pæony-flowered, and collarette varieties. In addition to the cash prizes in the forty-eight classes, five silver challenge cups, ranging in value from £5 to £20, are offered for competition. Given a favourable season, the exhibition should be one of the best the society has held within recent years. Schedules may be obtained of the hon. secretary, Mr. E. F. Hawes, Ulysses, Fortune Green, N.W.

**British Gardeners' Association.**—The first dinner of this association will be held at the Holborn Restaurant on Thursday next, March 14. The Earl of Plymouth will preside, and in the course of the after-dinner proceedings, a gold medal and address will be presented to Mr. J. Weathers, the retiring general secretary, and the gold medals and diplomas awarded to the successful candidates at the first examination will be presented to them. The dinner will commence at 6.30 p.m., and applications for tickets, 4s. 6d. each, should be made to Mr. A. E. Cresswell, 44, Albert Road, Leyton.

**Retirement of Mr. Samuel Pope.**—Mr. S. Pope, the begonia specialist, of Messrs. Thomas S. Ware, Lim., has so long been associated with tuberous begonias, and has done such splendid work in their improvement, that his many friends will regret to learn that he has found it necessary to retire from business life. For upwards of half a century Mr. Pope has made the raising and cultivation of begonias his chief study, and his latest achievement, the beautiful double variety, Lady Cromer, may be mentioned as a proof of his success in the creation of new forms of these valuable flowers. He commenced his career in the nurseries of Messrs. Lucombe, Pince, and Co., Exeter, and for several years was with Messrs. John Laing and Co., Forest Hill. In 1890 his services were secured by Messrs. Thomas S. Ware, Lim., in whose employment he has been during the past twenty-one years as begonia specialist at their Bexley Heath nursery. To his success in this position the fine collections of begonias exhibited by the firm at the Temple and other shows have amply testified. Latterly Mr. Pope has been in indifferent health, and, acting under medical advice, he is retiring to Torquay, his native place. As a mark of the esteem in which Mr. Pope is held by the firm and their employees, he was last week presented with a handsome marble clock bearing a suitable inscription. The presentation was made by Mr. W. G. Valentine, the managing director of the firm, and in a few well-chosen words he expressed the feelings of esteem and goodwill that are entertained for him by all. We learn with pleasure that Messrs. Ware have recognised the splendid services of Mr. Pope by granting him a pension for the remainder of his life. Mr. Pope is succeeded by his son-in-law, Mr. R. Bastin, who has been trained by him, and for some time has been his right-hand man. Mr. Bastin has indeed achieved so much success in connection with begonias that there is full justification for anticipating that the fame of the firm in connection with these flowers will be fully maintained, if not greatly enhanced.

**February in the North.**—The weather during February, writes our Aberdeen correspondent, has been unusually mild for the season of the year. The amount of rain and melted snow has been about 2¾ inches, falling in measurable quantity on nine days, and distributed pretty equally over the month from the 1st to the 29th. What fell during the first five days of the month was in the form of snow. After that we had only rain, but the ground continued white for seven days. Frost was rather keen on the 4th, but otherwise it was not strong. February, as a rule, is a time in which our greatest frosts are apt to occur, but during the last three weeks of the month the temperature was very mild and springlike. The absence of persistent or hard frost has allowed the husbandman to proceed with his work.

**No Salisbury Show in 1912.**—The Wilts Horticultural Society has decided to suspend operations for the present year owing to lack of support. An attempt was made to arouse public interest in the society's work, but without success. Lord Pembroke, who presided at the meeting held to consider ways and means, considered suspension better than dissolution, and promised that if in the future it was decided to revive the society and show he would give all the assistance in his power.



CORYLOPSIS MULTIFLORUS.

An elegant hardy shrub, bearing racemes of pale green flowers. A.M., R.H.S., March 5, Miss Willmott, Great Warley (gardener, Mr. C. R. Fielder).

**British Association.**—The annual meeting of this body will be held at Dundee, beginning on Wednesday, September 4. The president-elect is Professor E. A. Schäfer, LL.D., D.Sc., M.D., F.R.S., and the Sectional Presidents are: A.—Mathematical and Physical Science, Professor H. L. Callendar, LL.D., F.R.S.; B.—Chemistry, Professor A. Senior, M.D., Ph.D.; C.—Geology, B. N. Peach, LL.D., F.R.S.; D.—Zoology, P. Chalmers Mitchell, D.Sc., F.R.S.; E.—Geography, Sir C. M. Watson, K.C.M.G., C.B., R.E.; F.—Economic Science, Sir H. H. Cunynghame, K.C.B.; G.—Engineering, Professor A. Barr, D.Sc.; H.—Anthropology, Professor G. Elliot Smith, M.D., F.R.S.; I.—Physiology, L. Hill, M.B., F.R.S.; K.—Botany, Professor F. Keeble, Sc.D.; L.—Education, Professor J. Adams, M.A.; M.—Agriculture, T. H. Middleton, M.A. It will be seen from the list of sectional presidents that this year there will for the first time be an agricultural section at the forthcoming meeting.

**National Chrysanthemum Society.**—The schedule of prizes offered by this society is before us, and we are reminded that the exhibitions will be held on October 2 and 3 and October 29, 30, and 31 at the Crystal Palace, and on November 20 at Essex Hall, Strand. Some of the class specifications have been made easier, and there is an intimation that prizes for the best seedling plant of anemone, anemone pompon, and pompon chrysanthemums will be awarded in 1913; exhibits for this competition must be staged before the society's Floral Committee in 1913. Following the plan that has proved so successful in connection with other societies, the N.C.S. will issue the "Transactions" of the society in May. New members joining now will receive a copy of "The Culture and Exhibition of Large Chrysanthemums," as well as the current literature of the year.

# HORTICULTURAL EDUCATION.

## Self-education of Young Gardeners.

Notwithstanding all that has been said and written within recent years on the advantage to the gardener of a knowledge of the principles underlying successful practice, there are not wanting those who still hold the opinion that an acquaintance with the practical details of garden work is sufficient to ensure a full measure of success. If you discuss the question of horticultural education with those who hold such views, you are told before the discussion has proceeded very far that someone with whom they are acquainted has obtained a foremost position among practical horticulturists, although his general education was not of the best, and he knows practically nothing of the scientific aspects of gardening. They will also tell you in support of their contention of men who commenced life with great educational advantages and have failed to make their mark, and, in consequence, occupy a relatively low position. Facts such as these, however convincing they may appear at first sight, hardly touch the question at issue. They simply show that in gardening, as in other pursuits, men with great natural abilities are able to succeed whatever may be the obstacles in their way, and that others who do not possess the energy essential to the proper application of the knowledge with which they have been furnished will, on the contrary, assuredly fail. There cannot well be any difference upon this point, and certainly not among those who have opportunities for observation over a wide area, and have given some thought to the subject.

Whatever knowledge a man may possess must be applied, and with a due amount of skill, before he can derive any material advantage from its possession. In other words, the gardener must have a full knowledge of the practical details of garden work and garden management, which can only be obtained by several years of strenuous endeavour, before he can hope to achieve even a moderate degree of success. So essential is a practical training regarded by the writer that he has no hesitation in stating that, in his opinion, a man who cannot even read or write will, after a few years' work in the garden, prove superior as a cultivator to a man who has from the study of books become acquainted with scientific methods, but will not take the trouble to become well versed in the essentials of good practice. This much has been stated to show that, while the young gardener will be strongly advised to devote some portion of his spare time to the study of such sciences as have a direct bearing on the work of the garden, no one holds a stronger opinion as to the paramount importance of practice than the writer.

As the general aspect of horticultural education is far too wide a subject to admit of it being properly dealt with in one article, the education of young men who have entered on their gardening career will on this occasion alone be discussed. To fully appreciate the importance of the question to the younger members of the profession who will have to depend upon their own efforts, it is necessary to remember that within recent years there have been considerable advances in horticultural education, and that much more rapid advances may be anticipated within the next ten years or so. If these anticipations are realised, it follows that those who are now entering on their career and fail to take advantage of the opportunities they have for the acquisition of scientific knowledge will at an important period in their life have to compete with men who have been more fully equipped for the battle of life than they. Therefore, whether the young gardener has only recently entered on his training or has been engaged therein several years, he should take full advantage of his opportunities for strengthening the weak points in his general education and the acquisition of an elementary knowledge of those sciences which have a direct bearing upon his work. If he is really desirous of rising to a good position in his profession he must turn a deaf ear to those who are ever ready to contend that, because some gardeners have achieved success with a modicum only of science, the study of science is wholly unnecessary. Further, he should not at this period of life concern himself over much about the material results that will be obtained from well-directed study. He may be well assured that they will be such as to render him substantial assistance in his endeavours to make his mark, and what is hardly less important, some knowledge of the natural sciences will greatly increase the interest of the garden and add much to the pleasures of life.

Having thus briefly stated the case in favour of a combination of science with practice in the education of the young gardener, it will now be convenient to consider what subjects he should study for the purpose of fully equipping himself for his work and on what lines should be the study conducted. To avoid any misapprehension, it may be well to state that it is not necessary for the gardener to become an expert botanist, entomologist, geologist, or chemist. It is a question whether it would even be desirable that the studies should be carried far enough in either direction to admit of the student proceeding beyond the elementary stage. But it must be admitted that one whose life will be devoted to the cultivation of useful and ornamental plants should have a sufficient acquaintance with their various parts to be able to describe them clearly and accurately, and to understand the structure of root and branch, and the processes of reproduction, nutrition, cross-fertilisation, and hybridisation, so that he may be in a position to determine with some degree of accuracy beforehand what the results will be from a certain course of procedure. Again, he should be well acquainted with the constituents and inhabitants of the various classes of soil that have to be dealt with in garden management. Neither elementary chemistry or geology, nor, indeed, the two combined, will tell the cultivator all he should know about soils, but some knowledge of these sciences will enable him to more readily understand the information that is to be obtained from advanced works on soils and fertilisers. Then, with regard to economic entomology, which, for our present purpose, may be described as the study of insects injurious to plant life, it may be stated that those who are well acquainted with the life history of the various pests will be in a much better position for contending with them successfully than those whose knowledge does not extend beyond the remedies by which plants can be cleared of their enemies when an attack has been made.

(To be Continued.)

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**Cabbages.**—The severe frosts recently experienced have worked havoc among this crop; perhaps at no season previously had cabbages looked so promising in this district. Whenever possible the crop should be hoed, the blanks filled up with plants from the seed bed, and the whole crop made firm by treading if needed. A small sowing of nitrate of soda mixed with an equal bulk of dry soot strewn between the lines will be very beneficial at hoeing time.—G. E.

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# ROYAL HORTICULTURAL SOCIETY'S EXAMINATION.

The Royal Horticultural Society's seventh examination of employees in public parks was held on January 8, 1912.

As previously, the examination was partly viva voce and partly written, occupying three hours and twenty minutes. It was held at the Society's Hall in Vincent Square, Westminster.

Forty-nine candidates entered, and of these 17 secured places in the first class, 7 in the second, and 16 in the third, leaving 8 who failed to satisfy the minimum requirements of the examiners and one who was absent.

The examiners report that the average quality of the written answers equals that of former years, no marked advancement being noticeable in the examination taken collectively. Many cases of individual improvement, however, were noticed—candidates of past years being found to have considerably extended their knowledge. The identification of specimens in the viva voce section was better, the names being generally given unhesitatingly and correctly.

Some good answers were given to question 7 on leaf physiology; otherwise there was evident lack of careful reading on the subject of the structure and operations of the leaf.

The selection and action of artificial manures were well known.

Scope was given in question 9 to select and arrange plants suitable for ornamental water, but few candidates were familiar with the many beautiful forms of reeds, leaves, and water plants that give character to the water margin; lists of subjects were given, but they were too formal, and all kinds of unsuitable stuff were included.

C. R. Fielder,
Owen Thomas,
John W. Odell,
W. Crump,
Edward White,
W. Wilks,
Examiners.

CLASS I.

1. Fred J. Nash, Leicester.
2. Thos. Scott, Stoke Newington; and Wm. Chas. White, Hatfield.
4. Walter Davies, Richmond.
5. John Tyrrell, Cardiff.
6. William Good, St. Albans.
7. George Nile, Highbury.
8. James Hurley, Deptford.
9. William H. Jeffery, Lee Green.
10. James Jarrett, Birmingham.
11. Frederick Stevens, Forest Hill.
12. William E. Kemsley, Sittingbourne.
13. Henry Herne, Herne Hill.
14. Edward Martin, Highgate.
15. H. Johnson, Lewisham.
16. G. Bowles, Mottingham, Eltham.
17. Herbert G. Foster, Child's Hill, Hendon.

CLASS II.

1. Albert G. King, Kew Gardens.
2. W. H. Mouser, Highgate.
3. George Brooks, Wood Green.
4. Harry Adams, Upper Sydenham.
5. J. H. Copeland, East Dulwich.
6. W. Wickenden, West Norwood.
7. W. A. Cooper, E. Dulwich.

CLASS III.

1. W. Power, Victoria Park, N.E.
2. Geo. Miller, E. Dulwich.
3. T. S. Newman, Lewisham.
4. G. J. Rule, Wandsworth Common.
5. John F. Lee, Sydenham.
6. Richard Streatfield, Upper Sydenham; John W. Cordock, Charlton, Kent; and J. E. H. Ward, Camberwell.
9. P. Perry, Highgate.
10. E. J. Stewart, Highgate, N.
11. Percy Church, Highbury; and John Chapman, Brockley.
13. H. Crane, S. Lambeth.
14. C. T. Free, Limehouse; and George W. Allchin, Battersea.
16. Harry Cotton, Roydon, Essex.

## PRUNING ROSES.

The sharp nip of frosts and snow experienced during early February quite checked the tendency to prune roses so ridiculously early as many practice. I cannot call to memory a single season when roses grew extra early but what they suffered very much for such precocity sometime during the spring; and, recognising this, is my reason for much later pruning than we generally find.

If we limit the number of eyes, it stands to reason we must lose more than if we waited later and so secured some that could grow away with far less risk of severe checks. Personally, I look upon these early growths at the tips of the shoots as a decided safeguard, because the natural tendency to grow at the points or upper eyes first keeps the lower eyes comparatively dormant, and it is these eyes, or buds, that will be of most service later on.

The middle of March is quite early enough to prune in any district, however favourably it may be situated, while the end of the month is early enough for teas and those of precocious and often somewhat tender growth.

There is undoubtedly a great temptation to prune when one notices how well and promising this top growth appears. Some have fears of free bleeding or loss of sap when these shoots are cut down in such a state of activity. But this, from my own experience, is not so harmful as encouraging growth upon the wood left after the knife has done its work. The cut soon dries, and the basal eyes left quickly help to absorb the superfluous sap.

The art of pruning has been so often noted in the pages of the Gardeners' Magazine that the subject is apt to tire. Excellent cuts have frequently appeared, and these are far more explicit than mere written or spoken words. I may, however, perhaps be allowed to warn against the hasty and too similar use of the knife upon varieties of entirely different characteristics. By all means give a little consideration to the habit of the variety operated upon. A glance at the growth before us should be a good guide; that is, if one has been at all observant during the previous season.

Always make a practice of cutting quite close down to the eye that is to remain; never leave an inch or two of wood above the eye or bud. It cannot do otherwise than die if you do, and unfortunately this decay often extends below the growing eye, and either kills or greatly weakens it.

Another golden rule is to cut to an eye with an outward tendency, or the growth will be apt to crowd the centre of your plants, to their great disadvantage. Any crowded wood in the centre of the plant should invariably be removed. Roses enjoy light and air, which they do not get when a number of shoots are crowded in the centre.

Much may be done in this respect when young growth has progressed sufficiently for one to see which have a tendency to crowd or become misplaced. These should be cut out. Even if one does lose a few flowers, the rest amply repay in quality, while we are keeping the plant in a much more serviceable condition for the future.

A little thought should be given as to whether quantity or quality in the blooms is the chief desideratum, and the plants pruned a little closer in the latter case.

Rosarian.

## IRISES AT CLANDON PARK.

As these pages have testified, the late Earl of Onslow had a great love for his interesting garden at Clandon Park, Surrey, and, in conjunction with Mr. Blake, the head gardener, he made it especially remarkable for fine collections of hardy primulas and irises. Both these families of hardy flowers are extensively cultivated at Clandon Park, the natural conditions prevailing having been improved so as to find congenial homes for the several groups of each. In the accompanying illustration one of the iris gardens is shown on the bank of one of the numerous pieces of water at Clandon. On the higher and steeper parts of the bank the various varieties of the several sections of German irises are cultivated with immense success, while I. florentina, I. ochroleuca, I. Monnieri, I. anglica, I. xiphium, and many others occupy the more level spaces, with I. sibirica and its varieties, the gorgeous I. Kæmpferi and I. orientalis in the moister places. It is only when irises are grouped freely in this fashion that they are seen to the fullest advantage; and, so far as our experience goes, there is no other garden where the various kinds have been cultivated so extensively and so well as at Clandon Park.

IRISES BY THE WATER SIDE AT CLANDON PARK, SURREY.

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**Magnolia speciosa.**—This Magnolia is one of the Soulangeana section, and a particularly desirable variety for early forcing. Some large specimens shown by Messrs. R. and G. Cuthbert, of Southgate, at the Horticultural Hall on February 6 were much admired. It is freely branched, yet of rather upright habit, and the flowers, which are in colour white tinged outside with purple, are borne in great profusion.—K.

## THE USEFULNESS OF ASTERS

Though the aster has been in cultivation for a long number of years, it was not until of late that its popularity became great, and this was not to be wondered at, seeing that the old forms were so stiff in appearance, and the flowers were of indistinct colours, produced on short stems, and therefore quite useless for decorative purposes. Truffaut's Pæony variety was a great advance on the old type, and ever since its introduction every effort has been made to improve the flower, so that at the present time there is a whole list of different sections that the cultivator may choose from, embracing a wide range of colouring. This, no doubt, has had much to do with increasing the popularity of asters; and when we take into consideration the length of time the flowers remain in perfection, either when cut or on the plants, and the variety of purposes for which they may be employed, there can be no doubt about the aster being the most useful annual in cultivation. As a florist's flower the aster occupies the same place in summer as the chrysanthemum does in the winter, and it may be employed in like manner either as a decorative pot plant, for bedding, or for filling up gaps in the herbaceous borders. As cut flowers for furnishing large vases and for wreath-making the flowers are indispensable.

To provide a constant supply of cut flowers through the summer and autumn months it will be necessary to make several sowings, the first about the middle of February. It is advisable to make this first sowing in pans or boxes, using a light, rich soil for the purpose. After the seeds are sown, the boxes should be placed on the greenhouse shelf near the glass, where a temperature of from 50 to 55 degrees can be maintained. It is not advisable to raise the early batches in a strong heat, as the young plants are so liable to damp off close to the roots, owing to the closeness of the atmosphere in which they are growing. If the boxes or pans are stood on a shelf where there is a free circulation of air about them this is not so likely to happen as when stood on a bed or stage further from the glass. When the young plants have made three or four rough leaves, they should be pricked off into other boxes or pans, and again returned to the greenhouse shelf until established; afterwards they may be transferred to a cold frame to harden off, and then be either potted or transplanted about three inches apart in cold frames where they can remain until the weather conditions are favourable for transferring them to the open ground.

A second batch should be sown about the second week in March, but as the young plants are so susceptible to damping off, a light, airy place should be provided for them until they are strong enough to be pricked out. As the days will now be getting longer this may be done in a cold frame, or, if one is not at command, boxes about three inches deep may be used. A further sowing may be made in April, either on a slight hotbed or in a cold frame, due care being taken to prevent the plants from damping off in their early stages.

Double asters for cut flowers are largely grown, the most popular kinds being Comet and Ostrich Plume. In some places these are grown by the thousands for cutting, their finely shaped flowers standing well up on long stems, and thus rendering them most useful. These are the two double kinds that are such favourites with market growers, and are seen in such abundance in the florists' shops. There is also one known as the Mammoth which is a great favourite. To produce the finest flowers the plants must have ample room for development. The dwarfer kinds should be allowed a distance of at least a foot between them, while the taller ones ought not to be planted closer together than eighteen inches. The flowers should be cut before they are fully expanded, as they will open in water, and keep fresh much longer if they have not been exposed to the full sunshine.

### Asters for Bedding.

As bedding plants asters are charming subjects, but for their full beauty to be appreciated the colours should be so used as to harmonise with each other. The soft and hard shades should not be planted together. The soil ought to have been previously well manured and deeply dug, as the tall growing kinds are gross feeders, and require a lot of nourishment. The plants should also be allowed sufficient space so that they may develop freely, as nothing detracts so much from the beauty of a plant as overcrowding. It is not well, as some advise, to plant two sections together, that is, quilled and pæony-flowered, single and double, etc. Each kind or section shows to better advantage when planted by itself; therefore, when selecting the kinds to grow, this ought to be taken into consideration, as tall varieties do not look well in small beds, neither do the dwarf ones show themselves to advantage in large ones.

For small beds it is better to choose such varieties as the Victoria or Bouquet, as these do not grow more than a foot or fifteen inches high, even when treated liberally. Instead of edging the beds with very dwarf quilled sorts, it is better by far to have a distinct edging of something else that will harmonise with them. For larger beds, such sorts as Comet, Ostrich Plume, Mammoth, Truffaut's Pæony Perfection, and the like may be chosen, and these should on no account be overcrowded.

### Asters for Pots.

Unless for large conservatories, it is better to grow some of the medium kinds, as the tall ones take up too much room, especially when the plants have to be stood on stages. Those, however, who have grouping to do indoors, or who have large conservatories to decorate, would do well to grow some of the giant kinds, as they stand well up on long stems, and the pots may be hidden by plants of a dwarfer nature. To keep up a constant supply for this purpose it will be necessary to make several sowings at intervals of about three weeks. The soil used should be of a light rich nature, and ample drainage afforded to allow of the water passing away freely, for, though these plants are gross feeders, they resent stagnant water about their roots. It is always preferable in hot weather to have the pots plunged up to their rims, as this not only keeps the soil more evenly moist, but avoids the necessity of watering so frequently.

### Single Asters.

During late years there has been quite a rage for single flowers of all descriptions, even the rose and dahlia must have their single forms, and there can be no doubt, viewing them from an artistic point of view, that these single forms are most beautiful, their light, graceful appearance, either as pot plants, or as cut flowers for furnishing large vases, giving them a commanding place in the floral world.

The long graceful petals of the single asters, loosely arranged round the disk, make them very conspicuous. Then the flowers last such a long time in perfection that one cannot fail to appreciate their worth, especially in the hot weather, when many other kinds so soon fade. The flowers being borne singly on the tips of long stems of sufficient strength to carry them upright enable us to employ them to greater advantage when arranging tall vases. There are several types of these, but the giant forms are the most useful, being produced on stems of from eighteen inches to two feet in length. As plants for filling up the herbaceous borders they are invaluable, as they may be lifted and transplanted with safety when the plants have attained a large size, but the best way of overcoming any difficulty is to grow a quantity in pots, as they could then be planted out even in very hot weather without the least risk of failure. The only care necessary to ensure success would be to shade for a few days from the bright sun, and to see the plants did not suffer for lack of water until established, when they would take care of themselves.

### Diseases.

The aster, like all other plants, is liable to the attack of various pests. In a young state there is "damping off," usually caused through the plants growing in too close an atmosphere. Sometimes the plants "go off" after being planted out, and when this occurs, they should be pulled up on the first signs of withering, and at once destroyed. If examined it will be found usually that a small caterpillar has eaten the pith out of the stems, thus destroying the plant's vitality. Asters are also liable to the attack of fly, but this can easily be got rid of by syringing them with one of the numerous insecticides that are on the market.

Then in very hot weather the plants are liable to suffer from the attacks of red spider and rust, but this is usually through lack of moisture or insufficient nourishment to keep them in a healthy condition. The most troublesome pest the aster is subject to is the sawfly, as the larvæ of this insect eats the pulp of the leaves, feeding under the skin in the same way as the celery maggot does in the celery leaves. To ward off the fly it is well to dust the young plants occasionally with soot, and the ground around them should be treated in like manner.

H. C. PRINSEP.

## CHRYSANTHEMUM MRS. GEORGE RUNDLE.

I am pleased to see attention drawn to this old favourite chrysanthemum, which was introduced by Rundle in 1868, and was for many years seen on exhibition stands as one of the leading varieties. With the advent of larger-flowered sorts, naturally this variety was ousted from favour because, no matter how good it was as a small flower, it was not to be compared with larger and equally good blooms of other sorts. At Sheffield, Nottingham, and Hull the blooms were, and are now, staged in triplets, and create much interest; but where this variety scored the most was in larger vases with long stems, with its own foliage, and at the least a dozen blooms together. Here we had decorative effect of the highest order, especially if a few trails of Ampelopsis Veitchi, croton leaves, or Asparagus Sprengeri were added.

For growing at the foot of a south wall in the open, this is an admirable variety, opening its blossoms early and of full size when disbudded to single flowers on a stem. Grown in this way, it was a great favourite in gardens around Liverpool thirty-five years ago. As a standard, in pots, no variety was ever more popular, as evinced by the displays at the Brighton shows, and I see no reason why it should not be again popular, but, unfortunately, size is the god that governs nowadays.

E. M.

## VERONICA HULKEANA.

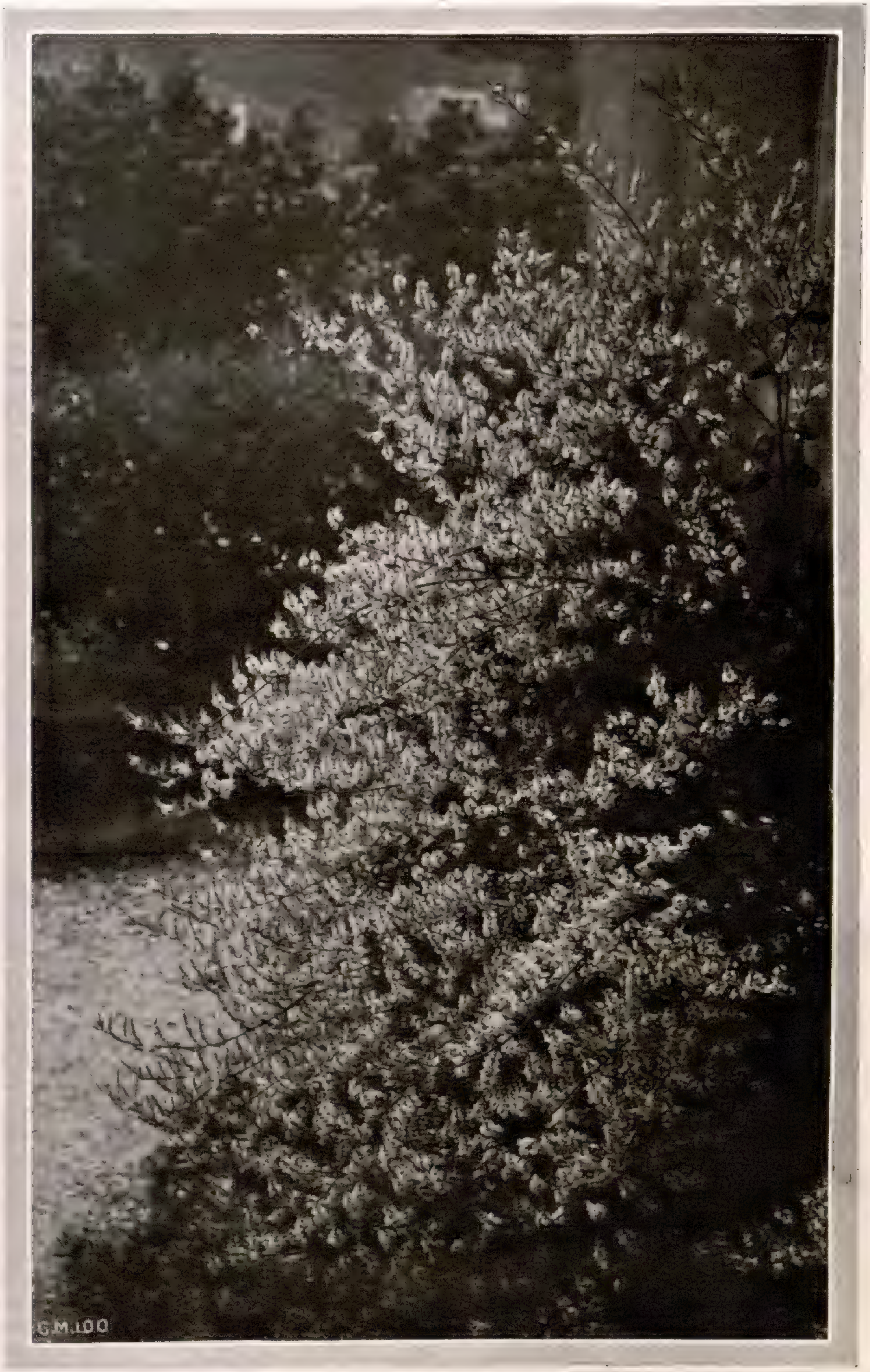
This is certainly the most beautiful of all the shrubby veronicas. Like the majority of the family, it is a native of New Zealand, where it is found in the mountainous districts. It was introduced into this country in 1865, but, in spite of its loveliness, is seldom met with, even in the highly favoured south-western counties. In the late spring a plant such as that shown in the accompanying illustration, which occupied a wall space of 7ft. in height and 8ft. in breadth, is a most beautiful picture, being covered from its highest point to the ground-level with long, branching flower-panicles of a delicate lavender colour. If left to itself, the plant will form a loose-growing bush, but it presents a more attractive picture when grown against a wall, the wall being also valuable for the additional protection it affords the plant. When cultivated in this manner it is a charming sight at the close of the month of May, when its countless bloom-sprays, many of them from 18in. to 2ft. in length, standing out from the wall, and slightly drooping, form a cloud of delicate lavender colour, at once attracting the attention and exciting the admiration of every beholder.

It is totally distinct in appearance from all other shrubby veronicas, and far exceeds the most ornamental of these in loveliness, surpassing them in the grace of its long, branching flower-panicles. A large plant will often bear as many as two hundred flower-sprays. Veronica Hulkeana is frequently reported to be very tender, but it has proved hardier than many others of the shrubby section, these having been badly injured by frost in a garden where Veronica Hulkeana is grown, while the latter was quite unharmed, and for this reason it would be well to try it in the open on south walls, anywhere in the warmer localities. The cause of its having gained a character for tenderness is doubtless owing to the fact that large plants, and in some cases even young ones, sometimes die off in an unaccountable manner. The death of the plants is sometimes attributed to the strain of flower and seed production, but a plant only 2ft. in height, which bore but half a dozen flower sprays, died suddenly, and large specimens have flowered and borne seed year after year in perfect health, only to succumb eventually. With the possibility of this sudden collapse in their minds, possessors of fine examples are naturally on tenter-hooks lest their favourite should show signs of failing vigour, for the loss of a large plant of this veronica deprives the garden of one of its most beautiful objects in the latter days of May, and many years must elapse before a small plant can attain large proportions. If the flower-sprays were cut immediately they reached their prime, the drain of seed-bearing would be spared the plant, but even this could not ensure its continued health.

Cuttings from four to six inches in length, taken off with a heel in the early summer, strike readily, and plants may also be raised from seed, but it takes a long time for a cutting or seedling to rival the proportions of a fine specimen which has died. However, plants are pretty, even in their early stages of growth, and they commence to flower when quite small. In the colder districts Veronica Hulkeana makes a most charming greenhouse plant. With regard to the tenderness of this veronica we have just experienced exceptionally cold weather for this district, 12 degrees of frost being registered. Very many tender plants have been killed outright, but Veronica Hulkeana is unhurt, not even a leaf showing the slightest sign of damage.

Wyndham Fitzherbert.

Kingswear.



VERONICA HULKEANA.
A graceful shrub with lavender-blue flowers.

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## LACHENALIAS.

The lachenalias, or Cape Cowslips, as they are sometimes termed, are charming plants for the greenhouse, where they flower during the winter and early spring months. A great number of garden forms have been raised within recent years, but one of the best of all is Nelsoni, with rich golden-amber coloured blossoms. It is by no means a novelty, but for all that it is a very beautiful form, and, furthermore, of good constitution.

Some of the original species are also very pretty, notably the well-known Lachenalia tricolor, and the quaintly-coloured Lachenalia pendula. One of the finest exhibits of this last that has ever come under my observation was contributed by Messrs. Sutton and Sons, of Reading, to the first meeting this year of the Royal Horticultural Society.

Complaints are by no means infrequent that lachenalias do not always prove a success, and this is, I think, chiefly to be attributed to the rough treatment they sometimes have to undergo. When the flowering season is past, they should be looked after as carefully as before, and not stuck underneath stages or in any out-of-the-way place. When totally dormant they should be kept quite dry; a frame is a good place for them till August, when they must be shaken quite clear of the old soil and be repotted.

K.

## AMONG THE ALPINE FLOWERS.

"The sap will surely quicken soon or late,
The tardiest bird will twitter to a mate;
So spring must dawn again with warmth
and bloom."
CHRISTINA G. ROSSETTI.

Spring always seems to come too tardily for the lover of flowers who is eagerly watching for the uprising of his favourites from that black earth or between the stones of his rock garden. He is sure of their appearing; he looks for their coming as the lover watches for his dear one; and he longs for the spearing shoot, the swelling bud, and the opening blossom. Spring cannot well be said to be here, though March will have been ushered in ere these notes can appear. There is a dalliance and a reluctance of the flowers, as if they knew too well that fate has yet some trials for their tender leaves and fragile petals.

Yet many of them are here, and many more are pressing forward, less timorous than others, and we see their advance from day to day with ardent satisfaction. They are all around. Bulbous plants are in the majority, but others are in the field seeking our favour—a favour we cannot deny to such lovely things.

### Snowdrops.

In the rock garden, the border, or amid the grass, are the snowdrops, the virgin flowers of the winter, which, happily, dwell with us until the sharp winds of March bring the daffodils to bear them company ere they depart for the year.

The old lover of the snowdrop would hardly recognise his favourite as it is now present in our gardens. The art of man has wedded different races of the galanthus, and has provided us flowers of the utmost beauty, and far more opulent in their loveliness than the little Galanthus nivalis of the past time. Yet there is nothing more beautiful than thousands of the common snowdrop spread in sheets among the grass, scattered about the rock garden, or in clumps of rare beauty in many parts of the pleasaunce. Here are many species and still more hybrids, from the quaint Galanthus Scharloki, with its divided spathe and its spot of green on each outer segment, to the massive G. Imperati Atkinsi, one of the most imperial of all the snowdrops.

Then there are hybrids of Galanthus plicatus, of noble beauty and with truly fascinating eardrops of white and emerald green. The many know not the loveliness of these new snowdrops, but soon shall come the time when, like the daffodil, they shall find their way into many gardens, and be sought after like those narcissi which "take the winds of March with beauty." Those of us who are privileged to own these patrician flowers, look thankfully upon their transcendent loveliness.

### Crocus tomassinianus.

Gladly do we see among our flowers of the early days the dainty Crocus tomassinianus, a charming little flower, not bold enough, perhaps, to attract the admiration of those who can see no beauty in crocuses save in the glowing massive cups of the Dutch varieties. These may affect to despise the exquisite soft-coloured daintiness of Tomassini's crocus, but we who love our flowers for other things than mere size and regularity of contour are in the seventh heaven of delight as we study the beauties of these crocus gems. We have no little spring crocus more beautiful than this; and we have none more reliable. It grows readily in a sunny spot; it flowers freely, giving us an abundance of its lilac or purple flowers; it seeds well, and thus increases with more rapidity than do some of the other species. There are now several shades of purple or of lilac to be procured among the varieties of this gem, and all are very pretty. A little group with the soft exterior colouring displayed when the flowers are closed gives us pleasure—a pleasure vastly heightened when the little flowers open to the sun of the months of February and March.

### Adonis amurensis.

The introducer of a flower such as the Amoor adonis deserves a wreath of fame, so great has been the boon he has bestowed upon those of us who yearn for the earliest flowers. And Adonis amurensis, which first bloomed in February, is one we may well visit from time to time to see if it has begun to open its golden flowers. It reminds one, as might be anticipated, of its ally Adonis vernalis, the spring adonis, but it comes so much earlier and is so attractive in itself, with its fine golden flowers borne above its gracefully-cut leaves, that it is one of the plants we can never praise too much. Our enemies the slugs have an affection of an inordinate kind for this Amoor adonis as well as we; but their desire assumes a different form, the gastropods seeking to enjoy the pleasures of appetite, while we, let us hope, are governed by higher tastes than they. In a dryish soil Adonis amurensis does well here, though not in a place where it can ever suffer from drought.

### Scilla bifolia.

The earliest flowers on the forerunners of the different forms of Scilla bifolia are in full blow, and other varieties are loth to lag behind. Looking through the garden to-day I renewed my pleasure at the sight of a little deep-coloured form sent to me from Asia Minor, and which is the first of all, and rejoiced to see another one—grandiflora—in bloom, with others, such as S. bifolia ruberrima, fast showing colour. Too few know the usefulness of Scilla bifolia in the rock garden, and it ought to be more highly appreciated than it is. I have a goodly number of varieties here, but none give more pleasure than these very early ones, harbingers of others to come, with blue, pink, flesh-coloured, or white flowers. They are so easily grown that they need not be absent from any garden; while their value is all the greater because they come as the vanguard of the varieties of the Siberian squill, Scilla sibirica, and others of the race.

### Other Flowers.

Here are a few early narcissi, gladly opening to hail the month of March, though minimus has forestalled the others of the race, and has given its dainty flowers for some time; a few of the Glories of the Snow have also opened their blooms of blue in the case of Chionodoxa sardensis, and a single early plant of C. Luciliæ has almost rivalled in earliness its sister Glory. There are sprays of Arabises, dwarf hyacinths, Mezereons, a saxifrage or two, with various other early gems of the rock garden, delightful pioneers of the vast army of the blossoms of the year, such as primroses, violets, aconites, and early aubretias.

Truly the opening months, trying though they are to us poor mortals, bring in their train real joys and visions of floral loveliness.

S. ARNOTT.

## ROCK GARDEN NOTES.

The continuously wet weather experienced during the past season has been the cause of many losses in this department. Although the inhabitants of the rock garden are quite hardy where extreme cold is concerned, many succumb to excessive moisture, and some of our choice subjects will be found to be either dead or in a state of collapse. It is a difficult matter to winter many of the natives of the high mountainous regions, owing to the prevailing dampness of our winter climate. During a warm autumn, when the atmosphere is excessively humid, the plants are forced into strong sappy growth, which is quite unfit to stand severe weather. Of course, many choice subjects are protected by overhead coverings, yet it is impossible to shelter all from the rains, and consequently many are lost.

The idea—and it is a very prevalent one—that when once a rock garden is planted it should go on for ever is absolutely wrong, as the plants cannot always stand our climate. One of the most important points regarding the maintenance of a rock garden is to have a good stock of reserve plants in readiness to fill up vacancies in the spring. In damp, low-lying districts the losses during the winter are much heavier than in dry ones, yet at the same time it is quite essential that there should be a reserve supply connected with every rock garden.

Generally speaking, the early half of March is a most suitable time for filling up all gaps, and by this time it is easily seen which plants are going to survive. When replanting, it is advisable to remove the old soil and replace it with fresh, not only taking off the top but going to a good depth, bearing in mind the fact that the majority of rock garden plants are deep rooting. Each subject must be afforded soil to meet its requirements, and to accomplish this a thorough knowledge of the various plants is necessary. The androsaces, dianthuses, æthionemas, alyssums, edaianthuses, phyteumas, and many of the saxifrages that delight in soil of a calcareous nature, should be afforded plenty of limestone chippings or old mortar rubble. Then there are the peat-loving subjects, which include the daphnes, Eomecon chionantha, Epigæa repens, Linnæa borealis, some of the primulas, shortias, and many others. Each should be afforded a suitable rooting medium to ensure success.

In the majority of cases a rich soil shou be avoided, for, although a strong growt is produced by its use, collapse often f lows. Firm planting is of great importanc and when filling up the crevices between t rocks, hammer and chisel will have to b brought into use to fix the plants firmly in their positions. The work should be accomplished carefully and thoroughly, for the future welfare of the plants depends great deal on how they are put in. T roots must be laid out, and the soil work in amongst them, so that they may sta growing right away. When a plant turned out of its pot and the roots are a tight ball it is of great advantage loosen them and spread them out inste of pushing the ball in undisturbed.

If dry weather prevails during the ope tions, the plants should be well wate after they are in their places, and wa will be frequently required until they a established.

E. C. POOLEY.

Gnaton Gardens.

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A practical and well-illustrated work on Rockeries is ROCK GARDENS AND ALPINE PLANTS, E. H. Jenkins. It is full of skilled directions, can be obtained by post from our Publisher 2s. 10d.

## PRUNING AND NAILING.

Although the weather has been so mild in many places, the rainfall during November and December was very excessive, and prevented or delayed both pruning and nailing. Where this was the case, no time should now be lost in getting the work finished before the pressure of other duties comes. Some gardeners reserve pruning and nailing for frosty weather, but there is nothing gained by doing so; in fact, it is next to a waste of time putting men to nail trees when they are so benumbed with cold as to cause them to run up and down the paths to warm themselves. Those who, like myself, have had much experience of this work in their early days, know full well what it means.

I lived at one place where the young men in the houses did all the nailing, both inside and out. Nailing was a considerable item, as there were about one hundred and twenty yards of Morello cherry wall to do. The same of outdoor peaches, in addition to several hundred yards of apricot, plum, pear, cherry, and other fruits. No matter how cold it was, the young men, when they had done their work in the warm houses in the morning, had to turn out in the biting cold winds to take their turn on the walls. It was not so bad when the weather was mild, and one enjoyed the change, but in some winters the frost was very severe, and one winter I remember well in the early sixties, when the snow was on the ground for several weeks together, and the weather was so cold that one scarcely knew whether they were hitting their fingers or the nails, yet we were compelled to turn out. It was this that made me determined that, if ever I was in charge of a garden where there was a quantity of nailing to be done, it should be given to the outside men to do before the weather became too cold, and this I succeeded in doing, for, although there was a Morello cherry wall with an area of over seven thousand square feet, the nailing on this was usually completed by the end of November, and no finer or better trained trees were to be found in the kingdom. It was the rule to have all the north, north-east, and north-west walls done first, as it is when nailing these that one feels the cold most, especially when the wind is blowing a gale. It is astonishing how much of such work a couple of good hands that have been well trained will get through, but when novices are put to the job without anyone of experience to teach them, there can be little wonder at slow progress and bad work.

Nailing, like all other work, requires practice if it is to be done quickly and well; the operator should see at a glance where the shoot should go, and on which side to place the shred so that the nail may not press against the young growth. It is bad nailing oftener than not that causes canker, for wherever the nail comes in contact with the wood it is sure to cause harm. I have stood for hours at a wall instructing beginners how to do the work, and that is the only way to have it done satisfactorily. Gardening is carried on in private establishments for the pleasure and enjoyment of the owners, but there can be neither when the work is done in a slovenly manner, and unless young men have a good training in their early days, it is quite certain they will never be able to properly organise a staff under them in after life.

Nailing may be thought to be of little moment, but I have seen visitors stand and look at a well-trained tree for a considerable time, remarking that every shoot seemed to be in its proper place, no over-crowding, and space for each growth to extend itself indefinitely without coming into contact with its neighbour. One sometimes hears gardeners remark, "We have not time to do such good work now." It is not the time that is spent on it, but doing the work in the right season and in the most systematic manner. When nailing, the shred should always be placed on the opposite side of the shoot to that which it is inclined to grow, so that whatever strain there is it should be on the shred, and ample space should always be allowed for the swelling of the wood the following year. With all trees this is important, but more especially is this the case with young vigorous ones, whose growths swell rapidly. Young trees need more attention than older ones, for, should a leading shoot be crippled through the shred being too tight, this often causes the tree to be ill-shaped and unevenly balanced.

Pruning is an art that can only be learned by practice, and to become proficient in that art one must have practical demonstrations, for not only is there a great difference in the habit of growth and mode of fruiting of the various species under cultivation, but the different varieties of the same species require special treatment peculiar to themselves. Take, for example, Belle Magnifique cherry; few would prune this in the same way as they would the Bigarreaus, but treat it more in the way of the Morellos. Yet, in dealing with cherries, many would simply state that shoots should be cut to a certain bud, treating all varieties alike. The same remark applies also to plums and pears, as no two varieties grow exactly alike.

Now, in pruning either wall trees, or those growing in the open ground, the operator should know exactly the position he wants the next season's growth to take, and should cut to a bud accordingly. It is always preferable to use a sharp knife to seccateurs, and the blade should be placed in such a position that when the cut is made the top edge shall be just above the bud, so that the growth proceeding therefrom may heal over the wound made, which cannot take place when seccateurs are used. In pruning wall trees the aim should be to have the shoots as evenly balanced as possible. Do not try to cover the wall in a season or two, but consider what the tree should be in ten or a dozen years' time, and treat it accordingly. Many trees are spoiled when young owing to their shoots not having been pruned back far enough, thus leaving a portion of the wall bare. When selecting fan-trained trees at a nursery, always discard those having a centre shoot, as such can never be got into a good shape afterwards. A well-trained tree is not only a credit to the person who is in charge, but is a pleasure to the owner who takes a pride in his garden, and, though they may not express themselves as being well pleased, one can usually tell by their manner whether they are satisfied with the way things are managed. I was once told by a gentleman who was very fond of his garden that it was seldom a person had due credit for doing things well, but if anything went amiss it was soon brought to notice. This is undoubtedly so, for it is impossible to pass by a dead tree unnoticed, though one may go by a dozen in a flourishing condition without attention being arrested, but when we see a notably fine specimen one is sure to stop and gaze on its proportions, and pass some observations about it. To obtain trees of this class special attention must be given from their youth up, each shoot must have been cut to the right bud, and assigned its proper position. Sap has a tendency to flow more rapidly to the upper branches, therefore these should be cut to a bud on the lower side of the shoot, while those on the lower portions should be cut to a bud on the upper side. It may also be necessary to check the flow to the upper shoots by pinching them when they have made three or four inches of growth, so as to divert the sap in other directions, and more equalise the flow. It is a mistake to produce over-gross shoots, as these have to be cut away. The aim should be to only encourage the growth required, removing all superfluous and ill-placed shoots at the first possible opportunity, and regulating those that remain in such a manner that an even and well-balanced tree is the result; if this is accomplished, the operator will have every reason to congratulate himself.

H. C.

## PYRAMID AND STANDARD FUCHSIAS.

I cannot call to mind any plant that gives such a generous return for a small amount of attention and labour as the fuchsia. Further, it lends itself to a variety of purposes, including the very important part it plays in bedding arrangements and garden decoration generally. We have been taught to believe that at least partial shade is essential to the well-being of these plants, but that fallacy is exploded by a very clear demonstration of their ability to thrive in luxuriant fashion in sun-baked and exposed situations. The weather we experienced last summer provided a very severe test, and was very trying to vegetation generally, and yet, where fuchsias received close and regular attention to artificial watering, together with refreshing shower baths in the evenings of those hot days, they were clothed in beauty the season through.

I propose to offer a few remarks as to their production as standards and pyramids, and it may be said that the orthodox way to proceed for standards is to commence with cuttings and to allow the resulting plants to run up to the required height before being stopped.

Assuming that the cuttings are inserted in February, and the plants are grown under glass, they will reach 3ft. in height by the end of September, and in this way the foundation of the standards is laid. Nothing is gained by stopping them until early February of another year, and if subjected to warm and fairly moist conditions, good compact heads are soon formed.

Another plan I have adopted in recent years is to utilise surplus plants of tall growth to form standards. These are clean pruned with the exception of 6in. at the top, when the stock of plants is being overhauled in February, and as these have thick and strong stems and a large root system, splendid heads are formed in a very short time. To my mind, fuchsias are seen to the best advantage in standard form, and as seen arranged thinly over violas, to harmonise or contrast pleasingly with them, a fine and charming effect is produced.

It is hardly necessary to point out that in the production of pyramids the mode of procedure is entirely different from that for standards, and certainly both methods of training should be employed. A very ready method of getting together a stock of large and serviceable fuchsias for park and garden decoration is to plant out each season a number of plants from 4½in. pots and keep them pinched with a view to symmetry.

Some wonderful examples of pyramid fuchsias have been exhibited at the Temple and Holland Park shows in recent years, and it is nothing short of marvellous how these giants were brought from a long distance without suffering.

W. H. Aggett.

## ANNUAL CANDYTUFTS.

Candytufts are so easily grown that perhaps it would be better for them if the seeds germinated indifferently, and the best results could only be obtained by special efforts on the part of the cultivator. We are apt to think best of those things that cost us most to produce or achieve. But candytufts are cheap, they germinate freely, and the plants thrive almost anywhere. The great cause of comparative failure is thick sowing, while allowing the seedlings to stand thickly, instead of severely thinning them out, is a cause that also generally follows the initial mistake of thick sowing. The splendid strains of large-flowered bold-spiked candytufts like Dobbie's White Spiral need room to develop, and a square foot is none too much room for the best plants, though thinning need not be quite so severe as this when a mass of florescence is desired. From white to a deep shade of rose-red that is nearly crimson, there are many shades of colour available in candytufts, and it is surprising what a capital display can be produced in beds or borders from seeds sown in the open in March. Thin sowing and early thinning result in large freely-branched plants that flower over a cosiderable period, whereas thick sowing and failure to thin early and severely result in slender plants that quickly run their course.

CANDYTUFT WHITE SPIRAL.
A fine selection made by Messrs. Dobbie and Co. of this valuable white-flowered annual.

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**Seedling Azalea mollis.**—It is impossible to even hazard a guess as to the number of these that are sent to this country every year from the Continent, and a great proportion of which are employed for forcing into bloom. At one time complaints were made that the flowers of many of them were poor in colour; but this fault does not prevail to a great extent.—T.

## ACACIA BAILEYANA.

The illustration on page 131 gives a capital impression of the grace and floriferousness of this, as yet, uncommon species, though, of course, it does not show the rich golden colour of its flowers. Besides this brighter colour, the smaller leaves are a great recommendation, for anyone who has used cut sprays of the well-known Acacia dealbata cannot fail to have regretted the unfortunate habit the latter species has of half closing its leaves at an early stage, and so giving the sprays a partially withered appearance. Being naturally a bush, the species under notice is admirably adapted for greenhouse culture, and, even if it did not flower so beautifully, Acacia Baileyana would be well worth growing as a foliage plant. The young leaves are very silvery, and plants with several branches would be useful for grouping, and especially so in jardiniere and other forms of house decoration.

Besides already recorded instances of its culture in Cornwall, this species finds a place in the Channel Islands, and is, I believe, listed by Messrs. Robert Veitch and Son, of Exeter. As it is not so strong a grower as the Silver Wattle, I am afraid A. Baileyana will not successfully compete with the former as a popular cut flower, though, of course, there are many purchasers who would willingly give a higher price for the more decorative species.

Considering their great beauty, it is surprising to find how rarely the acacias are grown as greenhouse plants in this country. There are no difficulties attendant upon their culture; the chief point to remember is that, except during the flowering period, and for a short time after the plants have been pruned, abundant moisture at the roots is absolutely essential. A light rich soil, such as fibrous loam and leaf-mould, with a good proportion of sharp sand, is required, and, of course, ample drainage must be provided. The best time for pruning is after the flowers have faded, and when the plants have made their growth it is advantageous to place them out of doors until the late autumn, when they should be housed in a greenhouse; much artificial heat is not to be recommended.

As anyone with but a passing knowledge of Australian plants knows, there are a great number of species of acacia—Nicholson's "Dictionary of Gardening" says fully 400—and probably, as is the case with that other bewildering Antipodean genus, Eucalyptus, no one knows how many. Besides the two species already named there are not more than a score or so in cultivation in this country, whilst it would be difficult to purchase more than a dozen different kinds. There are several varieties of Acacia longifolia well worth growing; A. longifolia mucronata, which is now in flower in the Temperate House at Kew, bears numbers of bright yellow cylindrical flowers, and is even more ornamental than the variety magnifica. A. Riceana is a desirable species, producing long spikes of globular flowers, well set off by the neat, dark green, linear leaves. The flowers of A. lineata are small, but of a very rich golden colour. As its name implies, A. juniperima has all the appearance of a juniper bush, with very dark green leaves, but the illusion is dispelled when the golden cylindrical flowers appear. Acacia armata and A. acinacea are other desirable species, as also is A. affinis, which has been described as an improved A. dealbata.

Cecil Aubrey.

## THE PIERIS.

Pieris is a genus of Ericaceæ, which is usually represented in gardens by one or more of three species, although nineteen species are enumerated in the Kew Index. The three most familiar are P. floribunda, P. formosa, and P. japonica, the former a North American shrub, the two latter of Asiatic origin.

PIERIS JAPONICA.
A hardy evergreen shrub with panicles of white flowers.

Some confusion exists relative to the generic name, for, in addition to pieris, the names of Leucothœ, Portuna, Zenobia, Andromeda, and Lyonia have been used in connection with one or more of the species. Andromeda is by far the most widely known of these synonyms, and many people persist in its use, instead of that of pieris. Attention may be directed to a true Andromeda in the European A. polifolia, a low-growing, wiry-branched shrub, with small evergreen leaves, and pink, urn-shaped flowers, which is sometimes found wild in the bogs of this country.

Pieris, like other plants of the erica family, attain their greatest luxuriance in soil of a peaty character, although they thrive well in sandy or loamy soil, providing it is comparatively free from limy matter. Propagation is effected by means of seeds, cuttings, or layers, but in either case it is a rather slow business to obtain good saleable plants, for growth in the early stages is slow. The positions which pieris may be called upon to occupy are many, for they are choice enough to warrant their use as specimen beds on lawns; their evergreen character ensures them shrubbery space, and they should always be included in collections of choice peat-loving shrubs, while one or two kinds form handsome specimen plants.

A hot, dry position is not suited for pieris, the best plants being found in somewhat shaded situations, where the ground is naturally a little damp. When making up ground for pieris, it is not necessary to introduce a large quantity of peat into ground which is not naturally of a peaty character, rather select sweet, sandy, or light, loamy soil, and fork a few inches of peat into the upper foot. Manure must not be given, but the plants will be benefitted by a surface dressing of half-decayed leaves, applied in spring. Such a dressing has the advantage of keeping the ground moist and encouraging surface roots at the same time. The encouragement of surface roots is quite as necessary as it is in the case of rhododendrons; therefore, deep planting must be avoided.

P. floribunda is a North American species which was introduced about a century ago, a figure appearing in the "Botanical Magazine," t. 1,566, in 1813, two years after its debut. It is usually met with as a compact bush, two to four and a-half feet in height, with oblong or oval, serrate evergreen leaves, one to two inches long. The white flowers are borne during March in short upright terminal panicles. As a rule, it blossoms freely, although a thin crop of flowers may be expected now and then.

P. formosa is the most imposing of the species, though unfortunately it is less hardy than either P. floribunda or P. japonica. Nevertheless, in the southern counties, and particularly in Devonshire, Cornwall, and South Wales, it grows magnificently, and fine examples are to be seen. Several plants are to be seen in the Kew collection, which, though occasionally cut by late spring frosts, have made satisfactory progress since they were cut to the ground line during the severe frost of February, 1895. These plants neither grow nor flower so freely as those in south-west gardens, however.

P. formosa is a native of the temperate Himalaya, and of various parts of central and southern China. At its best it forms a small tree 200ft. or upwards in height, with a considerable spread. Such a specimen is referred to as growing in the gardens at Pentille Castle in the description which accompanies figure 8,283 of the "Botanical Magazine." The oblong or lance-shaped evergreen leaves are up to five inches in length and 1¾ inch wide, deep green and glossy. When young they, with the soft shoots, are of a bright red hue. The white, urn-shaped flowers are borne in large terminal panicles during April and May. These panicles are often six inches long and eight inches across. In the neighbourhood of Tunbridge Wells it is said to thrive almost as well as in Devonshire.

P. japonica may be met with as a bush 2 to 4ft. high, with dark green, more or less oval leaves, which may be anything between 1 and 3½in. long and from a quarter to 1in. wide. The white flowers are borne in terminal drooping panicles late in March or in April, the panicles often being from 4 to 6in. long on vigorous specimens. The accompanying illustration gives a good idea of the beauty of a flowering spray of this shrub. Where one kind only is grown this ought to be selected. A variety with variegated leaves is sometimes met with.

P. Mariana and P. nitida are North American species, which are sometimes seen in cultivation. They are less beautiful in this country than the above-mentioned kinds, although showy shrubs in their native country. Neither do they appear to be very hardy, for young plants produce sappy growth, which is easily injured by frost.

P. ovalifolia is a distinct species by reason of its broadly oval leaves, which on some specimens are 8in. long and 4in. wide. The white, pink-flushed flowers are in long, slender axillary racemes. It is a native of the temperate Himalaya, and is not in general cultivation.

During the present century a number of new Chinese species have been described by M. Hector Léveillé. In the "Bulletin de l'Académie de Geographie Botanique," XII. (1903), pp. 251-253, descriptions of the following species appear: P. Gagnepainiana, P. divaricata, P. Martini, P. Kouyangensis, P. Duclouxi, P. Bodinieri, and P. repens. In "Bulletin de la Société Botanique de France" (1904), p. 211, the same author describes P. longicornu and P. Cavalerei. The other species are P. phillyreæfolia, P. villosa, P. nana, and P. Swinhoei.

W. Dallimore.

## PROPAGATION OF CHRYSANTHEMUMS.

An amateur gardener—and very much an amateur—once said to me that it was no trouble to grow chrysanthemums, for someone had given him some plants which had been on a rubbish heap all the winter, and they had grown and flowered well. This is on a par with the remark of another amateur that Shirley poppies would grow on a dust heap. Both statements are true, and yet very misleading, if made without qualification. With plants, as with children, it is a great thing to give them a good constitution to start with. In the rearing of plants of the hardy border, or early-flowering, chrysanthemums which are now so much in vogue, there are two main factors which determine the degree of success we attain to, and these are the old stools and the cuttings.

First, as regards the old stools. Viewing the old plants solely as a source of cuttings, it is a mistake to cut them down as soon as they have finished flowering, as the tops continue to strengthen the young shoots from the base for some time, often, in fact, until the former are finally cut off by frost. We speak of these chrysanthemums as hardy, but they can only be called so relatively to the choicer indoor varieties. Both severe and wet winters are alike fatal to them in the open ground, and in a damp season slugs are no less destructive, as it was the experience of a great many, perhaps most, growers on wet soils that they lost all their plants in the open ground during the winters of 1908-9 and 1909-10.

Some precautions must be taken, then, to secure a stock of plants to supply in the spring, and the nature of these must depend upon circumstances. In a light soil in a slugless garden they will be safe enough in the open in an ordinary winter, with, perhaps, some ashes round the crowns, and, if the weather becomes very severe, a little litter thrown over them lightly. On the other hand, in a wet, or slug-infested, garden, it is advisable to put a certain number of plants into pots in the late autumn, and keep them through the winter in a cold frame, which is made as nearly slug-proof as possible by the use of lime or soot, or both. If any have been grown as pot plants during the summer and autumn, these, kept in the frame during the winter, yield the best young stock. As a possible reserve some plants may be laid in under the shelter of a south wall, or even partially buried in one corner of the frame.

Care should be taken that the young growths from the base do not get drawn up and succulent, either through being too thick, or having too little light or air in the frame, as such material does not make good cuttings. The object should be to keep the young growth as short and sturdy as possible. To attain this some take up the best of the old plants in the autumn and plant them in an earth staging near the glass. Other growers like to have the old plants out in the open for a month at least before taking the cuttings in the spring, and it is undoubtedly a good plan if a look out is kept for a sudden sharp spell such as we often have in March.

Next, as regards the cuttings. The only ones to use are those originating from the part of the old plants below the surface, and the best of those which are already provided with some roots. The latter pieces may be taken off any time after the middle of March, and put in sixties, one in a pot, but the rootless pieces should be put near the sides of pots in the ordinary way, and, if too long, shortened to two inches or so, and cut clean through just below a leaf, the lower leaf, or leaves, on the remainder being removed before insertion in the mixture of loam and sand. Shoots originating from the portion of the stem above the ground are no good for cuttings, as they always show a bud soon after they begin to grow. When the cuttings have rooted they should be potted off before the roots have become matted together, as these are very brittle, and the plants suffer a considerable check in consequence if the rooted cuttings have to be pulled asunder. It is better to pot them off earlier even if it means the sacrifice of a few which have not yet made any roots. In about six or eight weeks from the time the cuttings are taken, they should be nice strong plants ready for putting out in their flowering positions. Those which are planted out early, say the middle of April, need carefully hardening off.

When plants have stood the winter where they flowered the previous autumn they should be taken up and not left a second year, as much better flowers are obtained from fresh plants. If taken up and divided, nice, young, rooted pieces may often be obtained without any old wood attached, and these make fine plants if planted at once in some well-cultivated ground. Cuttings may be taken any time during June, or even in early July, and the plants grown on in pots to be kept in a frame during the winter, when they furnish a good supply of material for propagation in the spring, and possibly also some late flowers in November. This method sometimes solves the difficulty of keeping the old plants through the winter.

Alger Petts.

**Iris fimbricata.**—This beautiful greenhouse iris is not grown as much as it deserves to be. Its delicate lilac blossoms are splendid for buttonhole wear; indeed, it rivals the famous Odontoglossum crispum for this purpose, and, bearing as it does a continuation of its flowers from the same spike it remains in perfection for a long period. The plants are now pushing their flower spikes freely. The cultivation of this subject is very easy. When the plants have done flowering, they are best repotted annually. It will be found they increase readily from growths which are pushed out freely from the base. They should be shaken out of the pots and pulled to pieces. For specimen plants select five or six of the strongest growths for a ten-inch pot, placing five near the sides and one in the centre, while one strong growth in a 5in. pot will suffice. The best compost is good loam two parts, decayed manure one part, and plenty of old mortar rubble broken up finely. When potted they should be placed in a frame and grown cool, giving plenty of water while growing. When the centre leaves have attained the same length as the others, water must be gradually withheld, and from October onwards the plants must be kept quite dry until the flower spikes can be felt rising in the centre of the growth. The secret of successful flowering is this complete rest. After October the plants will need the protection of a heated frame, and when showing flower should be removed to the conservatory.—Lewis Smith, Shotesham Park Gardens.

## FINELY-FLAVOURED PEAS.

(Concluded from page 176.)

### Sowing.

Much of the success in the after-cultivation of peas depends upon the amount of care taken at the time of sowing. A plan often advocated—namely, that of sowing two rows of peas some 6 or 8 inches apart and several inches from pea to pea in the rows—is not one which works out satisfactorily in practice. In sowing early peas it is always wise to give a liberal seeding, as the plants are never so robust as with late varieties, and they have much more to contend with as regards pests, such as birds, slugs, mice, etc. On light soils the trenches can be drawn out with a hoe to a width of eight inches, the seed sown, and the soil immediately replaced over it. Heavy retentive loams should, however, be forked over a day or so before drawing the trenches, while the latter should be exposed for a few hours during the day time in order that the soil may dry as much as possible before sowing.

The shallower peas are sown the better, although in the case of the early varieties it is well to place them at a greater depth than the main crop varieties or those sown from March onwards; by so doing, the tender seedlings are, to some extent, protected from frosts. Two inches is a suitable depth for March and later sowings, while those made in February may be placed at a depth of from 3 to 4 inches.

### Pests.

Immediately after sowing, precautions must be taken to protect the seed from the ravages of depredators, such as birds, slugs, mice, etc., for unless the latter are kept at bay the time and labour involved in sowing is set at naught, and disappointment will follow. Birds are a source of trouble, particularly where gardens are in close proximity to dwellings; the common practice of placing a few strands of black cotton along the rows is undoubtedly one of the best methods of scaring small birds, as when their wings come into contact with the invisible cotton they are readily scared. Soaking or damping the peas and sprinkling them over with red lead before sowing, although an old practice, is also to be recommended. Slugs are by far the most troublesome pests, and the plants require continuous attention until they are well above ground.

Repeated dressings of freshly slaked lime are useful for destroying slugs; one dressing, however, has little or no effect, as there is a sufficient coat of slime on their bodies to render this quite ineffective. The sprinklings of lime are best applied when the slugs are feeding or late in the evening and early in the morning. Mice are also an annoyance to the pea grower, and are usually more abundant in those gardens where there is ample accommodation for harbouring them. For effectually dealing with these pests, I know of no better method than the use of "break-back" traps; if sufficient numbers of the latter are used, and kept properly baited, there need be no fear of these little trespassers prove destructive to the crop.

### Staking.

While many of the dwarfer varieties of peas produce an abundance of pods without staking, it by no means follows that this is a practice to be recommended for those which attain to a greater height than 18 inches; and in wet weather even dwarf varieties suffer where no attempt is made to keep them off the ground. The proper time to stake peas is when they have attained a height of from 6 to 8 inches, at which stage the soil should be drawn towards the plants from either side of the rows. Hazel branches cannot be equalled for the purpose of staking; and these can be purchased at a very cheap rate in winter and spring when copse wood is being cleared. In the North of England, where less hazel is grown, branches of beech trees are more commonly used, while in town gardens the plants are generally supported by means of wire supports or trellis work. If young plants are allowed to become "laid" or broken down, they do not completely recover from the check thus received. There is no prettier sight in the kitchen garden than to see neatly staked rows of peas, and this work can only be successfully accomplished where care is taken in the grading of the sticks or branches to be used; also to see that the latter are placed at a proper angle in the ground and the tops neatly cut and levelled off.

J. C. N.

PEA LORD KITCHENER.

A first early wrinkled marrow remarkable for earliness, heavy cropping, and high quality, introduced by Messrs. J. K. King and Sons.

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**Peristrophe speciosa.**—Many acanthaceous plants flower during the winter months, and this peristrophe, known also as Justica speciosa, is one of them. It is a plant of quick growth, and, potted into six-inch pots, it soon forms a bushy specimen a couple of feet or so in height. The flowers are of a bright purple colour. In many parts of India this peristrophe is, I understand, a perfect weed; but in this country it is well worthy of consideration where winter-flowering plants are in demand.—W. T.

## ROTHAMSTED EXPERIMENT STATION.

The annual report by Mr. A. D. Hall, F.R.S., on the work accomplished at the Rothamsted Experiment Station during the past year is, as usual, of much interest, especially to those who are engaged in agriculture. It shows that both the director and the members have been active, not only in the conduct of experiments on the lines which have made the station famous throughout the civilised world, but in carrying out others of a somewhat different character that promise to be of far-reaching importance to those concerned with the various branches of horticulture.

There is a full report on the experiments with farm crops, and with reference to investigations in connection with garden crops it is stated that at the laboratory the pot experiments on the continuous growth of plants in the same soil have been continued for another season without as yet any conclusive results, and the same statement might be applied to the experiments upon clover sickness. The vegetation house was very largely given up to a new series of experiments on the treatment of "sick" greenhouse soils, which have become unfit for the continued growth of crops after two years' use in the greenhouse, though they are still exceptionally rich in plant food. Methods of treating the soil by heating to various temperatures and by the use of antiseptics were tested with satisfactory results, and a method for dealing with soil on a commercial scale has been worked out, which is being extensively tested. It seems likely that at a very small cost the growers of tomatoes and cucumbers under glass may be saved from what has hitherto been the expensive necessity of frequently renewing their soil. Dr. Russell and Dr. Hutchinson, with Mr. Petherbridge, have been studying in detail the chemical, physical, and biological changes brought about in the soil by the treatment, and the results are almost ready for publication. Dr. Russell has also been extending his work upon the part played by the protozoa in the production of sewage-sick soils and the effect of partial sterilisation in restoring their activity. This work has been undertaken in connection with Mr. J. Golding on sewage farms at Kegworth and Kingston, and a very considerable measure of success has been attained by the treatment.

The experiments on the toxic and stimulating effects of small quantities of various mineral substances were continued, and a series of experiments were begun on the growth of plants in extracts of the soils from the experimental plots. These latter trials have yielded some very striking results, which are to be repeated and extended in the coming year. Another series of experiments dealt with the growth of plants in nutritive solutions of various concentrations, either as water cultures or with the nutritive solution added to sand so as to keep the soil moist but not wet. In all cases growth was found to be proportional to the concentration of the solution, even though the solutions were regularly renewed and always provided the plant with an excess of nutrients. It was also found that the soluble nutrients could diffuse with perfect freedom along the thin water films coating the grains of sand, and that there was no retardation of growth even when the nutrients were enclosed in porous pots inside the sand, so that they were forced to travel by diffusion before they could reach the plant's roots. Further experiments on this subject are projected for the coming year.

Dr. Brenchley resumed her study of the weeds of arable land, taking this time a district on the borders of North West Wiltshire and Somerset, which gave her a range of formations including some of those that were dealt with in her work of 1911 on the soils of South Bedfordshire. It is interesting to find that the association of particular weeds with particular soils which prevailed in South Bedfordshire did not always hold for the same formations and weeds in the new district. In Bedfordshire, a distinct association was found to exist between some of the species and the soils upon which they grew, but the determining factor proved to be the texture of the soil, except in the one case of the calcareous soils derived from the chalk.

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## GARDEN CITY PROBLEMS.

(Concluded from page 161.)

### Types of Garden Cities.

There are three distinct types of Garden City, and as to which of these is the ideal type there may be difference of opinion. A great deal must depend on local and other circumstances. We have, first, the older cities and towns, with their centres of civic life, and their outlying garden suburbs; secondly, we have the complete industrial town with its sites for public works, and its civic buildings, etc., laid out on a complete Garden City plan, such as Letchworth, Bournville, Port Sunlight, etc.; and, thirdly, we have the simply garden village, such as New Earswick. From a health point of view, there doesn't seem to be much to be said for the one in preference to the other, provided there is no overcrowding of the dwellings, for the death-rate per 1,000 at Bournville (5.7) is not a great deal lower than that of uncrowded Kelvinside (7.7.); but when we compare it with crowded Cowcaddens (24.3), the contrast is very striking. But to whichever of these types the Garden City belongs, it is essential that it be well planned. There must be economy in everything. There must be no wasteful expenditure on unnecessarily winding streets or roads, but at the same time, the lay-out of the streets is a matter of much importance when considered in relation to the prevailing winds. Long, straight streets running in the direction of the prevailing winds, especially if the buildings be high, are not favourable to tree growth, and street trees are one of the most essential features of the Garden City. Many of you, no doubt, have heard of, and some of you may have seen, the "ringed" streets of Cologne, Weisbaden, or Frankfort. It is said that the planners of these towns adopted this system of laying out these streets in order to check wind currents, and it certainly must have a considerable effect in this way.

Another objectionable feature in the Garden City is the presence of high buildings amongst the cottage dwellings. These form wind blocks, and they do immense mischief to vegetable life in their vicinity. In fact, so well aware are the German town planners of drawbacks of this sort that they always endeavour to place factories and other high buildings in such positions that this will not happen, and that the smoke discharged from them will not be carried over the town. Other things essential to the success of a Garden City are a reasonably good soil, and a fairly pure atmosphere, and, above all, there must be no crowding of the dwellings, and there must be plenty of open space.

As to the particular lay-out which should be adopted, this will, of course, vary according to circumstances; in this, as in the designing of the dwellings, and in everything else connected with it, the charm of the problem is, as Lord Pentland remarked in his address at the Town Planning Exhibition in Edinburgh in March last, "its many-sidedness." But the chief charm of the problem, it seems to me, lies in the fact that it is the only possible system of housing of the working classes (who, with few exceptions, have nothing to look to at present but a tenement house), which will provide a good, healthy environment, which is absolutely necessary to prevent degeneration of the race.

Nowadays, we hear a great deal about school gardening in connection with the education of our children, and a very laudable effort is being made by the "Open Spaces Committee of the Outlook Tower" to convert waste spaces in the old town of Edinburgh into gardens for the people; and quite recently a proposal was made to establish garden allotments in the Gorgie district. There can be no doubt about the propriety of instilling into every boy and girl by a little practical demonstration, no matter what walk in life he or she may afterwards tread, a love for gardening, and it can have nothing but an elevating influence, if nothing else, on the minds of our slum children, to draw them from the streets into these open spaces, in order to, if possible, give them a little interest in the art; but in our Garden City all this would be part of their existence.

The allotment idea is all very well in a way. To the town dweller who, perforce, has to live in one of these tenements I have been alluding to, the allotment affords a means not only of indulging in a hobby, but of providing healthy recreation for both mind and body; but, to my mind, the allotment is only a makeshift at the best. The tenant himself may benefit, but as the allotment must of necessity, in the majority of cases, at any rate, be at some distance from his home (and the distance will generally be found to be greater or less, according to whether he happens to live in a more or less densely populated part of the City), it cannot afford much in the way of facilities for obtaining fresh air and healthy enjoyment to his wife and family.

Given cheap land and cheap and rapid transit, I have said that all the other difficulties would vanish. Let me now refer for a moment to some of the advantages we now enjoy in the possession of plant materials of all kinds compared with what our forefathers had. Never was there a time in our history when the plant materials necessary to produce our ideal Garden City were more plentiful or more easily obtained than at present. We have now a wealth of hardy flowers and shrubs, which were unobtainable, and in many cases unknown, 50 years ago. I need only mention the decorative roses and chrysanthemums, the new types of sweet peas, and the hardy herbaceous plants and bulbs which are now easily obtainable by all, and which can be grown by the humblest cottager.

It has often been remarked that in Scotland the working classes are far behind their English brethren in the cultivation of flowers, fruits, and vegetables, but I believe the reason for this difference is largely due to the different conditions under which they are housed, though no doubt there are other reasons. But all this will, no doubt, soon be changed when we adopt the Garden City plan of housing, which, after all, is based in its inception on "the cottage homes of England." I can conceive nothing which would have such a potent influence in the bringing about of more temperate habits in the people, which would lessen vice and crime so much, which would, I believe, have such an influence in staying that mad rush after sport which seems to have seized our youth, and even some of our elders, in our large towns, than the cultivation of a taste for gardening, and the opportunity to prosecute it in one's own ground, for which the Garden City offers such an inducement. Not that I condemn sport as such, for in our Garden City we would have cricket and football fields, tennis courts and bowling greens, and every facility for healthy recreation by both old and young. But the mode of life would certainly have a steadying influence on our youth, and in what more delightful way could the artizan spend his leisure time than in his garden? What more wholesome influence could he exert on his children, to say nothing of the benefits which they would derive from it otherwise, than in the cultivation of his plants and flowers. How else can we expect to rear healthy, self-respecting, self-reliant citizens in our large towns than by such means?

We hear much of the cry, "Back to the Land." It seems to me now that we have got an Agricultural Small Holdings Act that the Garden City question has assumed a position of greater importance than ever; for it is on the outskirts of the Garden Cities, as at Letchworth, that these small holdings are more likely to prosper than in the more outlandish and more inhospitable parts of the country.

## EUPHORBIA FULGENS.

Euphorbia fulgens, or E. jacquniæflora, to give it its more popular name, should be cut back to about half its height after flowering, and kept in a house having a temperature of 55 to 65 degrees, and watered only if necessary to keep the stems from shrivelling.

About the middle of March begin to syringe the plants daily in bright weather, closing the house so that with sun heat the temperature reaches 75 to 80 degrees. Ventilate at 65 degrees, increase it at 70 degrees, and again at 75 degrees, shading only if the temperature exceeds 80 degrees. Cuttings produced under these conditions will root more readily than if grown in a close, shaded house.

Cuttings may be taken in April, May, and June, when about three inches in length; they should be cut cleanly, with a slight heel, and inserted in saucers filled with silver sand which has been previously watered; place in the propagating frame in a temperature of 70 to 75 degrees, keeping them close and shaded during the day with just a crack of ventilation at night, if necessary, to prevent damping. In a fortnight or three weeks, they will be ready for potting into 3in. pots, using a compost of four parts loam, two of leaf-mould, two of peat, and one each of sand and ashes from the garden rubbish fire; pass the whole through a half-inch sieve. After potting return the little plants to the propagating frame, and keep them close. Syringe lightly occasionally, but do not give water. It is remarkable how little watering they require at this stage; we have frequently potted euphorbias into 60's, and transferred them to 48's for a fortnight, before water, other than that received by light syringings, has been necessary.

When rooted through the 3in. pots, remove the plants to a house having a temperature of 60 to 65 degrees at night, keeping them rather close until settled in their new home. From now onward through the growing season a little night ventilation is beneficial; give shade at 70 degrees, increase ventilation at 75 degrees, and as often as is necessary afterwards to keep below 80 degrees, reducing it as the temperature recedes, closing the house, and removing shading when about 80 degrees is reached, at the same time syringing lightly and damping the house.

When ready transfer to 4½ or 5in. pots, using compost as before, but well broken up instead of sifted; pot firmly. When well established euphorbias should be removed to a cooler house and given plenty of room, standing them on a damp base; increase the ventilation, and lightly shade at the temperature before mentioned; this, of course, will be comparatively cool treatment, as by this time (July or early August) we shall have much warmer weather.

Place the larger plants into 7in. pots, and the smaller into 6in., using the same kind of compost, but do not add artificial manure; pot quite firmly, and keep closer for a few days afterwards. When well established in these pots a little plant food may be given occasionally. By the end of September the plants will require very little shade, though, if not carefully inured to the sun they will probably flag somewhat.

From now throughout the winter the plants will require a temperature of 55 to 65 degrees by night, and 60 to 70 degrees by day, with sufficient fire heat and ventilation to keep up a buoyant atmosphere. At all times, water should be carefully applied.

H. PRIME.

Hatfield Gardens.

PEA DREADNOUGHT.

A handsome, finely flavoured and productive maincrop variety, introduced by Messrs. James Carter and Co.

## WORK FOR THE WEEK.

### THE ORCHID HOUSES.

COOL HOUSES.—At the warm end of the cool house, or in a house which is slightly warmer than where the odontoglossums are grown, quite a lot of plants will succeed. Amongst them are Dendrobium Kingianum, D. K. album, D. delicatum, D. linguæforme, D. Hilli, D. speciosum, and its variety fusiforme, which bloom very profusely at this season, and are very attractive. These thrive well in shallow pans, suspended near the roof glass, and as they root chiefly on the surface, the compost should not be too deep, and the pans should be quite half-filled with crocks. They will succeed in the compost previously recommended for imported dendrobiums. The proper time to afford new rooting material is when the new growths make new roots, but as these growths do not extend themselves very far, the plants, if allowed a reasonable space wherein to grow, need not again be disturbed for some time, provided the compost is sweet, and in good condition. D. Victoria Regina will also succeed under the same conditions.

ONCIDIUM PULCHELLUM is another of these little gems, and the plants are now commencing to grow again, and will need more water at the roots; the flower spikes will soon begin to show, and, as these take some time to develop, the plants should be placed near the light. In our houses it is essential that the inmates should enjoy all the light possible, especially during the dull months of the year.

PLEUROTHALLIS ROEZLI is another orchid which will thrive under similar conditions, and, having just passed out of bloom, may be repotted, should this be necessary, in a compost suitable for masdevallias. This is largest and the most striking species of the genus.

EPIDENDRUM (NANODES) MEDUSÆ is another quaint and singular orchid which will succeed under the above conditions, suspended from the roof, where it receives a free circulation of air at all times. This and the pleurothallis have no pseudo bulbs to support them, so should at no time be allowed to suffer for lack of water.

ODONTOGLOSSUM GRANDE, O. Insleayi, and O. Schlieperianum will succeed in a similar position, but these are now at rest, and should not be repotted until the new growths are forward and about to produce new roots. Small yellow thrips often infest this group, therefore the plants should be periodically sprayed with a weak solution of insecticide, and vaporised from time to time as a preventive measure.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

CARNATIONS.—The Malmaison carnations are now growing freely. Plants that were potted into 32's in the autumn, and have now become well rooted, will need more moisture at the roots. It will be noticed the plants are producing shoots freely from the axils of the leaves simultaneously with the centre stem or flower spike; Malmaisons should not be pinched with a view to produce bushy plants, as with tree varieties, or it will be at the expense of flowers. Each plant should be supported by a neat stake, and as the flower spike advances it should be neatly tied and disbudded to a single crown bud. Fowl manure, and sheep or deer droppings, in liquid form, are excellent stimulants. There are also many artificial manures for the purpose. All stimulants must be given sparingly at first, gradually increasing their strength as the flower spikes develop. Stock plants potted last year with a view to making specimens are now also pushing their flower spikes. These should be staked and disbudded. Malmaisons resent coddling; they like a light, span-roofed house, with a temperature of about 50 degrees at night, up to 60 by day, with a current of air always passing among the plants. The bottom ventilators should never be closed night or day (except in extremely cold weather). This will encourage a sturdy growth, the leaves will curl, and a heavy bloom appear on them. Greenfly is the worst enemy, but vaporising occasionally will keep the plants clean.

BORDER CARNATIONS.—Where border carnations will not do satisfactorily it is a good plan to grow the glorious Cecilia and the huge crimson King Arthur in pots and treat them similarly to the Malmaisons. Lady Hermione and Trogan also are splendid grown in pots. In fact, any good border varieties that were potted into 60's, and wintered in a cold frame, if placed, three plants of a variety, in 9in. pots, will make a fine show just before the Malmaisons come in.—Lewis Smith, Shotesham Park Gardens.

IMANTOPHYLLUMS OR CLIVIAS. — These are among our most useful plants for the conservatory during the spring months, and they are splendid for house decoration. Their cultivation is very simple. Plants that are in bloom now will require plenty of water, and liquid manure is very beneficial. After they have passed out of bloom they should be liberally treated, and a cool greenhouse or warm frame suits them admirably. It is always best to confine the roots somewhat, as this tends to free flowering. Should any plants need a shift they may be potted directly their flowers are over, or cut. If the centre of the crowns are bare the specimens are best divided. Cut the rhizome through with a sharp knife, and pull the portions apart, but avoid damaging the thick fleshy roots as much as possible. Repot at once, using suitable sized pots, and a compost of three parts loam, one part coarse sand and mortar rubble, adding dried cow manure. From October onwards water should be almost withheld, and the plants receive a rest until the flower spikes appear in spring.

HUMEA ELEGANS.—This graceful subject is not grown so freely as it deserves to be. For grouping it is unsurpassable. Generally speaking, they are biennials; for, although some plants will run to bloom the first year, the second season they are seen at their best when the plants have grown into fine specimens, attaining a height of 5 to 6 feet. Their peculiar odour is appreciated by many. Seeds should be sown at once, in a pot or pan, in a compost of finely sifted loam, leaf-soil, and sand; place the pan in a warm house, and cover with a piece of glass. So soon as the young plants are large enough they should be potted into 60's, and grown steadily. Place them in a warm frame on an ash base, and repot as they require it. Loam, leaf-soil, and coarse sand suits them well. In February the large plants should have their final shift.—Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

FIGS.—In the warmer parts of the country it will be fairly safe to give attention to fig trees grown on walls, but in colder and more exposed districts it will be advisable to defer the work to the latter end of the month. When pruning the trees it must be borne in mind that the fruit is formed on the tips of the past year's growth, and it is therefore essential to preserve and lay in those growths which show the best signs of giving a crop (the embryo fruits can easily be noted). Frequently fruits swell away in late summer and remain on the tree until the spring, but such fruits are of no value, and should be rubbed off. Figs resent hard pruning, and with trees which have received due attention in the way of summer pinching and the removal of superfluous growths, it will only be necessary to thin out weedy or other faulty growths and lay in the most promising shoots; overcrowding should be avoided; allow a space of 9in. at least between the bearing wood. As it is desirable to cover the wall space with fruiting growths, young shoots from the base of the tree should be laid in to take the place of older growths; where there is a sufficiency of young growths it is the best plan to cut out some of the older wood, as it is on the young and vigorous growths the finest fruits are produced. Outdoor fig trees are seldom troubled with insect pests. White scale sometimes is found, and if allowed to spread and multiply will seriously affect the trees and fruit. As a remedy for this pest, apply forcibly with a syringe or spraying engine, hot water at a temperature of 145 degrees; if the scales are numerous a second application may be necessary. This should be done before growth commences, or the young tips may be injured. Two or three applications of a strong solution of soapy water are usually effectual, and there are several insecticides on the market which may be used if desired.

PLANTING FIG TREES IN THE OPEN.—When planting young fig trees means must be taken to restrict the roots, for if allowed an unlimited root they will make far too much growth, and fail to fruit satisfactorily. As to soil, the fig is not fastidious, but prefers an open, well-drained rooting medium. Old mortar or plaster rubble and wood ashes should be incorporated with the soil. Firm planting will ensure short-jointed and fruitful growths. Old trees, if growing too vigorously, and failing to crop, should be root-pruned and kept within bounds. Bush trees require but very little attention, merely cutting out a branch here and there where there is an excess of growth.

BIG BUD IN BLACK CURRANTS.—Last year I had a number of black currant bushes so badly infested with big bud that they were condemned to be burnt; but, noting Mr. Pearson's recipe for this pest in the Gardeners' Magazine, I was desirous of testing its efficacy, and sprayed the bushes with quassia extract five times—twice in March, twice in April, and once during May, at intervals of a fortnight. The results were gratifying; there was a good crop of currants, the fruits clean and bright, and, although the bushes are not free from big bud, the attack is slight in comparison to that of last year. I hope by further spraying to practically clear out the pest. I would certainly advise those who are troubled with big bud to give it a trial.—W. Messenger, Woolverstone Park Gardens, Ipswich.

## THE KITCHEN GARDEN.

MAINCROP ONIONS.—As soon as the ground is in a workable condition, this crop should be sown without delay. The onions prefer a long season of growth, and when the seedlings are up early they withstand the attacks of the dreaded onion fly much better, being larger and therefore stronger. If the site is rather wet, a good dressing of burnt garden refuse direct from the heap will help the surface wonderfully, preventing it from kneading. Little time will be required on the plot if it was previously prepared, and the surface left rough; simply break it down with a fork, level, make firm, and rake the coarse stones off; square the bed, and then draw drills one foot apart and an inch in depth. After covering the seeds, rake down parallel with the lines. A wooden rake is preferable, as it leaves the soil rough, and therefore prevents a caked surface, which would hinder and cripple the growth of the seedlings. Main Crop, Improved Reading, and Long Keeping are good varieties, and will give a continuous supply. After-treatment will consist of regular hoeings and an occasional dusting of soot.

VEGETABLE MARROWS. — These are much appreciated when obtained early. The seeds must be sown in a temperature of about 60 degrees, placing each seed in a small 60-sized pot. Shift the plants into larger pots as required, eventually planting them out on a mild and gentle hotbed in a light compost, consisting of equal parts of loam and spent mushroom-bed manure, with a little leaf-soil and mortar rubble added. Other plants may be placed in boxes and large pots, training them up trellises in an intermediate house should room be available. Pen-y-byd and Table Dainty are excellent for early crops.

CELERY.—By the middle of the present month the main batch should be sown in boxes in a very gentle heat; use soil of a light, sandy nature, and just cover the seeds. If preferred, and a large batch has to be raised, the seeds could be sown on a mild hotbed in frames, making the soil level and firm. Keep the frame lights closed till germination takes place. Sulham Prize and Standard Bearer are first-rate main-crop varieties, the last-named standing better and later than any variety. Celery sown early must be pricked off into boxes filled with a light, sandy compost, and placed in gentle heat.

LETTUCE. — Those sown during the autumn and wintered in rough frames should now be planted on sheltered borders in a rich soil, as no crop responds more readily or pays better when given good treatment. Should good endive not be plentiful, the forward plants of lettuce should be transplanted into warm frames, and give every inducement to hasten growth by light sprayings on fine days, and closing the frames early to husband the sun heat. We find Stanstead Park to be one of the best varieties, and very hardy, large, and of excellent flavour. Continue to prick off spring-sown seedlings in boxes and frames. A small sowing should now be made outside for succession, Commodore Nutt being a good and quick variety for this purpose.

POTATOES. — Plant another batch of sprouted tubers in a skeleton frame for succession, taking great care to protect them whenever frosts appear.—G. Ellwood, Swanmore Park Gardens.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

Every foot of available space in the Society's Hall at Vincent Square, Westminster, was filled with exhibits on Tuesday and Wednesday, March 5 and 6, and during a very considerable part of the first day there seemed to be no room to get another Fellow or visitor in the hall, and the crowd moved slowly in a solid mass. Even at twelve o'clock there was a very large attendance. Tempers got somewhat frayed in the crush, and time after time the complaint was made that "the hall was not half large enough." Much to their annoyance, the orchid people, with the exception of the Messrs. Cyphers, were ousted from their favourite annexe, and they did not like having to give place to hyacinths.

Orchids were finely represented, and tulips, hyacinths, and daffodils were present in considerable force. Alpine and other hardy flowers, Indian azaleas, and carnations were other prominent subjects staged.

On this occasion a few classes were provided for hyacinths, and for daffodils and tulips grown in fibre; the competition was very keen, and this part of the exhibition was itself of considerable size, and deserved more space than it received.

Novelties were not numerous, Corylopsis multiflorus being the most striking new subject on view.

An exhibit that attracted a great deal of attention was the low rock garden, arranged by Messrs. R. Wallace and Co., Colchester; Iris bucharica, Primula denticulata alba, Pulmonaria augustifolia azurea, Fritillaria imperialis chitralensis, Saxifraga apiculata, Tulipa Clusiana, erythroniums, and hardy heaths were represented by good colonies. The Burton Hardy Plant Nurseries, Christchurch, presented a small rock garden exhibit. Hepaticas, white and blue, various primroses and anemones, double adonises and numerous saxifragas made up a pretty little group from Messrs. Bakers, Wolverhampton. Mr. Maurice Prichard, Christchurch, exhibited Primula cashmeriana Riverslea finely, and had hepaticas, Orobus vernus atropurpureus, and other pretty things on view. Messrs. G. and A. Clark, Dover, again exhibited the blue-green junipers to which we recently referred, and with these staged coloured primroses, Pulmonaria saccharata, Iris stylosa, etc. Iris sindjarensis, Trillium grandiorum and T. g. roseum, hardy heaths, and Bletia hyacinthina were shown among other hardy flowers by Messrs. Thos. S. Ware, Lim., Feltham.

Very beautiful was the little rock garden display made by Mr. Clarence Elliott, Six-Hills Nursery, Stevenage. On this were lovely sheets of Saxifraga apiculata, S. oppositifolia alba, S. Boydi, the splendid S. Burseriana Gloria, S. oppositifolia splendens, S. Elizabethæ, and a few other fine subjects. A delightful little group of early spring flowers from Messrs. Barr and Sons proved very attractive. Iris reticulata, Rhododendron præcox, and a charming lot of crocuses and saxifragas were included.

Alpine plants and other hardv early flowers were also submitted by Mr. G. Reuthe, Keston; Messrs. Whitelegge and Page, Chislehurst; Messrs. Thompson and Charman, Bushey; Mr. Pulhams, Elsenham; Mr. J. Box, Lindfield; and Messrs. J. Peed and Sons.

Corylopsis multiflora (A.M.), with catkin-like drooping spikes of yellowish-green, was shown by Mr. Fielder, gardener to Miss Willmott, Great Warley, Essex, and promises to be a useful and attractive early-flowering shrub. Himalayan rhododendrons were beautifully staged by Messrs. R. Gill and Sons, Falmouth, and the brilliant rosy-crimson variety Cornubia gained an A.M.; R. Thomsoni, R. Duchess of Cornwall, and R. barbatum, were also well shown, and the new Primula Winteri was again on view. The new Ribes laurifolium, with its pendant spikes of green flowers, was again exhibited by Mr. Beckett, gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree.

Messrs. S. Low and Co., Enfield, contributed greenhouse-flowering plants, and so did Messrs. Jas. Veitch and Sons, Chelsea, the latter staging a fine blush-pink Indian azalea, named Blushing Bride (A.M.), and some superb cyclamens and hybrid greenhouse rhododendrons. Indian azaleas were very largely exhibited by Messrs. Jas. Veitch and Sons, Chelsea, in a separate group, and it would appear that these very free-flowering greenhouse plants are again coming into popular favour; deutzias, viburnums, prunuses, and wistarias flanked the azaleas.

Against a background of glossy-leaved, freely-flowered camellias Messrs. W. Paul and Son, Waltham Cross, set up particularly beautiful plants of double white, double pink, and double carnation-flowered; and double crimson peaches, as well as double almonds; all these were smothered with exquisite flowers, and were greatly admired. A solid bank of Indian azaleas, representing a great range of varieties and colouring, provided a brilliant display from Mr. L. R. Russell, Richmond.

Messrs. W. Cutbush and Son, Highgate, presented a fine lot of perpetual carnations, and a delightful lot of forced early-flowering shrubs, these latter including the lovely Prunus trilobia, lilacs, magnolias, and mollis azaleas. The same firm had also a goodly group of hyacinths. Lilacs in pots, staged by Messrs. Paul and Son, Cheshunt, were delightfully fragrant, and the spikes of Marie Legraye and Belle de Nancy attracted no small amount of attention.

Mr. H. Burnett brought over some splendid carnations from Guernsey, and put up May Day, R. Felton, White Enchantress, Gloriosa, and Mrs. H. Burnett in grand style. Carnation Coronation was largely staged by its raiser, Mr. B. Bell, Castel, Guernsey. A bold display of perpetual carnations from Mr. C. Engelmann, Saffron Walden, contained rare blooms of Mrs. C. W. Ward, Carola, Prince Charming, and Lady Northcliffe.

The Hon. Lady Neeld, Duchess of Devonshire, Mikado, Mrs. Greswold Williams, and Winsor were perpetual carnations admirably shown by Messrs. Young and Co., Hatherley, Cheltenham. Messrs. Allwood Brothers, Haywards Heath, exhibited perpetual carnations in great variety, and staged these in fancy vases in good style.

A spring flower garden set out artistically by Messrs. Jas. Carter and Co., Raynes Park, was a centre of attraction all day. In front of a background of cupressus, small cedars and other conifers, this firm set up a low rockwork filled with daffodils and other bulbous flowers. Into two pools water trickled all the time, and this with the lovely green grass was pleasant to turn to from the masses of colour round about. In the centre was a raised vase of tulips set in a bed of blue hyacinths; circular groups of rosy hyacinths occupied positions at either end, while yellow and white crocuses encircled the water pools.

A pretty exhibit of hyacinths from Messrs. Sutton and Sons, Reading, was arranged so as to show charming combinations of colours by way of suggestion for future planting; the groups were of dark and pale blue, deep pink and salmon pink, dark blue and cream, pale blue and pale pink, red and cream, deep pink and dark blue, cream and pale blue, and mauve shades.

Hybrid gerbera flowers of exquisite beauty were finely shown by Mr. H. N. Ellison, West Bromwich; the colour range of these lovely and elegant blooms was from pinkish-white to deep crimson, the yellow and pink shades being very delightful. Mr. Ellison also showed freesias in variety.

Mr. J. Dickson, gardener to Adeline Duchess of Bedford, exhibited finely-grown plants of a splendid strain of Primula obconica, some of the deeper colours being especially fine. Freesias, well grown and charmingly sweet-scented, were exhibited in some quantity by Mr. H. Brotherston, Knebworth, Herts. Messrs. H. Cannell and Sons had a blaze of zonal pelargoniums, and Messrs. W. Wells and Co., Merstham, contributed perpetual carnations, and Messrs. H. B. May and Sons staged clematis and ferns.

### ORCHID COMMITTEE.

Another superb exhibit of orchids, arranged with the usual taste by Mr. H. Alexander, grower to Lieut.-Colonel Sir George Holford, Westonbirt, Tetbury, Gloucester, was a striking and beautiful feature of the show. Not one plant exhibited in the Gold Medal group of the fortnight previously was present in this display. Odontoglossums and large branching sprays of phalænopsis, with tall spikes of white Lælia anceps, formed a beautiful background for a grand lot of cattleyas and lælio-cattleyas. The central specimen plant was of the famous Cattleya Trianæ Hydra, carrying sixty flowers; of C. Trianæ there were sixteen fine varieties, C. T. Colossal and C. T. Prince Rupert being extra fine. C. Maggie Raphael var. Flambeau, the handsome and large C. Percivaliana Westonbirt var., and C. Brenda were all fine, as were Brasso-cattleya Thorntoni Colossal, B.-c. Enterpe Westonbirt var., the yellow Lælio-cattleya Cranstoniæ Holford's var., L.-c. Arbaces, the new L.-c. Voltaire, Sophro-lælia Psyche, the distinct yellow Odontoglossum Canary Bird, and Phalænopsis Schilleriana, with 84 flowers on one spike.

In Messrs. S. Low and Co.'s group of orchids we noticed Odontioda Bradshawiæ, Cymbidium insigne, white forms of Cattleya Schroderæ Cœlogyne panduata, and other good things. Messrs. James Veitch and Sons, Chelsea, submitted a considerable group of orchids, and their collection included the fine Brasso-cattleya Digbyano-Mendeli, the graceful Odontoglossum Dora, Cymbidium insigne, Dendrobium spectabile, Pleurothallis Roezli, Cypripedium macrochilium, C. Thomsoniana, etc., etc.

Messrs. Armstrong and Brown, Tunbridge

RAFFIATAPE.—To pass off green corrugated tape (that rots and fades) for this is to sell old seed as new. Raffiatape is bound with strong unfadeable cotton, which gives it great strength, durability, and, being two colours, it is never unsightly. Plants are as quickly tied as parcels, as it expands with growth. 1d. coils (ties up 150 plants); 6d., 1s., and 1s. 6d. reels. Samples and catalogue of all garden sundries.—C. E. WEST, Higham Hill, London, N.E. Please ask your seedsman for West's Patent Garden Sundries.

Wells, presented a large and beautiful exhibit of orchids, and these consisted of odontoglossums and odontiodas and dendrobiums in great variety. A few of the former, of special note, were O. ardentissimum, O. armairvilliersense, O. crispum, and various hybrids. Brasso-cattleya Schroderæ-glauca, Cypripedium Baron Schroder, Lælio-cattleya Warnhamense, Brasso-cattleya Leemanæ, Miltonia Bleuana, Dendrobium nobile virginale, D. n. Rappart, D. Chessingtonensis, D. Apollo, and D. Melpomene were all finely represented, while Cypripedium Boltoni, C. Cowleyanum, and C. Venus Orchidhurst var. were also of special interest.

Mr. White, grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, showed a fine Cymbidium Colmaniæ Edenside var., with five lovely spikes of white flowers. Mr. Carpenter, West Hall Gardens, Byfleet, gained a Cultural Commendation for a very fine Angræcum sesquipedale. Cymbidium grandiflorum was grandly shown by Mr. Collier, gardener to Sir J. Colman, Bart., Gatton Park, Reigate, and this carried a spike of fifteen big blooms; dendrobiums from Gatton were also well shown, and D. Golden Ray superba (A.M.), yellow and purple, was very pretty

Messrs. Charlesworth and Co., Hayward's Heath, had Odontoglossum Ashworthianum, O. armairvillierense xanthotes, a beautiful O. ardentissimum, the white Cattleya Trianæ alba floribunda, Brasso-cattleya Queen Alexandra var superba, and a fine Odontioda Cooksoni. F. M. Ogilvie, Esq., Shrubbery, Oxford, showed a freely-flowered and elegant Odontoglossum Valeria, Cypripedium Euryades rubrum, etc.

The Hon. Lady Neeld, Grittleton, showed a beautiful Odontoglossum percultum. Mr. G. Day, gardener to H. S. Goodson, Esq., Putney, presented the brilliant Odontoglossum ardentissimum Dayanum, and a fine Odontioda Diana. Messrs. J. and A. McBean, Cooksbridge, Sussex, had several very beautiful odontoglossums, and a particularly fine form of Odontioda Charlesworthi. Messrs. Cypher and Sons, Cheltenham, put up Masdevallia macrura, Odontioda Charlesworthi, Dendrobium nobile virginale, the big Cypripedium Masterianum, and the graceful Angræcum citratum. Messrs. Hassall and Co., Southgate, had a rare display of Angræcum sesquipedale, carrying about twenty-seven flowers; Cattleya Empress Frederick and some good forms of C. Trianæ were included in the group. Messrs. Sander and Sons, St. Albans, had such interesting orchids on view as Dendrobium speciosum, Cœlogyne flaccida, Renanthera Imschootiana, the pretty Phalænopsis Stuartiana, etc.

## DAFFODIL COMMITTEE.

Messrs. Cartwright and Goodwin, Kidderminster, had a bright exhibit of daffodils, the flowers clean, and of fair size; Circlet, Weardale Perfection, Amazon, Mervyn, Long Tom, Horace, the double Red and Gold, and Lady M. Boscawen were charming varieties. Mr. F. Herbert Chapman, Rotheside Gardens, Rye, put up a pretty exhibit of daffodils, chionodoxas, and squills. Among new daffodils he had the White Madonna, Mrs. Veitch, Albatross, Alabaster, Whitewell, and Acme.

Messrs. R. H. Bath, Lim., Wisbech, showed how well tulips and hyacinths can be grown in fancy bowls in fibre, and both Messrs. Carter Page and Co., London Wall, and Mr. Robert Sydenham, Birmingham, assisted in the same demonstration. A small group of daffodils from Messrs. Barr and Sons, Covent Garden, included a fine lot of King Alfred and numerous seedlings.

Tulips were shown in great quantity by Messrs. R. and E. Cuthbert, Southgate; these were in pots and well grown. They were staged in groups of a variety, the whole display filling one end of the hall. Mr. Stanley, Proserpine, Duchess de Parma, Le Reve, Montresor, Pink Beauty, Sir Thos. Lipton, and De Wet were capital varieties. Mr. Christopher Bourne, Sompson, Beltchley, put up a beautiful lot of the newer daffodils, his set including St. David, a neat golden trumpet, J. T. Bennett Poe, Circlet, Helios, White Slave, Lady de Bathe, Armorel, King Alfred, Golden King, and White Lady.

## FRUIT AND VEGETABLE COMMITTEE.

Vegetables were quite prettily staged by Messrs. Sutton and Sons, Reading; Chicory, cabbage lettuces, Superb Early White broccoli, seakale, radishes, dandelion, mushroom, rhubarb, and a selection of coloured kales were included in this interesting exhibit.

One exhibit of fruit was staged, and this consisted of about forty dishes of well preserved apples from Mr. W. H. Divers, gardener to the Duke of Rutland, Belvoir Castle, Grantham; Blenheim Pippin, Baillie Neilson, Russian Transparent, Hormead Pearmain, Barnack Beauty, Hambling's Seedling, Belle Dubois, Belle Pontoise, and Belle de Boskoop were all notably good.

## AWARDS.

No first-class certificates were awarded on this occasion.

Award of Merit.—To Azalea Blushing Bride, from Messrs. Jas. Veitch and Sons, Chelsea; to Rhododendron Cornubia, from Messrs. R. Gill and Son, Falmouth; to Corylopsis multiflora, from Miss Willmott, V.M.H. (gardener, Mr. C. Fielder), Great Warley; to Pteris Parkeri, from Messrs. Parker and Son, London, N.; to Odontoglossum Jasper, from J. Moss, Esq.; to Dendrobium Golden Ray superba, from Sir Jeremiah Colman, Bart. (gardener, Mr. W. Collier), Gatton Park, Reigate.

## MEDALS.

Gold.—To Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester, for orchids.

Silver-gilt Knightian.—To the Duke of Rutland, Belvoir Castle (gardener, Mr. Divers), for apples.

Silver-gilt Flora.—To Messrs. Armstrong and Brown, Tunbridge Wells, for orchids; to Messrs. Jas. Carter and Co., Raynes Park, for spring bulb garden; to Messrs. Jas. Veitch and Sons, Chelsea, for azaleas and other greenhouse flowering plants.

Silver-gilt Banksian.—To Mr. L. R. Russell, Richmond, for Indian azaleas; to Messrs. Sutton and Sons, Reading, for hyacinths; to Messrs. R. and G. Cuthbert, Southgate, for tulips.

Silver Flora.—To Mr H. Burnett, Guernsey, for carnations; to Messrs. Cutbush and Son, Highgate, for carnations, hyacinths, etc.; to Messrs. Wm. Paul and Son, for camellias and flowering peaches; and to Messrs. J. Veitch and Sons, Chelsea, for orchids.

Silver Banksian.—To Mr. Christopher Bourne, Simpson, Bletchley, for daffodils; to Messrs. Cartwright and Goodwin, Kidderminster, for daffodils; to Messrs. Barr and Sons, Covent Garden, for spring bulbous flowers; to Adeline Duchess of Bedford (gardener, Mr. J. Dickson), for Primula obconica; to Mr. Clarence Elliott, Stevenage, for rock garden; to Messrs. H. B. May and Sons, Edmonton, for ferns and clematis; to Messrs. Jas. Cypher and Sons, Cheltenham, for orchids; to Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Sir J. Colman, Bart. (gardener, Mr. Collier), for orchids; and to Messrs. Hassall and Co., Southgate, for orchids.

Bronze Flora.—To Mr. C. Engelmann, Saffron Walden, for carnations; and to Messrs. Stuart Low and Co., Enfield, for carnations.

## HYACINTH AND DAFFODIL COMPETITION.

The premier class for eighteen distinct varieties was hotly contested by seven exhibitors. The first prize, however, was won by Mr. Jas. Gibson, gardener to the Duke of Portland, Welbeck Abbey, Worksop. The whole exhibit was in fine condition, the varieties being Electra, Lord Balfour, King Menelik, Le Grandesse, Perle Brilliante, La Jacques, Moreno, Corregio, Lady Derby, La Victorie, City of Haarlem, Ivanhoe, King

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FLORA ABUNDA

of the Blues, Queen of the Pinks, Schotel, General Vetter, Koh-i-Noor, and L'Innocence. Mr. J. H. Barker, gardener to F. R. Dixon Nuttall, Esq., Ingleholme, Eccleston Park, Prescot, who had fine fresh spikes of Gounod, Madame Kruger, King Menelik, City of Haarlem, La Victorie, and King of the Blues.

The class for twelve hyacinths was keenly contested, there being no fewer than seven entries. The first prize was awarded to Mr. A. Hanson, Ivanhoe, Victoria Park, Liverpool, for massive spikes of Corregio, Lady Derby, Enchantress, Gounod, Schotel, King Menelik, La Victorie, and Madame Kruger. Mr. H. Prime was a good second with Ivanhoe, and City of Haarlem in fine form. Mr. J. Shelton, gardener to Lord Hillingdon, Wildernesse, Sevenoaks, was third.

For six hyacinths, Mr. R. Morrison, Prince Alfred Road, Wavertree, Liverpool, led the way with fine spikes of Ivanhoe, Gounod, La Victorie, Corregio, Madame Kruger, and Menelik. Mr. H. Edwards, gardener to C. E. Bishop, Esq., Norton Priory, Chichester, was second; and Mr. H. Brotherston, gardener to the Earl of Lytton, Knebworth, third.

The best six single hyacinths grown in moss fibre were exhibited by Miss E. M. Rawlings, Great Houghton Hall, Northampton, who was closely followed by Mr. W. Howe; and Miss Michell, Oakfield, Cricklewood, third.

Messrs. R. and G. Cuthbert, Southgate, were the only exhibitors of twelve varieties of hyacinths in pans, making one hundred and twenty spikes. The plants were splendidly developed, the varieties employed being Mr. Plimsoll, City of Haarlem, Perle Brilliante, King of the Blues, Ivanhoe, La Victorie, Jacques, Corregio, King Menelik, Queen of the Pinks, Linneæus, and Schotel.

There were but three competitors for four pans of hyacinths, each containing ten bulbs. Here Mr. Jas. Gibson was again first with fine examples of King of the Blues, La Victorie, Corregio, and City of Haarlem; Mr. H. Prime, gardener to the Marquis of Salisbury, Hatfield, was second, with good examples of Electra, La Grandesse, City of Haarlem, and La Victorie; while Mr. G. Mackinley, gardener to his Excellency the American Ambassador, Wrest Park, Ampthill, was third, with neater examples. The same competitors were the only exhibitors for one hundred plants in twenty varieties. These were splendidly grown, and arranged in five plants of one variety made a brave show, the whole being bedded in maidenhair ferns. Some of the best varieties were King Menelik, General Vetter, Linnæus, Perle Brilliante, Corregio, Queen of Pinks, Ivanhoe, and City of Haarlem; a very fine exhibit.

There were two exhibitors of six bowls of tulips grown in fibre, and the first prize fell to Mr. W. Howe, gardener to Lady Tate, Park Hill, Streatham, for very finely grown sets of Keiserskroon, Duchesse de Parma, Rose Luisante, Prince of Austria, White Joost van Vondel, and La Rêve. The second prize was awarded to Mr. Bates, gardener to the Hon. Mrs. Guy Baring, Chesterfield Street, Berkeley Square. For six bowls of narcissi grown in fibre, Miss Michell led with a good exhibit of Lucifer, Victoria, White Lady, Emperor, Red Flag, and Leoine. Mr. W. Howe came second, and Miss E. M. Rawlins third.

### Gardeners' Royal Benevolent Institution.

The Liverpool Auxiliary has added another successful meeting to its series of annual reunions in the form of a smoking concert held at the Bear's Paw on Tuesday, the 27th ult. The committee were fortunate in having their President, the Right Hon. the Earl of Derby, G.C.V.O., C.B., Lord Mayor of Liverpool, in the chair, and this, with an attractive programme, filled the spacious hall to its utmost limit, and a record may be claimed for the music, decorations, and attendance. The chairman, in a brief and cheery address, referred to the great progress made in the gardener's art during the last 50 years. A man loving flowes 50 years ago would hardly believe it possible that such a change could be made; but, for himself, he sometimes wished that they had not gone so far in their scientific knowledge and cultivation. He liked to see the spring flowers come up in the open, then he began to think spring had come. Members of their profession, however, did a great service to mankind generally, and he doubted whether there was anything in this world which gave as great a pleasure, and at so little cost, as flowers. They could not go into a hospital ward where there were flowers without feeling that these gave hope to those who felt hopeless; and by giving hope they gave assistance to the doctors' skill, and for that reason he hoped there would be a generous response on behalf of the Gardeners' Royal Benevolent Institution. An excellent programme was carried out, and Mr. Allan H. Bright moved, and Mr. C. A. Young seconded, a vote of thanks to his Lordship, which was carried with the utmost enthusiasm.

The decorations were ably carried out, and the thanks of the committee were accorded to Messrs. R. P. Ker and Sons, B. Webb and Sons, C. A. Young, W. Rowlands, and others, for choice plants and flowers.

## A DISEASE OF SWEET PEAS, ETC.

(Continued from page 187.)

### Cypripediums, Culinary Peas, Etc.

A batch of orchids (Cypripedium) attacked by Thielavia was sent to Kew for investigation. The basal portion of each plant was soft and decayed, and covered on the surface with a dense, black, crusty layer consisting of the Torula condition of the fungus. When placed in a damp chamber at the ordinary temperature of the laboratory, the white Milowia stage of the fungus developed within a few days, and gradually encroached on the still living green portion of the leaves. This material, available in quantity for the first time, enabled a series of experiments to be made on the action of the fungus on germinating seeds and on seedlings.

Twelve "marrow fat" peas were planted in each of two Petri dishes, in soil sterilised by steam and afterwards mixed with a copious growth of the Milowia form of the Thielavia. A third Petri dish used as a control, was prepared in a similar manner, excepting that no fungus was mixed with the soil. After a period of ten days five seedlings appeared above ground in one of the infected dishes and three seedlings in the other. All thes seedlings, however, died within a few days. On examining the peas that had not appeared above ground, it was found that both plumule and radicle had in every instance been killed by the fungus, as was also the case with those that appeared above ground at a later stage. All the peas in the control dish germinated and produced healthy seedlings. No success attended the many attempts to infect the leaves or above-ground portion of the stem of peas with the Milowia stage of the fungus. Seedlings of the Shepherd's purse (Capsella Bursa-pastoris) were also killed by the fungus. On the other hand, germinating oats were not attacked, neither were those of another grass, Briza maxima. Four Petri dishes containing ordinary garden soil, sterilised by steam and afterward infected with Thielavia in the Milowia stage, obtained from a pure culture on manure, were prepared. Two of these were flooded with one per cent. of formalin in water for an hour, after which the liquid was poured off and the soil allowed to remain for a week, when all trace of the smell of formalin had disappeared. The soil in the two remaining dishes was left untreated. Twelve peas were placed in each dish. At the expiration of ten days, all the peas in the two dishes treated with formalin were making vigorous growth, whereas in one of the dishes not treated with formalin no growth appeared above the surface of the soil, and in the second untreated dish four sickly seedlings continued to grow for a few days, but finally collapsed with one exception. When peas germinate in pure sand, mixed with the Milowia stage of the fungus attached to fragments of manure, infection of the seedlings occurs, whereas, when spores of the Milowia stage of the fungus alone are mixed with the sand, no infection takes place. This, along with experiments already recorded, proves that the germinating spores of the fungus cannot infect a host-plant directly, but only after the mycelium has existed for some time as a saprophyte, on humus or decaying vegetable matter.

### Symptoms of the Disease in Sweet Peas.

In those instances where the land is badly infected, the majority of the peas do not appear above ground at all. This occurs when both the plumule and radicle are attacked. In such case, if a number of the peas are dug up and placed with sterilised manure in a Petri dish, the contents kept moist and at a temperature of about 65 deg. F., the white Milowia condition of the fungus will appear on the surface of the manure within a few days. In the majority of cases the root only is attacked, at least at first, and the plant often attains a considerable growth before any sign of injury appears, but suddenly the plant may begin to wilt, turn yellow, and die, or in some instances only one branch dies, the rest of the plant remaining green for some time, but rarely producing perfect fruit. Another very common symptom of the disease is known to growers of sweet peas under the name of "streak" or "stripe," characterised by the presence of dingy yellow streaks or stripes on the leaves and stem. This condition is the result of what may be termed a mild attack, the fungus not being present in the tissues of the root and collar in sufficient quantity to kill the plant outright, yet sufficiently abundant to prevent the root from performing its function to the fullest extent, hence the stem and leaves lack water and are hungered. The green portions of a plant showing "streak" correspond to the position occupied by the vascular bundles or water-conveying vessels where the limited supply of water obtained by the root makes itself evident, whereas the yellow portions between the veins are dead, owing to lack of water. If the root of a pea plant that has been attacked by the fungus is examined, it will be seen to present a blackened or charred appearance, and very frequently to be more or less decayed on one side, suggesting the idea that it had been gnawed by wireworm. In some cases small black patches of the Torula form of fruit are present on the surface.

### Symptoms of the Disease in Asters.

So far as my experience goes, asters are always killed outright during the seedling stage. When the plants are about three inches high they commence to wilt, and soon fall over as in the disease known as "damping off." The roots of diseased plants are shrivelled and blackened, and all the rootlets are dead. The fungus appears to spread very rapidly in the soil, as whole batches of seedlings collapse simultaneously.

(To be Continued.)

→ Spraying ←
The question to-day is not **"Shall we Spray,"** as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested **"FOUR OAKS"** which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-**. No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 G, SUTTON COLDFIELD.**

## ANSWERS TO CORRESPONDENTS.

ASPARAGUS BEDS.—F. B., Norwood: We wish to re-make an old asparagus bed, 12 yards by 3ft. 6in. wide. The soil is a heavy clay. The old plants have done badly of late, so we wish to re-make the bed and plant two-year-old roots. Kindly advise us how to proceed.—The better plan would have been to re-make the bed in the autumn; but, as planting time is close at hand, the work must be tackled immediately. Poor or heavy soil should be removed to a depth of at least two feet below the general soil level; break up the subsoil as much as possible, and then wheel in a quantity of the best well-worked soil to be found in the garden, mixing with this a large addition of crushed mortar rubbish, old manure, sand or road grit, burnt earth, and ashes from the burnt garden refuse. If the site lays very wet, excavate somewhat lower, and place a couple of inches of coarse mortar rubble, crushed brick, etc., in the bottom, for drainage. The soil should be made firm as filling in proceeds, and the bed should be made up to about a foot above the surrounding level. At the end of March or early in April plant the new crowns, spreading the roots evenly all round, and covering them with three inches of the best and finest soil. If you can possibly do so, make the bed four feet wide, as this will allow three rows of plants; set the crowns fifteen inches apart in the rows.

POSTCARDS OF CURIOUS PLANTS.—E. S., Norfolk: Have you any postcards or similar illustrations of curious plants, such as Mimosa pudica, Primula obconica, or of insects and birds that are troublesome in gardens? If so, I should be glad if you would send them, as I wish to use them in a lantern that will throw such pictures on a screen, in connection with a lecture I am giving shortly.—We have no postcard pictures of the kind you refer to, but if you mounted the illustrations that have appeared in the GARDENERS' MAGAZINE, they would help you materially. There are picture postcards of many kinds of British birds, and of a fair range of flowers, and these can be obtained at most shops where postcards are made a special feature.

JOURNAL OF THE KEW GUILD.—A. W. E., Reading: In referring to the "Journal" of the Kew Guild in your issue of February 24, you do not mention where it can be obtained, but say it is interesting even to "a man who is not a Kewite," in which category I am included. Please say to whom I might apply for a copy.—The secretary of the Kew Guild, and the Editor of its "Journal," is Mr. H. Cowley, South Side, Kew Green, Surrey. The "Journal" is issued for and to the Guild members, but we believe it is possible to purchase a copy.

DWARF BUSH CHRYSANTHEMUMS.—R. W. E., St. Albans: Kindly tell me how to produce dwarf, bushy, decorative chrysanthemums, so as to have them flowering in five-inch pots.—Insert cuttings at the end of March or in early April, in sandy soil, in a warm frame or greenhouse. Several may be placed in one pot, and each one potted into a thumb pot as soon as rooted. From thumb pots they must in due course be shifted into 60's, and early in July they should be ready for the final shift. Two or three, or possibly more, stoppings will be necessary, but only one stopping should be given after the final potting. A cold frame, with abundant ventilation, will provide sufficient shelter after the young plants are potted from the cutting pots, and every effort should be made to secure hardy, sturdy growth, so that when the plants are in bloom they are only about 18in. or 2ft. high, and carry from ten to twenty-five blooms. Directly after the final potting the plants will do best if placed out of doors in an open position, and plunged to the rim of the pot in ashes. They must have ample room for development, and for the admission of light and air among and around them. The potting material should not be so rich as that adopted for the production of large blooms, and sound, fertile loam should form the basis of the compost, adding a little bone-meal or dried cow manure, if necessary, or sand and leaf-soil if the loam is rather heavy and adhesive. Feeding should commence as soon as the flower buds have set, and should consist of frequent waterings with liquid manure and guano, using these in alternate weeks. Soot water is helpful if given occasionally, as it imparts a deeper green to the foliage, and increases the purity of the floral colours. In a hot, dry summer plunging the pots in ashes is almost essential to success, as the pots become so full of roots that, if exposed to sun and air, the root tips next the pot would become severely damaged if the soil was allowed to become at all dry. In a wet season extra care must be taken in watering, as there is then a little risk of harm resulting from an excess of water in the case of plunged plants.

LIFE HISTORY OF THE PEAR LEAF BLISTER MITE.—W. W., Cheltenham: I am becoming interested in the various mites that plague horticulturists, and have carefully followed the references made in the GARDENERS' MAGAZINE to the black currant bud mite, and the begonia mite. Can you tell me the life history and description of the pear leaf blister mite?—Nalepa, who named the pear leaf blister mite Eriophyes pyri, gives the size of the mite as from 1/147th to 1/125th of an inch long. The anterior end of the body (cephalo-thorax) has a semicircular shield on its upper surface. In front is the rostrum with its piercing and sucking mouth parts. There are two pairs of 5-jointed legs; each leg ends in a claw with a 4-plumed bristle. The abdomen is transversely ringed. On the upper surface of the mite and springing from the hind edge of the shield are two bristles. The abdomen bears two bristles towards its front end; about the middle are two moderately long bristles; near the hind end are two very short bristles; while there are two long bristles at the tail.

In the larval state the mite resembles the adult in external appearance, except for the smaller size, and a weaker bristling. In colour the mite is whitish. The winter is passed under cover of the outer bud-scales of the buds on the shoots of the year. In this position the mites shelter in numbers. In spring the mites proceed to gall the young leaves. The adult female lays her eggs in the gall. New broods of mites spread from the galls, forming fresh blisters on the same and other leaves. Before leaf-fall the mites pass to their winter quarters in the buds.

### NAMES OF PLANTS.

B. G. R., Hants.—1, Viburnum tinus; 2, Rhododendron præcox.

J. B. H., Cardiff.—1, Lippia citriodora; 2, Chionodoxa Lucilæ; 3, Garrya elliptica.

C. W., Lichfield.—1, Boronia megastigma; 2, Erica hyemalis; 3, Cestrum elegans; 4, Lachenalia Nelsoni.

H. E., Wimbledon.—1, Odontoglossum cirrhosum; 2, O. crispum, a pretty form; 3, probably a form of O. ardentissimum.

G. C., Loughborough.—1, Pelargonium crispum; 2, P. quercifolium; 3, the common rue, Ruta graveoleus; 4, Phyllanthus glaucescens; 5, Doodia aspera multifida; 6, Selaginella erythropus.

## GARDENING ENGAGEMENTS.

Mr. M. T. Heard, late of Broad Oak, Accrington, has been appointed head gardener to Oliver Riley, Esq., Embsay, Skipton, Yorkshire.

Mr. Arthur Mansfield, late of Merthyr Tydvil, has been appointed head gardener to the Hon. J. W. Rice, Brooklands, Swansea.

Mr. John H. Shipley, for the past four years head gardener at the Old Vicarage, Shiplake, Henley-on-Thames, Oxon, has been appointed head gardener to H. G. Rose, Esq., Ingleside, Stevenage, Herts.

## OBITUARY.

◆

### MR. W. A. GARAWAY.

Mr. Wm. Alexander Garaway, of Messrs. Jas. Garaway and Co., Bristol, passed away on February 19. He was well known in the nursery trade, and had reached the age of 75 years, but of late his health had been such that he was not often away from home.

### MR. THOMAS MUIR.

After thirty years' service as head gardener at Biel, Prestonkirk, the residence of Mrs. Hamilton Ogilvy, Mr. Thos. Muir passed away on February 26. He was a very capable gardener, and we have a vivid recollection of the fine display of Kniphofias at Biel, of which he was very proud.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. FEBRUARY 25 TO MARCH 2. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Feb. 25—Sunday | 1 18 | 48 | 47 | 52 | 44 |
| " 26—Monday | 0 54 | 42 | 41 | 51 | 34 |
| " 27—Tuesday | 6 6 | 49 | 46 | 56 | 43 |
| " 28—Wednesday | 3 0 | 51 | 49 | 57 | 49 |
| " 29—Thursday | 1 48 | 49 | 48 | 54 | 49 |
| Mar. 1—Friday | — | 48 | 47 | 52 | 48 |
| " 2—Saturday | 1 18 | 50 | 48 | 55 | 47 |
| Means | (total) 14 24 | 48 | 46 | 54 | 45 |

| DATE. 1912. FEBRUARY 25 TO MARCH 2. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Feb. 25—Sunday | — | 47 | 45 | 45 | 38 |
| " 26—Monday | 0·04 | 45 | 45 | 45 | 25 |
| " 27—Tuesday | — | 46 | 45 | 45 | 41 |
| " 28—Wednesday | 0·04 | 47 | 45 | 45 | 43 |
| " 29—Thursday | 0·03 | 48 | 46 | 45 | 41 |
| Mar. 1—Friday | 0·09 | 47 | 46 | 46 | 39 |
| " 2 Saturday | 0·29 | 47 | 46 | 46 | 39 |
| Means | (total) 0·49 | 46 | 45 | 45 | 38 |

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# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Spring flowers meet a ready sale, and business generally is steady.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Arums | per doz. | 3 0 | | 4 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azalea | per doz. bun. | 3 0 | | 4 0 |
| Camellias | per box | 2 0 | | 2 6 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 15 0 | | 21 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 6 | | 3 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Freesias | per doz. bun. | 1 6 | | 2 0 |
| Gardenias | per doz. | 5 0 | | 9 0 |
| Hellebores | per doz. | 1 6 | | 2 0 |
| Hyacinths, Roman | per doz. bun. | 4 0 | | 6 0 |
| Lilac | per bunch. | 2 6 | | 3 6 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 2 6 |
| ,, longiflorum | per doz. | 3 0 | | 5 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 2 0 | | 2 6 |
| Mignonette | per doz. bun. | 2 6 | | 3 0 |
| Narcissus | per doz. bun. | 1 3 | | 6 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 8 0 | | 12 6 |
| Roses | per doz. | 2 6 | | 7 0 |
| Smilax | per doz. trails | 2 0 | | 3 6 |
| Snowdrops | per doz. bun. | 1 0 | | 2 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips | per doz. bun. | 5 0 | | 10 0 |
| Violets | per doz. bun. | 1 3 | | 4 0 |
| Wallflowers | per doz. bun. | 2 0 | | 2 6 |

### Fruits.

Canadian apples are in good request; grapes are dearer, and so are bananas.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English, cooking | per bush. | 4 0 | | 7 6 |
| ,, Nova Scotia | per barrel | 12 0 | | 22 0 |
| ,, Canadian | per barrel | 12 0 | | 22 0 |
| ,, American | per barrel | 20 0 | | 32 0 |
| ,, Californian | per case | 7 0 | | 11 0 |
| ,, Cape | per box | 4 0 | | 7 0 |
| Bananas | per bun. | 5 0 | | 10 6 |
| Cob Nuts | per doz. lb. | 6 0 | | 7 0 |
| Cranberries | per case | 9 0 | | 12 0 |
| Grapes, English | per lb. | 1 4 | | 3 6 |
| ,, Belgian | per lb. | 1 0 | | 2 0 |
| ,, Almeria | per barrel | 12 0 | | 16 0 |
| ,, Cape | per case | 4 0 | | 10 0 |
| Lemons | per case | 6 0 | | 30 0 |
| Nectarines, Cape | per box | 4 0 | | 8 0 |
| Oranges, Denia | per case | 15 0 | | 30 0 |
| ,, Jamaica | per case | 9 0 | | 11 0 |
| ,, Californian | per case | 14 0 | | 22 0 |
| ,, Seville | per box | 15 0 | | 18 0 |
| Peaches, Cape | per case | 5 0 | | 8 0 |
| Pears, American | per barrel | 25 0 | | 26 0 |
| ,, Cape | per box | 3 0 | | 6 0 |
| ,, Californian | per case | 8 6 | | 16 6 |
| Pineapples | each | 2 6 | | 5 0 |
| Plums, Cape | per case | 2 0 | | 8 0 |
| Strawberries | per lb. | 15 0 | | 22 0 |

### Vegetables.

Prices are somewhat firmer, and the demand is steady.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 0 | to | 4 0 |
| ,, Jerusalem | per ½-bush. | 1 6 | | 2 0 |
| Asparagus | per bun. | 3 6 | | 6 0 |
| Beans, Madeira | per basket | 4 0 | | 8 0 |
| Beet | per bush. | 2 6 | | 3 0 |
| Brussels Sprouts | per ½-bush. | 1 0 | | 2 0 |
| Cabbage | per tally | 3 0 | | 6 0 |
| Carrots | per doz. bun. | 1 6 | | 3 0 |
| Cauliflowers | per doz. | 2 0 | | 2 6 |
| Celery | per doz. bundles | 10 0 | | 14 0 |
| Chicory | per lb. | 0 4 | | 0 5 |
| Cucumbers | per doz. | 4 0 | | 12 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Leeks | per doz. | 2 6 | | 3 6 |
| Lettuce | per doz. | 1 6 | | 4 0 |
| Mushrooms | per doz. lb. | 10 0 | | 13 0 |
| Mint | per doz. bun. | 5 0 | | 6 0 |
| Onions | per case | 8 0 | | 9 0 |
| Parsley | per ½-sieve | 2 0 | | 3 0 |
| Parsnips | per bag | 4 0 | | 6 6 |
| Radishes | per doz. bun. | 0 9 | | 2 0 |
| Rhubarb | per doz. bun. | 0 8 | | 1 0 |
| Savoys | per tally | 7 0 | | 12 0 |
| Seakale | per bun. | 0 9 | | 1 3 |
| Spinach | per bush. | 5 0 | | 7 0 |
| Tomatoes, Canary | per pack. | 12 0 | | 16 0 |
| Turnips | per doz. bun. | 2 0 | | 2 6 |
| Turnip Tops | per bag | 2 6 | | 3 0 |
| Watercress | per doz. bun. | 0 6 | | 0 6½ |

## LONDON POTATO MARKETS.

A fair demand continues, and though large stocks are in hand, prices are firm.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Blackland | per ton | 60 0 | to | 65 0 |
| British Queen | per ton | 75 0 | | 85 0 |
| Essex | per ton | 70 0 | | 80 0 |
| Evergood | per ton | 50 0 | | 75 0 |
| King Edward | per ton | 65 0 | | 90 0 |
| Up-to-Date | per ton | 70 0 | | 90 0 |

## FORTHCOMING ENGAGEMENTS.

MONDAY, March 11.—United Horticultural Benefit and Provident Society, Annual Meeting at Royal Horticultural Hall, at 8 p.m.

TUESDAY, March 12.—Surbiton Spring Flower Show.

WEDNESDAY, March 13.—East Anglian Horticultural Club.

THURSDAY, March 14.—North of England Horticultural Society meets at Bradford.

British Gardeners' Association, Dinner at Holborn Restaurant, 6.30 p.m.

TUESDAY March 19.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "Ferns," by Mr. H. B. May, V.M.H. Scientific Committee at 4 o'clock.

WEDNESDAY, March 20.—Royal Meteorological Society.

THURSDAY, March 21.—Perpetual Flowering Carnation Society, at Royal Horticultural Hall, Westminster; two days.

Linnean Society Meeting.

Manchester and North of England Horticultural Society.

TUESDAY, March 26.—Bournemouth Spring Flower Show; two days.

WEDNESDAY, March 27.—Liverpool Spring Show; two days.

Royal Horticultural Society's General Examination in Horticulture.

Royal Botanic Society Meeting.

THURSDAY, March 28.—Torquay Spring Show.

FRIDAY, March 29.—Warninglid Gardeners' Society.

SATURDAY, March 30.—French Horticultural Society of London.

TUESDAY April 2.—Royal Horticultural Society; Narcissus Committee meets at 11.30 a.m.; Fruit, Floral, and Orchid Committees meet at 12 o'clock; Lecture at 3 p.m., on "Tender Plants for a Warm Corner" by Mr. R. Irwin Lynch, M.A.; Scientific Committee at 4 o'clock.

Scottish Horticultural Association.

THURSDAY, April 4.—Manchester Orchid Society.

SATURDAY, April 6.—French Horticultural Society of London.

Normanby Horticultural Society, July 24 and 25, in Normanby Park, Doncaster.

Leamington and County Flower Show, July 24 and 25.

National Dahlia Society, September 17 and 18, at the Crystal Palace.

Blackburn Chrysanthemum Show, November 15 and 16.

Derby Gardeners' Association's Summer Show, July 27; Chrysanthemum Show, November 8 and 9.

Barnet Horticultural Society, July 11.

Foxlydiate and Hewell Flower Show Society, August 5, in Hewell Park.

Shrewsbury Floral Fete, August 21 and 22.

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Giant SWEET PEAS

The finest Blooms in the World

**A flower garden without Eckford's Sweet Peas can only be compared to a house without furniture.**

Sweet Peas are requisite to the small, medium or large garden, and if you wish to have colour, effect, prize specimens, and tall plants, then send to Eckford's for your Seeds. The time to buy is NOW. The firm to buy from is ECKFORD'S. No other seed specialist in the world can rival Eckford's for Sweet Peas. Large flower, longer stems, brighter colours, and a profusion of bloom will be the result of growing Eckford's seeds. Remember, Genuine Eckford's Seeds can only be obtained direct from Wem. No Agents are employed.

**ECKFORD'S GREAT £1000 COMPETITION.**

**SECTIONS FOR EXPERTS, NOVICES, AND CHILDREN.**

**£250 for Ladies or Gentlemen keeping one or more Gardeners. £250 for Professional Gardeners. £250 for Amateurs. £125 for Cottagers. £125 for Boys and Girls under 16. Open to all. Send a postcard for full particulars.**

SPECIAL NOVELTY OFFER FOR 1912.

**CLARA CURTIS** (Waved). — A fine waved primrose; very free flowering. fine for exhibition. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**W. T. HUTCHINGS** (Waved).—A very fascinating flower of soft cream overlaid with a delicate pink. In sealed packets, 7 seeds **3d.**; 15, **6d.**; 30, **1/-**.

**OTHELLO** (Waved). — A beautiful self-coloured giant chocolate, of splendid substance and robust habit. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**APPLE BLOSSOM** (Waved). — A beautiful flower of apple blossom colour, of giant size, frequently four-flowered. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**APRICOT** (Waved).— A beautiful light apricot overlaid with rich cream pink; delightful for table decoration; one of the most superb. In sealed packets, 5 seeds, **6d.** 10, **1/-**.

**Mrs. HENRY BELL** (Waved). — A beautiful rich apricot ground overlaid with a soft pink, which deepens towards the edges of both standards and wings; finely-waved. In sealed packets, 10 seeds, **3d.**; 20, **6d**; 40, **1/-**.

**TERRA-COTTA.** - A bright cerise standard overlaid with terra-cotta; wings soft rose. In sealed packets, 5 seeds, **6d.**; 10, **1/-**.

**ASTA OHN** (Waved).— A pretty waved lavender overlaid with rose; a very charming flower. In sealed packets, 10 seeds **3d.**; 20, **6d**; 40, **1/**.

**CERISE** (Waved).—A fine bold, beautifully waved, true cerise; a very strong grower. In sealed packets, 10 seeds, **3d.**; 20, **6d.**; 40, **1/-**.

**SAINT GEORGE** (Improved Waved).— This is a very charming flower; as accurately as one can describe, it is a deep exquisite coral of giant size and splendid substance. In sealed packets, 5 seeds, **6d.**; 10, **1/-**.

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**EVELYN HEMUS** (Waved).— A warm cream shading to yellow with a picotee edge of terra-cotta pink; standard and wings beautifully waved, In sealed packets, 10 seeds, **3d.**; 20 **6d.**; 40 **1/-**.

**SPECIAL OFFER.** One full-sized packet of each of the foregoing 12 charming and novel Sweet Peas, 9/6, post free, for cash with order. One half-sized packet of each of the foregoing 12 charming and novel Sweet Peas, 5/-, post free, for cash with order.

SPECIAL COLLECTIONS FOR 1912.

| | | |
|---|---|---|
| **Exhibitor's (C) Collection.**<br>30 select varieties, fine for exhibition, 20 seeds of each, **10/-**, post free, cash with order. | **Exhibitor's (D) Collection.**<br>12 Giant Waved varieties, new and up-to-date; fine for exhibition, 10 seeds of each for **2/9**, post free, cash with order. | **Exhibitor's (E) Collection.**<br>24 Giant Waved varieties, new and up-to-date; fine for exhibition, 10 seeds of each for **5/6**, post free, cash with order. |
| **Villa (C) Collection.**<br>12 splendid varieties, suitable for exhibition, 50 seeds of each, **2/9**, post free, cash with order. | **Villa (B) Collection.**<br>24 splendid varieties, suitable for exhibition, 50 seeds of each, **5/3**, post free, cash with order. | **Half-Villa (B) Collection.**<br>24 splendid varieties, suitable for exhibition, 25 seeds of each, **3/-**, post free, cash with order. |

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

AS GARDENER or CARETAKER; married, no encumbrance; good all-round man; exemplary character; personal. WRIGHT, 29, North Road, Highgate, N.

CLERGYMAN recommends his man, 3½ years' excellent character, as GROOM-GARDENER or Single-handed Gardener. Apply H. BLAKE, School House, Shroten, Blandford, Dorset.

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ENGLISHMAN (23) seeks Re-engagement in good Nursery; speaks German; well up in general Nursery work; specialised in Ferns, British and Exotic; highest testimonials, English and Continental. A. S., 211, Nag's Head Road, Ponder's End, Middlesex.

FRENCH GARDENING. — Married man requires Situation as FOREMAN (Working); four years' practical experience on Intensive system; excellent references from past and present employers. GOODMAN, Winkton, Christchurch.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GARDENER (Head, where two or three are kept). H. WEEKS, Thrumpton Hall Gardens, Derby, can highly recommend N. DRING, as above; thoroughly experienced in all branches; age 28; total abstainer.

GARDENER (Head) seeks SITUATION where two or more are employed; age 36; married, no family; life experience, Inside and Out, Roses and Carnations; excellent references. J. SMITH, 2, Lyncombe Vale Farm, Bath.

GARDENER (Head Working). — Mr. J. CLUTSOM, Gardener to F. Rutherfoord Harris, Esq., Llangibby Castle, Newport, Mon, wishes to highly recommend his Foreman, G. BARFOOT, age 30, where three or more or kept; thoroughly experienced Inside and Out; excellent references; abstainer; married when suited.

GARDENER (Head Working), where one or more kept; 10 years in present situation, 5 years as Second; age 31; married when suited. A. GIBBS, The Gardens, Farrants, Bickley, Kent.

GARDENER (Head Working, where three or more are kept); 15 years' experience in all branches; age 31; highly recommended. H. CRAKER, 1, Hawthorne Road, Bickley, Kent.

GARDENER (Head Working, or Single-handed); life experience in all branches; Inside and out; age 40; married, no family; good references. W. CURD, 36, Clarence Place, Gravesend, Kent.

GARDENER (Head of three or more); more than 20 years' experience in large and well-kept establishments; eight years as Head; age 46; married, no family; Gentleman will recommend. F. DUNK, Broughton Astley, Leicester.

GARDENER (Head Working, or where help is given); thoroughly experienced in all branches; good references; three years present reference; wife would take care of house during absence of family. State wages. GARDENER, 28, Martell Road, West Dulwich, S.E.

GARDENER (Head Working, where two or three are kept); life experience Inside and Out; Flowers, Fruit, Vegetables, including Orchids; married, no family. E., Sherwood Farm, Mitcham.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE nighly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married. G. HALL, Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working); life experience Inside and Out; 11 years present situation; leaving through death; age 35; married; excellent references. E. CHALLIS, Park House, Winchmore Hill, N.

GARDENER (Head Working, where several are kept); life experience in all branches, Inside and Out, in good establishments; especially well up in Hardy and Herbaceous Plants, Shrubs, and Alpines; 14 years and 7½ as Head; excellent references; married, no family. A. T., 30, Askew Road, Shepherd's Bush, London, W.

GARDENER (Head or good Single-handed); 18 years' practical experience in all branches; excellent characters; Foreman and Head; age 33; married.—HUDSON, Cupid Green, Hemel Hempstead, Herts.

GARDENER (Second, or Singlehanded); well up in Vines, Cucumbers, Melons, Plants, etc.; well recommended; age 25; married. L. HUBBARD, Coombe Lodge Gardens, Coombe Road, Croydon.

GARDENER (Single-handed, or help given), 12 years' experience; good references; single; age 36; abstainer. J. CHAPMAN, Ferry Hill, Chatteris, Cambs.

GARDENER (single), age 24, seeks SITUATION, near Croydon, as Second or otherwise; 7 years' experience; good refs. STEVENS, 24, Broughton Road, Croydon.

GARDENER (Single-handed) seeks Re-engagement; life experience; can be well recommended; good references; age 26; single. W. SEAR, 51, Sumatra Road, West Hampstead, N.W.

GARDENER seeks SITUATION where help is given (or good Second); life experience Inside and Out; 7 years at Coryton Park; single; age 27. J. GUEST, Newhayes, Wilmington, Devon.

GARDENER wants SITUATION (second), age 25 years; Single; 7 years' practical experience Inside and Out; Vines, Peaches, Chrysanthemums, Roses, etc.; abstainer; good refs. W. COOPER, Bell Lane, Alconbury, Huntingdon.

GENTLEMAN wishes to recommend his GARDENER (Head Working) to any Lady or Gentleman; 15 years' experience in all branches; age 30; married, no children. G. BRUNTON, Charlesfield Road, Horley.

GARDENER seeks SITUATION, where one or more are kept; life experience in all branches; married, no family; highly recommended from past and present employers; 5 years head of three; disengaged when suited. A GEORGE, East Knoyle, Salisbury, Wilts.

GARDENER (Under, or Groom-Gardener).—Man, 26, seeks Situation; disengaged end March; used to Inside and Out; married when suited; good reference. TURNER, Staple Rectory, Canterbury.

GARDENER, age 26, married, two children, seeks SITUATION as Kitchen Gardener; can look after pony, and would clean motor if required. 10 years' experience; good references. J. CARD, 15, Lambeth Road, W. Croydon.

GARDENER seeks SITUATION where help is given (or good Second); life experience Inside and Out; 7 years at Coryton Park; single; age 27. J. GUEST, Newhayes, Kilmington, Devon.

JOURNEYMAN (Inside or Inside and Out) seeks SITUATION; 7 years' experience; age 22; cricketer. Apply, RODWAY, Church Road, Lockhampton, Cheltenham, Glos.

J. E. PEAT, Esq., wishes to highly recommend his HEAD GARDENER (Working), who has been with him 9½ years; 6 and 7 years' previous references. H. DOVE, The Lodge, Cranmer, Mitcham, Surrey.

JOURNEYMAN, Second or Third (Inside and Out); 6 years' experience; age 20; good references; Bothy preferred. Apply T. HOLDER, Holloway, Pershore, Worcestershire.

JOURNEYMAN seeks SITUATION (Inside or Inside and Out) in good establishment; 4½ years' experience; good references; Bothy preferred; age 21. Apply, W. ELSEY, 6, Eastnor Road, South Park, Reigate, Surrey.

JOURNEYMAN (Inside, or Inside and Out); seeks Situation; age 20; four years' good experience; Bothy preferred; good references. GOLDSMITH, Bonds Cottage, Broadwater Forest, Tunbridge Wells.

LADY recommends experienced GARDENER (Head or Single-handed); married, no family; highest references. Address, EDWARD HENEAGE, Barsham, Beccles, Suffolk.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22, as UNDER GARDENER (Inside and Out); was with him 8 years. Address Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

MR. DAVIDSON, Polesden Lacey Gardens, Dorking, highly recommends G. BRYANTON, as good Single-handed with help or Head of one or two; nearly 10 years' experience; excellent references; age 25; single. c/o Mr. HILL, 40, Anatola Road, London, N.

MR. BROWN, The Gardens, Forty Hall, Enfield, highly recommends W. CLARKE, as Gardener, single-handed or with help; life experience; 18 months here as second, Inside and Out; good references; age 26; married when suited.

MR. NAYLOR, Gardener to the Right Hon. Lady Battersea, recommends W. BRADSHAW as First Journeyman (Inside or Out); 9 years' experience in Vines, Peaches, Plants, Herbaceous Borders, Rockeries, etc.; age 24; height 5ft. 10in.—Address, The Pleasaunce Gardens, Overstrand, Cromer.

MR. W. MORRIS, The Dingle, Sydenham Hill, Sydenham, highly recommends his GARDENER (Single-handed); life experience, Inside and Out; age 24; married when suited. C. CULVER, 17, Peak Hill Gardens, Sydenham.

MR. A. WAGG, Ossington Hall Gardens, Newark, can thoroughly recommend W. CLAYTON as Third Journeyman; Inside; five years' experience; three in present place; age 19 years; tall and strong.

MANAGER or FOREMAN, 10 years foreman, Propagator, and Grower to W. Whiteley, Lim.; life experience in London Market Nurseries; age 44; abstainer; highly recommended. SMITH, Nellgrove Road, Hillington Heath, Middlesex.

MRS. WARREN, Shaw Hill, Melksham, wishes to recommend ALLEN TASKER, years here as Journeyman, Inside, as Second of three Inside; age 23; Bothy preferred

SITUATION required by YOUNG MAN, German, Inside or Out, in good establishment; 6 years' experience; well recommended. W. BIERMANN, 28, Elm Park Road, London, S.W.

YOUNG MAN, age 21, seeks SITUATION in the gardens; good references; Bothy preferred. WHITEHEAD, Priors Marston, nr. Byfield.

YOUNG MAN, age 18, seeks SITUATION in general, either outdoor or under glass; h had experience in gardening since schooldays. G. W. BENTON, 161, Duke Street, St. Helens, Lancs.

## SITUATION COUPON

*To the Advertisement Manager of* "The Gardeners' Magazine," *148 & 149, Aldersgate Street, London, E.C.*

**For MARCH 16, 1912.**

**Please Repeat my Advertisement.**

Name.......................................................

Address.......................................................

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Date.............................

**THIS COUPON**, duly filled up, should be forwarded not later than Tuesday for the next issue.

## Situations Wanted—*continued.*

W. BEALE, Head Gardener, Camfield Place, Hatfield, Herts., wishes to recommend J. DOVER as IMPROVER or JOURNEYMAN in good establishment; been here 3½ years, chiefly Inside; age 18; Bothy preferred. J. DOVER, North Mymms, Hatfield, Herts.

YOUNG MAN seeks SITUATION on pleasure grounds, or Inside and Out; age 21; good references. WYATT, 11, Bushy Park Road, Hampton Wick, Middlesex.

YOUNG MAN requires SITUATION in Garden as Under Gardener; good references. C. C., c/o Mr. Mouland, 54, Well Road, Sydenham, S.E.

YOUNG MAN, 21, seeks SITUATION as GENERAL HELP in Gardens for Summer Months; excellent references, tall, strong, willing worker; Bothy or otherwise; take duty. State wages. (No circulars.) MEPHAM, c/o W. C. Banbury, 45, High Street, Borough, London, S.E.

YOUNG MAN, age 21, seeks SITUATION in Gentleman's Garden as Inside and Out; 19 months at present situation; excellent references; 5 years' experience. J. ABBOTT, Blackwell Hall Gardens, near Chesham, Bucks.

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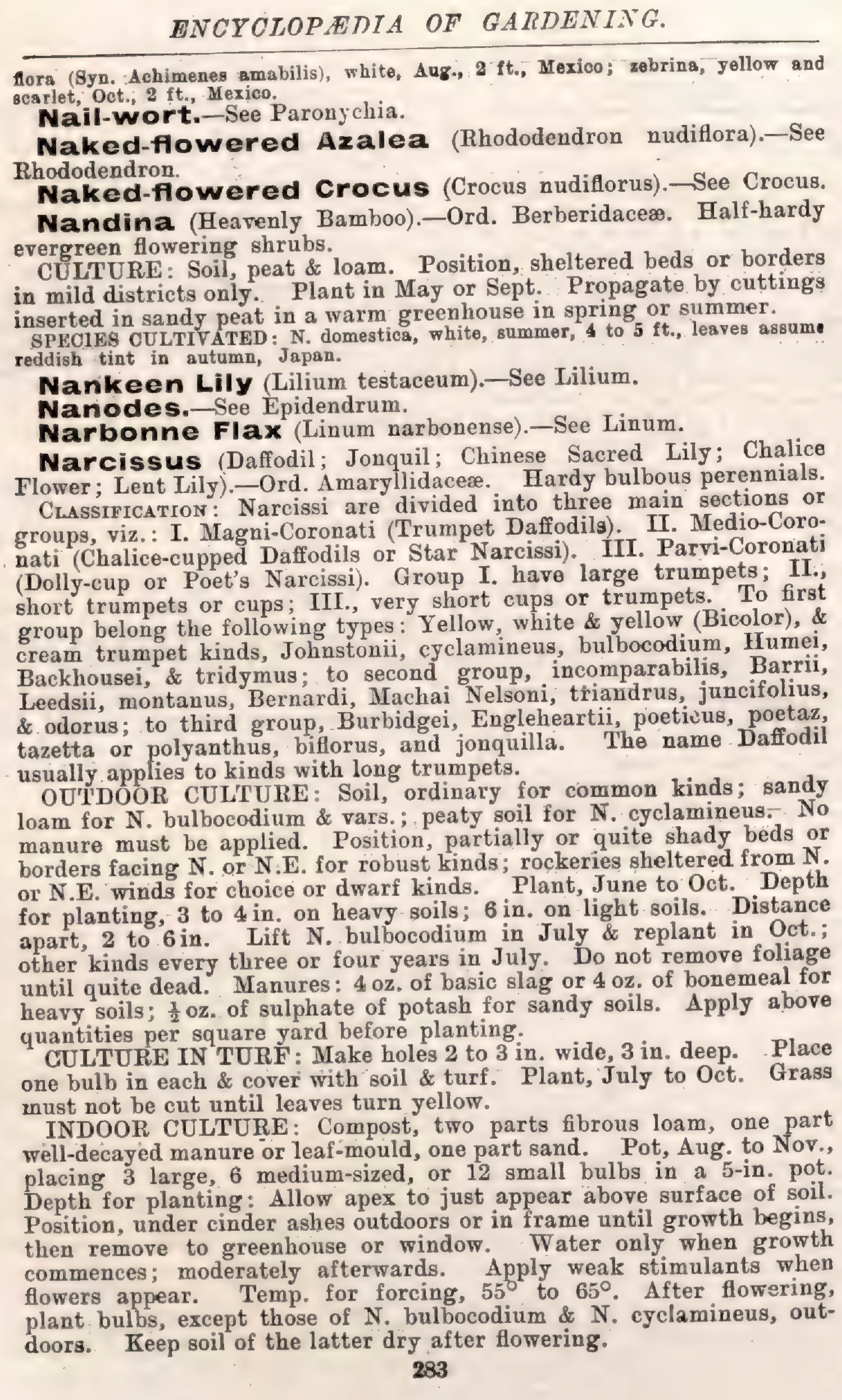

*ENCYCLOPÆDIA OF GARDENING.*

flora (Syn. Achimenes amabilis), white, Aug., 2 ft., Mexico; zebrina, yellow and scarlet, Oct., 2 ft., Mexico.

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CULTURE: Soil, peat & loam. Position, sheltered beds or borders in mild districts only. Plant in May or Sept. Propagate by cuttings inserted in sandy peat in a warm greenhouse in spring or summer.

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**Narcissus** (Daffodil; Jonquil; Chinese Sacred Lily; Chalice Flower; Lent Lily).—Ord. Amaryllidaceæ. Hardy bulbous perennials.

CLASSIFICATION: Narcissi are divided into three main sections or groups, viz.: I. Magni-Coronati (Trumpet Daffodils). II. Medio-Coronati (Chalice-cupped Daffodils or Star Narcissi). III. Parvi-Coronati (Dolly-cup or Poet's Narcissi). Group I. have large trumpets; II., short trumpets or cups; III., very short cups or trumpets. To first group belong the following types: Yellow, white & yellow (Bicolor), & cream trumpet kinds, Johnstonii, cyclamineus, bulbocodium, Humei, Backhousei, & tridymus; to second group, incomparabilis, Barrii, Leedsii, montanus, Bernardi, Machai Nelsoni, triandrus, juncifolius, & odorus; to third group, Burbidgei, Engleheartii, poeticus, poetaz, tazetta or polyanthus, biflorus, and jonquilla. The name Daffodil usually applies to kinds with long trumpets.

OUTDOOR CULTURE: Soil, ordinary for common kinds; sandy loam for N. bulbocodium & vars.; peaty soil for N. cyclamineus. No manure must be applied. Position, partially or quite shady beds or borders facing N. or N.E. for robust kinds; rockeries sheltered from N. or N.E. winds for choice or dwarf kinds. Plant, June to Oct. Depth for planting, 3 to 4 in. on heavy soils; 6 in. on light soils. Distance apart, 2 to 6 in. Lift N. bulbocodium in July & replant in Oct.; other kinds every three or four years in July. Do not remove foliage until quite dead. Manures: 4 oz. of basic slag or 4 oz. of bonemeal for heavy soils; ½ oz. of sulphate of potash for sandy soils. Apply above quantities per square yard before planting.

CULTURE IN TURF: Make holes 2 to 3 in. wide, 3 in. deep. Place one bulb in each & cover with soil & turf. Plant, July to Oct. Grass must not be cut until leaves turn yellow.

INDOOR CULTURE: Compost, two parts fibrous loam, one part well-decayed manure or leaf-mould, one part sand. Pot, Aug. to Nov., placing 3 large, 6 medium-sized, or 12 small bulbs in a 5-in. pot. Depth for planting: Allow apex to just appear above surface of soil. Position, under cinder ashes outdoors or in frame until growth begins, then remove to greenhouse or window. Water only when growth commences; moderately afterwards. Apply weak stimulants when flowers appear. Temp. for forcing, 55° to 65°. After flowering, plant bulbs, except those of N. bulbocodium & N. cyclamineus, outdoors. Keep soil of the latter dry after flowering.

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# THE GARDENERS' MAGAZINE.

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(See page xi.)

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VOL. LV.—No. 3,046. SATURDAY, MARCH 16, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

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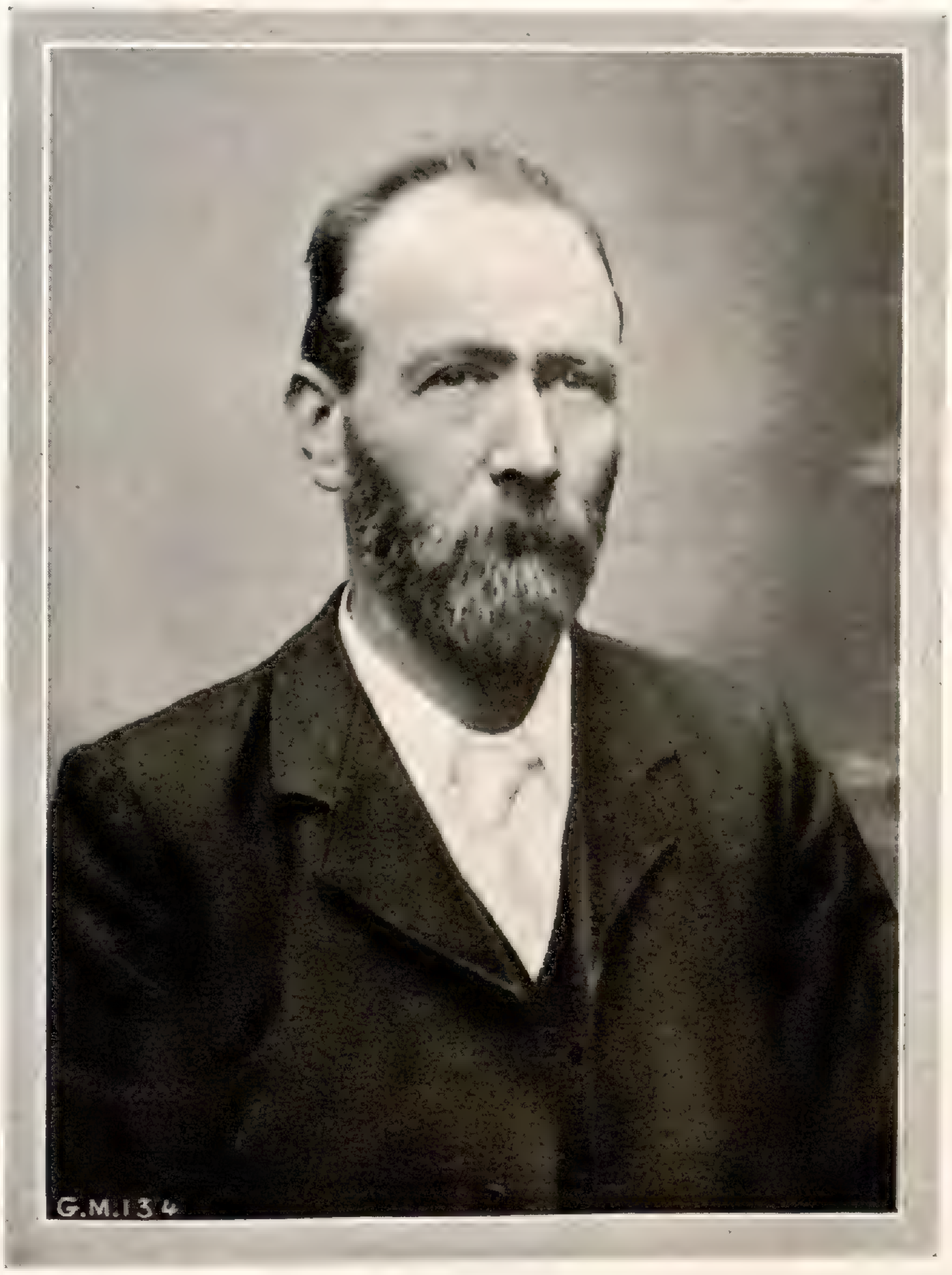
### Diversity in Dahlias.

In accordance with the new policy that was initiated with such eminently satisfactory results two years since, the National Dahlia Society held a conference on the 8th inst., at which papers of much interest to those who are concerned with the dahlia and its cultivation were read and discussed. The advantages of such conferences cannot well be overestimated, for they afford opportunities that do not arise in any other way for those who are interested in any particular flower to meet and discuss points of practice, the relative merits of varieties under various conditions, the best methods of presenting the flowers to public notice, and other matters of more or less importance in connection with their favourites. Such gatherings are invariably interesting and useful, and the one to which reference is now made was by no means the least successful of the large number at which we have had the pleasure of being present. The audience, if hardly so large as could have been wished by those who are desirous of further popularising the dahlia as a garden flower, consisted almost exclusively of those who are specially interested in dahlias, many of them having travelled considerable distances in their desire to be present. The first of the two papers that were read dealt with the cultivation of dahlias in town gardens, a phase of culture that has not for many years received the attention it so well merits. For a long period these flowers were largely grown in town gardens, especially on the eastern side of the Metropolis, and many are the stands of splendidly developed blooms that have come under our notice at the exhibitions of the more important of the amateur floricultural societies that from twenty to thirty years ago flourished on the north-eastern boundaries of the City of London. There are at the present time several amateurs' societies in the Metropolis that are wholly concerned with the cult of the dahlia, but, unfortunately, little is heard of them and their activities outside the area embraced by their operations. Dahlias are so well able to bear the unfavourable conditions that obtain in towns as to thrive where few other flowering plants will succeed, and with their aid the owner of a garden of even modest dimensions can have displays of flowers that are at once bright and attractive. He must, in the course of his practice, differentiate between the production of blooms for exhibition and for garden decoration, and remember that, owing to the actinic value of light being less in towns than in the country, stimulative manures must be sparingly used. The reader of the paper on the cultivation of dahlias dealt chiefly with the production of blooms for competitive purposes; and of a high degree of excellence was the advice he gave, for he recommended the application of a much smaller quantity of manure when the soil is being prepared than is usually considered necessary, and would be advisable in the case of many soils in country gardens. The other paper contributed to the conference was of special interest from the fact that it dealt with a question that immediately concerns all classes of cultivators and has been much discussed during the past two or three years. Within a quite recent period several new types have been brought into prominence, and, as they differ considerably in character from those which have been generally grown in British gardens for two or more decades, cultivators have had some difficulty in determining the position they should be assigned in any comparison that might be made between them and the older types. That there should have been some difference in opinion as to their relative merits is not surprising. The first of the pæony-flowered varieties, with their large and effectively coloured blooms, that were introduced to this country were so robust in growth as to be of little value for decorative effect except in gardens other than those of large size, and the blooms of the Collarette varieties differed so greatly from those of the other types that it was not easy at first to accept them without some question. Some of the leading English raisers have devoted considerable attention to the improvement of the habit of the pæony-flowered varieties, and have already achieved much success in this respect, and obtained many new and beautiful varieties. Cultivators have become accustomed to the blooms of the Collarette varieties, with their frills of short florets round the disk, and now regard them with much favour, especially as they are valuable in the garden. Several of them received awards last season from both the Royal Horticultural Society and the National Dahlia Society, a fact of some importance as showing that these two societies are ready to recognise flowers of merit, however great may be the departure from the existing types. Much satisfaction was expressed at the conference that this should have been done, it being now recognised that to further popularise the dahlia the creation of new and distinct forms must be liberally encouraged. Hitherto, raisers have been rather too conservative in their views in making selections from their seed beds, but happily these views are rapidly



MR. WILLIAM HALL.

undergoing a change that can hardly fail to have an effect of far-reaching importance upon the dahlia as a factor in garden decoration.

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**Mr. William Hall,** Chief Officer of the Parks Department under the Borough of Sunderland, is not only an excellent manager, but also a creator of parks and gardens, as since his appointment in 1890 he has laid out two new parks for the borough, and laid down six bowling greens and seven tennis courts. Mr. Hall was born at Wark-on-Tyne, and served his apprenticeship under his father, who is still head gardener at Parkend—a position he has held since 1856, probably a record. From home Mr. W. Hall proceeded to the well-known gardens at Eden Hall, Cumberland, and from thence to Holkam Hall, where, as also at Wentworth Woodhouse, he gained considerable experience as a plantsman and as a cultivator of hardy and tender fruits. His first appointment as head gardener was at Deighton Grove, near York, and his second at Kirkley Hall, Northumberland, where he achieved considerable success with phalænopsis. Here he stayed until his appointment to the charge of Sunderland's parks and open spaces. Mr. Hall is a busy man, and admirably manages his extensive charge. He takes great delight in the study of plant physiology, landscape work, and garden design, and between whiles plays bowls, at which game he is a champion.

**New Class for R.H.S. Daffodil Show.**—In connection with the Daffodil Show to be held at the Royal Horticulutral Hall, Westminster, on April 16 and 17, Mr. Chester Jay Hunt, of Montclair, New Jersey, has offered £1 10s., £1, and 10s., as first, second, and third prizes, in a perfectly open class for six varieties, distinct, of Leedsi daffodils, three stems of each, the varieties shown to cost not more than two guineas per hundred.

**Preservation of Colley Hill.**—With reference to the efforts that are being made by the National Trust to preserve Colley Hill, Reigate, Mr. S. H. Hamer, the secretary of that body, informs us that the executors of Mr. George Taylor, the owners of the land, have agreed to an extension of the option of purchase for a short time. About £3,000 is still required, and of this an anonymous donor has promised £1,000 if the remainder of the amount is subscribed by April 15. A shilling fund has recently been started, and has met with much success, 11,000 shillings having been collected in three months. Mr. Hamer points out that to the antiquary, the botanist, the ornithologist, and the entomologist, Colley Hill is of peculiar interest; but if this opportunity is allowed to go by, and the hill is built over, not only will a stretch of the Surrey Hills lose its wildness and beauty, and an old historic trackway (the Pilgrim's Way) be despoiled, but the whole neighbourhood—and, indeed, London—will suffer by the loss of one of its chief attractions. For the information of those who may be interested in the matter we would add that the offices of the National Trust are at 25, Victoria Street, S.W.

**A Fine Specimen Hydrangea.**—From "Amid the Surrey Pines," Mr. W. H. Franks writes: "A good deal has been written about hydrangeas in the rerecent issues of the Gardeners' Magazine, but not too much, because they are beautiful shrubs, and deserving of more attention than they at present receive. Near here (Witley) there is a wonderfully fine specimen, 5ft. high and 24ft. in circumference. It is on the northern side of a cottage, and has no protection whatever, yet it does well, and has had as many as 729 perfect heads of bloom in one season. If some of the pot plants now so popular were retained and planted out, in the southern counties, and given ample room to develop, they would soon become noble examples."

**Cucumber and Tomato Canker.**—The disease of cucumbers and tomatoes caused by Mycospærella citrullina, and commonly known as cucumber and tomato canker, has been included by the Board of Agriculture among the diseases which, in pursuance of the Destructive Insects and Pests Order of 1910, must be reported to the Board by the occupier of any premises on which they appear. Growers who are in doubt as to whether or not the disease is present on their premises should submit specimens of affected plants to the Board for determination. Up to the present the disease has been chiefly confined to tomatoes grown under glass. Occupiers of gardens in which the disease appeared last year are strongly advised not to plant tomatoes in the same soil, unless it has been adequately sterilised, and to spray all their plants during the early part of the season with Bordeaux mixture or a solution of liver of sulphur (one pound to 32 gallons of water).

**Chinese Primula Flowers** of great beauty have been sent us by Messrs. E. Webb and Sons, Wordsley, Stourbridge; the blooms were of excellent size and substance, and some of them exquisitely fringed. A few varieties of great excellence are Rose Queen, the purplish-crimson Eclipse, the white Avalanche, Ruby Queen, of vivid hue; Blue Bell, with very bright blossoms; and Meteor, a delightful salmon-rose flower of great effectiveness.

**Lectures on "Ferns" and "Weeds."**—On Tuesday, March 19, Mr. H. B. May, V.M.H., who has made lifelong study of ferns, and has raised and introduced numbers of fine varieties, will lecture on "Ferns" at the meeting of the Royal Horticultural Society, at 3 p.m. On the same day, following the monthly dinner of the Horticultural Club, Mr. Harold Long will deliver a lecture on "Weeds"; dinner is at six o'clock, at the headquarters of the club, Hotel Windsor, Victoria Street, Westminster.

**An Important Horticultural Exhibition.**—From the schedule now before us we learn that Messrs. Robinson Bros., Lim., of West Bromwich, will hold a horticultural exhibition of an important character in the Botanical Gardens, Edgbaston, Birmingham, on August 28 and 29. The schedule is comprehensive, and the prizes liberal, and in the seventy-five classes ample provision is made for the display of the various classes of border plants, cut flowers, fruits, and vegetables available for exhibition at the end of August. The more important of the classes are those for a collection of border flowers, representing, as nearly as possible, a border of growing plants on a ground space of 20 feet by 8 feet (prizes, £10, £8, £6, and £4); roses, H.P.'s, 48 blooms (£6, £4, £3); table of choice fruit (prizes, £10, £6, £4); grapes, 8 bunches (£10, £6, £4),; and collection of vegetables, 12 distinct kinds (prizes, £20, £15, £10, £5). The cash prizes amount, in the aggregate, to £350, and in addition gold and silver medals will be awarded to honorary exhibits of merit. The competition will be limited to the users of the Carmona Fertilisers, of which, with other "Guaranteed Gardenalities," Messrs. Robinson Bros., Lim., are the manufacturers.

**The Royal Gardeners' Orphan Fund Committee** is indebted to a gentleman, who was unable to be present at the recent annual meeting, for a contribution which will ensure the payment of 5s. per week for one year to one of the unsuccessful candidates on that occasion—an act of thoughtful generosity for which the child's mother is deeply grateful.

**Strelitzia regina.**—From Mr. W. Read, gardener to Major-General Stanmore, Barton Fields, Canterbury, we have received a photograph of a remarkably fine specimen of Strelitzia regina that is under his charge. The development of the handsome leaves is quite exceptional, and the flower spikes, of which there are four, rise well above them. We regret that the photograph is not suitable for reproduction. Mr. Reed states that he is growing the specimen in a warm greenhouse, in which a temperature ranging from 50 to 55 degrees is maintained, and has given it liquid manure two or three times weekly.

**Twenty Thousand Lilacs for the International Exhibition.**—It is said that the nurserymen of the Aalsmeer district of Holland will be well represented at the forthcoming International Horticultural Exhibition, and that part of their exhibit will consist of 20,000 lilacs, which the Aalsmeer growers are adepts at raising and forcing.

**Carnation Conference.**—Under the auspices of the Perpetual-flowering Carnation Society, a conference will be held at the Royal Horticultural Hall, on Thursday, March 21, in conjunction with the society's exhibition. The conference will begin at 3.30 p.m., and Mr. J. S. Brunton will preside. Mr. F. Finch, Balls Park Gardens, Hertford, will lecture on "Cultivation of Perpetual-flowering Carnations for Amateurs"; and Mr. E. F. Hawes, the secretary of the society, will lecture on "Carnations as Bedding Plants." The conference will be open to all who visit the exhibition.

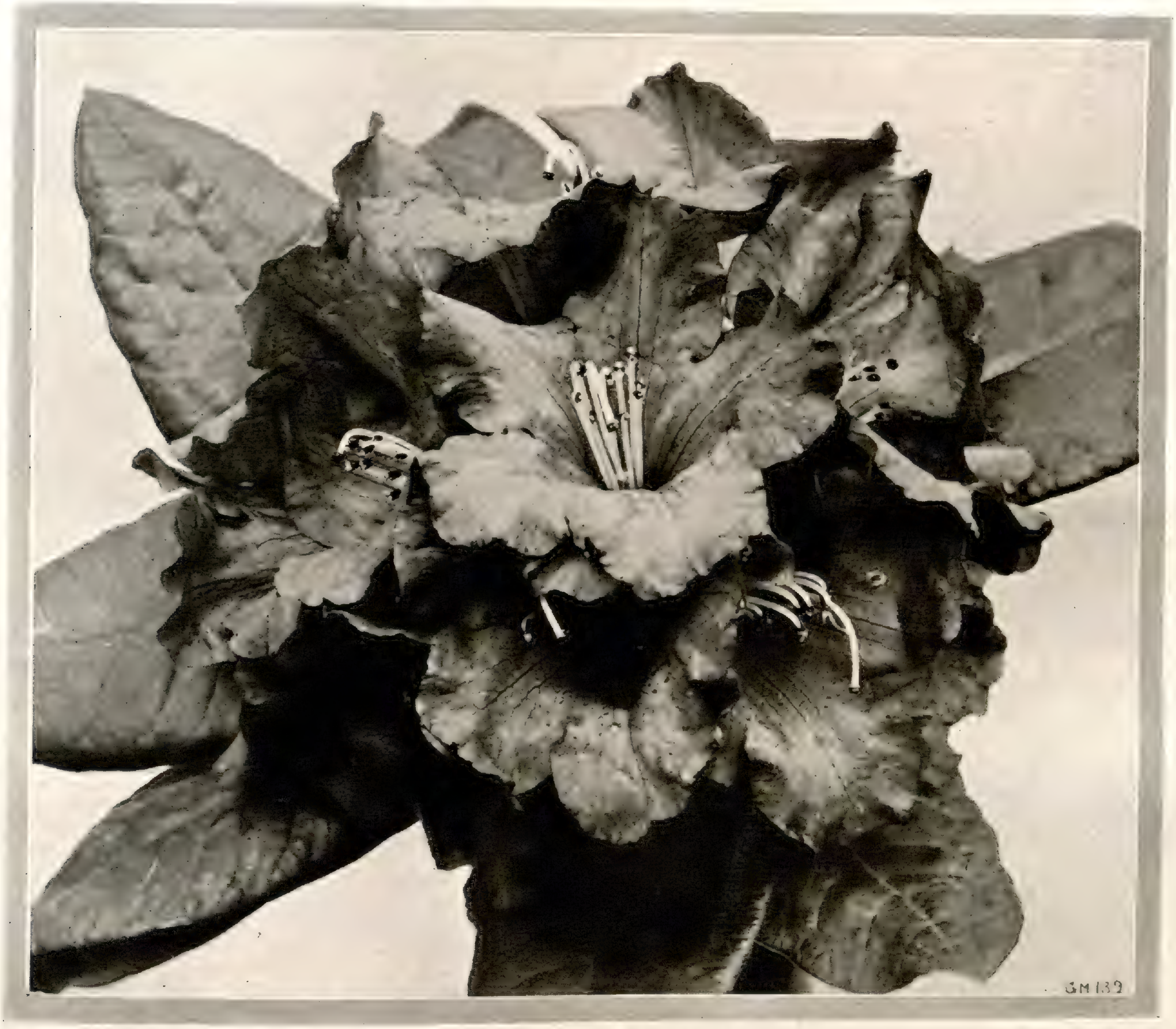
**Official Catalogue of Sweet Pea Names.**—The National Sweet Pea Society has just published its new Official Catalogue of Sweet Pea Names. This list has been brought quite up to date, and it serves to show the enormous number of names recorded for sweet peas. How many of these names are synonyms we do not know, but it would be very greatly to the interest of the sweet pea trade and popularity if the seedsmen and raisers would combine to find out, or place the matter unreservedly in the hands of the N.S.P.S. to settle. The new catalogue consists of thirty-one pages, is interleaved for notes; a copy is being presented free to everyone who newly joins the society this year; and other folks may have it, post free, from the hon. secretary, for the small sum of 7d.

**The Flora of Ireland.**—The other evening Dr. T. Johnson, F.L.S., lectured in the temporary lecture theatre of the Dublin Museum, on the native plants of Ireland. By means of lantern slides and specimens, he described the chief features of the flora, and the effect of the Ice Age on the flora of past ages. The Alpine, Atlantic, American, and other types of plants were dealt with, and sources of present-day additions to the flora mentioned. The flowering plants of Ireland, Dr. Johnson stated, are much the same as those of Great Britain, but smaller in number—about 1,000 out of 1,500. While one-sixth of the flowering plants in Great Britain have been found in the fossil state, the record for Ireland in this respect is almost a blank. It was suggested that there is a large field for investigation in the search for fossil plants of the Arctic type, and in the systematic survey of the extensive peat deposits of Ireland.

**Preservation of Finchampstead Ridges.**—The Finchampstead Ridges, forming part of the Bear Wood Estate, command fine views that extend into the three counties of Berks, Hants, and Surrey, and an effort is now being made by Berkshire residents to preserve this lovely spot for all time to the general public. A meeting has been called for March 8, at Wellington College Hotel, when a scheme will be presented, and the secretary of the National Trust will be present to render assistance.

**Sleep Movements in Plants.**—Professor W. Pfeffer, who has devoted considerable attention to the investigation of sleep movements in plants, has recently published a paper on the mechanical prevention of such movements. The most interesting result recorded in the paper is the discovery that the internal changes, on which sleep movements depend, continue their normal course even when the leaves are fixed so that they cannot execute the normal movements. Thus a plant fixed in the diurnal position will assume the night position if released at the right hour, and in the same way a plant fixed in the night position wakes if freed in the morning. Similar conclusions are drawn from the study of leaves not kept absolutely still, but so as to show very minute sleep movements.

**Extension of Wandsworth Common.**—The Wandsworth Borough Council have decided to contribute £3,000 towards the purchase of the twenty acres of land adjoining the Royal Patriotic Asylum, for the purpose of extending Wandsworth Common, provided the remainder of the sum necessary for the completion of the purchase be contributed by the London County Council, Battersea Borough Council, and the public.



RHODODENDRON CORNUBIA.
A handsome variety, with rich rosy-crimson flowers. A.M., R.H.S., March 5. Messrs. R. Gill and Sons, Falmouth.

**Potato Great Scot.**—In the notice accompanying the illustration of this new round potato, which appeared in our issue for February 27, we, by a slip of the pen, described it as having been introduced by Mr. J. W. Cross, instead of having been distributed by him. This variety, it may be mentioned, was raised by Mr. A. W. McAlister, of Dumfries.

**A Sweet Pea Society for Woking.**—A sweet pea society has been founded at Woking, Surrey, with the title of Woking and District Sweet Pea Society. It is proposed to hold a show early in July and to provide a number of open classes. Mr. L. C. B. Hockin and Mr. W. Hopkins, Westfield Gardens, are co-secretaries of this new venture.

## HORTICULTURAL EDUCATION.

(Concluded from page 192.)

With reference to the lines on which the studies of young gardeners should be conducted, it must be said that there is room for some difference of opinion. Not so long since a scientist, who is recognised as one of the leading authorities on educational matters, stated that much better progress might be made in the study of science with the aid of good books than by attending lectures. There may be something in that view of the case, but the best course is undoubtedly to attend a course of lectures on the subject that is being studied, and to work at the text-book during the intervals between the lectures. By taking this course the study will be less irksome, and the progress more rapid. Generally speaking, it will be wise for the young gardener, even when he enjoys the advantage of attending a course of lectures, not to take more than one subject at a time. If he does this, and devotes his spare time on two or three evenings each week to his studies, he will, at the end of two or three years, be in possession of an elementary knowledge of the sciences that are the most closely associated with garden management.

Those who are not so situated as to be able to attend lectures must be careful in the choice of their books, for if any serious mistake is made in the matter valuable time will be lost, and it may result in the abandonment of the study of the subject. The book must of necessity be sound, but it should also be of a more or less elementary character, for when the beginner commences, as is frequently the case, with an advanced text-book, he makes such slow progress, however strenuous may be his endeavour, that he becomes possessed of a feeling of hopelessness, and gives up the work in despair. The book should be of an elementary character, whatever may be the science with which it deals, for it will give a general view of the whole subject, a point of no small importance, and it will not be overburdened with terms difficult to remember and still more difficult to pronounce. By mastering the elementary work the student will have acquired sufficient knowledge to be of service to him, and if he is disposed to carry his studies further he will be able to do so without meeting with any great difficulties.

Considerable numbers of elementary books on the natural sciences have been published during the past twenty years, and, for the most part, they evince an immense improvement on those of older date. Especially is improvement evident in the elementary works on botany, of which there is a good range on my bookshelves. Among them is one that is especially adapted to the requirements of young gardeners who have to pursue their studies without the aid of lectures or class teaching. It is simple and inexpensive, two points of importance, and complete in itself. Yet it is sufficiently advanced to contain practically all that is necessary the gardener should know relating to the general morphology, the simple structure, and the physiology of plants. With its aid, and the free use of leaves, flowers, and other specimens that can be readily obtained in gardens, it will be possible for the student to become sufficiently acquainted with the various parts of plants, and with the botanical terms relating to them, within a year to be able to recognise and describe each one in scientific language. In like manner he will obtain a sound elementary knowledge of the leaf, root, and other organs. The book referred to is Liversedge's "Elementary Botany," published by Messrs. Blackie and Son at 1s. 6d. When this book has been mastered there are many excellent books of a more advanced character from which to select. Whether the young student carries his botanical studies further or not is a matter to be determined by himself; but it should be remembered that there are other subjects to be studied, and that the object of the writer is not to show how a gardener may become a botanist, but how he may acquire a knowledge of botany sufficient for his everyday requirements, and also to enable him to fully understand the scientific papers on botany that are constantly being published.

To advise on the study of geology by young gardeners is not quite so simple a matter as giving advice on the acquisition of botanical knowledge. It cannot be shown that geology is so closely related to the work of the garden as is botany, and the book has yet to be written which is especially adapted to the needs of the young gardener. There are plenty of good books on geological science, but for reasons that can be readily understood the information they contain is not directly associated with cultural methods. Yet an elementary knowledge of the crust of the earth is so useful that the study of geology as an essential part of the education of the young gardener can be strongly recommended. It not only greatly enlarges the breadth of view in relation to soils, but the study is most fascinating, and forms an admirable foundation on which to commence the study of soils with a view to the application of the information gained to practical purposes. The young gardener will do well to combine the study of elementary geology and physical geography, and he may be advised to select as his text books Sir A. Geikie's "Geology" and "Physical Geography," published by Messrs. Macmillan and Co. in their series of science primers at 1s. each. The first will tell the student what an intelligent man should know of the crust of the earth, and the other will enable him to more clearly understand how the various changes therein have been brought about, of special interest being the chapters on the air, the circulation of water on the land, and the origin and work of brooks and rivers. The lessons the books contain are, as for the most part, taken from the common phenomena of everyday experience, and the facts are so stated as to possess sufficient interest to hold the attention of the student. The most satisfactory progress in the use of these primers will be to study them section by section, and as each one has been studied to turn to the questions at the end of the book, and answer these without referring to the text, until all the answers have been carefully written out. The writing out of the answers will be of much value as a test of knowledge, and be useful as a mental exercise.

Much the same advice may be given with regard to chemistry as that relating to geology. It is not essential to proceed beyond the elementary stage, but it is desirable the gardener should know something about the constituents of air and water, and also be acquainted with the chemistry of the non-metallic elements and the metals, for such knowledge will be found of great practical value. There is no occasion to have a text-book that is costly or difficult to master. Sir H. G. Roscoe's "Chemistry," belonging to the series of science primers already mentioned, will suffice for obtaining a general knowledge of the subject. Those who desire to at once proceed to the study of those fungi and insects injurious to the occupants of the garden will do well to use Mr. T. W. Sanders' "Garden Foes," published at the GARDENERS' MAGAZINE office at 2s. 6d. net, and study it thoroughly.

Not only should the young gardener study the sciences to which reference has been made, but he should give sufficient attention to the practice of writing to enable him to write legibly and clearly. Generally speaking, the writing as taught in English schools is indifferent, and the age at which boys usually leave school renders it impossible to teach them composition. Legible writing and good composition will not enable gardeners to grow plants and crops to a higher degree of perfection, but they will afford them material assistance in obtaining good positions among their fellows. A well-written letter produces a favourable impression at all times, and when a gardener is making an application for a fresh position, the importance of being able to produce an impression that will be favourable to him will be freely acknowledged. The writer would like to say much more upon this point, but the limits of space have been reached. G.

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**Grape Culture.**—An illustrated guide to the culture and management of vines in greenhouses and in the open air is published at GARDENERS' MAGAZINE Office, 148, Aldersgate Street, London, price 1s. net (by post 1s. 2d.), or bound in cloth 1s. 6d. (by post 1s. 8d.). Full particulars are also given as to renovating old vines, and the best varieties to grow.

## ROYAL HORTICULTURAL SOCIETY.

### SCIENTIFIC COMMITTEE.

MARCH 5.

DISEASED TULIPS.—Mr. Massee reported that the tulips referred to him at the last meeting making poor growth and showing brown spots on the foliage and brown flecks in the tissues of the stem had been attacked by the fungus Botrytis cinerea, which had apparently infected the foliage from the air in the first place, not from sclerotia in the soil, as is frequently the case.

DISA SAGITTALIS. — Messrs. Veitch showed this species from S. Africa under the name D. caulescens, to which it is allied. It received a Botanical Certificate in 1890. Messrs. Veitch also showed a malformed Cypripedium Fairrieanum, in which the scape was almost entirely suppressed.

GALLS ON OAK.—Mr. Aldersey sent a branch of oak having roundish swellings of considerable size at intervals along the branches. A fungus, Dichlæna quenina, was probably the cause of these growths, which occur with considerable frequency on young oaks, but rarely upon old ones.

GRAPES KILLED BY FOG.—Some small flowering shoots of grapes were sent to illustrate the damage done by London fogs, which had caused the growths to turn quite brown and shrivel.

NARCISSUS CALATHINUS × MINIMUS. —Mr. Chapman showed a hybrid between these two species having the unusual character, which it shares with N. Triandrus pulchellus, of a corona paler than the perianth pieces, the difference being quite evident. A Certificate of Appreciation was unanimously voted to Mr. Chapman in recognition of his work in raising this hybrid.

MALFORMED NARCISSUS.—Sir F. W. Moore sent a flower of a narcissus somewhat of the incomparabilis form, though not quite agreeing in come characters, having the perianth tube split half-way down between the segments, and an evident difference in colour between the inner and outer pieces. The outer perianth pieces had no corona, but the inner ones had, so that the flower bore a superficial likeness to an iris. The stamens were six, three rising from the top, three from near the base of the tube. The plant produced this type of flower every year. Mr. Bowles remarked that he had seen a similar form in Mr. Polman Mooy's garden, which was also constant. In that case the plant was a bicolor trumpet, and had three pale perianth segments, three strap-shaped strips of corona bent down upon them, three petaloid anthers standing upright. In this case, since the petaloid stamens alternated with the three perianth pieces, the outer perianth pieces were apparently wanting.

PRIMULA KNUTHIANA. — Messrs. J. Veitch showed a primula which had been identified at Kew as P. Knuthiana of Pax, but which was a much finer flower than that figured by Pax in his monograph under that name. It had been raised from seed sent home by Messrs. Veitch's collector, Mr. Purdom, and was much like the form of P. farinosa grown in gardens under the erroneous name of P. frondosa. It was, however, distinct from that plant. The committee expressed a wish to see further seedlings of this plant.

AMYGDALUS × PRÆCOX. — Messrs. Veitch sent flowering branches of Amygdalus × præcox, raised by crossing Amygdalus persica magnifica with A. Davidiana alba. The hybrid had pink flowers like A. persica, but of about the size of A. Davidiana, and retained the early-flowering habit of Davidiana.

DOUBLE HYACINTH. — An uncommon double form of hyacinth, like those figured in old herbals, was sent by Mrs. Rooper. It had been purchased under the name of Italian Hyacinth.

## NEW PLANTS, ETC.

### CORYLOPSIS MULTIFLORA.

This species has long been known to science, and it was described by the late Mr. G. Nicholson in the "Dictionary of Gardening" in 1885, who, however, stated it was not yet introduced to cultivation. It is a Chinese shrub, and promises to be an attractive addition to early-flowering subjects. The flowers appear before the leaves; they are small, yellowish-green, and borne in pendulous catkin-like racemes with considerable freedom. An illustration appeared in our issue of March 9. A.M., R.H.S., March 5. Miss Willmott, V.M.H. (gardener, Mr. C. R. Fielder), Warley Place, Great Warley.

### AZALEA BLUSHING BRIDE.

A beautiful semi-double variety of Azalea indica, and one that seems sure to become popular, owing to the delicate, clear blush-pink colouring of its fine blooms. In habit of growth and freedom of flowering it compares favourably with the finest cultivated forms. A.M., R.H.S., March 5. Messrs. James Veitch and Sons, Chelsea.

### PTERIS PARKERI.

A fine new seedling Pteris with erect, deep green fronds, the pinnæ being quite broad for this family and of stout texture. This should prove very serviceable and popular for decorations and for production for market. A.M., R.H.S., March 5. Mr. J. J. Parker, Rose Nursery, Whetstone.

### RHODODENDRON CORNUBIA.

A very handsome rhododendron of the Himalayan group, bearing fine trusses of large deep rosy-crimson flowers of great beauty and effectiveness. The parentage is given as R. Shilsoni and R. arboreum. A.M., R.H.S., March 5. Messrs. R. Gill and Son, Falmouth.

### ODONTOGLOSSUM JASPER.

An attractive odontoglossum obtained by crossing a spotted variety of O. crispum with O. amabile. The flowers are of good shape, soft pink, freely spotted with bright red-brown. A.M., R.H.S., March 5. J. S. Moss, Esq., Wintershill, Bishop's Waltham (gardener, Mr. Kench).

### DENDROBIUM GOLDEN RAY SUPERBUM.

This is a very fine form of the showy hybrid between D. Othello Colmanæ and D. signatum aureum. The shapely and large flowers are deep yellow, each segment shading to deep purplish-rose at the tip, while the lip is intense purple and yellow, with maroon centre. A.M., R.H.S., March 5. Sir Jeremiah Colman, Bart. (gardener, Mr. Collier), Gatton Park, Reigate.

### ACIPHYLLA LATIFOLIA.

A stately herbaceous plant, growing from 4ft. to 7ft. high, the stem being about four inches thick at the base; the leaves are leathery, twice pinnatisect, and the small purple flowers are borne in large quantities in compound umbels. This plant is a native of the Auckland and Campbell Islands, and it has been introduced to British gardens by Captain A. A. Dorien Smith. It first flowered in this country at Tresco Abbey, Isle of Scilly.—"Bot. Mag.," t. 8,407.

### RHODODENDRON SPINULIFERUM.

This striking rhododendron was introduced to European collections by Mons. Maurice de Vilmorin, who raised plants from seeds sent him by Ducloux in 1907. The species first flowered under cultivation at Les Barres in 1910. The narrow tubular flowers much resemble those of R. Keysi, but the colour is bright red. Unfortunately this bright-flowered shrub is not fully hardy in this country, but it deserves cool house protection.—"Bot. Mag.," t. 8,408.

### SYMBEGONIA FULVO-VILLOSA.

In this interesting New Guinean plant the segments of the perianth are united in the female flowers, but free in the male flowers. The foliage is begonia-like, and the species is more or less herbaceous; it grows about six inches high, is easily propagated by cuttings, and succeeds in an intermediate house. The female flowers are yellowish, campanulate, and erect.—"Bot. Mag.," t. 8,409.

### PITCAIRNIA TABULÆFORMIS.

In this lowly, stemless, Mexican Bromeliad the white-bordered leaves form a large spreading rosette, from the centre of which rises a cone-like inflorescence, bearing a number of yellow and orange flowers that appear among green and creamy-white bracts.—"Bot. Mag.," t. 8,410.

### PRUNUS SARGENTI.

A beautiful Japanese cherry that has reached Kew by way of the Arnold Arboretum. The species becomes a large tree, is quite hardy, bears bright rose-coloured flowers in great profusion, and is handsome in autumn, when its leaves assume a rich red colour. In the Arnold Arboretum the tree fruits freely, bearing small black cherries in June, but in this country it does not fruit freely.—"Bot. Mag.," t. 8,411.

AZALEA INDICA BLUSHING BRIDE.

This beautiful Indian azalea has large semi-double flowers of a lovely blush-pink shade. A.M., R.H.S., March 5. Messrs. James Veitch and Sons, Chelsea.

**Cyclamen.**—Notable features of the present-day race of cyclamen compared with the old strain, are the wide range of colour that now prevails, the size of the blooms, and the strange shapes that occur among the members of the papilio and fringed sections. The old-time strains were remarkable for the symmetrical shape of the blossoms, a feature that is not to be found at all in the fringed or papilio race, while even the grandiflora race does not, in some cases at least, produce blossoms as symmetrically shaped as of old. The beautiful colours among the varieties of to-day are, however, most striking, some of the salmon-scarlet tints appealing perhaps more to one than any of the others.—W. T.

## VINE BORDERS.

Some forty or fifty years ago vine borders were wholly outside the vinery in many gardens, not always because it was thought they were thus in the best position, but because it was the fashion to grow grapes in conjunction with other subjects, such as pineapples, figs, and mixed plants. Sometimes the vines were turned outside during the winter and protected with hay bands until the time came again to start them into growth. The houses were so constructed that an inside border was an impossibility. After this came a combination of inside and outside borders, but gradually grape growers have some to the conclusion that an inside border is wholly the best where high-class grapes are required.

With the roots in a limited area inside we hear of fewer failures to produce the finest grapes, and, on the whole, a greater immunity from such troubles as shanking in such varieties as Black Hamburgh, a variety more prone to this defect than any other. Some persons still cling to the idea of an outside, or partly outside, border, but it should not be difficult to explain why an inside border is preferable. For instance, the roots are under control, stimulants can be more directly applied, and with greater efficacy, either for the benefit of the foliage, the wood, or the bunches. In an inside border the roots are in a much more equable temperature than when the border is in the open and exposed to repeated weather fluctuations.

At one time the outside borders were protected during the winter with boards, tarpaulins, leaves, and straw, and even some were thatched. Under such a covering the soil was prevented from obtaining the slightest warmth from the sun until the borders were uncovered in May, sometimes earlier. All this protection, entailing much cost and labour, is, happily, dispensed with when the border is wholly inside. Even a combination of inside and outside borders is not equal to one wholly inside. I cannot see why a portion of the roots should be exposed to all external weather variations, and the remainder so efficiently protected. This combination of rooting space is, I know, a favourite method among many successful growers. Personally, I do not now advocate this dual principle, but advise a border wholly inside, with proper safeguards as to drainage and situation.

From the manner in which vine borders are made, it is a fair conclusion to arrive at that there are many good methods. Some borders are four feet deep, with little or no drainage or concrete; the roots are allowed to ramble away at will, and many records of shanked grapes are noted, and many ill-coloured and otherwise unsatisfactory bunches have to be recorded. At the same time the growers see better results from vines differently situated, yet do not grasp the reason of their own failure, nor attempt to reason the matter out for themselves, and so often blame their predecessor for his want of knowledge! In a properly-constructed border, with a suitable elevation, a rooting space of two feet six inches is ample for the production of the finest grapes. It is not the extra bulk of soil that is the principal factor in the growth of the vines and their produce, because so much depends upon how the vines are fed, and how the growth is produced.

In some situations vines will succeed in the ordinary soil without any addition. In such a case, however, there must be natural drainage of a satisfactory character, with a warm subsoil, such as a sandy gravel would provide, certainly not a stiff clay. In making a cheap vine border the local surroundings as to soil have to be taken into consideration, and even if these be naturally favourable the addition of freshly-cut turf, lime rubble, wood ashes, and a small quantity of quarter-inch bones will be an advantage. An elaborate preparation is not a necessity even where local circumstances are not favourable as to soil. The great point is to have a rooting medium of a porous character to enable the water to pass quickly away. Vines enjoy copious supplies of moisture at the roots, but it should pass quickly away after wetting every portion of the border. To remain longer is only to produce stagnation about the roots, and that is all against a healthy condition, inducing shanking of the berries, mildew (if other attributes are favourable to this fungus), a defection in colour, and a general want of that robustness of foliage and growth without which success cannot follow. Firm soil is also an important point in achieving success, as a loose rooting medium does not conduce to firm, short-jointed growth. Maturity of the wood is a great factor in success. The soil should not, however, be made firm when in a wet state—clogging of the water pores would result, and the soil would be in a condition anything but favourable to the free development of the roots, which, it need hardly be said, is essential to the healthy growth of the vines.

It is a mistake to make the border complete at once; far better make it piecemeal, giving the vines the added benefit of new soil yearly until completion. Drainage is an important point in making a new border. A great quantity is not a necessity, and a 6in. depth of broken bricks properly laid, and protected from the admission of fine soil, which is apt to choke the passage of water, will suffice. For this latter purpose nothing is better than freshly-cut turf laid grassy side downwards. There are many other points in this interesting subject I would like to draw the attention of Gardeners' Magazine readers to, but fear I have already trespassed far enough, and the remainder must, perforce, wait a more favourable opportunity.

E. Molyneux.

Swanmore Park.

## RARE SNOWDROPS.

A curious, yet pretty snowdrop is that named Galanthus virescens, or the Green Snowdrop. It is a form of G. nivalis, our common snowdrop, and its history is a little obscure, as all we know of its introduction is that it was grown by Professor Fenzl in the Vienna Botanical Gardens, and that some bulbs were obtained there by the late Max Leichtlin, by whom it was distributed. Both the late Rev. Harpur Crewe and the late Mr. James Allen received it from him, and it was from the latter that I obtained the original bulb which was the beginning of my small clump. It is not a snowdrop which increases rapidly, and in the considerable number of years I have cultivated it, G. virescens has multiplied but little. It is thus a plant which requires some care and consideration if we are to prevent this variety, which would almost appear to be a survival of the original snowdrop, from becoming as extinct as the dodo. Curiously enough, the double green snowdrop —a very singular flower indeed—is quite as slow of increase, and is even more likely to become one of the vanished flowers.

On the face of it, a green-flowered snowdrop cannot be expected to be an attractive flower, yet it is one which grows greatly upon one's affections.

It is, in shape and general appearance, like the ordinary G. nivalis, but the exterior of the outer segments is striped and clouded with green towards the base and over a considerable portion of the remainder, while the interior ones are all green, with the exception of a narrow margin of white. It is a distinct flower, indeed, and we find it more appreciated in our gardens as we grow better acquainted with it. It is later flowering than G. nivalis commonly is.

G. virescens does not reproduce itself true from seeds, as has been proved by several snowdrop lovers who have seeded it, and is increased by means of offsets. It requires no special soil, and it is only necessary to be careful that the bulbs are not destroyed in winter before the blooms appear, or later, after the leaves have died down.

Galanthus Warei, which I once had, but lost during my removal to my present home, seems to be now very scarce, and some bulbs I procured from an Italian source did not give flowers of the character of G. Warei, as I obtained it first through the kindness of Mr. W. B. Boyd, who procured it from Mr. T. S. Ware under the name of G. Scharloki. I have been sorry to be without this snowdrop, although it does not differ much, if anything, from certain seedlings of G. Scharloki, some of which have not the divided spathe of that variety, although it has a good deal of the green exterior markings of the latter. The interior segments in G. Warei have, however, the markings of larger size. Authorities are of opinion that it must have been derived from Scharlok's form of G. nivalis, but no one has been able to clear up the point, which is, however, of little consequence, save to the student of botanical characters. It was never a vigorous plant with me.

S. Arnott.

## CASSIA CORYMBOSA.

Of the many species of cassia introduced into this country, the only one in general cultivation is C. corymbosa, and as a decorative plant it is the best of them all, for it is alike useful as a bedding plant or for furnishing the conservatory during the dull months of autumn. When used as a pot plant, it is much better to root the cuttings in spring and grow them to a single stem. If old plants that have been wintered in a cellar or shed are introduced into a warm house they will soon make side shoots from the dormant buds, and when these have attained a length of three or four inches they should be taken off with a heel attached, and inserted singly in 3in. pots, which have been filled with light sandy soil. If the pots are plunged in a hotbed where a temperature of from 70 to 75 degrees can be maintained, the cuttings will soon root, and when the pots have become filled, the plants should have a shift into pots a couple of sizes larger. After potting return them to the hotbed until established in the new soil, and afterwards they may be hardened off by standing them in a cold frame early in May.

Care, however, will be needed to see they do not suffer from a sudden change of temperature; the lights should be kept closed for a few days, so as to gradually accustom them to their new quarters, and when the weather becomes favourable, which will be about the beginning of June, they may be fully exposed to the open air. By this time the pots will be filled with roots, so that the plants will be ready for their final shift into 32's. When again potted select a sunny position that is sheltered from the winds, and here the pots should be plunged to their rims, where they can remain until housed in the autumn, by which time, if due attention has been paid them, they ought to be from two to three feet high, clothed to the top with bright green foliage, and the upper portion carrying several racemes of clear yellow flowers.

Cassia corymbosa was at one time treated as a stove plant, but lately it has been much employed for bedding, and I have seen it in bloom most profusely until quite late in the autumn. When planted in a sheltered position and the weather has been mild, I have cut fine flowering sprays from the open borders as late as the middle of November. For bedding old plants are preferable, as these bloom much earlier in the season than young ones. In some places in the southern counties, where the soil is warm and the situation sheltered, the plants will withstand the slight frosts experienced, but such positions are by no means general, and only on two or three occasions have I been able to keep the plants through the winter without lifting. Our plan was to lift the plants in the autumn to prepare the beds for spring bedding, and then they were stored away in a dry place where frost could be excluded. If we were desirous of increasing the stock of strong plants the shoots were cut off at the time of lifting and inserted in pots and placed in a gentle heat; here they soon pushed forth young growths which were taken off and rooted in the ordinary way, and by spring these were ready for their final shift, so that at planting out time they were a couple of feet high.

This cassia is very accommodating, and will put up with a lot of rough usage, but on the other hand, if liberally treated it will well repay for the care and trouble bestowed. As a plant for covering the wall of a conservatory or as a pillar plant it is most useful, especially as it retains its foliage and flowers through the winter.

H. C. Prinsep.

## STAPHYLEA COLCHICA.

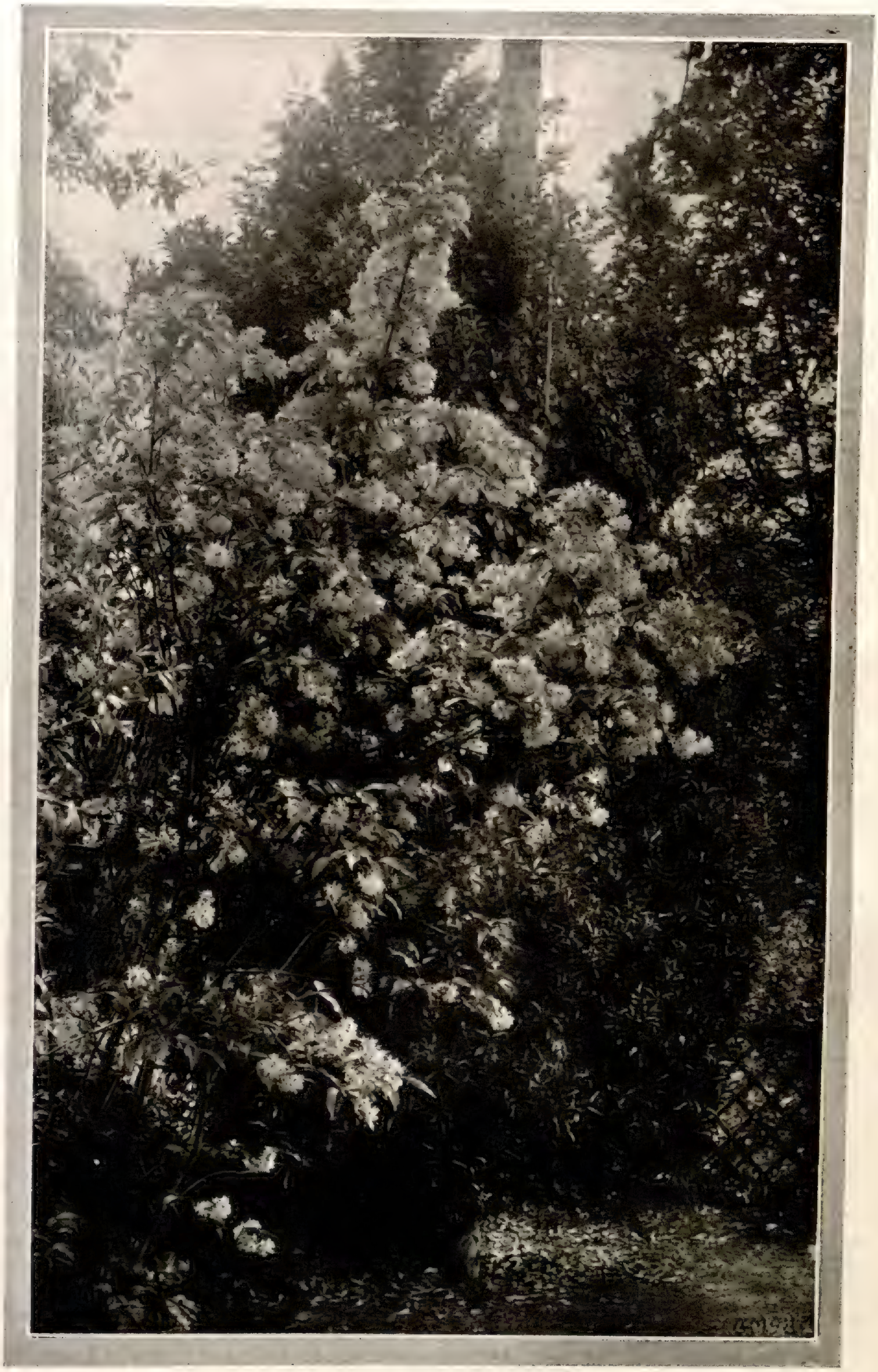
This beautiful flowering shrub is very lovely in the garden during the summer, specimens 20ft. or so in height being covered with large, drooping panicles of pure white flowers with yellow anthers, not unlike orange blossoms, and sweetly scented. About five-and-twenty years ago a correspondent, writing to one of the leading horticultural papers on this shrub, which he evidently knew only as a pot plant, opined that it was probably not free-flowering when grown in the open. In this he was fortunately mistaken. This staphylea is by far the handsomest of the family, the best known of the other members being the North American S. trifolia and the European S. pinnata, know respectively as the Bladder Nut and St. Anthony's Nut Tree. S. colchica is a native of the Caucasus, and thus perfectly hardy, bears pinnate leaves, and thrives in the full sun or in partial shade.

As a forcing subject it is decidedly the best of all deciduous shrubs, as it may be had in bloom, with a modicum of trouble, from Christmas onward, and as the tender green leaves of forced specimens unfold at the same time that the flowers expand the effect is charming. It responds readily to artificial heat, and when placed in a warm house kept moist the flowers open rapidly. Plants may be lifted from the open in the autumn as soon as the leaves fall, potted and forced, but the more preferable plan is to grow plants for forcing entirely in pots. Pot plants carefully treated will improve year by year, and produce a quantity of flower, the panicles being borne on the young wood of the preceding year, and also on the spurs of the old wood. When the plants have passed out of bloom they should be pruned back to a plump bud and encouraged to make strong growth in gentle heat, so that strong buds may be obtained. If the soil is exhausted the plants are taken out of their pots just as they are breaking into growth after being pruned, the soil picked away from the roots, and the plants repotted in fresh soil in the same sized pots, or in one size larger. After forcing they must be kept under glass until all danger of frost is past, for the forced foliage is very tender, and will not bear exposure until hardened off. Through the summer and autumn the plants should be plunged in the open, so that the wood may become thoroughly ripened, and care must be taken that they do not want for water.

Propagation is effected by cuttings of ripened wood eight inches in length inserted in a cold frame in September, by layers, or suckers having a few roots, the last being the most successful method. It may also be raised from seed sown in a sheltered position in the open in September or October. Increase is sometimes effected by grafting on S. pinnata.

When planted out this staphylea is a very rapid grower, a pot plant two feet in height, planted in good soil in the open, attaining a height of 8ft. in five years. The specimen shown in the accompanying illustration was put out from a pot four years before the photograph was taken. In S. pinnata the pendulous, white flower panicles are composed of individual blooms which are considerably smaller in size and lack the spreading petals of the flowers of S. colchica.

Wyndham Fitzherbert.



A FINE EXAMPLE OF STAPHYLEA COLCHICA.
Flowers white, in drooping panicles.

## ILEX INTEGRA.

The number of varieties of Ilex aquifolium and I. platyphylla is so large, and the different kinds are so varied in character, that they usually provide a sufficient amount of variation for the person whose sole object is decorative effect; those people, however, who are interested in more than the purely ornamental aspect of a particular plant, and make an effort to furnish their gardens with rare and out-of-the-way subjects, may, with a little trouble and expense, collect together an extremely interesting set of hollies (Ilex species), which are quite as decorative in appearance as many of the well-known forms of the common holly.

Of this number the Chinese and Japanese I. integra is one of the least known, although it is not of recent introduction. Growing in Japan and China to a height of from 30ft. to 40ft., it is said to be a favourite subject for garden decoration. Here it is of pyramidal outline, with dark green ovate leaves up to 4in. in length. The leaves differ from those of most hollies by being spineless; in fact, it is only now and then that a leaf can be found with a broken margin, and then its serration is very slight. White flowers appear in May, which are followed, on female plants, by bright red fruits, which may be about the size of those of the common holly, or considerably larger. As is the case with I. aquifolium, a yellow-fruited variety has been recorded. This has been called leucoclada; it does not, however, appear to be in cultivation. I. integra thrives under much the same conditions as the other hollies.

W. D.

PROFITABLE FRUIT GROWING for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, writen for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# A DISEASE OF SWEET PEAS, ETC.

(Concluded from page 207.)

### Symptoms of the Disease in Orchids.

I have only observed the disease on cultivated species of cypripedium, of which abundant material was sent to Kew, and it was stated to be present on most of the plants occupying a large house. The roots are attacked first, then the bases of the leaves, which gradually become brown and finally assume the condition of a soft rot, when the whole plant falls over. The snow-white Milowia fruit was produced in abundance when the decayed portions were placed under favourable conditions for its growth. It was in all probability the spores of this condition of the fungus that spread the disease from one plant to another in the house, the minute spores being dispersed by wind, syringing, etc.

### Preventive Measures.

It is practically impossible to cure a plant that is once infected, as the mycelium is located in the living tissues of the root, and no substance is known that will check or kill such mycelium, without at the same time killing or materially injuring the host-plant. Hence the only means of checking the onslaught of the fungus is by the adoption of preventive measures. The majority of cases of disease are obviously due to infected land. No evidence of the presence of spores on peas or other seeds is forthcoming, and would not be expected to occur, when it is remembered that the fungus, as a parasite, confines itself to the root and collar of the stem. Infection of the soil may be brought about by various means. When a diseased crop is grown, the roots in most instances become thoroughly decayed, and too friable to remove even if an attempt was made to do so. It is on such decayed roots that the Torula or resting-spore stage of the fungus grows, consequently the soil becomes infected, and even if a crop of some kind is afterwards grown that the fungus cannot attack, it finds host-plants in the various kinds of weeds growing along with the crop. In addition, when it is remembered that the fungus can pass through its complete course of development as a pure saprophyte, feeding on the humus present in the soil, it will be readily understood that, when land is once infected, the fungus is quite capable of holding its ground, and of quickly extending its area of devastation, unless prompt measures are taken. The infection of a new area is in the majority of instances due to the use of manure, on which material the fungus flourishes and reproduces itself at a very rapid rate.

Commercial formalin (= 40 per cent. formaldehyde) has proved to be the most effective fungicide for sterilising infected soil. In the United States, where Thielavia proves very destructive in causing a root-rot of tobacco seedlings, the soil of the seed-beds is thoroughly soaked with a solution of formalin in water, in the proportion of one pint of formalin to twelve gallons of water. One gallon of the mixture should be allowed for each square foot of the surface. After the watering is completed the soil should be covered for two or three days with coarse sacking or canvas, to keep in the fumes. The watering should be done after all digging has been done and when the seed beds are in a condition ready for sowing, and a week or ten days should intervene between the soaking of the soil and the sowing of seed, to allow for the complete escape of the formalin fumes and for the drying of the soil.

When green manure is dug into land intended for seed beds it should previously be thoroughly watered with formalin as advised above.

Professor Benincasa has quite recently conducted a series of experiments as to the best means of checking root-rot of tobacco in seed beds. Having proved that infected soil is the usual source of injury, and that heating such soil to a temperature of 90 deg. C. does not completely eradicate the disease, comparative tests were made by using ordinary garden soil, pure sand, and volcanic ash or pumice for seed beds. The plants grown in garden soil were badly infected, seed beds of sand proved very efficient in controlling the disease, volcanic ash gave the best results of all, both in arresting the disease, and in the rapid and vigorous growth of the seedlings. This result is partly due to the absence of humus, which favours the continuous growth of the fungus in soil containing organic matter, and also to the physical conditions of such soil.

The author suggests the use of coal ashes, volcanic scoria, or naturally or artificially powdered volcanic rocks, as suitable for the formation of seed beds.

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# FANCY PERPETUAL FLOWERING CARNATIONS.

From the princess down to the factory girl all womankind, more or less, are the slaves of fashion. This is not restricted solely to the adornment of their person. Fashions in flowers are almost as changeable as fashions in hats or hatpins. Yet it is the beautiful which survives or reappears.

It was considered proper until quite recently to admire only flowers of self colours, particularly so in such florists' flowers as roses, carnations, chrysanthemums, etc. But fashions change, and so to-day a carnation can be beautiful which possesses more than one colour, and this, of course, is as it should be.

For as long as carnations have been popular with the people, so long have fancy varieties of certain markings been held in the highest esteem. The old Painted Lady class in border carnation is represented in perpetual varieties, in later years, by that fine old variety Prosperity, which is, perhaps, best described as a white overlaid pink, and no one who has seen a perfect flower of this old favourite can deny its beauty. Since the days of Prosperity we have had lots of varieties which have aspired to the position it once held. Purity and clearness of colour, however, which the majority lack, are quite as important to a fancy as to a self. To-day we have a worthy representative of this beautiful class of carnation flower in Mrs. Tatton. This is one of those varieties which has never received the attention it deserves, and is not found in quite half the catalogues. Yet it is one of the best varieties yet raised in Great Britain. Its superiority over any other variety with similar markings, such as Lucille, Conquest, Apple Blossom, etc., will be quickly recognised by anyone who has grown them all under the same conditions as I have.

Then we have in all classes of carnations those lovely fancy varieties, white, marked pink or red. Old Alice Tyers, in the borders, long maintained its popularity, and Mrs. Bradt, in the perpetual section, was popular for years in America, being supplanted by Mrs. M. A. Patten, which was very popular with the florists in its day. Jessica and Bay State, one white, flaked pink, the other white, flaked red, had a brief reign, but both lacked freedom. This season we have Wivelsfield Wonder, a white, flaked pink, which is a seedling from Mrs. Bradt, and has been voted the best in this scheme of colouring. Benora, a white, flaked red, is coming from America, and promises well.

Now we are obtaining quite a number of yellow ground or fancy yellow varieties in the perpetual flowering carnation section. Canary Bird, yellow, flaked pink, of American origin, is perhaps the best of these; while there is also Orpheus, yellow, pencilled carmine and white. This season brings with it Sunstar, yellow, with pale pink and white markings, which promises to be popular.

When we think of fancy carnations we group with them heliotropes, but surely Mikado should be grouped as a self colour. However, we will deal with this new and delightful group here.

Mikado was the forerunner, and mainly through its good qualities this new colour has become popular with practically all associated with the flower. We now have heliotrope selfs and fancies. Of the latter Salome and La Mode are the principals, and their extent of beauty is purely a matter of taste. But even the florists use this class of flower, so that there can be no doubt as to their future. Geisha is an aspirant which has undoubtedly gained greater popularity in a short time than any similar variety, and this is well deserved. The flowers have excellent form, and are of a delightfully light shade. It has, like all heliotropes, an underlying colour, which is more prominent in the young flowers. The new Fairmount is undoubtedly the most serious rival Mikado has, it being superior in almost every respect. The colour is more solid, and has a perfect French grey finish. The flowers are larger, and the habit of growth more robust. So we see the selection in this new class of colour in perpetuals is being rapidly extended.

The purple carnation does not appeal to all, yet it undoubtedly has its place, and, mixed with other colours, such as white or yellow, gives an unique effect, while under artificial light they are superior to crimsons, assuming a gloriously rich claret shade. Vinca and Royal Purple are the best representatives of this class. The latter variety is generally considered the best. The colour is more free from magenta, and the habit of growth much freer.

There are other fancy varieties, such as Mrs. T. M. Crook, Helen M. Gould, Imperial, etc., which are distinct from all others, and have their respective charms which appeal to many.

Marmion and Lady Audley Neeld rival each other for superiority, and are generally grouped as perpetual flowering Malmaisons. The massiveness of their flowers and the decisiveness of the marking give an unique effect. The general description is white, overlaid cherry-red. However, this, or, indeed, any description, cannot convey to the reader the colour and effect of a fancy flower. Marmion undoubtedly produces the finer flowers, and Lady Audley Neeld has a better habit of growth.

From the foregoing it will be seen how in quite a few years the number of fancy varieties has increased, and still others, such as the new Mandarin and Elektra, which are practically terra-cotta fancies, promise to add to this already large list, which would not exist if there was not a market for them.

The effect at a distance is the supreme test of a fancy variety—whether that effect is muggy or clear and attractive. Too many are only examined closely, the distant effect being ignored, which renders them useless for decorative work, but some varieties look more beautiful at a distance or under artificial light.

Montagu C. Allwood.

## OUTDOOR PEACHES.

Some regard the peach as the king of fruits, and, though other fruits may equal it, most will admit that none beats it when it is at its best. To obtain it in this condition, however, entails more labour and attention than the growing of any other hardy fruit, except, of course, the closely-allied nectarine; but some may say that its superiority to a well-ripened gage plum is not sufficiently marked—if, indeed, it exists at all—to repay the extra attention required. The lengthened period of protection from frost which is necessary owing to the earliness of its flowering, the incessant struggle with aphis, the disbudding of the shoots, and the thinning of the fruits, with the annual taking down of the whole tree from the wall, and replacing it, to say nothing of the renewal of the soil and necessary surface feeding, constitute a formidable list of operations, some of which scarcely exist, or only in a very modified degree, with most other hardy fruits.

### Winter Pruning.

Let us begin with the operation which is either the beginning or the end of the year's routine, according to the system adopted, that of the winter pruning, as it is usually called. Some defer this till the blossom buds are getting almost ready to burst in March, keeping the trees unnailed and tied away from the wall, so that they shall not be hastened into flowering by the radiation of the sun's heat. It is doubtful if the gain by this method outweighs the advantages of doing the work in September, or as soon after as the fruit is gathered. For one thing, there is less work to do at the latter season, but the principal recommendation of autumn pruning is that by cutting out the old wood at that season the young wood has the maximum benefit from the autumn sunshine, while the wounds heal up more quickly then than at any other time, and so the risk of gumming is lessened.

The retarding of flowering by tying the tree away from the wall is probably less than a week at best, and as preparations have to be made for protecting the blossom in any case, there does not seem to be much gain. Of course, no one should nail up peaches with shreds, for not only is there the trouble of detaching the branches from the wall at some time between September and March, but the shreds harbour insect pests.

### Pests.

Aphis is the great trouble in peach growing, masses of curled leaves past all hope of cure being only too familiar to all. The delay of syringing until it is seen that the leaves are beginning to curl is perhaps the prime mistake of the amateur, and even of the professional gardener sometimes. If the blossom is carefully examined aphis will be found among it, and, as soon as ever the blossom has been fertilised, even before it is obviously set, the tree should be syringed, there being still nothing more harmless and more effective than the old-fashioned mixture of soft soap and quassia chips. Peach foliage is very sensitive, and, it may be added, rather erratic or fickle, and petroleum and soft soap emulsion, however well made, will sometimes cause injury. If the tree is sprayed twice in the first week or ten days after flowering, and then once a fortnight until midsummer, the occasional evening syringing with clear water, which peach trees should always receive, will probably keep them clean for the rest of the summer, though the tree must always be kept under careful observation. Some recommend giving peaches the first spraying before the blossoms open, and then, after the foliage begins to expand, syringe with plain water every evening, in addition to the periodical spraying with insecticide.

### Disbudding.

The work of disbudding the shoots and thinning the fruits should not be done all at one time, but spread over two or three weeks, or even longer, especially in the case of the former, as no shock is then given to the tree, and the energy set free by the removal of useless shoots is gradually transferred to those which are to form next year's fruiting wood, while better opportunity is given to select the best shoots for the purpose.

A preliminary thinning of the fruits should be made as soon as they are becoming visible, taking off all the badly placed ones and some of those which are thickly placed together, and leaving the major part of the thinning till it can be seen which are going to take the lead, though even then it should not be all done, as there are various possibilities of injury to the young fruits, besides the probable loss of some during the stoning process.

### Watering and Feeding.

If the old soil over the roots within three or four feet of the stem was removed during the previous autumn or winter, and some fresh rich soil, with plenty of bone-meal in it, put in its place, the trees will scarcely need any help during the stoning period, assuming the soil has a sufficiency of lime, or has been well dressed with basic slag, mortar rubble, etc. If the season is a dry one, the trees should have a good soaking occasionally with plain water, as the peach is a wilding in growth, and has the fondness of the willow for water so long as it is not stagnant.

When the stoning period is drawing to an end, and the fruits are seen to be increasing in size, it is time to begin feeding, always remembering to soak the soil thoroughly wth clear water first. A dressing of rich guano is one of the best things to apply, six or eight ounces to the square yard being used and well watered in. If one of the highly concentrated artificial fertilisers is used, a quarter of a pound to the square yard would be as much as it would be safe to apply, and this should be given in two doses, with an interval of a fortnight between them. Feeding and watering should alike cease when the fruits begin to show signs of ripening, for not only may the manure impair the flavour, but a wet soil, by excluding air from the roots, and in other ways, may produce the same effect. A fairly dry soil at the time of ripening appears to be necessary if the finest flavour is to be obtained.

### Gathering the Fruit.

This is a little art in itself. Some put a net under the tree to catch the falling fruits, but few should fall if they are properly looked after. When the earliest fruits are getting ripe each should be gently tried by touching it with the fingers at the back so that if it leaves the branch it may lightly drop into the open palm. This should be done alternate days in very hot weather, or every three days at the most. Fruits are sometimes pushed off the branch by their own swelling, but more often by earwigs, woodlice, ants, etc., eating the fruit just against the stalk. This is especially the case when a wall needs pointing, ants sometimes beginning to eat the fruit when it is the size of a wood nut. Holes in an old wall should be stopped up with cement, a job which can be done by any handy man without that damage to all surrounding objects which often results from the employment of a builder's man.

People sometimes speak of peaches and other stone fruits as being of such superior quality when eaten direct from the tree, but this is at least open to question. If peaches are laid carefully on a dish as picked, in a single layer, and kept for a day, or even for two or three days, when they are not dead ripe at the time of picking, the flavour is decidedly improved, the ripening process, which is a preliminary to decay, continuing after the fruits have left the tree. **Alger Petts.**

## BORDER AURICULAS.

There are three well-marked groups of auriculas—namely, show, alpine, and border varieties—and to those who do not possess the necessary appliances for the cultivation of the first two, the latter will be most useful. The auriculas which are listed under the heading of border varieties are highly appreciated for the fragrance and bright colouring of their blossoms. Beautiful effects are obtained in the spring by massing them in beds, either in separate colours or mixed.

Raising a batch of plants from seeds is an interesting proceeding, and at the same time a very simple one. Like all the other members of the Primula family, the seeds of auriculas germinate best when sown as soon as they are ripe; but when seeds have to be purchased, the most suitable time for sowing them is during the second half of March or early in April. Pots or pans should be filled with a mixture of two-thirds loam, one-third leaf soil, and a small quantity of sand. Sow the seeds thinly, and cover them lightly with the soil, affording them a gentle watering, and placing them in a frame to germinate. To prevent a too rapid evaporation, a piece of glass must be placed over the receptacles, and this should be shaded with paper. Immediately germination is noticed, remove the glass and paper, and shade the frame lightly. The seedlings appear very irregularly, and often slowly, therefore it is advisable to retain the seed pans for some time after the first comers have been transplanted. Seed boxes are used for the purpose of transplanting, and the young plants nursed along for a time in the frame.

When the seedlings attain fair size, they are best transferred to open nursery beds, where they will be allowed to bloom. The idea of flowering the plants in nursery beds for the first time is that it allows the cultivator to weed out all the undesirables, and to make a selection of those considered the finest varieties. The folowing season the selected ones should be planted in their frame shelter until early in spring.

When a good strain has been selected, and the plants become large, propagation may be effected by division, and a good time to divide is in the spring, when flowering is over, and the plants are lifted from the beds to make room for other subjects. A fairly shaded and moist situation should be selected for their summer quarters, and the divided portions put out about nine inches apart. When a good strain has been selected, it is a good plan to save seeds and sow them as soon as they are ripe. Usually the seeds ripen in July, and consequently the young plants raised from them are small for wintering in open beds, therefore it is advisable to provide them with frame shelter until early in spring.

For town gardens the border auriculas are amongst the most useful of plants. Fogs and soot seem to have no effect on them; in fact, they thrive in the smoke-laden atmosphere.

Gnaton Gardens. **E. C. Pooley.**

## JAPANESE ANEMONES.

The varieties of Anemone japonica have been so greatly increased within the past ten or twelve years that they form a group of considerable importance among the hardy herbaceous plants, and one of much value for contributing to the charm and interest of the flower garden during the latter part of the summer season. They are equally attractive arranged in lawn groups and in bold masses in the mixed border, the latter being the best place for them when the garden is of limited dimensions. They are especially desirable in the flower garden of the country house, as they are usually at their best when the owners turn from the gaieties of town life to the quiet pleasures that the country is so well able to afford, and usually entertain their friends. The Japanese anemones are also most useful for the supply of cut bloom at a season when really choice flowers are none too plentiful.

The typical Japanese anemone (A. japonica) possesses much beauty, although hardly equal in richness of colour to some of the newer rose-coloured forms. It has the advantage of being vigorous in growth and free in blooming; the colour of the flowers may be best described as pale rose. The pure white variety, known as A. japonica alba, is so highly meritorious that it should be grown wherever the charms of the Japanese anemones are fully appreciated. It has a bold habit, and produces its large salver-shaped pure white flowers with remarkable freedom. The recently introduced Lady Ardilaun also has pure white single flowers, and can be strongly recommended. Whirlwind, now generally known, has large semi-double white flowers, and is useful both for its effectiveness in the garden and the adaptability of the flowers to various floral arrangement in a cut state.

The most beautiful of the varieties with flowers other than white are the type which has been already mentioned. Elegantissima, semi-double, light pink; Mont Rose, dwarf in growth, and bearing large semi-double rose-pink flowers; Prince Heinrich, a distinct variety, with semi-double crimson flowers; and Queen Charlotte, a beautiful variety, the flowers large, semi-double, and of a soft pink hue.

All the Japanese anemones here mentioned are equally suitable for the formation of lawn groups and for association with other hardy perennials in the mixed border. When grown in beds it is an advantage to associate with them one of the lilies that bloom early in the summer to prolong the attractiveness of the group. Lilium Hansoni, one of the finest of the free-growing lilies, is especially suitable for associating with these anemones, for it carries its flowers well above the foliage of the anemones, and when they have lost their beauty the stems can be cut back to a level with the foliage of the latter. Moderate-sized groups present in the borders the most attractive appearance.

These anemones will thrive in any good garden soil to which a liberal addition of manure has been made. Late in the autumn is perhaps the best time to plant, but if pot plants are obtained they can be planted now with the full assurance of success. The chief point in the cultivation of these flowers is to allow them to remain undisturbed for as long a period as they continue to make a strong growth and bloom freely.

A FINELY-FLOWERED GROUP OF ANEMONE JAPONICA ALBA.

## SPRING IN THE SHADY GARDEN.

As though to compensate for a lack of summer splendour there are innumerable ways in which spring is to be made beautiful in the shady portions of the garden, and one especially noteworthy fact is the ease with which plants can be lifted from the open ground, and placed in shadowed beds and borders when about to bloom. This applies to almost all bulbous plants; if we take up hyacinths, tulips, narcissi, daffodils, scillas of most species, anemones, chionodoxa, and crocuses, with a sufficient depth of unbroken soil on the same spade, and drop them into specially prepared holes, they will not suffer the slightest check, even if the buds are colouring. Wallflowers that are not veterans may be moved from place to place in the same manner, and a belt of the bright gold, or a group of the vivid red, will quite transform a cold, dreary-looking border into a gay one.

A simple expedient for having a fine spring show in shade is to cultivate numbers of bulbous and other spring plants in oblong, round, or square tubs or boxes; these can be planted precisely as though they were beds, and kept sunk in sunny ground all winter, mulched over with three or four inches of dry stable manure. When the plants are attractive by reason of foliage, and within some weeks of flowering, the receptacles should be disinterred and sunk in the garden of shade. When a leaf-mould and loam mulch, or one of cocoanut-fibre refuse, is laid over the soil, there will be nothing to reveal the fact that the plants have not come to maturity there. Dwarf brown wallflowers, carpeted by Scilla siberica, double red tulips with an undergrowth of myosotis, or Eastern Queen wallflower, above mauve arabis, prove very successful. The tubs need not be ornamented, as they are sunk, but if the wood is painted inside and out it will last much longer. By having an extra supply of these tubs, and growing plants in half of them for a summer display, sinking these in the place of the spring ones as soon as the early flowering plants fade, a lovely constant adornment for a usually bare part of the garden is gained. Pinks and snapdragons make an excellent combination; not only will the flowers quickly succeed the early favourites, but the antirrhinums will continue until winter, while the foliage of the pinks remains decorative. For positions of special importance, such as sunless front gardens, autumn tubs might well be prepared also; dwarf Michaelmas daisies and chrysanthemums, montbretias, pansies, and Sedum spectabile are most suitable subjects.

Masses of white foxgloves are among the fairest things that a shady border can contain in the earliest summer, or latest spring, but few gardeners realise the stately charm of a lawn or front garden bed of these flowers. An edge of gold or mauve pansies or violas can be recommended. Then all the forms of Campanula latifolia flourish without sun, giving blue or white columns of bloom, while the tufted evergreen foliage is of value throughout the entire year. Alternate white campanulas and coloured foxgloves look well, but for an earlier display white columbines should be chosen.

A large bed of aquilegias, from prize mixed seed, proves one of extreme interest and beauty early in the year; it can safely be carpeted, or broadly edged, with mixed pansies or violas, as all the lines harmonise, a fact that should be remembered by those who are choosing seeds for sowing under glass. Crimson bedding pansies are most meritorious in shade, because they provide the rich warm colour that is always lacking. Then the whole family of the primrose, including polyanthuses, oxlips, and the lovely long-stemmed cowslips, can be congregated in shaded soil; even the delicate double white and other primroses will flourish if planted in interstices of low rockwork.

One of the prettiest spring displays in a suburban front garden is a centre rockery mound covered only with yellow primroses and blue, white, and pink forms of Scilla nutans; this is an instance of how the simplest ordinary blossoms attain importance when represented in sufficient quantity by themselves.

A small grass plot can be turned into a fair spring display, even if shadowed, by outlining it, except where an entrance is left, by a two-feet wide stretch of rockery, and introducing spring-blooming bulbous and perennial subjects into this; for colour in summer a variety of begonias and dwarf asters can be introduced, without the perpetual early plants receiving an injury.

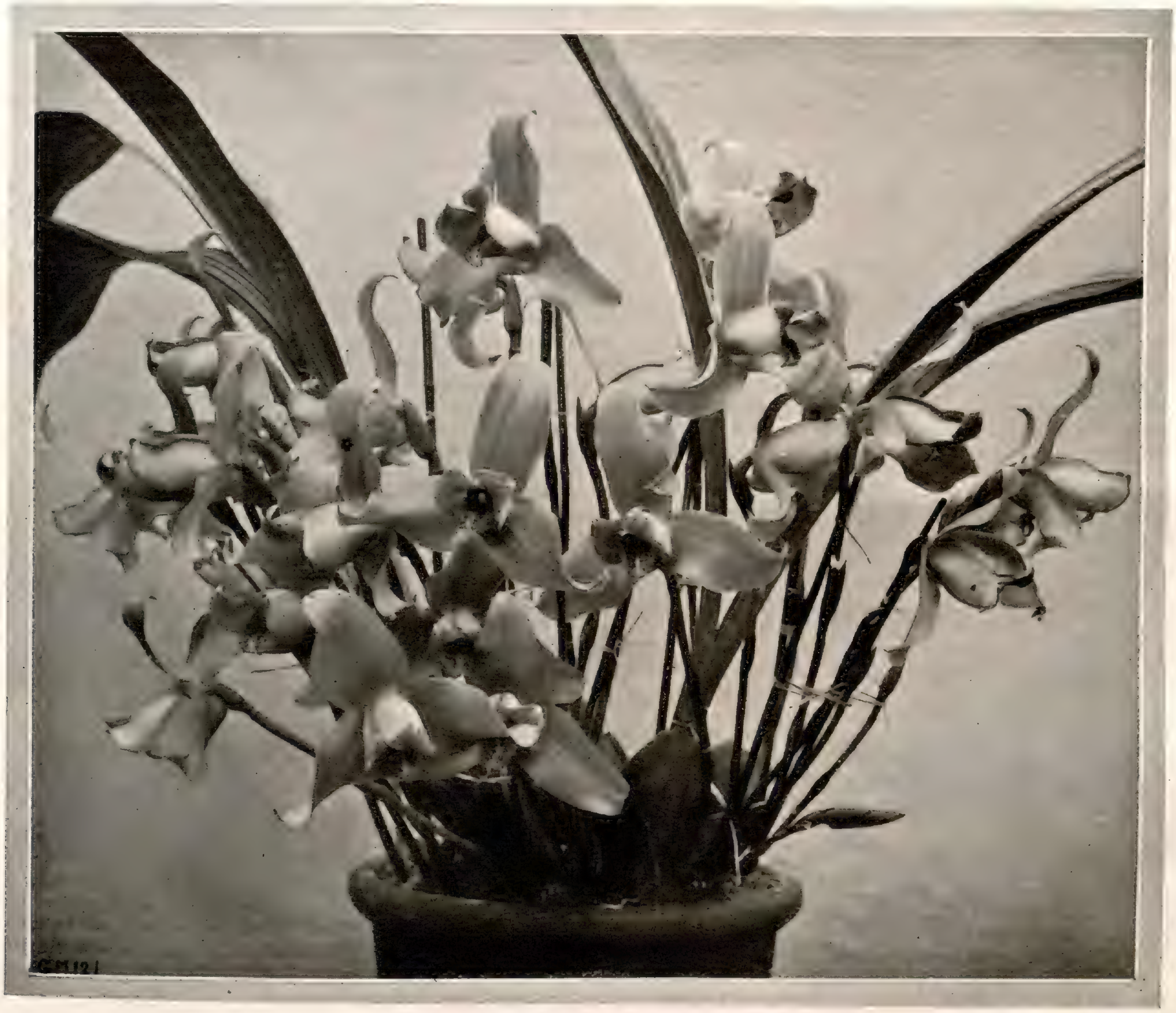
M. H.

## LYCASTE BALLIÆ.

Nearly nine years ago the writer, discussing L. Balliæ, stated, "Not only is it beautiful, but it is easily managed in an intermediate house, or the warm end of a greenhouse, and as it does not take up a great deal of space when its leaves fall, it is just the sort of plant for an amateur's limited collection." These remarks have been amply justified in recent years, and further evidence of the attractiveness and freedom of this hybrid lycaste was seen at a recent meeting of the Royal Horticultural Society, when Mr. Thorne, gardener to Mrs. Joicey, Sunningdale Park, Sunningdale, exhibited the specimen figured in the present issue. This fine example of skilful management carried thirty flowers, and was greatly admired by the many visitors interested in orchids who were present at the meeting.

Lycaste Balliæ is the result of crossing L. macrophylla with L. Skinneri, and as the cross has been made on several occasions, and as L. Skinneri shows so much variation, it follows that L. Balliæ varies somewhat in colour. This variation has led to the use of several names, such as L. Charlesworthi, L. Cappei, L. Mary Gratrix, and L. schœnbrunnensis. Generally the petals of L. Balliæ are reddish-rose, spotted with deep red; the sepals soft reddish-rose, and lip cream coloured, marked with blood-red.

C.



LYCASTE BALLIÆ.
A fine hybrid between L. macrophylla and L. Skinneri, with rose-red flowers. This specimen carried 30 flowers, and was exhibited by Mr. Thorne, gardener to Mrs. Joicey, Sunningdale Park, Sunningdale.

# When and How to Spray Fruit Trees and Reasons Why.

Year by year the spraying of fruit trees gets to be a more general operation, and it is not too much to say that in the future it will become part of the cultural routine, just the same as pruning and other work. That this is coming is indicated by the fact that the people who already take the most trouble over spraying and spend the most money on it are the commercial growers who are dependent on their fruit for a livelihood. They, in short, realise the necessity of the operation, as they are far too shrewd to spend time and money on it if there was no return; and when commercial growers lead the way, amateurs, farmers, and others who grow as a side line are sure to follow, though many of the latter may be slow to make a start.

I am afraid there are a good many people who spray fruit trees in a rule of thumb kind of way, because someone has told them that it is a good thing, but without having any clear ideas of their own as to why they do it or what they expect to get as the result. This sort of thing is wrong; it is like shooting without aiming, and to spray intelligently and successfully one should have some knowledge of the diseases and the life histories of the insect foes that the spraying is intended to check or eradicate. How can this knowledge be obtained? Partly from books, and fortunately there is plenty of cheap and reliable literature in the market that the practical grower can make use of, and the knowledge can partly be secured by observation. We talk about nature study in schools, but, bless me, we want more nature study out of schools and amongst adults. The ignorance that still prevails amongst practical growers in respect of insect life is appalling, and the habit of including all the common pests under the comprehensive and meaningless heading of "blight" is far too common. If you know the tactics of your enemy you are half way on the road towards defeating him; but there are many people who still look upon "blight" as being inevitable, and if they fight it at all they do so blindly, but without taking any trouble to find out what it really is, where it comes from, and how it multiplies.

What, then, are the objects of spraying? First, to cleanse; to keep the stems and branches of trees free from lichen growths and other harbours of insect life. Is this cleanliness necessary? Look into an old West Country orchard and see the branches of the trees simply fringed with lichen. Note the sickly nature of the growth, take stock of the fruit that is produced, and you have the answer to the question. Secondly, we spray with an object of preventing the development of insects from an egg to a living and feeding stage, and if a means could only be found for doing this quite effectually, a good deal of time and money might be saved. Thirdly, spraying is done to kill insects while they are actually engaged in their work of destruction, and this has to be done when preventive measures fail. Lastly, all the enemies of the fruit grower are not animate, but they take the form of fungoid diseases of a destructive nature, and these not infrequently present greater difficulties in eradication than living insects.

Quite a host of people are engaged in feeding practical growers with material for spraying. First, there is the scientist, who makes a study of insects and diseases, and suggests remedies; secondly, there are the manufacturing chemists who have flooded the market with insecticides and fungicides to save the grower trouble and make business for themselves; and thirdly there is the appliance maker, and to his credit it must be said of him that he has turned out spraying machines of a reliable character, from the big motor-driven plant to the knapsack which the operator carries on his back. But, in spite of these opposing forces, Nature protects her own, and, as insects and diseases continue to multiply, growers have to arm and protect their interests.

We talk of winter spraying and summer spraying, the former being done when trees are dormant, and the latter when they are in growth; but it would be rather more correct to speak of the former as spring spraying because it is mostly done in March, before growth commences, and its effects are naturally preventive and somewhat speculative, as it is carried out in anticipation of trouble.

## The Objects of Spring Spraying.

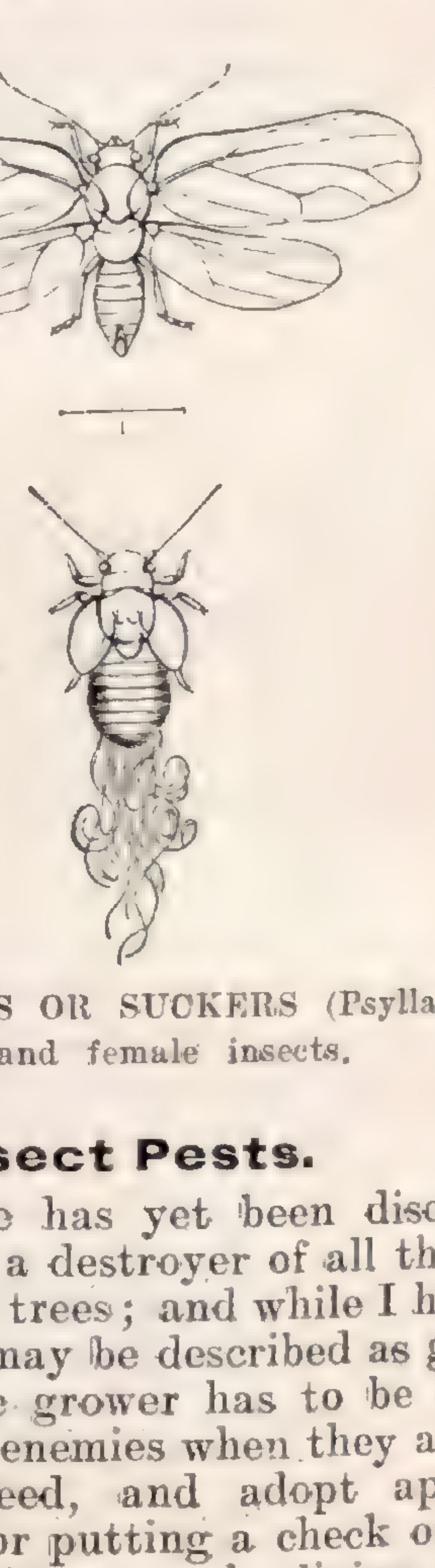
If the only object of March spraying was to cleanse trees, there would be no difficulty about it, for ever since caustic soda and the spraying machine took the place of lime and the old whitewash brush, there have been winter washes galore put on the market; and while they are all successes as cleansers, it is doubtful how much further they go, for most of us have seen trees spotlessly clean, and with shining bark, but victims nevertheless of caterpillars and other insect pests. Nevertheless, progress has been made in the matter of spring spraying, even at the expense of spraying to no purpose; a good many things have been found out, though there are still discoveries to be made, and we can spray this month with the assurance that we are not only cleaning trees, but doing something to prevent insect and fungoid troubles later on. Still, in the matter of spring spraying it is necessary to exercise faith.

## Spring Spraying with Lime.

After all, the use of lime on fruit trees is only a case of history repeating itself. Long before sprayers and insecticides were introduced, farmers used to paint the stems of their orchard trees ghostly white with lime wash, and from the tops of ladders they used to dust lime amongst the branches to kill lichen growths. And now we have come back to it again, first as a cleanser, and secondly, because though lime does not claim to destroy the eggs of insect pests, notably apple sucker, which is one of the worst of the tribe, it is claimed for it that any rate a coating of warm lime on the twigs and branches seals in the eggs of the above pests and a great proportion of them are prevented from hatching. Further, it has the same effect in preventing the development of fungus spores of the apple scab and the brown rot. There are a few rules, however, that should be observed in respect of lime spraying. First, it should be left as late as is consistent with safety, or the end of this month when the buds are swelling, but before they expand. Only the best white lime should be used, at the rate of one bushel to 25 gallons of water. Place the lumps of lime in a tub with enough water to cover them, and as the lime is slaked add the remainder of the water, stirring the mixture up to a cream. Thorough straining is very essential, or a lot of time will be lost through the clogging of the nozzle, and the lime wash should be applied while it is warm to all parts of the tree, and particularly the ends of the shoots. A still day is desirable for spraying, and the eyes and hands should be protected, the former with goggles and the latter by greasing.

## Lime and Sulphur Spray.

The addition of sulphur with lime is recommended in order to add to its efficiency as a fungicide to prevent scab, and this at a lower strength may also be used as a summer spray, but for the moment we have only to do with March spraying. The lime and sulphur wash is more difficult to prepare than when lime alone is used, but proprietary mixtures can be obtained if desired. The home-made preparation which is known as the Californian wash consists of 6lbs. quicklime and 3lbs. flowers of sulphur to 10 gallons of water. The lime and sulphur should "be put in a tub with enough water to cover them. When the lime is slaked and still hot, add more water, boil for forty-five minutes and make up the quantity to 10 gallons."



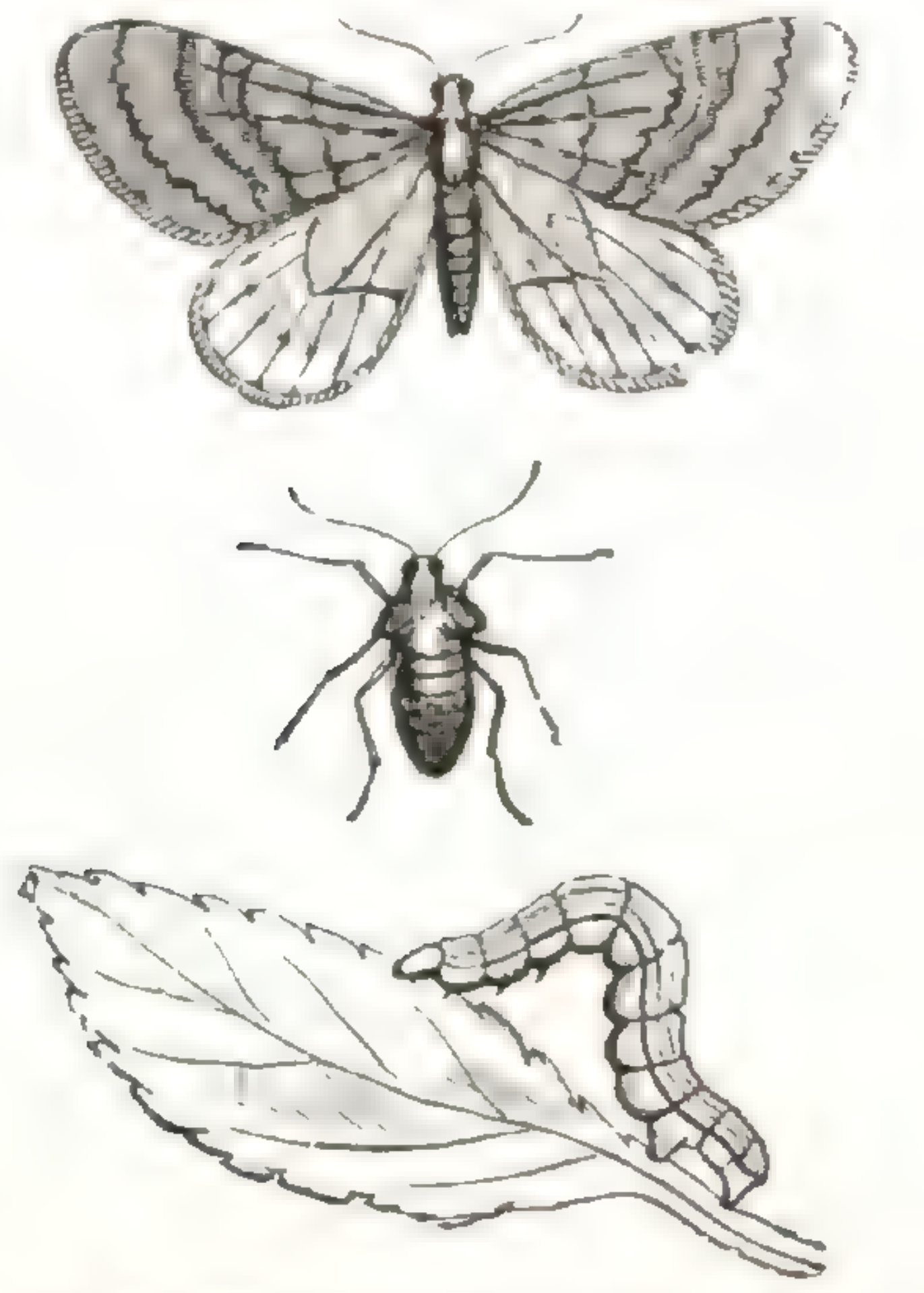
APPLE CHERMES OR SUCKERS (Psylla mali). Male and female insects.

## Insect Pests.

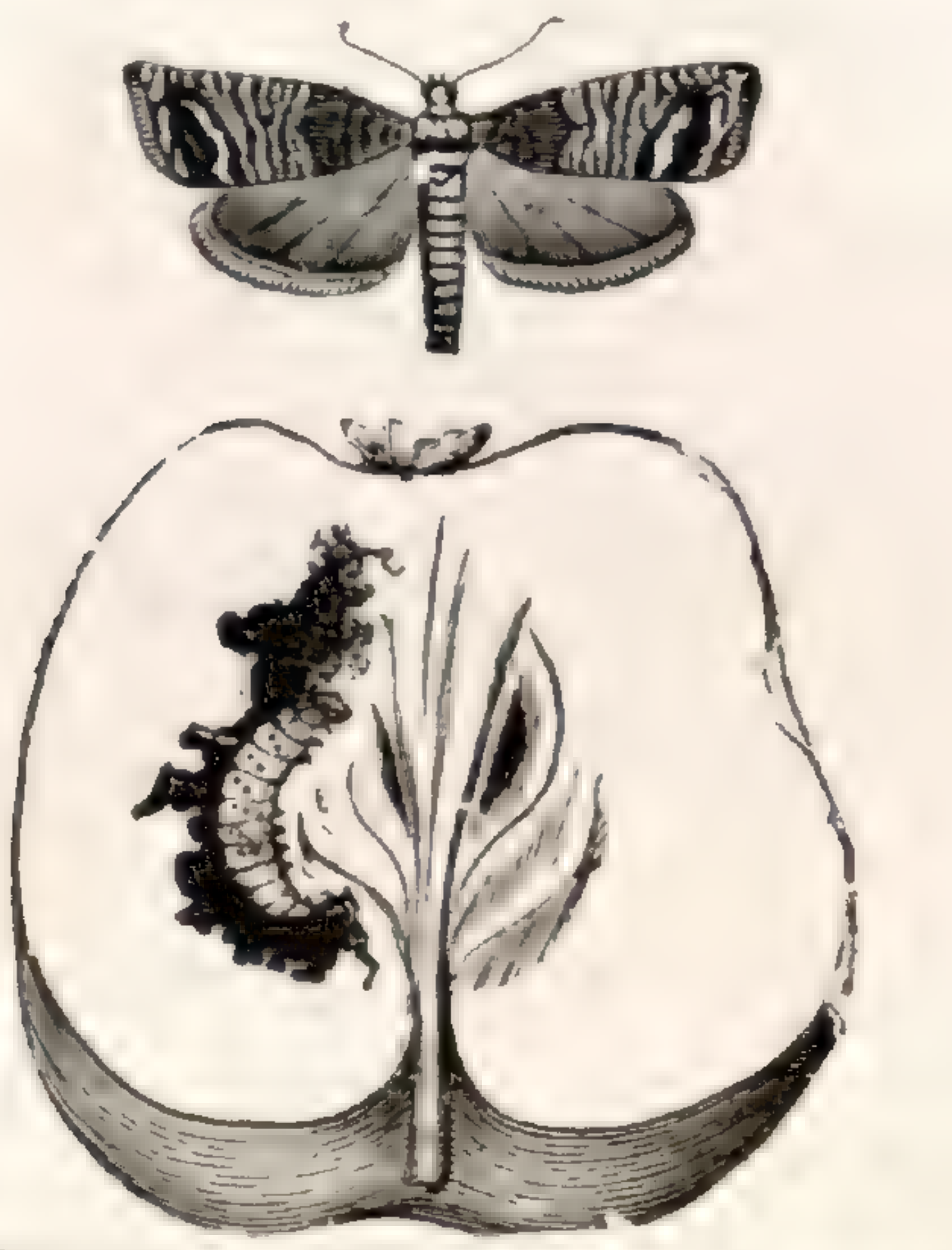
No insecticide has yet been discovered that will act as a destroyer of all the pests that affect fruit trees; and while I have referred to what may be described as general preventives, the grower has to be on the look-out for his enemies when they actually commence to feed, and adopt approved methods then for putting a check on their depredations. Amongst the living foes of fruit crops there are some which only appear occasionally and locally, but others which are widespread are the most injurious, and the majority of these are described below.

Apple Sucker.—Masses of sticky honeydew in the trusses of blossom always indicate the presence of this aphis-like pest, and it is questionable whether the apple crop has a worse enemy. The suckers (Psylla mali) hatch out in April from the eggs that are laid on the young shoots, and after they have done their evil work the blossoms turn brown, and the flower stems wither and fall off. March is the best time to spray for Psylla with the lime wash, which seals the eggs to the shoots and prevents the development of the insects. In May and June the pests may be seen in a winged state, and they commence their egg-laying in the autumn. Prevention is doubtless the last course to pursue with this pest, and when established in the flower trusses the only spray that can be used with safety is a nicotine solution.

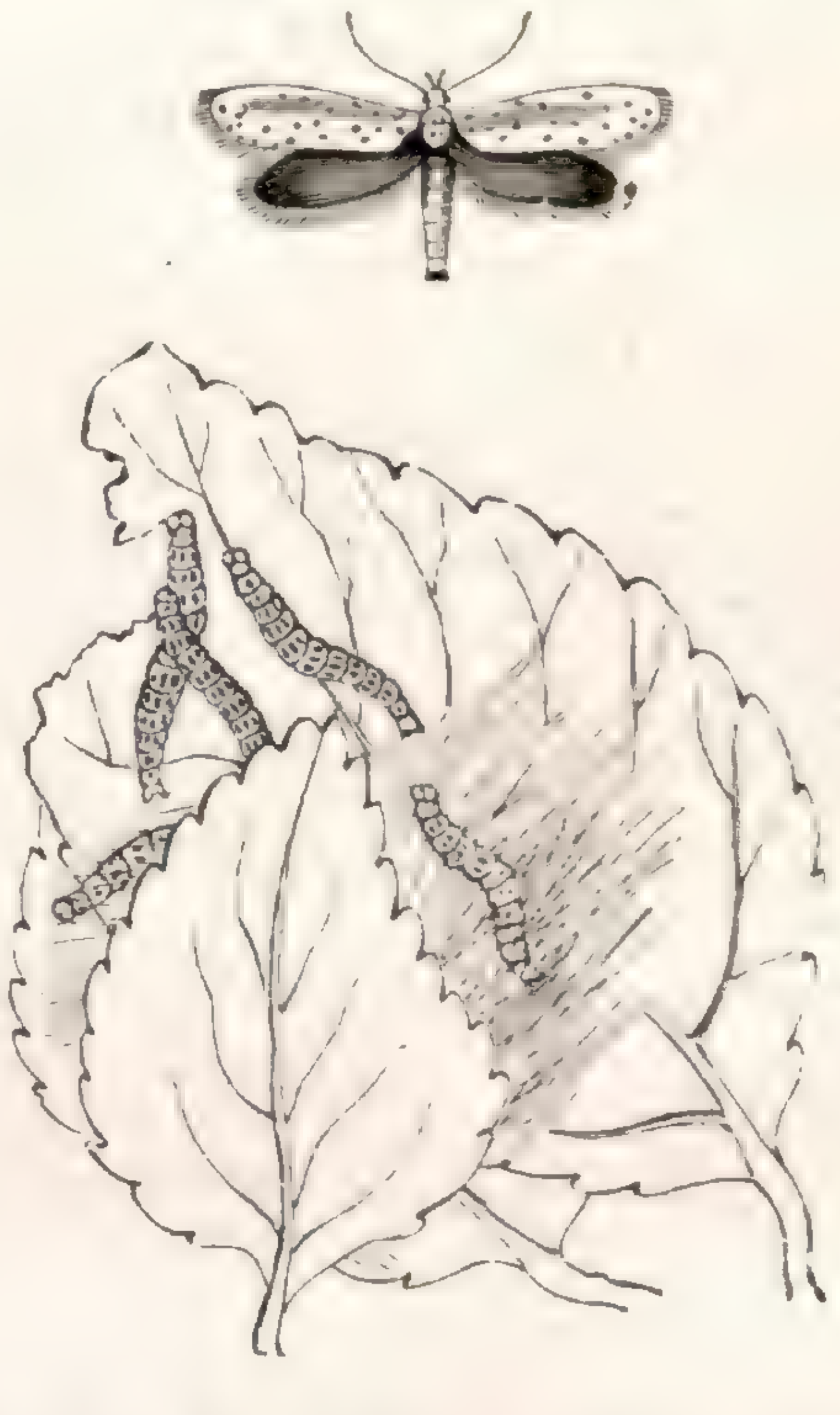
American Blight.—The woolly aphis is too well known to need description, and though it does not appear to injure an old tree it is fatal to a young one, as it stunts growth, causes ugly swellings to appear on the shoots, and is the forerunner of canker. The trouble with American blight is to reach the insects by means of a sprayer, as it secretes itself in holes and crevices, and when warm weather comes the hateful cotton wool-like substance appears on the trees. There is no single season for fighting American blight, which should be attacked at all times. Spring spraying does something to prevent it, but when the pest appears in the summer there is nothing better than touching the patches of blight with a small brush dipped in methylated spirit.


WINTER MOTH (Cheimatobia brumata).
Caterpillar, Winged Male, and Wingless Female.

Winter Moth Caterpillar.—Of all the pests that bite there is none so bad as this one. It is not particular as regards food, for it attacks apples, pears, and stone fruit, and in the Forest of Dean I have seen stretches of oak trees entirely defoliated by it. The damage done to the foliage of fruit trees by this pest is often serious. The first means of dealing with it is a preventive one, and consists of grease-banding trees early in October to catch the female moths as they ascend the trunks to lay eggs in the branches. Perhaps grease-banding is more general in that famous fruit-growing district in the Evesham Vale than anywhere, and every year thousands of moths are caught by this process. The young caterpillars begin to feed when they are hatched out soon after the trees break, and the best way of dealing with them then is to poison their food and so destroy them. Prepared arsenate of lead, used according to the directions supplied by insecticide manufacturers, is the handiest stuff to use, and the spraying should be done before the flowers open, as the caterpillars are only commencing to feed then, but another spraying may be necessary after the fruits have set. Before they reach maturity winter moth caterpillars may be destroyed by spraying with weak paraffin emulsion and also by several proprietary fruit tree washes.

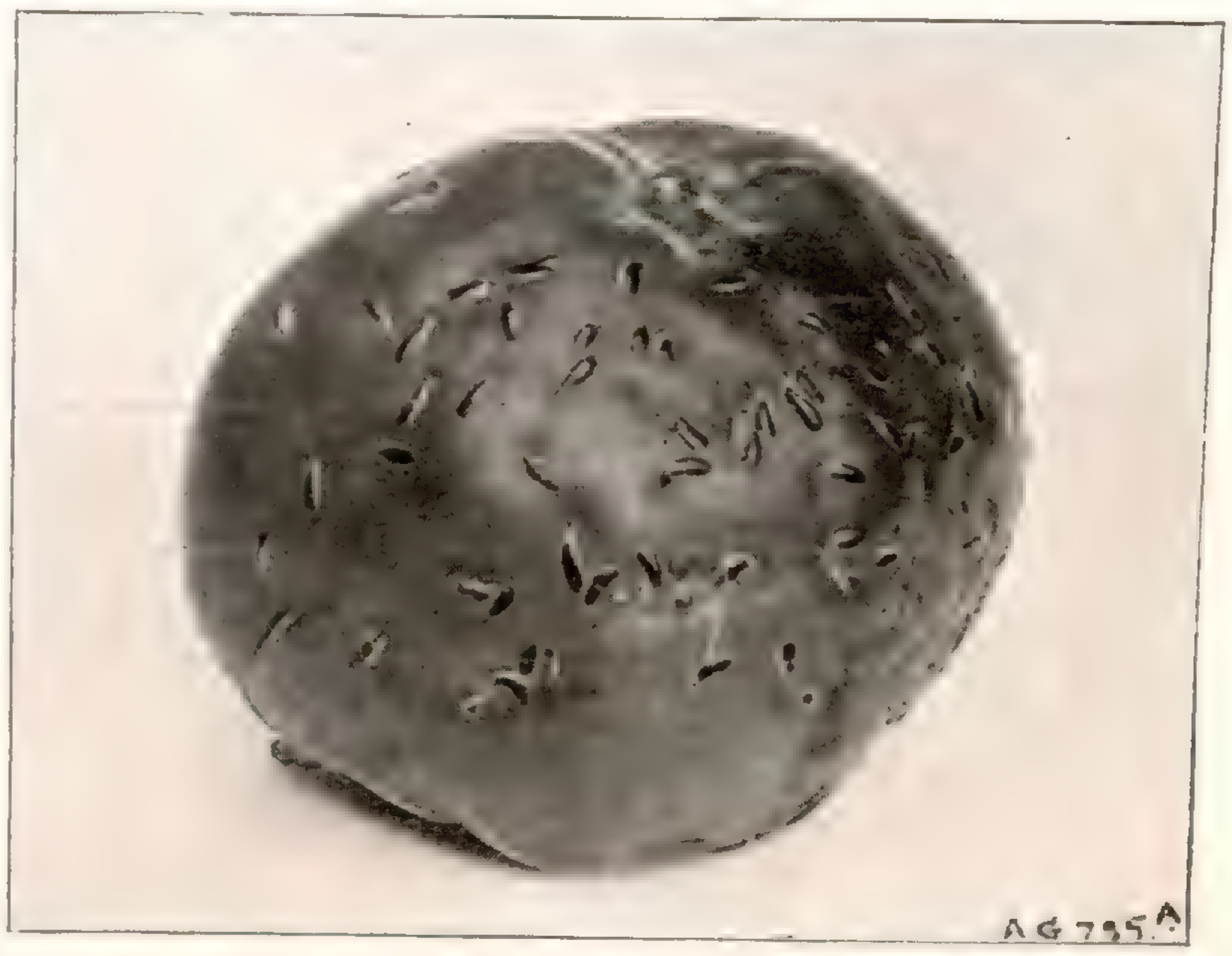

THE CODLIN MOTH (Carpocapsa pomonella).
Moth and Caterpillar.

Codlin Moth Caterpillar. — Most people are acquainted with those apples which fall prematurely ripe from the trees, and bored with the tell-tale holes that are the work of the caterpillar mentioned above. For this pest I believe a March spraying with lime or a caustic solution is good as a preventive, as the number of hiding-places of the enemy are reduced; but after all precautions have been taken, in some seasons the hateful maggots commence their work of boring the apples at the eyes, and they then eat their way to the core in the interior. When this happens, there is nothing like poison, and nothing so good as an arsenate of lead wash applied with a sprayer. The spraying should not be delayed until the calyx of the small fruit has closed in, but it should be done immediately the flower has set. The poisonous liquid then lodges in the eye of the fruit, and is fatal to the grubs located there. There is one further remedy, i.e., destroy grub-bored apples, which frequently have the maggots in them when they fall; and if growers would form a coalition to do this, the codlin moth population would be considerably reduced.


ONE OF THE TENT CATERPILLARS.
SMALL APPLE ERMINE MOTH (Hyponomeuta malivorella), Moth and Caterpillars.

Tent Caterpillars.—These are the larvæ of the Lackey and Ermine moths, which feed inside their web-like tents at the ends of shoots. The eggs of these moths may often be found when pruning in bands and patches on young shoots, protected by a coating of gum. A coating of lime-wash will often prevent the eggs from hatching, and last season I effectually put an end to both Lackey and Ermine caterpillar when they commenced feeding by syringing forcibly with McDougall's fruit tree wash.

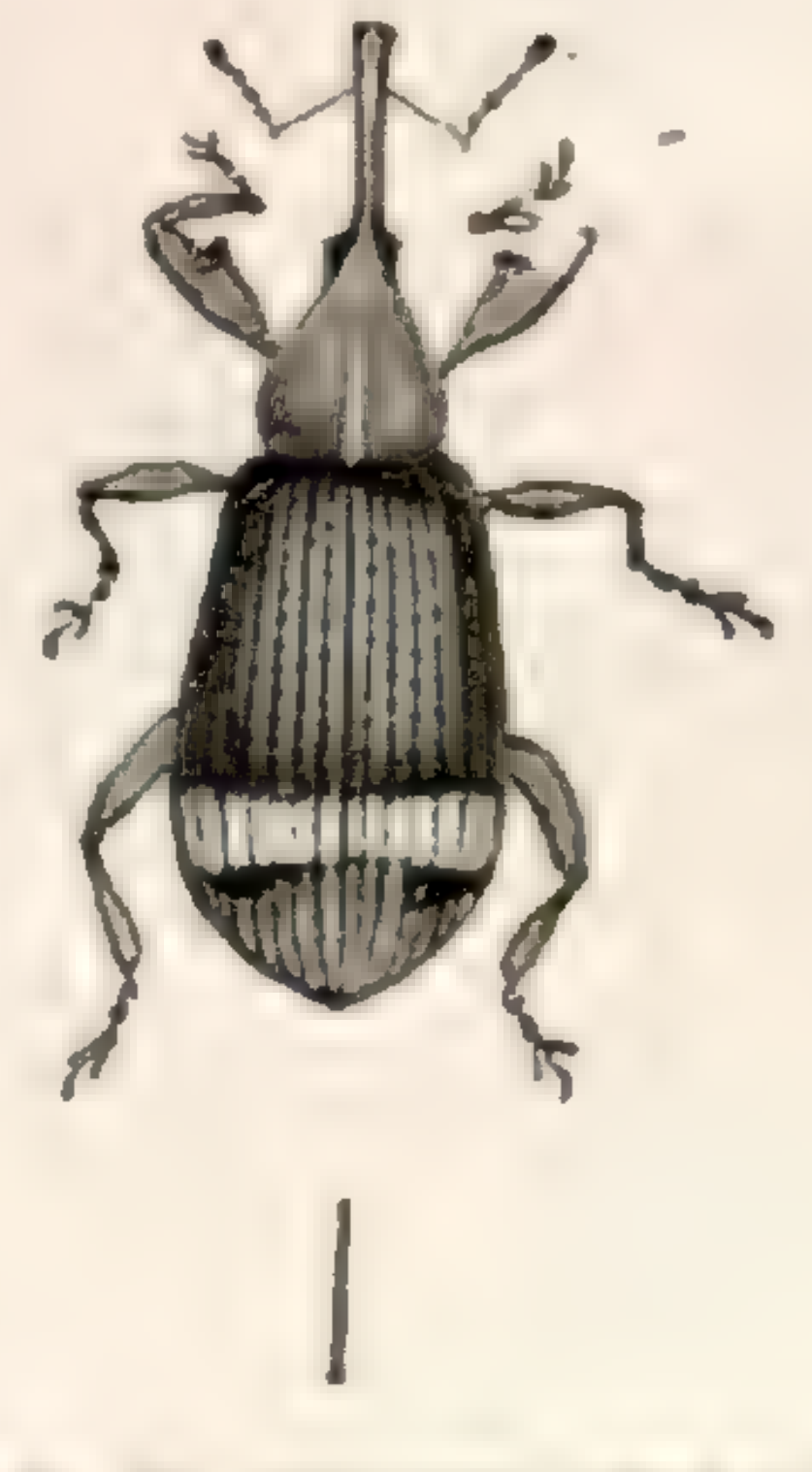
Mussel Scale.—Young apple trees may quickly suffer in health if the bark is allowed to become covered with mussel scale, and it is often found under and near the bands where standard trees are tied to the stakes. March is the best time to deal with it, either by means of lime spraying or one of the proprietary caustic solutions that are sold for winter spraying.



MUSSEL SCALE (Lepidosaphes ulmi) ON APPLE.

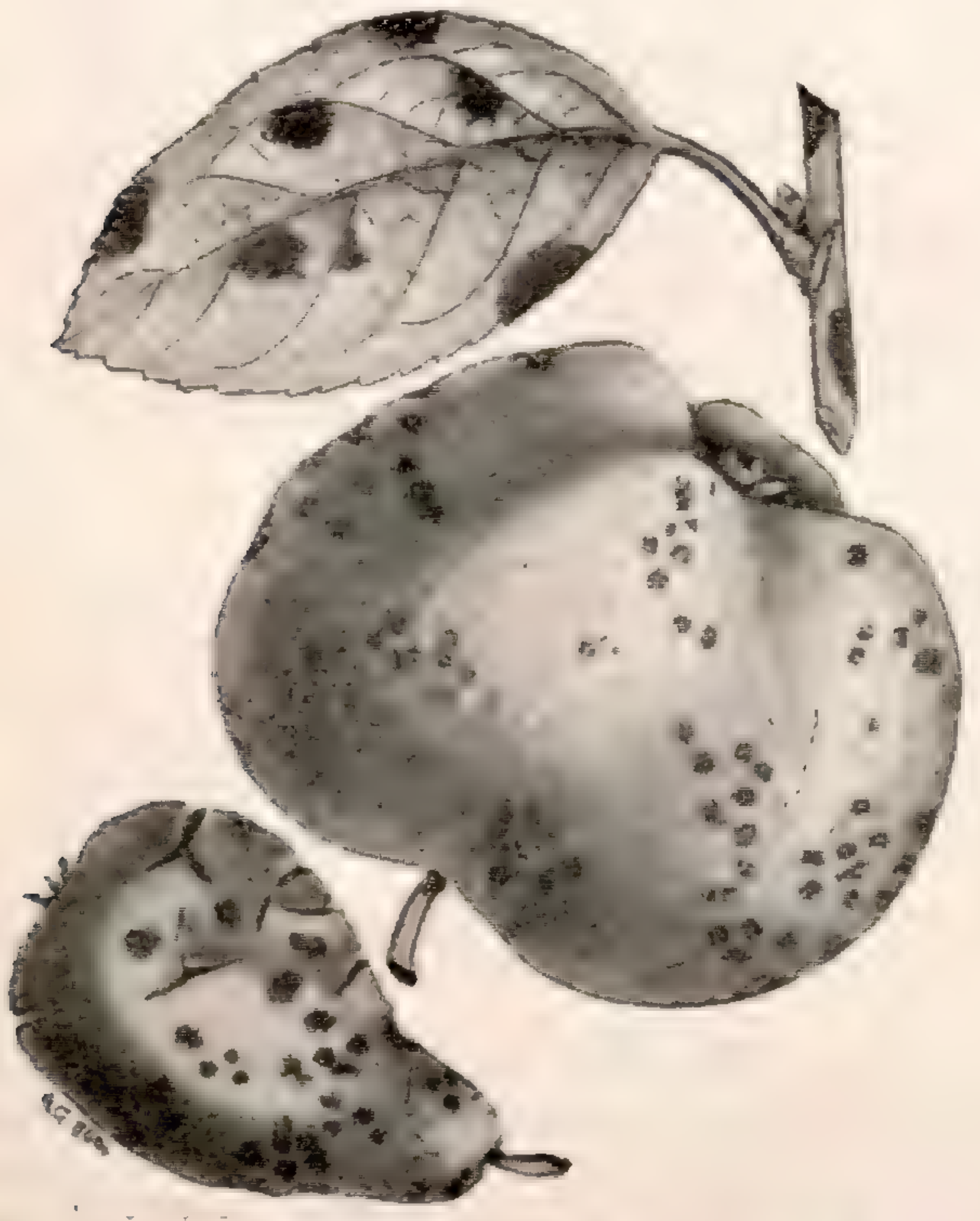
Apple Blossom Weevil.—Every year this pest takes its toll of the apple crop, and if the flowers the petals of which turn brown and fail to expand are examined, the white grub of the weevil will be found inside. We have yet to find a real remedy for this pest; but lime spraying in March undoubtedly does some good, first by sealing up many of the harbouring places of the pest, and secondly, by retarding somewhat the opening of the buds.

Aphis. — Noted for their marvellous powers of multiplication, the different members of this family, such as the apple aphis, plum aphis, and cherry aphis, are common enemies of the fruit grower. In dealing with aphis there should be one rule, i.e., deal promptly, because a score yesterday may mean a thousand to-morrow. In the case of aphis on fruit trees, lime spraying in March is beneficial, as it stops some of the species from hatching, and afterwards nicotine wash, the well-known soft soap and quassia, not to mention a number of proprietary washes, will destroy aphis, but the spraying should not be neglected until the trees are sticky masses of honeydew and filth.


APPLE BLOSSOM WEEVIL
(Anthonomus pomorum).
(Much magnified.)

## Fruit Diseases and Fungicides.

In addition to being a fighter of insect foes, the fruit grower in these days has to be something of a doctor as well, for fruit trees are liable to diseases and ailments which either affect them constitutionally or reduce the commercial value of the crops. These diseases are a varied quantity, and while some may be prevented or checked, in the case of others no effective remedies are as yet forthcoming, and scientists are in the same position in respect of them as medical men are in reference to several of the diseases to which human flesh is heir. Further, there is a similarity between the two, and just as a healthy man is more proof against an epidemic than a sickly one, so does a dirty and weakly fruit tree fall a readier prey to disease sooner than a vigorous one. The obvious lesson from this is—keep fruit trees clean and in sound health by good cultivation, use preventive measures so far as possible to ward off diseases, and if remedies are necessary, apply them promptly before much damage is done. Spring spraying is not a cure for diseases, but in some cases a means of prevention, and several instances of this are described below.



APPLE AND PEAR SCAB DISEASE.
As illustrated by the Board of Agriculture; the spots on the apple and leaf are caused by Fusicladium dendriticum, and those on the pear by F. pirinum.

### Apple Canker.

The real cause of canker is unknown, and it appears under many different circumstances, some varieties, like Lord Suffield and Ribston Pippin, are more liable to it than others, and frequently it does its worst in injuring trees where the conditions of subsoil are unfavourable to apples. When canker gets all round a branch there is no hope for it, and the limb may as well be severed, but in the case of wounds, particularly on young trees, the fungus may be checked by cutting the cankered part away to clean wood and painting with Stockholm tar. This is an old remedy, and a better one, to my mind, is to secure a small bottle of Lysol from a chemist, dilute it to one part of Lysol to three parts of water, and apply it to the cankered parts with a stiff paint brush. A few years ago I treated a number of young standard trees with this remedy that were cankered at the point of working, and the results were so satisfactory that I have every confidence in recommending it.

### Apple and Pear Scab.

Most of us are painfully acquainted with the apple scab (Fusicladium dendriticum) and its relative Fusicladium pirinum, which attacks pears, and is perhaps the worst trouble of the two, because whereas the former is responsible for corky scabs on the fruit, the latter makes pears crack, and prevents their development. In the bright sunny summer of last year both apples and pears came very clean, and there was little scab, which leads one to the conclusion that climatic conditions are largely responsible for it, but in any average season it is a common cause of trouble. Spraying in the spring for scab must be viewed in the light of a preventive measure, and lime-sulphur wash is recommended. Two years ago I had evidence of the value of ordinary limewash, applied warm, being good for scab, and this was in connection with some Wellington apples, which were always so scabby as to be unmarketable, but the season following the spraying the fruit was wonderfully clean and free from scab. Lime-sulphur wash may also be applied in the summer, and some prefer it to Bordeaux mixture. A recipe for making a self-boiled lime-sulphur spray was given in the "Journal" of the Royal Horticultural Society, March, 1909, and is as follows: Flowers of sulphur, 10lb.; quicklime, 15lb.; water, 50 gallons. The lime is placed in a wooden vessel, and a few gallons of boiling water poured over it. The sulphur is then added with a few more gallons of hot water. The mixture should be covered with a cloth, and the solution boiled by the heat of the slaking lime for twenty minutes. When boiling has ceased the remainder of the water to make 50 gallons is added, and in straining care should be taken that all the sulphur is worked through. Bordeaux mixture is also recommended for scab, and the Board of Agriculture formula is a half-strength solution formed of 6lb. copper sulphate and 3lb. quicklime to 100 gallons of water. Spraying should be commenced as soon as the fungus appears on the foliage, and be continued, if necessary, at intervals until the apples are the size of a nut. Still another preventive remedy is to spray trees on which scab has been prevalent, just before the buds commence to swell, with a solution of sulphate of copper, at the rate of 1lb. of sulphate to 75 gallons of water.

### Apple Mildew.

The development of trees is sometimes checked in the spring and early summer by the powdery mould of the above mildew, and for this the same remedies as suggested for the scab are applicable. If it is only a case of a few shoots being affected by the mildew, and this is by no means infrequent, the best plan is to cut off the twigs and burn them.

### Brown Rot.

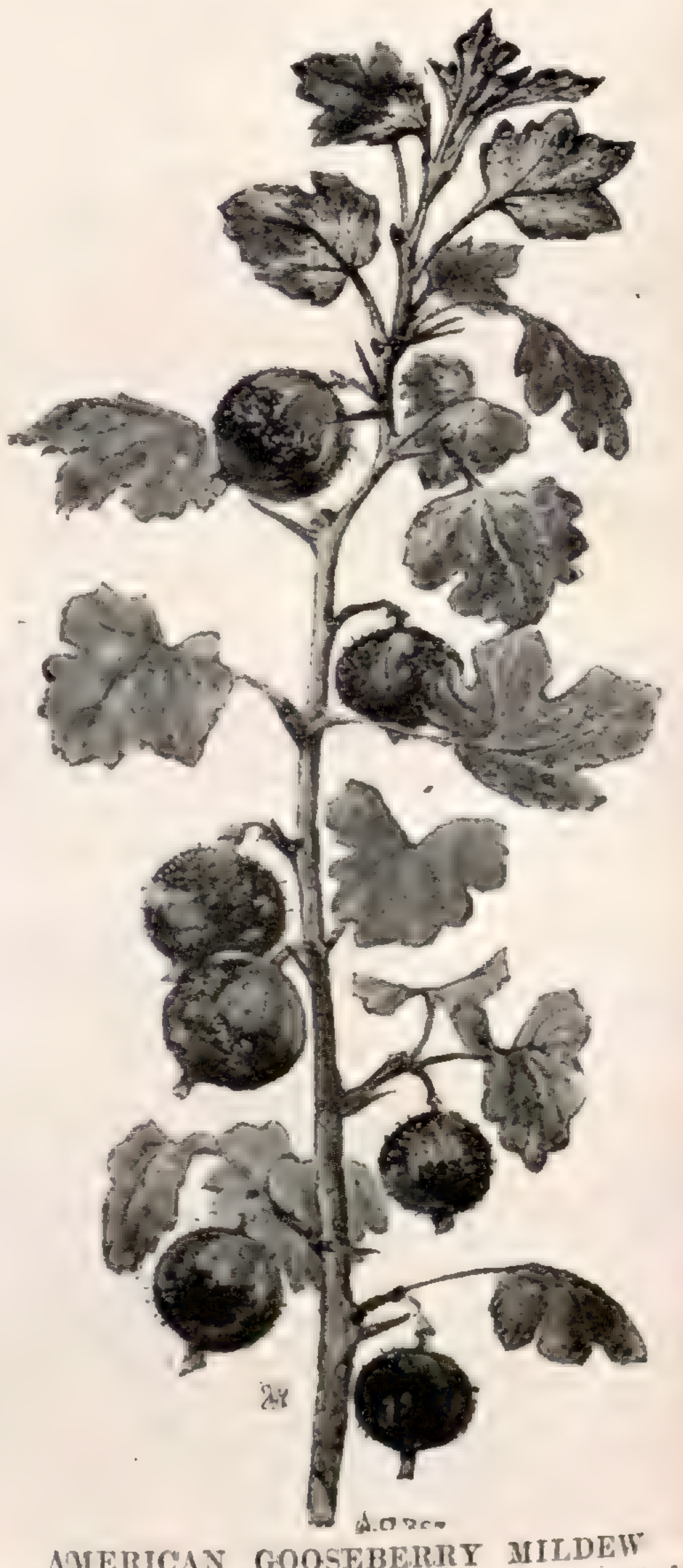
This fungus (Sclerotinia fructigena) not only affects apples and pears, but stone fruits as well, and it appears on the foliage before attacking the fruit. The effect of the disease is that the fruits become hard and remain on the trees in a mummified state, even to the next season. These specimens are holders of the fungus germs, and should be picked off and burnt, but in other respects the remedies for brown rot are the same as for apple scab.

### Peach Leaf Curl.

This disease (Exoascus deformans), also known as the "leaf blister," is the bane of all gardeners who grow peaches and nectarines out of doors, and it is so well known that no description of it is necessary. There is no doubt whatever that climatic conditions have a great influence on leaf curl, and when these are particularly favourable for the disease it is doubtful whether there is any known remedy that will effectually prevent or check it. Cold, damp weather in the spring, with biting winds or quick changes of atmosphere, are very favourable for the disease, which gives much less trouble if the conditions are genial at the critical period. Last spring leaf blister was very prevalent, and dozens of trees have not recovered from the effects of it. Lime and sulphur sprays and Bordeaux mixture are both effective as preventives if applied when the buds first show signs of swelling, but before the leaf buds expand, and the latter solution is then used at the strength of 10lb. copper sulphate, 5lb. of lime, and 50 gallons of water, the copper sulphate being dissolved in one wooden vessel, and the lime slaked in another before they are brought together. In America the self-boiled lime and sulphur wash is also used as a check to the disease when the trees are in leaf, without injury to the latter.

### American Gooseberry Mildew.

This notable disease, which is costing the country so much money in attempts to eradicate it, has been illustrated and described so many times that most people must be acquainted with its symptoms, and if one is unfortunate enough to have bushes affected with the mildew the best thing to do is to obey the law by reporting the case to the Board of Agriculture or a local inspector, and instructions will be given as to the compulsory pruning and spraying of the bushes. American Gooseberry Mildew caused a great scare when it was first "discovered" several years ago, and the time appears to have arrived when growers might reasonably ask whether it is such a serious thing as it was at first declared to be, and also what effect the compulsory measures have had in eradicating the disease.



AMERICAN GOOSEBERRY MILDEW
(Sphærotheca mors-uvæ). Diseased leaves and fruits as illustrated by the Irish Board of Agriculture.

### Silver Leaf.

It is unfortunate that no effective remedy has been discovered for this disease (Stereum purpureum), which is causing wholesale loss of plum trees, and the variety that is worst affected is the fine old Victoria, though others of a soft-wooded nature are liable to infection. In some cases, when a few branches are affected, the disease may be checked by cutting these off, but badly affected trees should be burnt, and when silver leaf once appears the attack generally ends in the death of the victim. Speaking of plum trees, I am reminded that a good many trees die annually through being attacked by the shot-borer (Xyleborus dispar), and growers are often at a loss to know what is wrong. In cases of bad attacks there is no remedy, but the trouble may be prevented either by lime spraying the stems and lower branches two or three times annually, or smearing with some greasy mixture that will make the bark distasteful to the beetles.

In conclusion, it may be added that there are numerous insects and some diseases besides those mentioned in this article which fruit growers have to wage war against, but the worst and most destructive have been dealt with, with the exception of the Black Currant Gall Mite, and the Pear-Gnat midge, for both of which a really reliable remedy is very much wanted. Taken collectively they are a formidable host, these enemies of the fruit-grower, and the trouble is that while one anxious man tries his best to eradicate common foes by spraying, and so forth, his neighbour is just as careless about it, and breeds the very pests that the other is trying to destroy. In consequence of this the keen fighter of fruit pests, both insects and diseases, is hampered by the apathy of his neighbour, and no permanent victory can ever be possible as long as there is no spirit of either coalition or co-operation existing amongst people who grow fruit, and whose interests are identical.

G. H. H.

## LIBONIA FLORIBUNDI.

This grand old autumn-flowering plant was, some years ago, a general favourite, and found a very prominent place in our conservatories during the autumn and early winter months. The scarlet and yellow flowers have a warm, bright appearance at a season when such flowers are needed, but scarce.

Autumn-rooted plants require very careful treatment from now onwards, else they will lose the bottom leaves, and leave the stems bare. The temperature must be kept even, the potting carefully done, and the foliage freed from insects, especially red spider. Spring-rooted plants may not grow quite as large, but they will be beautiful compact specimens, and most useful for filling vases, as well as for the warm greenhouse and conservatory stage.

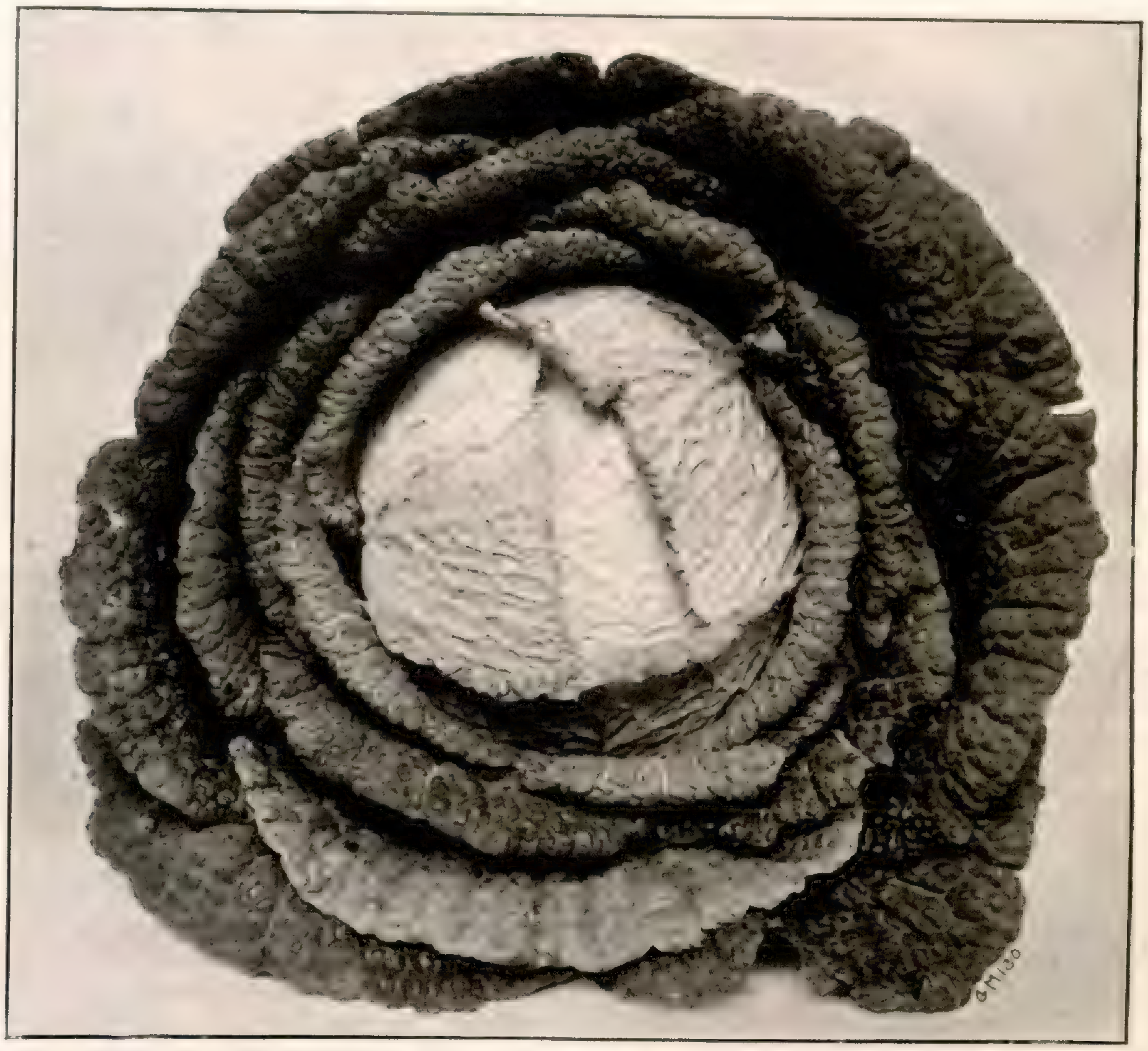
Inexperienced cultivators should insert cuttings in a light compost under a handlight, or in a propagating frame. Directly they have rooted pot them singly in small 60's, and use a mixture of fibrous loam and peat in equal quantities, adding freely some sweet leaf-soil and coarse sand. At each of the subsequent repottings a similar compost may be used, but in a rougher condition. The leading shoot should be pinched when it is five inches high, then side shoots will grow freely, and lay the foundation of bushy plants. From June 10 to the first or second week in September keep the plants in a frame.

G. B.

## SAVOYS.

The crinkly-leaved cabbages so popularly known as savoys are among the most serviceable of winter greenstuffs, and they are extensively cultivated both in private and market gardens. One mistake frequently made is that of sowing the seeds too early and planting the seedlings on very rich land. The result of such practice is that the savoy heads become excessively large, and if sharp frosts follow wet weather there is wholesale bursting, and so a large amount of useful material is wasted. Good soil is essential, but savoys should not be planted on excessively rich land.

Instead of sowing savoy seeds in March, as is so frequently done, it is far better to wait until the first week in April, and then sow in the same manner as for cabbages, sprouting broccoli, kales, etc. Another sowing towards the end of April is also desirable where a fairly large supply has to be maintained. Planting should take place as soon as the seedlings are fit to transplant, and a site that has been occupied by peas will be an admirable one. Whatever crops the savoys have to follow should be merely cleared off, the land being cleaned at the same time; but no digging should be done, as firm soil is quite half the battle in securing hardy plants and good, useful heads. It may be necessary to use an iron bar to bore the holes with for the reception of the plants, and if this is the case it is all so much to the good. Water the plants, and make them firm in the holes, and then little beyond surface hoeing will be needed to ensure a moderate and continuous growth.



DWARF GREEN CURLED SAVOY.

Good varieties are Dwarf Green Curled, Perfection, the small Tom Thumb, Early Dwarf Ulm, and Drumhead, the latter a very large variety, and on that account grown extensively for market where size is important.

## GAZANIAS IN THE GARDEN.

These richly-coloured flowers are not grown in the flower garden as extensively as they were 25 or 30 years ago. I do not know of any other flower that can replace Gazania rigens as regards the colour. The rich, orange-coloured petals, with the black eye or centre, combine to make a flower of great distinction. It has always been a great favourite of mine, and I have grown it extensively and in various positions.

To secure the very best effect, the cultivator should avoid the use of a very rich soil, as a too luxuriant plant does not flower freely. Furthermore, when grown in large masses, or forming broad edgings to beds, the general effect is much more pleasing than that obtained from thin planting.

Cuttings may be rooted in autumn and in spring. The autumn-struck plants are the most satisfactory as regards freedom of flowering. Spring-struck plants flower more sparsely unless the roots are restricted considerably. Some old mortar rubble should be mixed with the compost in which the plants are grown, both in pots, boxes, and borders. After they are well established a rather dry condition of the soil induces freer flowering, but, of course, the plants must not be allowed to suffer in this way, and when dry spells of weather come watering can be nicely regulated. For planting on dry banks, hot, sunny borders, and for furnishing baskets, boxes, and vases, gazanias are very suitable. There are several very beautiful varieties, but I think splendens, with its rich orange, black and white flowers, is the best for the garden.

Geo. Garner.

DAHLIAS TO PERFECTION.—A thorough guide to the successful culture of these popular flowers is "Dahlias and their Cultivation," by J. B. Wroe, price 1s. net, by post 1s. 2d., bound in cloth 1s. 6d., by post, 1s. 8d., from W. H. and L. Collingridge, 148, Aldersgate Street, London.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CALANTHES are among our most useful winter-flowering orchids. They will now have started into growth, and the earlier flowering sorts will need repotting. On no account should the plants ever be allowed to remain a second year in the same compost; for, however good it may now appear, it will become in a most unsuitable condition long before the plants have finished their season's growth. When the new growths are a few inches high, and about to push forth new roots, is the best time to repot. Turn the plants carefully out of their pots, and shake away the exhausted soil, cutting back the old roots to about an inch in length; these root stumps will assist in keeping the pseudo-bulbs in position, until the plants are established in the new compost. Previous to repotting, carefully examine and clean each pseudo-bulb. Large or small pots may be employed according to the requirements of the plants, and the uses they are to be put to when in bloom. The strongest bulbs should be potted up separately in five inch and six-inch pots. The pots should be clean, and about half-filled with clean crocks covered with sphagnum moss. The compost should consist of peat and fibrous loam in equal parts, from which all the fine particles have been taken; add some sphagnum moss and dried cow manure. Press the compost moderately firm around the base of the pseudo-bulbs, and fill to within three-quarters of an inch of the rim of the pot, thus leaving sufficient space for watering and top-dressing. Warm the compost before use. After potting stand the plants in a light position in a house where the temperature ranges from 65 to 70 degrees by night, with a rise of 10 to 20 degrees by day, and give a light shading during the hottest part of the day. No water should be given until the roots are seen to be pushing into the new compost, but a moist, warm, genial atmosphere is necessary during the whole of the time the plants are making their growth. When each plant becomes firmly established in its new compost, and is nicely rooted, an abundance of water may be afforded, with an occasional watering with weak liquid manure. The calanthes now in bloom, such as C. Regnieri, C. Sanderiana, and others, will also require repotting after the spikes are cut and growth recommences

PROPAGATION. — These deciduous calanthes may be easily propagated by taking off the old back-bulbs and the tops of the new ones, and placing them close together in shallow pans upon a layer of sphagnum moss in a warm, moist position, in the hottest house; they will soon push forth growth, and may be potted up and treated as previously advised. — J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

MYRSIPHYLLUMS. — Trails of these twining plants are much in request for table and other floral decorations all the year round. Last year's plants, if shaken out and repotted now into 7in. pots and grown in heat, will quickly throw up their stout basal shoots, when they may be placed in the position they are to occupy against a wall or partition in a warm house for supplying trails for early cutting. To form a succession to these, seeds should be sown, and when the seedlings are two or three inches in height put two or three together in thumb pots; given good cultivation these will soon be ready for 48's, in which size pot they may remain for one season. When grown in pots the trails are more compact than when grown in a bed or border; therefore are better adapted for the use to which they are generally put. Fine green twine should be used for the trails to entwine themselves upon, as then, when cut, there is no need to withdraw the string before use. As the trails are cut, place a new string in position to receive other growths, which are generally abundant. The two best to grow are M. asparagoides and M. myrtifolia. When well established give frequent applications of liquid manure

TABLE PLANTS.—The most promising of the young crotons, dracænas, pandanus, Panax Victoria, Abutilon Sawitzi, and the like, that are required for table and other decorations in the dwelling, should be selected at an early date, and given special treatment, to ensure symmetrical specimens, in 48-sized pots as soon as possible. These should not be crowded among the general collection of stove subjects.

PALMS.—In most gardens these indispensable plants are much used in the dwelling-house, and often they receive somewhat rough treatment. Now is a good time to overhaul the stock, repotting those that require a shift and top-dressing others. For the most robust growers use a compost of three parts sand loam to one of leaf-soil, adding a little decayed manure, sharp sand, and sifted mortar rubble. Pot firmly, and leave plenty of room for applying copious waterings. The less robust varieties should be potted in a rather lighter soil, adding plenty of finely broken crocks and charcoal to keep it open. A few small plants should be purchased at this season to replace worn-out or overgrown specimens.—H. T. Martin, Warren Wood Gardens.

## THE FLOWER GARDEN.

ROSES.—It is now time to commence the pruning and training of climbing roses, and in doing this it is well to remove any dead growths first by cutting them right out from the base. The remaining shoots will need careful thinning, as nothing is gained by training them thickly, but the older branches that are showing signs of weakness should be cut away, and young growths trained in their places. Endeavour to arrange the growths so as to cover the amount of space at disposal evenly, and when dealing with very strong shoots it is advisable to shorten them back to about one-third their length. If it is desirable to retain the branches full length of any particular variety, they can be induced to break into growth and flower all along their stems by bending them over and fastening them to pegs in the ground, afterwards securing them in their permanent places. Tea roses that have been protected during the winter should now have their protecting material removed, but it is well to defer pruning them until a little later. Hybrid perpetuals can be dealt with at once, and it is well to cut back newly planted roses to within about three buds of the base.

GLADIOLI AND MONTBRETIAS.—The present is a good time to plant these, and whether they are grown in the mixed flower borders or in beds by themselves, thorough cultivation of the soil is necessary if they are to be a success. They look well in the mixed border planted in groups of one colour. Cover them with four inches of soil, and have a little leaf-soil placed around the corms when the natural soil is stiff and heavy. Among the montbretias Prometheus is an especially handsome variety, and Lady Hamilton, George Davison, Germania, Westwick, and Lord Nelson are some of the best.

SPRING FLOWERS.—The recent mild weather has brought on the spring flowers rapidly, and various subjects are already quite gay. Stir the surface soil in flower beds with the Dutch hoe, and keep everything smart and tidy. Snowdrops and aconites have been rather short-lived this year, but the lovely chionodoxas and the crocuses are very bright. Anemone palsatilla is flowering gaily, and Erica carnea is a mass of bloom, while Daphne Blagyana is already flowering profusely, and forms an object of especial beauty in the rock garden.

TUBEROUS BEGONIAS.—It is now time to start these into growth, and a good plan is to place the tubers in boxes half-filled with leaf-soil in a fairly warm house until growth is active, when they can be put separately into small pots, using a light open compost. When they are first started little moisture is required except that provided by the syringe. When they have become established in the pots remove them to a cool house or frame where they can gradually be hardened off.

ANNUALS.—To produce sturdy plants most kinds should be sown now in boxes of fine soil or in a cold frame. When they are large enough prick them out to obtain strong plants for planting in the flowering quarters. The kinds recently enumerated in the Gardeners' Magazine are all recommended for garden adornment. The middle of April is soon enough to sow in the open ground.—J. Gardner, Batsford Park Gardens.

## FRUITS UNDER GLASS.

MELONS.—When the leading growths of the earliest plants have attained a length of three feet, the points should be pinched out to induce the development of fruiting shoots; stop the laterals which show fruit at the second leaf beyond the fruit, and all unfruitful laterals should be pinched back to two or three leaves. We do not allow any laterals to grow below the trellis; these are rubbed off as soon as they appear, but every care is taken of the leaves, from the soil upwards, to accelerate the swelling of the stem in proportion to the quantity of leaves and laterals it has to sustain upon the trellis. We adopt the system of pollinating the flowers as soon as open. The atmosphere of the house is kept fairly dry during the flowering period, air being admitted on all favourable occasions; syringing is withheld for four or five days, or even a week, and each flower is pollinated during that period. This method does not, of course, allow all the fruits to be "set" at the same time, but we have never found that it materially affects the swelling of the young fruits if strong healthy plants are maintained. In fact, we find under this system that the ripening of the fruits is prolonged, which is of the utmost importance where a constant supply of melons is required.

PINE-APPLES.—Endeavour to shift the plants that require it as soon as possible into their fruiting pots, using a compost as recommended in a previous calendar. The soil must be thoroughly warmed before being used, and rammed firmly around the sides of the pot, and well up around the collars of the plants; the compost should be in a fairly moist condition when used, as this will obviate the necessity of watering for several days. After potting, plunge the pots up to their rims in the fermenting material, close the ventilators, and syringe the plants early in the afternoon to induce the roots to push into the new soil. Maintain an atmospheric temperature of 80 to 85 degrees, and admit air when the weather permits. With the lengthening of the days and more sunshine, it will be necessary to examine fruiting plants two or three times a week, and those requiring water should be given a sufficient quantity of tepid water to thoroughly soak the soil; applications of liquid manure or some chemical fertiliser should be given once a week.

SECOND EARLY VINES.—Any vines that have been tied down to ensure an even break should be returned to the trellis. When this is accomplished, commence to disbud directly it can be ascertained which are the best growths to select. Nothing is gained by allowing the shoots to remain crowded before proceeding with this operation. Increase the night temperature to 65 degrees, with a temperature of 70 to 75 degrees in the day time, allowing a rise of 10 degrees with sun-heat. Administer water to the borders if necessary, and create a moist, humid atmosphere by damping down the paths and walls several times a day, spray the rods lightly, and close the house early in the afternoon to nurse the sun heat as much as possible. Do not allow the hot-water pipes to become overheated at any time, or this will probably cause the foliage to become infested with red spider.—Henry R. Farmer, Cardiff Castle Gardens.

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# EXHIBITIONS AND MEETINGS.

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## National Dahlia Society.

This society held a conference at Carr's Restaurant, Strand, W.C., on Friday, March 8. Owing to the inclement weather, the attendance was not so large as at the 1911 conference, but many of the prominent growers and raisers were present.

The President, Mr. George Gordon, V.M.H., opened the proceedings, and in doing so expressed the pleasure he felt in meeting so representative a gathering of those who were specially interested in the dahlia and its cultivation. He felt, and he had no doubt that those present shared in his feelings, that the National Dahlia Society had acted wisely in adopting the policy of holding a conference annually. Such gatherings could hardly fail to greatly stimulate the interest in dahlias, and to be of much value to those who are engaged in their cultivation. To the veterans of the cult an interchange of views on various matters connected with the flowers was beneficial, but to beginners it was an immense advantage to have an opportunity of obtaining from experts advice on cultural methods, selection of varieties, etc. He said he had a long-founded regard for the show flower, but felt that it was the duty of the society to encourage every section of the flower, and so enlist the sympathy and support of as large a number of dahlia-lovers as possible. He then called upon Mr. George Davidson to address the meeting on

### THE CULTIVATION OF DAHLIAS IN A TOWN GARDEN.

Mr. Davidson said: The amateur with the small garden in the suburbs is at a great disadvantage in cultivating his flowers, compared with his fellow in the country, or farther from town, where there is the advantage of more space and air. If exhibiting be his aim, then his difficulties increase, and with such flowers as the rose and sweet pea it is practically impossible for him to be able to compete on anything like equal terms with those more fortunately situated.

Not so, however, with the dahlia, for with the possible exception of the carnation, there is no flower more suited for growing in the suburbs, either for exhibition or the decoration of the garden.

Of course he has to face difficulties, but provided he is keen there are very few, if any, that cannot be got over with a little ingenuity and work. Soil, aspect, trees, etc., he has very little choice but to take as he finds them.

The first presents no real difficulty, as I think dahlias can be grown well on practically any soil, provided it is properly prepared. I have grown exhibition blooms on sandy soil, soil with a subsoil of brick-bats, sardine tins, etc., and now on a wet stiff clay. Aspect, of course, cannot be altered, but unless the garden is entirely shaded dahlias of one section or the other can be successfully grown.

Trees I find the greatest disadvantage. If the suburban gardener is fortunate enough to have a plot without any, or only a few small ones, then all is plain sailing. However, the majority of modern gardens are, as a rule, parts of some old estate, and his small space is as often as not occupied with one or two old trees of the forest kinds. If he requires a larger garden he will almost invariably find it attached to an older dwelling and contain a number of fully-matured and well-developed fruit trees, which, whether fruitful or the contrary, are generally highly prized by the landlord. I have always found it extremely difficult to obtain his permission to remove these obstacles to successful cultivation of flowers. If the garden is comparatively free from trees probably a neighbour makes up for it by taking a fiendish delight in growing as many of the strongest varieties as he can close to your fence, so that you get the full advantage of the roots. On one side of my garden I have to contend with a row of willows, which on the wet soil flourish amazingly. I very soon decided that the pompon dahlia was most likely to succeed here, so after cutting away as many of the large branches hanging over my garden as I could (which, by the way, must be done with a certain amount of tact to prevent unpleasantness), I proceeded with the help of a pickaxe, and a navvy, to get out as many of the roots as I possibly could, the whole piece of ground being thoroughly broken up to a depth of two feet or more. In this ground I planted my dahlias, with partial success. I managed to get plenty of exhibition bunches from those placed farthest from the trees, but those nearest the stems came with bad centres, or showed eyes, in spite of continual watering and feeding. The trees were taking practically all the moisture, while under the plants the ground was quite dry.

The next year I tried a slightly different plan. After digging the ground thoroughly, which in the meantime had become full of fibrous roots, I inserted in the soil nearly up to the rim a six-inch pot, against each plant; this was placed close to the stick before planting, so as not to damage the roots. These pots were filled two or three times in the evening, and about three times a week, with water, in addition to the ordinary watering. This was quite successful, and it was a rare thing to have blooms with bad centres, at any rate during September and early October.

I place nearest the trees those pompons which naturally produce rather large blooms, and therefore there is not the same difficulty in getting them small enough for the shows as when grown in naturally good soil. On the other hand, feeding is sometimes required to keep them up to the necessary size.

A number of amateurs experience difficulty in getting some varieties sufficiently small for the early exhibitions. This can be obviated by growing plants from old tubers, which will give an earlier and large display of bloom of the right size.

The small amateur very often makes a big mistake when growing for exhibition by having too many varieties and too few plants of each. Find out what does best with you, as what will do well in one garden may not in another, and plant three or four plants of each. Personally, I consider if one cannot get a good bunch of six blooms from four plants that variety should be discarded, as however pretty it may be, if it is a shy bloomer, or only gives an occasional good flower, there is no room for it in a small garden.

In my garden I can generally depend on the following varieties to give me good exhibition bunches: Adelaide, Phœbe, Cyril, Little Bugler, Nerissa, Queen of Whites, Daisy, and Montague Wootton.

Now, though it is possible to obtain good blooms of both the pompon and single dahlias when grown under trees, provided they are not so large as to exclude too much light and air, I have never succeeded in getting show and cactus varieties to do well in this position. The blooms can be had large enough, but invariably lack substance and depth. It is therefore necessary to have a piece of ground as free as possible from the influence of roots.

The great objection to growing the cactus dahlias is the large amount of room they take up. Though they certainly require more ground than the other varieties, they can be grown, at any rate for exhibition, in a much smaller space than is generally advocated by those with more ground at their disposal.

I use a plot 12ft. wide from walk to fence; this is divided up into 5ft. beds, with 1½ft. between them. Eight plants are put in a bed, in two rows. Of course, at this space there is a great deal more work and inconvenience than when grown at a more orthodox distance, but this is better than not growing them at all.

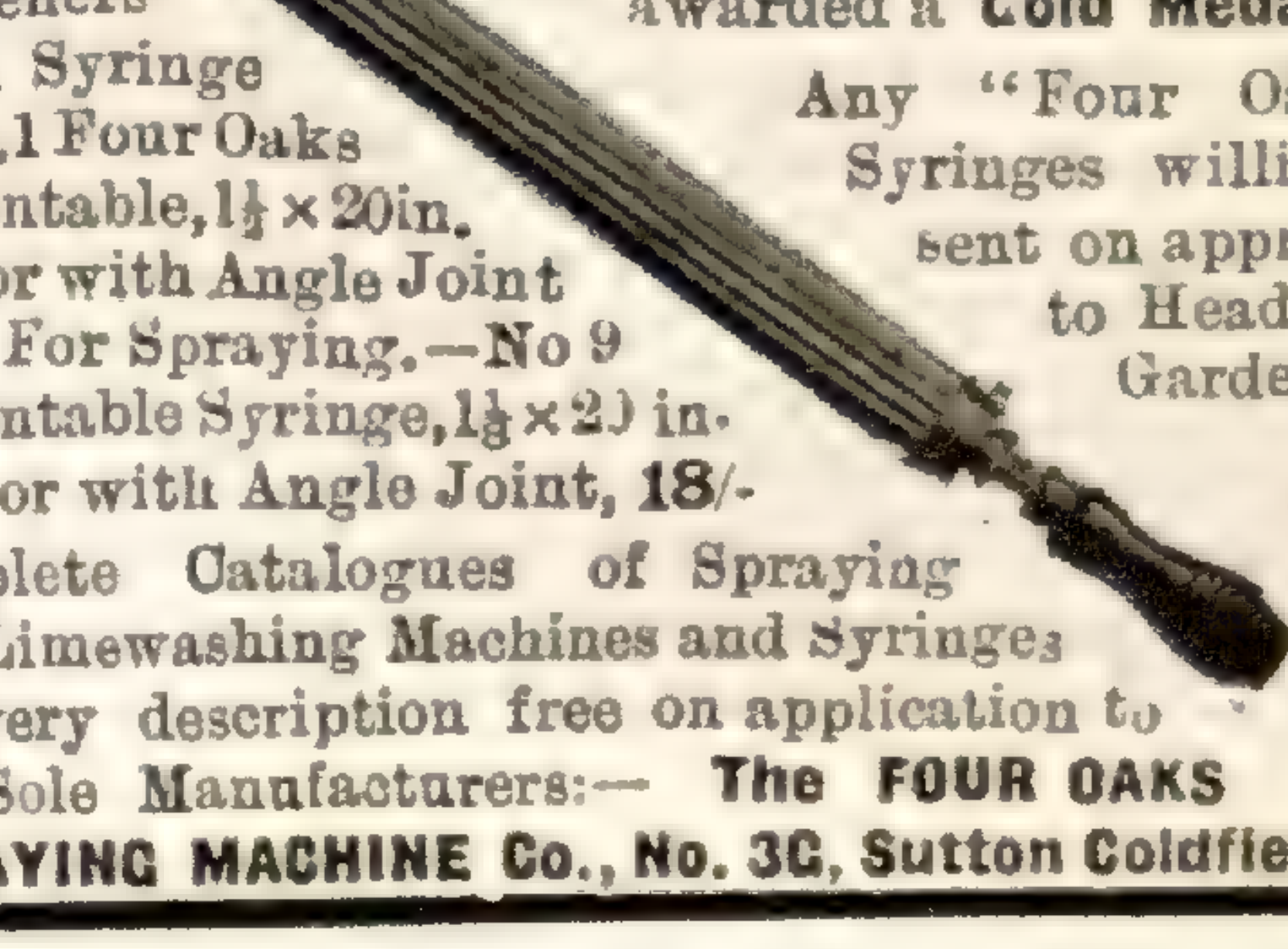
The greatest trouble is to prevent the blooms getting damaged by being blown about by the wind, and thus coming in contact with neighbouring plants. This can be prevented by tying the stems of the bloom to bamboo canes, placed at intervals around each plant. One advantage of close planting is that blooms may be more readily protected from the vagaries of the weather by judicious tying. Thinning out the laterals will have also to be more severely done so as to allow the plants to have all the air possible.

From a decorative point of view close planting cannot be recommended, as the plants will make too much growth and the blooms would not be seen. I consider that the gardener with a limited amount of space will find it more satisfactory to grow the singles and pompons, as they not only take up less room, but give a far more plentiful supply of blooms than the majority of cactus dahlias seen on the show board.

It will be found that dahlias, more especially the cactus sorts, grow considerably taller in the suburban garden than in the country; taller stakes should therefore be used, or there will be danger of their being broken down by the autumn gales.

I have also noticed that they are generally later in blooming. If a bud does not appear about the beginning of July, I invariably pinch out the centre of the plant, and when necessary give a few light doses of nitrate of soda, which will cause the side shoots to start away vigorously, and plenty of bloom should be had by show time.

I have not attempted to go into cultural details in this paper, as the proceedings are exactly the same whether the garden is large or small, and full particulars have already been given from time to time. However, watering, and probably feeding, will have to be indulged in more freely. Very often, even after a couple of days' rain, I give my plants a good soaking, as it must not be forgotten that trees and other plants take much



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moisture, and while growing as they are rather close together, and staked out, they act as a kind of umbrella, and probably very little of the rain actually reaches the roots. This, in my opinion, is more often than not the cause of single blooms and bad centres.

Dust and soot, especially if your garden is near a railway, will soon ruin your light-coloured blooms if they are not protected by some means. I use shades of transparent water-proof paper, fixed on wire frames, and as they fold up flat when not in use they take up very little room in the winter.

That dahlias can be grown successfully for exhibition in the suburban garden is shown by the number of competitors who enter at the National Dahlia Society's shows, and as they are very often prize-winners, it is at once apparent that they have nothing to fear from those more fortunately situated.

### DISCUSSION

Mr. Davidson, in answer to one member, said he did not use any other than natural manures, in liquid form, after the flowers were set.

Mr. Lee asked how much pruning should be given in a town garden, and the lecturer said it must be severe for exhibition blooms, and he considered the plants should be not less than 2½ft. to 3ft. apart, more if possible. Mr. S. Mortimer said 4ft. apart was the usual distance to plant for exhibition flowers.

### DECORATIVE, PÆONY-FLOWERED, AND COLLARETTE DAHLIAS.

This was the subject dealt with ably by Mr. J. B. Riding, and we hope to publish his paper in full in an early issue.

After describing the various groups mentioned above, and speaking highly of their usefulness, a brisk discussion followed.

Mr. Joseph Cheal opened the discussion, and said he confessed to some conservatism with regard to pæony-flowered and collarette dahlias, but he quite understood that both groups were fine for garden decoration, especially at a little distance from the eye or house. Disbudding should not be practised, as this would mean weak stems and huge flowers. Of the collarette varieties he liked the rounded forms best. It would be a good thing if old dahlia lovers would cast aside all prejudices and predelictions and remember that there is a place for all and every section of dahlias, and that each finds some admirers and each has distinct uses.

Mr. J. T. West said he could not find much decorative value in the giant decorative sorts. He had done some work among pæony-flowered dahlias, and humorously told of his original experience with the earliest Dutch-raised sorts, from which he obtained some very fair seedlings, including Liberty. Disbudding should not be practised in this section, as it would spell ruin to the section. He said he only obtained two good varieties out of 1,200 seedlings, and he found that it was easier to raise good cactus varieties than good pæony-flowered varieties. Dahlias for garden decoration should, he considered, only be judged when shown without wires or dressing.

Mr. Stephen Jones said the giant, like Gustave Douzon, was one of the finest decorative dahlias if it was looked after a little, and if a man would not look after his plants he should be content to grow groundsel. The collarette dahlias were of great decorative value also if given moderate attention.

Mr. Wyatt said that the more sections of dahlias there were the more people would be pleased; therefore it was folly to condemn any section. There was, he considered, room for considerable improvement in the colouring of pæony-flowered dahlias.

Mr. Emberson said all his flowers of Bertha von Suttner and South Pole pæony varieties came double in 1911, and he wondered whether anyone else had a similar experience. Mr. West said the dry season had a good deal to do with the doubling. Mr. C. H. Curtis spoke of the high value of large decorative and pæony-flowered dahlias, when cut, for large floral effects in halls and churches, etc.

### CONCLUSION.

Mr. J. Wyatt very pleasantly proposed a vote of thanks to Messrs. Davidson and Riding for reading such useful and up-to-date papers; this was seconded by Mr. J. T. West, who thought the conference would be the means of increasing the amateur membership of the society. The vote was heartily accorded, and a similarly hearty vote to the president concluded the proceedings rather before 8.30, so that those from some distance could get home at a reasonable hour.

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## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 5th inst. Mr. Massie, the president, was in the chair, and there was an attendance of 100 members.

Dr. John H. Wilson, lecturer on agriculture in St. Andrew's University, gave an address on "Fruit-growing in Australia." The lecturer was a member of the Agricultural Commission which was invited by the Commonwealth Government to report on the rural economy of Australia. Using slides made from photographs taken on the way, Dr. Wilson showed that fruit-growing was carried on vigorously in all the States of the Commonwealth. In the higher ground of southern Queensland the apple, peach, etc., were successfully grown, while in warmer regions the banana and pineapple were deservedly in favour. The orange succeeded well in all the States with the exception of Tasmania. Probably the orange was the most profitable fruit crop in New South Wales, although apples, pears, and stone fruits were also extensively grown. In Victoria the irrigated areas were largely under fruit, but orcharding was likewise a very important industry in regions dependent on surface water collected in dams. Special reference was made to examples of the latter system at Doncaster, near Melbourne, where lemons, apples, pears, apricots, plums, and cherries were grown with marked success.

In Tasmania the apple occupied more than two-thirds of the orchard areas. The production of that fruit was being rapidly increased there, more especially on the banks of the Tamar, in the northern part of the island. Following the example set by Victoria at Mildura, on the Murray, the South Australian Government was reclaiming large portions of land for fruit-growing further down the river, the water being raised by powerful pumps and distributed in concrete channels. In Western Australia, in the elevated country lying between Perth and Albany, apple-growing was being greatly extended, the soil and climate being very suitable for the industry. The rapid advance of apple-growing in Tasmania and Western Australia is mainly due to the good prospects which the London market offered for the fresh fruit, which arrived at a time when supplies from home and elsewhere were exhausted.

Exclusive of vineyards, the area under fruits in the Commonwealth was one hundred and eighty-five thousand acres. Dr. Wilson pointed out that the growers everywhere received much help from experts employed by the respective States. In this connection he mentioned that recently the Commonwealth Government had instructed the noted vegetable pathologist of Victoria, Mr. D. McAlpine, to devote his whole time for four years to the problem of checking the ailment of the apple called "bitter pit." The cost of the investigation during that time would not be less than £8,000. Great attention was paid to the testing of suitable varieties in experimental orchards. These were often connected with the State farms or the agricultural colleges. Systematic instruction in orchard work was given in the colleges and other institutions. In certain States provision for cold storage was made by Government.

On the motion of Mr. Comfort, Dr. Wilson was accorded a very hearty vote of thanks for his interesting address.

The exhibits were: Apples, Dr. Robertson and William Robinson, from Mr. Charles Webster, Gordon Castle Gardens, Fochabers; new perpetual-flowering carnations, including White Wonder, Una Wallace, Lady Northcliffe, British Triumph, Regina, Scarlet Glow, and the latest American introduction, Gloriosa, from Messrs. Todd and Co., Edinburgh; cyclamens from Mr. John Black, Inverard Gardens, Edinburgh; collection of tulips from Mr. James Bruce, Springfield Nursery, Davidson's Mains; decorative chrysanthemum J. G. Day, from Mr. Alex. Porter, Davidson's Mains; Dawe's Champion Early rhubarb (forced and unforced), from Mr. James Scarlett, Sweethope, Musselburgh.

The apples Dr. Robertson and William Robinson, exhibited by Mr. Webster, received each a Certificate of Merit; Mr. Black was awarded a cultural certificate for his cyclamens, and the exhibit of carnations by Messrs. Todd and Co. was very highly commended.

Mr. William Cuthbertson, J.P., will deliver a lecture at the meeting on April 2 entitled "Sweet Peas up to Date," with lantern illustrations in natural colours.

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## United Horticultural Benefit and Provident Society.

The annual meeting of this society was held at the Royal Horticultural Hall, Westminster, on Monday evening, March 11. Mr. C. H. Curtis presided, and the attendance of members was an unusually large one for such an occasion.

Quite early in the proceedings the Chairman moved a resolution conveying to Leopold de Rothschild, Esq., the society's patron, the heartiest congratulations of the officers and members upon his providential escape from death by assassination a week previously; this, needless to say, was carried unanimously.

### REPORT OF THE COMMITTEE FOR 1911.

The following is the substance of the report presented:

The net benefit membership is 1,358, unfortunately less by eight than it was a year ago; and instead of having enrolled seventy new members as in the year 1910, only fifty have been added. Doubtless the exceptional circumstances in which all friendly societies were placed last year, owing to the legislation of the Government, account for this, and the committee is in no way alarmed or despondent, but hopes that the old progressive condition will have been regained, when the members and potential members have become accustomed to the new conditions that have arisen as the result of the passing into law of the National Insurance Act. Forty-five members have lapsed, twenty-five from the higher scale and twenty-one from the lower; twenty members have gone abroad, six have died, and two have passed the age of seventy years.

Among the deceased members, the committee has to name, with sorrow, G. Attrill, A. J. Brown, Charles Foster, and G. Thompson. Mr. James George, who was one of the founders of this society, and for many years one of its trustees, died in March last year, when the previous annual report was in the press.

The total amount paid out to the nominees of deceased members was £248 12s. 4d. In regard to the lapsed members, though their numbers are considerable, the percentage is certainly not higher than in any similar society. These lapsed members, however, do not forfeit their deposit balance; indeed, one member, who lapsed thirty-eight years ago, applied for, and promptly received, the amount of 13s. 4d. owing to him.

The total amount of sick pay to benefit members during the year was £507 12s., being £53 8s. 6d. less than in the previous year, and over £63 less than in 1909. The chronic sick pay amounted to £102 6s., being nearly one-fifth of the total sick-pay account.

Seven hundred and eighty-eight members are paying on the higher scale, and five hundred and seventy-two on the lower. Twenty-eight members have taken advantage of Rule xviii., par. 3, which enables those who have reached the age of sixty to withdraw "twice the amount credited to their account as interest in the previous year." By such withdrawals they are furnished with a ready means for the payment of their subscriptions, which is a great boon. One member withdrew £6 12s. 8d. under this rule; and another member who had reached the age of seventy years, by virtue of par. 4 of the same rule, withdrew £42 8s. 9d. from his balance account.

The repeated suggestions to the effect that members who are recovering from an illness should take advantage of the provisions of the convalescent fund, have been better acted upon in 1911 than in some previous years. The amount of assistance from this fund was £10, being 18s. more than the subscriptions. N. N. Sherwood, Esq., founder of this fund, contributed five guineas as usual.

Acting upon the advice contained in the quinquennial actuarial report, published last year, the committee discussed at several of its earlier monthly meetings the question of making a uniform allowance of 5s. to those of its necessitous members who are over seventy years of age. At the July meeting a proposition on this matter was passed to take effect as from January 1, 1912. Subscriptions to the benevolent fund amounted to £220 17s., and the payments therefrom to £90 11s. 6d.

The strictest economy, consistent with the proper working of the society, has been observed. The total management charges amounted to £222 7s. 6d., as against £222 9s. 7d. in 1910; and £195 11s. 10d. in 1909.

During the year the sum of £2,700 has been invested by the trustees, who have purchased the following: £500 L.C.C. 3 per cent. for £429 8s. 6d.; £700 L.C.C. 3 per cent. for £591 12s.; £400 Newport Corporation 3 per cent. for £334 1s.; £300 L.C.C. 3½ per cent. for £298 18s. 6d.; and £800 Middlesex County 3½ per cent. for £772 2s., the total sum being £2,426 2s.

Two members of committee were deputed to watch carefully the proceedings in Parliament in connection with the new Act of State Insurance—the National Health Act. The committee discussed the problems that were raised in regard to this enactment at each of its monthly meetings, and nothing was left undone to safeguard the interest of the members of this society. Efforts were made to interview the Chancellor of the Exchequer, and eventually a conference was agreed to between a deputation from your committee and a representative of the Chancellor. Your committee has also endeavoured to obtain an audience of the Commissioners who have been appointed to administer the Act, but has been unsuccessful. The Commissioners, however, have furnished information as to the interpretation of the clauses and provisions of the Act. In a measure such as this, of a character at once so far-reaching, complex, and novel, its application and bearing upon our particular society, and the relation of our society to it, has provided a problem that has had to be considered discreetly, with caution, and without haste. Special meetings have been held to discuss the Act, and the result has been that the committee looks forward most hopefully to the prospect of this society becoming approved; within the meaning of the Act. The members have been invited, by circular letter, to state their position and opinion in reference to the Act. In conclusion, the committee relies upon the full confidence and support of all the members in the serious work with which it is now confronted, and in which it is engaged. It may be necessary also to exercise the virtue of patience; but the outlook of this society, under the new law, appears promising.

In short, the society provides for sickness, makes provision for chronic illness, renders aid to the distressed, credits each member with a due proportion of the surplus funds, helps the convalescent and cares for the feeble and aged. Every member should act as a missionary of the society and continually preach the gospel of thrift and self-help with intent to secure new members. The financial stability of the society is beyond question, as it has now £41,500 invested.

In conclusion, the committee begs once more to acknowledge the kindness of those who, as honorary or life members, or in other ways, assist the society and help to extend its usefulness and sphere of influence.

TREASURER'S STATEMENT.

| Dr. RECEIPTS. | | £ s. d. |
|---|---|---|
| 1911. March 9th. | | |
| To Balance brought forward | £399 3 1 | |
| Transferred from Secretary | 2 2 9 | |
| | | 401 5 10 |
| 1911-12. To Subscriptions, etc., per Secretary— | | |
| Benefit Fund ......... | £2,205 17 0 | |
| Benevolent Fund ......... | 222 3 6 | |
| Convalescent Fund ... | 9 2 0 | |
| Management Fund ... | 160 11 11 | |
| Advertisement and Dinner Account ...... | 11 6 0 | |
| | | 2,609 0 5 |
| ,, Dividends on Investments ................. | 1,162 5 0 | |
| ,, Bank Interest .......... | 3 18 6 | |
| ,, Income Tax Returned ... | 66 10 7 | |
| | | 1,232 14 1 |
| | | £4,243 0 4 |

| Cr. EXPENDITURE. | | |
|---|---|---|
| 1911-12. March 6th. | | £ s. d. |
| By Payments per Secretary— | | |
| Sick Pay to Members .............. | | 507 12 0 |
| Management Expenses and Salary | | 222 7 6 |
| ,, Payments to Nominees of Deceased Members | £248 12 4 | |
| ,, Lapsed Members Accounts paid out ...... | 40 19 4 | |
| ,, Withdrawals from Deposit Accounts— | | |
| Members over 70 ...... | 85 8 9 | |
| Interest Withdrawn ... | 91 9 6 | |
| | | 466 9 11 |
| ,, Grants from Benevolent Fund ........... | 90 11 6 | |
| ,, Grants from Convalescent Fund ........ | 10 0 0 | |
| ,, Advertisement Expenses | 0 3 9 | |
| ,, Investments ................. | 2,426 2 0 | |
| | | 2,526 17 3 |
| ,, Balance due from Secretary ............ | | 1 14 3 |
| ,, Balance at Bank— | | |
| On Deposit Account ... | 200 0 0 | |
| ,, Current Account ... | 302 13 5 | |
| ,, In hands of Treasurer ... | 15 6 0 | |
| | | 517 19 5 |
| | | £4,243 0 4 |

The Chairman moved the adoption of the report and financial statement, and took opportunity to review the year's work. He paid special attention to the subject of the National Health Act, and pointed out that 90 per cent. of the members would come under the Act and the rest be exempt from it. He said that, in the event of the majority of members agreeing to approval under the Act, there would be two sections of the society, one as now, and one under the provisions of the Act. He outlined in brief the scheme the committee had in mind, and suggested that in future a member "under the Act" would, on payment of 10d. per week, instead of 9d., obtain the full benefits obtainable under the Act, plus a sum of 4s. per week and other benefits the society was now able to provide. He suggested that there would be a sliding scale of contributions and benefits on the ordinary or voluntary side, so that a member on the "insured" side might elect to pay what he felt he could afford, plus what he would be compelled to contribute under the Act, and, remembering the excellent health record of gardeners, and the satisfactory progress of the society in the past, he said the committee hoped to make the society a most attractive one for young gardeners. The Chairman pointed out that the society need not associate or amalgamate with another society or societies until three years after the enforcement of the Act, and also emphasised the point that the committee would do nothing to commit the members until everyone had had an opportunity of considering the scheme now in progress of formation.

Mr. Burge formally seconded the motion. Mr. Summers said he understood all employed in the manual work of gardening, no matter what their income, would have to contribute to the state scheme. He stated that there was a proposal on foot in the Lea Valley to form a society among those employed in the nurseries and market gardens of the district, for the purpose of administering the Act; a meeting was held recently, at which he was present; he gave the lecturer (sent by the Insurance Commissioners) a copy of the U.H.B.P.S. report. This report evidently came as a surprise to the lecturer, who knew nothing of the society, but who appeared to be so favourably impressed by the working of it that he suggested the Lea Valley gardeners should meet and consider the advisability of joining up with the U.H.B.P.S. instead of forming a separate society. Mr. Summers' statement created great interest. He said a communication would, he believed, come from the Lea Valley men, and he expressed a hope that the Chairman of the "United" would be able to come down, with other members of the committee, and endeavour to draw into the society many hundreds of new members.

Mr. Edwards, Mr. Hill, Mr. Gumbrell, Mr. Frogbrook, Mr. Winter, Mr. Wilson, and others spoke on this matter. Mr. Frogbrook held somewhat pessimistic views, and, feeling he was not in accord with the committee, he was resigning his seat thereon; he made certain statements relative to the future of the society, based on statements made to him by the member of Parliament for the Leyton division. The Chairman asked for references to any part of the Act, or memoranda, on which these statements could be founded, and requested Mr. Frogbrook to be kind enough to furnish the committee with them. The motion was then put and carried.

Messrs. A. C. Hill, T. Winter, and E. F. Hawes were re-elected members of committee. Mr. Creswell fills the vacancy caused by Mr. Frogbrook's retirement; and Mr. Campbell, Roehampton, was elected to the seat Mr. Woods vacates under the age limit. Votes of thanks were accorded the trustees, Messrs. Hudson, Scott, and Curtis, and to the treasurer, Mr. W. P. Thomson. Mr. W. Collins was congratulated on the completion of 25 years' service, and re-elected secretary. The Press was thanked for services so kindly rendered, and a vote of thanks to the chairman brought the meeting to a close about 10 p.m. Besides those mentioned, Messrs. Hawes, J. Wheeler, W. Wesker, and Shelton took part in the animated but pleasantly conducted proceedings.

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## ANSWERS TO CORRESPONDENTS.

MAYUS PUMILIO.—C. F. M., Chertsey: I have some seeds of a New Zealand plant named Mayus pumilio, but as I know nothing of such a subject, can you please enlighten me and suggest the best method of dealing with the seeds and subsequent plants?—Mayus pumilio belongs to the natural order Scrophulariaceæ, which contains the mimulus, foxgloves, pentstemons, veronicas, and other popular garden plants, but it is not a specially attractive member of that order. It is interesting and distinct, growing vigorously and spreading freely by means of underground stems; it is of lowly growth, rarely exceeding a height of four inches, and its violet and white flowers, borne on slender stems, hardly rise above the spoon-shaped foliage. Should be grown in the rock garden in light soil and a sunny position. Sow seeds at once in light soil and place in a frame or cool greenhouse, prick off the seedlings into boxes as soon as they are large enough. Some of the seedlings may be planted out later in the year, but a stock should be grown in pots in a cold frame until next spring when they may be planted out in the rock garden.

DECAYED BULBS.—The question addressed to you by "A. B., Essex," regarding the behaviour of his bulbs (p. 188) and your comments thereon, remind me, says "Pedestrian," of a sad experience I once had, not only with bulbs, but with seedlings and cuttings of various kinds, some 15 or 20 years ago. Thinking that, perhaps, "A. B.'s" failures may be traceable to something of the same nature, I am induced to state the facts in order that he and others may avoid even such misfortune. At the period mentioned alterations on a rather large scale were in progress in a part of the pleasure grounds, when a band of silver sand, fairly fine, yet gritty, was struck, and, to the eye, appeared at least equal to what we had been buying to mix with composts for propagating and other purposes. A large quantity of this was stored and used for various mixtures with the most disastrous results to the plants. Seedlings developed their cotyledens and then disappeared, cuttings would not make roots, and the roots of bulbs refused to permeate any compost to which this sand had been added. Everything and everybody was under suspicion, as, so far as we could judge, the conditions were the same as in former years. It was getting well into spring when it dawned upon me that the sand we had been using was the only item in the mixture that varied from previous years, and that it might be the source of our misfortune. I had a sample analysed, and learned that it contained an excessive amount of iron. I say excessive because I do not now remember the quantity, but I think it was about 12 per cent. In any case we discarded this sand, and returned to that from the old source, with the usual good results.

SPRAYING FRUIT TREES.—H. R. S., Seaton: I feel sure that if you could once again draw attention to the value of spraying fruit trees, stating why and how it should be done, such information would greatly interest many readers. Your "Wasted Orchards of England," published many years ago, did a great deal of good, but there is need for another good rousing up, at least in Devonshire.—As we are dealing with the matter of spraying for insect and fungus pests on fruit trees in the present issue, we need only refer you to the article and illustrations.

### NAMES OF PLANTS.

W. H. C., Bury St. Edmunds.—1, Acacia armata; 2, Boronia megastigma.

F. I., Axminster.—1, Saxifraga apiculata; 2, S. oppositifolia; 3, S. Burseriana.

A. L. J., Ware.—1, Cydonia Manlei; 2, Muscari conicum; 3, Adiantum reniforma.

S. P., Wells.—1, Acalypha Macafeeana; 2, Phyllanthus (Reidia) glaucescens; 3, Darlingtonia californica; 4, Cantua buxifolia.

F. F., Todmorden.—1, Begonia manicata; 2, B. fuchsioides; 3, Haageana; 4, B. Rex.

M. T. B., Oswestry.—1, Gleichenia dicarpa longipinnata; 2, Primula Kewensis; 3, Odontoglossum gloriosum; 4, a very poor Cattleya Trianæ; 5, Plumbago rosea.

L. R. P., Ware.—1, Cypripedium aureum; 2, a poor form of Dendrobium nobile; 3, Kleinia (or Cacalia) articulata; 4, not recognised; 5, Sphagnum cymbifolium.

**Prudential Assurance Company, Lim.**—The directors state in their report for the year ended December 31 last that in the ordinary branch the number of policies issued during the year was 60,012, assuring the sum of £5,396,721, and producing a new annual premium income of £325,699. The premiums received were £4,812,268, being an increase of £6,147 over the year 1910. The claims of the year amounted to £3,423,273. The number of deaths was 8,471. The number of endowment assurances matured was 20,862, the premium income of which was £119,586. The number of policies in force at the end of the year was 901,693. In the industrial branch the premiums received were £7,631,408, being an increase of £205,091. The claims of the year amounted to £2,976,058, including £277,083 bonus additions. The number of claims and surrenders, including 4,488 endowment assurances matured, was 373,641. The number of free policies granted to those policy-holders of five years' standing and upwards who desired to discontinue their payments, was 140,617, the number in force being 1,705,885. The number of free policies which became claims was 43,668. The total number of policies in force in this branch at the end of the year was 19,041,748: their average duration exceeds twelve years. The assets of the company, in both branches, as shown in the balance-sheet, after deducting the amount written off securities, are £81,239,682, being an increase of £3,710,456 over those of 1910.

## GARDENING ENGAGEMENTS.

Mr. J. Chapman, of Ferry Hill, Chatteris, Cambridgeshire, has been appointed gardener to R. C. Harding, Esq., Bank Grove, Richmond Road, Kingston-on-Thames.

Mr. T. Gamage, for some years foreman in the gardens of Ballyfin House, has been appointed gardener to Sir Anthony Weldon, Bart., Kilmorony, Athy, co. Kildare.

Mr. W. Simpson, late gardener at Stoke Rochford Hall, Grantham, has been appointed gardener to Major J. W. Dent, Ribston Park, Wetherby, Yorkshire.

## FORTHCOMING ENGAGEMENTS.

TUESDAY March 19.—Royal Horticultural Society. Narcissus Committee meets at 11.30. Fruit, Floral, and Orchid Committees meet at 12 o'clock. Lecture at 3 p.m. on "Ferns," by Mr. H. B. May, V.M.H. Scientific Committee at 4 o'clock.

Horticultural Club, Hotel Windsor, Westminster; Monthly dinner, commencing at 6 o'clock, to be followed by a lecture on "Weeds," by Mr. Harold Long.

WEDNESDAY, March 20.—Royal Meteorological Society.

THURSDAY, March 21.—Perpetual Flowering Carnation Society's exhibition, at Royal Horticultural Hall, Westminster; two days.

Linnean Society Meeting.

Manchester and North of England Horticultural Society.

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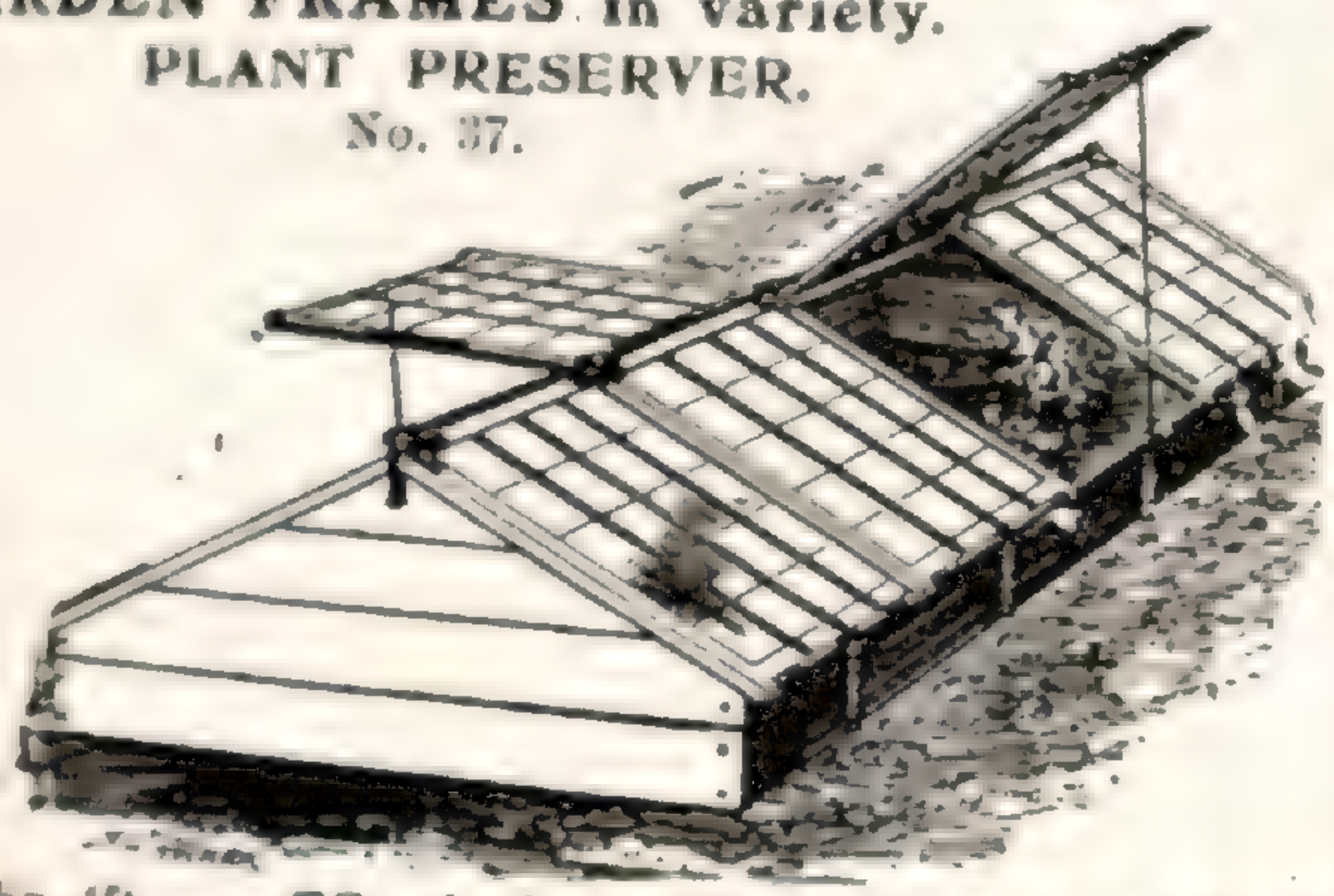
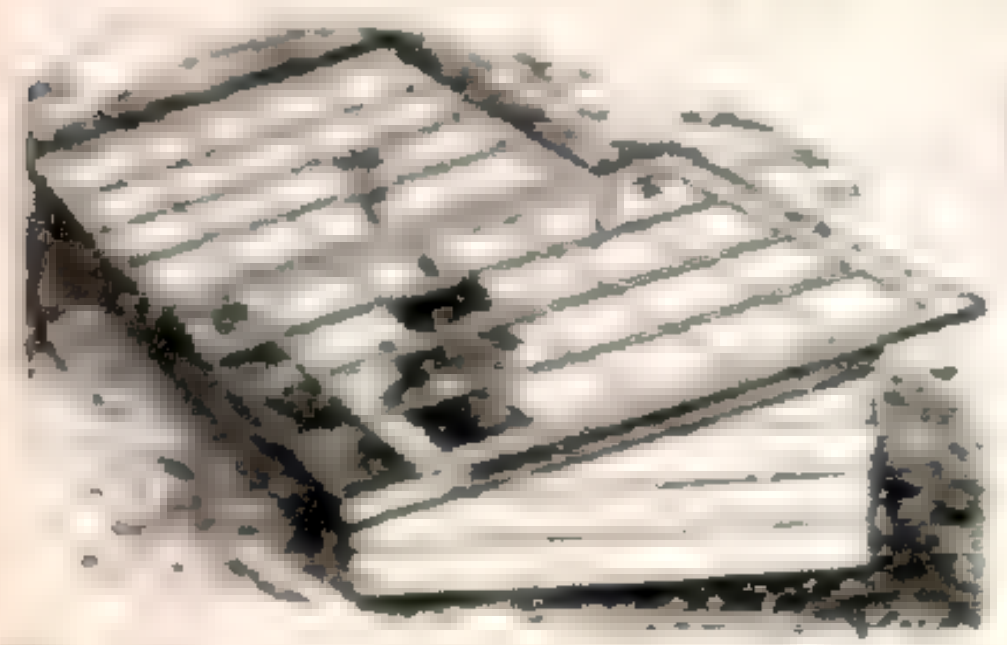


| | | | |
|---|---|---|---|
| 6ft. by 4ft. | £2 1 0 | 12ft. by 4ft. | £3 10 0 |
| 8ft. by 6ft. | 3 17 0 | 12ft. by 6ft. | 5 5 0 |



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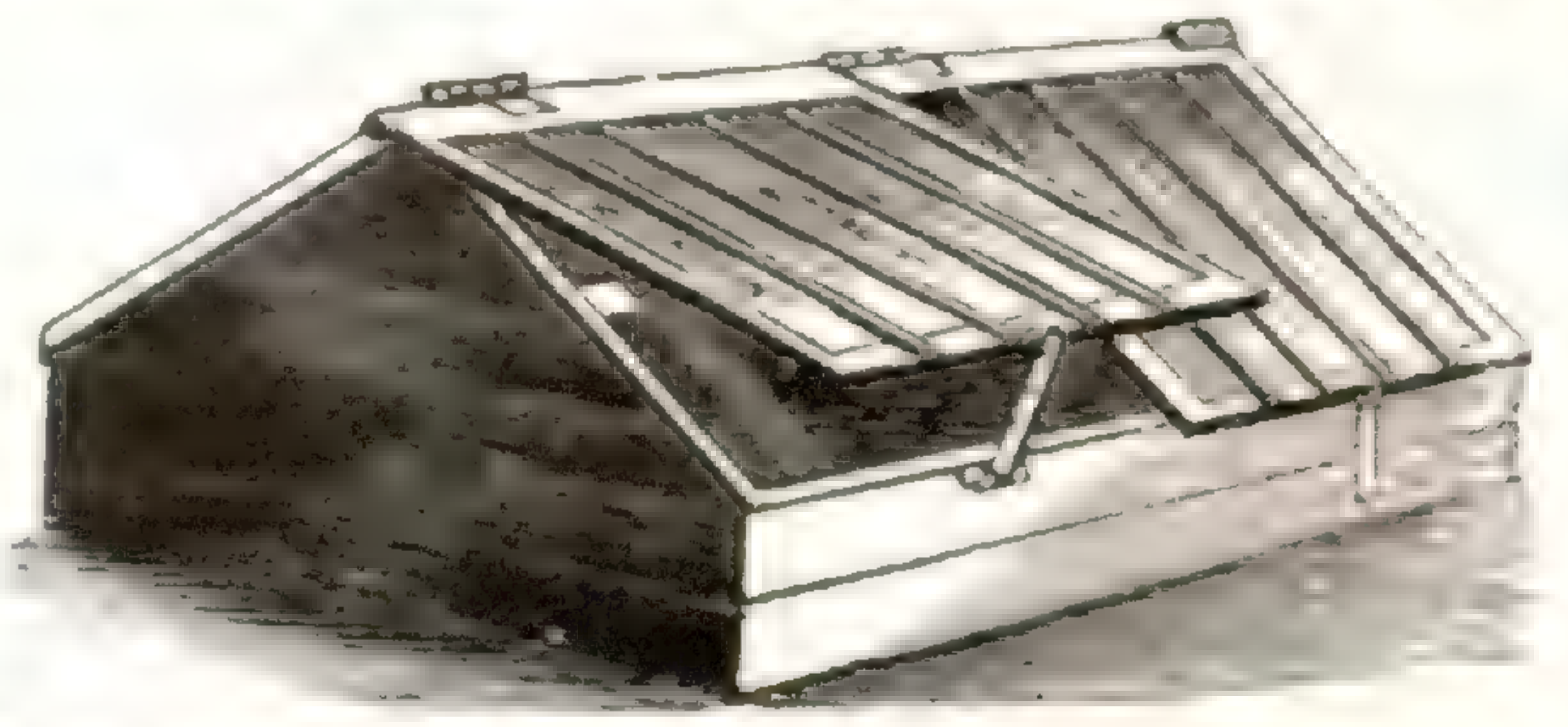

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| 12ft. ,, 5ft. ,, | 4 | 15 | 0 |
| 12ft. ,, 6ft. ,, | 5 | 12 | 6 |

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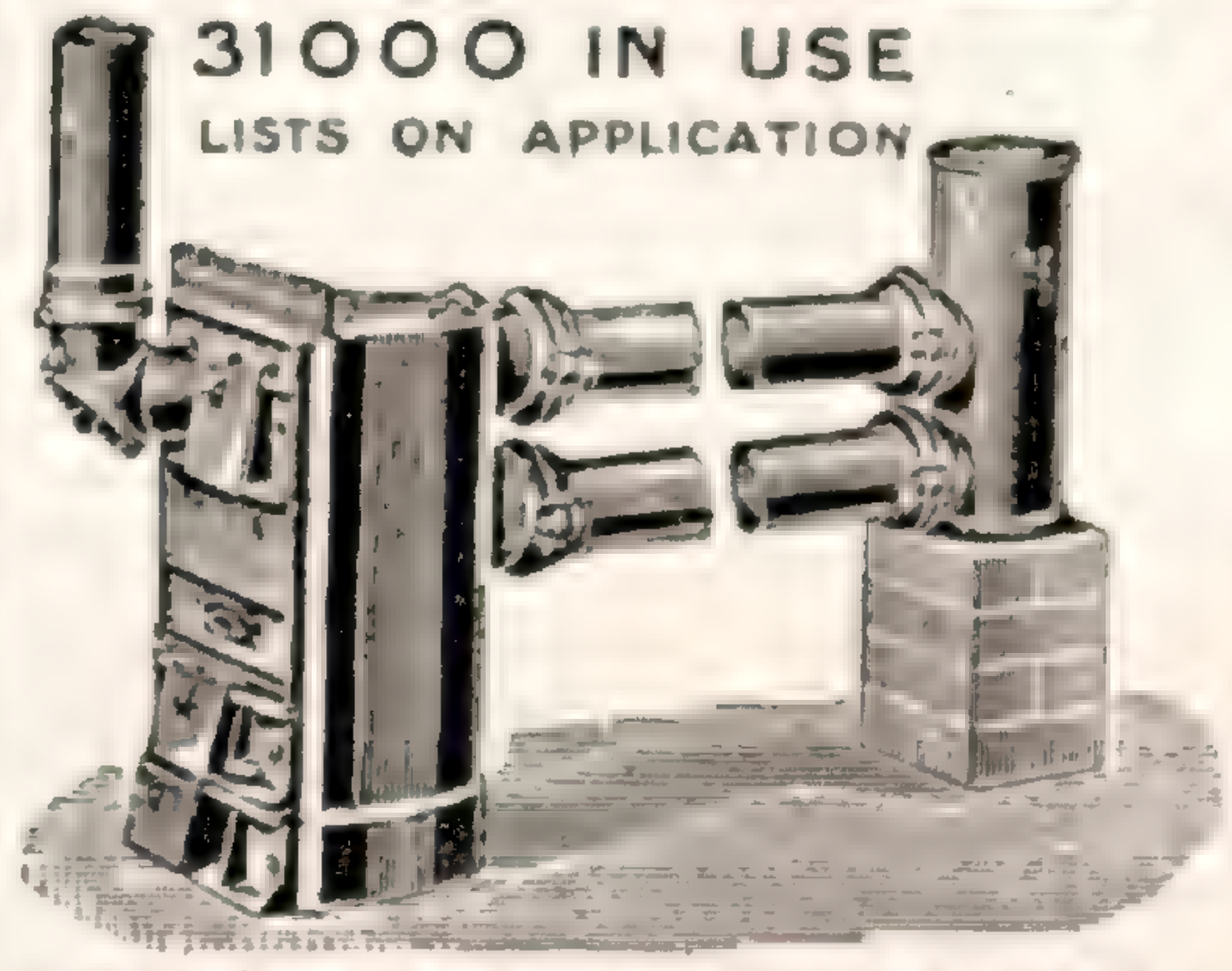

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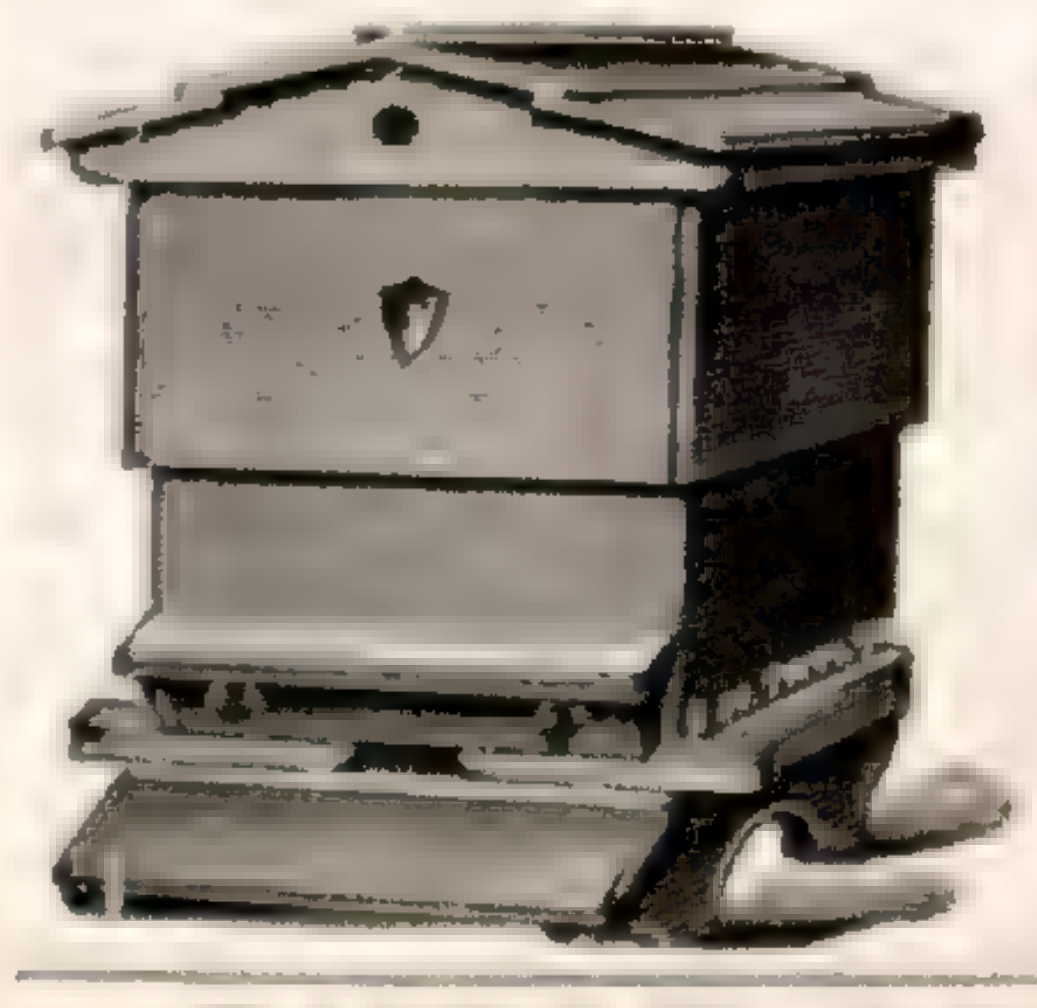

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

ADVERTISER, aged 18, seeks SITUATION in Gentleman's Garden; three years' experience, Inside and Out, in first-class establishment; good reference. A. GODWIN, Jubilee Road, Waterlooville, Hants.

A. TALBOT, The Gardens, Bennington Lordship, Stevenage, Herts, wishes to recomment F. WHITE as JOURNEYMAN (Inside and Out); 6½ years' experience; age 25.

CARPENTER seeks SITUATION; used to Greenhouse work, new and repairs, Painting and Glazing; 12 years' experience; single; estate preferred. J. SIMS, Poulton Priory Estate, Fairford, Glos.

COL. MULLENS highly recommends his GARDENER (Second of 5 gardeners) for a similar position, or Single-handed; age 26; single; abstainer; excellent references. Apply, E. DAMANT, Oaks, Langham, Colchester.

FRENCH GARDENING. — Married man requires Situation as FOREMAN (Working); four years' practical experience on Intensive system; excellent references from past and present employers. GOODMAN, Winkton, Christchurch.

FOREMAN (Inside); age 24; 10 years' good experience in Fruits, Plants, Carnations, and Chrysanthemums; highly recommended; married. C. RALPH, care of Mr. Ralph, The Manor Gardens, Staple, Fitzpaine, near Taunton, Somerset.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GARDENER (Head, where two or three are kept). H. WEEKS, Thrumpton Hall Gardens, Derby, can highly recommend N. DRING, as above; thoroughly experienced in all branches; age 28; total abstainer.

GARDENER (Head or good Single-handed); well experienced in all branches; can also undertake the management of electric light plant, having had charge of extensive private plant for nearly three years; will be highly recommended by present employer; age 29; married, no family. H. GOODSHIP, Gardens, Tempsford Hall, Beds.

GARDENER (Head Working), where one or more kept; 10 years in present situation, 5 years as Second; age 31; married when suited. A. GIBBS, The Gardens, Farrants, Bickley, Kent.

GARDENER (Head of three or more); more than 20 years' experience in large and well-kept establishments; eight years as Head; age 46; married, no family; Gentleman will recommend. F. DUNK, Broughton Astley, Leicester.

GARDENER (Head Working, or where help is given); thoroughly experienced in all branches; good references; three years present reference; wife would take care of house during absence of family. State wages. GARDENER, 28, Martell Road, West Dulwich, S.E.

GARDENER (Head Working, where two or three are kept); life experience Inside and Out; Flowers, Fruit, Vegetables, including Orchids; married, no family. E., Sherwood Farm, Mitcham.

GARDENER (Head Working), age 46, wants private Situation; one under; near London preferred; good references; wages 28s. JONES, 18, South Street, Leighton Buzzard.

GARDENER (Head, or good Single-handed), 12 years' experience, Inside and Out; 3 years last situation as Head; abstainer; age 28; single; disengaged. WHATMORE, 59, Cardigan Road, Reading.

GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married. G. HALL, Hermitage Cottage, Minchinhampton, Glos.

GARDENER (Head Working); life experience Inside and Out; 11 years present situation; leaving through death; age 35; married; excellent references. E. CHALLIS, Park House, Winchmore Hill, N.

GARDENER (Head Working, where several are kept); life experience in all branches, Inside and Out, in good establishments; especially well up in Hardy and Herbaceous Plants, Shrubs, and Alpines; 14 years and 7½ as Head; excellent references; married, no family. A. T., 30, Askew Road, Shepherd's Bush, London, W.

GARDENER (Head of two or three, or Second in large establishment); 12 years' experience Inside and Out; very good Grape and Plant Grower; age 30; married, one boy; first-class recommendations. H. SHERMAN, The Bank, Waresley, near Sandy, Beds.

GARDENER (Head); 15 years' experience in first-class places; two years as Head in last place; excellent references; disengaged; age 29; single. J. H. MASSEY, Webb Row, Nether Alderley, near Chelford, Cheshire.

GARDENER (Second, or Singlehanded); well up in Vines, Cucumbers, Melons, Plants, etc.; well recommended; age 25; married. L. HUBBARD, Coombe Lodge Gardens, Coombe Road, Croydon.

GARDENER (Single-handed) seeks Re-engagement; life experience; can be well recommended; good references; age 26; single. W. SEAR, 51, Sumatra Road, West Hampstead, N.W.

GARDENER (Single-handed or with help). Mr. RICHARDS, Gardener to Col. Fairfax Rhodes, wishes to highly recommend F. SIMPSON as above; 11 years' experience in all branches; four years present place; excellent character; age 28; married when suited. Brockhampton Park Gardens, Andoversford, Glos.

GARDENER (Single-handed or otherwise) married, seeks Situation; good references; disengaged. Apply S. W. SPRING, Hazel Street, Bentley, nr. Ipswich, Suffolk.

GARDENER (Single-handed or otherwise) seeks Situation; 10 years' good experience Inside and Out; good references; age 25. H. D., 24, Aston Lane, Henley-on-Thames.

GARDENER (Single-handed or otherwise); thoroughly experienced; could undertake pony or cow; willing and obliging; 5½ years' reference; married. W. DUFFELL, The Cottage, Melrose, Knockholt, Kent.

GENTLEMAN wishes to recommend his GARDENER (Head Working) to any Lady or Gentleman; 15 years' experience in all branches; age 30; married, no child. G. BRUNTON, Charlesfield Road, Horley.

GARDENER (Under, or Groom-Gardener).—Man, 26, seeks Situation; disengaged end March; used to Inside and Out; married when suited; good reference. TURNER, Staple Rectory, Canterbury.

GARDENER. — MR. HIGGIE, Stanwick Park, Darlington, highly recommends E. SMITH, who has been General Foreman 9 years, to any Lady or Gentleman requiring Head; experienced in all branches, Inside and Out; age 33. Address, Stanwick Park, Darlington.

GARDENER seeks SITUATION, where help is given (or good Second); life experience, Inside and Out; 7 years at Coryton Park; single; age 27. J. GUEST, Newhayes, Kilmington, Devon.

GARDENER (Head or good Single-handed); age 37; single; 20 years' general experience in first-class establishments; well up in Fruit and Plant Culture, Early and Late Forcing; London suburbs preferred. J. HARVEY, The Gardens, Coverwood, Ewhurst, near Guildford.

GARDENER (32) from Horticultural School (Holland) requires Situation; 2 years in Germany, 5 in England; life experience in all branches; teetotaller; 2 children. POSTHUMUS, 3, Ethel Villas, Heston, Middlesex.

J. E. PEAT, Esq., wishes to highly recommend his HEAD GARDENER (Working), who has been with him 9½ years; 6 and 7 years' previous references. H. DOVE, The Lodge, Cranmer, Mitcham, Surrey.

J. CHITTY seeks SITUATION in Garden as Improver; Bothy preferred; two years and six months' experience. Chertsey Green, Chertsey, Surrey.

J. ATKINSON, Kirkandrews Tower, Longtown, Cumberland, seeks Situation as JOURNEYMAN (First Outside); seven years' experience; age 23; total abstainer; Bothy preferred.

J. MAY, Northaw House Gardens, Potter's Bar, Middlesex, would be pleased to recommend E. DENTON as Gardener, where one or two are kept; 16 years' experience, Inside and Out; age 31.

JOURNEYMAN. — Mr. PODMORE, The Manor Gardens, Little Berkhamsted, Hertford, can recommend a YOUNG MAN, age 23, who has been with him three years; abstainer.

JOURNEYMAN (Second, Inside); age 20; six years' experience; two years last place; can be well recommended; Yorkshire or North preferred. J. ALLISON, Wilton, Redcar, Yorkshire.

JOURNEYMAN seeks SITUATION (Inside or Inside and Out) in good establishment; 4½ years' experience; good references; Bothy preferred, age 21; disengaged when suited. Apply W. ELSEY, 6, Eastnor Road, South Park, Reigate, Surrey.

JOURNEYMAN (inside and out).—MR. W. HONE, Coldham Hall Gardens, can highly recommend H. BUND, age 21, who has been about three years here, and is leaving for a change; he is very willing, and most attentive to his duties; previously served under his father; can be disengaged when suited.

JOURNEYMAN (Second), Inside; seven years' experience; good references; Bothy preferred; age 22. A. BOTTING, Cooper's Hill Lodge, Englefield Green, Surrey.

JOURNEYMAN (Inside or Inside and Out) seeks SITUATION; 7 years' experience; age 22; cricketer. Apply, RODWAY, Church Road, Lockhampton, Cheltenham, Glos.

JOURNEYMAN, Second or Third (Inside and Out); 6 years' experience; age 20; good references; Bothy preferred. Apply T. HOLDER, Holloway, Pershore, Worcestershire.

MANAGER or FOREMAN, 10 years Foreman, Propagator, and Grower to W. Whiteley, Lim.; life experience in London Market Nurseries; age 44; abstainer; highly recommended. SMITH, Nellgrove Road, Hillington Heath, Middlesex.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22, as UNDER GARDENER (Inside and Out); was with him 8 years. Address Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

MR. NAYLOR, Gardener to the Right Hon. Lady Battersea, recommends W. BRADSHAW as First Journeyman (Inside or Out); 9 years' experience in Vines, Peaches, Plants, Herbaceous Borders, Rockeries, etc.; age 24; height 5ft. 10in.—Address, The Pleasaunce Gardens, Overstrand, Cromer.

## SITUATION COUPON

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**For MARCH 23, 1912.**

**Please Repeat my Advertisement.**

**Name**.............................................

**Address**.............................................

.............................................

**Date** ..............................

**THIS COUPON,** duly filled up, should be forwarded not later than Tuesday for the next issue.

## Situations Wanted—*continued.*

MR. BROWN, The Gardens, Forty Hall, Enfield, highly recommends W. CLARKE as Gardener, single-handed or with help; life experience; 18 months here as second, Inside and Out; good references; age 26; married when suited.

MR. W. MORRIS, The Dingle, Sydenham Hill, Sydenham, highly recommends his GARDENER (Single-handed); life experience, Inside and Out; age 24; married when suited. C. CULVER, 17, Peak Hill Gardens, Sydenham.

MR. A. WAGG, Ossington Hall Gardens, Newark, can thoroughly recommend W. CLAYTON as Third Journeyman; Inside; five years' experience; three in present place; age 19 years; tall and strong.

MRS. O. S. BABINGTON, The Lodge, Halesworth, Suffolk, highly recommends her GARDENER (Head); thoroughly practical; excellent references; age 32; at liberty end of March.

MRS. WARREN, Shaw Hill, Melksham, wishes to recommend ALLEN TASKER, 3½ years here as Journeyman, Inside, as Second of three. Inside; age 23; Bothy preferred

M. HERBERT, Meadow Walk, Ewell, Surrey, seeks SITUATION as Improver (Inside or Inside and Out); age 18; has a good reference; Bothy preferred.

WANTED, SITUATION as Single-handed GARDENER; all-round experience; good references. H. TITMUSS, 360, York Road, London, N.

YOUNG GERMAN, with good knowledge of English, desires an Appointment as Gardener Assistant) to an English Gentleman; excellent training in theoretical and practical gardening; private and public experience; highest references. MORITZ SCHULZ, Mona Cottage, Solihull Lodge, Shirley, Birmingham.

YOUNG MAN, 21, seeks SITUATION as GENERAL HELP in Gardens for Summer Months; excellent references, tall, strong, willing worker; Bothy or otherwise; take duty. State wages. (No circulars.) MEPHAM, c/o W. C. Banbury, 45, High Street, Borough, London, S.E.

YOUNG MAN, age 24, seeks SITUATION as Under Gardener or Groom Gardener; excellent references; Bothy preferred. J. GREENHAM, The Stables, Hauteville, Harrietsham, Kent.

YOUNG MAN requires SITUATION in Garden as Under Gardener; good references. C. C., c/o Mr. Mouland, 54, Well Road, Sydenham, S.E.

YOUNG MAN, age 21, seeks SITUATION as Single-handed Gardener; good reference; Bothy preferred. WHITEHEAD, Priors Marston, nr. Byfield.

## Situations Vacant.

CANADA.—Wanted, several GARDENERS or NURSERYMEN to complete orders. Definite situations. Apply early, UNION TRANSIT COMPANY, 381, Argyle Street, Glasgow.

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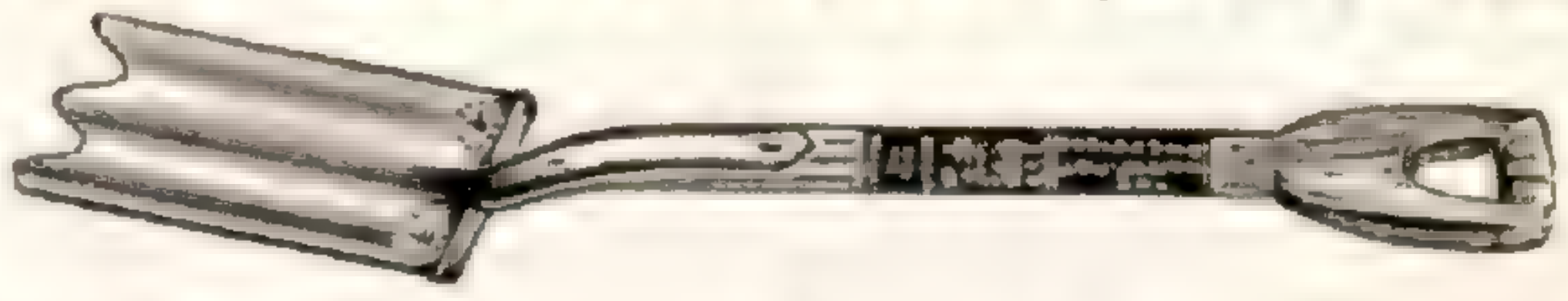

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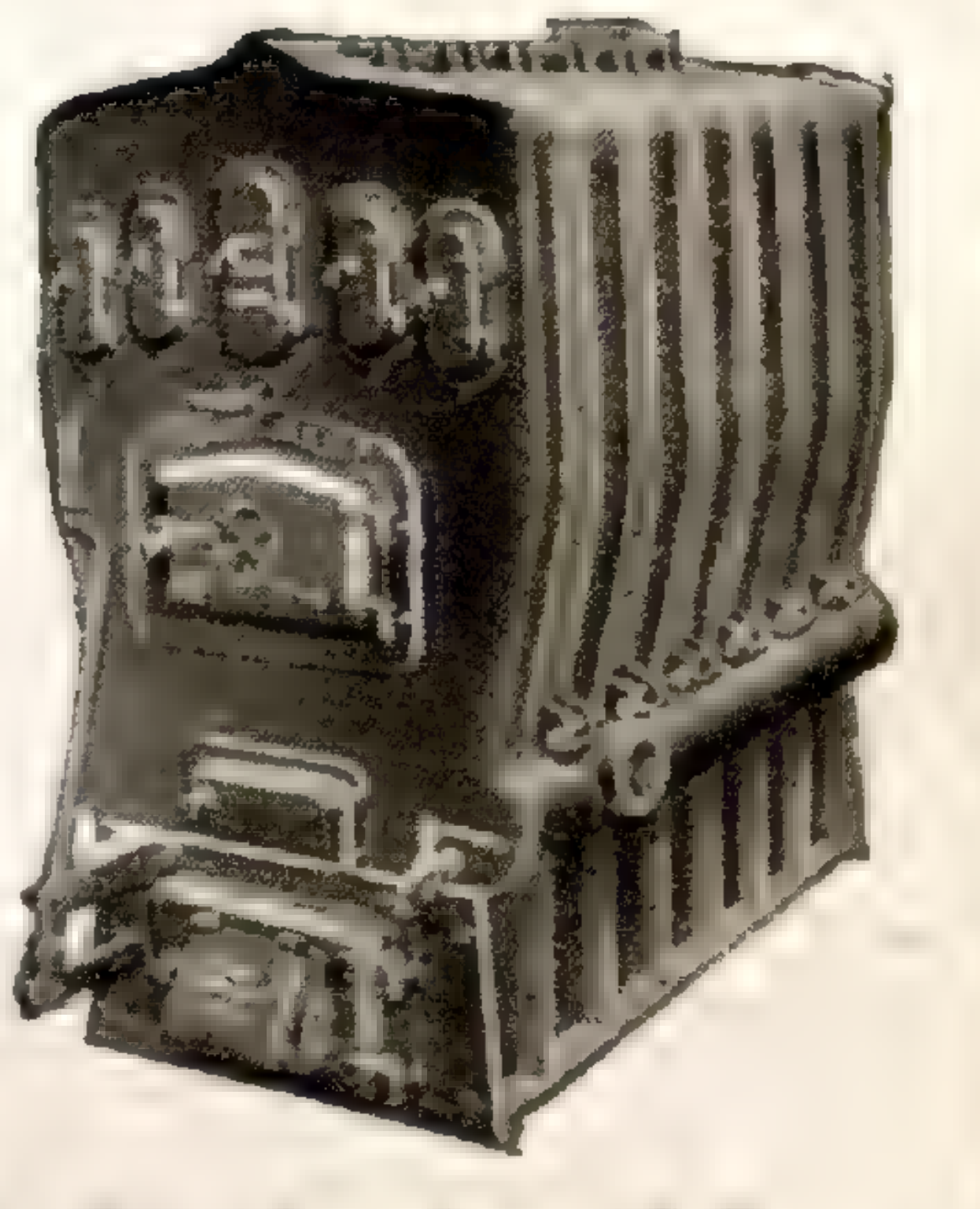

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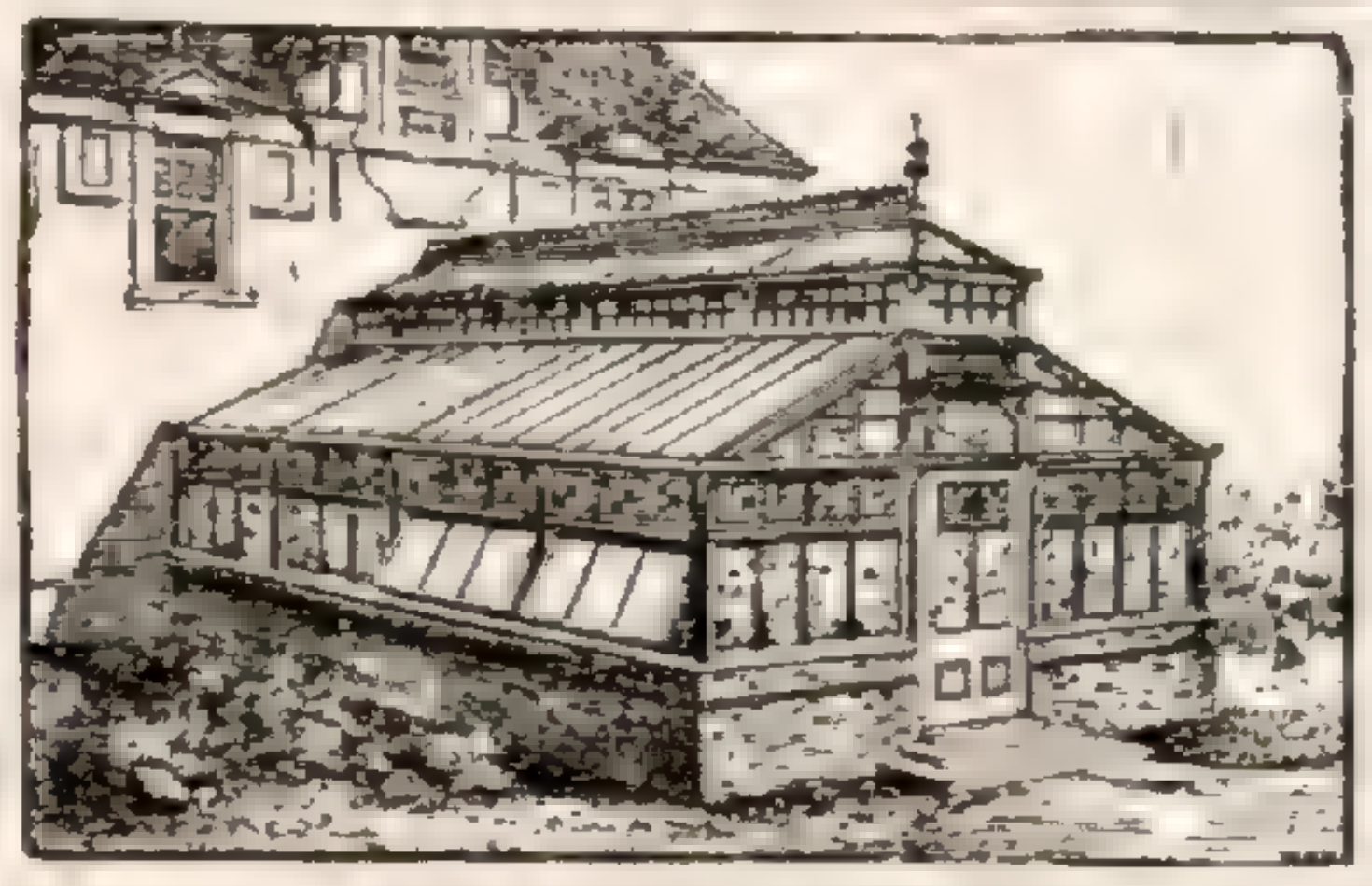

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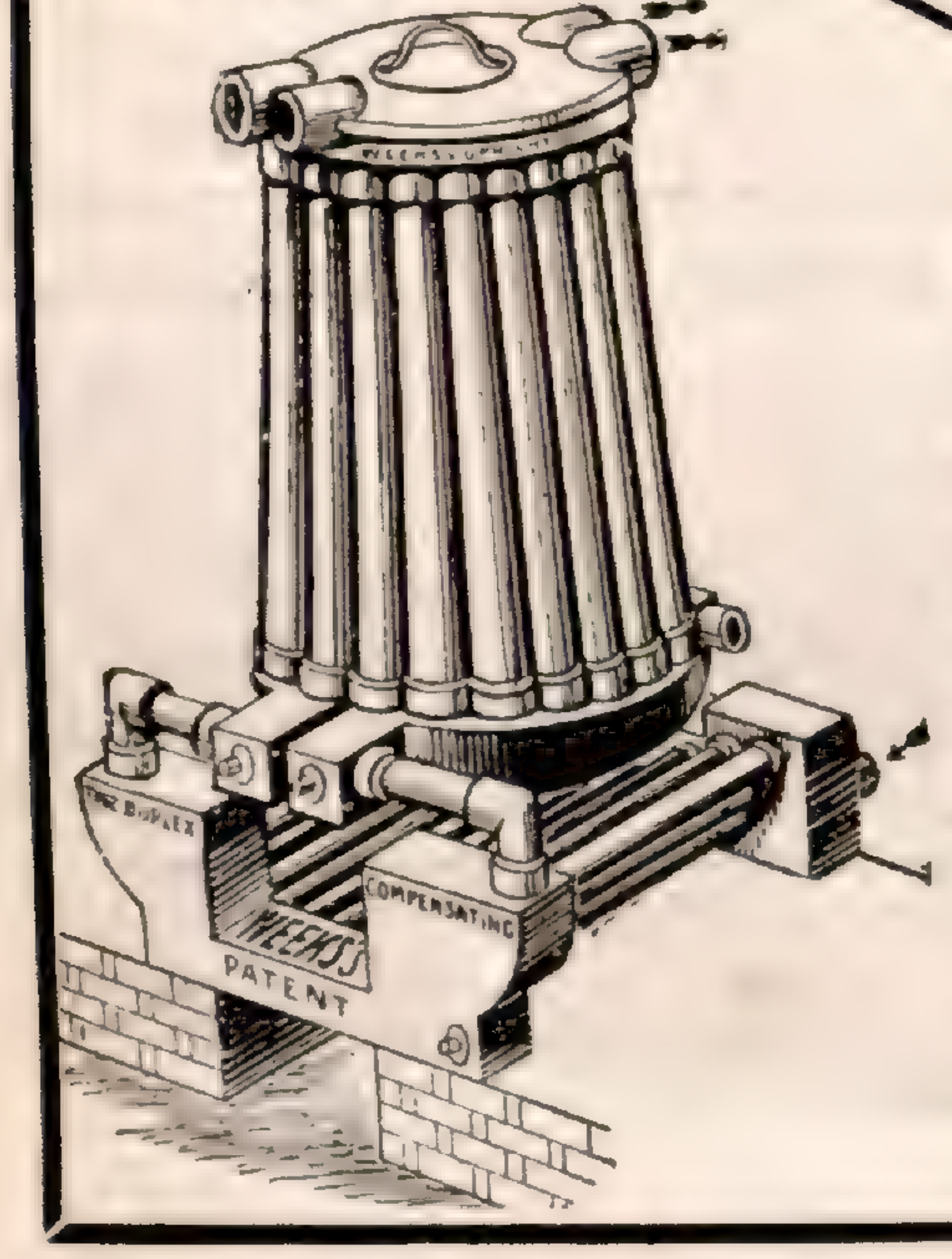

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# THE GARDENERS' MAGAZINE.

No. 3,047.
Vol. LV.
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VOL. LV.—No. 3,047. SATURDAY, MARCH 23, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Symbiosis.

The term symbiosis has been applied to those very peculiar associations which have been found to exist both in the animal kingdom and that of plants, in which a sort of friendly alliance has been entered into for mutual benefit, thus differentiating such associations from parasitical ones, in which the benefit is entirely one-sided. In the plant world the association is usually on a microscopic scale, with bacteria, which of late years we have learned do an immense amount of good by their association, tenanting the roots of the host plants, and assisting them by producing nitrogenous nutriment by which the plants benefit, while, on the other hand, the bacteria themselves find a congenial habitat and nutriment for their needs in the roots they occupy. A knowledge of this fact has enabled the orchidist particularly to raise plants from seed which hitherto had often been a matter of great difficulty. Our scientists, however, by careful examination of the soils in which orchids thrive, discovered that special species of micro-organisms, or bacteria, people the soil in such cases, different species accompanying, symbiotically, different species of orchids. The next results obtained by carefully conducted experiments with special cultures of these bacteria were, that orchid seeds sown on sterilised material either failed entirely to germinate, or did so so feebly as to perish soon afterwards, while, if sown on material provided by these cultures with the proper kind of bacteria, germination was vigorous, as was also subsequent growth. This, of course, proved conclusively the beneficial symbiotic action of the bacteria concerned, and also cleared up the mystery that orchid seeds, which resisted ordinary sowing, often appeared in quantities around the parent plants, where, of course, the necessary bacteria occupied the soil. It is, however, perhaps in the relations between insects and insects, and particularly with ants and termites (the white, so-called, ants), that the most astonishing interrelations exist. We are all familiar with the common species of ants, which are often unwelcomely plentiful in our gardens, and most of us know that a sort of symbiosis exists between them and the aphis, or green-fly, which exudes a sweet and honey-like liquid, that the ants greedily devour, and obtain by gently stroking the aphis with their antennæ. The symbiosis, however, which we have in mind goes much farther than this, the "guest" insects, as they are termed, inhabiting the nests of the ants and termites, and being fed by them for the sake of sweet juices which they exude. The most remarkable feature here is the enormous number and the varied character of the insects concerned, it having been estimated that something like 3,000 different species of such guests exist, and occupy the nests of the great number of ants and termites known all over the world. All these "guests" belong to insect orders, most of the members of which lead independent lives, but some, and as we have seen not a few, have, in some inscrutable way, come into association with their "hosts," who, instead of destroying them as intruders, have permitted them to remain, and, in most cases, provide them with food, profiting in return by the juices aforesaid. These insects, thus treated, have by a process of evolution become so modified in character that it is often a matter of great difficulty for even the expert entomologist to determine to what outside order or genus they really belong, and from which they originated, and, in point of fact, the great number of species we have mentioned are practically new species of known genera, but, and often, quite extraordinarily different from any of the independent living ones. Beetles of numerous species appear to predominate, and many of these, as of the other kinds of insects, have so responded to the requirements of their "hosts" that they have developed brightly-coloured brushes and other appendages, whence the saccharine juices exude for the benefit of the hosts, while their jaws have become also fittingly shaped for receiving their food from the ants and termites in return. They have also varied in other ways; quite un-ant like species have actually become so like the ants themselves as to deceive all but experts. Among the tropical wandering ants, which periodically traverse the country on devastating expeditions, in the course of which nothing living escapes them, some actually convey their guests with them, some on foot, and others are carried by means of special arrangements which have been evolved to meet the case and facilitate their transport. Some of the "guest" insects are treated as menials by the ants, instead of providers of appreciated juices, and in that case assist in what we may term the domestic offices of the ant colony. In any case, however, we have here a multitude of most remarkable cases of true symbiosis, in the sense of amicable and mutually beneficial association between diverse forms of insect life, the study of which undoubtedly place the ants and termites on a very high mental plane, if we may use such a term in connection with mere insects.

MR. H. GOUDE.

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**Mr. H. Goude,** whose portrait we have the pleasure of giving in this issue, is busily engaged in disseminating a knowledge of horticulture in the county of Norfolk; and, judging from the results obtained, he affords a conclusive proof of the enormous advantage to a teacher of gardening of a thorough acquaintance with the practical details of the art. In the course of his training in gardening Mr. Goude had opportunities for becoming well acquainted with the practical work in both nurseries and private gardens, and it is evident that these opportunities were taken full advantage of; for, on the completion of the preparatory stages of his gardening career, he became manager of a market nursery at Worthing, and two or three years later he received an important appointment as head gardener in Bedfordshire. Eleven years ago Mr. Goude went to Norfolk to take up an appointment as gardener and steward, and during the period he occupied the position he achieved much success, and was a formidable competitor at the Norwich shows and some other of the principal exhibitions in the county. Mr. Goude's present position gives him abundant opportunity for preaching what he used to practise, for during the lecturing season he regularly lectures five nights each week; and, as evidence of his ability in imparting knowledge, it may be mentioned that the lectures are well attended. During the daytime demonstrations are given for gardeners and small holders. Lectures and demonstrations do not, however, exhaust Mr. Goude's activities in the cause of horticultural education. School gardens are dotted all over the county, and these have to be periodically visited, and teachers' classes are held every Saturday for those who are about to take up the subject of gardening. While taking the keenest interest in the whole of the important duties associated with his position, Mr. Goude would appear to be especially interested in school gardening, this being greatly stimulated by the endeavour of the boys to understand the instructions given them in connection with gardening.

**The Irish Cup for the International Exhibition.** — At the monthly meeting of the Royal Horticultural Society of Ireland the Irish Cup that has been purchased for presentation by the society to the Royal International Horticultural Exhibition was placed on the table, and was much admired. In the course of the meeting Sir Frederick Moore, the hon. secretary of the fund raised for the purchase of the cup, gave some particulars of the amount raised. He stated that the response was so generous that it had been resolved to present a second cup, which would be offered for alpine plants, and to give the cash balance in aid of the Belfast rose show, which will be held on July 19 by the Ulster Rose and Floral Society in conjunction with the National Rose Society.

**Scottish Forestry.**—It will be a matter for much regret, writes our Aberdeen correspondent, if Scottish forestry is to be made the subject of jealousies between rival institutions. Apparently this would seem to be the case, if we are to judge from the agitation started in the Edinburgh Press against Aberdeen University being selected by the Scottish Forestry Commission as the seat of the first chair of forestry in Scotland. Evidently it has come to the ears of the Edinburgh authorities that it is the intention of the Commission to recommend Aberdeen as the demonstration area, but, if so, it is information which no one else seems to possess, as the long-deferred report of the Commission has not yet been issued. Be that as it may, if such decision has been made, it is a wise one. No one wishes for one moment to minimise the great services rendered by Edinburgh University to the cause of forestry. But it is to the future, not the past, we must look. Looking to the future we must, says one of our leading forestry authorities in the North, take the country as a whole, and see where the greatest areas of woodlands are; and not only that, but where the bulk of afforestable land is situated. This is undoubtedly in the north. It must be borne in mind that, in all probability, the demonstration area—which is acknowledged on all hands to be one of the first essentials, and the establishment of which, we may presume, is among the recommendations of the Commission—would be the working centre of forestry extension, and would not be merely used as an object lesson for forestry students. The great bulk of the work will be on the waste ground suitable for the establishment of economic forests; and, this being for the most part in the northern half of Scotland, it is reasonable to suppose the demonstration area should be there also.

**Conference on Horticultural Education.**—By permission of the Principal, a conference on horticultural education will be held, under the auspices of the North of England Horticultural Society, at Armstrong College, Newcastle, on Saturday, May 4, commencing at 3 p.m. Earl Grey, president of the N.E.H.S., will preside, and the main object of the conference will be to consider: (a) Work already being done; (b) How horticulture can actually be taught in the classroom, and the subjects suitable; (c) How horticulture is to be taught in the new Farm Institutes; (d) How can classes for young gardeners in isolated places be formed, especially when they are few in number. Should capable head gardeners be subsidised to teach horticulture to such lads? (e) How far is it possible for such an art as horticulture—"a matter of practical skill guided by rules"—to be taught at all except in a garden?

**British Pteridological Society.**—We have received No. 11 of the "British Fern Gazette," the organ of the society, and, as usual, this contains much of interest to those who appreciate the charms of our native ferns. Of special interest is "The Narrative of a Resuscitated Collection," in which Mr. W. B. Cranfield describes in a highly interesting manner how in the summer of 1908 he transferred the large collection of British ferns formed by the late Mr. James Moly from the latter's residence at Charmouth, Dorset, to his garden at Enfield.

**Preservation of Finchampstead Ridges.**—The committee appointed at a recent meeting at Wellington College for the purpose of carrying through the scheme for the preservation to the public of the view from the summit of Finchampstead Ridges, have decided to approach the trustees of the Bear Wood Estate for the purpose of obtaining some additional land in the area. It is understood that the vendor is so far favourable to the project as to have intimated his intention to contribute to the scheme.

**Contact Insecticides.**—The substances which kill insect pests through coming into contact with the outer surface of the insect body have been investigated at the Michigan Agricultural College for the purpose of determining exactly how such substances kill. It is commonly supposed that they act by plugging up the breathing pores, thus causing death by suffocation; but it was found extremely difficult to kill many insects in a reasonable time merely by depriving them of air, and it is concluded that the certain and fairly rapid death caused by such materials as kerosene and gasolene cannot be due to the stoppage of the tracheæ alone. It was also found that air saturated with the vapour of various insecticides was nearly as effective as the liquids themselves. Further tests showed that in the use of many insecticides, such as kerosene, gasolene, creolin, and pyrethrum, vapour penetrated the tissues and caused death long before the liquid or powder itself had time to penetrate the chitin, or to cause suffocation by the plugging of the tracheæ. The evidence obtained seemed to show that the vapours, after absorption in the insect body, become mainly effective through the tendency of their presence to prevent absorption of oxygen by the tissues.

"**The Hardy Plant Year Book,**" of which we have received a copy within the past few days, is of interest as the first of the annual publications of the National Hardy Plant Society, and of value for the information it contains on the cultivation and exhibition of the plants with which the society is immediately concerned. The contents include the annual report, the rules and bye-laws, a full report of the conference held at Shrewsbury in August last, articles on a visit to Friar Park Gardens, seasonal borders of hardy flowers, autumn flowers in the rock garden, and insects injurious to hardy plants. There are descriptive lists of the new plants of the past year and garden varieties of flowers which received recognition. The first of these is unsatisfactory, inasmuch as it conveys the impression that there is but one gardening paper in which new plants are illustrated and described.

**National Diploma in Horticulture.**—To enable the North of England Horticultural Society to effectively consider this scheme and co-operate with the Science and Education Committee of the Royal International Horticultural Exhibition, in May next, the council have appointed the following Special Committee: Major J. W. Dent, Ribston Hall, Wetherby; R. Farrer, Esq., Ingleborough; Professor M. E. Sadler, LL.D., Vice-Chancellor, The University, Leeds; Professor J. H. Priestley, B.Sc., F.L.S.; Professor R. S. Seton, B.Sc.; Professor F. E. Weiss, D.Sc., Dean, The University, Manchester; Mr. A. J. Allsop, Mr. P. Clapham, Mr. W. H. Dobson, Mr. J. Donoghue, Mr. W. B. Little, and Mr. G. Taylor.

**Tobacco Culture in Canada.**—Canada raises a good deal of the tobacco which is consumed in the country. The industry is of recent origin, and its progress has been greatly forwarded by the work of the Tobacco Division of the Government Experimental Farms, which has helped the growers in selecting and testing the right kinds to grow, and also by practical demonstrations of the best processes of curing the leaf. The improvement of the quality may be imagined when it is stated that some 15 years ago samples of the tobacco then grown by the Quebec farmer for his own use, upon being submitted to several of the leading tobacco manufacturers in the United Kingdom, was pronounced to be of a quality quite unfit for their purposes; that, in their opinion, a use for it might be found for fumigation purposes, as an insecticide for greenhouses; and that its commercial value was about 1d. a pound. Tobacco is at present raised almost entirely in Quebec and Ontario. The total crop last year was 20,000,000 lbs., two-thirds of the whole crop being raised in the latter province. The yield averages 1,500 lbs. per acre in normal years, and if well cured commands from 6d. to 7½d. per lb. for "binders," and from 4d. to 4½d. for pipe tobacco. Tobacco is one of the most paying crops. It is generally grown in areas of 1 to 4 acres especially in the fruit growing districts of Ontario and Quebec, where it forms a useful adjunct to fruit growing.

**The Southampton Horticultural Society,** which celebrates its jubilee this year, has lately issued its prize schedule for the several shows arranged to be held. First and foremost is the rose show, to be held jointly by the National Rose Society and this Society on June 26. The prizes are numerous, and arranged to suit all classes of growers. This also applies to the prize list for the Jubilee Show, to be held on July 16 and 17, comprising 36 classes for carnations, 12 for sweet peas, and over 60 for miscellaneous plants, cut flowers, fruit, and vegetables, in addition to provision for cottagers and juveniles. The autumn show schedule includes the usual classes for chrysanthemums and fruit.

**A Co-operative Kitchen Garden.**—In the development of the St. George's Hill estate, near Weybridge, for building purposes, it is intended to proceed on wholly new lines in making provision for the supply of the prospective residents with fruits and vegetables. The houses to be built will chiefly be of large size, ranging in cost from £2,000 to £10,000 each; and it is desired to avoid breaking up the areas of woodland for the purpose of providing space for kitchen gardens in connection with the residences. It is therefore proposed to establish a large kitchen garden, fully equipped with plant and fruit houses, and an extensive orchard. The garden will be in telephonic communication with the houses on the estate, and the produce will be supplied at market prices.

**Garden Plots for Scholars.**—Many of the schools in the populous parts of London have plants in pots and window boxes, and thus have enabled the scholars to obtain some knowledge of gardening, but an addition to this training an experiment of much interest is about to be made at Canning Town. The vicar of the parish has secured a piece of land that has been laying idle during the past twelve years to be chiefly used as allotments for the working men of the neighbourhood. Part of this land will be devoted to the provision of gardens for children, and about sixty scholars attending the schools in the neighbourhood will be provided with plots. The land is now being prepared, and the children are anticipating with much interest the time when they will have gardens of their own.

**Antidote for Rhus Poison.**—We cull the following from our American contemporary, "The Weekly Florists' Review": E. O. Orpet, of Lake Forest, Ill., speaking of ivy poisoning, says that last summer, when Rhus toxicodendron was just budding forth with blood-red shoots, four men were employed to root it up, for unless given something to climb upon, it becomes a pestiferous ground weed. These men were seemingly immune until hot weather, but when perspiration was free all were badly affected. The face swells to such an extent that the sufferer can scarcely see, and other portions of the body are also affected. Our physician recommended as a remedy tincture of Sanguinaria canadensis, applied with a soft cloth. Each man was cured in four days by the use of this simple remedy. The bloodroot grows plentifully here with the rhus in similar situations, and a pint of the tincture is ample to effect a cure of a serious case. Physicians also recommend the fluid extract of Grindelia robusta for cases of poison from Rhus toxicodendron and R. venenata, the latter being the most injurious of the two species.

## ROYAL HORTICULTURAL SOCIETY.

In spite of unpleasant weather and the dislocation of train services owing to the coal strike, there was a first-rate exhibition at the Royal Horticultural Hall, Westminster, on Tuesday, March 19. Daffodils and early spring flowers were in great force, and flowering shrubs were especially good. Orchids again proved a great attraction, and carnations were much in evidence. The attendance was again very large.

### FLORAL COMMITTEE.

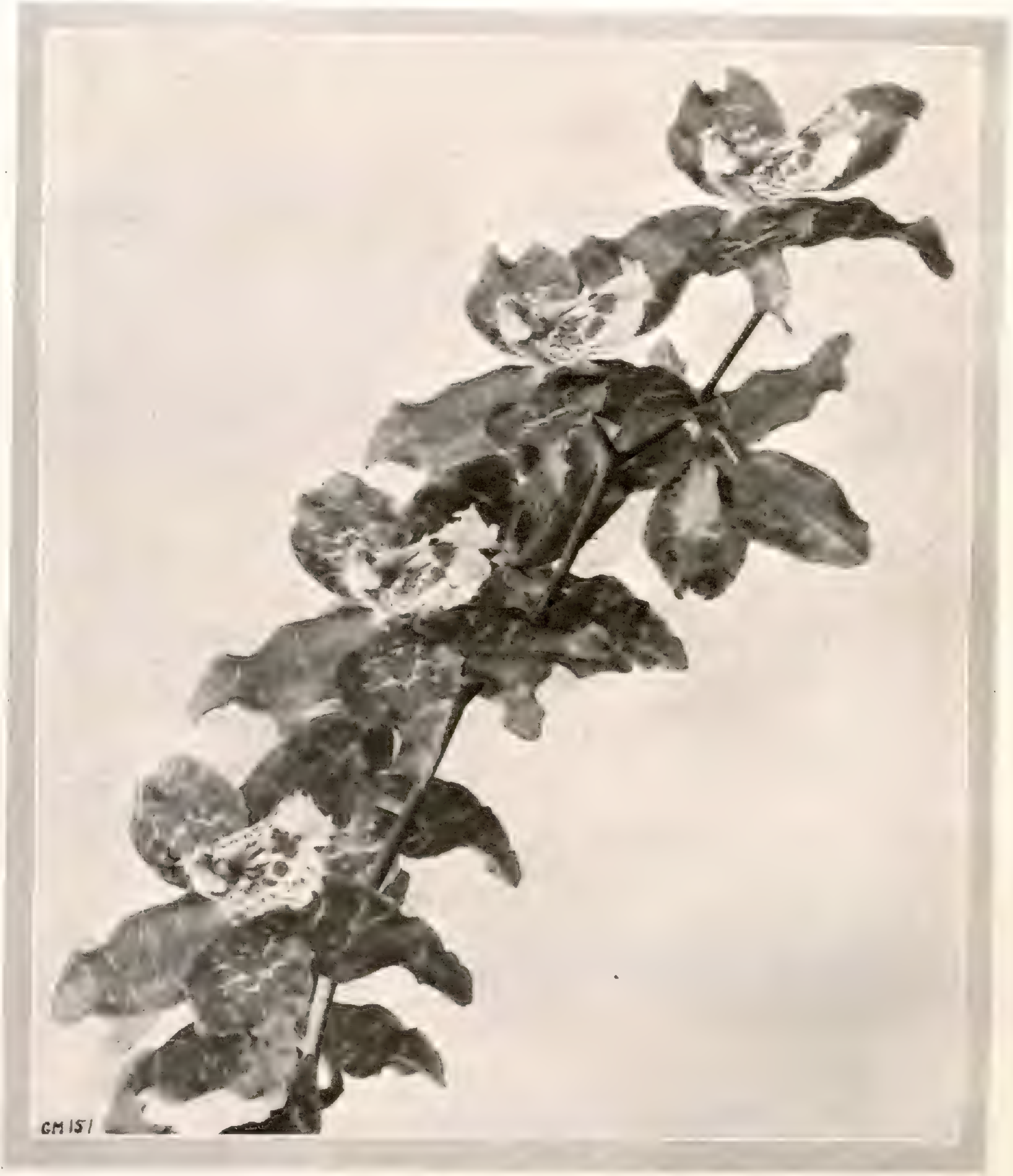
Rose Queen, a finely-shaped, fragrant H.T. variety, with rich silvery-rose colouring, gained an A.M., as shown by Mr. W. E. Wallace, Eaton Bray, Dunstable. Mr. G. Prince, Longworth, exhibited roses, and made a very pretty show of the lovely Fortune's Yellow. The roses from Messrs. G. Mount and Sons, Canterbury, consisted almost entirely of the varieties Lady Hillingdon and Mrs. G. Shawyer, both being shown in fine condition.

Greenhouse plants in great variety from Messrs. J. Veitch and Sons, Chelsea, comprised gorgeous amaryllis, a splendid strain of Primula obconica, Azalea amœna Hexa, greenhouse rhododendrons, and Amphicome Emodi. In another group the firm had a splendid lot of lilacs in pots, Indian azaleas, the new double Prunus Pissardi Moseri fl.-pl. (A.M.), a lovely flowering shrub; and Primula Knuthiana (A.M.), with rosy lilac flowers. The same firm had also a splendid bank of cyclamens.

Mr. H. Burnett, Guernsey, was, as usual, an exhibitor of very fine perpetual carnations, and staged grand bunches of Mrs. Tatton, Mrs. H. Burnett, R. F. Felton, Mandarin, Marmion, Carola, and Mrs. C. F. Raphael. Messrs. W. Wells and Co., Merstham, had Scarlet Glow and White Wonder carnations in good form in their exhibit. Messrs. Allwood Brothers, Haywards Heath, disposed good blooms of carnations in attractive fancy vases and bowls, thus demonstrating once more the decorative value of the flowers. Messrs. Young and Co., Hatherley, presented fine vases of Cheltonian, Mikado, Lady Neeld, Winsor, Enchantress, Rose Enchantress, Britannia, and Afterglow perpetual carnations. An interesting exhibit from Messrs. Stuart Low and Co., Enfield, included camellias, cyclamen, acacias, and a selection of perpetual carnations.

A few fine hippeastrums (amaryllis) were staged by Mr. Dye, gardener to Lord Rothschild, Tring Park, and two of these—Rose du Barri, deep salmon rose, and Musigny, deep crimson—each gained an A.M. The green-flowered shrub, Corylopsis Veitchi (A.M.), was exhibited by Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree. Mr. Goldston, gardener to Lady Mary Holland, Easton Place, London, S.W., submitted a few well-grown amaryllis, chiefly orange and white varieties.

Flowering shrubs from Mr. L. R. Russell, Richmond, made a brave show, the mollis azaleas, lilacs, forsythias, laburnums, etc., being margined by Primula obconica and Francisea floribunda—the latter a fine plant. Messrs. R. and G. Cuthbert, Southgate, showed Ghent and mollis azaleas, lilacs,



ODONTOGLOSSUM QUEEN OF GATTON.
Flowers yellow, heavily marked with brown. A.M., R.H.S., March 19, Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

magnolias, etc. Messrs. W. Cutbush and Son, Highgate, filled a long table with lilacs, magnolias, Pyrus malus Scheideckeri, Prunus triloba, Spiræa confusa, Rhododendron Pink Pearl, and an exhibit of fine flowers of all the best varieties of perpetual carnations, the new Mr. J. Mackinnon being especially good.

Across the top of the hall Messrs. J. Hill and Son, Edmonton, exhibited a grand lot of ferns, staging splendid examples of Nephrolepis Fosteri, N. todeaoides, Platycerium Hilli, Cheilanthes elegans, Osmunda palustris, the graceful Adiantum Williamsi, Lastrea erythrosa, Blechnum brasiliense, and other good things. Fragrant gardenias, bright clematis, and graceful ferns were extensively displayed by Messrs. H. B. May and Sons, Edmonton. Messrs. Jarman and Co., Chard, set up a pretty group of star cinerarias in a great variety of colouring. Messrs. W. Artindale and Son, Sheffield, exhibited cut flowers of their very fine strain of Primula obconica.

A blaze of colour was provided by Messrs. H. Cannell and Sons, Swanley, who presented large bunches of very fine varieties of zonal pelargoniums, their Sirdar, Duke of Bedford, Carmania, Mars, and Saxonia being especially brilliant. Messrs. H. J. Jones, Lim., Ryecroft, Lewisham, showed zonal pelargoniums, and staged very fine flowering varieties as Chas. H. Curtis, A. Lovett, Ellen Countess of Radnor, Cymric, Jas. Wraight, F. Gulliver, Arabic, and Mrs. H. Wood, all splendid sorts with large trusses of big blooms. Mr. Hawthorn, gardener to Messrs Charrington, Byfleet, put up a nice little group of cyclamens.

Mr. Maurice Prichard, Christchurch, had Primula helvetica alba, Anemone pulsatilla, and Primula cashmeriana in very fine firm. Messrs. J. Cheal and Sons, Crawley, arranged a small rock garden filled with primulas, lithospermums, heaths, etc., with flowering shrubs at the back. Messrs. Bakers, Wolverhampton, had in a collection of early flowers some delightful groups of Primula frondosa, Cypripedium spectabile, Iris reticulata, and blue and white hepaticas.

Messrs. Thompson and Charman, Bushey, Messrs. G. and A. Clark, Dover, and Messrs. T. S. Ware, Lim., Feltham, staged rock garden exhibits, the latter making a fine effect with trilliums, scillas, primulas, etc. Mr. Clarence Elliott, Stevenage, made a feature of Viola gracilis and Saxifraga apiculata on a small rock garden. From the Burton Hardy Plant Nursery, Christchurch; Mr. Jas. Box, Lindfield; Messrs. Whitelegge and Page, Chislehurst; Messrs. G. and A. Clark, Dover; and Messrs. J. Peed and Son, Norwood, S.E., came exhibits of alpine and early hardy flowers.

Mr. G. Reuthe, Keston, showed Narcissus cyclamineus, a fine selection of saxifragas, irises, Rhododendron argenteum, Pieris japonica, etc.

Messrs. R. Gill and Sons, Falmouth, displayed a large collection of Himalayan rhododendrons, including the new R. cornubia, R. arboreum, R. barbatum, R. Shilsoni, R. Henry Shilson, R. cinnamomium, R. albescens, and other fine things. Abies Douglasi Fletcheriana, a pygma form of a popular tree, was exhibited by Messrs. Fletcher Brothers, of Ottershaw, and gained an A.M.; it is a very distinct and striking plant.

Mr. Van der Elst, Tottenham Nurseries, Dedemsvart, Holland, exhibited a very pretty pink form of Anemone pulsatilla, named Mrs. Van der Elst, and, seeing how popular hardy plants are at present, it was not easy to understand how this failed to gain an award; at Amsterdam a week previously it met with official approval.

### ORCHID COMMITTEE.

Mr. W. Collier, gardener to Sir J. Colman, Bart., Gatton Park, Reigate, brought up the splendid Odontoglossum Queen of Gatton (triumphans and percultum), A.M., with yellow flowers heavily marked with brown, and with a white and red purple lip; a fine O. Rolfeæ also came from the Gatton collection. A beautiful specimen of Sophronitis grandiflora, carrying 100 flowers, was exhibited by Mr. Alexander, grower to Lieut.-Colonel Sir G. Holford, Westonbirt, Tetbury, Gloucester, who also exhibited Cattleya Dirce Westonbirt variety (A.M.).

Messrs. Charlesworth and Co., Hayward's Heath, had delightful plants of Odontoglossum Gladys, O. ardentissumum, O. armairvillierense, O. Phædra, O. Craveniana, O. amabile, the striking Neomoorea irrorata, and the graceful Angræcum citratum. Messrs. J. and A. McBean, Cooksbridge, displayed some fine forms of Odontoglossum crispum, O. Phœbe, O. nebulosum, Cattleya Schroderæ, and the lovely little yellow Lælio-cattleya Euripedes. De Barri Crawshay, Esq., Sevenoaks, showed several seedling odontoglossums and a fine Cymbidium insigne.

The orchids from Messrs. S. Low and Co., Enfield, included Odontoglossum Rolfæ, Oncidium concolor, Brasso-cattleya Langleyensis, Cattleya Schroderæ, and other good things. Messrs. Sander and Son, St. Albans, were quite large exhibitors of orchids, and their fine exhibit contained Dendrobium Wardianum, Phaius Norman, Cymbidium Gottianum, Renanthera Imschootiana, a number of beautiful odontoglossums and odontiodas, Cattleya intermedia nivea, etc.

A large number of odontoglossums and odontiodes were arranged by Mr. Day, gardener to H. J. Goodson, Esq., Putney, and among the former O. Cobbiæ, O. ardentissimum Dayanum, O. amabile, and O. Wilckeanum were conspicious; Phaius Norman was well represented, and so was Cattleya Trianæ. Mr. H. T. Pitt, Stamford Hill, exhibited Cymbidium Lady Colman, Rosslyn var., as well as the original hybrid. Mr. E. V. Low, Hayward's Heath, showed Cpyripedium aureum Surprise, with seven fine flowers. Mr. R. C. Thwaites, Streatham, submitted Eulophia Saundersi and Odontioda Sanderæ.

S. Gratrix, Esq., Manchester, exhibited a grand plant of a very beautiful odontoglossum named O. crispum Samuel Gratrix; it carried a fine spike of rounded flowers marked heavily with bright and light brown; a First Class Certificate was awarded. A little group of orchids from Mr. Coningsby, gardener to G. H. Smith, Esq., Killoran, Finchley, contained good specimens of Cymbidium eburneo-Lowianum, C. insigne, and Lycaste Skinneri. Messrs. Hassall and Co., Southgate, presented the good old Angræcum sesquipedale, Brasso-cattleya Maroni, and Cattleya amethystoglossa.

### DAFFODIL COMMITTEE.

This body had a number of groups to consider, and several fine novelties were placed before it, three Awards of Merit being granted.

Some exquisitely beautiful new daffodils, exhibited by Mr. Alex. Wilson, Shorel, Bridgwater, attracted the attention of all daffodil lovers. Among those named Bernardino, Hypatia, Midas, the new White Whelp; Robespierre (A.M.), a grand incomparabilis; Rubalite (A.M.), a big poetaz; Gyr Falcon, a giant Leedsi, with soft cream colour; Pilgrim, Inglescombe (double), and Buttercup. In addition there were a number of beautiful seedlings as yet unnamed.

Messrs. W. Cutbush and Son, Highgate, presented a long table full of daffodils in pots, the chief varieties being Mrs. Langtry, Barri conspicuus, Empress, Glory of Leiden, Horsfieldi, Emperor, James Walker, Sir Watkin, King Alfred, and Sulphur Phœnix, Messrs. R. and G. Cuthbert, Southgate, exhibited tulips in pots, chiefly Darwin varieties; Mr. Farncombe Saunders, Corydon, White Queen, Pride of Haarlem, Psyche, Clio, and Le Tulip Noir were the varieties most in evidence.

A beautiful selection of varieties of daffodils from Mr. Christopher Bourne, Simpson, Bletchley, attracted a great deal of attention; Victoria, Norma, Weardale Perfection, the lovely Evangeline, Gloria Mundi, Whitewell, and the grand new Helios (A.M.), a fine and shapely incomparabilis variety that subsequently passed into the possession of Mr. Walter T. Ware, Inglescombe, Bath. The bold King Alfred daffodil was finely displayed by Messrs. James Carter and Co., Raynes Park, this firm exhibiting large drifts of it on a bold piece of rock garden, backed by conifers, and with a pool of water in the centre. There were about seven hundred blooms of this splendid daffodil, so the fine effect produced can well be imagined.

Messrs. Barr and Sons, Covent Garden, filled a large space with a fine collection of cut daffodils, and among newer sorts they displayed Alice Knights, Plenipo (double), Doubloon (double), Cleopatra, Sir Galahad, Mrs. G. H. Barr, Michael, Michael Angelo, Bernardino, Bedouin, Adelaide, Lord Kitchener, Furnace, and Homespun. An exhibit of tulips set up in tall bamboo stands and associated with sprays of Asparagus Sprengeri, came from Messrs. S. Bide and Sons, Farnham; the varieties were Vuurbaak, Lucretia, and Pink Beauty, and these were shown in fine form.

Tulips and daffodils grown in fibre, in fancy pots, by Messrs. R. H. Bath, Lim., Wisbech, were capital. Prince of Austria, Coleur Cordinal, Spaedonk, Keizerkroon, and Rose Luisante among tulips, and J. B. M. Camm, Aspasia, Emperor, and Princess May among narcissi were excellent. Mr. J. Martin, Truro, showed a few daffodils, and the Rev. G. H. Engleheart, Denton, Salisbury, showed some splendid new seedlings, including one unnamed trumpet variety of creamy-buff colouring with faint pink tinge.

Messrs. Robert Sydenham, Tenby Street, Birmingham, exhibited Lilium speciosum, lily of the valley, tulips, spiræas, and hyacinths, all grown in bowls in fibre; and staged a few good daffodils, such as Flambeau, King Alfred, Argent, Mrs. Brett, Elvira, Millie Price, and C. J. Backhouse.

### FRUIT AND VEGETABLE COMMITTEE.

Lily White seakale, Harbinger cabbages, with Early Paris, Stanstead Park, and All-the-Year-Round lettuces, cucumbers, corn salad, radishes, chicory, dandelion, beet, endive, Mercury or Good King Henry, tarragon, and celeriac—all salading subjects—were shown by Messrs. Sutton and Sons, Reading, and made a very interesting exhibit. Carter's Forcing lettuce, a capital cabbage variety, was well shown by Messrs. J. Carter and Co., Raynes Park.

Apples were well shown by Mr. W. Heath, gardener to Sir Daniel Gooch, Hylands Park, Chelmsford, the varieties Annie Elizabeth, Royal Jubilee, and Newton Wonder being especially well preserved. Mr. F. E. Wienholdt, Rhodes Farms, Inyanga, South Africa, exhibited dishes of good specimens of Cleopatra, King of the Pippins, Blenheim Pippin, Munro's Favourite, and Syke House Russet apples.

The awards will be found on page 247.

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**Heliotrope Madame de Bussy.**—This is a very fine heliotrope either for bedding or for pot culture, the flower clusters being massive, the individual blooms very large, and in colour bluish violet with a white centre. What is more, the blossoms are deliciously scented, a feature which is wanting in some of the newer kinds.—K.

**Cucumbers.**—If the seedlings have made good progress in pots, and a hotbed has previously been prepared, they will now be ready for their permanent stations. A good compost for the early batches consists of three parts turfy loam, one part flaky leaf-soil, and some mortar rubble to keep it open. Place a thin layer over the entire bed, then place hillocks or mounds at three feet apart to receive the plants. Plant, and stake to the first wire, at which height the plants should be stopped, train thinly, and do not overcrop. Promote a moist and genial atmosphere, watering the plants very carefully until well established. A temperature at night of 65 degrees, rising to 80 by day in sunny weather, will suit cucumbers well. Encourage growth by timely light top-dressing of warm soil whenever the roots appear.

## FANCY CARNATIONS.

Fancy carnations have, as the result of the activities of the raisers, undergone so remarkable a development within the past ten years that they now form a group of considerable importance, and enjoy a high degree of popularity among those who appreciate in even a moderate degree the charms of the carnation in its many attributes of beauty. There is no occasion, in referring to the section wherein the fancy varieties have a place, to institute comparisons between them and the selfs with a view to determine their relative merits. Both classes possess merits of a high order, and both should be fully utilised in beautifying the flower garden and in furnishing supplies of blooms in a cut state for indoor decorations. In the opinion of the writer they are especially useful for pot culture and for planting in borders where the flowers will be immediately under the eye of the cultivator, and thus enable him to enjoy to the full the exquisite colouring and distinctive markings that so strongly appeal to the artistic perceptions of flower-lovers, and especially of those who take an interest in carnations.

CELESTIAL.
BECKY SHARP.

UNA.
LIBERTE.

CLEMENT.
GEORGE HIRST.

FIRST PRIZE COLLECTION OF UNDRESSED FANCY CARNATIONS.
Shown by Messrs. A. R. Brown, Lim., King's Norton, at the Midland Carnation Society's exhibition in 1911.

The success that has been achieved by raisers in the improvement of the section has enabled them to introduce during the past few years a large number of new varieties of great merit, and as the result the list of really first-class flowers has became so lengthy as to perplex those who have no opportunities for seeing varieties until they are widely distributed in gardens. To assist such cultivators—and, indeed, all who may be desirous of revising the list of varieties grown for the purpose of substituting some of the more recent introductions for older flowers—the following selection has been prepared. This has purposely been made short that cultivators with limited space at their disposal should not be perplexed by a multiplicity of names, but there are many others that could be recommended to those who have room for a larger number of varieties.

Alice B. Stewart.—A distinct and beautiful flower, richly marked with rose on an apricot ground.

Celestial.—A handsome yellow-ground flower, marked with maroon and red.

Delicia.—A beautiful white-ground flower of large size, with pink and red markings.

Donald McDonald.—A large and attractive flower of superb form, now being introduced by Mr. C. Blick; the ground rich yellow, deeply suffused with bright red.

Douce Davie.—An effective flower, with yellow ground, and suffusion of rose at the margin of the petals, the latter marked with deep rose.

Father O'Flynn.—A remarkably fine variety, the ground bright yellow, attractively marked with light scarlet.

Forester.—A handsome yellow-ground flower of large size, raised by Mr. J. Douglas; the markings are crimson and red.

Hidalgo.—A superb yellow-ground flower that has been in cultivation some years, and continues to hold a high position; the blooms are of fine form, and the petals marked with maroon and red.

John Ridd.—A remarkably fine variety that is being introduced by Mr. J. Douglas this season, the blooms are of fine form and the petals have rose-red markings on a bright yellow ground.

Leslie.—Another of Mr. C. Blick's fine novelties; the flowers are large and the broad buff-coloured petals are margined and suffused with bright rose.

Liberté.—A fine variety, the blooms large, and of fine form, the ground clear yellow, overlaid with crimson marking. This variety was conspicuous in the collection with which Messrs. A. R. Brown and Co. obtained premier honours for six varieties undressed, at the Midland Counties Carnation Society Show last year, and illustrated herewith.

Linkman.—A remarkably attractive variety; the flowers are large in size and of superb form, with bright scarlet markings on a yellow ground.

Lord Steyne.—A distinct and handsome flower of large size, heavily marked with crimson on a rich yellow ground.

Mrs. F. Gardiner.—A charming flower of high quality, with apricot-coloured ground and bright rose markings.

Mrs. J. L. Gibson.—A distinct and attractive flower, with lilac-rose markings on a buff-coloured ground.

Mrs. Penton.—A new variety of quite exceptional merit, the flowers of fine form, the ground buff, with rich rose markings.

Pasquin.—A bold and handsome flower of full size and fine form, the ground yellow, the margin and markings of the petals rose-lavender.

Rhea.—A charming variety of recent introduction, the flowers of excellent form and full size, the ground colour yellow, suffused with rose-scarlet.

Sweet Briar.—A remarkably pleasing variety of high quality, the flowers of full size, with lavender and rose markings on a white ground. Carnation Grower.

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**Sweet-scented Flowers.**—That little unassuming heath-like greenhouse shrub, Boronia megastigma, with its sober tinted brownish flowers, would attract but little attention were it not for the delicious fragrance that they possess. So pronounced is it that a single specimen will make its presence manifest throughout a good sized structure. What is more, although of so penetrating a nature, the perfume is not at all overpowering. Another greenhouse shrub remarkable for the fragrance of its blossoms is Daphne indica or odora. This flowers as a rule from December onwards to the spring, whereas the Boronia is generally a little later in blooming.—T.

## BORDER CARNATIONS.

These popular garden flowers still maintain the high position they have occupied for so many years, and in spite of many rivals continue great favourites. The rapid development which has taken place among them says much for the high esteem in which they are held by the flower-loving public. The beautiful flowers, many of which are sweetly scented, are highly appreciated for room decoration, for, when afforded careful attention, they last for some considerable time in a cut state. Although not so continuously in flowering as begonias or geraniums, the carnations provide an excellent variety for bedding purposes, and when massed in separate colours beautiful effects are obtained. There are few plants that surpass these for town gardens, for they will thrive in the most smoke-laden atmosphere, while for seaside cultivation they are well suited.

CARNATION JOHN RIDD.

A distinct and handsome fancy variety, raised by Mr. James Douglas, Great Bookham. The blooms are of large size, and are freely marked with rose-red on a yellow ground.

### Soil Preparation.

Many failures with carnations are attributed to the soil, yet almost any soil may be made fit, if thoughtfully prepared. There are more drawbacks in localities than in soils, for the latter can be altered and improved, but the locality cannot. Thorough drainage is a most important point, for there is nothing a carnation dislikes so much as a moisture-retaining soil, and many failures are due to sourness. In selecting a piece of ground for planting avoid, if possible, sheltered and confined borders, choosing in preference an open position, where the plants will be fully exposed to all the elements.

When the question of where to plant has been decided the ground should be well dressed and deeply dug, and left lying in a rough state until it is required for planting. If of a heavy nature, it is more beneficial to dress with stable manure, while for light soils cow manure is the best; but whichever is used it must be thoroughly decayed. A dressing of some approved soil disinfectant will prove of great assistance if dug in with the manure, as it destroys many underground enemies. Shortly before planting a dressing of wood ashes and soot, and, if obtainable, a liberal quantity of fresh sea sand, will be beneficial. Retentive soils should be dressed more freely with wood ashes and sand than those of a light nature. This dressing must be thoroughly incorporated with the soil, and the top of the ground left in a more even and fine condition than it was in the earlier digging.

### Raising Seedlings.

There are two methods of raising plants, one by seed sowing and the other by layering. Seedlings are readily raised, and they bloom freely in the year following the sowing of the seed. It is an extremely interesting proceeding to raise a batch of seedlings, but the cultivator must not expect to get many flowers as fine as those of named varieties, and there will also be a small percentage of singles. From the middle to the end of March is a suitable time to sow the seeds, using pans or boxes which have been previously filled with light soil, placing them in a warm house with a temperature of about 60 degrees, where the seeds will quickly germinate. As soon as the seedlings are large enough to handle, transplant into boxes filled with well-decayed manure and sand in equal parts. When established in the boxes, cold frame treatment should be afforded, keeping the stock fairly close until the plants become accustomed to the change of temperature, after which time they must be gradually hardened off until full exposure is safe. Under this treatment splendid plants are obtained for putting out into their flowering quarters for the following season.

### Planting.

In many districts it is quite safe to plant out the majority of the varieties which have been propagated by layering, in the early autumn, but the cultivator has to take into consideration those which are less robust than others. The yellow varieties, and all those having flowers with yellow predominating, are inclined to be rather delicate, and these are much safer when potted and wintered in frames. When for any reason the planting cannot be done in the autumn there should be no hesitation in planting at this season, for, provided the work is properly done, the results will be in every way satisfactory.

The end of March and early in April is the most suitable time for spring planting, providing the ground is in good working condition. Assuming that the soil has been prepared beforehand, it is made firm by treading and raked level. If planted in rows, the distance between each row should be about twenty inches, allowing eighteen inches from plant to plant. The soil must be made firm about the roots, and these should be deep enough to prevent the plant from swaying about with the winds. When bedded out for summer effect it is advisable to plant a little closer. For this, about fifteen inches space between the plants will be found sufficient. If the weather remains dry after planting is finished, a good watering should be afforded.

Regarding the planting of the seedlings these are put into their permanent quarters as soon as they are large enough, which is generally about the end of July. The space recommended for the layered plants will suffice for seedlings.

### Summer Management.

Constant attention is required throughout the growing season, to keep the plants in a healthy condition. It is very beneficial to frequently stir the surface of the soil with a hoe, and an occasional dusting with soot is of great assistance. This latter operation should be carried out in the early morning when the dew is on the foliage.

Carnations have many enemies, and precautions must be taken to prevent any damage being done by the various pests which atack them. The soot dressings will usually keep sparrows off, but where there is any danger of rabbits or hares doing damage, it will be necessary to enclose the beds with wire netting. The carnation maggot is very troublesome in many districts during the early summer, and if not destroyed causes much damage. It is necessary to carefully examine the plants occasionally to exterminate this pest.

As growth advances and the flower spikes are produced, support must be afforded. Galvanised wires will be found most suitable for this purpose, and inconspicuous; but the top end must be turned round to prevent any hurt occurring when picking the flowers. If large flowers are required for exhibition purposes, the buds must be thinned, leaving about three to develop on each spike, and in some instances it is necessary to reduce the numbers to one. Mulching with decayed manure is beneficial, where the soil is light, during hot, dry weather, and the plants will need water occasionally.

### Varieties.

Bridegroom, pink; Cecilia, yellow, large flowers; Delicia, white ground, marked pink and crimson; Donald MacDonald, yellow ground, edged and marked crimson; Daffodil, good yellow; Duchess of Wellington, deep lavender; George Macquay, white; Gloriosa, apricot ground, marked scarlet; Herbert J. Cutbush, scarlet; King Arthur, crimson; Lady Linlithgow, rose; Lieut. Shackleton, yellow ground, splashed pink; Mrs. Macrae, dark scarlet; Mrs. G. A. Reynolds, apricot; Miss Willmott, pink; Mrs. Henwood, white.

PICOTEE F. W. GOODFELLOW.

A beautiful yellow-ground variety, raised by Mr. C. Blick, Hayes, Kent. The flowers are of large size, and the petals have a heavy rose edge.

Yellow-ground fancies are, as a class, dealt with in another article, but the newer yellow-ground picotees are so beautiful that they merit attention, and a good baker's dozen of varieties consists of: Childe Harold, fine wire edge; Dalkeith, heavy crimson edge; Exquisite, light scarlet-edge; Gretchen, deep yellow, light purple edge; Her Majesty, heavy purple edge; John Ruskin, light rose edge; Lady Douglas Galton, purple wire edge; Lady Gascoigne, rich rose edge; Lady Golightly, heavy crimson edge; Lucy Glitters, medium rose edge; Mrs. Walter Heriot, very fine, rose edge; Onward, medium rose edge; and Peregrine, clear yellow, rose margin.

The following will be found suitable for producing an excellent supply of flowers for cutting: Carabas, Mrs. Nicholson, and Raby Castle, pinks; Trojan, Countess, and White Swan, whites; Islinglass, scarlet; Daffodil, yellow; Uriah Pike, dark crimson; Mephisto, crimson; Benbow, buff; Crimson Clove and Gloire de Nancy are two well-known favourites, and should be grown for the fragrance of their blossoms.

Gnaton Gardens. E. C. Pooley.

## PERPETUAL CARNATIONS OUT OF DOORS.

The adaptability of the perpetual carnation for growing and flowering in the open air is now being more generally recognised, and there is no small probability that this class will supersede the border varieties, especially when we have raised a few different shades of colour in the selfs and also in the fancies. To introduce this wider range of colour in the perpetual carnation the cross-fertilisation necessary might be effected with varieties which we already have in the perpetual section, so as to retain the perpetual habit now obtained, and not by using pollen from border varieties, or the ultimate object might be defeated.

When one considers the short flowering period which the border carnation gives, it is surprising that the perpetual varieties were not tested earlier, and also that even now the plants are not more utilised for outdoor flowering. This may be due to the idea that the perpetual varieties are not hardy enough. That they are as hardy as and more so than many of the border carnations I have repeatedly proved, and the test has been in the worst kind of soil and atmosphere one could grow them in during winter, and in which about only half a dozen varieties of the border carnations would survive.

The preparation of plants for open air culture is a simple matter. Stock for the purpose may be propagated early in autumn, grown cool during the winter months, and planted out about the end of March, weather permitting, in the quarters where they are to flower. When the young plants are rooted, and have grown sufficiently, they should be pinched or stopped once. I prefer stopping the plants once only, and allowing all other growths to grow away unchecked. If the young plants can be grown in five-inch pots before being planted out, the greater production of bloom will be obtained, but should time and space not permit of this, then they may be planted out from three-inch pots. A little later propagation will suffice for the smaller sized pots, but the plants should be well established, yet not be checked by being kept too long in the pots before being transferred to the flowering quarters. Any surplus young stock could be planted out, and a good supply of flowers will be provided by plants which have flowered in pots, and have to give place to younger batches of plants in the houses.

Choose a border which does not require any fresh manure at digging time, and, if lime is not present in the soil, some should be worked in when the ground is prepared. Where it is desired to gather flowers over as long a period as possible it is a good plan to grow the plants where the blooms can be covered at night with tiffany stretched over wires; this protection may not be necessary in all localities, yet at the same time it is worth the extra trouble, as it keeps the blooms untarnished during heavy dews and rains.

Perpetual carnations growing in the open give better stock for propagating than can be obtained from pot plants. They require little attention beyond keeping them staked, stirring the soil between them frequently, and watering in very dry weather, with an occasional weak stimulant when the soil is moist.

Specially good varieties for flowering out of doors are Britannia, Mrs. Burnett, Mrs. T. W. Lawson, Enchantress, Winona, Beacon, Winsor, and Lady Bountiful; in fact, most kinds will respond to this treatment, though those which form good plants, after stopping the lead once before planting out, are most satisfactory. T. H. Slade.

## THE NEWER HYBRID BRIAR ROSES.

For the garden the hybrid briar roses will, in the near future, play an important part, as, since the introduction of the variety Soliel d'Or by Pernet Ducher in 1900, we have had many additions to the class, mainly through that source.

This group includes some of the oldest and most beautiful roses in the garden. For instance, Austrian Copper and Austrian Yellow, both grown in England by Gerard in 1596, are even now great favourites, as both blossom profusely, the former a bright reddish-copper, and the latter deep yellow. These were followed by Harrisoni (Harrison, 1830), a very pretty yellow, of dwarf habit, and Persian Yellow (Willcock, 1837), with large double flowers of a deep golden colour. Soliel d'Or (Pernet Ducher, 1900) is the result of crossing Persian Yellow with Antoine Ducher; it is perfectly hardy and free flowering, giving large flat blossoms of a distinctly pleasing colour — orange-yellow to reddish-gold, shaded with nasturtium-red.

From this variety we have obtained the following novelties, all of which are destined to become popular owing to their freedom of flower and brilliancy of colour, especially when grown as a hedge or screen where they can ramble at will. They require little pruning beyond the removal of small and worn-out shoots. A yearly renovation of the soil about their roots will encourage the growth, and add to the number of flowers.

The year 1910 was especially productive of varieties, giving us no less than three of the five coming from P. Ducher—Beauté de Lyon, coral-red, slightly shaded with yellow, the flowers full and globular. Viscountess Enfield, quite one of the most attractive, coppery old rose, shaded with yellow, the inner petals tinted with carmine, with occasional stripings of yellow in the centre. Rayon d'Or, quite unique in colour among roses, the long and pointed buds coppery-yellow, striped with claret-red, and as the blooms expand they show a flush of rose, which gradually dies away to bronze, and later to a rich yellow; this rose should be valuable in pots for early flowering, as under cool treatment the colour is most interesting. Soliel d'Angers (Ch. Detriche, sen.), deep ochre-red, edged vermilion; the foliage of this variety is sweetly scented. Juliet (W. Paul and Son, 1910) is a most remarkable rose in colour, and said to be derived from Soliel d'Or and Captain Hayward. The outside of the petals is old gold, the interior a rich rosy-red, changing to deep rose as the flowers expand; the blooms are of full size, most shapely, have an extraordinary lasting power, and delightful fragrance.

The hybrid briars are not nearly so subject to mildew as H.T.'s or other sections; in fact, some of the varieties are quite immune. E. Molyneux.

Swanmore Park.

## MAGNESIA.

Your correspondent, Mr. Alger Petts, raises a question on p. 141 as to the value of magnesia salts for horticultural purposes, and suggests that experiments should be conducted on plots of ground yielding the same produce with some of the magnesium compounds, and also with common salt and lime, to prove their value. This would certainly be a means of testing the relative values of the salts employed on the small portions of soils and crops grown upon them, but the results would be no guarantee that they would be the same on another plot. Very often an experiment carried out on one formation of soil is taken as a criterion for all future courses of treatment, no matter what the composition is.

All soils formed from the magnesium limestone are rich in magnesia, and no application of it could be of any service to plant life upon it. Again, practically all soils that have been under cultivation for a lengthened period have had applications of lime and kainit at one time or other, and as these contain magnesium salts the supply of this indispensable plant food is being unconsciously maintained in the soil. Farmyard and other organic manures contain a certain percentage of magnesium salts, and by their application to the soil the store of these salts is augmented, if not to the extent of the quantity extracted by the previous crop, yet sufficiently to enable growth to develop.

Soils naturally deficient in magnesia, even when long cultivated, and dressed with magnesium lime, are likely to benefit from periodic applications of magnesium salts, and this I have seen exemplified during last year. The soil was a heavy loam, rich in potash, but deficient in lime, phosphates, and magnesia. In Staffordshire an extent of country is being broken up for the first time and brought into cultivation, and, although the natural herbage is of the most useless plants, the crops obtained after the use of lime, kainit, and phosphates are wonderful. Most of this land is heavy clay, with a few sandy bands running through it, and, so far as can be judged from its neglected appearance, has never in its history received any aid to its fertility. This year a portion is being treated with a crude magnesium salt, and this is fully expected to foster the production of an even greater crop than the heavy yields of the last few years. It is on maiden land of this kind, and on an extensive scale, that experimental work is of value, showing the natural resources of the soil with the aid of fertilisers of a definite character, and not on small plots in a garden which may vary considerably in their chemical composition; a fact often overlooked.

Some years ago, when in charge of a kitchen garden of a good many acres in extent, I found very heavy clay in one part, almost pure sand in another, and all the variations of soil between these, within the walls, and yet we secured excellent crops all through. Naturally lime and magnesia were abundant, but potash and phosphates were deficient. Still, without any artificial help in these materials, we had peas go to the top of 7ft. stakes and down to the ground again on some of the quarters. The heavy manurings which had been given to this garden during the several hundred years it had been in cultivation no doubt contributed to the supply of both organic and inorganic plant food constituents available, and also their fairly even distribution. The physical properties of some portions being of a less retentive nature than the clays, the deficiencies of potash and phosphates were most marked upon them. Considerable experimental work was carried out in these gardens, and the results, in some instances, were quite the opposite of what was expected when commencing the experiments.

On soils almost side by side, and under identically the same treatment, excellent and very indifferent crops were obtained. It is because of this experience that I see the possibility of mistaken impressions regarding experiments with some of the magnesium compounds, common salt and lime. If the lime used in experiments of this kind contains magnesia, which will be the case with 90 per cent. of the limes in the country, then it is useless employing magnesium salts alone, and drawing a comparison. Magnesium salts should be mixed with non-magnesium lime, or lime containing very little magnesia, and then applied to all fruit crops, especially stone fruits, and also to all leguminous crops in the kitchen garden. Common salt can be tried at the same time, but its effect will not be manifest. There would be very little benefit from lime and magnesia dressing to land intended for the growth of cabbage, celery, asparagus, and all green vegetables, but salt, being one of the chief constituents required by them, would influence their growth in a marked degree if added to the soil in which they were being cultivated. Experiments with magnesium salts should therefore be confined to crops requiring large supplies, and the salts always be in either a mixture or in combination with lime. Hibernia.

## PERPETUAL SPINACH.

A green vegetable that continues to yield useful material for the table during the hottest and driest of seasons, and is at the same time a capital subject in wet weather, and so hardy that the severest winter has not the slightest effect upon it, is one that deserves more than passing notice. Such a vegetable is the Spinach Beet, or Perpetual Spinach, and there is no doubt it will be grown this year in many gardens where it has never been cultivated previously.

In gardens where there is ample provision for the cultivation of the choicer vegetables, possibly Perpetual Spinach may not be regarded with favour for the employer's table; but even if this is so, there are others to be considered in such establishments, and a good breadth of Perpetual Spinach is a great standby, and can be drawn upon for the servants' hall, the gardeners' home, and the bothy. But a person must be very fastidious who cannot appreciate a dish of well-cooked Perpetual Spinach.

Deep rich soil is essential to the highest success, but here again the Perpetual Spinach is most adaptable, and can hardly be sown in the wrong place. In rich soil the beet-like roots grow to a large size, and the leaf development is correspondingly large and continuous. Perpetual Spinach is, botanically, a variety of Beta Cicla; it is of garden origin, and a hardy perennial; hence a sowing in March and another about mid-summer will suffice to keep up a good supply. Sow in drills a foot or fifteen inches apart, and thin out the seedlings to nine inches apart at the earliest possible moment. General attention includes frequent hoeings, weeding, regular picking of the useful leaves, and a few good soakings of weak liquid manure in a dry season, though, if the soil be deep and rich, these latter will not be necessary even if desirable. C.

## PERPETUAL CARNATIONS FOR PRIVATE GARDENS.

It is astonishing how rapidly the perpetual carnations are increasing in popularity; but their delicious perfume, diversity of colour, and durability when cut, are characteristics that fully justify the favour with which they are regarded.

There are so many varieties at the command of the cultivator that in districts where all the varieties do not succeed, it is easy to replace those which fail with others that will thrive. One of the most pleasing varieties is, in my opinion, that lovely pink flower, Mrs. Burnett. I always feel sorry when I see a poor batch, for the simple reason I have not been able to grow it here, although, in other cases, I obtain my revenge. Pink Delight is another beautiful flower, but, like White Perfection, is not easy to propagate or to grow to a high degree of perfection. With me it does not make a good plant. I am now building my hopes on Lady Northcliffe, one of the latest introductions. R. F. Felton produces finely developed blooms, is attractive in colour, and the plant has evidently a good constitution, and not subject to disease. May Day, Regina, and Rex are excellent varieties, and quite worthy of a place in select collections. Lady Allington and Rival are of great merit, and will hold their places for some time to come. Rose Doré is a rare grower, but not free flowering in winter; the two older varieties, which I consider have not yet been surpassed in their respective colours—namely, blush pink and scarlet—are Enchantress and Britannia. The latter should always be grown under glass. The newer Scarlet Glow is a promising variety, the flowers of good form, and the colour very bright. White Enchantress is a good variety in its colour group.

All the above varieties are grown here, but none of them can be compared in size with Carola. In my previous notes I have always spoken in favour of this variety. I have a house of it now, simply grand. It is a wonderful carnation, very free, with magnificent blooms, as large as a Malmaison. In many parts this variety appears to suffer much from rust; it did here at first, but with the usual care it soon became clean, and since then not a spot has been seen. This year our stock will be increased from five to seven hundred plants.

One or two of our leading horticulturists have recently brought out a remedy, or cure, for rust. In my opinion the preparation is good, but the directions for use are not in accordance with my practice. Instead of using the preparation twice a week, as advised, I use it twice a day. On no account must a syringe be used. It must be the finest spray possible, one similar to what the florist uses, which only leaves a moisture like the morning dew on the foliage. If this spray is continued the rust will disappear, as it cannot thrive under such treatment. Anyone who doubts the efficiency of this treatment need not "Wait and see," but "Come and see." The above variety must be grown under glass throughout the season, and once the plants are free from the disease there will be no further trouble, and the grower repaid a thousandfold.

Mrs. Raphael is one of the largest of the perpetual carnations, more like a Malmaison, but thrives well. Here it is a most vigorous and healthy grower, and the flowers are of a charming cherry-red colour, with a delightful fragrance. These beautiful flowers are becoming more and more indispensable for decorations, and they can be grown with but little artificial warmth, for even now, in the middle of March, it is quite safe to dispense with fire heat, which cannot be said about other flowers suitable for decoration at this time of the year.

A. Grubb.

Porters' Park Gardens.

CARNATION SCARLET GLOW.

One of the finest of the perpetual varieties with scarlet flowers. The blooms illustrated were shown by Mr. H. Burnett at a recent R.H.S. meeting.

## CALLIANDRA TWEEDIEI.

One cannot well imagine many more beautiful plants than this Brazilian evergreen shrub, when it has been well grown and is in full flower. Here we have a low bush, with miniature, mimosa-like leaves, of a delicate green colour—an ornamental plant even out of flower. But when, as now is the case, the frail-looking branchlets bear globose heads of bright red flowers, the value of the shrub is greatly increased. The individual beauty of the flowers lies in their bunches of long stamen-filaments which contrast so sharply with the pale green leaves. At first sight the flowers are so suggestive of those of the Australian Bottle Brush (Metrosideros speciosus), only these flower-heads are stalked, and are not so dense, that one might almost describe the calliandra as a pigmy, bushy Sensitive plant trying to look like a metrosideros.

At maturity the calliandra is said to become 6ft. high, which is over large for the average stove house, but there is no difficulty in keeping the plants at less than half that height. The species under notice will thrive in a compost of medium loam and leaf-mould, with the addition of a sprinkling of silver sand. If it is available of first-class quality, peat may be used instead of leaf-mould, but poor quality peat is always an unsatisfactory rooting medium.

Being a native of Brazil stove house treatment is necessary for the calliandra, but while in flower the plants could be placed in an intermediate temperature without any fear of injury, provided that they are not over-watered. Cuttings of young shoots which are becoming firm in texture will usually root if firmly inserted in light sandy soil, and placed under a bell-glass where a moderate amount of bottom heat is available.

Cecil Aubrey.

## OLEARIA STELLULATA.

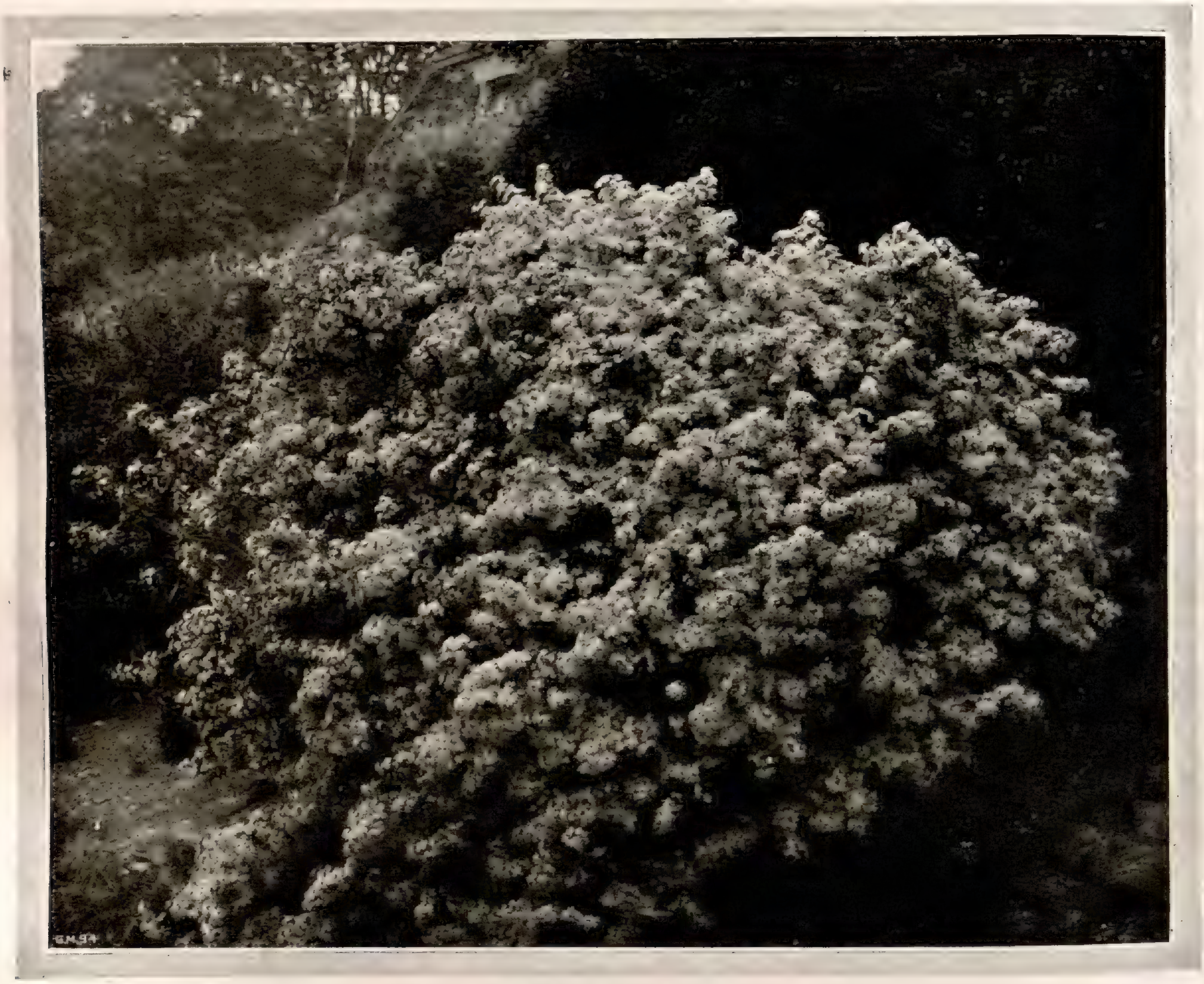
In gardening works this shrub is generally held to be synonymous with O. Gunniana, but the latter is quite distinct, and its white daisy-like flowers are smaller, of greater substance, and more cupped than in O. stellulata. O. Gunniana is possibly now not in cultivation.

O. Stellulata was one of the first species to be introduced into England. It is a native of Tasmania and New South Wales. In the south-west it attains large proportions, the shrub represented in the accompanying illustration being 7ft. in height. It is an early bloomer, being at its best in May, while its first blossoms generally expand early in April. In colder parts of the country it flowers about a month later. The leaves vary in length from half an inch to two inches, and are narrow, deep green on the upperside and whitish beneath. The flowers are borne in leafy panicles, which are long and very graceful in form. Each flower is small, daisy-like, pure white, with about a dozen ray-florets. Although this species rarely presents the unbroken sheet of white that O. Haasti does, its larger and more starry flowers are freely produced on the branching shoots, and the plant, having a graceful habit, makes a charming picture, especially in large specimens several feet in height.

It is fairly hardy, even in Scotland, if planted against a south wall, and protected during frost, but is more tender than O. Haasti. It succeeds best in a sunny position, and is not particular as regards soil, since it may be seen flourishing both in heavy, retentive loam, inclining to clay, and in light, shaley soil. Large specimens, 6ft. or more in height, make charming pictures when white with countless blossoms, and, although this species cannot excel O. Haasti in the number of its flowers, it possesses a far more graceful habit, which renders it more ornamental as a garden shrub. The bloms last in beauty a considerable time, and a well-flowered plant is in general appearance quite distinct from the numerous hard-wooded subjects, such as ericas, chorizemas, pimeleas, eriostemons, and others, all of which require much the same treatment.

Cuttings of this olearia root quickly, and the plants flower freely in quite a small state. Being readily increased and quite happy in a cold greenhouse, pot plants should always be held in reserve to take the place of any which may have been killed by the winter frosts, while they prove exceedingly useful in the early spring, when the flowers may be hastened by gentle heat. The genus was formerly known as eurybia.

WYNDHAM FITZHERBERT.



OLEARIA STELLULATA.
A beautiful hardy evergreen shrub with white flowers.

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**Cyperus alternifolius.** — Since palms and ferns have been so extensively grown for decorative purposes, this member of the Sedge family has not been met with so frequently as was at one time the case. It is a very pretty plant, with the leaves disposed like the ribs of an umbrella on the top of a clean green stem. It stands well in the dwelling-house if kept supplied with water. There is a variegated variety which needs to be potted in rather poor soil to keep its colour well.—S. W.

## HERBACEOUS BORDERS.

Herbaceous borders are popular nowadays, the trend of fashion having set largely in its favour; and it may be said that the spirit of favouritism which has been extended toward them has much to recommend it from the garden-lover's point of view.

Though usually spoken of as herbaceous borders, the truer designative "Perennial Borders" might well be accorded to them, thus giving, as it were, a titular permission for the inclusion of various shrubs, bushes, etc., which certainly cannot be regarded as herbaceous subjects. But whether herbaceous or perennial borders be spoken of matters but little; the main idea in the creation of such borders is that they should be well-arranged with a suitable collection of decorative subjects, that will give blossom and beauty for as long a season as possible.

The idea has been given to a waiting world of a series of vivid colour effects in the borders. Bold massed groups of one particular colour, alternating, or combining, with other groups of particular hue, equally bold, and equally bright, into forming, as it were, a "kaleodoscopic rainbow of colour." The colours may gradually shade from one to the other, or may be set in vivid contrast against each other. It matters but little as long as you obtain a repetition of colours throughout the season. And is this the sole end of the herbaceous border, that sweet inheritance from old-world English gardens? Or shall we advocate the merits of the true herbaceous border for each of the summer months?

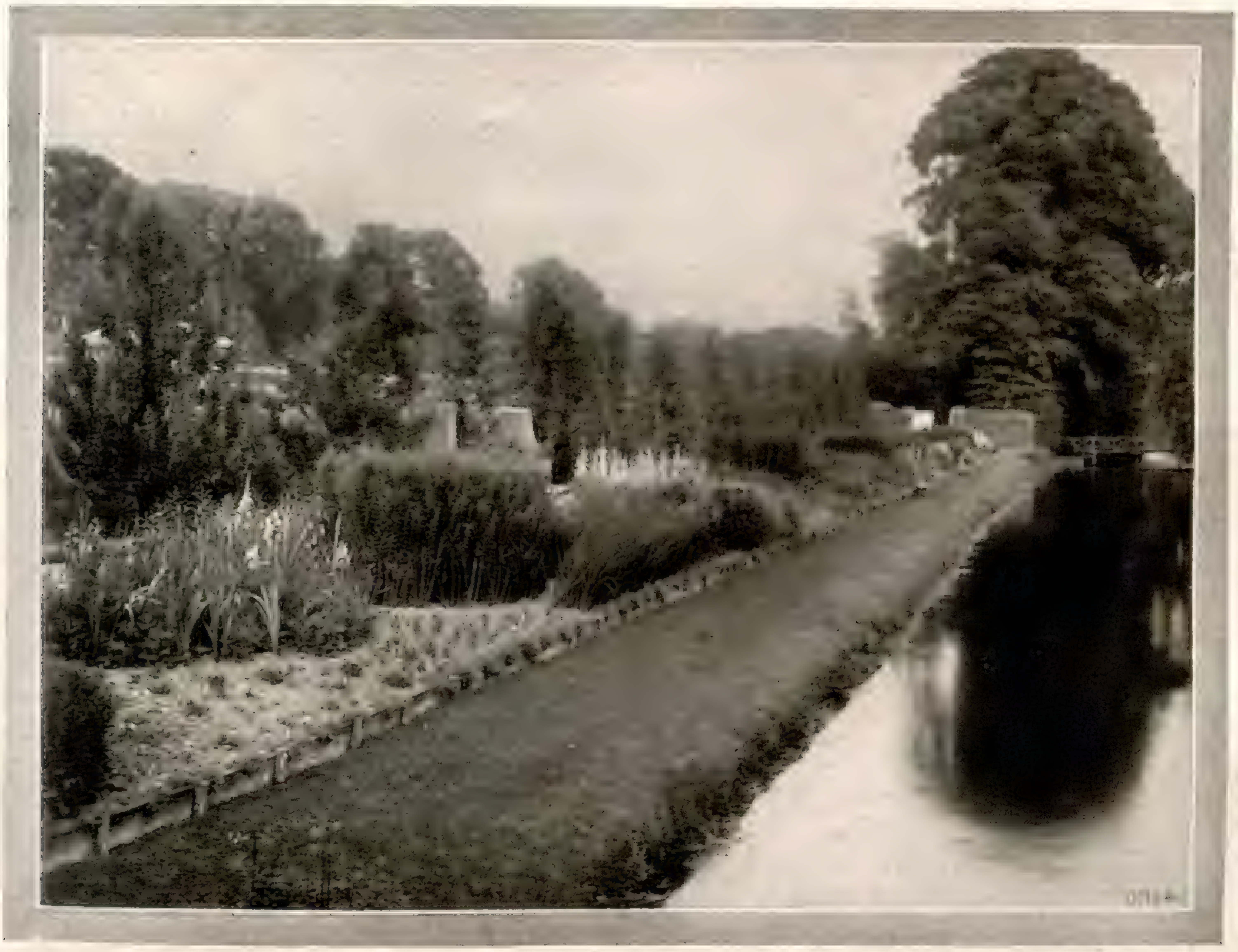
Neither will fill the requirements of the true herbaceous border; neither the "rainbow brilliancy" nor the monthly scheme; but rather the full idea must be to render the beauties of the flowering perennials in the most picturesque manner from spring until autumn. The collection need not comprise a host of rarities, one can obtain beauty from what are ofttimes termed "common subjects"; yet carefulness in selection and planting have a telling effect when the herbaceous border is "in being."

I do not wish to give any especial list of subjects to be utilised, for many readers will have their own ideas about their own favourites, and would be able to formulate as good a selection as I; and yet I must enter a plea for diversity in foliage, flowers, and the heights of various subjects used. Flatness in a planting scheme is fatal; therefore let there be distinct diversity in the manner noted. Let it be understood that I do not wish to discredit those pleasing schemes which describe themselves as the White Border, the Blue Border, etc., etc., for provided the utmost discretion is used in planting the best subjects possible of the colours named, there is no good reason why the White Border or the Blue Border, or, indeed, any other pleasing colouring should not become popular. A garden scene showing blossoms of one particular "colour study," set in a wealth of green foliage, will prove a veritable fount of delight to many a garden lover. There is a restfulness in it; a peace which acts as a calm to weary nerves; a picture which does not jar either upon the eye or mind; a Garden of Rest!

To produce the best effect in the herbaceous borders one must make both the borders and the intervening path as broad as possible; the greater beauty is apparent in the spacious borders, with bold free groupings. Or, if the border be a single one at the end of a lawn, or in a similar position, let it be arranged so that there is a good view of it obtainable from across the lawn, for the distance lends enchantment and provides an effective picture.

With reference to the introduction of shrubs, etc., let me advise care in grouping these. A few dainty masses of Japanese maples, deutzias, shrubby spiræas, roses, azaleas, syringas, philadelphus, pyrus, etc., etc., will enhance the beauty of a broad border, and effectually break up any idea of flatness, either in summer or in the winter time when most of the other subjects are cut to the ground. But do not plant shrubs heavily; just interpose here and there light-growing specimens or groups in the general scheme, and you will get an added beauty.

Usually a good gravelled path is set between two borders, though one may sometimes note a grass pathway in a few gardens. Both have their merits, and are deserving of no caustic criticism, though both need a certain amount of care and attention. To my mind, however, a rough stone pathway, with interstices among the flat stones for varied lowly subjects to rove through, gives a delightful finish to old-fashioned herbaceous borders in an old-world garden. The grey-bronze stones, deep with age and the effects of weather, through which creep tiny linarias, sedums, thymes, erinus, and many other charming subjects, make an ideal pathway, firm and dry, and possessing a beauty of their own.



HERBACEOUS BORDER AT WILTON HOUSE, SALISBURY, THE SEAT OF THE EARL OF PEMBROKE.

The edging of the herbaceous border also requires a little study. It may be a grass verge; it is sometimes ornamental tiles; possibly dwarf box may form the edging. But after all, what is prettier than a rockwork edging overrun with dianthus, arabis, alyssums, aubrietias, violas, saxifrages, cerastiums, sedums, iberis, and many others of the rock plants.

It gives a charming, informal, interesting edging, a delightful setting or frame to the border, a setting that cannot possibly suffer by repetition.

In closing, may I urge the importance of good work in the herbaceous borders. Deep trenching and thorough manuring are necessary at the formation, and as time goes on the soil must be kept well worked between the plants, and the plants themselves kept in health by transplanting and division when necessary. With well-worked soil and a fair amount of manure, the herbaceous borders should be a garden of floral beauty, a picture of luxurious growth and glorious blossom.

P. S. HAYWARD.

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**Ficus Parcelli.**—Among the several members of the fig family that are grown for the beauty of their foliage is Ficus Parcelli, whose leaves, though they are wanting in the leathery nature of those of Ficus elastica, are mottled and marbled in so many ways with white on a dark green ground as to be very attractive. It needs ordinary stove treatment. The genus Ficus is fairly prolific in variegated forms, as in addition to F. Parcelli there is a variegated variety of F. elastica, while the creeping kinds, F. radicans and F. repens, both have variegated sports.—T.

## DAHLIAS.

The dahlia appears to owe its name to Andre Dahl, a Swedish botanist, and a pupil of Linnæus. In Germany, however, the flower was known to some extent as the Georgina, this name having been originally proposed as a substitute for dahlia, so as to prevent confusion with Dalea, an insignificant leguminous plant. For many years the flower was only single and semi-double, but the German florists at length obtained very double blooms, and a multitude of different varieties of all colours (except blue) and shapes were afterwards raised in this country. Subsequently, when popular interest in the flower was flagging, the cactus dahlia was introduced, and quickly attracted interest. Meanwhile, German horticulturists turned their attention to a section which we know as the pompon. At present, the Dutch pæony-flowered dahlias are being grown to a large extent, and it is thought that this section is to be the next rage in dahlia culture.

It would appear that the late autumns experienced during recent years have been extremely unfavourable to the dahlia grower. I was very much impressed, however, by the excellent display of dahlias which were on view in Sefton Park, Liverpool, during the past autumn. This display seemed to attract more than ordinary attention, as the border in which the dahlias were planted presented an absolute blaze of colour, such as it would have been almost impossible to secure with any other class of plant of like stature. Some kinds, such as the cactus dahlias, have undoubtedly a very important value from a decorative point of view; like chrysanthemums, they are capable of retaining their freshness for some considerable time when placed in water. Few cottage gardens throughout the south of the country are complete without a collection of dahlias. The dahlia classes at the various country flower shows attract hosts of exhibitors from amongst the cottagers, and so keen is the interest displayed that I have known of many who have cheerfully paid fancy prices for novelties of recent introduction.

### The Cactus Section.

The cactus dahlia is undoubtedly a flower of extreme beauty, graceful in form, and probably of a wider scope of colouring than is to be encountered in any other form of flower in the whole realm of horticulture. The following varieties are among the best, and the list is compiled from a selection given by one of the most noted dahlia growers of to-day: Caradoc, Clincher, C. E. Wilkins, Dorothy, Dr. Gray, Faunus, Fairy, Glory of Wilts, Great Western, Kathleen Bryant, Nelson, and Ruby Grinstead. In the modern type of cactus dahlia the edges roll back in the opposite direction from that in which they were formed, making the floret appear much narrower than it really is. All the different varieties of cactus dahlias owe their elegance and grace of form to the varied curves and flutings, and the curious twists and irregularities of the florets. The best varieties have their buds formed in the shape of a filbert, pointed at the end, and it will be noticed that the florets unfold from a straight position, instead of being curved inwards.

### Exhibition Dahlias.

It is difficult to formulate a list of show points to which all dahlias should conform, since the very diversity of form in this flower is the principal factor upon which its popularity is founded. However, it may be stated in general that a good cactus dahlia should be of large size, with a closed centre, and no suspicion of green. The florets must be long and narrow—the narrower the better; and it will be more in their favour if they are curved inwards to a slight extent; every floret must, of course, be regularly and evenly placed, without confusion. The ordinary or double show dahlia, of which some surprisingly good specimens are shown in country shows, should have the following points: The flower must be round and perfectly symmetrical, the florets regularly and evenly placed, and their edges rounded and shell-shaped, not in any way mouse-eared or pointed. The latter, by the way, should taper gradually to a smaller size towards the centre of the flower, not suddenly. Pompon dahlias must have the same points as regards shape and form, but should be of smaller size, no more than two inches across. Broad, rounded florets of good substance are essential in the single dahlias; they must also lie flat, without being crumpled or twisted; also the edges should be slightly reflexed. Single dahlias should have a clear and decided colour. Pæony-flowered dahlias seem to score best when the shape, form, and colour are as grotesque as they can possibly be; in fact, the very ugliness (from a florist's point of view) of this section seems to have brought them into popular fancy.

### Propagation.

Plants in pots may be purchased from nurserymen during spring, and these should not be planted out until May if they are to be grown in the open ground. Where plants have been obtained and grown through one season, however, the roots should be carefully lifted when cut down by frost, and stored in a cellar or outhouse when fairly dry; it is advisable to bury them in ashes or sand so as to prevent mildew. They may be brought to light in March, and placed in a warm house of some sort, when, as soon as the eyes commence to grow, the central stem can be divided in such a way as to leave a growth and some of the tubers on each section of it. These make very good plants for the late summer or autumn if planted out in May, but for exhibition culture cuttings taken the same season are best. The roots should be started in heat, and the cuttings will root readily in March. To avoid deterioration, it is advisable to take the cuttings quite close to the root, where the stem is solid; if they are taken higher up where the stem is hollow, deterioration will certainly ensue.

### Staking and General Management.

The young plants should be potted into six-inch pots in good compost, and stood in cold frames until about the first week in June. Then they may be transferred to their permanent quarters, staking immediately with a good stout 6ft. stake, and supplying the plant with plenty of water in the absence of rain, so as to enable it to establish itself quickly. Delay at this stage generally means late flowering and consequent disappointment. As soon as fresh growth is made, four additional stakes should be placed around the central one, about 12 or 15 inches away from it, and with their tops leaning outwards. The side shoots should be tied to these stakes as soon as they are sufficiently developed. When grown for exhibition purposes it is most essential that the plants should have a number of their shoots reduced and their buds removed; a cluster of buds is generally produced in the points of the principal stems, and these should be disbudded to the best and generally the leading bud; the growth-buds that are produced in the axils of the leaves immediately below the flower buds should be pinched out at the same time.

As soon as flowering commences a soaking of liquid manure or guano may be given with advantage. Old blooms, as the florets fade, must be removed at once, and no useless spindly growth should be allowed to develop in the centre of the plant.

J. C. NEWSHAM.

## NARCISSUS SEEDLINGS.

At a recent meeting of the Royal Horticultural Society's Scientific Committee Mr. Worsley made some remarks upon the growth of narcissi in gardens. It was the general opinion that narcissi, when allowed to grow untended, may become smaller, but never, in spite of a somewhat general opinion to the contrary, revert to the specific type, though seedlings may vary from the parent type. Sir John Llewelyn showed flowers of wild plants from S. Wales, including N. obvallaris and a large deep-coloured form with something of the coloration of N. Golden Spur. The plants occurring wild in S. Wales showed a good many variations in form and colour of flower, but there were two types of foliage only which never seem to intergrade. Canon Fowler wrote that he sometimes found forms among such varieties as Emperor producing finer flowers than the majority, and he believed these variations to be constant; one plant was found among Weardale Perfection last year having two flowers of only a fourth the size of that variety, and something like Johnstoni in form. Mr. Malcolm, of Duns, also alluded to a sport which he had found in his garden. Sporting appears to be rather frequent. Some discussion arose as to varieties that commonly produce seed, and Mr. Williams, of Lanarth, said N. cyclamineus reproduced itself by seed quite freely, but seedlings died out rapidly in the grass; N. pseudo-narcissus also produced itself freely from seed in the grass and reached flowering size. In Mr. Bowles's garden, N. pallidus præcox is the most abundant seeder, but the seedlings rarely gave the pale form, though they retained the early-flowering habit; pseudo-narcissus seeds freely, as to Triandrus albus, variiformis, and cyclamineus. Mr. Chittenden said that N. cyclamineus seeded very freely at Wisley, as do N. bulbocodium and N. Triandrus albus; other forms rarely produce more than a stray capsule or so. Mr. Shea had only found Sir Watkin with a seed pod once, and Empress rarely seeded, but White Wings frequently with him. Weather conditions appeared to determine to a large extent the amount of seeding that occurred, for in 1910 he found only nine varieties produce seed, but in 1911 21 seeded. Possibly bees were required to effect pollination satisfactorily. Mr. P. R. Barr found that self-fertilised seedlings of garden varieties of daffodils tend to revert to their parent types, e.g., Horsfieldi self-fertilised produces numerous poor forms of pseudo-narcissus. King Alfred, on the other hand, produces some very nice yellow trumpet forms, as a rule more or less dwarfer than their parents. Mr. Backhouse remarked in reference to the common belief that single wild daffodils may sport to double forms, that seedlings resulting from the first cross between the single wild form and the double one would, some of them, be double, and the idea might have arisen in another way as well, viz., by bringing into gardens poor, and practically single because poor, forms of double daffodils which, under better cultivation, would become typically double. Against this, however, is the fact that the true double form of the wild daffodil is rare in cultivation, Van Zion being the form commonly grown.

# BROCCOLI.

There is no other winter or spring vegetable so widely grown or so much in request as the broccoli, and none in which the season of usefulness extends over so long a period, for, thanks to the numerous varieties in the various sections into which the broccolis are divided, fine heads may be had from Michaelmas until mid-summer; therefore, in dealing with a vegetable of such general cultivation it is essential that each section should be treated separately, as the management differs considerably.

## Autumn Supplies.

If we take the autumn section, of which there are several varieties that are in use from September until the early winter, it will be found these are more tender than those in season from March onward, and not sufficiently hardy to withstand the frost of our climate unless in the most favoured portions of the kingdom. Their flavour, too, is more that of the cauliflower than the broccoli. For the sake of distinction, broccolis may be divided into four sections, autumn, winter, early spring, and summer.

To produce plants of the first section sufficiently early that the heads may turn in during September, seeds should be sown in March. As the climatic conditions and soil vary so much in different districts, it is useless to lay down any hard-and-fast rules as to the date of seed sowing, or whether the plants should be raised under glass in a cold frame, or on an open border; for while in the south the seeds might be sown in the open, in the north it would be necessary to raise the plants under glass. But whichever mode is adopted the plants should not be allowed to become overcrowded, and should be transferred to their permanent quarters as soon as large enough. This section requires deeply-tilled fertile soil to produce fine heads of close and delicate texture. We do not advocate allowing them to remain until full grown, like those one often sees in the markets; they should be cut when young and before the leaves have unfolded sufficiently to expose the curd.

To grow heads of this class the plants must be allowed ample space for the leaves to become fully developed, otherwise the heads will be disappointing. From two feet to thirty inches each way, according to the quality of the land, will be found a suitable distance; and if the land is extra fertile another six inches will be found none too much, as plants are apt to be drawn when grown within the four walls of the kitchen garden. Michaelmas White, Self-Protecting, and Autumn Protecting are all good varieties that may be included in this section.

## Early Winter Supplies.

We now come to the early winter kinds, such as Sutton's Winter Mammoth, Christmas White, Snow's, Vanguard, and some others. Most of these are somewhat tender; therefore, in cold, damp places they will require protection in severe weather. It is a good plan to lift them where possible and plant them in cold pits or frames, but where this is not practicable they should be transferred to a south border about the middle of November and planted with their heads towards the wall; here, should severe weather set in, they can be easily protected from frost with the aid of mats and litter. This is usually the season when broccolis are most appreciated, therefore a little extra pains in their management amply repays the cultivator for his trouble. To produce sturdy plants the seeds should be sown on a warm border in March, care being taken to protect it from the ravages of birds, which are usually very troublesome at this season of the year. When the plants are large enough to handle they should be pricked out, so as to induce them to grow as sturdily as possible. They should be large enough for transplanting by the end of May or early in June.

Do not overcrowd, as it is far better to have half a dozen presentable heads than a dozen poor ones. Keep the plants well supplied with moisture through the summer should the season be dry. In addition to the above-named there is a variety of Early Sprouting that is very useful, and being more hardy than the others it needs no protection.

BROCCOLI SUTTON'S WINTER MAMMOTH.
A mid-winter variety, remarkable for its large, finely-formed, self-protected heads, and excellent quality. Introduced by Messrs. Sutton and Sons, Reading.

## Late Winter and Early Spring.

In the third section there is a large choice of varieties, as this includes those in use during March, April, and the early part of May, and every seedsman has a special variety of his own to recommend. To grow good broccoli of this class, as most gardeners are aware, needs some special preparation of the soil; especially in old kitchen gardens that have been cropped for years with some of the brassica family. This is particularly so with the light soils, as on such the plants make slow progress in hot weather. It is a good plan where such ground has to be dealt with to manure in the autumn and dig as deeply as the soil will allow; then leave it to become somewhat consolidated so as to conserve the moisture as much as possible. It is also a good plan to give a surface dressing in spring, using such manure as dissolved bones, sulphate of ammonia, kainit, or sulphate of soda. The plants should be inserted in the ground as it was left in spring, there being no need to cultivate again. It is very annoying after one has been at the trouble to produce a fine breadth of plants which look promising in autumn to find the greater portion of them have been killed by the winter's frost. To guard against this lift the plants in the autumn so as to check their growth, and where they have grown at all leggy plant them deeper in the soil with their heads facing the north. It frequently happens, where the garden is situated in a low, damp position, and the soil is of a heavy retentive nature, that broccolis suffer seriously during severe winters unless some protection of this kind is afforded them; especially if the autumn has been mild, with more than the normal rainfall, as the plants then grow until quite late, and are therefore very sappy, and liable to suffer.

This section contains such varieties as Snow White, Main Crop, Leamington, Safeguard, and a whole host of others. The seeds should be sown in the open ground in April, and before the plants become crowded; if it is not possible to transfer them to their permanent quarters, they should be pricked out in an open place about six inches apart. If the soil is made fairly firm growth will not be so rapid, and therefore less liable to suffer when transplanted.

## Late Spring Supplies.

The last section contains such varieties as Universal, Late Queen, Standwell, Latest of All, and the like, and these when well grown will usually give a supply until cauliflowers are plentiful from the open ground. The seeds of this section should be sown from the middle of April to the first week in May, according to the district. Some of them are strong-growing kinds, making large leaves, and therefore should be allowed more room to develop than the dwarfer ones. Universal is the finest variety I have grown in this class, and those who have not already done so would do well to give it a trial. Broccoli is very largely grown for market; in some districts it follows the early potatoes. Whole train loads are sent to the various towns in the North, and at the present time Winter Mammoth is sent from Cornwall, packed in crates

H. C. Prinsep.

# NOTES FROM KEW.

## Greenhouse Flowers.

Apart from the numerous plants that flower at this season a great number of hardy subjects have been forced for the embellishment of the greenhouse. There is, of course, a wide choice of hardy shrubs, especially among the azaleas and rhododendrons, while others of this class that may be especially mentioned are the double-flowered cherries, Pyrus floribunda, Spiræa arguta, Staphylea colchica, the double-flowered form of Kerria japonica like little golden roses, and the uncommon Xanthoceras sorbifolia, whose white flowers have a distinct coppery centre. Of forced bulbs the hyacinths, tulips, and narcissi contribute bold masses of colour at Kew.

Of greenhouse plants proper there is a fine display, as apart from such well-known subjects as Indian azaleas, camellias, carnations, primulas, cyclamen, and cinerarias there are many others not so generally met with. A bold group of Coleus thyrsoideus shows off its rich cobalt blue flowers to advantage, and an allied but uncommon species, though less attractive, is decidedly ornamental. This is C. shirensis, which, like that just mentioned, is a native of central Africa. The finest begonias just now are Gloire de Sceaux, with bronzy foliage and rose-coloured flowers, and that valuable hybrid raised many years ago by M. Lemoine—Begonia semperflorens gigantea rosea, which is, and has been for a long time, quite a mass of blossoms. An exceedingly pleasing effect is produced by a group of the Mexican Begonia manicata interspersed with some bright-coloured hippeastrums.

Numerous hard-wooded subjects contribute their share to the floral display, notably chorozemas, acacias, particularly a very large specimen of A. pulchella, Boronia megastigma, Cytissus racemosus, and others. Of the many still remaining especial mention may be made of a finely-berried group of Ardisia crenulata, and of a flowering example of the curious South African Bird's Head Flower—Strelitzia Reginæ.

## Pinguicula Rosei.

This Mexican Butterwort is now in flower in the orchid range, the treatment given to many orchids being very suitable for this and its near relative, the well-known Pinguicula caudata. To this last, P. Rosei bears a great general resemblance, except in the colour of the blossoms, which in the newcomer are of a deep violet tint. Close by is a flowering example of P. caudata, so that the near relationship between the two, except in colour, may be readily seen.

## Eranthemum albiflorum.

This pretty acanthaceous plant is by no means a novelty, yet, considering its merits, one wonders that it is not more generally grown. Like many other members of the genus, it is of upright growth, and the flowers, which are borne in terminal spikes, are very suggestive of a spray of white lilac. Grown as in the T range at Kew in comparatively small pots with the entire plant not much more than a foot high, it is very pretty. This eranthemum is a native of the Solomon Islands, and is a plant of easy propagation and culture.

## Impatiens.

Several of the tropical balsams have proved to be thoroughly good decorative plants, not the least of their merits being their almost continual flowering qualities. Summer and winter alike, the huge specimens of Impatiens Olivieri, in the greenhouse, bear their large mauve-coloured blossoms, and in the T range the bright vermilion-tinted Impatiens Holsti supplies a distinct and welcome shade of colour. The old Impatiens Sultani is also of easy culture, and very floriferous.

## Clivia miniata citrina.

Though this pale yellow or straw-coloured variety of Clivia miniata has been at Kew for many years, it is still sufficiently uncommon to at once arrest attention when a good example is in bloom, as happens at the present time in the cool portion of the T range. While it is very distinct, and on that account noticeable, it is not so showy as some of the improved forms of Cliva miniata, which in gardens is more generally known by the generic name of imantophyllum.

## Veltheimia viridifolia.

The "Dictionary of Gardening" gives the month of August as the flowering period of this South African bulbous plant, but that it is not limited to that season of the year is shown by the fact that a number of plants are now in bloom in the cool compartment of the T range. The broad, strap-shaped leaves, which are about a foot in length, are disposed in a very regular manner, and from the centre of the tuft the flower scapes are pushed up. These reach a height of eighteen inches to two feet, and are terminated by a raceme of flowers, which are not particularly showy, being of a yellowish-green and rose colour, but they last in beauty a considerable time, and the whole aspect of the plant, leaves included, is decidedly ornamental. This veltheimia is an old plant in gardens, having been introduced as long ago as 1768.

## Tillandsia splendens.

This must be assigned a place as one of the most showy of Bromeliaceous plants, and it is also one of the best known. The leaves, about three inches in width, are of a pleasing green colour, and marked with dark transverse stripes. The sword-shaped scape bears a great number of large, closely-imbricated, bright red bracts, arranged opposite to each other. From these bracts the yellowish flowers are produced, but they do not remain in beauty for any great length of time. The bracts, however, keep fresh and bright for a long while. Some specimens in the stove portion of the T range are so attractive as to suggest that this and other Bromeliads might with advantage be more often met with in gardens than they are. This particular kind is also known as Tillandsia zebrina and Vriesia splendens.

## Tydæas.

Whether known as Tydæas or Isolomas, these form a very pretty class of gesneraceous plants, remarkable in some cases for the distinct markings of their flowers and in all for their continuous blooming qualities. A group in the T range now in flower shows the plants in that stage somewhat earlier than they are usually met with. It is surprising that tydæas are not more generally grown in gardens, as they are of easy culture, and flower over such a lengthened period.

## Columnea glabra.

This is an exceedingly pretty gesneraceous plant of which there is a good example in flower in the intermediate portion of the T range. It bears, generally speaking, a considerable resemblance to an æschynanthus, but, unlike the members of this genus (which are nearly all natives of South-eastern Asia and the neighbouring isles), this columnea comes from the mountains of Costa Rica, from whence it was introduced by M. Carlos Wercklé, the discoverer of Hidalgoa Wercklei. It is a plant of a half-shrubby character, with ovate leaves, thick in texture, while the blossoms of a somewhat curved tubular shape are bright orange-scarlet. Being in its native state an epiphyte this grows well in a mixture of leaf-mould, fibrous peat, coarse sand, and sphagnum moss.

## Pavonia Wioti.

A generation ago this pavonia was more generally met with than it is at the present day. Still, as now flowering in the T range, it is a very pretty warm house shrub, and, what is more, quite distinct from the usual occupants of that structure. Pavonia Wioti forms an upright-growing plant, clothed somewhat sparingly with pointed ovate leaves, about six inches in length. The flowers, which are borne in a loose terminal head, have a large outer calyx of a bright reddish-pink colour, split up into narrow segments. The petals are of a dull purple tint, and the anthers, which are crowded together at the mouth of the corolla, are blue. It is a relative of the abutilons, and is sometimes included in the genus Gœthea. An allied species—P. Makoyana—has darker flowers than P. Wioti, while of some seedlings raised by M. Lemoine, the best, as far as my knowledge extends, is Kermesina.

## The Alpine House.

This is now one of the most attractive features of the gardens, being filled with a delightful assortment of flowering subjects. They are, for the most part, grouped three or four of a sort together, and the effect is most pleasing. Among the occupants of the structure may be noted Shortia uniflora, anemones in variety, especially A. blanda atrocœrulea, and A. fulgens, muscari in variety, several narcissi, including the tiny Narcissus minor, and N. cyclamineus, Draba azoides, species of tulips, chionodoxas, Scilla sibirica, and a particularly fine white-flowered form, Leucojum vernum, Cyclamen Coum, and its white variety, hepaticas of sorts, saxifrages in variety—especially S. Burseriana grandiflora, S. Boydi, and S. Griesbachi, erythroniums, and Adonis amurensis flore pleno. This list might be considerably extended, but enough is given to show the attractive nature of the plants in flower. The singular little Chinese Rhododendron intricatum, with tiny lilac-coloured flowers, is also in full bloom in this structure. A notable feature of this rhododendron is that it often produces a second crop of blossoms in the autumn.

K.

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**Lælia monophylla** is rarely grown, but, on account of its bright colour, is very interesting; it will also succeed under the conditions suggested. It has always been a difficult subject to deal with, and the greatest difficulty has been to find a suitable temperature and a suitable compost. Any plants that require fresh material should now be given attention. They should be placed in the smallest pans possible, but as they resent being disturbed, they should not be moved unless it is absolutely necessary to do so. Use well-drained pans and the same sort of compost as advised for dendrobiums. The plants should be grown in a shady position near the roof glass, and when established in their receptacles should never be allowed to become dry. The greatest mistake with these so-called difficult subjects is a too free use of water after they have been disturbed. These orchids all delight, when in full growth, in a moist atmosphere (but not unreasonably moist), and a circulation of air at all times whenever possible.—J. T. Barker, The West Hill Gardens.

## SILVER-LEAVED BEDDING PLANTS.

At the present day the furnishing of flower beds during the summer months is carried out on very different lines from those that were at one time almost universally followed. A notable feature is the far greater variety of plants that are now employed, and the important part that mixed beds play in the summer display. Even large examples of different greenhouse subjects are often bedded out with good effect at that season, and under these conditions they are frequently seen to greater advantage than when under glass.

Another feature in which the bedding-out of to-day differs markedly from the displays of old is that dense masses of colour are not so universally met with. Where large and showy flowers are extensively grown there is now a much greater tendency to break up these masses of colour by the judicious employment of plants grown for their foliage alone.

As a foil to brightly-coloured flowers, or as a direct contrast to the bright green of the grass which so frequently surrounds the flower beds, plants with foliage of a more or less silvery hue are in considerable demand. I do not refer to those in which the leaves are more or less variegated with white, but rather to the different subjects with leaves clothed with silky hairs, varying in density, pureness of tint, and other particulars.

One of the most useful of this class is Leucophyta (or Calocephalus) Brownii, an old plant in gardens, but never, I think, used so freely as now, for the tiny scale-like leaves are of an intense silvery whiteness, which almost seems to glisten in the sunlight. It used to be almost universally grown as an edging plant, being pegged down for this purpose; indeed, it can frequently be seen now treated in this way. Larger examples are, however, quite common, being employed either as dot plants over low-growing subjects, or associated in mixed beds with other plants of equal size. Bushy specimens, a yard or more in height, have, in bright weather, quite a dazzling effect.

Artemisia arborescens has become quite an established favourite within the last few years. It is of free growth, and as a bushy plant from 2ft. to 4ft. in height is very effective. The leaves are prettily cut, and very silvery. As a foil to pelargonium Paul Crampel or salvia Pride of Zurich, this artemisia is most useful. Last summer it was particularly fine, but owing to the bright sunshine much the same may be said of most silvery-leaved subjects, that is, where they did not suffer from want of water.

Cineraria maritima has long been grown for the sake of its prettily cut, whitish foliage. There are several garden forms of it now in cultivation, among the best being candidissima, whiter than the type; acanthifolia, with broad silvery white leaves; and Diamond, a pure white, large-leaved, very fine form.

Centaurea candidissima, also known as Centaurea ragusina, is well known as a white-foliaged plant, and has been long used as a bedding plant, especially in the days when long rows or lines of colour were so much in vogue. A somewhat taller and more graceful form, C. gymnocarpa, is very pleasing.

Gnaphalium microphyllum is, I suppose, a correct name, as one meets with it in the parks and gardens where summer bedding is in vogue, and occasionally in a catalogue. Still I cannot find it in any work of reference. It is a rather upright-growing plant of a shrubby character, and entirely clothed with whitish tomentum. This gnaphalium is very largely used as a dot plant, but it has not the intense whiteness of the leucophyta or the artemisia. One of this class much less grown now than it used to be is Gnaphalium lanatum, with roundish leaves about half an inch across. From its spreading growth it is more usually employed as an edging than in any other way.

Stachys lanata, which in my boyhood's days used to be known as the Flannel Plant, from the soft texture of the leaves, was at one time popular as a broad edging to long borders. It is not much used now, but, being quite hardy, it is occasionally met with. Of low-growing subjects that will simply cover the ground with a dense white carpet the best are Antennaria tomentosa and Cerastium tomentosum, both of which are now well-known subjects.

In conclusion, I may note the intense silvery whiteness acquired last summer by that tropical Knotweed, Polygonum lanigerum, thus surpassing any previous effects. The hot summer was, no doubt, answerable for this. S. W.

## EFFECTS OF THE WINTER ON HARDY BAMBOOS.

Hardy bamboos are generally supposed to suffer more from the cold winds at the present season of the year than from frost, but the severe weather has had a decidedly evil effect upon several kinds, and they all more or less show the effects of the winter.

The bamboos in these gardens are growing 700 feet above sea-level, on a slope facing S.S.E., but they are thoroughly protected from the cold winds by belts of ornamental trees and shrubs. The natural soil is a heavy loam resting on a clay sub-soil, but the bamboos, most of which have been established over twenty years have in many cases assumed large proportions. Arundinaria nitida and A. spathiflora have suffered more than any others, as they are very brown, and have lost quantities of leaves. A. aristata has been effected in a less degree, and this bamboo, with its purple-coloured stems, is one of the most ornamental of all. A. auricoma, A. Fortunei, and A. Hindsi are quite brown. A. metallica is decidedly dingy around the edges of its large leaves, but not worse than usual; while A. anceps and A. japonica have suffered less than any of this section.

Bambusa Laydeckeri is in rather a brown condition, but B. palmata and B. quadrangularis have suffered very little. Phyllostachys aurea presents a very uninviting appearance, and looks exceedingly brown and dingy. P. Castillonis, P. viridi-glaucescens, and P. Quilioi are very little affected; while P. fastuosa, with its handsome erect stems, is comparatively fresh and green.

The snow probably did more damage to the plants than the frost, for it was immediately after the snow that several kinds lost a great many leaves, and commenced to change colour. Nevertheless, hardy bamboos may still be regarded as very ornamental garden plants, for they add considerable beauty, and give a decided tropical appearance to gardens at a time of year when there is little else to beautify them. Now that growth is about to commence a good top-dressing of well-decayed farmyard manure will be a great assistance to them. J. Gardner.

Batsford Park Gardens.

## WORK FOR THE WEEK.

### CONSERVATORY AND GREENHOUSE.

Himalayan Rhododendrons. — These are most beautiful for conservatory and greenhouse decoration. In some kinds the flowers are purest white, and have most delicate fragrance. Large specimens, with 100 flower trusses or more, are a fine sight when in bloom. Their cultivation is very simple, and with care the plants are maintained in good health, and will flower profusely for many years. Himalayan rhododendrons resent hard forcing, and if subjected to it the buds drop prematurely. The plants are best grown quite cool. At the present some of our plants are in bloom, after being placed in the conservatory for a fortnight; others which are in a late vinery will come on naturally, and therefore extend the period of flowering. After flowering is over, all old flower spikes should be removed, taking care not to damage the growth buds surrounding the flowers. Any pruning that is necessary to make shapely plants should then be carried out by shortening back any long rank growths and trimming out dead wood, etc. Any repotting or top-dressing should then be attended to. If a shift is needed, choose suitable sized pots or tubs for the purpose, and use a compost of three parts peat and one part coarse sand. The new receptacle should be about four inches larger than the one the plant is taken from, to allow for a portion of the compost to be worked all round the roots. The compost must be rammed very firm, and if the work is properly done, the plants need not be disturbed again for some years. The third week in May the plants should be stood outside, and I find it best to plunge the pots up to the rim in an ash bed. They must never be allowed to become dry at the roots during the summer. Early in October they should be removed to a cold house and kept drier at the roots during the winter. Our plants are exceptionally well set with flower buds, no doubt owing to the abnormal amount of sunshine experienced during last summer.

Flowering Shrubs and Bulbs after Flowering.—It is often painful to me to see the waste of good material in some gardens. Many shrubs after they have been of service are laid carelessly aside, and soon die, while bulbs are often thrown away. Azalea mollis and A. indica, shrubby spiræas, Viburnum Opulus and V. plicatum, lilacs, prunuses, laburnums, deutzias, Staphylea colchica, etc., after flowering, should have all flower spikes carefully removed, and be pruned back hard, placed in a light airy house or warm frame, and syringed freely overhead early in the morning and again at shutting-up time to encourage them to break into growth freely. The third week in May they may all be moved outside, and plunged in an ash-bed. If the plants are chosen according to their height, and placed in beds six feet across, with paths between, they are easy of access, easily watered, and have a tidy appearance. Bulbs, such as tulips, hyacinths, and narcissi, after flowering, should be stood in cold frames, in separate varieties; and when all are over they should be planted out at the foot of south walls, in narrow strips two feet wide (they do not interfere with fruit trees), or in any sheltered spot where they are not in the way and can be left undisturbed. A splendid early crop of bloom can be gathered from these year after year, and they give no trouble. Narcissi may also be kept in pots or boxes until they have died down, and then planted in the grass for naturalising.

General Remarks.—With the increase of sunshine and consequent rise in temperature, growth will be very rapid. Fires should be banked up during sunny days, but kept ready for emergencies, as cold storms spring up suddenly. Ventilation should be given as early as possible in the morning, and increased during the day. Insect pests will increase rapidly, consequently vaporising must be resorted to frequently.—Lewis Smith, Shotesham Park Gardens.

## THE ORCHID HOUSES.

THE CATTLEYA HOUSE.—For some time to come, the inmates of this house will need attention, as the various species and hybrids reach the condition necessary to repotting. This family comprises the most beautiful of all orchids, and those that a great many find difficult to keep in a satisfactory condition over a series of years. This is not as it should be, as under proper conditions cattleyas are easily grown. I do not pretend to be able to give the cultural details of this large family in one week's notes.

VARIOUS SPECIES.—C. Percivaliana is the first to bloom, and opens its lovely flowers in January and February. This should be repotted now, provided it is about to push forth new roots. It should be grown in a position where it will receive the maximum amount of light and a free circulation of air. After repotting, and until re-established, they should be carefully shaded and watered. C. Trianæ follows, makes a grand display from February to April, and is a most variable species, and there is a large percentage of inferior varieties among an importation, therefore good varieties should be taken care of. C. Mendelli and C. Schroderæ are the next to open their flowers, and these last through April and May; and then, in June, we have C. Mossiæ and C. Warneri. In July and August C. Warscewiczi (gigas) and C. Gaskelliana are conspicuous. With many C. Warscewiczi is considered a shy bloomer, and undoubtedly there are individual plants that take some persuading to produce flowers. Then comes, for September, the beautiful C. Dowiana and its variety aurea, followed up in November by C. labiata. This latter is the species which the majority of growers have the greatest difficulty with, and often, in spite of all that can be done for it, it will deteriorate.

TEMPERATURE.—When growing cattleyas it is advisable to put them into two classes—the warm and the cool; they can be accommodated in one house by growing one set at the warm end and the other at the cool end. Where large quantities of cattleyas are grown it is much better to provide a house for each section. Those which require the warm position include C. Warscewiczi, C. Dowiana and its variety aurea, C. Lawrenceana, C. Warneri, C. Eldorado, C. superba, C. Luddemanniana, and C. intermedia. For the cooler position, such species as C. Mossiæ, C. Mendelli, C. Gaskelliana, C. Percivaliana, and C. Harrisonæ are suitable. There are hybrids which may be accommodated in the same house, but which space will not allow me to deal with at the present time.

POTTING CATTLEYAS.—Whenever they are pushing new roots, it is desirable to pot cattleyas if the compost in which they are growing is at all sour or decayed. The old decayed compost should be removed as far as possible, without causing injury to the roots. They should be placed in receptacles that will hold them comfortably; but beginners should guard against overpotting.

COMPOSTS.—The compost in which our cattleyas are grown consists of equal portions of peat, polypodium, A1, and osmunda fibre, and sphagnum moss, all thoroughly cleaned, and used in a rough state.

WATERING.—After the plants are potted keep them rather dry until the new roots are seen to be entering the new compost. When nicely established they should have an abundant supply of water, taking care that the compost becomes dry between each watering. I do not believe in dribbling water into cattleyas; when dry give them a thorough soaking, and then allow them to become dry again.—J. T. Barker, The West Hill Gardens.

## HARDY FRUITS.

GRAFTING.—As there is every prospect of an early fruit season, the appearance of the trees indicating active movement of the sap, grafting—more particularly in the warmer parts of the country—will require immediate attention. For effecting quick propagation of new or choice varieties of the apple, pear, plum, or cherry, grafting is of the utmost importance, although, in the case of plums and cherries, budding is more generally the method employed. There are varieties of pears which need to be worked a second time as they do not succeed perfectly on the first graft, either upon the pear or quince stock. Strong growing pears form the best stock upon which the weaker sorts may be regrafted. Orchard trees which are in a healthy condition, but either produce fruits of little or no value or bear indifferently, may, by grafting, be converted into profitable specimens in a comparatively short space of time. There are plenty of excellent varieties from which to select either for market or private use. If the trees are large, crown grafting is the most suitable method to adopt, and from three to six scions may be inserted according to the size of the tree. This applies to trees with stems up to 10in. in diameter, when sawn through five or six feet from the ground. If the intention is to graft on the branches they should not be cut back too close to the main stem, and from one to three scions be inserted, according to the size of the branch. Stems half an inch or so in diameter are best whip grafted. There are several methods of grafting, but whip grafting and crown and wedge grafting are those most generally adopted. A sharp knife is needed for preparing both stocks and scions, and whatever method is followed the work should be done expeditiously. The scions should be about nine inches in length, and the wood must be clean and well ripened.

WHIP GRAFTING.—Remove a slip of bark and wood with a clean cut, to fit exactly with a corresponding cut which must be made in the scion; a sloping cut must now be made in the scion, and a similar slit made in the stock to receive the tongue of the scion; care must be taken that the scion fits bark to bark on one side at least; bind the grafts fairly firm and cover with grafting wax.

CROWN GRAFTING.—Slice a piece off the lower part of the scion, about two inches long; make a slit the same length in the bark of the stock, then carefully raise the bark with a smooth, flat-pointed stick and insert the scion.

WEDGE GRAFTING.—As the name indicates, a cleft or division is made in the stock to receive the scion, which is cut like a wedge; care must be taken that at least on one side the bark fits to bark. In both crown and wedge grafting bind the grafts fairly firm and cover with grafting wax or clay to exclude the air. The clay should be well kneaded, and some finely-chopped chaff and cow manure incorporated with the clay to prevent it cracking and falling off.

REMARKS.—As there is an abundant show of flower buds on the pear trees, they should be examined, and where necessary, some flower buds should be removed to lighten the strain on the trees; extension growths may be showing flower buds at the tips if not properly pruned back to a wood bud, and this should be remedied at once. Examine stakes and ties supporting young trees and renew in both cases where necessary. When tying allow sufficient room for the swelling growth. Labels fastened on the trees with wire are often overlooked, and much damage occurs by the wire cutting into the bark where sufficient space is not allowed for expansion.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

CAULIFLOWERS.—Those sown during the autumn and duly wintered in cold frames have become splendid plants, sturdy, compact, and very hardy, and will now be in a capital condition for planting out. Plant the most forward plants on sheltered sunny borders, in soil that has been deeply dug, and liberally manured; plant firmly, and at distances according to the variety, the lesser kinds at eighteen inches apart. Utilise screens of evergreen branches to break cold, cutting winds, and assist quick growth. The small plants of this batch can be planted on the ordinary quarters to form a succession. If at all dry, water immediately after planting. If slugs are known to be in the land, place a ring of finely sifted cinder ashes around each plant at planting time. Magnum Bonum, Walcheren, and Early Giant are well proved varieties.

SPRING SOWN CAULIFLOWERS of the early types should now be in cold frames hardening off; pull the lights off when weather permits. A good batch of these small kinds is valuable if planted in cold and other frames at fifteen inches apart, and hurried on as fast as is safe, to form small early heads. Water regularly, and shut up early and spray overhead daily. Make a sowing of Autumn Giant and Early Giant.

CARROTS.—The main crop should now be sown in ground that has been specially prepared; too much care cannot be given to the preparation of the soil. If it is intended to sow on ground that was previously cropped with early celery, trench or deeply dig it, adding road scrapings, fine leaf-soil, and mortar dust, with a quantity of soot, and even any peat dust that may be on hand, should the ground be heavy. The plot should be dry on the surface when preparing for sowing. A dressing of burnt garden refuse should be given, and the surface be then brought into a fine tilth. Rake and level, and draw drills one inch deep and one foot apart. It is time profitably spent if the seeds are covered with finely sifted old potting soil. To procure good exhibition roots holes should be bored to a depth of three feet and fifteen inches apart, and these filled in firmly with three parts sandy loam, one part burnt garden refuse, road scrapings, and one quart of bone meal to each barrowful of the mixture. A good strain of Intermediate is still the best for exhibition and general use. For shallow soils Early Gem and Favourite are splendid.

PEAS.—From this date onwards the more tender marrowfat varieties can be sown with safety in the open. Trenches, or ground previously trenched and well manured, are necessary to procure good crops of highly-flavoured peas. Draw drills deep enough to form a shallow trench when the seeds are covered, as this depression is very beneficial for mulching and watering.

TOMATOES.—The hot summer of 1911 should prompt many to again take up outside tomato culture. To secure the best returns an early sowing should be made so as to have strong plants ready for planting out in sheltered positions by the end of May. Sow seeds in boxes of fine soil, place in a warm house to germinate, prick out, and pot off as required until they are established in five-inch pots, then gradually harden off, and plant out as suggested. Not much soil is required when first planting out; a hard base of ashes suits them well. On this place small mounds of loamy soil, plant, and top dress as the roots show; when four or five trusses of flowers have set, top-dress with horse manure and a little soot. Pinch out the growing point at the fifth truss to ensure a good set, and suppress all side shoots as they appear. Holmes' Supreme and Carter's Sunrise are excellent varieties.—Geo. Ellwood, Swanmore Gardens.

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**Browallia speciosa major.**—This is more of a shrubby nature than most of the browallias, and a valuable subject for winter flowering. The blossoms are of a violet-blue colour with a light throat, and become somewhat paler in tint after being expanded a few days. It is of easy culture, and readily propagated by seeds or cuttings. —K.

THE BOURNEMOUTH HORTICULTURAL SOCIETY.

The Fifth Annual
EXHIBITION OF SPRING FLOWERS
Will be held at
The Winter Gardens Pavilion,
On TUESDAY and WEDNESDAY, March 26th & 27th.

To be opened on Tuesday at 12 Noon by
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# EXHIBITIONS AND MEETINGS.

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## British Gardeners' Association.

The first dinner held by the British Gardeners' Association took place at the Holborn Restaurant on Thursday, March 14, at seven p.m., the President, the Earl of Plymouth, presiding. The attendance was rather disappointing, less than fifty persons being present. The dislocated train service, owing to the coal strike, was the cause of absence in not a few cases, but a number of members of council resident near town were also absent.

The Earl of Plymouth proposed "The British Gardeners' Association," and first expressed his pleasure at being present, and the honour he felt conferred upon him in asking him to be President. After a reference to the coal strike, his Lordship spoke of the value of organisation, and said that the gardeners of Great Britain must be won to the ranks of the B.G.A. by concerted action, and for the purpose of protecting the interests of all concerned, and in the most practical way. It was necessary to be able to bring those who had services to offer in touch with those who needed such service. Membership of the B.G.A. should put the seal of competence upon those who called themselves gardeners, and the members should see incompetents did not trade upon the interests of the public. Not only should members' interests be protected, but also the interests of all lovers of horticulture. Such an association, strong in numbers and competence, would increase productiveness, and add to the beauty of the country. In all the aims and objects of the association he was in full accord, and he wished it every success and steady increase.

Mr. R. G. Frogbrook, chairman of council, replied, and, after thanking his Lordship for presiding, briefly reviewed the history and development of the association, and emphasised its objects and usefulness. The work was steadily advancing, and the recent examination in horticulture was but one of the steps forward in the right direction.

The President then presented the gold medal of the association and engrossed testimonial to Mr. J. Weathers, the late hon. secretary, for services so long and ably rendered. Mr. Weathers made a very able response. Mr. H. Chandler was presented with the medal and diploma awarded at the recent examination to the examinee passing with the highest number of marks.

Mr. E. F. Hawes proposed "The Branches," and said that the success of the association depended largely upon the number and strength of the branches. Mr. Collier, Gatton Park Gardens, Reigate, responded. "The Visitors," proposed by Mr. Thomas Bevan, was replied to by Mr. H. C. Preece, a blind gentleman, who made the speech of the evening, and in it referred to the close and pleasant relations so often existing between employers and the head gardener. Mr. Preece during the evening also contributed humorous stories of London and daily life in inimitable fashion. Mr. C. H. Curtis gave "The Officers and Council," to which Mr. T. Winter responded. Mr. Creswell gave "The Press" in kindly fashion, and to this Mr. T. W. Sanders replied with an inspiring speech.

"The Chairman," given by Mr. R. S. Garnett, the society's legal adviser, was accorded musical honours. The President suitably responded, and the meeting concluded with the National Anthem. Excepting the small attendance, the first dinner was a great success, and to this success the various musical items largely contributed.

## Surbiton and Tolworth Spring Show.

A large and altogether first-rate spring flower show was held on March 12 and 13 at the Assembly Rooms, Surbiton, by the Surbiton and Tolworth Society, which is a young but very enterprising Surrey body, with A. Zimmern, Esq., as president, Mr. J. Allwork as chairman, and Mr. Lionel P. Perkin as secretary. No fewer than 81 classes were provided, and between £40 and £50 were given by residents and traders towards the prize fund. The competition was wonderfully keen, the entries, together with trade displays, filled the large hall and several annexes. Classes for bulbs grown in fibre and classes open only to ladies were extremely popular and well filled with really good exhibits. Messrs. Cartwright and Goodwin, brought a very pleasing exhibit of the finer daffodils from Kidderminster; Messrs. James Carter and Co., Raynes Park, displayed some of their fine Chinese primulas; and Mr. Lionel P. Perkin, Berrylands Road, Surbiton, put up a large and good display of daffodils in great variety. The handsome silver challenge cup offered by the society for the best trade display, was won by Messrs. Cartwright and Goodwin.

Mr. F. P. Dickson, gardener to Mrs. Bunford Samuel, Marlow House, Surbiton, put up a non-competitive group of deutzias, clivias, hyacinths, tulips, and Primula Kewensis, this filling up a corner by the stage in bright fashion.

Premier award for a group of flowering and foliage plants was won by Mr. C. Burfoot, gardener to G. B. Windeler, Esq., Ditton Hill, Surbiton, with a very pretty exhibit in which amaryllis, tulips, hyacinths, primulas, cyclamens, daffodils, cinerarias, and schizanthuses figured largely, and were well disposed with suitable foliage plants. There were six of these semi-circular groups, and they produced a very fine effect. Second prize fell to Mr. T. Smith, gardener to the Marquis of Ripon, Kingston Hill, and the chief feature of his contribution was formed of lilacs, Prunus triloba, and Ghent azaleas; Indian azaleas, cinerarias, and tulips were used as a groundwork for the beautiful flowering shrubs. Third prize was awarded to Mr. G. James, gardener to Baron von Ernsthausen, The Manor House, Ditton, who made a great feature of hyacinths. Mr. C. Corps, gardener to A. Zimmern, Esq., Park Hill Drive, Surbiton, was placed fourth, and in this group a graceful laburnum attracted a good deal of attention.

First prize for a dozen hyacinths, four pots, was won by Mr. J. R. Martin, gardener to W. J. Cockburn, Esq., J.P., Lincoln House, Surbiton, with grand spikes of Jacques, King of the Blues, Her Majesty,and Le Grandesse; Mr. G. James second. For three hyacinths Mr. James was well to the front, and he was also a capital first for three pots of daffodils, showing finely cultivated examples of Glory of Leiden and Victoria; Mr. Martin was a good second here. In another class for three pots of daffodils Mr. F. Lock, gardener to S. P. Priestly, Esq., Arsmie Elmers, Surbiton, scored easily with Sir Watkin, finely grown and freely flowered. Mr. Martin was second here out of nine competitors. Mr. Martin had the best pot of Emperor daffodils, but Mr. Burfoot scored easily for a pot of Sir Watkin carrying nine fine blooms.

Tulips, three pots, was a capital class, and here Mr. Hainge, gardener to R. A. Hewat, Esq., Sonachan, Surbiton, led with white Joost Van Vondel and red Joost Van Vondel, and Prince of Austria, Mr. Martin coming second. Mr. Martin led for double tulips, closely followed by Mr. James. Mr. James was an easy first for a specimen pot of hyacinths, and he led with a potful of bulbs that carried about three dozen spikes of King of the Blues.

Mr. Burfoot scored for cyclamens, and Mr. T. Smith was ahead for half-a-dozen primulas, with first-rate examples of the graceful P. malacoides. Star cinerarias were largely shown, and filled a space in front of the platform; Mr. H. Hawkes, gardener to W. Williams, Esq., Allbury House, Surbiton, was first prize winner for six plants, and Mr. A. Corps second. This last-named competitor led for three pots of spiræeas, with beautiful examples of Gladstone; Mr. F. Lock following closely in a class of six entries. Mr. W. E. Fielder, gardener to W. Hudson, Esq., The Lodge, Surbiton Hill, was a quite easy first for six florists' cinerarias, with neat examples carrying big flowers in good heads; Mr. Burfoot second.

In the jobbing gardeners' section the chief prize winners were Mr. A. J. Cooper and Mr. H. Kelly. The division for amateurs not employing a gardener more than two days a week found Mr. A. Palk, Cranes Park, Surbiton, a leading first prize winner, his hyacinths and daffodils being excellent. Miss Trollope, The Crescent, Surbiton, was also successful in this division, and her three pots of tulips were capital.

For bulbs grown in fibre Mr. T. Hainge led for three hyacinths with Grande Maitre; Mr. Burfoot scored for eight daffodils in a bowl, these carrying 18 flowers of the variety Victoria; Mr. Burfoot had also the best six bulbs of Sir Watkin, these carrying a total of fifteen fine flowers. Mr. Lock scored for a bowl of polyanthus narcissi with the beautiful Poetaz variety Elvira, carrying seventeen spikes. For a specimen bowl of daffodils. Mr. Burfoot scored with about three dozen flowers of Victoria in a wide pan. For hyacinths in fibre Mr. Palk led with eight fine plants of La Grandesse in a fancy bowl; Miss Perkin, Matthew Avenue, coming second with the yellow City of Haarlem.

There were only two classes for cut daffodils, each for six varieties, and Mr. G. James and Mr. T. Smith were the first prize winners; the former had fine flowers of Aspasia, Madame de Graff, and Glory of Leiden, while Mr. Smith showed good blooms of Seagull, White Wings, and Fairy.

The lady judges placed Miss D. M. Hall, Victoria Avenue, first for table decoration, but as all the flowers, Barri daffodils, were grouped in the centre of the table, this decision did not feet with general approval; but this much could be said of most decisions in connection with such a class where personal taste so largely enters into the finding. Miss Packham, Ewell Road, Surbiton, came second, and Miss Ada Hewitt, Adelaide Road, Surbiton, third.

## Newcastle Horticultural Society.

Councillor W. E. Harker presided over a fairly good attendance on the occasion of the annual meeting, which was held at Tilley's Restaurant, Newcastle.

The Chairman, in moving the adoption of the report, said the accounts he had to submit to them were not very encouraging. They commenced the year with a deficit of £142 13s. 9d., and closed the year's work with a deficit of £314 11s. 4d. The loss on the summer show occurred on the second day, when they expected the largest gate, rain having fell continuously. Comparing that day's takings with the corresponding day of the previous year, there was a decrease of £101 11s. 3d. That in itself should explain the loss. The council exercised economy in conducting the show, and effected a saving of nearly £100. However, that was not the first time the society had been faced with a heavy balance on the wrong side, and it was gratifying to them to know that they still had many good friends. They had received donations amounting to £90 5s., and since the accounts were issued the secretary had received a further donation of £10. Their creditors had also come forward in a most generous manner, and had not only agreed to allow the balance of their accounts to stand over until funds are in hand, but were willing to co-operate to enable them to hold the summer show as usual this year. Other friends, through Mr. Cyril Millican, had promised to give an entertainment to assist the funds, and they hoped to receive £100 from that source. It had been suggested that they did not cater in any way for amateurs. That was hardly correct. Some years ago they provided numerous classes in the amateurs' division, but the entries were so poor that the council decided to allot more prize money to trade exhibitors, nurserymen, and gardeners who moved with the times. In last year's schedule they gave six classes for amateurs, three for roses, and one each for carnations, sweet peas, and grapes. Having simplified these classes in accordance with the wishes of local amateurs, the entries increased, and they were now hoping to add further classes. It must not be forgotten, however, that in the past few years numerous country shows had come into existence, where amateurs predominate. For such an important show as theirs, it was essential to encourage the trade and professional exhibitors, and he could only mention such shows as Shrewsbury and York Gala, who attributed their success entirely to the pursuance of that policy. It was the trade exhibitors, who, compelled to move with the times, gave the shows educational value. The society held the record of having held shows annually since 1824 without a break. The honour of maintaining that record was fully recognised by the council, but they must at the same time receive the support not only of their members, but the citizens of Newcastle and the residents of the north. They all liked good value for their money, and he certainly thought their members at least obtained a good return for theirs.

The motion was seconded by Mr. Campbell, and carried unanimously. Various votes of thanks were accorded to the officers for their services during the past year, and it was resolved that the show should be held on July 3, 4, and 5.

## Dundee Horticultural Association.

There was a record attendance of members at the ordinary monthly meeting on the 14th inst. The lecturer was Mr. John Machar, Fothringham Gardens, who selected for his subject "Sweet Peas." In glowing language Mr. Machar minutely described every detail in connection with up-to-date methods of cultivation. In doing so, he drew largely on his own practical observations, tests, and experiments carried out in the gardens under his charge. Autumn sowing and autumn preparation of the ground he considered of far-reaching importance. Indeed, the latter was imperative even for spring sowing. Trenches seven feet wide, worked three feet deep, with farmyard manure well incorporated, also ½cwt. of basic slag to 80ft., with kainit, formed his chief autumn preparation. In spring an additional dressing of superphosphate of lime, applied at the rate of 14lb. to 60ft. run of trench was given. In planting the sweet peas were shaken out of the pots and planted singly in a double row one foot apart each way. Three shoots were allowed to come away from near the base, these being trained to branches or other supports, and all lateral shoots removed. In the earlier stages of growth he kept the surface of the soil black with soot for two reasons—one to protect the plants from the ravages of slugs, snails, etc., and the other to make the soil absorb and retain as much warmth from the sun's rays as possible.

In regard to watering during the growing season, Mr. Machar thought it was generally too lavishly performed, and advised as preferable frequent stirring of the soil and mulching with short grass, stable manure, leaves, etc., as being far more beneficial. Sufficient stimulant was given by two or three subsequent dressings of superphosphate, sulphate of ammonia, and nitrate or sulphate of potash; the latter two—ammonia and potash—might be given in solution with water or spread on the surface during rainy weather.

After giving a list of the best dozen inexpensive varieties, Mr. Machar gave the names of another dozen choice exhibition varieties, supplementing these with twelve of the best novelties up to date.

Many helpful hints regarding cutting and staging for exhibition were gleaned also from the lecture as well as in the subsequent discussion.

On the call of Mr. James Slater, the lecturer was cordially thanked for his lecture. A like compliment to the president, Mr. W. Christison, closed the meeting.

## Dundee Chrysanthemum Society.

Wood's Rooms, Commercial Street, Dundee, was the scene of a social smoking concert on the 15th inst., when upwards of 100 members assembled to honour their late secretary, Mr. W. P. Laird, who retired in December last, after holding office for 21 years. The popular President, W. S. Melville, Esq., J.P., presided, and during the course of an enjoyable evening handed over to Mr. Laird a beautiful carriage clock, silver cigarette case, and silver match-box, bearing suitable inscriptions. In making the presentation the Bailie warmly commended the gentlemanly qualities of Mr. Laird, his keen business foresight and powers of organisation, and his genial, courteous demeanour. In all his relations, his word was as good as his bond; but, as their honorary secretary for the long period of 21 years, he had excelled and endeared himself to every member of the society, and doubly so to the members of the several committees which were associated with him in the work. As head of the firm of Laird and Sinclair in Dundee, they wished him every success life could afford.

In returning thanks, Mr. Laird gave a short, concise résumé of the "ups and downs" of the society, and deplored the fact that it had never gone past the struggling stage, but it was these struggles which brought about a greater bond of unity. The work to him was a real pleasure, and his association with the various members of committees was always most harmonious. With the exception of two or three members of their first committee (21 years ago), who had "passed away," all the others were yet "hale and hearty," some of them round the table looking as youthful as he felt himself.

## Reading Gardeners' Association.

The fortnightly meeting took place at the Abbey Hall, Reading (by kind permission of Messrs. Sutton and Sons), on Monday, March 4, the President occupying the chair. The stormy weather had a somewhat prejudicial effect on the attendance, but there was a fair gathering to greet Mr. T. Tunbridge, of The Gardens, Three Elms, Henley-on-Thames, who was the lecturer for the evening, and who, owing to indisposition, had been unable to attend the previous meetings during the present year.

The paper was entitled "The Pruning of Groups of Roses," and Mr. Tunbridge, in his opening remarks, stated that the subject was far too wide to be covered in any one evening, and he, therefore, proposed to speak on the treatment of the climbing groups only, namely, the Multifloras, Wichuraianas, and Chinas, thus leaving untouched the teas, hybrid teas, and hybrid perpetuals, except Gloire de Dijon, Marie Van Houtte, and some of the climbing noisettes. Mr. Tunbridge once more gave proof of his versatility in the profession, giving most valuable information as to the proper and varied treatment of these different groups of the national flower. The benefit of his experience with regard to the management of climbers used for covering arches, pergolas, pillars, walls, stumps, etc., was also given to the members. His method of regulating growth and other details necessary to the successful and artistic clothing of these supports being clearly explained. Mr. Tunbridge brought a number of specimens with him, and gave a practical demonstration as to the particular pruning, severe or otherwise, required by many of the varieties referred to in the course of his paper.

At the close of the lecture a prolonged and instructive debate took place, followed by a hearty vote of thanks to Mr. Tunbridge.

A beautiful exhibit of cyclamen, Sutton's Giant White, rich salmon-pink, and Giant Rose-Pink, was put up by Mr. H. C. Loader, The Gardens, Erlegh Park, the lovely shades of pink brightened by the effect of artificial light being seen in charming contrast with the white variety. Mr. F. Townsend brought from the gardens at Hillside a group of primulas and a collection of narcissi, and both exhibits were greatly admired.

## Dumfriesshire and Galloway Horticultural Society.

It appears that a private meeting of the directors of this society was held the other evening, when the secretary and treasurer, Mr. R. G. Mann, presented a statement of the accounts, which had been audited by one of the directors. It was to the effect that at the meeting, held after the last show, which was held in 1910, there was a deficiency of upwards of £76, but that this had been reduced by contributions made by the four largest trade creditors, amounting to upwards of £8, and special subscriptions totalling upwards of £30. The last of the trade creditors had been paid about three weeks ago, and all that was now outstanding was the prize money of the show, which amounted to about £39. All the special prizes had been paid but one, as to which some dubiety existed respecting who was entitled to it, owing to two names appearing in the prize book, and no claim according to the rules had been made for it. The income account showed receipts amounting to a little above £125, while the expenditure was a few shillings more than that sum, showing 11s. 8d. due to the secretary, and the prize money owing to the winners. About half of this amount is due to some of the directors. The statement was considered satisfactory by those present. On account of the financial position, it was resolved to hold no show this year.

## North of England Horticultural Society.

The following awards were made by the Floral and Plant and Orchid Committees of this society at the spring show, held at Bradford on March 14:

Large Silver-gilt Medal.—To Messrs. R. P. Ker and Son, Liverpool, for amaryllis; to Mr. C. Engelmann, Saffron Walden, for carnations; to J. Hill, Esq. (gardener, Mr. G. Dunmore), Chellow Dene, for bulbs and lilacs.

Large Silver Medal.—To J. H. Craven, Esq. (gardener, Mr. F. W. Corney), Keighley, Mr. W. Shackleton, Bradford, and J. Hartley, Esq. (gardener, Mr. W. Coupe), Morley, for orchids.

Silver Medal.—To Messrs. W. Artindale and Sons, Sheffield, for Primula obconica gigantea; to Mr. J. Brooke, Bradford, for bulbs and lilacs; to Mr. J. Wood, Boston Spa, for rock plants; to N. Galloway, Esq., Bradford, Messrs. A. J. Keeling and Sons, Bradford, and Messrs. Mansell and Hatcher, Rawdon, for orchids.

Large Bronze Medal.—To Messrs. Conway's, Lim., for rock plants; to Messrs. S. Broadhead and Son, Huddersfield, for rockery; to Messrs. S. Dean and Sons, Bradford, for bulbs; to Mr. F. Spencer, for bulbs.

First-Class Diplomas.—To Odontioda eboraicum, from J. H. Craven, Esq.; to Dendrobium Cybele alba, from W. H. St. Quintin, Esq. (gardener, Mr. F. C. Riddle), Rillington); to Carnation Lady Northcliffe, from Mr. C. Engelmann.

Second-Class Diploma.—To Dendrobium nobile Thwaites var., from J. Hartley, Esq., Morley (gardener, Mr. Wm. Coupe); to Dendrobium Chessingtonense, from J. Hartley, Esq., Morley; to Amaryllises Pink Perfection and Ruby Queen, from Messrs. R. P. Ker and Son.

## Croydon Gardeners' Society.

"The Culture of the Grape Vine under Glass" was the title of the lecture given to the members of this society at the Sunflower Temperance Hotel, George Street. The lecturer, Mr. W. Rawlings, Heathfield Gardens, Addington, is an active member of the society, and in this his initial attempt at lecturing he entertained a good audience.

To grow grapes well and to advise the proper treatment requires several years of careful study, and Mr. Rawlings, although only a young man, appears to have devoted very close attention to this phase of gardening. Permeating his whole discourse were the many details so necessary for successful culture, and entering into these details so lucidly his lecture was exceedingly instructive to those who have not had much experience in growing grapes, at the same time appealing to those who are acquainted with their culture.

A pleasing collection of miscellaneous plants, including azaleas, deutzias, acers, etc., was staged by Mr. T. Butcher. From Coombe House Gardens Mr. Mills brought two exceedingly well flowered pans of Saxifraga oppositifolia alba and S. Burseriana grandiflora. Mr. W. Paulley was in evidence with a dish each of Catillac pears and Sturmer Pippin apples, and Mr. F. W. Moore put up three dishes of young carrots. These exhibits were a great attraction, and the exhibitors were the recipients of warmest praise for their efforts in making the meeting a successful one.

## Royal Horticultural Society.

MARCH 19, 1912.

### CERTIFICATE AND AWARDS.

First Class Certificate.—To Odontoglossum crispum Samuel Gratrix, from S. Gratrix, Esq., Manchester.

Award of Merit.—To Cattleya Dirce Westonbirt variety, from Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester; to Odontoglossum Queen of Gatton, from Sir Jeremiah Colman, Bart., Gatton Park, Reigate; to Amaryllis Rose du Barri and Musigny, from Lord Rothschild, Tring Park, Tring; to Corylopsis Veitchi, from the Hon. Vicary Gibbs, Aldenham House, Elstree; to Narcissus Robespierre and Rubalite, from Mr. A. M. Wilson, Shorel, Bridgwater; to Narcissus Helios, from Messrs. Walter T. Ware and Co., Inglescombe, Bath; to Primula Knuthiana and Prunus Pissardi Moseri fl. pl., from Messrs. Jas. Veitch and Sons, Chelsea; to Abies Douglasi Fletcheriana, from Messrs. Fletcher Brothers, Ottershaw; to H.T. rose Rose Queen, from Mr. W. E. Wallace, Eaton Bray, Dunstable.

### MEDALS.

Gold.—To Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse plants and flowering shrubs.

Silver Gilt Flora.—To Messrs. Barr and Sons, Covent Garden, for daffodils.

Silver-Gilt Banksian.—To Mr. A. M. Wilson, Bridgwater, for daffodils; to Messrs. J. Hill and Son, for ferns; to Messrs. W. Cutbush and Son, for carnations.

Silver Flora.—To Messrs. Sander and Sons, St. Albans, for orchids; to Mr. Day, gardener to H. S. Goodson, Esq., Putney, for orchids; to Messrs. Charlesworth and Co., Hayward's Heath, for orchids; to Messrs. R. H. Bath, Lim., Wisbech, for tulips and daffodils; to Mr. C. Bourne, Simpson, Bletchley, for daffodils; to Mr. M. Prichard, for hardy plants; to Mr. L. R. Russell, for flowering shrubs.

Silver Knightian.—To Messrs. Sutton and Sons, Reading, for vegetables and salading.

Silver Banksian.—To Sir D. Gooch, Chelmsford, for apples; to Mr. Weinholdt, Rhodes Fruit Farms, S. Africa, for apples; to Messrs. Dianellon and Vergopoulos, Cyprus, for oranges; to Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. J. and A. McBean, Cooksbridge; for orchids; to Messrs. Hassall and Co., Southgate, for orchids; and to G. H. Smith, Esq., Finchley, for orchids; to Mr. H. Burnett, for carnations; to Messrs. H. Cannell and Sons, for pelargoniums; to Messrs. Gill and Son, for rhododendrons; to Messrs. Stuart Low and Co., for carnations, etc.; to Messrs. H. B. May and Sons, for ferns; to Miss Ough, for floral paintings.

Bronze Flora.—To Mr. Box, for hardy plants.

Bronze Banksian.—To Mrs. Charrington, for cyclamen; to Messrs. J. Cheal and Sons, for rock garden; to Lady Holland, for amaryllis; to Mr. Reuthe, for hardy plants; to Messrs. Lane, for rock work; and to Messrs. R. and G. Cuthbert, for azaleas.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. March 10 to March 16. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | Temperature of the Air. At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Mar. 10—Sunday ...... | 1 54 | 44 | 43 | 54 | 42 |
| ,, 11—Monday ...... | 1 54 | 42 | 42 | 51 | 38 |
| ,, 12—Tuesday...... | 0 12 | 39 | 39 | 48 | 38 |
| ,, 13—Wednesday.. | — | 48 | 47 | 52 | 38 |
| ,, 14—Thursday.... | 2 0 | 49 | 48 | 57 | 48 |
| ,, 15—Friday........ | 1 30 | 48 | 47 | 49 | 47 |
| ,, 16—Saturday..... | 5 42 | 41 | 38 | 48 | 33 |
| Means ... | (total) 13 12 | 44 | 43 | 51 | 40 |

| Date. 1912. March 10 to March 16. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | Temperature of the Soil at 9 a.m. At 2 ft. deep. | Temperature of the Soil at 9 a.m. At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Mar. 10—Sunday ...... | 0·01 | 44 | 44 | 45 | 31 |
| ,, 11—Monday ...... | — | 45 | 44 | 45 | 28 |
| ,, 12 Tuesday...... | 0·07 | 45 | 44 | 45 | 37 |
| ,, 13—Wednesday.. | trace | 45 | 45 | 46 | 37 |
| ,, 14—Thursday.... | 0·01 | 47 | 45 | 46 | 44 |
| ,, 15—Friday........ | 0·06 | 48 | 46 | 46 | 39 |
| ,, 16 Saturday .... | 0·08 | 44 | 46 | 46 | 24 |
| Means ... | (total) 0·23 | 45 | 45 | 45 | 34 |

## COMING EVENTS.

Penarth Rose Show, July 3.

Midland Carnation and Picotee Show, July 31 and August 1.

Craig-y-don Horticultural Society, July 17, in the Town Hall, Llandudno.

Chislehurst Horticultural Society: Spring Flower Show, April 20; Summer Show, July 6, at Kemnal Warren.

West Birmingham Horticultural Society, August 24, at Lightwoods Park.

Sevenoaks Horticultural Society, July 10, in Knowle Park and Gardens.

Dundee Floral Fête, September 5, 6, and 7, on Magdalen Green, Dundee.

Leamington and County Flower Show, July 24 and 25, in Victoria Park.

National Carnation and Picotee Society, July 23, at Royal Horticultural Hall.

Leicester Flower Show, August 6 and 7, in the Abbey Park.

Hawick Horticultural Society; Summer Show, August 24; Chrysanthemum Show, November 22 and 23.

Formby Horticultural Society, Summer Show, July 10; Autumn Show, November 9.

Weybridge Horticultural Society, July 3, in the Old Palace Gardens.

Birmingham Horticultural Society, July 19 and 20, in Handsworth Park.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

LARGE-FLOWERED VIOLAS.—M. S., Saxmundham: Please give me the names and descriptions of a few very large-flowered violas as I wish to grow some for exhibition. —A few very large-flowered varieties are Kate Blythe, white, edged pale blue; Lizzie Wallace, heliotrope self; Maggie Melville, violet and purple; Duchess of Norfolk, creamy-white; Mary Burnie, primrose and heliotrope; Andrew H. Fisher, purple and rose; General Baden Powell, orange; Maggie Clunas, primrose self; Mrs. Chichester, white and mauve; Willie Farmer, white, edged purple; Bessie Murray, white and blue; White Knight, white; and William Lockwood, yellow.

WOODLICE IN GREENHOUSES.—Hibernia writes: In further reply to "A. J. B.," Cardiff, I would advise your correspondent to obtain a number of toads, and place them in his greenhouses, and he will soon find the number of woodlice diminish. It is interesting to watch the toads pick up the woodlice with their tongues with lightning speed.

GLORIOSA SUPERBA.—D. H. W., Wales: Kindly give me a few particulars concerning the cultivation of Gloriosa superba. —Start the tubers in comparatively small pots in a temperature of 55 to 65 degrees, placing the tubers crown end upwards. When some progress has been made and more room is necessary for the roots, place several of the plants in a large pot to form a specimen. Use a compost of two parts good turfy loam, and one part each of peat, leaf-soil, and dried cow manure, adding sand liberally to keep the whole porous. Water sparingly for a little while after each potting. Train the growths to a trellis, and, later on, train them round the balloon trellis if for show purposes. When the large pot is fairly well filled with roots, give liquid cow manure twice weekly. An intermediate house or warm greenhouse will suffice when the plants are coming into bloom. Carefully reduce the water supply after flowering is over, eventually keeping soil and tubers dry throughout the winter.

MOORPARK APRICOT.—L. F., St. Albans: Was the Moorpark apricot raised in this country, or was it introduced?—According to the late Dr. Hogg, "the Moorpark apricot is said by some to have been introduced by Lord Anson from the Continent, and planted at Moorpark, near Watford, in Hertfordshire. By others its introduction is ascribed to Sir Thomas More, who, in the beginning of the last [18th] century, is also said to have planted it at Moorpark; and a

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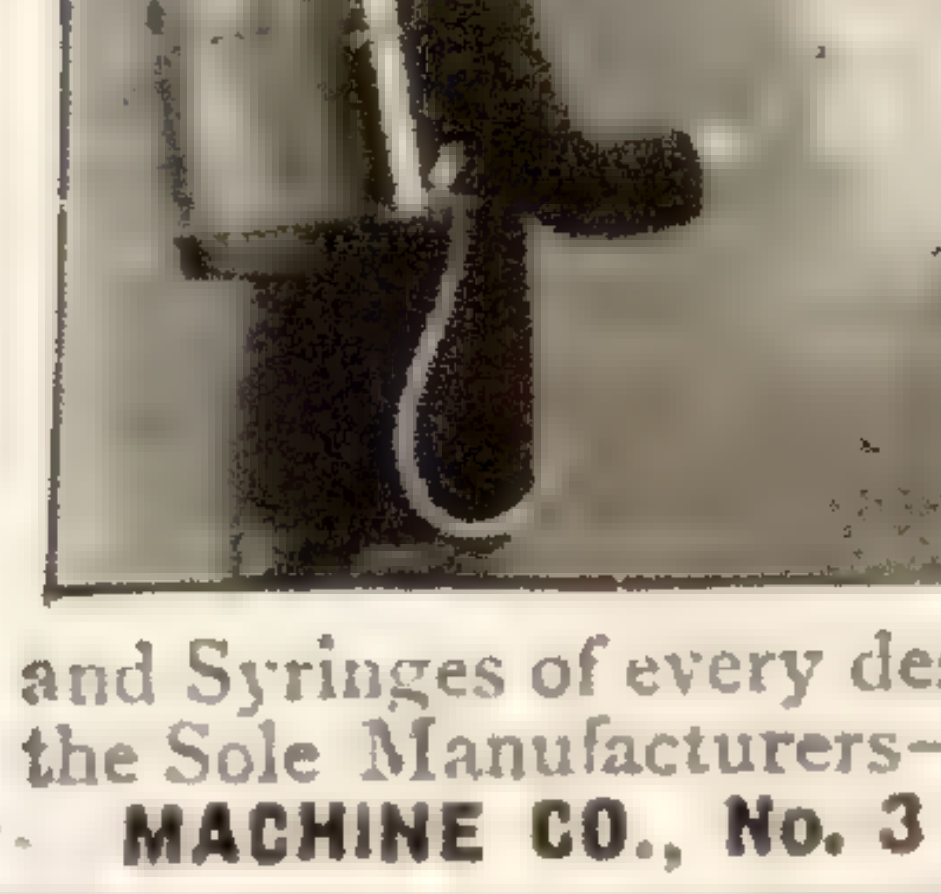

which have won **80** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-.** No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 C, SUTTON COLDFIELD.**

third account is that Sir William Temple introduced it. But by whomsoever it was raised or introduced, or at what period, it is quite certain it was very little known till late in the century. Neither Hitt nor Miller notices it in any of the editions of their works. I do not find it mentioned in any of the Brompton Park catalogues before 1784, when it was called Temple apricot. In 1788 it is first called Moorpark. In 1784 it was cultivated to the extent of three rows, or 300 plants; but in 1797 the quantity was increased to thirty-five rows, or 3,500 plants."

MALMAISON CARNATIONS. — G. G., Aberystwith: Kindly give me some information concerning the propagation and treatment of Malmaison carnations.—The Malmaison carnations are propagated by layering after flowering is over. We shall be dealing with this matter before long, and we advise you to watch our "Work for the Week" columns, as these carnations are frequently referred to therein.

ANNUAL MAIDENHAIR FERN. — S. E. G., Derby: Can you tell me anything about a fern called the Annual Maidenhair Fern I understand it is of annual duration, but was always under the impression that all ferns were perennial.—The fern to which you refer is not a Maidenhair, although so-called. It is Gymnogramma leptophylla, a native of Jersey and some parts of the Mediterranean district. It loves a moist situation, and when the conditions are favourable, it reproduces itself annually from spores, the parent plants dying at the end of the year. It can scarcely be called a hardy fern, although found in the Channel Islands, so that under cultivation a close case in a cool house, or out of doors in some sheltered, shady spot, would probably provide for its wants.

EXHIBITING SWEET PEAS.—G. W., Silsden: Does "Sweet Peas and Their Cultivation" contain information relative to exhibiting, and in such a way as to be of service to an amateur?—Yes; the book tells you how to show as well as how to grow sweet peas, and gives advice as to cutting and packing the flowers, and their arrangement in vases on the exhibition table. The book is published at the Gardeners' Magazine office, 148 and 149, Aldersgate Street, E.C., 1s. 2d. post free, or 1s. 8d. post free in cloth.

BOARD OF AGRICULTURE LIBRARY. —M. J. C., Romford: Has the Board of Agriculture a library; and, if so, is it available for consultation concerning matters relative to agriculture and market gardening?—There is a library at the Office of the Board of Agriculture, 8, Whitehall Place, London, S.W., and this may be consulted by persons interested in agriculture and market gardening on any week day between the hours of 10 a.m. and 5 p.m. (10 a.m. to 2 p.m. on Saturdays). Application should be made to the Publications Branch. In order to make the library accessible to students resident in the country, the Board of Agriculture is prepared to lend books where they are satisfied that the privilege will be of value.

PRIVATE GARDENS OPEN TO THE PUBLIC.—In answer to a question asked in these columns a short time ago, Mr. J. Castle, of Alnwick, kindly writes: The Duke of Northumberland's gardens, at Alnwick Castle, are open to the public free, from 10 a.m. to 4 p.m., every Thursday. I had charge of the flower garden department there before coming to take charge of the Cemetery, and I remember that the privilege was taken advantage of very largely in the spring and summer.

DAMAGED PELARGONIUM LEAVES.—F. D., Preston: Some friends have been discussing the cause of damage to pelargonium leaves (specimens enclosed); one gives bad root action, and another excessively moist atmosphere, and yet another says a fungus disease is the cause. Please give us your opinion.—The substance of the leaves suggests that root action is poor, therefore part of the trouble may be referred to this cause. The thin and flabby leaves further suggest an excess of moisture in the atmosphere, and the marks, due to scalding, further emphasise this point. The moisture has accumulated on the leaves, and the occasional bursts of bright spring sunshine have been focussed by the drops of moisture into points of burning heat, the water acting as a burning-glass. The remedies are less moisture at the roots and more ventilation, coupled with a little fire heat if necessary.

AMOUNT OF MINERAL MATTER USED BL CROPS.—N. O., Newport: I should be greatly obliged if you would tell me where I can find statements giving the amount of mineral that various crops, fruit crops especially, extract from the soil.—The information is given by Dr. Griffiths in "Manures for Fruit and Other Trees" (R. Sutton, Southwark Street).

CORRECTION.—A printers' error converted Mazus Pumilio into Mayus pumilio on p. 228 of our issue of March 16.

## NAMES OF PLANTS.

B. H., Hereford.—1, Allium neapolitanum; 2, Veltheimia vividiflora.

T. T., Tiverton.—1, Saxifraga oppositifolia; 2, Muscari botryoides; 3, Prunus Pissardi.

C. P. R., Exeter.—1, Prunus tomentosa; 2, Forsythia suspensa; 3, Saxifraga oppositifolia; 4, Erica mediterranea.

J. E. G., Crewe.—1, Dendrobium Findlayanum; 2, D. nobile, good form; 3, Cattleya Trianæ; 4, also C. Trianæ, but a poor variety.

L. S. B., Launceston.—1, Rhododendron arboreum; 2, Erica mediterranea; 3, Ribes sanguinea; 4, not recognised, send when in flower; 5, Cupressus funebris.

S. B. H., Lowestoft.—1, Quercus Ilex; 2, Coronilla glauca variegata; 3, Iris reticulata; 4, Sparmannia africana; 5, Lachenalia Nelsoni; 6, Primula Kewensis.

**Publications Received.**—Castle's Guide to the Fruit, Vegetable, and Allied Trades, 1912. (Castle's Directories, Lim., 22, King Street, Truro.)

## OBITUARY.

◆

### MR. W. R. PEARSON.

We regret to record the death of Mr. W. R. Pearson, which occurred on the 11th inst. at his residence, Widehough Gardens, Hexham, in his 67th year. Mr. Pearson was one of the best-known market gardeners in the Hexham district, and also in the Newcastle market, which he regularly attended for many years. Mr. Pearson and his forefathers have been tenants of the Widehough Gardens for several generations, and, as he leaves two sons, the tenancy will be continued in the family.

### REV. C. C. ELLISON.

We regret to record the death of the Rev. C. C. Ellison, which occurred at Bracebridge, Lincolnshire, on the 11th inst., in his 78th year. Mr. Ellison evinced much interest in outdoor life, and especially in gardening, as exemplified by the success he achieved as a cultivator and exhibitor of roses and fruit. He was not less successful as an angler and cricketer, and in ivory and wood turning he had few rivals among amateurs.

### MR. GEORGE HAMPTON.

We have to record the death of Mr. George Hampton, who had been sixty years in the Royal service, which occurred in his house in the grounds of Windsor Castle, in his seventy-sixth year. He was borne at Kensington Palace, where his father was employed, and entered as an apprentice the Royal gardens in 1852. After passing through the various departments of the Frogmore gardens, he went to Sandringham. After being in the gardens there for several years, he returned to Windsor to take charge of the plantations, roads, and walks in Windsor Home Park, and in the discharge of the duties connected therewith evinced much ability.

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## Situations Wanted—*continued.*

M. HERBERT, Meadow Walk, Ewell, Surrey, seeks SITUATION as Improver (Inside or Inside and Out); age 18; has a good reference; Bothy preferred.

MR. G. STURT, Oakdale Gardens, Holmwood, Dorking, Surrey, wishes to highly recommend J. DEW as JOURNEYMAN (Inside) in a good establishment; five years' experience; age 21; two years in Fruit and Plant.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22, as UNDER GARDENER (Inside and Out); was with him 8 years. Address Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

MR. GILL, Apley Castle, Wellington, Shropshire, wishes to recommend L. GIBBS, Coombe, Woodstock, Oxon, as JOURNEYMAN (Inside); six years' experience; age 21 years.

MR. CATERER, Dunorlan Gardens, Tunbridge Wells, wishes to recommend H. CHESSON, as Second Journeyman; Fruit Houses. Bothy preferred. Age 23; two years here; previously four years at Compton Place, Eastbourne.

SITUATION required under a Gardener by willing LAD, age 16, where two or more are kept; slight experience. F. LANE, 125, Keslake Road, Kensal Rise, London, N.W.

THOS. BAKER, late Manager for Wm. Lowe and Thos. Cripps and Sons, is open to Re-engagement; first-class references regarding abilities. 9, High Street, Eltham, Kent.

THOS. ALLISON, Gardener to Baroness Amherst, of Hackney, Didlington Hall, Stoke-ferry, Norfolk, wishes to highly recommend two JOURNEYMEN for Inside; leaving through estate having been sold.

W. MEREDITH, The Gardens, Firbeck Hall, Rotherham, can thoroughly recommend a Young Man for the KITCHEN GARDEN in a large place, or as GARDENER for a small place; age 25; accustomed to fires and duty.

YOUNG MAN, age 24, seeks SITUATION, Kitchen Garden and Pleasure Grounds; used to hand and pony mowers; good reference. Apply W. RADFORD, Poncheydown, Kentisbeare, Cullompton, Devon.

YOUNG MAN, age 18, seeks SITUATION in general, either outdoor or under glass; has had experience in gardening since schooldays. G. W. BENTON, 161, Duke Street, St. Helen's, Lancs.

YOUNG MAN seeks SITUATION as Single-handed GARDENER; age 21; able to milk one or two cows, and manage a few poultry if required; good references; Bothy preferred. WHITEHEAD, Priors Marston, near Byfield.

YOUNG MAN, age 19, seeks Situation as IMPROVER; two years' experience; good references. G. WILLIS, Great Burstead, near Billericay, Essex.

YOUNG GERMAN, with good knowledge of English, desires an Appointment as Gardener (Assistant) to an English Gentleman; excellent training in theoretical and practical gardening; private and public experience; highest references. MORITZ SCHULZ, Mona Cottage, Solihull Lodge, Shirley, Birmingham.

YOUNG MAN, age 24, seeks SITUATION as Under Gardener or Groom Gardener; excellent references; Bothy preferred. J. GREENHAM, The Stables, Hauteville, Harrietsham, Kent.

YOUNG MAN requires SITUATION in Garden as Under Gardener; good references. C. C., c/o Mr. Mouland, 54, Well Road, Sydenham, S.E.

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THE REV. J. H. PEMBERTON wants a YOUNG MAN to help him grow and show Roses, and help in garden; one who can bud. Address Havering, Romford.

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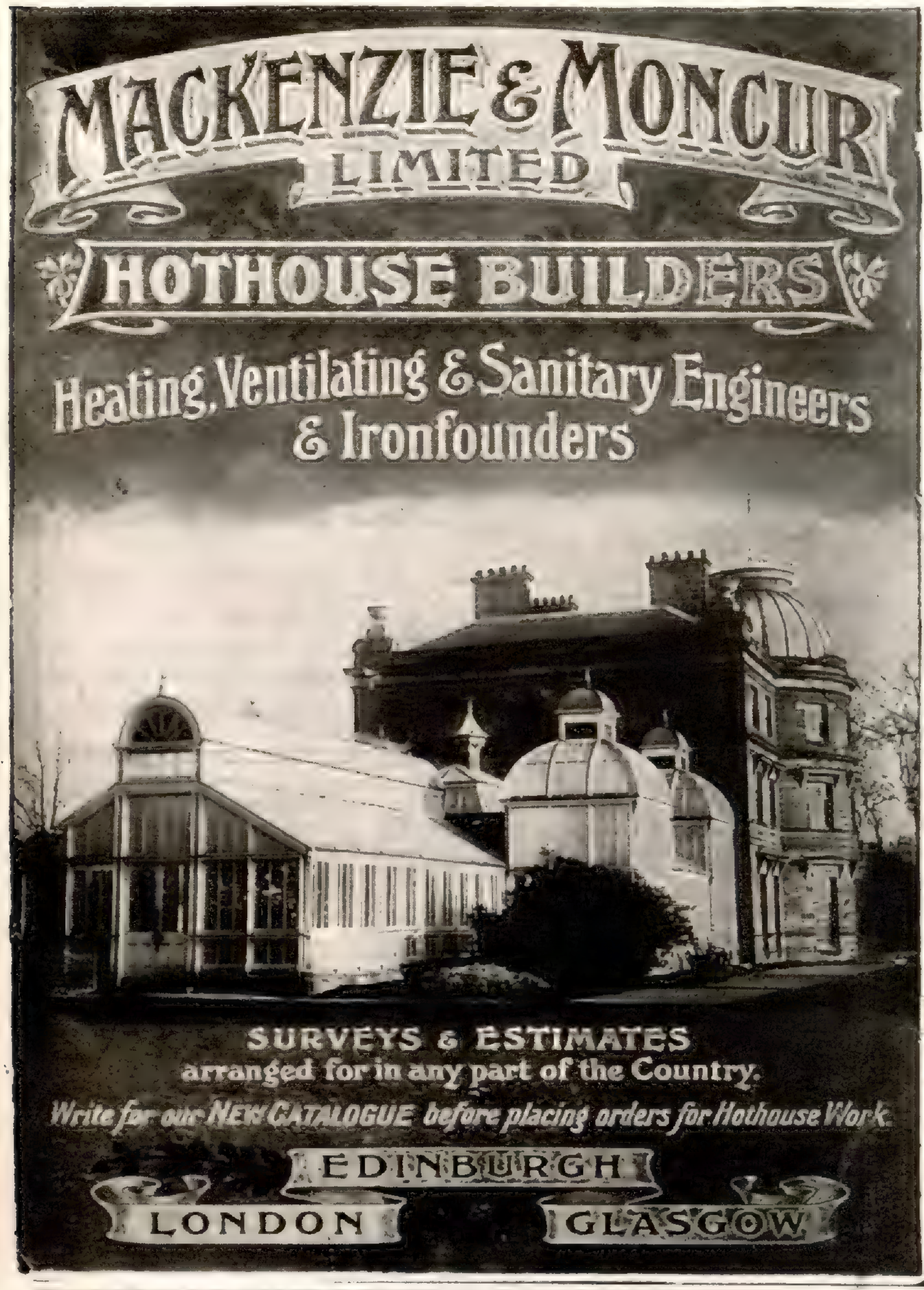

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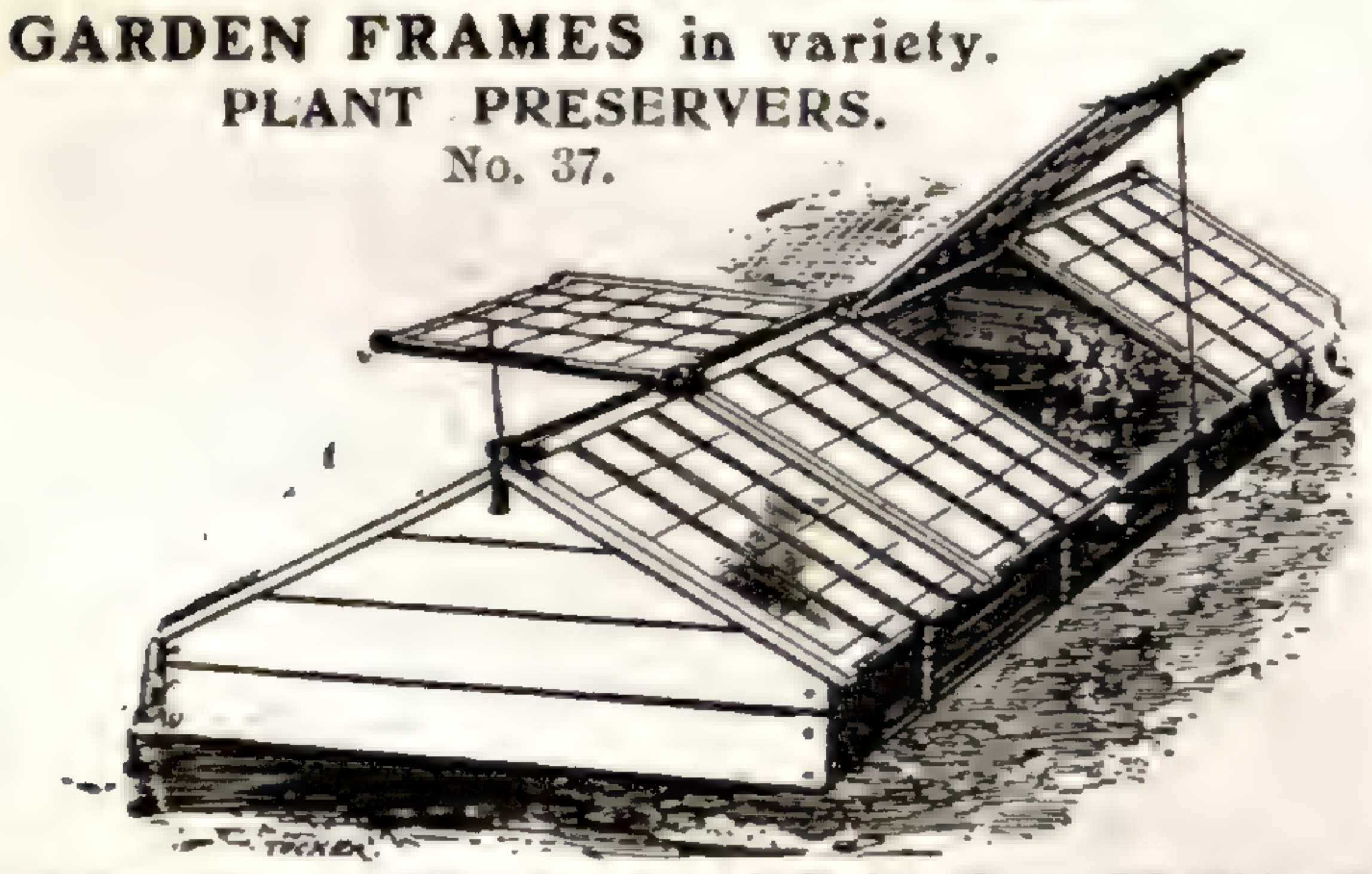

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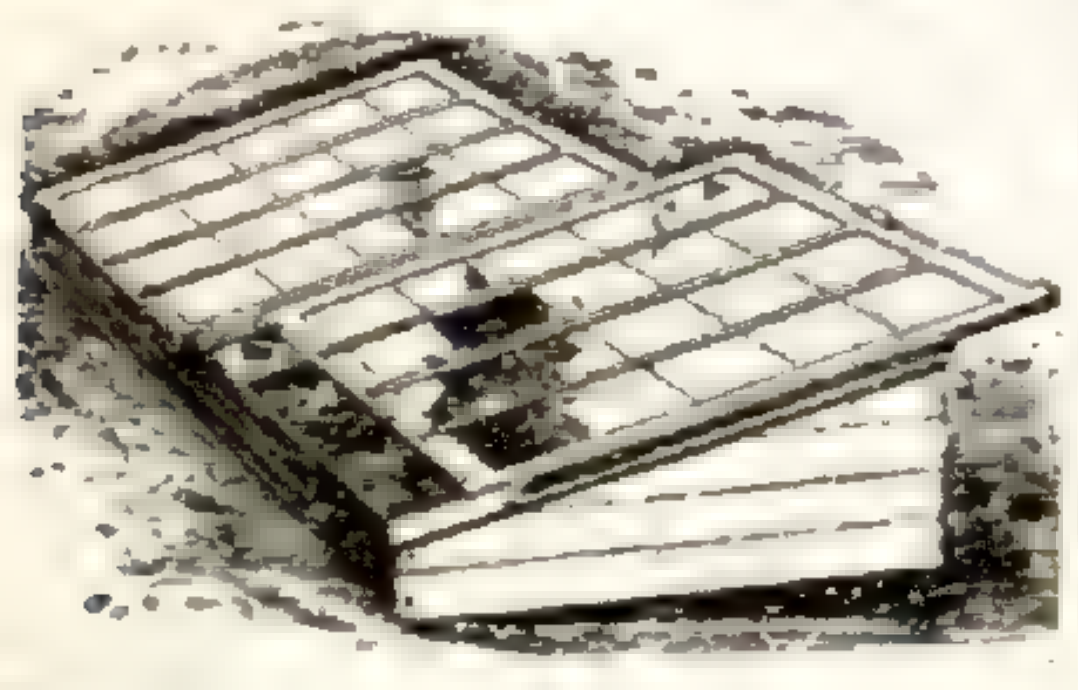

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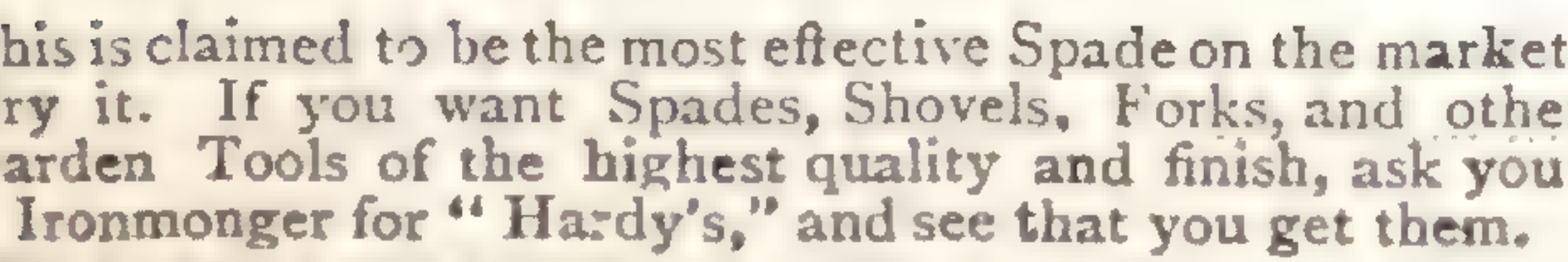

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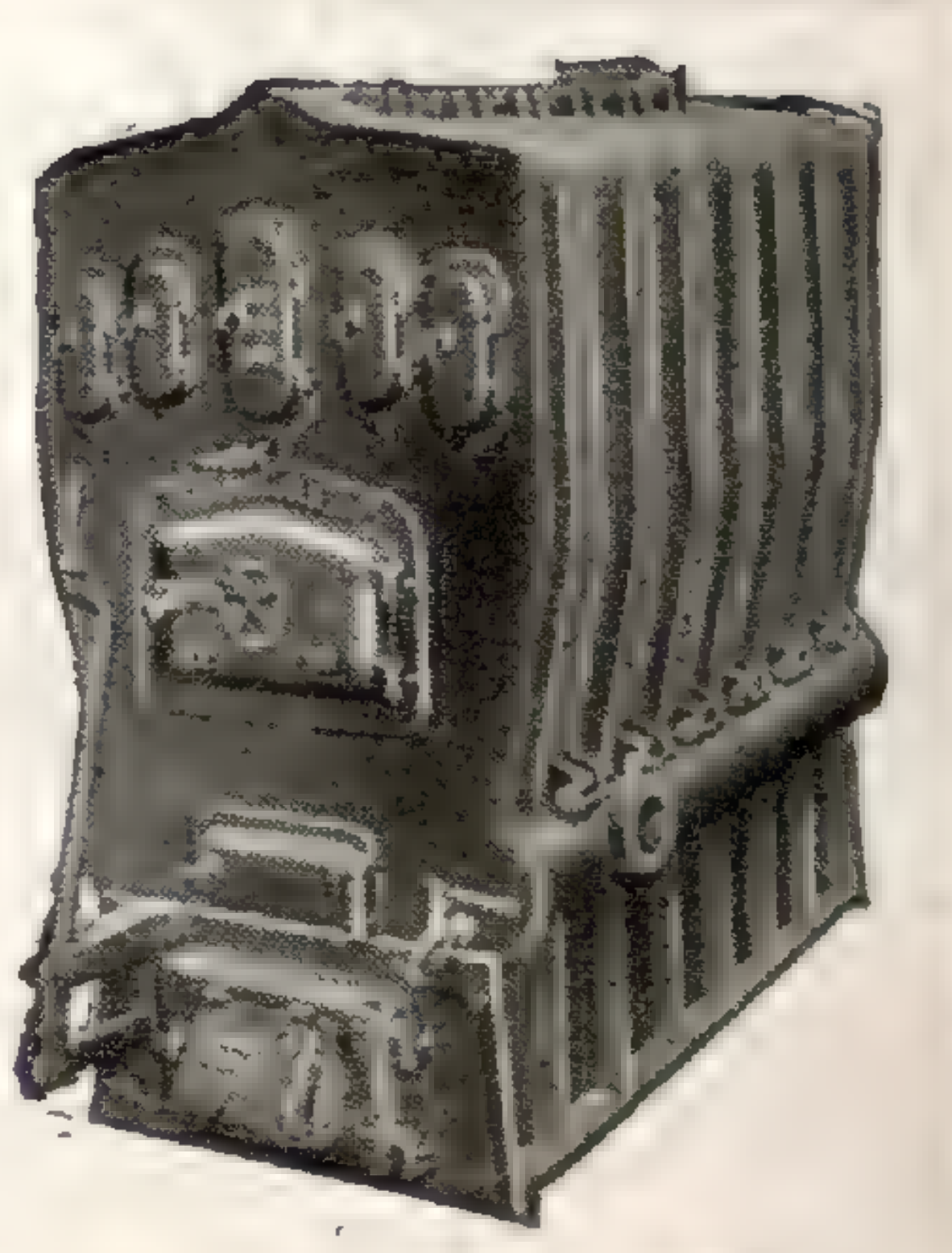

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# THE GARDENERS' MAGAZINE.

No. 3,048.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
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**BETTER LAWNS**

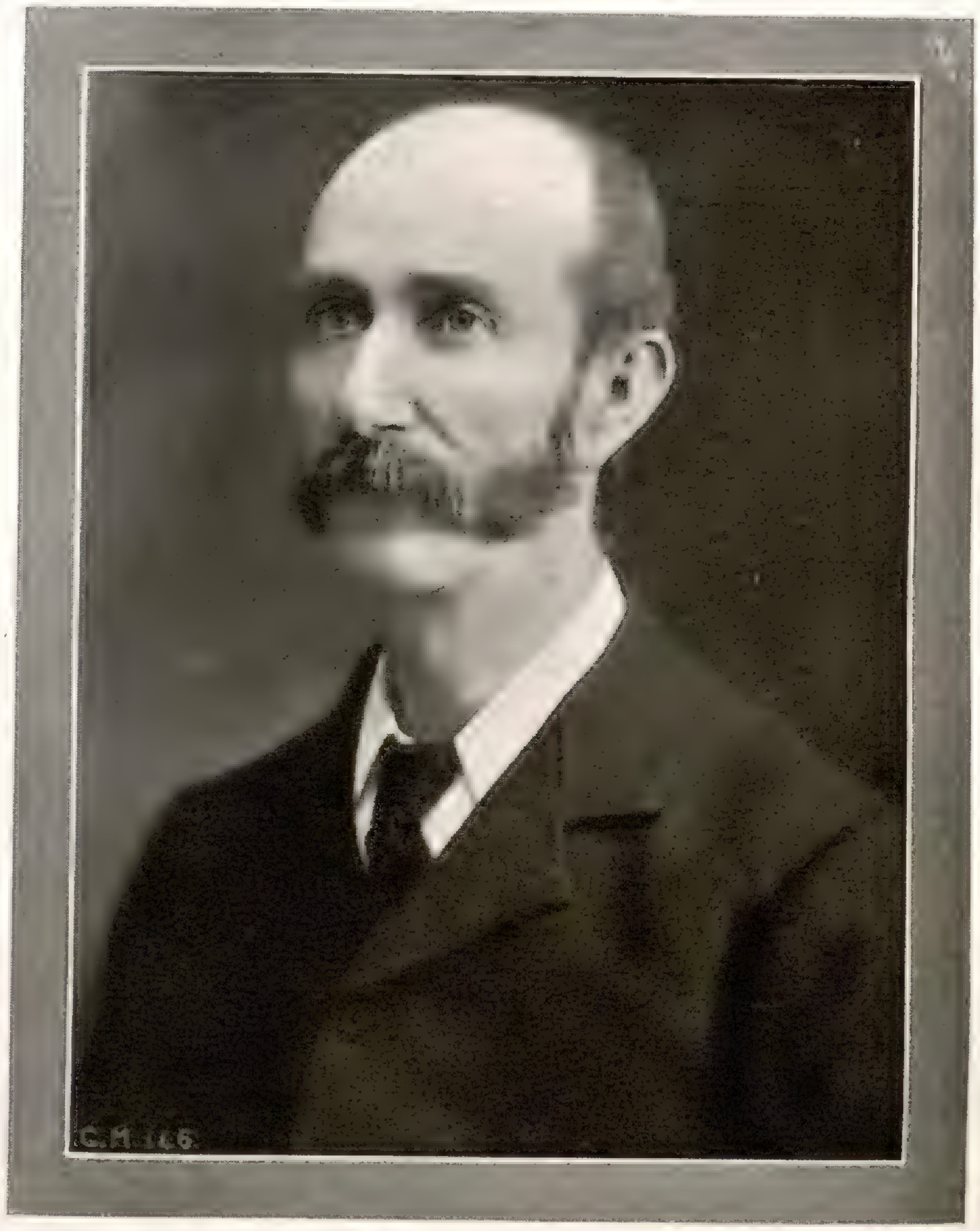
VOL. LVI.—No. 3,048. SATURDAY, MARCH 30, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Tree Sales in Ireland.

Some correspondence has recently taken place between the Horticultural Trades Association and the Irish Department of Agriculture with reference to the practice which obtains among the various County Councils, which are under the control of the Department, of engaging in the sale of fruit and other trees. The question involved is one of considerable importance, not only to the members of the Association, but to all who are engaged in the nursery trade in Ireland, and should have the most careful consideration. That it is important there can be no doubt, for, unless the circumstances are quite exceptional, there is the gravest objection to public bodies entering into competition with private firms who have to contribute to the funds by which they are able to compete with those engaged in trade, and, it may be, undersell them. It will be admitted, unless we are much mistaken, that the circumstances in which the Irish County Councils are placed are of a quite exceptional character. If this be so, the point to consider is not whether the Councils have done wrong in selling trees, but whether they have exceeded the limits that should have been placed on their sales. We are inclined to think, from the trend of the correspondence, that there has been some excess of zeal, but to understand the position it is necessary to remember that, whereas fruit growing was practically unknown in Ireland twenty years ago, excepting in gardens under the charge of experienced men, it is now an important industry. When in 1889 Mr. Lewis Castle and Mr. George Gordon made a journey through Ireland for the purpose of investigating the condition and possibilities of fruit growing in that country, it was quite the exception to meet with a fruit tree that had been planted within a recent period, and few were the farmers who appreciated the importance of replacing old and exhausted fruit trees that had become worn out. This being the state of things, it is obvious that no ordinary course of procedure would have brought about so great a change as to fully justify the optimistic views expressed by Messrs. Gordon and Castle in their report on the possibilities of Ireland as a fruit-growing country. It would have been little use at the outset of the educational movement for instructors to have gone into country districts to teach the peasants and small holders the principles and practice of fruit culture unless they had received some assistance in the purchase of fruit trees. This was done as part of the educational work, and, as proved by the results, the practice has been most satisfactory. Whether it should have been continued after the growers had acquired experience may be an open question, but there is no justification for the supply of trees to the public at large, which the Association states is now being done. In the letter with which the correspondence was opened, the secretary of the Association calls attention to "the very serious injury which is being done to the nursery trade in Ireland through the County Councils supplying fruit trees, forest trees, and even ornamental trees at very low prices to land owners and occupiers throughout the country." It is also pointed out that if it were a matter of assisting the poorer and more ignorant part of the population to improve their surroundings, no objection would be raised, but it was understood from numerous complaints that this was not the case, but that the various County Councils were pushing the business in all directions. In reply, the Department states that "the County Committees do not, as a rule, supply fruit, forest, or ornamental trees to landowners; their operations in this direction being mainly confined to small holders, cottagers, and labourers." From this extract, it is evident the sales have not been limited to the three classes of cultivators last named, as they unquestionably should have been. It is further stated that "the committees who adopt this method of distributing trees always obtain competitive tenders from nurserymen in Ireland. The best tender, not necessarily the lowest, is accepted; and the committee then proceeds to re-sell the trees to occupiers in the county at cost price, plus carriage. It can scarcely be contended, therefore, that the committees are in ruinous competition with nurserymen. Moreover, as trees are sold by the committee at cost price, the buyers paying carriage, neither the rates nor the Department's funds are used for the purpose of reducing the cost of the trees to the purchasers, so that the public funds are not used in competition with private enterprise." This may have been regarded as an excellent defence of the practice of which the Association complains, but we are unable to regard it as such, because no information is given with regard to the manner in which the cost of the several transactions are defrayed if not from the funds at the disposal of the committees, which, being raised from the rates, are of a public character. It is also stated by the Depart-



MR. H. CARVER.

ment that "in some counties it has been found that farmers can themselves obtain trees at practically the same price as that at which the County Committees can sell them, and that in such counties the practice of obtaining trees in bulk and selling them to occupiers has been discontinued." It is also stated in this letter that the Department's scheme has been the means of largely extending the sale of trees in Ireland. Also that over 600,000 trees were purchased by farmers in this manner last year; but the increase in the sale of the trees under the scheme and the distribution of over half a million of trees in 1911 can hardly be a source of satisfaction to the nurserymen, whose business is of a retail character, if they have not derived any advantages from such sales. The Association, it need hardly be said, did not accept the Department's view of the question, and in a second letter the secretary states that he has made fuller enquiries, and that "the result of these enquiries is to fully confirm the statements made in my previous letter. Correspondents from all parts of the country state that these operations are not confined to cottagers and small holders. I enclose three lists for tender, in which you will see that more than half the trees for which tenders were asked, or orders solicited, are totally unsuited for small holders, such as forest trees, and more especially ornamental evergreen and flowering shrubs." The letter from which the foregoing is a short extract was evidently unanswerable, for the only point in the reply is to the effect that what is done with the trees obtained in the open market by tender is a matter which concerns the Department and the County Committees only. We certainly do not agree with that view of the case, for the competition by public bodies with private traders on the lines indicated by the correspondence is a matter of public interest, and assuredly concerns those who help to provide the funds by which these bodies are enabled to carry on their work.

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**Mr. George Carver.**—Few men are better known in the horticultural circles of the Leeds district than Mr. George Carver, of the Grange Gardens, Scarcroft. Born at Great Bardfield, in Essex, Mr. Carver commenced his gardening career in the vicarage gardens of his native place, and in 1874, at his employer's suggestion, went to Marton Vicarage, North Yorkshire, where he spent two years, and then passed on to Busby Hall, Stokesley. Here he remained four years, and the varied experience gained enabled him at an early age to take charge of gardens at Nordley, Stockton-on-Tees, but, after a short period of service, he was invited to become head gardener to the late T. Fenwick, Esq., Allerton Hill, Leeds. Mr. Fenwick died in 1905, but Mr. Carver remained as head gardener to Mrs. Fenwick until her death in November, 1911, having been thirty-one years in the service of the family. Since then he has occupied his present position as head gardener to C. F. Ryder, Esq., and it is interesting to notice that Mrs. Ryder is granddaughter of Mr. Carver's old employer at Marton. Soon after coming to Leeds, Mr. Carver joined the Professional Gardeners' Friendly Society, and became its secretary in 1899; he has done excellent work in this connection, and it is due largely to his efforts that the society was reorganised, and is now on a sound financial basis as a special Lodge of the Oddfellows. Mr. Carver has a penchant for helping others, and it is probably due to the keen recollection of his earlier years, when, having lost his father, his mother struggled bravely to maintain a family of five, that Mr. Carver takes such a keen interest in the Royal Gardeners' Orphan Fund, and acts as local secretary for the Leeds district. If every gardening district had such an energetic and self-sacrificing horticulturist as Mr. Carver, the varied interests of gardeners throughout the country would be geatly improved. Mr. Carver writes: "We appear to have made a speciality of long service in our family. My father had been over 30 years in his situation when he died. I am the youngest of four brothers, and all the others have a better record in their present positions than even my thirty-one years at Allerton Hill." We wonder who to congratulate the most, the Carver brothers or their employers!

**Rock and Water Gardening.**—In our next issue we shall give special attention to rock and water gardening, and the matters that will be dealt with will, for the most part, be directly associated with the work that should be carried out at this season. The contents will include articles on the renovation of rockeries, aubrietias on walls, moss pinks, the finer saxifrages, the making of water gardens, choice water lilies, primrose-fringed streamlets, and plants for water margins. The issue will be freely illustrated.

**The Late Sir Joseph Hooker.**—A portrait bust of this distinguished botanist from a sitting taken a short time before his death has now been completed by Mr. Pennachine, the sculptor. Those who have had an opportunity of seeing the bust in Mr. Pennachine's studio describe it as an excellent piece of work. Sir Joseph Hooker left estate of the gross value of £36,861, of which £32,390 is net personalty. The testator left £100 each to the Linnean Society and the Scientific Relief Fund of the Royal Society.

**Austria and the Royal International Horticultural Exhibition.**—The great international horticultural exhibition, to be held at Chelsea, to which we are all looking forward with much interest, is evidently receiving a full share of atention from the Austrian horticulturists. The Vienna Horticultural Society is arranging a ten-day excursion to London for the purpose of enabling its members to visit the exhibition under the most favourable conditions. The party will leave Vienna on May 22, and will proceed direct to London. In addition to spending some time at the exhibition, visits will be made to the principal nurseries, the Royal Gardens, Kew, the Royal Horticultural Society's gardens at Wisley, the Hampton Court Gardens, and other places of interest. On the return journey the Austrian horticulturists will make a halt at Rotterdam, and spend a few days in Holland and Belgium, the programme terminating at Frankfort-on-the-Main after a visit to the celebrated palm garden in that city.

**R.A.S.E. Nursery and Plantation Competition.**— For several years past the Royal Agricultural Society of England has given special encouragement to forestry, and included in the schedule of prizes offered for competition at its annual shows classes for plantations and home nurseries. The encouragement will not be less liberal at the Doncaster meeting this year, for the old classes for plantations are retained and several new ones added. There are four classes for plantations, of which the final crop is to be hard-woods, and four for plantations of which the final crop is to be conifers. The new classes include one for plantations not exceeding two acres, consisting of Corsican pine, Douglas fir, Japanese larch, and Sitka spruce, and one for the best example showing systematic management of an existing woodland area, including the renovation and conversion of an unprofitable wood into a thrifty condition. The prizes consist of gold, silver, and bronze medals. The forestry exhibition, to be held in the show grounds at Doncaster from June 2 to 6, should be extensive and of much interest, for twenty-one classes have been provided, with silver and bronze medals as prizes, and promises of support have been received from some of the principal landowners in England.

**Spring Flowers at Kew.**—As the result of the relatively high temperature that has been experienced for some time past, spring flowers are now abundant in the Royal Gardens, Kew. Especially attractive are the great breadths of daffodils in various parts of the gardens, the groups of forsythias, and the specimen magnolias in the azalea garden. The forsythias are flowering with exceptional freedom, and in no year have we known them to be so effective as they are this season.

**Wart Disease of Potatoes.**—An order of the Board of Agriculture, entitled "The Wart Disease Order," was published in the "London Gazette" on the 22nd inst. It makes compulsory the notification of the disease to the local authority, and forbids the removal of tubers from any premises on which the disease exists or appears to exist until investigation by the local authority. The order applies to Great Britain.

**Cinerarias from Wordsley.**—From Messrs. E. Webb and Sons, of Wordsley, we have had the pleasure of receiving a gathering of flowers of cinerarias, representative of their fine strain known as "Webbs' Superb." The flowers before us fully justify the title that has been given the strain, for they are equally remarkable for their large size, breadth of floret, fine form, and the rich and diversified colours. The latter, it should be mentioned, range from the richest shades of crimson and blue to the more delicate shades that are so well represented in strains of the highest class. Very beautiful also are the white-centred varieties.

**Women and Horticulture.**—In moving the adoption of the report at the annual meeting of the Horticultural College, Swanley, Sir John Cockburn, who presided, said that it was twenty-one years since women were first admitted to the college as students, and later it was open to women only. The work done by the college was most important, for women were noted for their care of all living things, and gardening was an occupation well adapted to their abilities. The prosperity of the college was shown in the number of students. In the spring term there were seventy-three, in the summer term ninety, and in the autumn term eighty-four. The Colonial branch, under the care of Mrs. John Hopkinson, was doing good work in sending out trained students to the Colonies. They prided themselves on their exports from this country, but there was no export which approached in value the export of educated British women. In sending to the Dominions some of the very best of their trained young women they were, he considered, doing Imperial work of the highest importance.

**Market Gardeners' Compensation.**—The Market Gardeners' Compensation Bill, which has been introduced to the House of Commons, has been printed. The object of the Bill is to restore the right of the market gardeners to compensation for retrospective improvements, which was intended to be given by the original Market Gardeners' Act

## LIVERPOOL SPRING SHOW,

MARCH 27 and 28.

The Liverpool Horticultural Association has held a good many very fine spring shows, but that which opened in the Corn Exchange on Wednesday last was in some respects more interesting and pleasing than any of its predecessors we have seen. Probably nowhere in England is it possible to see more or better grown azaleas, rhododendrons, specimen orchids, and other spring subjects than are exhibited year after year by the gardeners around Liverpool, who, with a fine enthusiasm, support their horticultural society, and keep it always up to date.

A TASTEFUL ARRANGEMENT OF FRAU KARL DRUSCHKI ROSES EXHIBITED BY MESSRS BEES, LIM., AT LIVERPOOL SPRING SHOW.

The North of England Horticultural Society sent a deputation, including the Rev. J. Bernard Hall, Rev. J. Jacobs, Colonel J. Rutherford, M.P., Messrs. W. Bolton, W. H. Hatcher, W. Haig, R. P. Ker, H. Hicks, N. F. Barnes, B. Ashton, and J. S. Brunton.

The deputation awarded a gold medal to Mr. W. Hignett for dendrobiums, Messrs. Mansell and Hatcher for orchids, and Mr. E. Rogers for clivias; silver-gilt medals to Messrs. Charlesworth and Co., for orchids, Messrs. Young and Co. for carnations, Messrs. R. P. Ker and Sons for amaryllis; silver medals to Messrs. H. B. May and Sons for ferns, Messrs. Bakers for alpines, Mr. G. Reuthe for alpines, and L. Thomson, Esq., for narcissi.

The schedule opened with a class for six pots or pans of hardy herbaceous and four of bulbous plants, Mr. E. R. Finch, gardener to W. J. Lockett, Esq., Grassendale House, Grassendale, taking first with Dielytra spectabilis, Polygonatum multiflorum, Astilbe longifolia, and other well-grown plants. Mr. George Eaton, gardener to W. Tod, Esq., Drygrange, Allerton, stood second with similar subjects, but rather smaller plants. Mr. F. Atkin, gardener to T. N. Wright, Esq., Mossley Vale House, Mossley Hill, was third.

### FLOWERING BULBS.

The class for twelve hyacinths in single specimens brought only two entries, Mr. T. Hitchman, gardener to Arthur Earle, Esq., J.P., Childwall Lodge, Wavertree, being the winner; Mr. George Osborne, gardener to Drs. Tisdall and Ingall, Tusbrook, following. Mr. Hitchman again led for six specimens, Mr. Loo Thomson, Ailsa Craig, Formby, being second, and Mr. E. R. Finch, gardener to W. J. Lockett, Esq., Grassendale, third. There were six entries in this class. In the class for six pots, three bulbs in each, Mr. E. R. Finch scored, the runner-up being Mr. D. Little, gardener to J. Smith, Esq., The Knowle, Blundellsands, third prize going to Mr. T. Rigg, gardener to Miss McKean, Wavertree Lodge, Wavertree. Mr. G. Osborne was awarded first for three pans containing not more than ten bulbs each, Mr. Hitchman coming second. A fine show was made by the exhibits of six pots of daffodils, the pots not exceeding seven inches in diameter. The successful exhibitor was Mr. F. Atkin, gardener to T. N. Wright, Esq., Mossley Vale House, Mossley Hill. He had splendidly grown pots of Glory of Leiden, Mme. Plemp, Mme. de Graaf, and Emperor. Mr. E. R. Finch was a good second with similar varieties, third place being allotted to Mr. George Osborne.

Tulips made a brilliant show of colour, some very good exhibits being staged in the class for twelve pots of singles. The winner was Mr. F. Atkin, gardener to T. N. Wright, Esq., Mossley Hill. Roi Pepin, Van Vondel, and Fabiola were among the most telling of his varieties. Mr. E. R. Finch took second, his flowers not being so even in size and condition; third prize was awarded to Mr. J. Williams, gardener to C. J. Proctor, Esq., J.P., Boscobel, Oxton.

Mr. E. R. Finch led the way for six pots of double tulips, his flowers of Murillo, Toreador, and Tournesol being very fine. Second place was taken by Mr. F. Atkin, and third by Mr. H. Spencer, gardener to A. Heywood Jones, Esq., Holly Bank, West Derby. Mr. E. R. Finch scored for six pots of singles, showing some very nice flowers, Mr. J. Williams, gardener to C. J. Proctor, Esq., J.P., Boscobel, Oxton, taking second, and Mr. F. Atkin third place. Mr. Williams was successful with a basket of cut daffodils, his flowers being of good quality, and arranged with great taste; second prize was claimed by Mr. Ed. Wharton, gardener to John Findlay, Esq., Mairscourt, Sefton Park. Nine vases of daffodils, distinct varieties, brought only one entry, the exhibitor being Mr. George Osborne, who showed Glory of Leiden, Empress, Sir Watkin, Golden Spur, Rubens, Gloria Mundi, and Commander, as well as one wrongly labelled Almira.

Five competitors staged six hybrid amaryllis, the quality throughout being very good. Mr. Thos. Rigg was worthily placed first, his flowers being broad and of good texture, while the colours were very clear and bright. Mr. E. R. Finch followed with another nice set, third place being taken by Mr. W. R. Bentham, gardener to A. A. Paton, Esq., Greenbaun Drive, Sefton Park.

### PLANTS.

We have on previous occasions complimented the Liverpool growers on their splendidly-grown dendrobiums. We cannot do less than remark that this year they seemed to be as good as ever. Mr. Wm. Hignett showed Dendrobium Ainsworthi and D. nobile that were just huge masses of clean, bright flowers. Nothing in the show more worthily received firsts than these two plants, a Cultural Diploma also being given by the North of England Horticultural Society.

Mr. E. R. Finch had three splendid greenhouse azaleas, for which he received first prize, as he did also for four forced hardy plants, showing big specimens of Azalea occidentalis, Deutzia gracilis, Rhododendron Doncaster, and a well-flowered lilac. Mr. Finch also scored for one greenhouse rhododendron, and was second for three pot roses, being beaten in this class by Mr. Hitchman, who was also awarded firsts for one hardy rhododendron, showing a good plant of Pink Pearl, one specimen azalea, and three azaleas. Mr. Geo. Eaton had the best three rhododendrons, the same gentleman taking seconds for the single plants in both hardy and greenhouse classes. Some very pretty Cineraria stellata were staged, the group put up by Mr. Geo. Eaton receiving first prize. The blues in this group were very bright and pleasing. Mr. Eaton also led the way for four plants, Mr. F. C. Keightley, gardener to Mrs. Duncan, Grassendale, taking second, and Mr. John McColl, Allerton, third. Mr. McColl was the winner with six Primula sinensis, Mr. Keightley and Mr. F. Atkin taking the other awards in the order named.

Splendidly-grown cyclamen were shown, there being six entries of half a dozen plants.

A GROUP OF SEEDLING CLIVIAS EXHIBITED BY MR. E. ROGERS, GARDENER TO O. O. WRIGLEY, ESQ., AT LIVERPOOL SPRING SHOW.

Mr. T. Hitchman led off with a set of grand plants, carrying a wonderful quantity of flowers; Mr. E. R. Finch was second, and third place was taken by Mr. H. Spencer, gardener to A. Heywood Jones, Esq., Holly Bank, West Derby.

Of five decorated dinner tables the one arranged by Mr. J. Armistead, gardener to T. A. Vlasto, Esq., Bonnevaine, Sefton Park, was awarded first; daffodils, lily of the valley, and lonicera being used. Miss Newsham, Old Hall, Aughton, was second with Primula malacoides, schizanthus, and lily of the valley; third prize went to Mr. J. H. Warrimer, Rivington Road, Seacombe, for an arrangement of carnations.

In the local amateurs' section some first-rate exhibits of daffodils, tulips, and other seasonable subjects were staged, and great credit is due to the private growers in the locality for the manner in which they filled their classes. Our space, unfortunately, does not admit of a detailed record of the prizewinners in this section.

## NON-COMPETITIVE.

The exhibits of the trade added considerably to the interest and attractiveness of the show, there being on this occasion a larger number and greater variety of exhibits than we have previously seen at Liverpool. The big bank of orchids put up by Messrs. Mansell and Hatcher, Lim., Rawdon, Leeds, was a striking feature. A number of excellent dendrobiums and some very fine odondoglossums were well arranged with cypripediums, a few cattleyas, and other good things to add variety of both form and colour. Mr. W. Hignett, gardener to C. W. Carver, Esq., Woodbourne, West Derby, filled a table with dendrobiums that were really remarkable for excellence of culture. Every plant was a specimen, full of flower, and beautifully clean; some of the seedling forms were very rich in colouring.

An improvised rockery furnished with alpine and kindred plants, was arranged by Messrs. Bees, Lim., Liverpool. Primula Forresti and several other of the firm's Chinese novelties were well represented, the exhibit also containing such old favourites as the double primroses, hepaticas, and daisies. Messrs. Bees also exhibited some very fine floral designs that had the merit of showing originality without the vulgarity that so often mars attempts at striking designs.

A beautiful lot of ferns were staged by Messrs. H. B. May and Sons, Upper Edmonton, the finer adiantums and the crested nephrolepis being well shown. Messrs. R. P. Ker and Sons, Aigburth Nurseries, Liverpool, made a bold display of their brilliant amaryllis. The vivid crimsons and the scarlets were thrown into greater relief by the inclusion of some very fine white and delicately-tinted varieties. Messrs. Charlesworth and Co., Hayward's Heath, put up a small but choice group of orchids. Cattleya Trianæ varieties, some beautifully marked Odontoglossum crispums, and a fine plant of Brasso-cattleya Cooksoni were noted among other good things on the stand.

Messrs. Bakers, Wolverhampton, showed alpines, which were arranged in clumps between stones and moss. A few particularly good things on the stand were Myosotis Ruth Fischer, Morisia hypogæa, Phlox Laphami, and several choice primulas. Another nice collection of alpines came from Mr. G. Reuthe, Keston, Kent. Shortia uniflora grandiflora, Schizocodon soldanellioides, and the pretty little Soldanella montana were noticeable. Himalayan rhododendrons and camellias made a fine background to the exhibit. Messrs. Young and Co., Hatherley, Cheltenham, made a splendid show of perpetual carnations. The varieties were up-to-date and the arrangement very tasteful. A variety that appealed to us on acount of its breadth and smoothness of petal was Montgomery, a distinct musk-rose-tinted flower.

Messrs. Youngs, West Derby, showed a nice collection of perpetual carnations, such varieties as Triumph, Sunstar, and Lady Northcliffe being among other favourites.

Messrs. W. Rowlands and Co., Childwall Nurseries, Liverpool, put up a big bank of Primula Kewensis, the flowers in the mass being very pleasing. The same firm also staged a group of tulips in distinct colours. Mr. Fred Cross, Sherbrook Road, Daybrook, Nottingham, put up a table of daffodils in ornamental receptacles, which certainly are well adapted for these flowers.

A group of the very distinct and showy Ranunculus cortusifolius came from the Liverpool Corporation, Bowring Estate, the foliage as well as the bright yellow flowers being very ornamental. Messrs. Conway, Lim., Halifax, arranged a model rockery on very artistic lines, the pockets and crevices being furnished with small shrubs, ericas, anemones, primulas, etc. Mr. E. Rogers, gardener to O. O. Wrigley, Esq., Briodge Hall, Bury, showed a group of remarkably fine clivias, there being about fifty specimens, every one a really good one, and all home-raised seedlings.

### MEDAL AWARDS.

Gold.—Messrs. Bees, Lim., Liverpool; Messrs. Young and Co., Cheltenham; Messrs. Mansell and Hatcher, Lim., Rawdon; Messrs. R. P. Ker and Sons, Aigburth; Messrs. Baker's, Wolverhampton; Mr. W. Hignett, West Derby; Messrs. Charlesworth and Co., Hayward's Heath; Mr. G. Reuthe, Keston, Kent.

Silver.—Messrs. H. B. May and Sons, Edmonton; Messrs. Youngs, West Derby; Messrs. W. Rowlands and Co., Liverpool.

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**Nuts.**—The position assigned to cob and filbert nuts is usually a part of the garden which is considered to be of no value for any other purpose, irrespective of position and shelter; under such conditions it is not to be wondered at the trees fail to give satisfactory crops. A warm, sheltered position is required, and trees which annually bear heavy crops should be fed liberally as other kinds of fruit trees are. The trees should be kept to a single stem, and all suckers removed as soon as they appear; the heads of the trees should be kept shapely by cutting out cross-growing branches or other ungainly growths. Nut trees prefer a light, well-drained soil, and should be planted 10 to 12ft. apart. Big bud in nuts is caused by a mite similar to that which attacks the black currant, and should be treated in a similar manner.—W. Messenger.

## NEW PLANTS, ETC.

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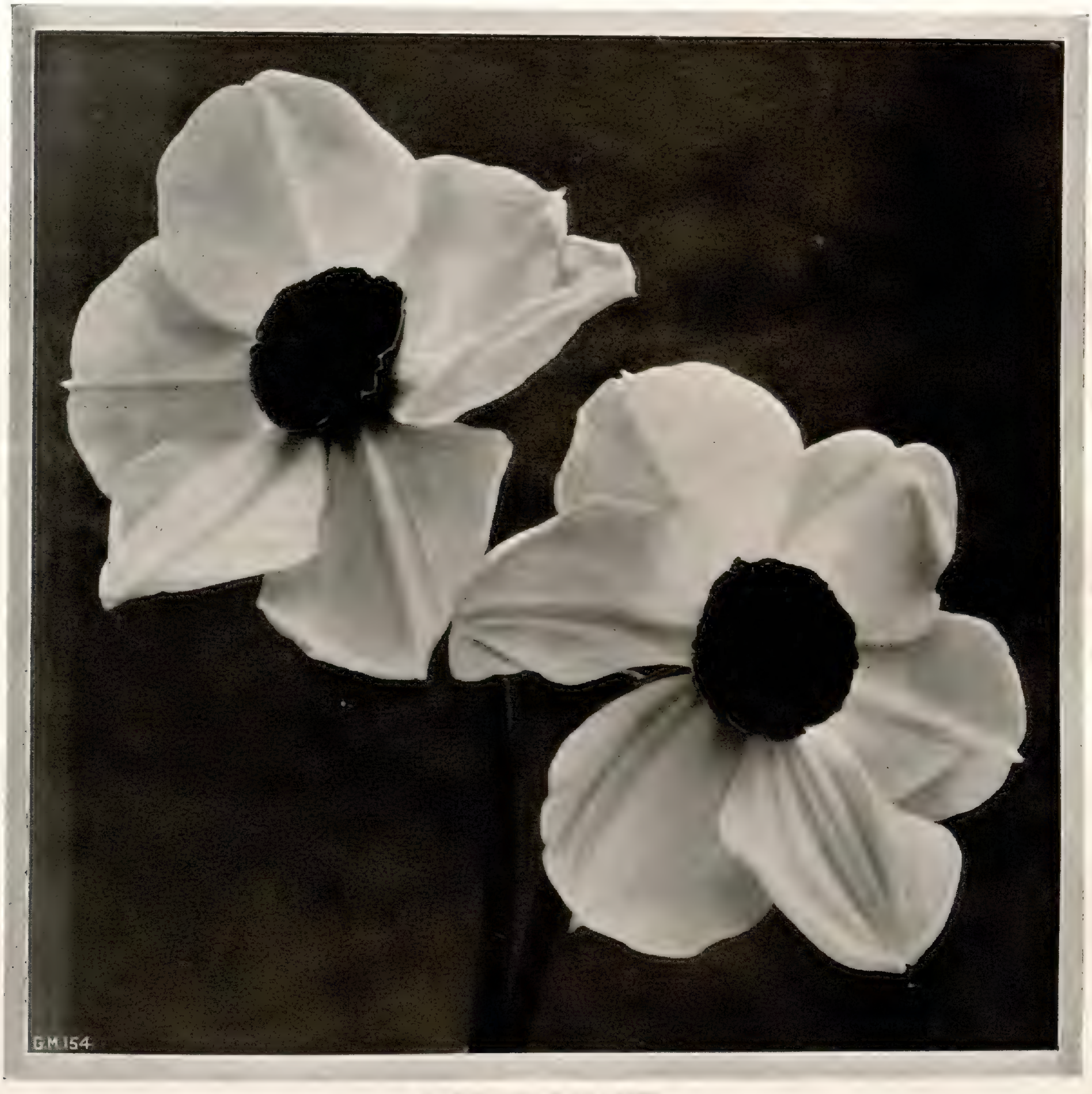
### DAFFODILS.

Helios.—A splendid incomparabilis variety of grand form; the perianth is light golden-yellow, and the broad cup, or crown, is deep yellow, shaded with orange. A.M., R.H.S., April 19. Messrs. Walter T. Ware and Co., Inglescombe, Bath.

Robespierre.—A large and elegant incomparabilis variety, with spreading, soft yellow perianth segments, and a medium-sized cup of vivid orange hue. A.M., R.H.S., April 19. Mr. A. M. Wilson, Shovel, Bridgwater.

Rubalite.—This is a fine poetaz variety, with large white flowers and red centre; the flowers are borne, several together, on a stem, and each has a long flower-stalk. A.M., R.H.S., April 19. Mr. A. M. Wilson, Bridgwater.



NARCISSUS RUBALITE.

A beautiful new poetaz variety, with large, rounded, white flowers, each with a rich orange-crimson crown. A.M., R.H.S., March 19. Mr. A. M. Wilson, Shovel, Bridgwater.

### ROSE, ROSE QUEEN.

An American-raised hybrid tea rose of great beauty and worth for forcing. The flowers are of excellent shape, broad-petalled, full, fragrant, and of a deep reddish-rose colour. As shown, it was very much admired. A.M., R.H.S., March 19. Mr. W. E. Wallace, Eaton Bray, Dunstable.

### PRUNUS PISSARDI MOSERI FL. PL.

This is a delightful early-flowering shrub or small tree, and one that holds its flowers for a good while. It is extremely free-blooming, and the semi-double flowers are of an exquisite light pink shade. It should become a popular plant. A.M., R.H.S., April 19. Messrs. J. Veitch and Sons, Chelsea.

### CORYLOPSIS VEITCHIANA.

Another recently-introduced Chinese species, with catkin-like spikes of light green flowers. It is much like C. multiflora, recently described, but appears to be a stronger grower, as well as more free in blooming. A.M., R.H.S., March 19. Mr. Edwin Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree.

### HIPPEASTRUMS.

Rose du Barri.—This is a grand variety, with large rounded flowers of great substance and beauty; the colour is deep rose, with a tint of salmon. A.M., R.H.S., March 19. Mr. Dye, gardener to Lord Rothschild, Tring Park, Tring.

Musigny.—Another finely formed variety of rare size and substance. The colour is the most vivid and deep shade of crimson imaginable. A.M., R.H.S., Mr. Dye, Tring Park.

### PRIMULA KNUTHIANA.

This species has been sent home from Shensi, in China, by Mr. Purdom. It is of lowly growth, from four to six inches high, with slightly mealy leaves, and neat trusses of rosy-lilac flowers that show some slight variation in form and colour in a small batch of plants. Lovers of hardy plants will welcome this addition. A.M., R.H.S., March 19. Messrs. Jas. Veitch and Sons, Chelsea.

### ABIES DOUGLASI FLETCHERIANA.

This pigmy form of a noble tree was raised from seed at Ottershaw about sixteen years ago, and is now about 1½ft. high, and as much through, the bush being of quite rounded form. Its close, compact, and slow-growing habit will render it suitable for rock gardens and other places where miniature trees and shrubs are desirable. A.M., R.H.S., March 19. Messrs. Fletcher Brothers, Ottershaw, Chertsey.

### ODONTOGLOSSUM CRISPUM SAMUEL GRATRIX.

This finely-formed and finely-grown orchid has also the merit of beautiful and attractive colouring. The blooms are disposed regularly along the spike, and sepals and petals are of equal breadth. The colour is white, with abundant markings of light and bright brown. On the waved white lip there are markings of deep crimson-purple. F.C.C., R.H.S., March 19. Mr. Brown, gardener to Samuel Gratrix, Esq., West Point, Whalley Range, Manchester.

### CATTLEYA DIRCE, WESTONBIRT VAR.

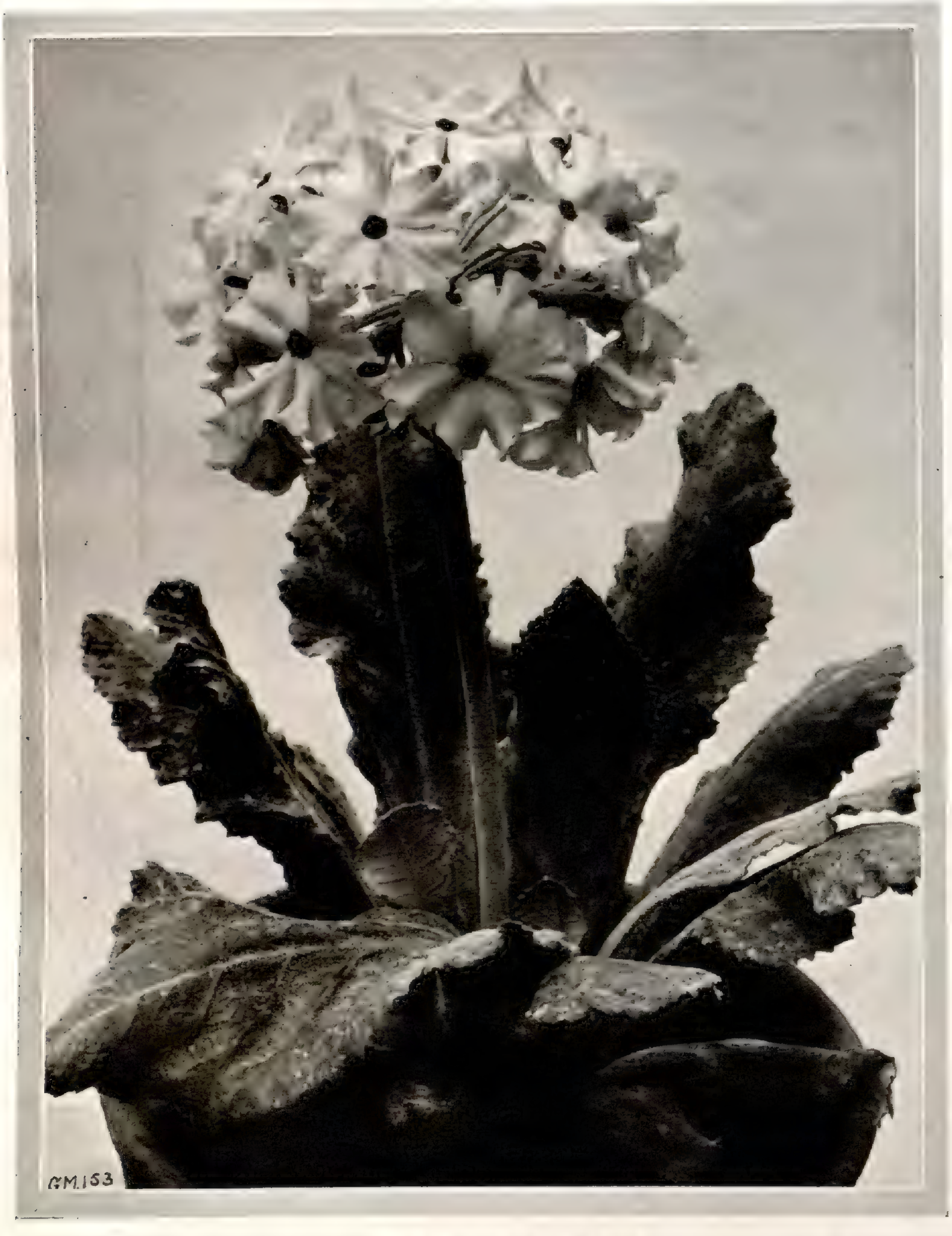
A handsome bold flowered hybrid derived from C. Vulcan and C. Warscewiczi. The flowers are soft purplish rose, with deep purple veinings, and gold markings on the large lip. A.M., R.H.S., March 19. Mr. H. Alexander, grower to Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester.

### ODONTOGLOSSUM QUEEN OF GALTON.

A very handsome and free-flowering hybrid obtained by crossing O. percultum with O. triumphans. It has a good deal of the form of the last-named and the bright chestnut brown markings on the yellow ground also indicate the influence of this fine old species. The whitish lip has a few small red-purple markings. A.M., R.H.S., March 19. Mr. Collier, gardener.

### BEGONIA DICHROA.

A handsome Brazilian species, of tall growth and lax habit. It has large rhomboid-elliptic leaves, blotched with white, and the brilliant orange-scarlet flowers are carried in a large branched panicle at the end of a stout peduncle. The species needs tropical treatment under cultivation, and where there is ample room it should prove worthy of attention. "Bot. Mag.," t. 8,412.



PRIMULA KNUTHIANA.
A dwarf Chinese species with rosy-lilac flowers and mealy leaves. A.M., R.H.S., March 19. Messrs. Jas. Veitch and Sons, Chelsea.

### ELLIOTTIA RACEMOSA.

A beautiful shrub or small tree, from the Southern United States. It is hardy at Kew, and does well among rhododendrons and heaths, but while it belongs to the heath family it is quite unlike a heath in appearance, as the oblong, dark-green leaves are whitish underneath, and from two inches to four inches long; the white flowers are borne in a loose terminal raceme from six inches to ten inches long. Unfortunately, this plant is not easily propagated, but once a ready means of increase is found it should become fairly popular. "Bot. Mag.," t. 8,413.

### BERBERIS WILSONÆ.

This is a sub-evergreen shrub introduced from Western or Central China by Mr. E. H. Wilson, when collecting for Messrs. J. Veitch and Sons. It is of dwarf-spreading habit, and therefore is desirable for undergrowth to taller, light-growing trees, or for planting in the rock garden. The flowers are golden yellow and freely borne, and followed by yellowish or salmon-red berries. "Bot. Mag.," t. 8,414.

### DISA LUGENS.

A South African terrestrial orchid of slender growth, with long narrow, linear leaves and an erect spike, carrying several flowers of moderate size, with blue-green striped sepals and an elongated beautifully fringed lip. "Bot. Mag.," t. 8,415.

### CALCEOLARIA CANA.

A Chilean species of perennial, tufted habit. The loosely-branched inflorescence carries a number of small flowers, that are white, suffused with rose, and freely marked with deep rose or purple. The throat is yellow and purple-brown. The flowers are violet scented. "Bot. Mag.," t. 8,416.

## SPIRÆA THUNBERGI.

This is the earliest of the spring-flowering spiræas to open its flowers, and it is not uncommon for a number of the earlier blossoms to appear in February, although the normal flowering time is the latter end of March and early in April. A native of China and Japan, it has long been an occupant of our gardens, its presence being valued almost as greatly by reason of its elegant leafage as by its star-like white flowers. Growing two to three feet in height, it forms a shapely bush of small wiry branches, on which the delicate green linear leaves appear in April. The flowers are from axillary buds from almost every part of last year's growth. They are small individually, but lack of size is compensated for by numbers.

S. Thunbergi is considered to be one of the parents of the popular S. arguta, a form which is easily one of the best dozen early-flowering shrubs. From this reason there would appear to be a chance of its turning out to be a valuable plant in the hands of the hybridist. A number of hybrid spiræas are already in cultivation, but they are mostly natural hybrids, and very little appears to have been done with the genus towards systematic hybridisation. In addition to being a good border plant, S. Thunbergi can be used with effect as a forced shrub for greenhouse decoration.

W. D.

## CALLICARPA AMERICANA.

Habitues of the Royal Horticultural Society's periodical flower shows must be well acquainted with Callicarpa purpurea, the stove species which bears such a quantity of shining violet-purple berries. But to be successful with that plant plenty of air is necessary during the flowering period, or there will be no berries, and the flowers are so insignificant that unless the plants are well fruited they have no ornamental value. As a rule, the stove houses in private gardens have to accommodate such a diversity of plants that it is almost impossible to afford ample ventilation just for a few particular plants, so Calliandra purpurea rarely finds a place.

But the subject of this note, being much hardier, is more easily grown, and might with advantage be cultivated in establishments where uncommon greenhouse plants are admired. As with the Indian species, the coloured berries are its chief attraction, but in this case the branches of the shrub are whitish, and the leaves have a dense tonestun on their undersides. The small flowers, which are red in colour, are borne in axillary cymes, and the juicy berries are also brighter in colour than those of the stove species. The berries of Callicarpa americana become a vivid reddish-purple colour, and make an almost startling contrast with the whitish stems of the plant.

With their customary methods of affixing popular names, the Americans have called this plant the "French Mulberry," and as it is neither a native of France nor a mulberry, we suspect that they are immensely pleased with the inspiration. The cultural conditions to be recommended for the successful treatment of Callicarpa americana are those of the greenhouse fuchsia, except that peat should be used instead of leaf-mould. After the plants have been cut back in the spring, the young shoots, taken with a heel of old wood, root readily under a hand-glass. When the plants commence to flower they should be given abundance of air in order to set their fruits, which the negroes of Alabama are said to esteem as a preserve.

Cecil Aubrey.

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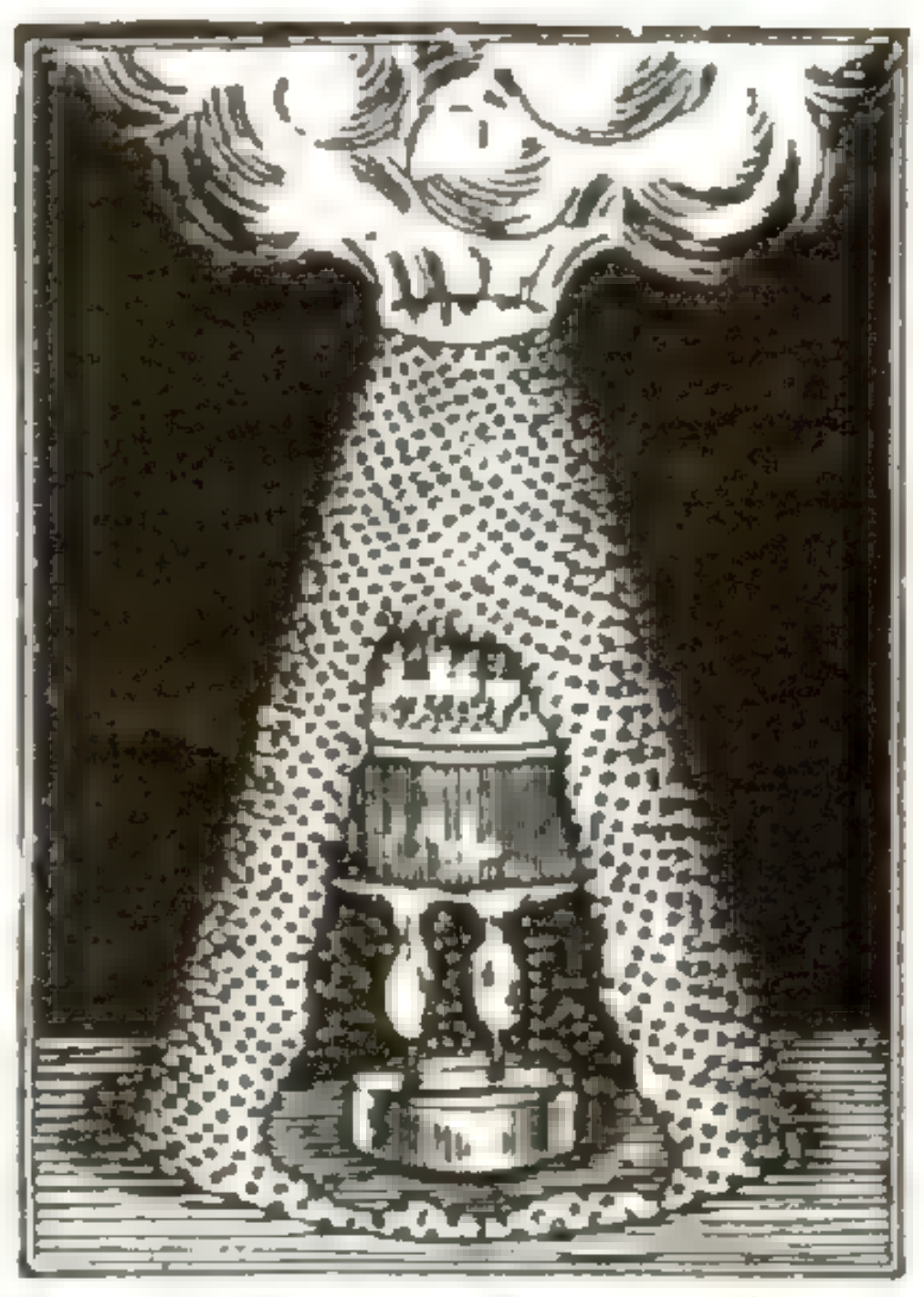

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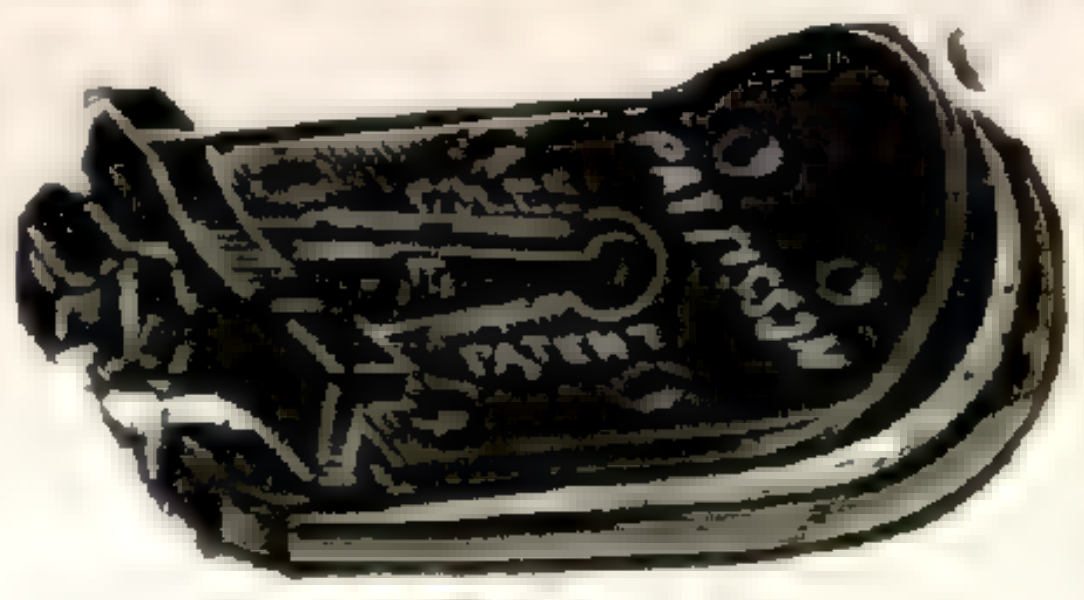

FIG. 1.

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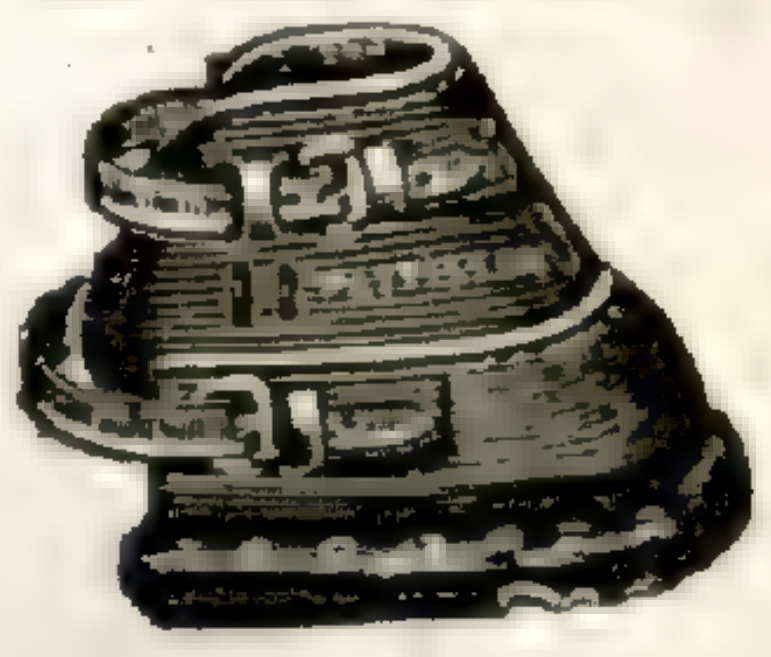

FIG. 2.

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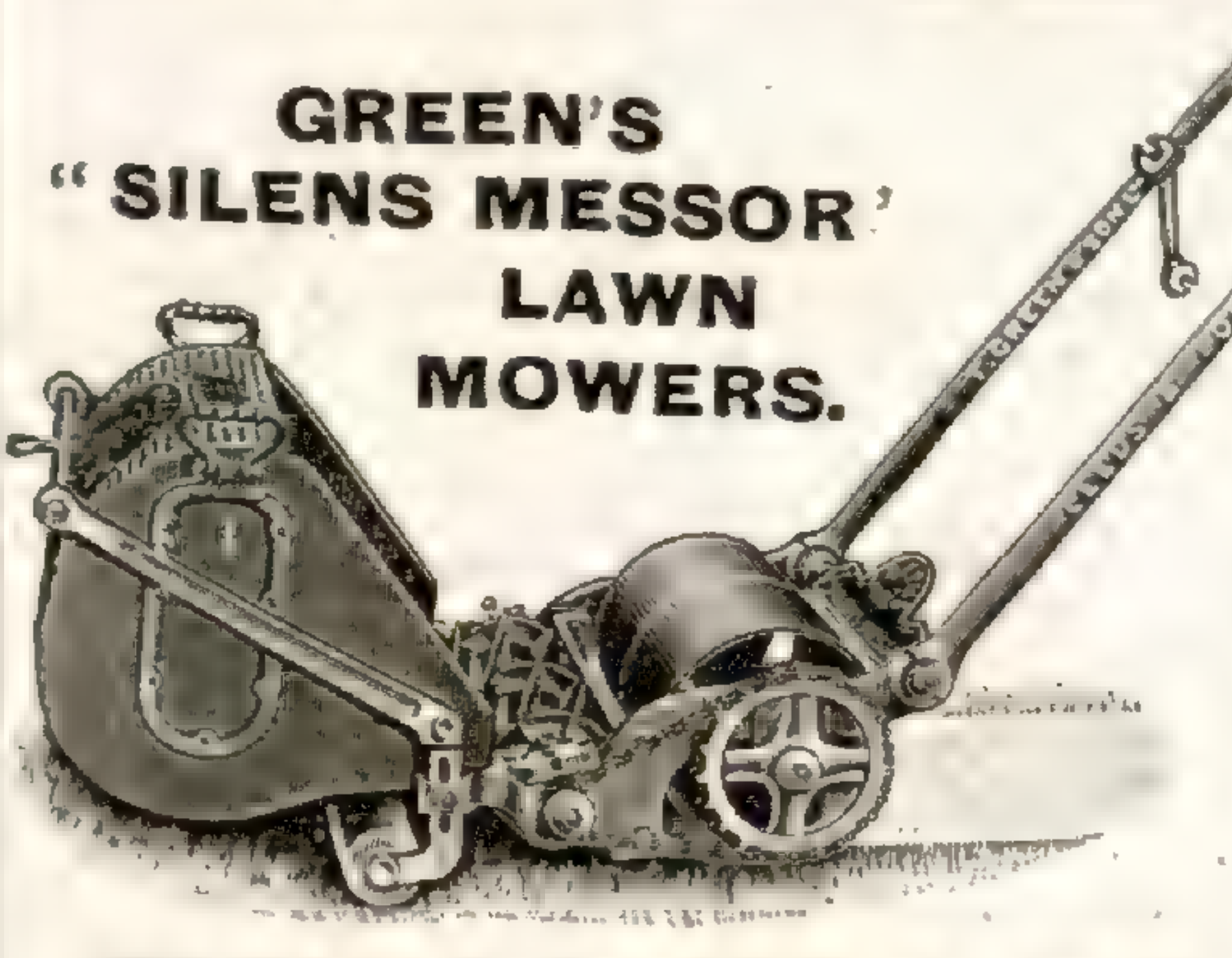

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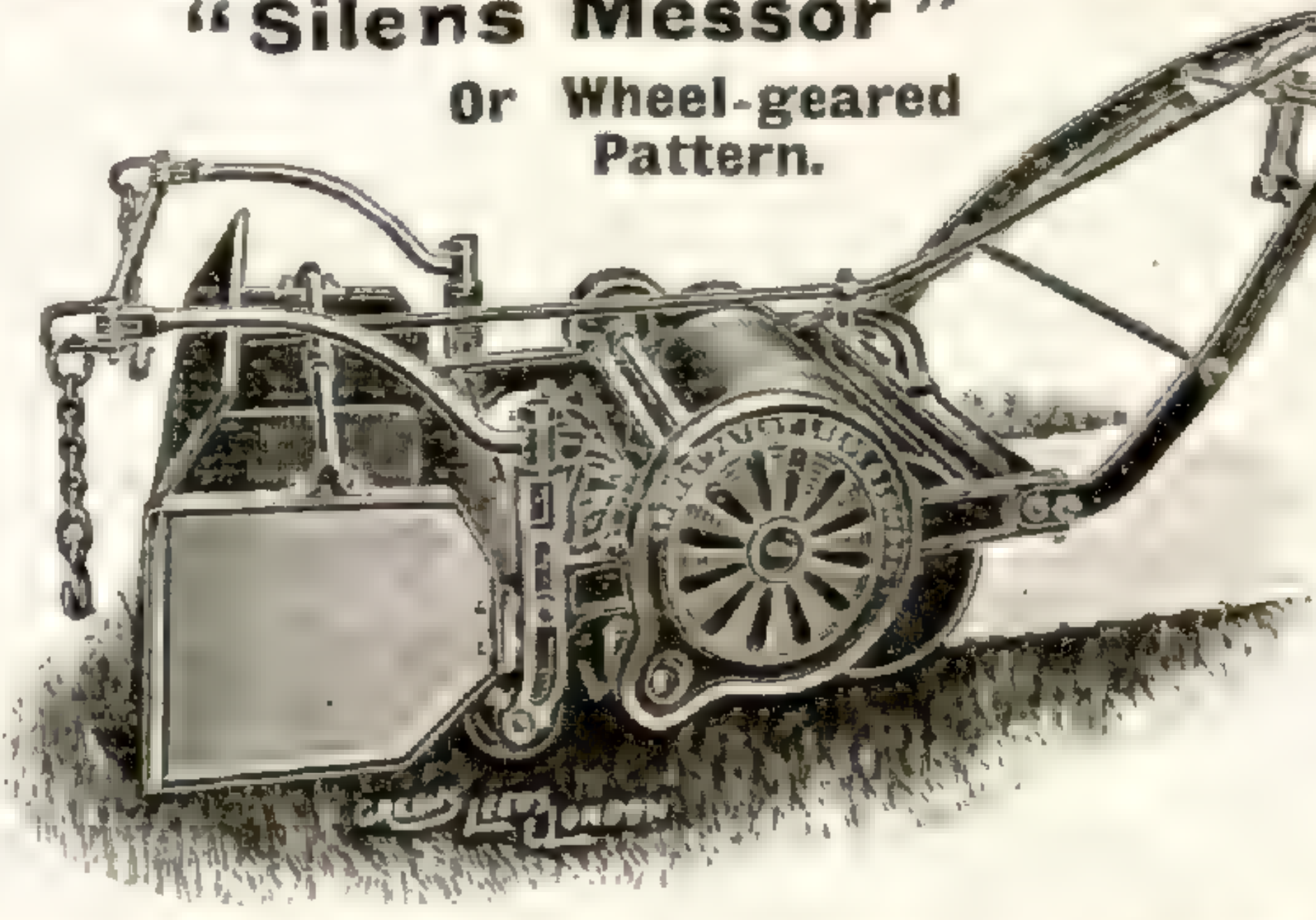

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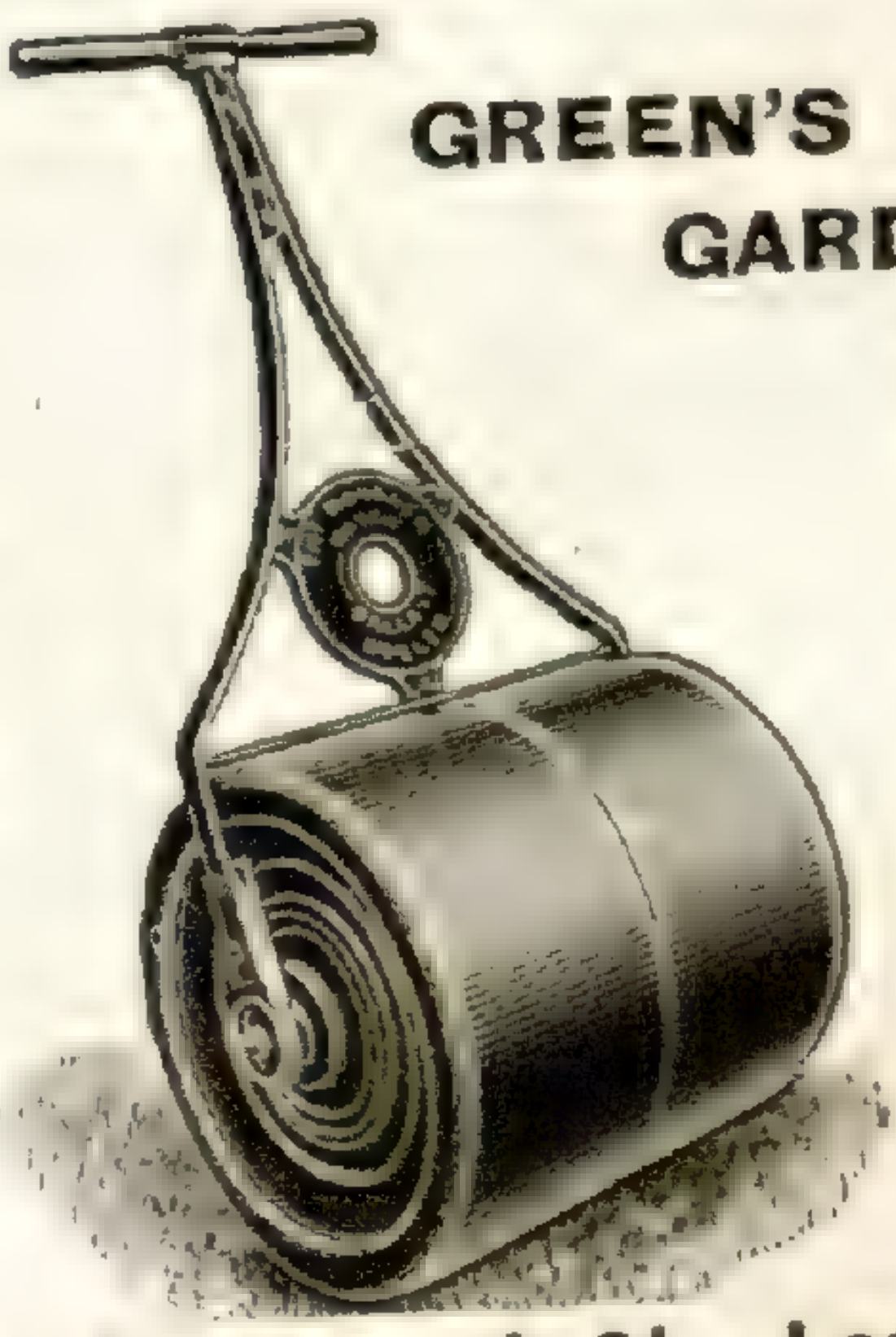

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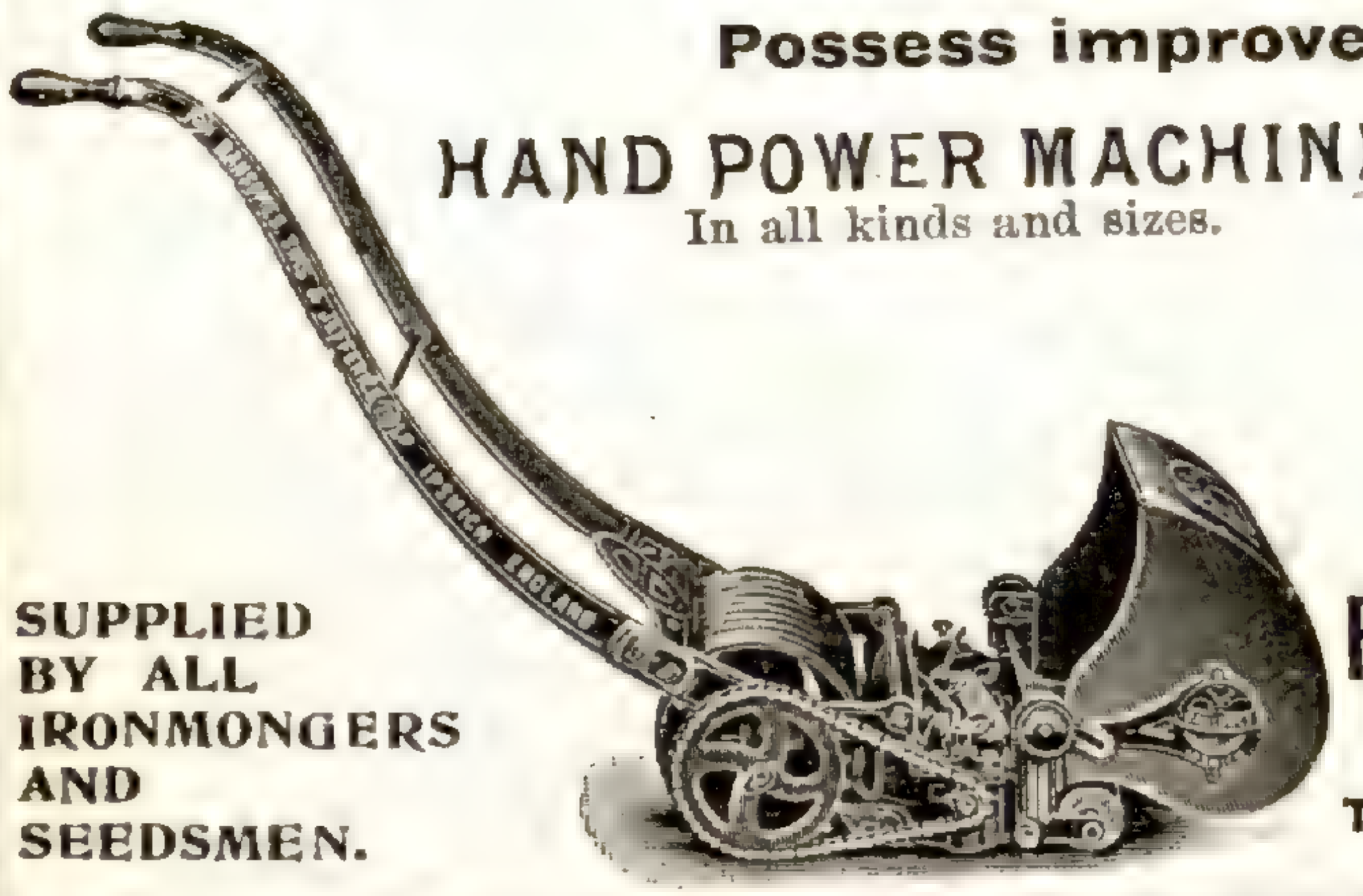

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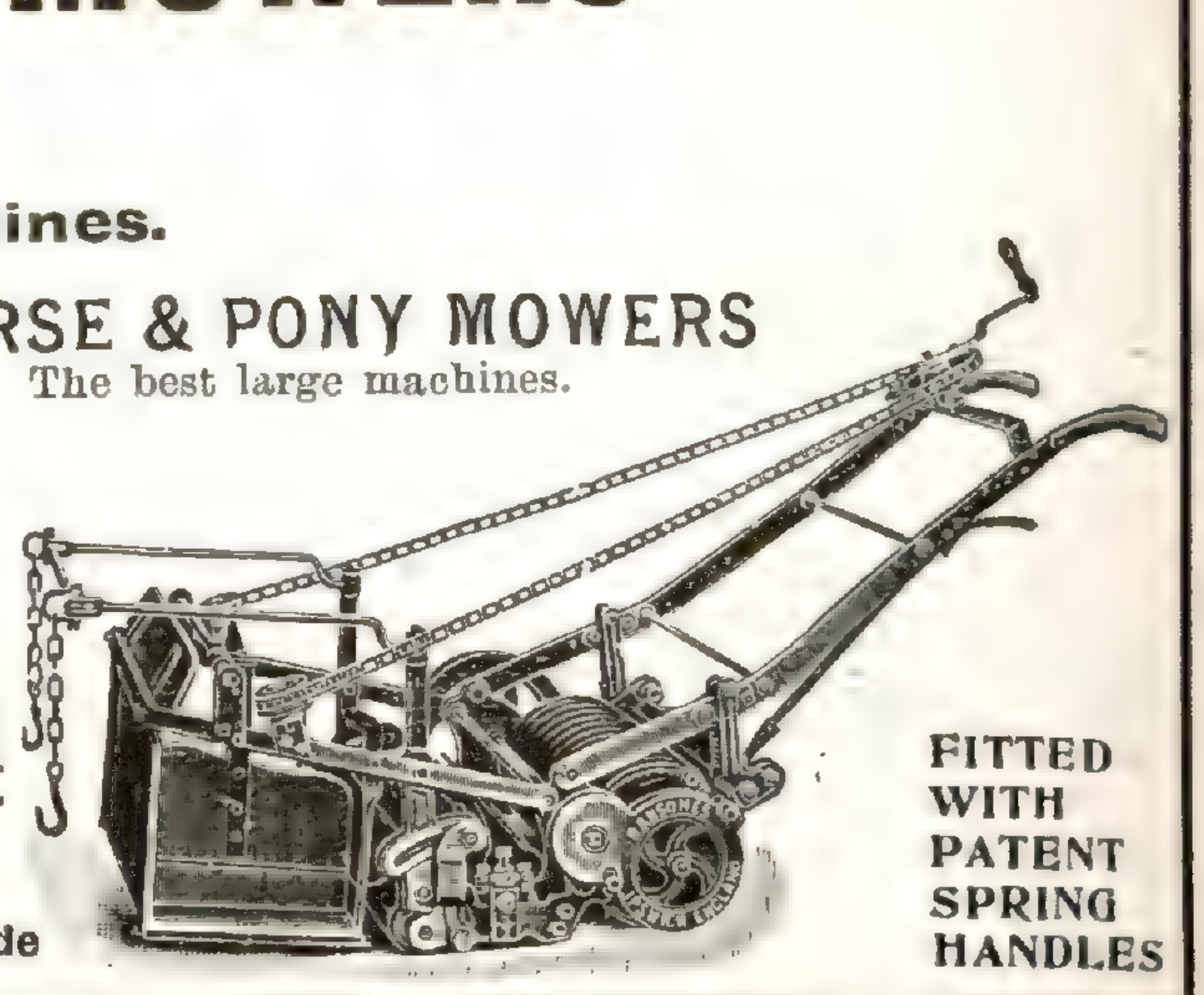

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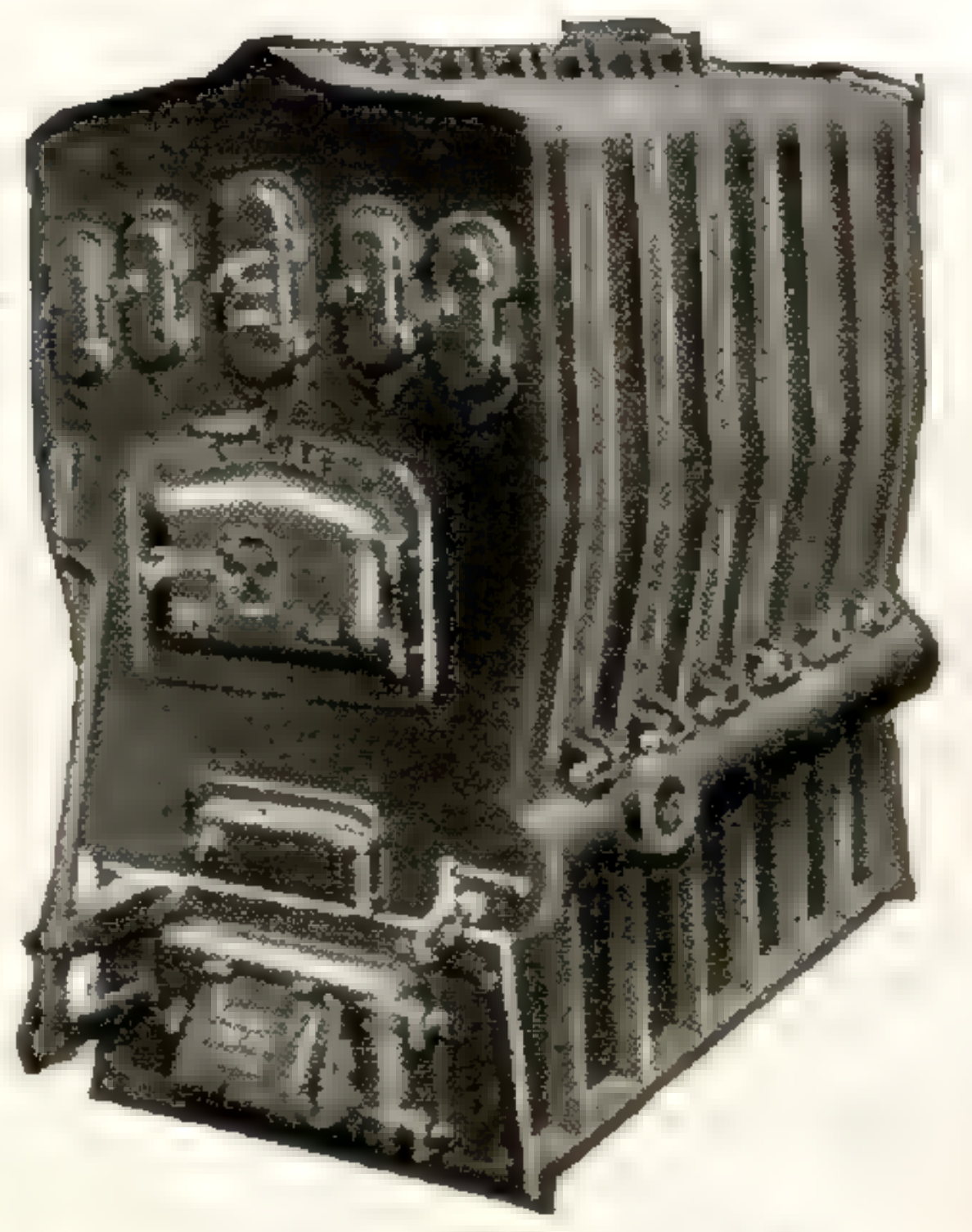

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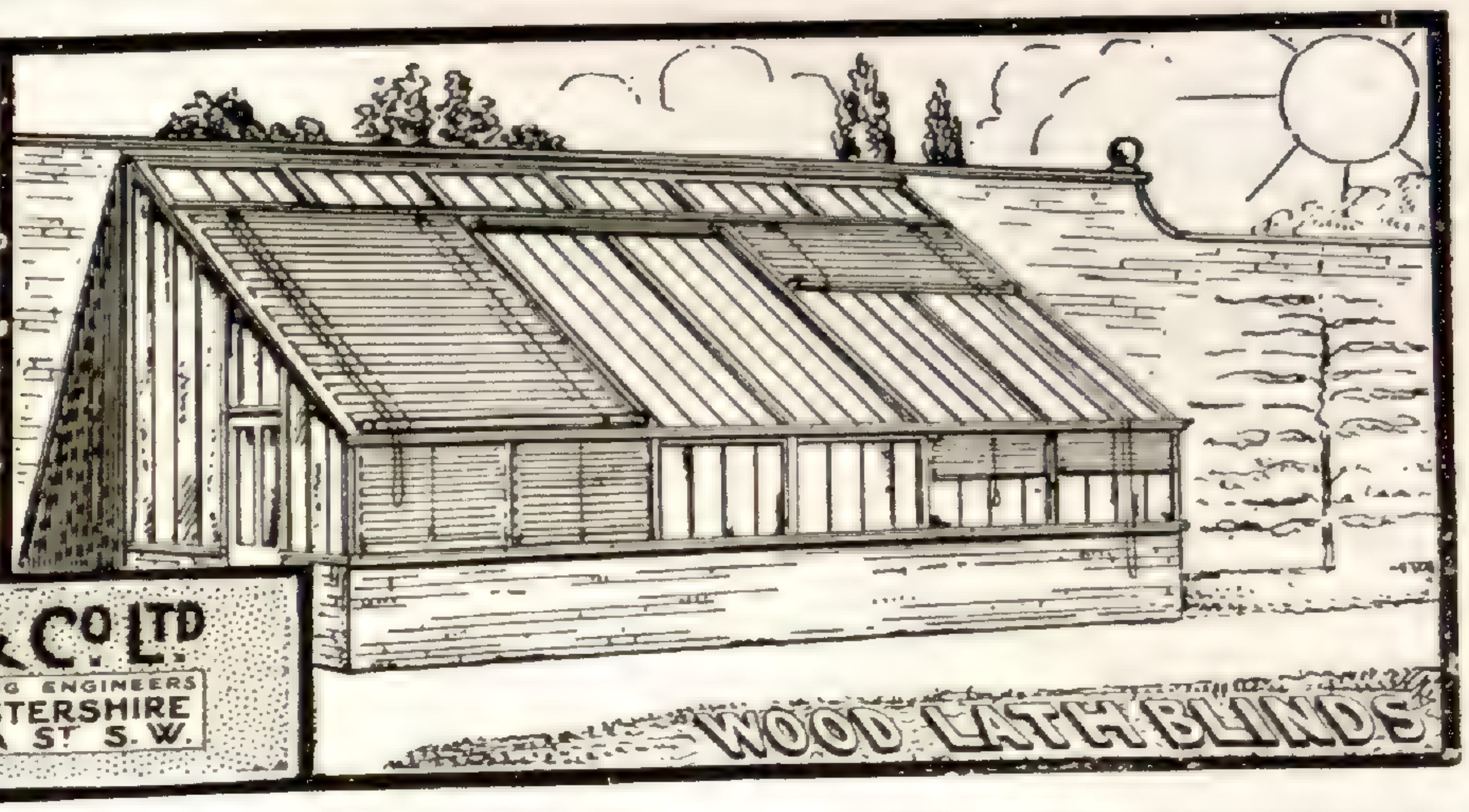

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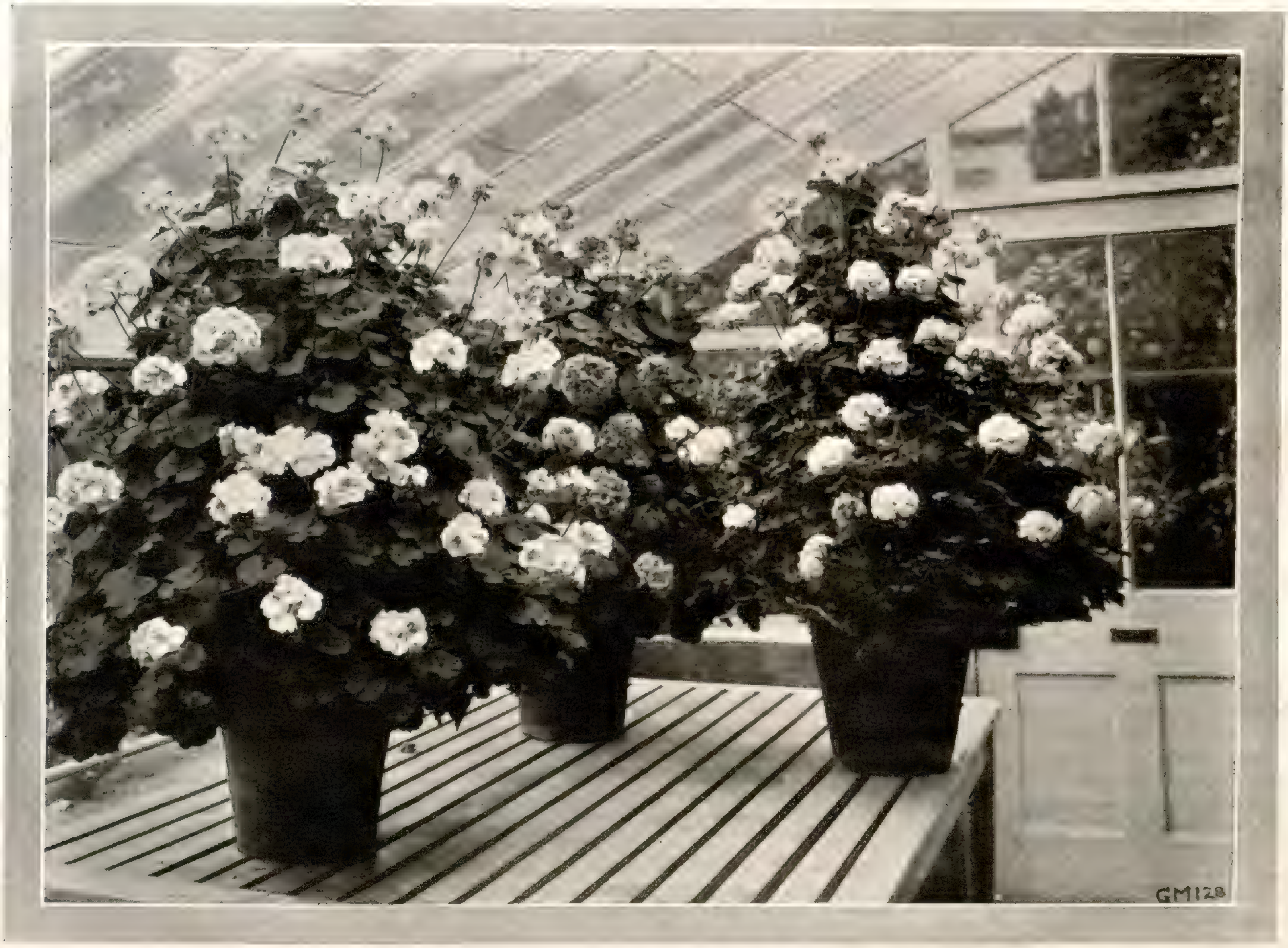
# SPECIMEN ZONAL PELARGONIUMS.

The cultivation of specimen plants of any sort is an art that is fast dying out, the craze for quantities of cut bloom having done much to oust from popular favour what was once the pride of almost every garden.

Certainly we see quite good examples of specimen plants at some of the leading exhibitions, York probably providing a display of zonal and other pelargoniums unequalled at any other show in the country. The question might reasonably be asked What is there that makes a bolder or brighter show, or continues to bloom over a longer period, than the zonal pelargoniums? Bright and interesting as there are when cultivated in small pots, either for winter or summer flowering, they are infinitely grander and more striking when cultivated as specimen plants. The accompanying illustration admirably indicates the adaptability of these plants for pyramidal specimens.



GOOD PYRAMIDAL SPECIMEN ZONAL PELARGONIUMS.
Left, Bertha de Présilly, soft rose; centre, Gustave Emich, scarlet; right, Olive Schreiner, white with red edge.

Such plants take some considerable time to grow, and, needless to say, occupy a great amount of space, so that anyone undertaking their cultivation must needs have a fair-sized house to devote to them if many specimens are to be grown.

If it is desired to grow specimen plants from a single cutting, three to four years is not too long to allow, but where good bushy plants are established in 48 or 32-sized pots, very fair specimens may be obtained the year after making up; by this I mean that two or three plants (the latter number for preference) may be put in a 12in. or 16in. pot. The compost for such specimens should consist of good turfy loam, not broken up too finely, with just sufficient leaf-soil and sand to keep it porous; to these should be added a fair proportion of bone-meal. Potting should be done very firmly, so as to induce a good short-jointed growth, as strong sappy shoots do not branch as nicely as might be wished the following season. Plants that have bloomed through the winter, and have good hard wood in them are just suitable for the purpose. The shape of the plants having been decided on, a framework must be made of stakes and stiff wire, firmly fixing this to the top of the pots. All flowers should be rigorously removed, and as growth is made, the side shoots should be gradually drawn to the bottom framework, pinching them when necessary to secure sufficient growths to fill up nicely, the central shoots being allowed to grow freely to furnish the apex of the pyramid, though some few of them must be stopped and tied in position, so as to secure a good line from the bottom circle to the apex. Very strong and sappy shoots should be pinched at once unless they are absolutely essential to fill up some gap.

A light, airy house is by far the best to grow these plants in, keeping them turned round, so that all sides of the plants get an equal amount of light. Watering must be carefully done, as an excess produces the soft shoots already referred to, and though these appear to make the plant quickly, they nevertheless are likely to die back once the growth becomes dense. No feeding of any sort should be necessary for some few months after potting, but when the pots are full of roots a little must be given to keep up the vigour of the plants; soot water is useful, as also is Peruvian guano given in small quantities. The growth of such plants should go on right through the summer and autumn, and with good management they should make fair specimens, but if they have not filled up sufficiently they may be kept going very steadily through the winter. I have found it advisable, however, to give them a rest if possible, during the dullest days of winter, by keeping them quite cool and giving only sufficient water to keep them healthy.

The following spring a top-dressing should be given, and a little more warmth allowed to start them into growth again. If they are not needed to bloom early in the season, and they are of good shape and well filled, practically the whole of the shoots may have the tips taken out, as this will naturally induce them to break evenly all over, and on being allowed to flower the plants should be furnished from top to bottom with a good mass of bloom, which, by judicious feeding, will continue for some considerable time either indoors or out.

Such specimens are very suitable for plunging on the lawn or for furnishing large vases on a terrace, and once grown to the desired size they may be kept so with careful management for quite a number of years.

The selection of varieties is largely a matter of personal taste, the whole of the singles being amenable to this system of cultivation, but for usefulness the semi-doubles are far the best, the blooms standing better than the singles. Gustave Emich, King of Denmark, Bertha de Présilly, Olive Schreiner, F. V. Raspail, Improved, Hermoine, Ville de Poitiers, Wonderful, and White King of Denmark are all varieties that can be recommended for the purpose. THOMAS STEVENSON.

Woburn Place Gardens.

## FATALITY AMONGST PLUMS.

In spite of seasons of scarcity and years of glut, with the consequent low prices in the latter case, and the shortage of fruit in the former, the plum growing industry is an important one in this country, and, taking one year with another, there is probably no other fruit crop that pays better. A characteristic about plum culture from a commercial point of view is the extent to which it is localised and dotted about the country in different parts, and on varied classes of soil are areas which in some peculiar way are adapted to plums, and having found this out men have developed the cult of the fruit until it has become an important commercial industry.

### Local Varieties.

It may also be observed that in nearly every one of these plum districts there is a local variety peculiar to the neighbourhood, which originated in a natural way, and needs no working on a stock, for it propagates itself from suckers and grows on its own roots in a natural manner. Speaking generally, in every plum-growing district it is the local variety that predominates, and one reason for this may be because it is so easily propagated, but another is that, taking an average of years, the local plums are the most profitable to growers, because they are produced in quantity, are sold wholesale, and supply the needs of the jam maker.

Even in that favoured fruit-growing county of Kent there are many less profitable varieties grown than the native round purple Bush plum that belongs to Kent, and is rarely seen outside its borders. If you stand in the vale of Evesham by the meandering Avon, in the early spring you may look over sloping hillsides for miles that are white as snow with pearly plum blossoms, and most of these are on trees of the famous Pershore or the native yellow egg plum of Worcestershire. It is not a high-class plum; no one ever argued that in its favour, but it serves a certain purpose, and, all things considered, there is none more profitable in the Evesham valley. The neighbouring county of Gloucester has its native plums, and one of them fills many of the orchards that skirt the banks of the Severn. This plum, which flourishes like the proverbial bay tree in its own particular district, originated in the little village of Blaisdon, from which it takes its name of the Blaisdon Red, and if you ask any grower in the locality he will tell you that it pays better than any other, and a lot of the fruit is consumed in the mining valleys of South Wales. Bristol is the chief commercial centre in the West, and to cater for its requirements in the way of fruit orchards and plantations have been established in its immediate vicinity. Bristol gets its earliest strawberries from the Cheddar Vale in Somerset, but some of the best come from Winterbourne in Gloucester, where plums also flourish, and the most popular local variety bears the name of the Magnum Bonum.

### Silver-leaf Disease.

So much for local plums, but where they will grow other commercial varieties will flourish also, and into the plum districts have been introduced Victorias, Prolifics, Czars, Monarchs, Pond's Seedling, Belle de Louvain, Gages, and other varieties, the names of which are to be found in any nurseryman's catalogue It is not among the native so much as the introduced varieties that plum growers in certain places are perturbed and puzzled in respect of the fatality amongst the trees. As an illustration of what I mean, I walked last autumn through the orchards of a West Country grower, who some years ago planted a few Victorias, and, finding that they did well, he put in more and more. For a time everything was smooth sailing, for the Victorias flourished and cropped heavily, but the trouble began when a tree here and there became affected with silver leaf. At first the grower thought little of it, but put it down to lightning, which is a common thing in the West of England when a fruit tree dies without there being any apparent reason for it. The man knows better now, for, a few at a time, his once profitable Victorias are being killed by silver leaf, while he is helpless, and can only talk of the money that the trees brought in before the deadly disease attacked them. This is only one instance, but hundreds of trees of soft-wooded varieties of which Victoria is the worst, are dying every year, and no remedy is as yet forthcoming. From what I know and have seen, I can say without fear of contradiction that the fatality amongst Victorias in particular owing to silver leaf is becoming very serious, and in some places the very existence of this popular variety is threatened.

### The Shot Borer.

One day last summer, I was in a district where plums are an important source of income to the small holders and farmers, and I observed a large number of trees that had died suddenly, and some of them had crops of withered fruits hanging on the branches. Most of the dead trees were of introduced varieties, but I do not remember the particular names at the moment, and the growers thought it must be lightning or some other mysterious cause. A close examination of the bark, however, proved it to be pitted with tiny holes, and the mystery was solved, for the death of the trees was due to the ravages of the Shot Borer (Xyleborus dispar), which bores inside the bark into the stem, and brings about the death of the tree. From what I could see the growers were taking the trouble very philosophically. They knew that nothing could be done in bad cases, but cut down the trees, and though they had been advised to keep the stems of other specimens coated with limewash as a means of prevention, few of them were doing it, and as another tree went wrong they deplored their ill luck, and enlarged on the uncertainties of fruit culture as a means of livelihood. Though one might blame the growers for not being more ready to adopt preventive methods one cannot help sympathising when losses of this kind occur, because a plum tree does not grow in a week, and after waiting until it comes to a fruiting state, it is disappointing, to say the least of it, to watch it collapse and die, without giving any warning.

### Need for Research.

Lastly there is a fatality about which there is some mystery atached, and in plum growing districts there are several varieties which are apt to die suddenly when the trees have arrived at a state of bearing. There is a reason for it, of course, but it is not an easy matter to locate the cause in some cases, and I have examined more than one dead plum tree that betrayed no evidence of either Shot Borer or other trouble that could be discerned with the naked eye. Perhaps, when we get the centres for research in matters of fruit culture, which, I suppose, are to be established sometime out of the much-talked-about Development Fund, fruit growers will have places where they can send trees that die mysteriously, and have them scientifically examined, with the object of finding out the cause. H.

## LIME.

Much misconception exists as to the action of lime in soils, or its effects on plant growth, and it is clearly evident that many old kitchen garden soils have been sadly neglected as regards suitable applications of this most essential constituent. A great many of these soils are highly charged with humus, due to repeated dressings of garden refuse, farmyard manure, cow and horse manure, and many other forms of organic matter; they become sour and acid in consequence, with the result that plants sicken and die in them. Here is evident necessity for the application of lime to correct such acidity.

Mention of the word "Lime" brings to the minds of most people visions of lime kilns and fine powdery slaked lime. The natural form of lime, however, is calcium carbonate, and it may exist either as old grey chalk, white chalk, or the Buxton and North-East of England carboniferous limestone. The crude limestone when burnt in the kiln undergoes chemical changes which alter its nature and composition completely. From 44 to 46 per cent. of carbonic acid gas is given off in the process, and the original carbonate of lime is changed into caustic lime or quicklime.

Exposure of the latter material to air results in a further change; moisture and carbonic acid will be absorbed, and a substance known as air-slaked lime is produced. This in time reverts to its original state, and gradually assumes the old properties it possessed prior to burning. When chalk is burnt in the kiln, one ton will be found to yield about 11 or 12cwts. of quicklime, and the latter will vary in weight from 70 to 100lbs. per bushel.

Quicklime or caustic lime is of a powerful nature, and some care must be exercised in using it on garden soils, especially where it is merely required for manurial purposes. Tomatoes, for example, are apt to wilt and sicken where an excess of fresh lime has been incorporated with the soil. The plant roots cannot penetrate into the soil freely, and sometimes the magnesia contained in the lime exerts a very injurious action on plant growth. Caustic magnesia is harmful to plants, but carbonate of magnesia is a positive necessity, although many gardeners do not think it worth while to use this material.

In a lecture delivered a year or two ago before the Scottish Horticultural Association, Mr. John Hunter, F.I.C., F.C.S., stated that the great advantage of carbonate of magnesia is that it is capable of being made soluble as required by the micro-organisms in the soil, and the proportion in which to use ground lime and carbonate of magnesia is five or six of the former to one of the latter. The small addition of magnesia was said to increase nitrification twenty-fold. It is this constituent of soils that gives the fine juicy sweetness to cultivated apples, which is so strikingly deficient in the crab apple, and it affects all fruits similarly. Both earlier maturity and finer quality are ascribed to carbonate of magnesia.

Ground lime is often recommended for horticultural use, the rate of usage being something like 7lb. to 30 square yards. In any case, where it is intended to employ this material in the garden, nothing but the best quality lime is worth using, there being a guaranteed percentage of no less than 85 per cent. of carbonate of lime. Moreover, this material should always be sown at the time of digging the ground. Where the land has long been manured with farmyard manure, small applications of lime prove very advantageous in assisting the decay of the vegetable matter. Ground lime is exceptionally useful on soils that are infested with finger-and-toe, eelworm, etc., and commercial growers sometimes use a material that has been prepared from magnesium limestone, because this retains its cleansing powers longer. Such forms of lime are, however, injurious to many soils, except, perhaps, where eelworm infestation is very acute.

It should be noted that lime has a much stronger attraction for carbonic acid than magnesia, so that as long as any caustic lime remains in the soil the caustic magnesia cannot be converted into carbonate of magnesia—in which form it is so essential to plants. As long as it remains in a caustic or calcined state, it is a positive source of danger to plants, especially certain vegetables, and rich soils highly charged with humus or organic matter appear to be the only suitable mediums wherein this caustic magnesia cannot work any ill effects. This is because the organic matter supplies the necessary carbonic acid to enable it to change into a carbonate. On these rich soils and on peaty soils also, ground lime prepared from the magnesium limestones may be used with safety and advantage, provided proper quantities are given. The carboniferous limestones, however, yield the best quality ground lime for horticultural purposes generally, and some of the best firms advertise a grade of lime containing no less than 95 per cent. of pure lime (CaO).

The neglect of liming inevitably leads to trouble, and it is quite wrong to suppose that superphosphate, sulphate of lime (gypsum), sulphate of iron, sulphate of ammonia, and other acid manures are capable of warding off trouble. The question is, simply, what becomes of the carbonate of lime in the soil? Acid manures will not conserve it, but merely convert it into sulphate of lime. Natural causes, such as rain, for example, help to work it out of the soil; in fact, it has been stated that in a normal rainfall the land will lose naturally from 700 to 1,000lbs. of lime per acre in a single season.

This is what becomes of the carbonate of lime in the soil. On the other hand, if this soil constituent is lacking—as it always is in sour acid soils—there will be no "base" such as will enable the phosphoric acid and the potash present in the soil, and in the sulphatic manures that may be applied to that soil, to be rendered available as plant food. A deficiency of lime is, indeed, one of the first defects that a gardener should remedy.

Old Basing. J. C. Newsham.

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**Impatiens Olivieri.**—This is one of the largest of the warm-house balsams, and, what is more, one of the most continuous flowering of them all. It may be grown in a large pot or tub, and, given space for its development, will form a specimen six feet high or thereabouts, and nearly as much through. The flowers, with which the plant is freely sprinkled throughout the greater part of the year, are large, and of a pleasing shade of pale mauve.—W. T.

[Photo: W. J. Vasey.

THE CLOSE, BURCOT, THE RESIDENCE OF LADY GLYN.
View from the River Thames, showing the large arches of Dorothy Perkins rose.

## THE CLOSE, BURCOT.

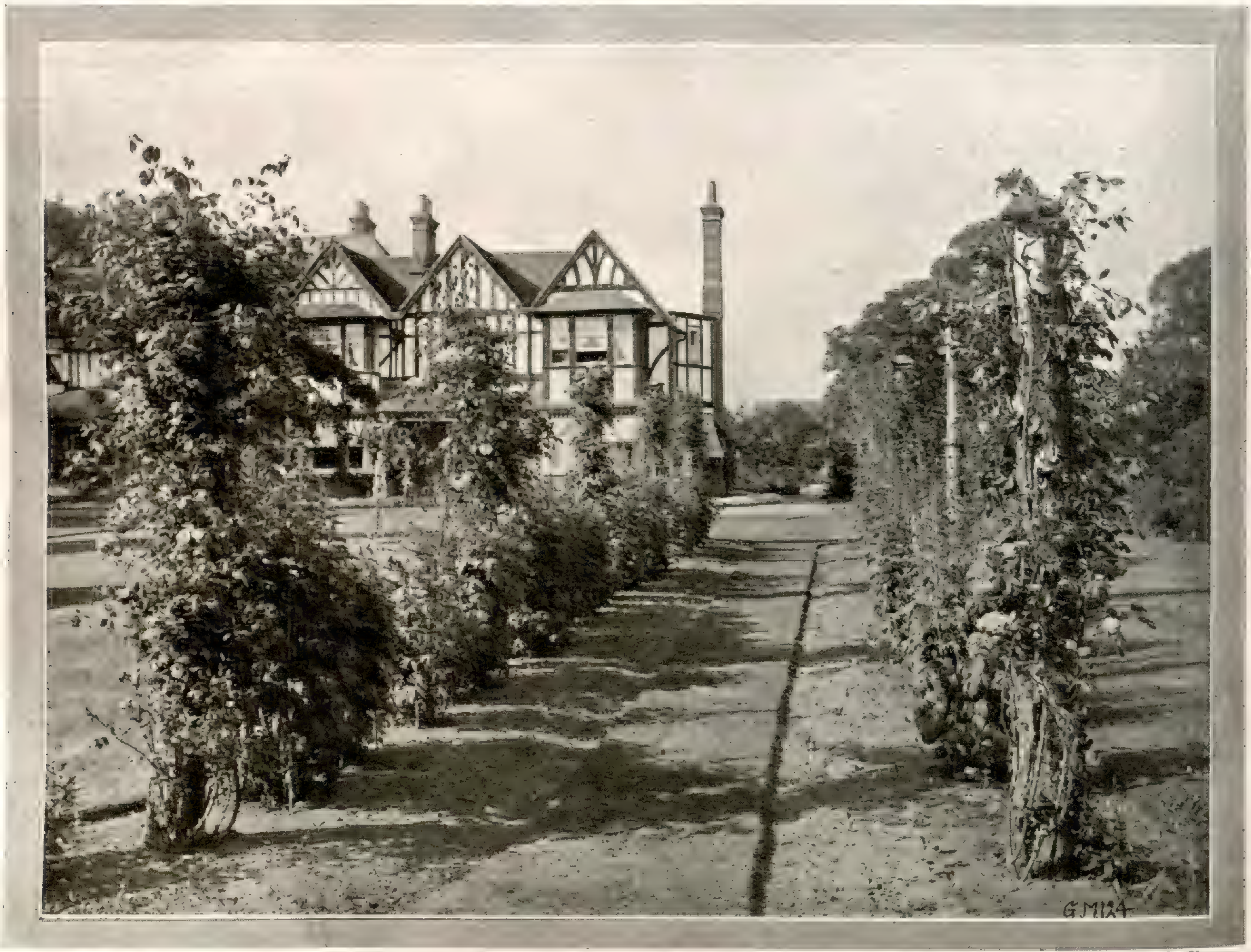
Burcot-on-Thames is a modest little village nestling close to Dorchester, on the Oxfordshire side of the river, about halfway between Wallingford and Abingdon. Like many another riverside place from Kingston to Oxford, it contains some delightful gardens, gardens that are a continual delight to the owner, and a never-ending source of pleasure to those who love our chief river and know something of the beautiful scenes through which it passes and helps to make.

At Burcot Lady Glyn has a residence named The Close, set amid charming gardens that slope gently down to the water's edge. The very waterside is overhung with rambling roses, and roses are planted freely all over the garden, and grow so well that their beauty and fragrance delight many others besides her ladyship. Viewed from the river, the gardens are particularly pleasing as there is sufficient expanse of well-kept lawn to form a good setting to the beds, arches, and arbours of roses, and the large groupings of the finer varieties of herbaceous phloxes and similar showy hardy flowers, in an extensive herbaceous border.

In this view the rosery is a conspicuous feature. It is of circular design, and access is obtained through four large arches, each completely covered by the beautiful Dorothy Perkins rose. Between the arches are standard roses in great variety, as well as beds of dwarf hybrid tea and other useful sorts. Nearer the house and skirting the lawn is a grass path, which runs between borders of roses where tall pillars and arches of Blush Rambler, Crimson Rambler, and other free-growing and abundant blooming roses are perfectly at home, with groups of the choicest delphiniums between them. Farther on, where the orchard comes up to the flower garden roses are again pressed into service, a long and high wirework screen, affording support to numerous rambling varieties, and so forming a dividing line of great elegance and beauty between these two departments.

Besides the rosery and the rose walks and beds, there are roses in the kitchen garden, these furnishing a light pergola-like arrangement through which a very pretty view of the lower garden and the river is obtained. Old-fashioned flowers are a feature at The Close, but in all cases the finest varieties are planted. The numerous side walks and their attendant flower borders serve to show these to advantage. Some of these walks are depicted in one of the accompanying illustrations. Roses are again very much in evidence, while delphiniums and pinks are other flowers boldly and freely cultivated, so that fragrance as well as beauty is a feature of these gardens, wherein high cultivation and originality of design are noteworthy.

W. J. V.



[Photo: W. J. Vasey.

ONE OF THE ROSE WALKS AT THE CLOSE, BURCOT.

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**Fancy Pelargoniums.** — This pretty small-flowering race of pelargoniums seems to have almost dropped out of cultivation, yet time was when both as small plants and large specimens they were met with in most gardens. The reason for their disappearance is, I think, to be found in the fact that they are more particular in their requirements than the decorative kinds.—W.

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## THE SPECIES OF BRYANTHUS.

The genus Bryanthus belongs to the order Ericaceæ, its closest allies being the Alpine Azalea (Loiseleuria procumbens) and the St. Dabeoc's Heath (Dabæcia polifolia). Some considerable confusion has existed concerning the proper generic name for most of the species, and one or all have been alternately included under Bryanthus, Menziesia, Phyllodoce, Andromeda, and Erica. In this country it is usual to follow Asa Gray's descriptions in "Proceedings of the American Academy," vii. (1868), pp. 367-368, and call them all Bryanthus, though in some countries there is still a disposition to split the genus. The reason for this is probably to some extent due to there being two distinct types of flowers amongst the species, one group having urn-shaped blooms, and the other campanulate. All are strictly alpine plants, for they are found in the mountainous regions of North America, Siberia, and Europe, one species extending into Scotland. Probably on this account they are sometimes found difficult to grow for any length of time in the warmer parts of the country, although three or four of the species thrive in many places, and are particularly happy in those parts of the North where peat-loving shrubs thrive.

As is the case with several other small genera of the heath family, the various species are of a particularly showy character when in flower, and, being evergreen, they are useful for carpeting ground in a similar manner to dwarf-growing heaths. For rockery planting they are peculiarly adapted, and patches of the several species might be introduced with advantage where they do not already exist. They are in perfect unison with the heaths, insomuch as the superior qualities of young plants over old are concerned, for comparatively young plants always look better and flower more profusely than old ones. A stock of young plants may be kept up by rooting cuttings of half-ripe shoots, an inch and a-half long in August. These ought to be inserted in a similar manner to erica cuttings, in pots of sandy peat, made very firm. They should then be stood in a close frame until rooted. A cool corner, shaded from bright sun, is preferable to a hot position for all the species. The following species have been described:

### B. Breweri.

This is a native of the Sierras of California, where it grows up to an altitude of 10,000ft. At its strongest its branches attain a height of 12 inches, although we are familiar with it about half that height. The dark green, linear leaves are sometimes half an inch long, often less, and they have revolute margins and a felty under-surface. During June the rose or reddish-purple flowers appear in terminal heads. In this case they are campanulate, and each one is about half an inch across. It may be obtained in this country, and is a very choice plant.

### B. empetriformis.

B. empetriformis is widely distributed in North America, for it is found from North California in the South to Vancouver Island and the Rocky Mountains on the adjacent mainland in the North. Howell, in his "Flora of North-West America," p. 420, says that it sometimes grows from 1ft. to

2ft. high, and forms clumps 1ft. to 3ft. in diameter. Here it is found from 6in. to 9in. high. Its leaves are usually below half an inch in length, and they are of the familiar linear-oblong outline. The campanulate flowers are borne 10 or 12 together in terminal heads, the colour being a pleasing rose or pale red.

### B. glanduliflorus.

It is doubtful whether this species is in cultivation in this country. In America it occurs from Oregon to Alaska, Howell describing it as growing on rocky banks and cliffs near perpetual snow. The branches are rather stiff, 3 to 12 inches high, bearing small leaves scarcely half an inch long. The young wood, flower stalks, and calyx lobes are intensely hairy, by which means it is easily distinguished from other kinds. Its urn-shaped flowers differ in colour from those of other species, for they are of a yellowish shade.

[Photo: W. J. Vasey.

ROSES, DELPHINIUMS, AND PINKS AT THE CLOSE, BURCOT.

### B. Gwelini.

This was originally described by G. Don, in the "Edinburgh New Philosophical Journal," xvii. (July, 1834), p. 160. Herbarium specimens show it as a tiny prostrate-growing, heath-like shrub with leaves scarcely more than an eighth of an inch long, with ciliated margins, and bearing short terminal racemes of small red flowers. Loudon refers to it as being found covering extensive areas with a close mass, after the manner of Wild Thyme. It is a native of Kamtschatka and the adjacent islands, and of Siberia. It is doubtful whether it is in cultivation in this country.

### B. taxifolius.

This species enjoys a very wide distribution, for it is met with in North America, Siberia, North China, Japan, North Europe, and has been collected in Perthshire in Scotland. It forms a dwarf shrub, 4 to 6 inches high, with small linear-oblong leaves one quarter to a third of an inch long, and urn-shaped flowers borne several together in terminal heads. An illustration of the plant is given in Brown and Britton's "Flora of the Northern States and Canada," p. 565, under the name of Phyllodoce cœrulea. From this it might be inferred that the flowers are blue. This, however, is not usually the case, for, although forms with bluish flowers are sometimes met with, more familiar shades are rosy purple and reddish-purple. The above-mentioned work refers to its distribution upon the summits of the higher mountains of Maine and New Hampshire, Mount Albert, Quebec, Labrador, through Arctic America to Alaska, North Alpine Europe, and Asia. It is one of the most easily obtained species.

### B. aleuticus.

This is a little-known American species with small serrate leaves up to half an inch long, and small rosy flowers, resembling, but smaller than, those of B. taxifolia.

### B. erectus.

This pretty little plant is a garden hybrid between Bryanthus empetriformis and Rhodothamnus Chamaecistus. An early description of it appeared in Lindley and Paxton's "Flower Garden," i, p. 97, Fig. 19. According to this description, the plant was originally obtained by Mr. Cunningham, of Comley Bank Nursery, Edinburgh. Although one parent is there given as B. taxifolius, a doubt is cast as to its being correct, and the plant now considered to be the parent is suggested. Growing from six to nine inches high, it bears flattened leaves nearly an inch long, and rosy-pink flowers upwards of half an inch in diameter. Reference is made to its dislike of bright sun and a dry atmosphere, the north side of a wall or a cool shady frame being recommended as the most suitable position for its well-being. After the lapse of 60 years no better advice can be advanced for the successful cultivation of this charming little shrub. There does not appear to be any large stock of plants in the country, for propagation is slow, layering in this case being found to be more satisfactory than cuttings.

W. Dallimore.

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**A Good Dry-weather Vegetable.**—The note on the New Zealand spinach (Tetragonia expansa), page 174, should serve to direct attention to this most valuable vegetable. In my suburban garden, which slopes away sharply to the south, practically all vegetables were burnt up during the intense heat and drought of last summer. This New Zealand spinach proved quite the exception, and, though the space allotted to it was limited, we were able to pick a good dish therefrom two or three times a week during the entire summer. As the neighbouring gardens yielded no vegetables of any account, the resolution to grow New Zealand spinach another year was almost universal owing to my success in the matter. Seeds were sown in shallow drills towards the end of April, and the plants thinned out well, for, as stated by your correspondent "C.," it requires, from its trailing habit, plenty of room to develop. During the long-continued drought the hoe was freely used, and the plants were occasionally given a soaking of water. In a wet season, owing to other vegetables being available, the New Zealand spinach does not assert itself.—S. W.

# DECORATIVE, PÆONY-FLOWERED, AND COLLARETTE DAHLIAS.

The following paper was contributed by Mr. J. B. Riding to the Conference recently held by the National Dahlia Society:

The subject of my paper may not seem a particularly entertaining one, dealing as it does with all the nondescript sections, as apart from the recognised show, cactus, pompon, and singles. I say "recognised sections" because they have always been acknowledged by the National Dahlia Society and the Royal Horticultural Society, while the subjects of my paper have only just began to assert their rights to be regarded as recognised flowers, for until last autumn neither of these societies had granted any awards to the collarette or giant decorative varieties, but for some unknown reason about three sorts of the collarette type and one giant decorative sort gained honours in 1911, I think much to the surprise of the committees themselves. At any rate, we have now placed in the thin edge of the wedge, and it will require very few blows to send it home. Up to the present neither of the leading societies have stooped to grant an award to the pæony-flowered varieties, but you may rest assured they will so honour them in the near future. I do not like to prophesy, but I can quote you that celebrated little sentence, "Wait and see."

I can quite understand the aversion to these types from some of our growers, amateur and professional alike, especially those who regard the dahlia solely from an exhibitor's point of view. I remember the day when the popular cactus varieties were reviled in the same way, but we have only to go back about thirty years to the coming of Dahlia Juarezi, and then compare it with the cactus dahlia of to-day. It is quite the same with the types I have to deal with: there is already plenty of evidence that they will be improved upon during the next few years. So I think we can safely ask the exhibitors to bear patiently with us until they ascend to their particular standard. Not that I think for a moment, Mr. Chairman, the exhibiting world should rule the roost, for I maintain that for every exhibition dahlia planted in this country there are at the lowest estimate a thousand others that are planted out in our gardens solely as decorative plants, to produce a fine effect in the autumn months, and the plant to surpass the dahlia for this purpose is still unknown. What have we to compare with their brilliancy in colouring during September and October? Nothing whatever. So I maintain, although the dahlias that I am about to deal with may not come up to the exhibition standard, they do, and will, assert themselves in our gardens.

## Decorative Dahlias.

Taking the sections in their order of introduction to this country, we come to that nondescript class known as decorative dahlias. Well, what is a decorative dahlia? I take it to be a section that cannot be placed in any of our recognised divisions at the present day. As far as I can remember they followed closely on the heels of D. Jaurezi, and were first of all sent out as cactus varieties. I am now alluding to such old varieties as Constance, Henry Patrick, Harry Freeman, Mrs. George Reid, Maid of Kent, Honoria, etc. As the cactus improved in form, these round-petalled sorts were cast aside, and only used for decorative purposes, and, although so old now, they are still grown with the same object in view, but their progress was very slow for some years, due simply to the fact that, when they appeared in the seed beds, they were ruthlessly cast on the rubbish heap. How many garden gems have been lost in this way it would be difficult to estimate, but no doubt many hundreds. It is only within the past ten years that dahlia growers have given them any attention, but I am glad to say we are now on the right track and have some really good additions to this class, some of the most prominent at the present time being Delice, clear pink; Kaiserin Augusta Victoria, Princess Juliana, Attraction, Loveliness, Ch. Ducrot, Gintry, Mad. Keller, Source de Feu, and Mad. A. Lumiere.

We now come to another section or subsection, generally known as Giant decorative varieties. These were of Continental origin, and have become more or less popular according to people's ideas. From my point of view they are valuable for garden decoration, or producing fine colour effects in our borders, in the front of shrubberies, rhododendron beds, and similar places, but they are not so useful for room decoration or cut flower purposes, except in certain cases, where the space or receptacle is unusually large. They are in some instances as large as sunflowers, and the effect they produce is quite gorgeous. They are not recognised as exhibition flowers, therefore it is rare that we see them at an ordinary flower show. For creating a huge mass of colour they are unsurpassed. The best selection I can give are Souv. de G. Douzon, F. Grinstead, Le Grand Maniton, Le Colosse, Yellow Colosse, Ph. Charmet, Glory of Paris Souv. de M. Silvent, Tener Alvarez, Le Triomphe, La France, Mons. Gondcheaux, Mad. A. Nonin, Le Fils du Ciel, Jeane Charmet, Grand Duc Alexis.

## Pæony-flowered Dahlias.

The pæony-flowered section has come in for more abuse from the British horticulturist than any other modern type. They have been described in the press by various writers as "ugly mongrels," "bunches of coloured rags," and other similar and uncomplimentary phrases. They came from Holland in the first place as something new, and so they were, from a certain standpoint, but doubtless you are all aware that these or similar kinds were known to our own raisers, just in the same way as they were to our Dutch neighbours, but they were too busy raising seedlings after their own hearts to think of making them into a collection and placing them before the public. I am under the impression that I was growing one of the first collections in this country, at any rate before Mr. John Green had the happy inspiration of naming them pæony-flowered dahlias. This, I think, was in 1904. The collection came to me privately for trial, and I well remember my judgment on them, which was as follows—"very pretty in the garden, but would not take on in this country; altogether much too rough."

But, luckily, I did not destroy the stock, and after events proved that I had made a mistake, for the pæony dahlia has come to stay, not, perhaps, in its original form, for one can see clearly year after year most striking improvements not only in the colours but in the form of the flowers, and, greatest of all, the advance that has been made in the habit of the newer plants, with their sturdy growth and fine stiff stems. I am looking forward to seeing great development in the near future. In passing, one must acknowledge the valuable help given by the superintendents of our public parks, by educating the general public as to the uses of this particular section, and those of you who have seen the diplays in the London parks will agree with me when I say these have done far more to popularise this flower than any trade displays ever could do in so short a period.

I should like everyone to regard the pæony dahlia as a garden flower, and not judge it from an exhibitor's standpoint, and I do not think that staging large disbudded flowers will help it forward in the least degree, though I am prepared to admit that where they have to be displayed in large vases or bamboo stands the surplus buds and lateral growth have to be rubbed out to obtain a long stem, but for ordinary floral work this is quite unnecessary. I do not advocate producing huge flowers either for garden or room decoration, for by so doing the stem will not remain rigid without artificial support. It has been said that we have no guide or standard to work up to. This may be true, but if we take the Geisha or Liberty as an ideal pæony flower, we cannot go far wrong. No doubt in the next few years we shall be able to discard all those sorts that do not carry their flowers erect and well above the foliage.

Varieties are now so numerous that it is impossible to mention all that I think are good, so I shall confine myself to one dozen varieties: Bertha von Suttner, Nora Lindsay, The Geisha, Holman Hunt, Liberty, South Pole, Mrs. G. Gordon, Mrs. J. B. Riding, Titian, Codsall Gem, Merveille, and Ruskin.

## Collarette Dahlias.

We now come to the collarette type, a section that has been very much to the front during the past two seasons, and no doubt the coming season will see it very much in evidence. It is not a new type, as many people suppose, for it has been grown in this country at least eleven years to my knowledge, but, like a good many other plants, its worth was not recognised at the time—I believe because the first variety, President Viger, was not very free flowering.

I have it on the authority of Mon. Maurice Rivoire that the collarette dahlia appeared in the year 1889 in the municipal gardens of the Park Perle de la Tete d'Or, at Lyons. The first two varieties appeared as sports on different plants, but he does not name the varieties that so sported, but he writes me, "The fact of the simultaneous appearance upon two different plants of a character so abnormal is truly extraordinary." The varieties having been obtained in an official establishment could not be sold therefrom. So Messrs. Rivoire and Son acquired them and placed them in commerce in 1901. These varieties or sports were President Viger and Joseph Joujou. Since that period this firm has introduced many excellent varieties, and Mons. Rivoire says he is persuaded that this section has not said its last word, and that it yet holds some surprises in store. He lays great stress on the fact that last year the collarette dahlias were remarkable for their continuous flowering when all other kinds of dahlias had almost ceased to flower owing to the extreme heat. It seems to me that while our French and German neighbours have been steadily improving this section, we in this country failed to recognise their merits at all. True, a few of us added some fresh sorts, but in a very desultory fashion—why I do not know. I suppose because they were not fashionable, and consequently there was very little demand for them.

It was in the autumn of 1909 that I decided to form a large collection, so I purchased almost every variety I could lay hands on both in France and Germany, and exhibited them in London and elsewhere the following autumn, staging them as decorative flowers and not show specimens. As you know, they were favourably commented on in the whole of the horticultural Press. The trade dahlia specialists also began to see something in the type, with the result that last year several of the leading dahlia growers made features of them at the autumn shows, with the result that the collarette as a type has come to stay. I do not claim that they will oust any other section, neither is it desirable they should do so; but I do claim that they are worthy of a place in our gardens. The majority are very free flowering, while the plants have a good sturdy habit, and throw their flowers well above the foliage, while in a cut state in vases they appear to last longer than the ordinary single form.

We have two distinct types, the round flower with slightly recurving florets, which are all of French origin; and the pointed type or star-like form, which hails from the Fatherland. Then, again, we have distinct "collars," the close fitting one as seen in the variety Maurice Rivoire, and the large loose one that is associated with Baronne Rothschild. No doubt we shall soon see improvement both in the range of colours and form. At present I favour the round-flowered varieties, because they have greater substance, and travel best. I am hoping that our raisers will not try to increase them in size, for should this occur there will be a danger of losing the stiff erect stem. I mention this because I have noticed that some of the latest varieties from the Continent are larger in size, but the stems are not so good, and when too large they lose their decorative value. This can be seen in the varieties Crown Princess Charlotte and Johannesfeur. Neither do I think disbudding should be practised for exhibition purposes, for it has a tendency to deceive the public, which does not pay in the long run.

I only propose to give a short list of the most distinct varieties at the present time, feeling, as I do, that in the next few years such a list will be quite out of date: Maurice Rivoire, Souvenir de Chabanne, Albert Maumene, Henri Farman, Baronne Rothschild, Gallia, Mad. R. Crozy, Exposition de Lyon, Grand Papa Charmet, Souvenir de Bernadeau, Mad. F. G. Bruant, and Mad. Perrier, of the round-flowered type; Diamant, Diadem, Burgomaster Siefurth, Betty, Leuchtfeur, Mad. L. Viger, Meteor, and Rhinekrone, of the starry type.

## LACHENALIAS IN BASKETS.

When Cape Cowslips are well grown in baskets, large or small, they show off to great advantage, much more so than when in pots, as the habit of growth, flowers and foliage is naturally of a pendant character. In this way they are easily managed, occupying space that would not be otherwise utilised, and giving the opportunity to grow other subjects on shelves and stages at a crowded period of the year. For instance, the roof of a vinery or peach house will suffice for a long time during growth, and when in flower there is no greater ornament in the conservatory than a well-grown basket of lachenalias, especially of L. tricolor or L. pendula. The foliage, also, is attractive in colour, and is of the right type for covering the baskets and forming a setting for the flower spikes. The rich golden-amber blossoms of L. Nelsoni, with its vigorous growth, make a lovely combination in the conservatory where much greenery is usually employed.

The making of baskets, wire or rustic, is a simple matter; the size should be according to the number of bulbs in hand and position for the plants when in flower. For a bold display of the commoner forms as L. pendula and L. tricolor, a basket not less than a foot in diameter will suffice. Early in August is the time to make up the baskets; suspend them from a beam in the potting shed, line the inside with flakes of green moss, place the bulbs inside the basket with the growing point outwards in moss, allowing at least two inches from bulb to bulb. Fill in the bottom of the basket with a suitable compost of loam, leaf-mould, sand, and half-decomposed cow manure. By the time the basket is completed with bulbs set all round and above, it will contain a good mass of soil, which will maintain the bulbs in a vigorous state for at least two seasons, especially if during the second year liquid manure is given. Cool treatment is best at all times for lachenalias.

E. M.

**Calceolaria deflexa.**—This, which is also known as Calceolaria fuchsiæfolia, is valuable for its winter-flowering qualities. It forms a neat bushy specimen clothed with fuchsia-like leaves of a deep green colour, and the rich golden-yellow blossoms are borne from autumn till the spring. Apart from its own intrinsic merit, it is also worthy of note, as one of the reputed parents, Calceolaria Javoni being the other, of that popular hybrid Calceolaria Burbidgei.—W. T.

## BORONIAS.

Among the limited number of hard-wooded plants that are popular nowadays the boronias must be included, or at least some of the members of the genus. They are all natives of Australia, and all form freely-branched, free-flowering shrubs. These features stand them in good stead under cultivation, for it is possible to have neat bushy little specimens laden with flowers in pots five to six inches in diameter.

The species most generally cultivated are three in number—namely, Boronia elatior, B. heterophylla, and B. megastigma. The last-named is the first to bloom, as the earliest flowers may often be had by Christmas, and a succession is kept up till the end of March or thereabouts. If pinched during its earlier stages, Boronia megastigma forms a freely-branched little bush, clothed with very narrow leaves. While the principal shoots are more or less ascending, the minor ones are disposed in a somewhat horizontal manner. From the undersides of these the flowers depend. They are small, bell-shaped, and in colour chocolate on the exterior, and yellowish within. A well-flowered specimen is certainly very pretty, but cannot by any stretch of imagination be called showy, yet the blossoms are so deliciously fragrant as to compensate for any shortcomings, and for this reason alone this boronia occupies a foremost position among popular hard-wooded plants. The perfume is very suggestive of the violet, and is so penetrating that a single specimen will make itself manifest throughout a good sized structure. At the same time, however, numerous the plants, the scent is not at all overpowering. Boronia megastigma was introduced from South-west Australia about forty years ago. A certain amount of individual variation occurs among the members of this species, for in some the flowers are deeper tinted than in others. The lighter-coloured flowers rather surpass the darker ones in fragrance. In the spring of 1903 a form with yellowish blossoms was, under the name of Boronia megastigma aurea, given an Award of Merit by the Royal Horticultural Society, but it does not appear to have made its way into cultivation.

Boronia heterophylla is a far showier plant than the preceding, while it is also later in blooming, being, as a rule, at its best in March and April. It is of comparatively recent introduction, for though known to botanists for many years, it was first grown in this country from seeds sent to Kew by the late Miss North, the artist, in 1881. The resulting plants flowered in 1885, and this boronia was distributed by Messrs. J. Veitch and Sons, of Chelsea, a couple of years later. The flowers with which the main shoots are closely packed are globular in shape, and of a bright carmine colour. When in good condition a specimen of this boronia is very showy. The leaves vary a good deal in shape, hence the specific name of heterophylla, but, as a rule, they are slender and narrow. The blossoms of this species do not possess the fragrance of B. megastigma, but the leaves, when handled, give off a very unpleasant odour.

Boronia elatior is a more vigorous growing plant than either of the preceding, and one that forms an admirable succession to Boronia heterophylla. Of rather upright and free growth, B. elatior is more densely furnished with foliage than the others, and the leaves being pinnate and bright green in colour, it forms, irrespective of flowers, a decidedly ornamental shrub. The blossoms, which are of a drooping urn shape, are bright rosy-red in colour.

Other species include Boronia serrulata, an old-time favourite, which used to be considered a good test of the cultivator's skill. It is a plant of rather spreading habit, with curious trapeziform leaves, and rich rose-coloured flowers. Boronia alata, B. Drummondi, B. pinnata, B. polygalæfolia, and B. tetrandra may also be mentioned, but they are very seldom seen.

Boronias require much the same treatment as epacris, heaths, and other hard-wooded subjects; that is to say, the plants should be shortened back into shape after flowering, and then encouraged to make fresh growth by maintaining a genial atmosphere. Should the plants need repotting the best time to carry this out will be when the young shoots are about half an inch long. The soil should consist of fibrous peat and sand. Especial care must be taken to have the pots clean and effectually drained, while it is most essential that the new soil be pressed down very firmly, and that the old ball of earth is not buried deeper than it was before.

W. T.

## PRUNING ROSES.

After so many annual notes upon this subject, there can be little to add, and the following is simply a reminder rather than an elaborate instruction. Pruning is certainly one of the most important things in rose culture, and so there is no need to excuse repetitions of reference to it.

As I write, we are having wet weather after severe frost, which immediately followed an exceptionally mild winter, when many roses had not ceased growing, the consequence being a much greater quantity of soft, unripened wood than usual. So much so that the present frosts cannot fail to have punished them severely. There has also been early or continuous growth, and my chief object in noting this precocity is to warn readers against the temptation to prune earlier than usual. This should be resisted, and is among those who give due consideration to the danger of late spring frosts, with which we are visited upon so many occasions.

Early pruning means early growth from the buds left on the plant. All have noticed how persistently the top buds of any rose growth break first; and, if we make it impossible for this to be from any but the small number left after pruning, it stands to reason we shall be getting the growth too forward for average safety. Left unpruned, the top growth is really a great advantage, as it keeps the lower eyes dormant much longer, simply because those above have used the early sap. This is clearly seen among pegged-down roses; for, unless the sap is stayed from rushing to the top at once, we have a large number of dormant eyes below, which, if secured in a horizontal position, would break and produce by far the best flowers.

Nor would I be much inclined to prune earlier because of a mild March. Quite the end of the month, and the first week in April, have proved the most serviceable times with me, and no illusive genial weather will tempt me to prune earlier. We notice how very rapidly growth unchecked overtakes that which has been checked, and we obtain the former by later pruning than many practise.

How to prune is a worn-out subject, but I would like to say a word against leaving crowded growths, even among the long rods or trails of the weeping and rambling varieties. A smaller number, and these the best, will often give better results. It is also most essential that all wood upon this class of rose should be well matured.

Rosarian.

## GARDENS OF GORGEOUS COLOUR.

Colour is a greater factor in the creation of joy than is generally recognised; as years pass scientists tell us more and more of the influence of bright hues upon mental and even physical health, so the gardener who uses a bold palette when painting his pleasure grounds for the year may congratulate himself upon adding to the sum total of contentment and sanity. It is so easy to create a magnificent effect, a display that will arouse public enthusiasm and live in memory, simply by massing gorgeous colours. There need be nothing vulgar or garish, no inharmonious contrasts, no crudeness to jar upon the most sensitive taste, but the heart may be lightened, the eye charmed, the very soul upraised by the outspread perfectness of vivid tints.

One essential is to have a sufficiency of each hue employed. To blend many, in small patches, is successful only as yielding a curious effect, a kind of kaleidoscopic beauty, or one reminiscent of some rich stained-glass window through which the sun shines. This is a legitimate interest to create as a feature in a large garden, not as a method of planting the whole one, whether large or small. For example, if a six-foot wide border runs for a half-acre length against a gray fence, or old wall, there will be a grand show gained by employing not more than four colours in it. The back might be all massed with the royal blue of delphiniums, anchusas, cornflowers, and open glades of Phacelia campanularia and larkspurs of the new perennial dwarf type; in the next two-foot breadth could be varying groups of lemon, gold, and carmine, represented by chrysanthemums, sunflowers, and Coreopsis lanceolata and grandiflora, phloxes, hybrid pyrethrums, and godetias, while the foreground's two feet could show rose-pink and azure.

A glorious result can be gained by the unusual blend of violet, carmine, royal blue, and rose; if arranged in this order the harmony from a slight distance will be perfect. As a further extension of foreground mauve may appear, culminating in azure blue. When carmine and royal blue are mingled on a palette, or pale pink and azure, violet and mauve are produced respectively, hence the sympathy that all these gay colours possess, and their readiness to live happily together, when suitably situated.

For a still more striking border or bed royal blue, orange, amber, and scarlet can be used; again, in this order they are a treat for the artist's eye, or equally so if the amber comes next the blue. If the scarlet were in that position the effect could not fail to be crudely unpleasant. Pure lemon-gold is a perfect associate for blues, whether indigo, royal, or azure. By using it between these blues all may be safely employed near together. The clear yellow, of a lemon, not an amber shade, is offered by many chrysanthemums and sunflowers, the viola Ardwell Gem, the Iceland poppy, and the yellow carnation.

A gardener was once called upon to complete with scarlet zinnias and verbenas a bed in which carmine phloxes already reigned. For a while he felt in despair of ever achieving anything but a disastrously vulgar show, until the happy idea occurred to him of separating the antagonistic hues by a line of maroon, then one of orange. These last hues suit each other; the former subdues the garish shade of carmine, the latter softens down the scarlet into which it blends. The annual known as Bidens atrosanguinea, or the Black Dahlia, and the darkest scabious were the maroon flowers used; the orange was the African marigold, a line of French dwarf ones in front.

Whole borders of blue violet and orange, of red purple and amber, of deep rose and azure blue can be recommended as brilliant in the extreme. Vermilion is enhanced by the presence of masses of snow-white; magenta is suited by a carpet of cream-coloured flowers. M. H.

## APPLE GALLOWAY PIPPIN.

Many of the old-world apples have, with the progress in horticulture, and the introduction of improved varieties, almost disappeared from cultivation, and their one-time high position is now untenable, yet there were some that the very best of the newcomers could not easily displace. One of these is the variety named Galloway Pippin, which for several centuries has been extensively cultivated throughout the southern parts of Scotland. After many years' experience, during which it has been pitted against apples of great renown, I am inclined to think that, although it may be nearly equalled by some, yet for long keeping, and good qualities both as a culinary and dessert fruit, it is unsurpassed by any.

Strange as it may seem, after such a record, it must be admitted that at present fewer fruiting trees exist in its native province than has been the case since its excellence and adaptability to the climate and district were first recognised. How to account for this apparent neglect on the part of cultivators is difficult to explain, except that, having obtained possession of a healthy and fruitful tree, no thought was given to the raising of young stock to replace it when age and decrepitude slowly but surely advanced. In recent years some improvement in this respect has become more manifest, and young trees have been sought for and planted; but, as a rule, it is old and almost worn-out specimens that are encountered.

Locally, but more especially by persons well advanced in years, the variety is known as "Croft-an-righ"—[Dr. Hogg refers to it as "Croft-en-Reich."—Ed.]—derived, no doubt, from its early association with an old monastery that, together with its orchard, or croft, existed in close proximity to the county town of Wigtown, and upon the shores of the bay of that name. Whether it originated here as a seedling, or was introduced from some distant source by means of the monks, who were well versed in pomology, I cannot say.

Scarcely a trace of masonry of the old monastery marks the spot where this haven of rest formerly stood; and the glebe attached, wherein a few rugged fruit trees stood as late as the middle of the last century, is now a grass field, though its position can still be defined by the more luxuriant growth that tells of the higher fertility of the soil compared with other parts of the field. In mediæval ages this was a place of considerable importance, and was used as a halting place by Scottish kings and their numerous retinue when on pilgrimage from the Scottish capital to the Shrine of Saint Ninian (Whithorn Priory), a few miles distant.

To return, however, to the subject, it may be stated that the tree is a strong grower, and has a spreading habit which renders it very suitable for the formation of a stately standard. For such the crab stock should be used, but for garden purposes the paradise stock answers well, and, of course, earlier productiveness is thereby engendered. The fruit is large, deep yellow in colour after being stored for a few weeks, and is then of excellent quality for any purpose. As a culinary fruit it may be used from October onwards, but here it is seldom wanted until midwinter, except, perhaps, in seasons of scarcity, when, owing to paucity of other varieties, it is requisitioned earlier. From January until May it holds the place of honour both for cooking and dessert purposes; and, although connoisseurs might possibly object to its classification as a dessert fruit proper, the great majority of consumers have no compunction in the matter, and many prefer a firm, juicy, and highly-flavoured fruit to one that is quite the reverse of this.

The variety is not precocious in fertility, especially when grafted upon the crab stock, but this may to some extent be overcome by using the broad-leaved paradise stock instead; but those who can wait patiently for a few years might with advantage choose the former, where space for full branch development can be allowed. Several of our best and most fruitful trees here have, to all appearance, withstood storm and stress for a century—perhaps longer than this—and are yet pictures of health and vigour. **James Day.**

Galloway House Gardens, Garlieston.

## OUTDOOR PEACHES.

I have read with pleasure the recent article on the above subject by Mr. Alger Petts. I think he is doing good work by noting so clearly the requirements of peaches in the open. Few people will deny the fact that peach trees out of doors are most wretchedly managed in many instances. When we see the manner in which so many trees are trained, there is small wonder that peach culture on walls in the open has fallen into bad odour.

There are two points omitted in Mr. Alger Petts' article that I would like to draw attention to, points that most likely escaped his notice at the time. First, the management of the roots of the trees. Very often the peach trees are growing in a border with a southern aspect and the regular occupants of the border may be herbaceous flowers or vegetables. In any case, the crop, especially if the latter, will receive considerable manurial assistance, and if the peach roots are allowed to ramble at will in such surroundings the trees will make gross growth. The borders in front of the peach trees should be trenched every alternate year to within 4ft. of the wall. This will result in a quantity of fibrous roots being formed on the strong, and what would be otherwise fibreless, roots. Such a precaution as this will save the trees from gross growth, and its attendant consequences.

The second point I wish to note is that of supplying peaches with a sufficiency of water after the fruits have been gathered. This is a detail much more important to the future welfare of the trees than many persons think. Take, for example, such a summer and autumn as we experienced last year, and consider how a wall prevents the trees securing as much moisture at the roots as they would if growing in the open, and also think of the amount of moisture the bricks absorb from the soil. How can the roots perform their natural function of storing the required nutriment in the trees if they are denied a proper supply of water? This is a detail too often forgotten after the fruit has been removed from the trees until the time again comes round to expect another crop. E. M.

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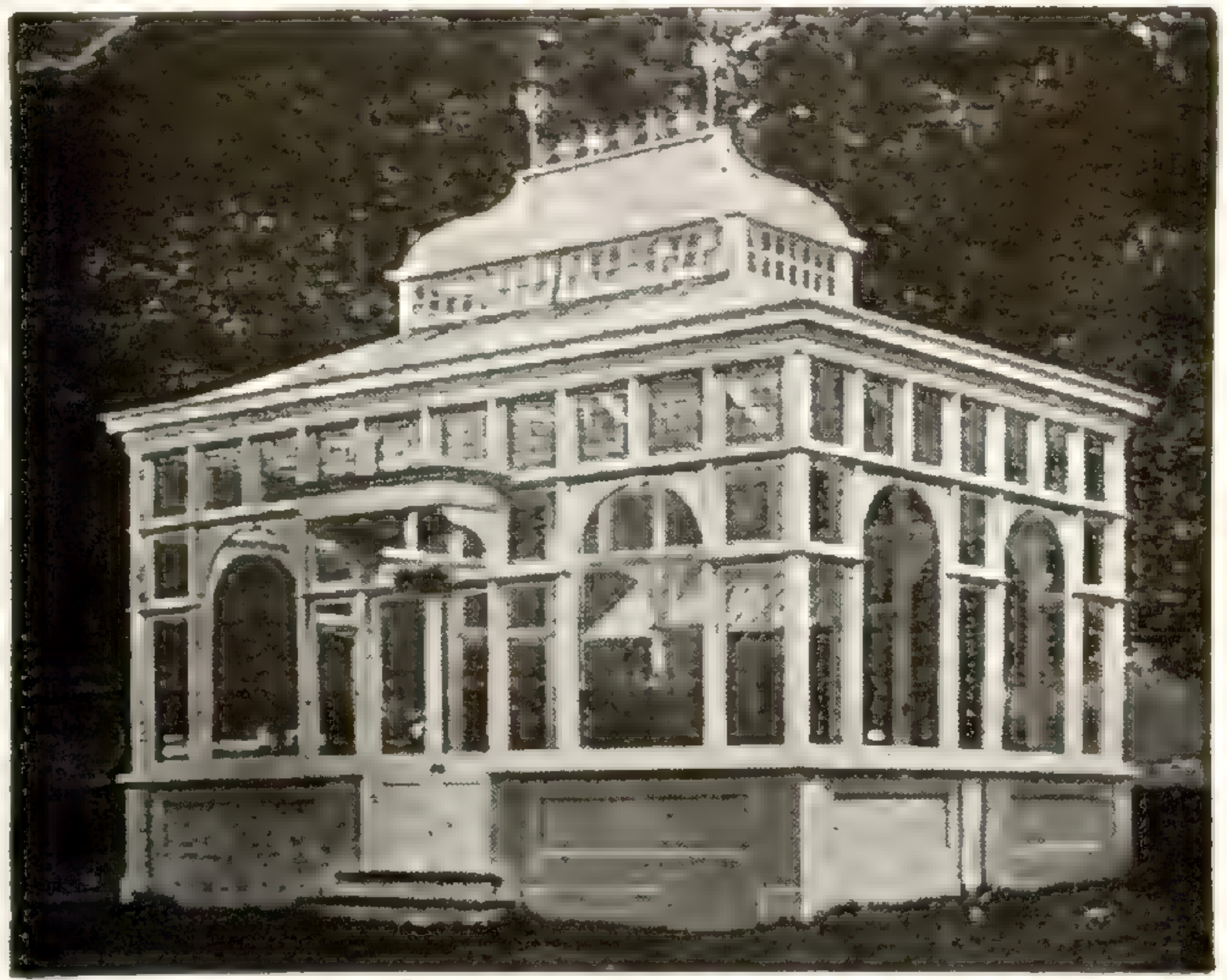

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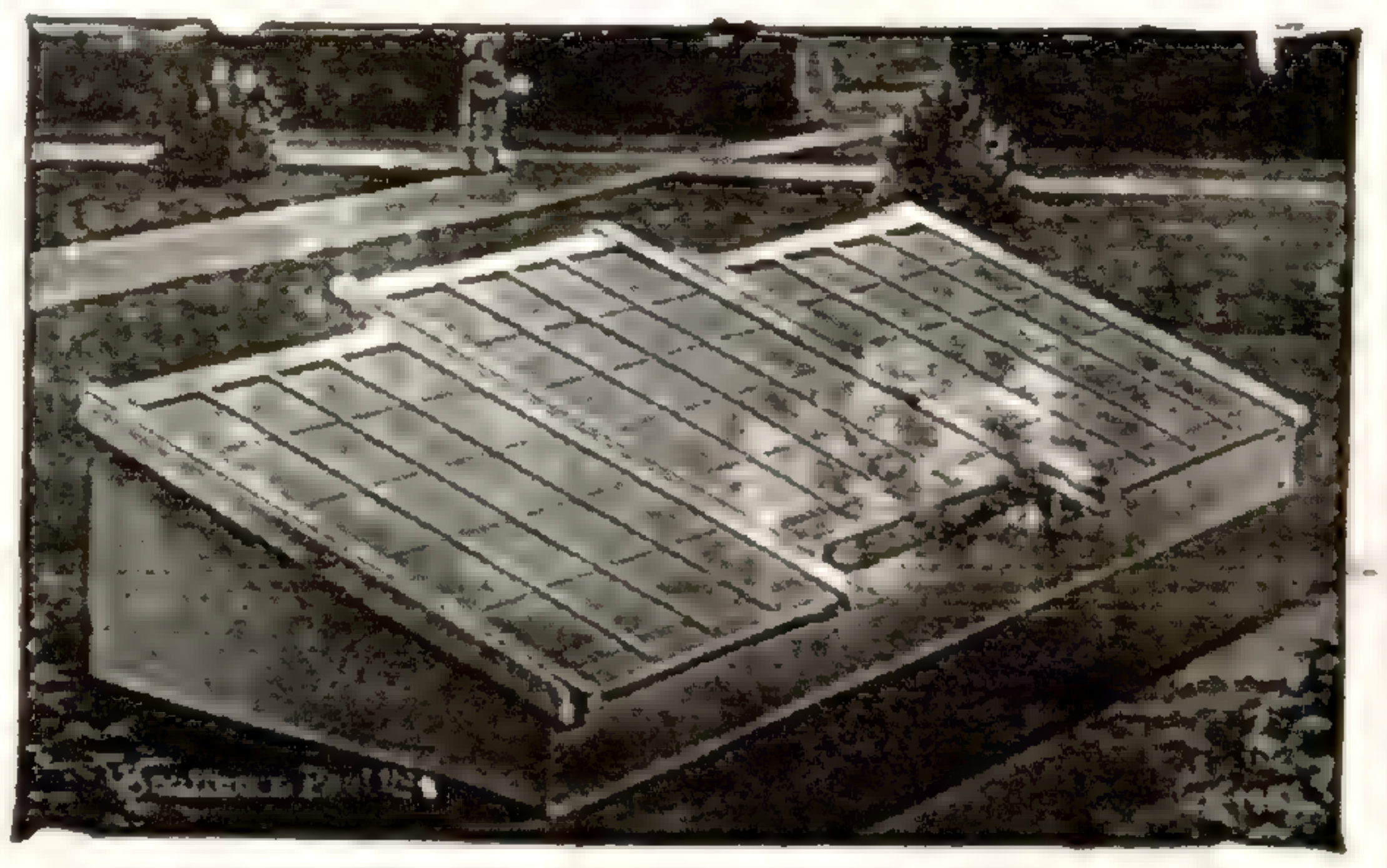

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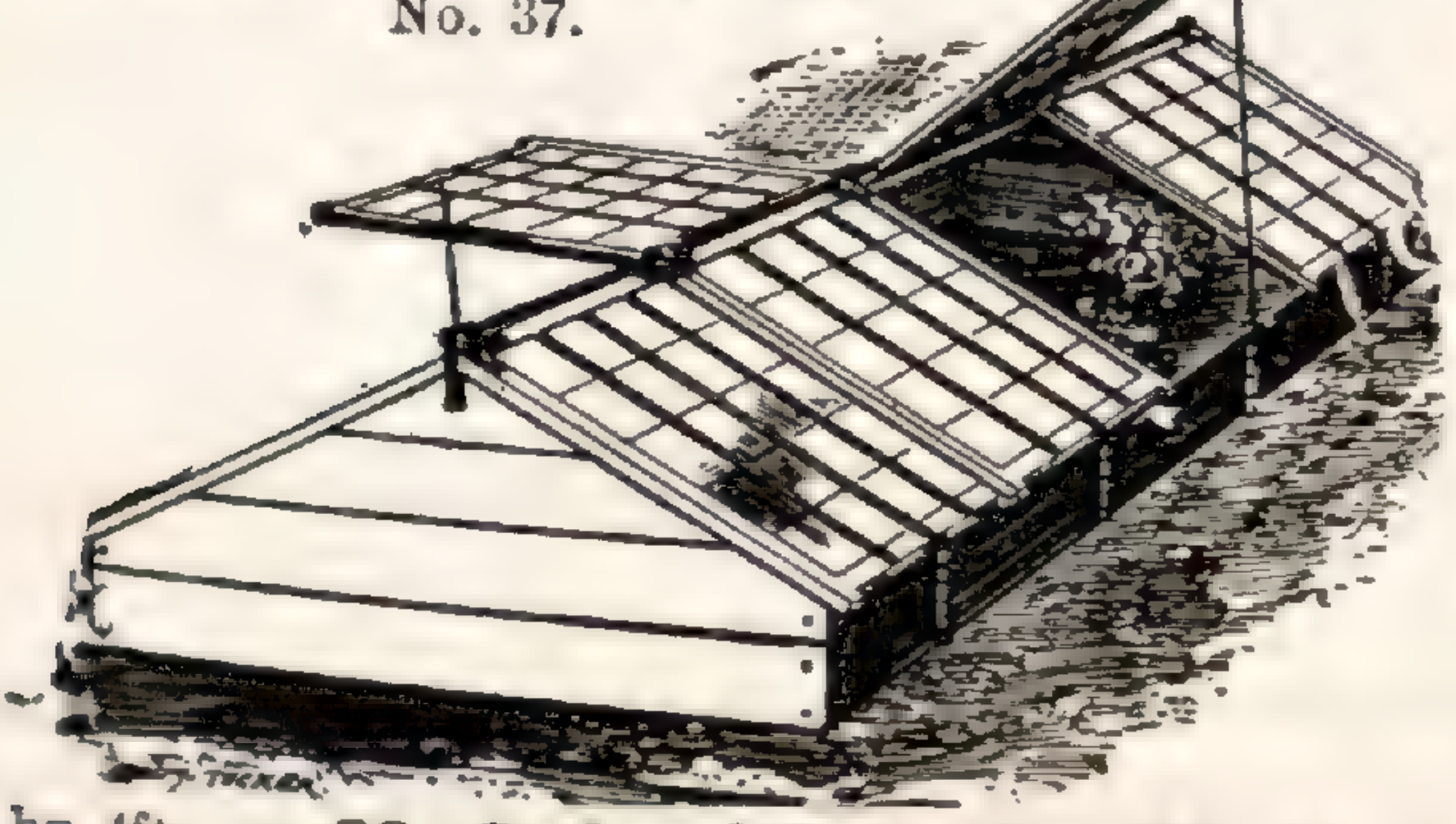

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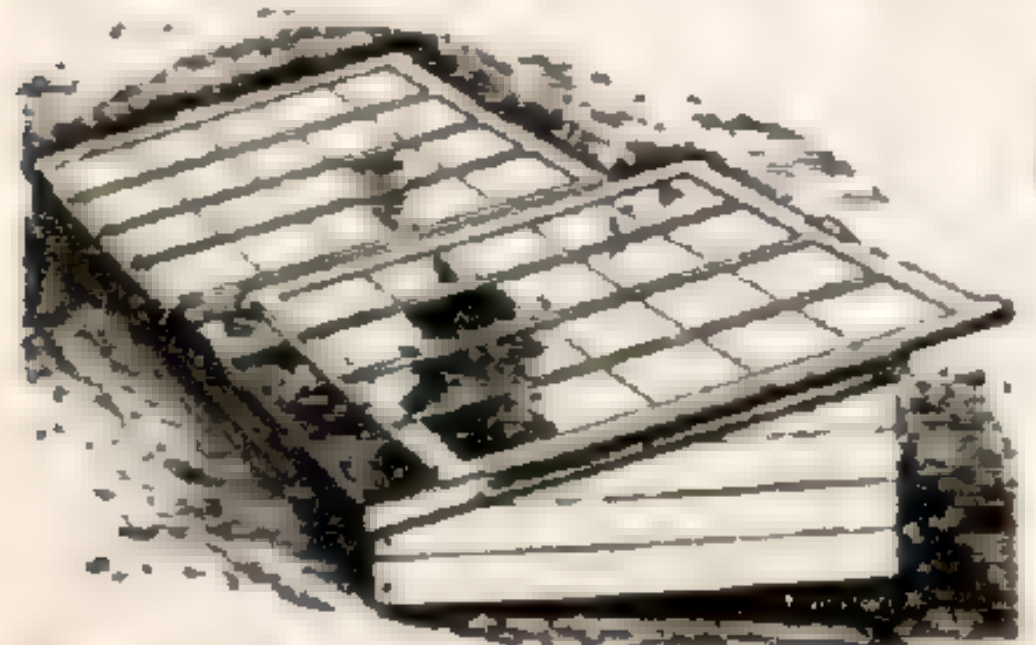

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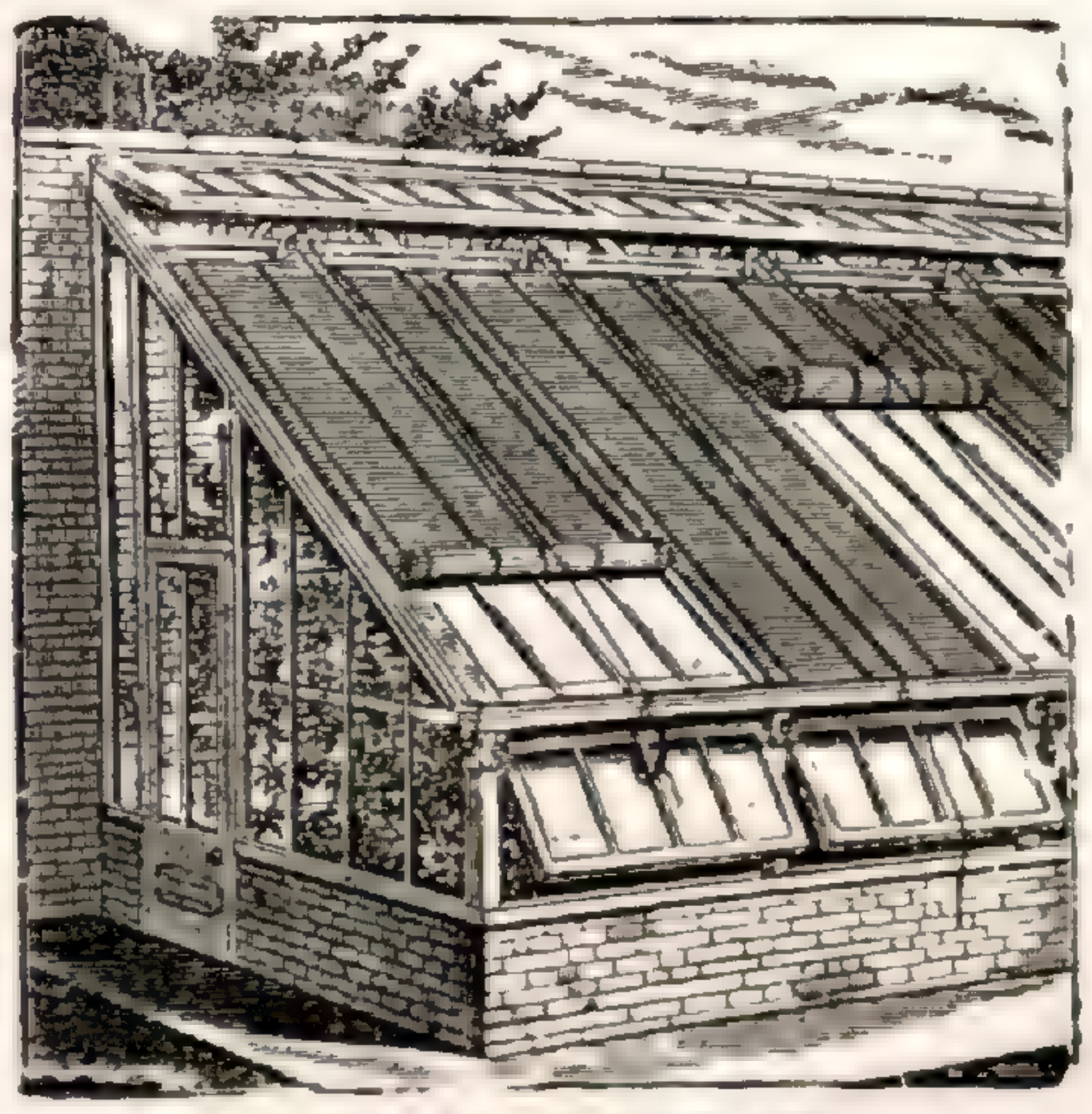

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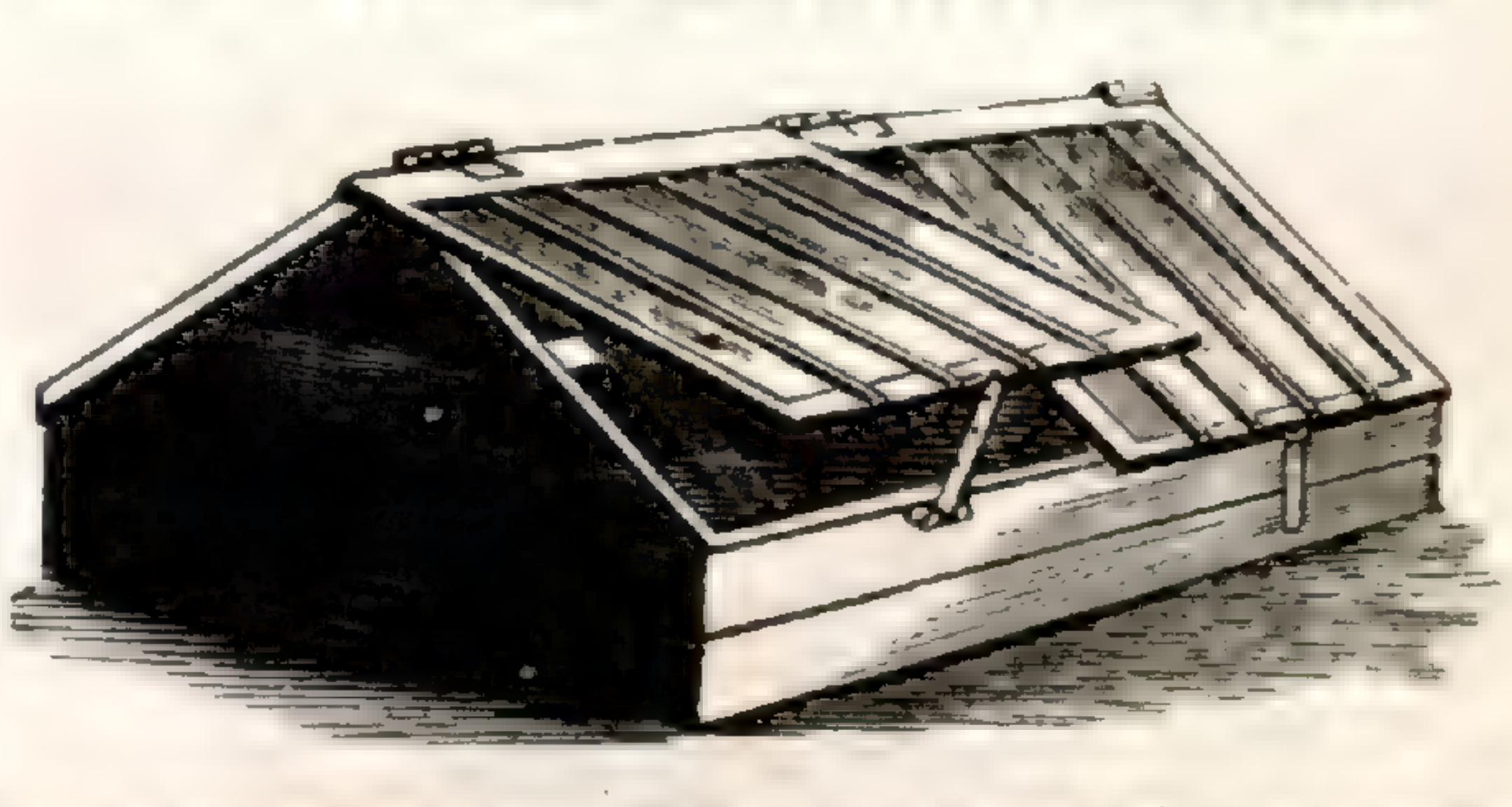

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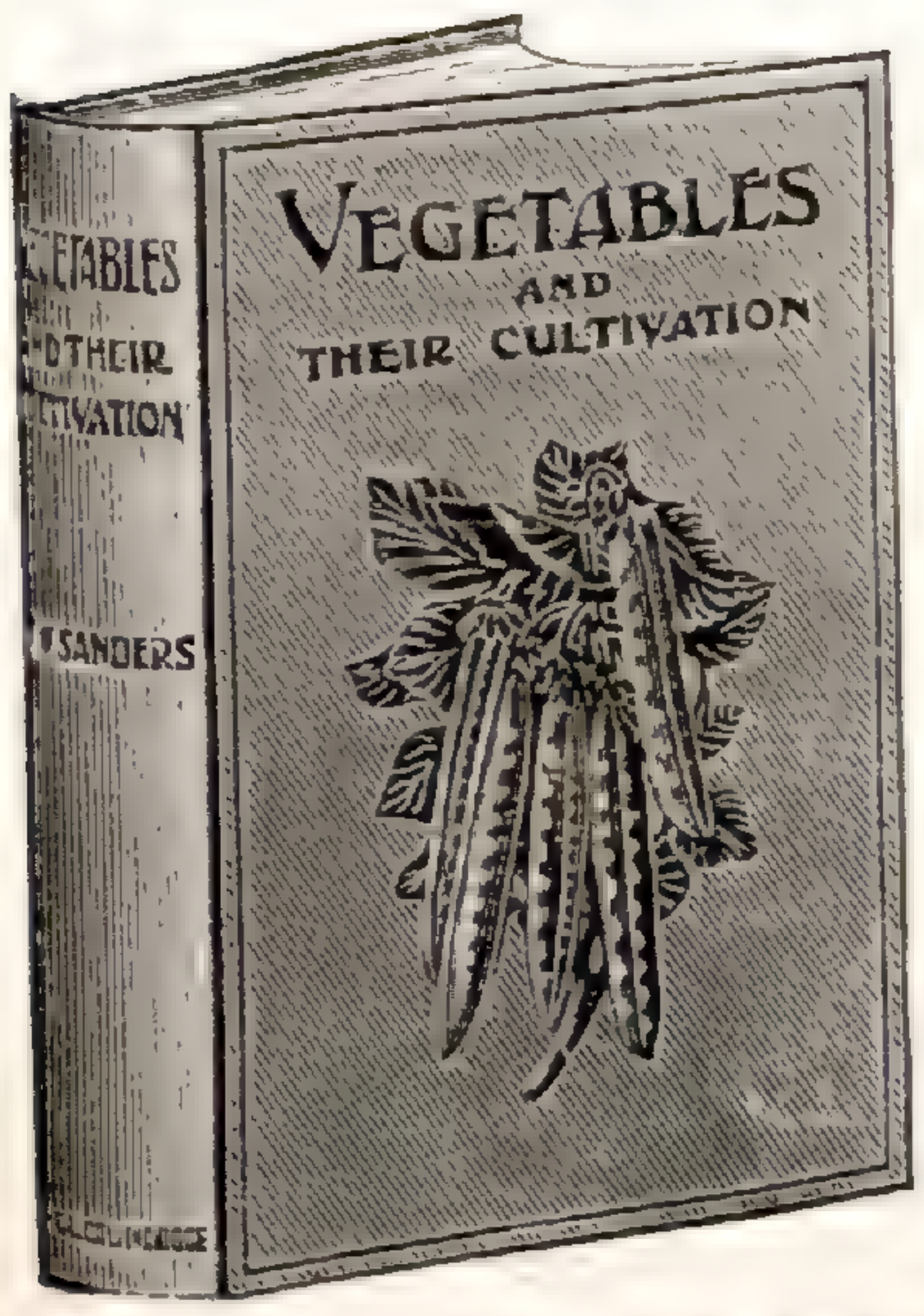

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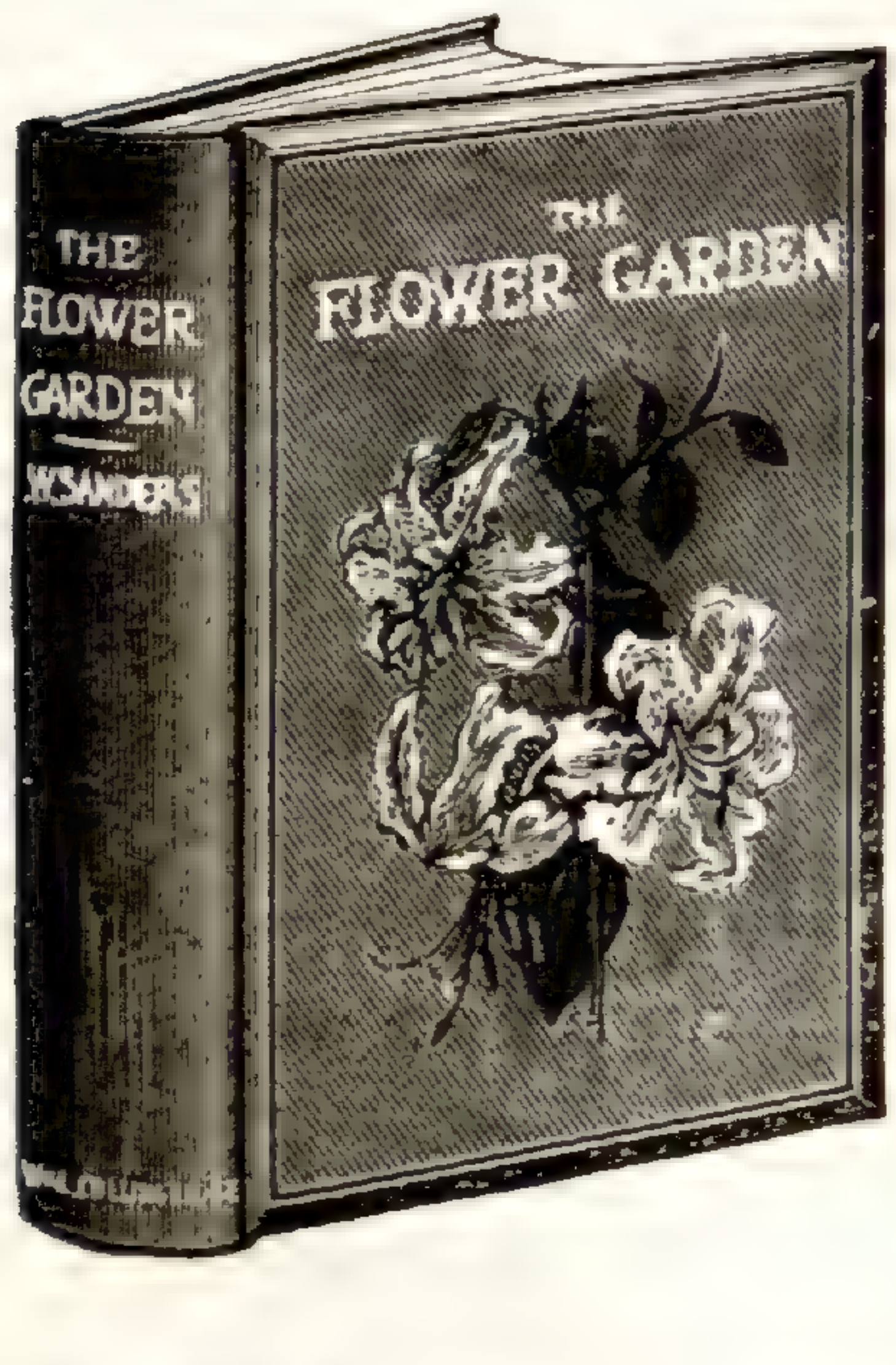

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# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

THE COOL HOUSES.—There are plants of odontoglossums, especially O. crispum and its hybrids, which for various reasons were not repotted in the autumn. These are now starting into growth, and any repotting they may require should be carried out when the young growths are two or three inches in length, and are seen to be pushing forth new roots. The sooner they are potted the better, as they will then become established in the new compost before the hot weather arrives. Undoubtedly, in many places, the abnormal heat of last summer was very trying to these orchids; but owing to the favourable winter we have just passed through, they should by the present ime have recuperated and be none the worse. Healthy plants will need but little disturbance, merely turning them out of their pots, cutting away any leafless and exhausted pseudobulbs, and picking out as much of the old compost as is practicable, in order that the plant may be placed in about the same sized pot as it formerly occupied. The compost in which I find these plants succeed is as follows: Equal portions of peat, polypodium, osmunda fibre, and sphagnum moss, with a fair sprinkling of half-decayed oak leaves, which should have been previously rubbed through a half-inch sieve.

POTTING.—One often hears many excuses put forward for the failure of some one or more plants, and in most cases the compost is blamed; but I am firmly convinced that the cause does not lay there at all, but is generally improper watering. All repotted plants should be placed together in a house, and be given extra shade. The newly-potted plants must be watered with care, and only sufficient must be given them to keep the moss alove until the roots are seen to be pushing through the new material. In gardens where only a few orchids are grown, to repot a plant is to end its days, and in most cases the end is attributable to excess of water, the old roots being decayed as a result. Those who grow odontoglossums indifferently will probably have noticed from time to time that the foliage has a decided tendency to become more or less marked, or spotted, and that the tips of the leaves decay, and have to be trimmed. These are sure signs that the existing conditions are too wet or too cold, probably both. This state of affairs is frequently brought about during winter when, instead of having slight warmth in the pipes with a little air on, the house is insufficiently ventilated, in order to keep the thermometer to the desired figure without turning on the heat.

PROPAGATION.—The back pseudo-bulbs of any varieties it may be desirable to increase the stock of, may be put into quite small pots, and treated as newly imported plants, and in most cases these will make new growth. Odontoglossum seedlings may also be potted as they require it. Odontoglossum Rossi, O. Cervantesi, O. Oërstedi, as they go out of flower, should be kept only moderately moist at the roots, and be allowed to rest as long as possible.

SOFT - ROOTING ODONTOGLOSSUMS must not be potted too firmly; pot rather lightly than otherwise, and avoid crushing the roots at any time. Keep a sharp search for insect pests, especially yellow thrip. At the least sign of it, fumigate at once with one of the approved preparations that are on the market. Slugs also must be diligently sought for, and destroyed.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

EUPHORBIAS.—Old plants of the species E. pulchellum and E. fulgens (Jacquiniæflora) that have been resting should now be placed in a moister atmosphere and higher temperature for the production of cuttings. Assuming that they were cut down to within a foot of their base immediately after flowering, no further shortening will be necessary; but if a greater length of stem was retained they may now be cut down to about that level, taking the precaution to apply styptic to the cut to prevent bleeding. The removed portions of stem make good material for cuttings when the stock is short; cut into lengths of a few inches, with a plump eye at the apex, and a straight cut immediately below a joint at the bottom, and insert in peaty soil with plenty of sharp sand added. The best cuttings will, of course, be produced from the ripened stems of the old plants later on, when growth has recommenced. Maintain a temperature of 70 degrees, rising to 80 degrees with sunheat. Very little water will be required beyond using the syringe frequently. Aim at producing short-jointed cuttings by keeping the stock near the roof-glass, and admitting air at the apex of the structure during bright weather. Take the cuttings with a slight heel when two or three inches long, and insert at once in sandy soil, and plunge in the propagating frame.

IXORAS.—Although these handsome plants are not so frequently met with as formerly, they are well worth a place where room can be given them. Repot any requiring it, using a compost of three parts fibrous peat, one of flaky leaf-soil, and sufficient sharp sand and nodules of charcoal to keep the soil open. As is pretty well known, ixoras delight in plenty of heat; indeed, it is hardly possible to accord them a too high temperature provided it is accompanied with ample humidity and a slight shade during the hottest part of the day during the season of active growth. Large specimens should have the long, straggling shoots shortened before new growth commences, and the cuttings may be inserted in sandy soil and placed in the propagating frame if young plants are wanted. Unfortunately, Ixoras are liable to attacks of mealy-bug and scale, and unless constant attention is devoted to keeping these pests down good results will not be obtained.

COLEUS.—The tops may be taken from the plants kept over the winter for stock, and inserted in any light soil where they will quickly emit roots at this season. These when well grown and highly coloured are very useful for house decoration during summer. In my opinion the most effective form of training is the pyramidal. To be successful in coleus culture, golden rules to observe are light rich soil, plenty of light, and no check to growth at any time.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

PEACHES AND NECTARINES. — The young growths on permanently planted trees will require to be carefully tied in when about four to six inches long. Care should be taken to select shoots which start from the base of the fruiting wood, and these should be tied in, to ensure a good quantity of fruiting wood for next season; no hard-and-fast rule can be laid down with regard to the number of young growths it is necessary to maintain, but sufficient care should be exercised, so that the number does not act to the detriment of the full development of medium-sized, well-ripened wood for next season. Every effort should be made to form an evenly-balanced tree, furnished with fruiting branches, equally distributed from the centre to the utmost limits. Gradually thin the fruits down to the required number, giving preference to those that take the lead in swelling, and are well placed. The borders will require copious supplies of clean tepid water, with occasional applications of diluted farmyard manure and some approved chemical fertiliser; damp down the paths and walls several times a day to maintain a moist atmosphere, frequently syringing the trees to keep the foliage clean. Admit air early in the morning—before there is any perceptible rise in the house temperature—which should be gradually increased as required; maintain a day temperature of 70 to 75 degrees with sun heat, allowing a night temperature of from 60 to 65 degrees. Damp down the paths and walls late in the afternoon with a weak solution of cow-manure, as this will not only materially assist the full development of strong, healthy foliage, but will also help to ward off the attacks of red spider. If red spider appears, the affected parts should be immediately dusted with flowers of sulphur.

CUCUMBERS.—Constant attention will be required to regulate and pinch the laterals at two leaves; the plants are making rapid growth with the advent of the lengthening days and increased sunshine. The shoots must be sufficiently thinned to allow plenty of room for the full development of the foliage. Cut all fruits when ready so as not to overtax the plants; give top dressings as required, using light rich soil, and water frequently with some farmyard liquid or artificial stimulants. Syringe the plants at least once a day, and damp down occasionally to maintain a moist humid atmosphere; admit air when possible, with a day temperature of 70 to 75 degrees, allowing a rise of 10 degrees with sun heat.

TOMATOES.—The lower bunches of fruits have set well, and are swelling away freely. Carefully attend to watering. It is not a wise plan to commence giving manurial assistance until more bunches of fruits have set, or otherwise there will be a development of too much foliage and soft sappy growths; remove all side growths as they appear. Carefully tie and train the plants to one stem, and admit air when possible, but in such a manner as not to cause any cold draughts. A day temperature of 60 to 65 degrees will be sufficient, with a night temperature of 58 to 60 degrees. Should white fly be troublesome, vaporise the plants on alternate nights for a week.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

BORDER CARNATIONS. — Carnations wintered in cold frames can now be planted out in their flowering quarters. If the soil is heavy and retentive, it should be given a good dressing of wood ashes, which may be lightly forked into the surface. Carnations are sometimes planted in groups in the herbaceous borders, but they look especially well in narrow borders of one variety. When numbers are grown they should be planted in breadths with an alley between every four rows. Allow 15 inches between the plants each way. Plant firmly, and give a good watering; they will then need little subsequent treatment until they are staked, except having the surface soil stirred occasionally with the Dutch hoe.

SWEET PEAS.—Those that were raised in pots under glass are large enough to be planted out at the first favourable opportunity, such as on a mild showery day. One pot will be quite sufficient to each clump. Place a few twiggy sticks around them at the time of planting, for these will to some extent afford protection as well as support. Should there be a spell of very cold winds, such as we sometimes experience in April, it will be necessary to protect with small spruce branches. A light sprinkling of soot round the plants will be an advantage. The present is a good time to sow sweet peas in the open ground, provided the soil is fairly dry, and can be broken down finely. A space of two inches between the seeds is necessary to obtain sturdy plants.

GENERAL WORK.—Attend to potting and pricking out the various subjects required for bedding purposes, and keep them near the glass to promote sturdy growth. Perennial lobelias that have been wintered in boxes are making new growth, and should be put separately into 48's, in which they will make good plants. Harden off pentstemons ready to plant out next month. Violas that were rooted from cuttings in the autumn may now be planted out where they are to flower. They are frequently used with good effect as a groundwork for rose beds, and planted beneath Japanese maples. If not already done, grass verges should be trimmed with the edging iron where necessary, and the lawns be kept well rolled, as this greatly facilitates the use of the lawn mower, which must now be brought into play every week. Ivy growing on walls needs to be trimmed, and can be cut back fairly hard, as it will soon become quite green again.—J. Gardner, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## Perpetual Flowering Carnation Society.

The exhibition held by this society at the Royal Horticultural Hall, Westminster, on Thursday and Friday, March 21 and 22, was an altogether good one. The arrangement of the show was a distinct improvement on previous efforts, while the number and quality of the flowers showed a marked advance. The officers and committee are to be congratulated upon the success of their efforts to popularise a beautiful flower. Among market growers and in large private gardens the perpetual carnation already holds a foremost position, but the amateur with a greenhouse is but slowly taking up the culture of these carnations, and we are glad the society that cares for the flower is encouraging these smaller growers.

### OPEN CLASSES.

Three fine displays, each arranged on a space 10ft. by 3ft., were staged, and the class compelled admiration. Foliage and foliage plants were admitted, and not fewer than twelve varieties had to be set up. The judges had no small difficulty in awarding the prizes, and eventually their decision placed Mr. W. E. Wallace, Eaton Bray, first for a bold, high arrangement of beautiful blooms of White Wonder, R. F. Felton, Marmion, Gloriosa, Scarlet Glow, White Perfection, Delight, Mrs. C. M. Ward, Winsor, and May Day, all associated with asparagus sprays; Colonel Rideout, Langley, second, with a rather flat arrangement of good blooms; and Messrs. Allwood Brothers, Wivelsfield Nursery, Haywards Heath, third.

There was only one exhibit of three vases of British Novelties, and this was from Mr. C. Engelmann, who won first prize with Carola, Lady Northcliffe, and Triumph, the latter a good crimson. Mr. W. E. Wallace led for American novelties with fine flowers of unnamed sorts.

For two varieties of market carnations, two dozen blooms of each, in boxes, and three dozen of each in vases, the premier award fell once more to Mr. W. E. Wallace, Eaton Bray, for lovely blooms of Gloriosa and Winsor. This exhibit won the Covent Garden cup. Three competitors.

The class for six vases of twelve blooms each, a split calyx to disqualify, brought out but one exhibit, and to this, from Mr. W. E. Wallace, was awarded the first prize of £5: the varieties staged were Delight, Scarlet Glow, Winsor, White Perfection, Rose Pink Enchantress, and May Day.

As usual there was a series of classes for twenty-five flowers of a variety or colour. Mr. E. Guille, Newport, led in the Enchantress colour class with Lady Meyer; Mr. Wallace coming second with Enchantress. For a variety of the Mrs. H. Burnett colour Mr. C. Engelmann scored with Lady Northcliffe; Mr. Wallace second with Delight; and Messrs. S. Low and Co. third with Baroness de Briener. Rose-pink varieties found Mr. A. F. Dutton, Iver, to the front with the fine pink Mrs. A. F. Dutton; Colonel Rideout second, and Mr. Wallace third.

Mr. Wallace scored in the Lawson class with Mrs. C. W. Ward, followed in order by Mr. C. Engelmann and Mrs. Collins, Heathfield Nursery, Swanley. White Perfection was the only variety in the white class, and this, from Mr. Wallace, merited the premier award. The scarlet class was more popular, and here Mr. Wallace led with the fine Scarlet Glow, and Mr. Usher, gardener to Sir Randolf Baker, Bart., Ranston, Blandford, was second with Britannia. Carola, shown by Mr. C. Engelmann, was the finest crimson, Mr. Wallace gaining second place with the same variety, and Mrs. Collins third with Harlowarden.

In the class for any other self variety, Colonel Rideout, Swanley, led with Mikado, and Mrs. Collins came second with Rose Doré. Mr. Engelmann set up the best vase of a fancy carnation, and showed the scarlet-flaked Fancy; Mr. Usher second. For a variegated variety not in commerce, Mr. Engelmann led with Hilda, which is somewhat like Lady Northcliffe.

### GARDENERS AND AMATEURS.

Mr. Usher won Messrs. S. Low and Co.'s cup for a vase of novelties, and Mr. Burnett's cup for a dozen blooms of novelties, but in neither case were the varieties labelled. For six of Mr. Burnett's novelties, Mr. Lloyd, gardener to Captain Wilner, Ewell Castle, Surrey, scored with Orpheus, Plato, Marmion, Mrs. Burnett, etc. Mr. Usher won the prize offered by Messrs. W. Wells and Co., and had a capital vase of White Wonder; Mr. Usher was also first for six blooms of Enchantress, and for six blooms of May Day.

In the rose-pink class Mr. Allan, gardener to Lord Hillingdon, Uxbridge, scored with R. F. Felton. Mr. Usher scored again in the Lawson class with Mrs. C. W. Ward, and was second in the white class with White Wonder, being the only competitor. In the scarlet class Mr. Usher had six fine flowers of Scarlet Glow, but he was second to Mr. S. F. Jackson, Danehurst, Epsom, for a crimson variety, Carola being the favourite flower. For any other self carnation Mr. Usher was to the front with Mikado, and Mr. Jackson second with Rose Doré. Mr. Usher's Marmion was the best in the fancy class, Mr. Allan coming second with Aurora. Mr. Johnston, gardener to Lord Burnham, Hall Barn, Beaconsfield, was also a successful competitor in this division.

Mr. J. H. Bruce, grower to Mrs. Bischoffscheim, Warren House, Stanmore, won Lord Howard de Walden's challenge vase for a group of perpetual carnations in pots, with a very fair exhibit, in which the flowers were a trifle small.

### SMALL GROWERS.

Some classes were provided for amateurs who employ a part-time gardener, and in the case of those residing upwards of fifty miles from London the flowers might be sent to the show and be staged by the committee. Some of the flowers were very good, especially those from Mr. T. H. Plowright, Windsor, and Mr. P. M. Patterson, St. Anne's-on-Sea; and Mr. F. S. Elgar, Salisbury, who secured the premier awards.

### FLORAL ARRANGEMENTS.

In the open class for a table decoration of carnations there were five competitors, and Mrs. A. R. Bide gained the first prize with blush flowers associated with asparagus and croton leaves; Mr. F. G. Bealing, Bassett, Southampton, second; and Mrs. A. W. Ruff, Sharnbrook, Beds, third. In a similar class open to gardeners and amateurs there were six entries, and here the first prize fell to Mrs. A. R. Bide, who had a combination of white and scarlet flowers—a trifle hard; Mr. Usher came second; and Mr. E. Guille, Newport, third. Mrs. Robinson and Mrs. Ruff each had good arrangements.

Messrs. R. F. Felton and Son, Hanover Square, were easily first for a basket of carnations with a splendid arrangement of Delight; Mrs. Hammond, Chelsea, second; and Mrs. A. R. Bide, Farnham, third. Mrs. Hammond led for a bouquet with Britannia, and she was first also with ladies' sprays and gentlemen's button-hole bouquets of carnations. Mr. Wallace scored for the best decorative vase of blooms with a charming arrangement of Delight; Mr. H. J. Dudney, Erith, second. Mr. Usher was awarded a second prize for a table of carnations suitable for a sitting-room; he had grand blooms rather heavily disposed.

### NEW VARIETY.

Mr. C. Engelmann, Saffron Walden, was granted an Award of Merit for his fine new large-flowered pink variety named Lady Northcliffe. It is a charming carnation, the exquisite pink colouring being laid over palest cream. The flowers are broad-petalled and carried on fine stiff stems.

### NON-COMPETITIVE.

Messrs. W. Cutbush and Son, Highgate, put up a bold exhibit of shrubs, daffodils, and carnations, the latter including Lady Meyer, Rose Pink Enchantress, Miss Winnie Hey, Winsor, and Rose Doré in good form. The display from Mr. C. F. Waters, Balcombe, included good vases of Miss Waters, Mikado, Mrs. Burnett, and Rose Pink Enchantress.

The largest exhibit, arranged across the top end of the hall, was from Mr. C. Engelmann, Saffron Walden, who had an enormous quantity of flowers, and set up large numbers of Lady Northcliffe, Salome, Triumph, Scarlet Glow, a fine lot of White Enchantress, the fringed Regina, Rose Pink Enchantress, Victory, Harlequin, the large crimson Carola, and other good things.

From Mr. Guille, Newport Carnation Nurseries, Shortgrove, Newport, came about a lozen large vases of the new light pink variety named Lady Meyer, which is evidently a free bloomer. Messrs. Young and Co., Hatherley, were also extensive exhibitors, and their light and elegant display included good vases of Carola, Mrs. Greswold Williams, Cheltonia, the buff Queen, Mrs. C. W. Ward, Rose Enchantress, and Britannia.

Mr. A. F. Dutton, Iver, Bucks, set up carnations in his usual artistic fashion in large glass vases, and presented good bunches of Scarlet Glow, Beacon, Niagara, Mrs. H. Burnett, Mrs. A. F. Dutton, Winsor, and Lawrence Enchantress. Mr. Bertie Bell, Castel, Guernsey, confined his attention to his new pink variety Coronation. Messrs. W. Wells and Co., Merstham, had a neat little exhibit of such good things as Wodenette, Dorothy Gordon, R. F. Felton, Mrs. C. W. Ward, and Scarlet Glow; a plant of Wodenette shown carried fourteen buds just ready to expand.

Mr. H. Burnett, Guernsey, put up an exhibit of splendid flowers, all large and bright; he had Marmion, Mrs. H. Burnett, R. F. Felton, Mikado, Mrs. Raphael, White Enchantress, Alma Ward, White Wonder, and Mrs. Felton, all grandly represented. Messrs. Stuart Low and Co., Enfield, were extensive exhibitors, and used bamboo stands freely for holding the flowers, with low bowls below; leading sorts on view were Lady Alington, Baroness de Brienen, Carola, the bright pink My Favourite, Samuel Gratrix, Alma Ward, and Beacon.

Mr. R. D. Day, Sutton Scotney, put up some very fine bunches of Mrs. Raphael, Belle Chinois, and Louise, varieties of Spanish irises, and these made a very attractive exhibit. Messrs. H. B. May and Sons contributed ferns in variety; and Mr. F. Cross, Nottingham, exhibited a collection of daffodils.

### MEDALS.

Large Gold.—To Mr. C. Engelmann, Saffron Walden.

Gold.—To Mr. H. Burnett, Guernsey.

Silver-Gilt.—To Mr. A. F. Dutton, Iver, Bucks; to Messrs. Young and Co., Hatherley, Cheltenham; to Messrs. Wm. Cutbush and Son, Highgate; and to Messrs. Stuart Low and Co., Enfield.

Silver.—To Mr. Guille, Newport Carnation Nurseries, Shortgrove, Newport; to Mr. C. F. Waters, Balcombe; to Mr. B. E. Bell, Guernsey; and to Messrs. W. Wells and Co., Merstham.

## East Anglian Horticultural Club.

A large muster of members assembled on the 13th inst. at the Boar's Head Hotel, Norwich, when the subject for discussion was "The Pruning of Fruit Trees, and the most suitable stocks upon which to grow them." This was opened in a most admirable manner by Mr. A. Reeves, manager of Messrs. Daniels Bros.' nursery, who also went to the trouble of bringing trees worked on various stocks to show root action, and by them he was also able to demonstrate various forms of training and pruning. As might be expected, the subject was one which lent itself to a spirited discussion.

A pleasing feature of the evening was the presentation of a framed photograph of members of the club to Mr. W. Laws, Norwich, who is leaving the district for the fruit-growing country of Kelowna, British Columbia.

The exhibits, both non-competitive and competitive, were a feature of the meeting; in the former section special mention is due to Mr. F. J. Endersby, gardener to J. H. Gurney, Esq., Keswick, for the best display of cyclamen ever seen at the meetings; to Mr. Frank Neave, Lingwood, for his array of large, brilliant-flowered polyanthuses; to Mr. W. Laws for carnations, which included a sport from Marmion, which has deeper coloured flowers; and to Messrs. Daniels Bros., Lim., for forced flowering shrubs.

## Bournemouth Spring Show.

The fifth exhibition of spring flowers was held in the capacious pavilion of the Winter Gardens on March 26 and 27. This show was an improvement on all previous ones, and the arrangement of the exhibits was all that could be desired. The entries were numerous, and the produce staged of very high merit indeed. The groups of miscellaneous plants, azaleas, pot plants of narcissi, tulips, hyacinths, and cyclamen, and the floral displays were very good, the table decorations being a charming feature.

In the class for a group of miscellaneous plants, Mr. T. K. Ingram scored with a very effective arrangement. With a palm in the centre, lilacs, crotons, staphyleas, liliums, narcissi, carnations, azaleas, and a neat edging of ferns, the arrangement and harmony of colour were especially good. The Park Nurseries (Mr. Welch, manager) were placed second, and this group was also a beautiful one. Lilacs, coleuses, carnations, lily of the valley, heliotrope, hydrangeas, and a neat edging of fibrous begonias, lightly arranged, made a beautiful arrangement. Messrs. Watts and Sons, Lim., were a good third.

Mr. Ingram won in the classes for Azalea mollis and A. indica. He also scored in the class for twelve pots of narcissi. Mme. Plemp, Emperor, and M. J. Berkeley were notable varieties staged. Mr. Pearce, gardener to Mr. Ormond, came second. Mr. Ingram had the best six pots of polyanthus narcissi and also the best twelve pots of hyacinths. Mr. George Garner second. Mr. Pearce scored with twelve pots or pans of tulips, Messrs. Ingram and F. G. Bealing being second and third respectively. The last-named had the best six pots of lily of the valley.

Mr. Usher, gardener to Sir Randolf Baker, Bart., staged a beautiful collection of cut blooms of narcissi in eighteen distinct varieties, Vanilla, Lucifer, Beauty, White Lady, and Mme. de Graaff being especially noteworthy. Mr. Ingram was a close second. Mr. Usher won in the class for five blooms, Magni-Coronati, one variety, staging Glory of Leiden. He also had the best five blooms Parvi-Coronati, showing Cassandra. Mr. Usher scored with violas and winter-flowering carnations. Messrs. Ingram, Kent, and Garner were first, second, and third respectively in the class for shower boquets.

Mr. Nippard, gardener to J. J. Norton, Esq., had the best six pots of cyclamen; Mr. Barge, gardener to Rev. C. H. Burrows, was a close second. Mr. Nippard had a beautiful group of miscellaneous plants arranged in a space of 9ft. by 6ft., second honours going to Mr. Pearce, and third to Dr. Crallen.

In the class for three specimen Azalea indica, Mr. Nippard staged the best in the show. Mr. Garner scored in the class for six hyacinths, six pots of tulips, and three pots of polyanthus narcissi; second honours going to Mr. Pearce. The last-named exhibitor had the best four pots of lily of the valley. Primulas, schizanthuses, deutzias, stellate cineraria, and spiræas were well shown. Mr. J. Taylor, gardener to Walter Child Clarke, Esq., had a grand specimen of imantophyllum in the class for any flowering plant not named in the schedule.

Non-competitive exhibits made a very fine display indeed, and the following awards were given by the council:

Gold Medals.—Messrs. Sutton and Sons, cinerarias, cyclamen; Mr. Maurice Prichard, alpine and rock plants; Messrs. D. Stewart and Sons, miscellaneous plants; Messrs. Charlesworth and Co., orchids; Messrs. Cartwright and Goodwin, narcissi.

Silver-gilt.—Messrs. J. Cypher and Son, orchids; Mr. Chamberlain, floral designs; Messrs. Stuart and Co., tree carnations; Mr. R. Prichard, alpine and rock plants.

Silver.—The Burton Hardy Plant Company, Messrs. Young and Co., tree carnations; Mr. Vincent Slade, zonal pelargoniums; Messrs. Watts and Sons, Lim.; R. Sydenham, Lim.; and Mr. J. Stevenson, Wimborne.

## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE.

MARCH 19.

PRESENT.—Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Canon Fowler, Rev. G. Engleheart, Messrs. J. O'Brien, W. Hales, C. T. Druery, J. T. Bennett-Poë, C. E. Shea, E. M. Holmes, R. Hooper Pearson, F. J. C. Chittenden (hon. secretary), and Rev. J. Jacob (visitor).

HYBRIDS WITH NARCISSUS CALATHINUS.—Rev. G. Engleheart made some remarks regarding the apparently very restricted distribution of this beautiful form of Narcissus triandrus. It is not apparently found outside a small area on an island in S. Europe, about 1½ degrees out of the latitude in which the type occurs on the mainland of Spain and Portugal. He also showed a beautiful and vigorous white hybrid between this and a variety of N. Leedsi, which might be likened to a hardy eucharis. Several of these white and vigorous seedlings had now been raised. The committee unanimously recommended a Certificate of Appreciation to Mr. Engleheart for his work with these hybrids.

OSYRIS ALBA.—Mr. E. M. Holmes showed roots of vines with the suckers of the parasite Osyris alba, a plant belonging to the Santalaceæ, attached to them. This parasite attaches itself to the roots of a large number of plants, over 60 hosts being known, but up to now it has not been recorded attacking the vine. The specimen came from Montpellier.

CAMELLIA TUCKIANA.—Mr. Bennett-Poë showed flowers of a seedling camellia, which he had raised from seed ripened in S. France, now flowering for the first time in a cold greenhouse. The flowers were single, about three inches in diameter, of a delicate pink, with numerous yellow stamens. It had been identified as Camellia Tuckiana.

BEETLES IN BEANS.—Canon Fowler showed French beans attacked by the beetle Bruchus lentis. This and other species of Bruchus are well-known pests of various species of bean and pea, boring holes into the cotyledons, but they appear rarely to interfere with germination.

ATHYRIUM WITH BULBIFEROUS SORI.—Mr. C. T. Druery showed portions of the fronds of Athyrium filix-fœmina plumosum with large numbers of small plants arising from the sori, each sorus producing several bulbils.

SNOWDROPS.—Mr. E. A. Bowles showed specimens and drawings of a double green snowdrop, in which both stamens and ovary were aborted and replaced by rather narrow, foliose segments. He also exhibited the double yellow form of Galanthus nivalis, and drawings of the white form of G. Elwesi recently shown by him to show that there were a few small green lines on the inner perianth pieces of that flower.

MALFORMED ORCHIDS.—Mrs. Taylor, of Bowerdens, Henley-on-Thames, sent two abnormal flowers from a newly-imported plant of Dendrobium Wardianum giganteum. In one of them two stamens of the other whorl had developed and become petaloid and bore pollen sacs on their inner edges near the base. In the other, the column bore at its apex three stamens, the usual one fully, the other two partially developed, and three lips, one inside the other (but the two inner and progressively smaller ones arising slightly to the right and left respectively of the normal one). Mr. J. Gurney Fowler sent an odontoglossum with four symmetrically disposed outer perianth pieces, six inner perianth pieces, including two lips, and two normal columns, side by side. The ovary also was double, but fused into one.

## National Hardy Plant Society.

A council meeting of the above society was held on Thursday, March 21, at the Hotel Windsor, the members present including Messrs. T. W. Sanders, W. Irving, J. Collingridge, E. H. Jenkins, R. Morton, J. Dickson, H. Hemsley, R. Pinches, F. Bouskell, and A. J. Macself. The principal business before the meeting was to report the progress in the arrangements for the society's first exhibition, to be held in the Royal Horticultural Hall, on June 19.

A preliminary schedule of classes has been distributed among members and hardy plantsmen generally, and, as promises of exhibits in these classes have been received from many of the leading trade growers and amateurs, it was decided to finally adopt this classification, and to offer medal awards in all classes rather than money prizes.

The Publications Committee was instructed to prepare the schedule for press.

A discussion arose as to the advisability of the society publishing a quarterly journal for free distribution among members, the matter being referred to the Publications Committee for consideration, to be reported upon at next council meeting.

Plants of Anemone pulsatilla rosea Mrs. Van der Elst were submitted to the council, the exhibitor being Mr. Van der Elst, Tottenham Nurseries, Dedemsvart, Holland. An Award of Merit was unanimously accorded this very pretty and decidedly distinct break in the popular Anemone pulsatilla.

The council were gratified that a goodly number of new members have been enrolled of late, and trust there will be a considerable increase prior to the date of the show, to which members will receive free admission.

## North of Scotland Horticultural and Arboricultural Association.

The fifth and penultimate meeting of this association for session 1911-12 was held in the Botany Classroom, Aberdeen University, on Wednesday evening, the 20th inst. There was a very large attendance, and Mr. John McKinnon, head gardener to the Earl of Aberdeen, at Haddo House, president of the association, occupied the chair. The first item on the agenda was a paper on "The Carnation," by Mr. W. B. Clark, head gardener, Balgownie Lodge, Aberdeen.

In his opening remarks, Mr. Clark referred to the border variety of the carnation as being the one most generally grown, and requiring considerable attention. He dealt with the cultural treatment of carnations, his remarks being of an eminently practical character. The propagation of carnations by means of cuttings and layering next engaged attention. August, he stated, was the best month for layering, and he recommended early layering and planting. Carnations, he maintained, were hardy plants, and resisted coddling. In the North of Scotland, however, they had everything to gain and nothing to lose by deferring planting until the spring.

Haphazard treatment of the carnation he deprecated, for they must have attention. Carnations cannot have too much sunshine, and they grow and flower best in garden soil, where he had always obtained the best results. Nothing better suited to the successful cultivation of the carnation could be found than a change of ground—in fact, ground that had grown carnations for some time should have a supply of fresh loam. Mr. Clark concluded with an admirable description of the foes of the carnation, and how best to deal with them. An animated discussion, taken part in by leading members, followed, dealing chiefly with the cultural difficulties growers of carnations have to deal. Thereafter a very warm vote of thanks was passed to Mr. Clark for his interesting and instructive paper.

Mr. James Ogg, head gardener, Skene House, Aberdeen, then read two short papers, one on "Cottage Gardening," and the other on "Garden Cities." He advocated greater attention being given to the encouragement of cottage gardening, and the awarding of prizes for the best gardens by local horticultural societies, apart from the awarding of prizes to particular flowers, fruits, or vegetables. Mr. Ogg's second paper gave a very succinct account of the origin and development of garden cities and of their value from an economic point of view.

In the discussion which followed, Councillor Esson, a popular member of the City Council, pointed out that Aberdeen might do more than had been done to follow out the garden city idea. Mr. C. S. France, retired forester, complained of the "barbarous ruination" wrought by the city authorities in the pruning of the trees in several of the avenues and drives within the city. Hearty thanks to Mr. Ogg for his papers, and the chairman for presiding, concluded a delightful evening.

## Bournemouth Gardeners' Society.

At the meeting held in the Avenue Assembly Room on March 19, Mr. J. J. Kettle, Violet Nursery, Corfe Mullen, Dorset, gave a very interesting and instructive lecture on "Violets, Past and Present." There was a good attendance of members, and a keen interest was taken in the lecture throughout.

Mr. Kettle is an expert cultivator of violets, both in the open air and under glass. His plants under glass are not grown extensively in frames, but in large houses; several acres are devoted to these fragrant flowers in the open.

The lecturer referred to the cultivation of violets in America, Central Asia, China, Japan, and the South of France, and quoted many references to the violet by authors both ancient and modern, making one to the fact that is recorded of a golden violet gem being bestowed as a reward of merit in Egypt two hundred and eighty years before Christ, which seemed to prove that this pretty, fragrant flower was grown and appreciated in the distant past.

Mr. Kettle said that violets did not like sun-heat beyond a certain degree, that the flowers only lasted three days under glass as spring advanced before they closed up. He had tried the plants in various kinds of soil; in almost pure sand, in stiff clay, and in a rooting medium chiefly made up of material from old mud walls. The result was that he could grow violets in almost any kind of soil, but he found out that for quality of bloom, a rather stiff soil, well drained, was by far the best. In a sandy soil there were plenty of flowers, but they were small. All plants grown in a rather poor soil must be fed, and fresh organic manure was the worst for them. Violets grown on ground manured with rather fresh strawy manure suffered most from attacks of red spider. The plants did well, he said, after crops of potatoes, and potash was essential to success. Mr. Kettle never entirely closed his frames, but placed them on bricks so that plenty of air passed under. In the case of the houses, front air was freely admitted, and abundance of water was given in winter and spring time. So treated there was not any trouble from damping. Runners, when layered, produced too many runners in turn, and he preferred the suckers which bore the finest flowers and fewest runners.

The lecturer recommended the varieties La France, Princess of Wales, Wellsiana for flowering during a long period, De Parma, and John Raddenbury. There was a good discussion, and many questions were replied to by Mr. Kettle.

An exhibition of cinerarias, imantophyllums, spiræas, and cyclamen was made by the following members: Messrs. Pearce, Evans, Heath, and Pardy.

Votes of thanks were heartily accorded the lecturer, and Mr. Evans, who presided.

## Broughty Ferry Horticultural Association.

The usual monthly meeting was held on the 19th inst. The President, Mr. James Bethel, presided, and Mr. Alex. Duncan, St. Andrews University Experimental Gardens, Dundee, gave a lecture on "Ferns." After a general survey of the family, and referring to the part played by it in the economy of nature, the lecturer dealt with the life-history, explaining, by the aid of diagrams and models, the interesting life-cycle of ferns. After a short but complimentary discussion the lecturer was cordially thanked.

The exhibits consisted of cyclamen from Mr. D. Eggo, Dunalistair Gardens; a vase of Rose Niphetos, from Mr. John Bell, Taypark Gardens; vases of iris, from Mr. D. K. Meston, The Lodge Gardens; Amaryllis, from Mr. Brown, Cambustay Gardens; and one seven-inch pot of Richardia æthopica, carrying eight flower spathes, from Mr. James Bethel, The Grange Gardens. On a vote being taken, it was found that the cyclamen were the most meritorious, and consequently Mr. Eggo was awarded the prize for the evening.

## Bristol Gardeners' Association.

The usual fortnightly meeting was held on March 14 at St. John's Parish Rooms, when Mr. A. Perry presided over a large attendance. This was the occasion of the annual visit of the Bristol Amateur Horticultural Society, and Mr. Board read an interesting paper on "The Sweet Pea." The lecturer favourably compared the sweet pea in colour and perfume to other well-known flowers. Speaking on cultivation, Mr. Board recommended sowing in pots, in February, and when two or three inches high pinching out the point in order to induce strong branching growths, and planting about the middle of April on well-prepared ground in shallow trenches. Cut out all weak growths, and apply a dose of nitrate once a week when in full growth.

For two pots of cyclamen Mr. Jennings was first, Mr. Springham second. A special certificate was awarded to Messrs. Garaway for three pots of King Alfred daffodil. Messrs. Scott and Woodward referred to the departure of the Chairman, Mr. A. Perry, to take up a new appointment at Northampton.

## Croydon Gardeners' Association.

At the fortnightly meeting of this association, which was held at the Sunflower Temperance Hotel on the 19th inst., Mr. John Gregory gave a most interesting lecture entitled "Life in our Ponds and Ditches," illustrated by an excellent series of lantern slides, mostly made by himself.

It was with many expressed regrets from his audience Mr. Gregory concluded his lecture, and the appreciative feeling from the members found vent in the proposal of a hearty vote of thanks to him.

Some excellent exhibits were staged by members of the society. Mr. T. Butcher had an attractive collection of forced flowering plants. Mr. W. Coles brought from Wallacefield Gardens, Coombe Road, four pots of hyacinths showing good culture; and Messrs. E. W. and S. Rogers staged four bowls of hyacinths and two of narcissi grown in moss fibre, these being typical of this popular way of growing them in indoor apartments.

## North of England Horticultural Society.

On the occasion of the spring exhibition, held by the North of England Horticultural Society at Bradford, Mr. W. F. Giles, of Messrs. Sutton and Sons, gave a lecture on "Salad Plants: British and Continental." The lecture was illustrated by some sixty lantern slides, and created much interest.

In the course of his lecture, Mr. Giles said that great interest had recently been aroused in this country in the various types of Continental vegetables and salad plants, doubtless partly due to the increasing numbers of visitors to the Continent. He considered, however, we were still a long way behind our Continental neighbours in the productions and use of salads, especially in the winter time. Even in the summer, immediately the temperature falls, so does the demand for salads. He was well aware that English private gardeners can, and do when required, produce tender salads during a considerable portion of the year, but as this produce does not, as a rule, find its way to the markets, it is not to be obtained by the general public. Until quite recently, however, few English market gardeners did much in the forcing of such things as lettuces, carrots, radishes, etc., with the result that the produce, being of slow growth, was often anything but tender.

On the Continent, however, many market gardeners make a speciality of producing "primeurs," that is, forced salads and other vegetables by the means of hotbeds, frames, and cloches, and it was the tender produce from these gardens which, obtaining such good prices in our markets in early spring, started the boom in England in what is now generally known as "French gardening." The Continental idea of a salad does not entirely agree with the British view of the same, for there one frequently has such things as potatoes, beans, cauliflowers, and other vegetables suitably dressed and served up.

Mr. Giles explained in detail the methods adopted by the French maraicheres in making up the hotbeds and growing the various vegetables by means of frames and cloches, pointing out that quick growth induced by the hotbeds, accompanied by copious waterings, was the secret of producing the tender crops. The French gardener usually has three or four crops growing together, but in different stages of growth. Radishes and carrots are usually sown together, and the same beds are then planted with lettuces and cauliflowers, and by the time the radishes and lettuces are cleared (these being the quickest-growing crops) the carrots and cauliflowers are well established, and making good growth. The hotbeds are never vacant all the season.

Mr. Giles illustrated the special way in which early crops are grown in Holland, also salads in Italy, and fully described the methods of culture at Brussels for the production of witloof. He mentioned the fact that Continental salads were usually prepared with oil, which is often at first disliked by many English people, but that once the taste for it is acquired the salads are much more enjoyed. He described the correct Continental method of preparing a salad, which should always be served freshly made; lettuce, if washed, should be dried with a soft cloth, the leaves should either be put into the bowl whole or torn, and no steel knife should touch them. Oil and vinegar are used in moderate quantities, and additional flavouring is secured by adding small quantities, finely chopped, of some of the various plants he had referred to. The great art of preparing a salad is to so judiciously mix the ingredients that the taste of one does not overpower the remainder. They should fall into their places like notes in music, in which there is nothing harsh or grating.

Besides dealing with all the salad plants usually grown in England, such as beet, cucumber, tomato, celery, radish, lettuce, endive, onion, cress, etc., he illustrated and fully described, amongst others, the culture of chicory, witloof, blanched dandelion, celeriac, purslane, tarragon, chervil, pimpinella, sorrel, chives, mercury, orache, and poiree, all of which are used in considerable quantities abroad in the preparation of salads.

In addition to these, the frugal French and Italians gather almost anything green and tender, and use them as salads, such as the tops of nettles, leaves of wood sorrel, cuckoo-flowers, scurvy grass, nasturtiums, and wild cress, besides the shoots of hops, of vines, and asparagus; and even the pods of young peas are sometimes used.

Mr. Giles did not consider all the Continental plants he had referred to were worth cultivating generally in this country, but thought many things were well worth greater attention here than is now given to them.

### Reading Gardeners' Association.

The fortnightly meeting of this association was held in the Abbey Hall (kindly lent by Messrs. Sutton and Sons) on Monday, when, notwithstanding another very wet evening, there was a good attendance, the President occupying the chair. The lecture for the evening was delivered by Mr. H. Wilson, The Gardens, Lower Redlands, one of the association's oldest members, the subject being "How to Maintain a Supply of Vegetables Throughout the Year." Although the culture of vegetables has been rather freely dealt with at comparatively recent meetings, Mr. Wilson gave a thoroughly instructive paper on the production of an adequate and continuous supply for the whole twelve months of the year. A prolonged and highly interesting discussion followed the conclusion of the lecture. On the proposition of the President, Mr. Wilson was accorded a hearty vote of thanks.

Mr. F. Townsend staged a large and very beautiful collection of forced narcissi from the vice-president's gardens at Hillside, which was greatly admired by all present.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| 1912. MARCH 17 TO MARCH 23. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Mar. 17—Sunday ...... | — | 45 | 44 | 46 | 41 |
| ,, 18—Monday ...... | 0 12 | 43 | 41 | 46 | 38 |
| ,, 19—Tuesday...... | 3 30 | 40 | 39 | 49 | 37 |
| ,, 20—Wednesday.. | 4 48 | 42 | 39 | 47 | 34 |
| ,, 21—Thursday.... | 3 30 | 47 | 46 | 53 | 32 |
| ,, 22—Friday........ | 2 0 | 45 | 43 | 50 | 44 |
| ,, 23—Saturday..... | 0 6 | 42 | 41 | 51 | 39 |
| Means .. | (total) 14 6 | 43 | 42 | 48 | 38 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS |
|---|---|---|---|---|---|
| 1912. MARCH 17 TO MARCH 23. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Mar. 17—Sunday ...... | 0·19 | 45 | 45 | 46 | 39 |
| ,, 18—Monday ...... | 0·18 | 45 | 45 | 46 | 28 |
| ,, 19 Tuesday...... | 0·03 | 44 | 45 | 46 | 29 |
| ,, 20—Wednesday.. | 0·19 | 43 | 44 | 46 | 26 |
| ,, 21—Thursday.... | 0·11 | 42 | 44 | 46 | 23 |
| ,, 22—Friday........ | 0·09 | 44 | 44 | 46 | 37 |
| ,, 23 Saturday .... | 0 26 | 44 | 44 | 46 | 29 |
| Means .. | (total) 1·05 | 44 | 44 | 46 | 30 |

Thunder and lightning on Thursday and Friday afternoons, March 21 and 22.

## ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.

### The Orchids.

As the time for holding this great exhibition draws near, it becomes possible to obtain some idea of the exhibits that will be displayed in the different sections. The scope of the schedule is so wide that provision is made for no fewer than 428 classes; many of them of a character to test the capacity of the most redoubtable exhibitor. The orchid classes alone number 32, and the entries show that there will be competition in most of them.

There are two entries in the amateurs' class for the best and most varied group of orchids, arranged in a space not exceeding 500 square feet. These exhibits will occupy 1,000 square feet, and there are two valuable cups to be awarded to the competitors. In the nurserymen's class for similar groups there are four entries for Sir George Holford's cup; there will therefore be nearly 2,000 square feet of orchids in this class.

Those who profess to despise hybrid orchids in favour of the natural species and their varieties, will be interested in class 68, in which nurserymen will compete for the best and most varied group of species, and varieties of species, arranged in spaces not exceding 200 square feet. Liberal provision, however, is made for the showy hybrids, which are due to patient and skilful cross-breeding, carried out in British and foreign collections, Baron Bruno Schröder's presentation cup being offered for the best group of hybrids occupying a space of 200 square feet.

There is one entry in an open class for a group of the resplendent lælias, cattleyas, and brasso-lælias—varieties and hybrids—in a space of 100 square feet; this exhibit will be amongst the most showy. More numerous entries are forthcoming in a class for the same type of plants where the specimens are limited to 25, and again where the number must not exceed 12. The effect of the scarlet Cochlioda Noezliana is manifest in the more brightly-coloured hybrids of odontoglossum, and it is hoped that the exhibit will show what genera and species have been crossed with this gay little gem. Such information would be valuable, not merely to specialists, but to all interested gardeners.

Then there are classes for specimen orchids in collections of 100 specimens, and others in which the specimens are limited to 50, 12, and 6. There will be keen competition for the silver cup offered for the best specimen orchid in the show. One exhibitor will contribute a group of orchids in which the interest is botanical rather than decorative. The visitor will here be able to see the wonderful forms and devices exhibited by the different flowers, illustrating the numerous ways by which the important process of fertilisation is brought about, necessary for the perpetuation of the species.

We have as yet referred only to competitive orchids, but these will not exhaust the exhibits of these marvellous flowers, for some of the most able amateurs and nurserymen will confine their efforts to exhibiting honorary collections. For instance, Sir George Holford, K.C.V.O., C.I.E., is expected to exhibit the largest group of orchids an amateur has ever shown in this or any other country, and the excellent quality of the plants may be judged by previous exhibits from the Westonbirt collection.

It is a notable fact that in the orchid section the number of entries from foreign orchidists is very nearly one-half the number received from Britain. The exhibitors of orchids will be as follows:

Messrs. Armstrong and Brown, Tunbridge Wells, Kent.
Mr. J. Birchenhall, Alderley Edge.
Messrs. Charlesworth and Co., Haywards Heath.
Sir Jeremiah Colman, Gatton Park, Reigate.
Messrs. J. Cypher and Sons, Cheltenham.
Mr. Harry Dixon, Spencer Park Nursery, Wandsworth Common.
Mr. J. Evans, Manor House, Key Green, Congleton.
Mr. J. Gurney Fowler, South Woodford.
Messrs. Hassall and Co., Southgate, N.
Lieut.-Colonel Sir G. L. Holford, Tetbury, Gloucester.
Mrs. Willie James, West Dean.
Messrs. Cowans, Lim., Gateacre, Liverpool.
Messrs. Stuart Low and Co., Enfield.
Mr. E. V. Low, Haywards Heath.
Mr. J. MacCartney, Bolton.
Messrs. Mansell and Hatcher, Rawdon, Leeds.
Mr. F. Menteith Ogilvie, Oxford.
Mr. P. Ralli, Epsom.
Mr. C. F. Raphael, Shenley.
Mr. J. Roberts, Rotherham.
Mr. J. Robson, Altrincham.
Mr. Lionel de Rothschild, Acton, W.
Colonel J. Rutherford, Blackburn.
Messrs. Sander and Sons, St. Albans.
Mr. F. Wellesley, Woking.

### Foreign Exhibitors.

M. G. Arends, Nurseryman, Ronsdorf, Barmen.
M. E. Dietrich, Château du Val Duchesse, Bruxelles.
M. Graire, 5, Rue St. Fuscien, Amiens.
M. C. Jules, Hye de Crom, 8, Conpure, Gand.
M. F. Lambeau, Rue du Fosse aux Loups, 39, Bruxelles.
Mr. W. A. Manda, South Orange, New York.
M.M. Maron et Fils, Brunoy, France.
M. G. H. Abeken Müller, Scheseningen.
M.M. A. A. Peeters et Fils, Ancienne Chaussée de Meysse, Laeken, Bruxelles.
Dr. E. Regel, Botanic Garden, St. Petersburg.
M.M. A. H. and L. Vincke, Scheepsdaele, Bruges.
M. Ch. Vuylsteke, Loochristi, Gand.

This great exhibition will take place in the spacious grounds adjoining the Royal Hospital, Chelsea. His Majesty the King will open the exhibition in person at noon on May 22, and it will remain open until May 30.

### Invitations to Jurors.

Invitations have just been issued to upwards of 350 specialists in every branch of horticulture to officiate as jurors at this great show. In awarding the prizes, British judges in every group will have the assistance of one or more foreign colleagues.

R. HOOPER PEARSON,
Hon. Press Secretary.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, April 2.—Royal Horticultural Society; Narcissus Committee meets at 11.30 a.m.; Fruit, Floral, and Orchid Committees meet at 12 o'clock; Lecture at 3 p.m., on "Tender Plants for a Warm Corner" by Mr. R. Irwin Lynch, M.A.; Scientific Committee at 4 o'clock.
Scottish Horticultural Association.
THURSDAY, April 4.—Manchester Orchid Society.
SATURDAY, April 6.—French Horticultural Society of London.
TUESDAY, April 9.—Weybridge Horticultural Society's Monthly Meeting.
WEDNESDAY, April 10.—Edinburgh Spring Show; two days.
Kingsbridge Daffodil Show.
East Anglian Horticultural Club
THURSDAY, April 11.—Cornwall Daffodil Show, at Truro; two days.

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# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

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"JACK" CARNATIONS.—M. N. G., Beaconsfield: Please tell me if it is possible to distinguish genuine named carnations from frauds from the appearance of the plants at this time of the year? I was persuaded to purchase some strong-looking plants from a stranger last week, and I am now told by a friend who had a similar experience last year that I have been "had," and that my purchases will turn out to be "jacks," or singles only.—We very much fear that your friend is right, and that the very strong plants purchased will give you only worthless single flowers. You may be forgiven, as an amateur, for once falling into this old trap laid for the unwary. These "jacks," as they are known to market growers, are grown for sale by, apparently, not over-scrupulous growers; they are purchased by costermongers chiefly, who often attach labels bearing the names of well-known carnations, and so find a ready sale for their wares among amateur gardeners. We have frequently urged our amateur readers not to purchase carnation plants from hawkers, but to do so from those specialists and nurserymen who advertise in our columns, and who have everything to gain by supplying good plants of first-rate varieties. The price will, of course, be higher than that paid to the hawker, but there will be a pleasurable return for the money expended instead of great disappointment. We are glad you have been interested in our articles on carnations.

OUTDOOR VINES.—B. J., Tavistock: Kindly tell me which are the best varieties of grapes to plant in a sunny position out of doors, against a wall?—Everything depends upon the situation. Black Hamburgh ripens out of doors under exceptionally good circumstances, while Royal Muscadine, Reine Olga, Black Cluster, and Gamay Noir are all likely to give very fair results.

LIME AND SOIL FERTILITY.—A. R., Notts: As an old reader of the "G.M.," I should be glad of your opinion regarding the following matters: I have been reading "The Chemistry of the Garden," by H. H. Cousins, and another book on manuring, by R. A. Berry, F.I.C., and am convinced that a knowledge of chemistry as applied to gardening is absolutely necessary if one is to cultivate crops in the best possible manner. For instance, one must know the composition of the soil one has to deal with. I have been making a few tests of our garden soil with muriatic acid, and find it contains no lime. Mr. Cousins says that chalk, or lime, is the chief basis of fertility, and without it successful results cannot be obtained, nor can the soil be brought into a high state of fertility without its help. The soil here is light, over gravel, and has never been liberally manured. What should be done with it? I have also a heap of light turfy soil, and it does not show evidence of a particle of lime by the acid test. Last season I grew tomatoes in this material, and they did badly, and were a great disappointment. Nearly all plants potted in it did badly. Having a heap of clay near by, I tested this, and found it respond to the test for lime, and so I mixed two parts of this with one part of the light, limeless soil, and have found that geraniums and young tomatoes are doing very well in the mixture. Now, what should I do to make the light turfy soil fertile?—Lime sweetens soil by neutralising organic acids, and it combines with the soil ingredients in such a manner as to set free the food materials that would otherwise remain unavailable to the crops. Lime by itself will not improve a poor, light soil, because the latter contains so little decayed organic matter, and it is upon this that lime acts so usefully. Add about half a bushel of lime to the square rod of ground, and when it is slaked fork it in, a few weeks before planting or sowing. Put in a summer crop, heavily surface-dress the ground with old manure, charred garden refuse, decaying leaves, and other matter that will provide humus. In the winter this dressing can be dug in. It would also be a good plan to follow the summer crop with one of clover or tares, this to be dug in later on as a green manure. In the case of the turfy soil for potting, you have practically answered your own question, because the addition of a heavier medium containing lime has already improved matters. Make up a stack of soil, consisting of alternate layers of light soil, cow manure, and heavy soil, and let all remain under a rough shelter for a few months; then chop down, mix well together, and add about a half pound of lime to each bushel before use. Old plaster rubbish, broken fine, would do instead of lime.

STEPHANOTIS SEEDLING.—E. R. B., Rugby: In our garden we have a plant of Stephanotis floribunda carrying a seed pod which is like a green plum, but about the size of a turkey's egg. Could you tell me if it is a rare thing for a stephanotis to produce seed pods in England, as I do not remember having heard of such a thing before? Should I let the pod remain on the plant, or cut it, and place it on a shelf this summer to ripen?—It is by no means a common thing for a stephanotis to form a seed pod; but there are many instances of such an occurrence, so that it can hardly be considered rare. Allow the seed vessel or fruit to remain on the plant until it shows signs of dehiscing or splitting, when it may be cut down and placed on a sunny shelf to completely ripen. Place a small piece of netting around the seed pod and tie it to the wire above, to guard against accidents.

SIX HONEYSUCKLES.—C. G. H., Bath: Will you please name half a dozen good climbing honeysuckles for a sheltered position?—Six good kinds are: Lonicera caprifolium major, L. etrusca, L. japonica aureo-reticulata, L. Periclemenum, L. flava, and (if the soil is light and the position warm) L. sempervirens.

MIXING MANURES.—A. C. W., Hereford: I have been told that it is wrong to mix nitrate of soda with superphosphate or guano. Is that right?—Yes; nitrate of soda should not be mixed with superphosphate, dissolved bones, or guano, because such mixture would quickly become a sticky mass, difficult to sow, and there would be a considerable loss of nitrogen. Sulphate of ammonia should not be mixed with a manure containing free lime, like basic slag, because of the loss of nitrogen that would result from the lime attacking the ammonia.

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## NAMES OF PLANTS.

N. S., Bridgwater.—Lomaria gibba.

G. W., Lewes.—1, Cœlogyne cristata; 2, Oncidium concolor.

C. P. J., Carshalton.—1, Coleum thyrsoideus; 2, appears to be a leaf of Phœnix Roebelini.

J. E., Horsham.—1, Ribes sanguinea; 2, Muscari botryoides alba; 3, not recognised; 4, Prunus Pissardi.

W. O. S., Ripon.—1, Lonicera japonica aureo-reticulata; 2, Eupatorium ianthinum; 3, Grevillea Thelymaniana; 4, Odontoglossum triumphans.

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## MARKETS.

### COVENT GARDEN.

### Flowers.

Trade is rather slow owing to the depressing effect of the coal strike.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Arums | per doz. | 2 6 | | 4 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azalea | per doz. bun. | 3 0 | | 3 0 |
| Camellias | per box | 1 6 | | 2 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 15 0 | | 20 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 6 | | 3 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Freesias | per doz. bun. | 1 6 | | 2 0 |
| Gardenias | per doz. | 4 0 | | 7 0 |
| Hellebores | per doz. | 1 6 | | 2 0 |
| Lilac | per bunch | 2 0 | | 3 6 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 2 6 |
| ,, longiflorum | per doz. | 3 0 | | 5 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 2 0 | | 2 6 |
| Mignonette | per doz. bun. | 2 0 | | 2 6 |
| Narcissus | per doz. bun. | 0 9 | | 4 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 8 0 | | 12 0 |
| Primroses | per doz. bun. | 1 0 | | 1 6 |
| Roses | per doz. | 1 6 | | 6 0 |
| Smilax | per doz. trails | 2 0 | | 3 6 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips | per doz. bun. | 5 0 | | 7 0 |
| Violets | per doz. bun. | 1 3 | | 3 0 |
| Wallflowers | per doz. bun. | 1 6 | | 2 0 |

### Fruits.

Oranges meet a ready sale, as also do bananas and apples.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, English, cooking | per bush | 5 0 | 7 6 |
| ,, Nova Scotia | per barrel | 12 0 | 22 0 |
| ,, Canadian | per barrel | 12 6 | 22 0 |
| ,, American | per barrel | 20 0 | 36 0 |
| ,, Californian | per case | 7 0 | 11 0 |
| ,, Cape | per box | 4 0 | 8 0 |
| Bananas | per bun. | 5 0 | 10 6 |
| Cob Nuts | per doz. lb. | 6 0 | 7 0 |
| Cranberries | per case | 9 0 | 12 0 |
| Grapes, English | per lb. | 1 4 | 3 6 |
| ,, Belgian | per lb. | 1 3 | 2 0 |
| ,, Almeria | per barrel | 12 0 | 18 0 |
| ,, Cape | per case | 4 0 | 8 0 |
| Lemons | per case | 6 0 | 30 0 |
| Nectarines, Cape | per box | 3 0 | 7 0 |
| Oranges, Denia | per case | 15 0 | 30 0 |
| ,, Jamaica | per case | 9 0 | 11 0 |
| ,, Californian | per case | 14 0 | 21 0 |
| ,, Seville | per box | 15 0 | 18 0 |
| ,, Valencia | per case | 10 0 | 18 0 |
| Peaches, Cape | per case | 5 0 | 8 0 |
| Pears, American | per barrel | 21 0 | 24 0 |
| ,, Cape | per box | 3 0 | 6 0 |
| ,, Californian | per case | 8 6 | 16 0 |
| Pineapples | each | 2 6 | 5 0 |
| ,, Cape | per doz. | 4 0 | 7 6 |
| Plums, Cape | per case | 2 0 | 6 0 |
| Strawberries | per lb. | 2 6 | 10 0 |

### Vegetables.

An excellent demand prevails for all kinds of produce, and supplies are good.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 0 | to | 4 0 |
| ,, Jerusalem | per ½-bush. | 1 6 | | 2 0 |
| Asparagus | per bun. | 3 0 | | 4 6 |
| Beans, Guernsey | per lb. | 1 6 | | 1 9 |
| Beet | per bush. | 2 0 | | 3 0 |
| Broccoli, Sprouting | per bag | 2 0 | | 3 0 |
| Cabbage | per tally | 5 0 | | 10 0 |
| Carrots | per doz. bun. | 1 6 | | 3 0 |
| Cauliflowers | per doz. | 1 6 | | 2 6 |
| ,, Cornish | per crate | 7 0 | | 9 0 |
| Celery | per doz. bundles | 6 0 | | 14 0 |
| Chicory | per lb. | 0 4 | | 0 5 |
| Cucumbers | per doz. | 4 0 | | 6 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 14 0 |
| Leeks | per doz. | 1 6 | | 2 6 |
| Lettuce | per doz. | 1 0 | | 1 3 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Mint | per doz. bun. | 4 0 | | 5 0 |
| Onions | per case | 8 0 | | 9 0 |
| Parsley | per ½-sieve | 1 0 | | 2 0 |
| Parsnips | per bag | 4 0 | | 6 6 |
| Peas, French | per pad | 5 0 | | 6 0 |
| Radishes | per doz. bun. | 0 9 | | 1 0 |
| Rhubarb | per doz. bun. | 0 8 | | 1 0 |
| Savoys | per tally | 7 0 | | 12 0 |
| Seakale | per bun. | 0 9 | | 1 3 |
| Spinach | per bush. | 3 0 | | 4 0 |

## LONDON POTATO MARKETS.

Supplies are heavy, with a moderate demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Blackland | per ton | 60 0 | to | 65 0 |
| British Queen | per ton | 70 0 | | 80 0 |
| Essex | per ton | 70 0 | | 80 0 |
| Evergood | per ton | 60 0 | | 65 0 |
| King Edward | per ton | 75 0 | | 80 0 |
| Up-to-Date | per ton | 75 0 | | 80 0 |

## GARDENING ENGAGEMENT.

Mr. A. Legge, foreman at Hackwood Park Gardens, has been appointed gardener to Sir Henry Mildmay, Bart., Dogmersfield Park, Winchfield.

## COMING EVENTS.

Penarth Rose Show, July 3.

Midland Carnation and Picotee Show, July 31 and August 1.

Craig-y-don Horticultural Society, July 17, in the Town Hall, Llandudno.

Chislehurst Horticultural Society: Spring Flower Show, April 20; Summer Show, July 6, at Kemnal Warren.

West Birmingham Horticultural Society, August 24, at Lightwoods Park.

Sevenoaks Horticultural Society, July 10, in Knowle Park and Gardens.

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# Employment THE GARDENERS' MAGAZINE Register.

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## Situations Wanted.

A GENTLEMAN wishes to recommend his HEAD GARDENER for a similar post where three or more are kept. Surrey preferred. He is of excellent character, competent, and successful; age 40; married, three children. Apply JOHNSON, 62, Halifax Road, Enfield, Middlesex.

ADVERTISER, age 18½, seeks SITUATION as Improver in Gentleman's Garden; 4½ years' experience, partly Inside and Out; good reference. J. WILKINS, Abbotsmead, Elstree.

CAPTAIN THORPE, of Coddington Hall, wishes to recommend his Gardener as HEAD of several; been here as same 14 years. F. STEADMAN, Coddington Gardens, Newark.

COUNTY Horticultural Instructor wishes to highly recommend LAD, who has received 2½ years' training; Bothy preferred; age 16½. Address H. MATTHEWS, 1, Chapel Street, Newport, I.W.

CARPENTER seeks SITUATION; Greenhouse Repairs, Glazing, Painting, etc.; Estate preferred; age 28; Single; 13 years' experience. W. PALIN, Pinvin Farm, Pershore, Worcs.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

E. VENTIN, Gardener to A. D. SELKIRK, Esq., can with every confidence recommend Young Man, age 18, as JOURNEYMAN, or IMPROVER in good establishment; disengaged. J. EATON, Government Lodge, Clewer, near Windsor.

ELECTRICIAN wants SITUATION; Gas and Oil Engines; own repairs; married; well recommended; and fill up spare time in Garden. Apply E. COOK, Debden Hall, Loughton, Essex.

FRENCH GARDENING. — Married man requires Situation as FOREMAN (Working); four years' practical experience on Intensive system; excellent references from past and present employers. GOODMAN, Winkton, Christchurch.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GARDENER (Head, where two or three are kept). H. WEEKS, Thrumpton Hall Gardens, Derby, can highly recommend N. DRING, as above; thoroughly experienced in all branches; age 28; total abstainer

GARDENER (Head of Two or Three or more).—W. H. PARTON, Carnation Specialist, highly recommends W. CARPENTER; thoroughly capable in all branches; 23 years' experience; last place 5½ years; married, two children. CARPENTER, Church Road, Yardley Wood, near Birmingham.

GARDENER (Head Working), where one or more kept; 10 years in present situation, 5 years as Second; age 31; married when suited. A. GIBBS, The Gardens, Farrants, Bickley, Kent.

GARDENER (Head or good Second); 11 years' experience; age 25; Single; two years in the houses present place. F. LEE, 18, Sherwell Hill, Chelston, Torquay.

GARDENER (Head Working), age 46, wants private Situation; one under; near London preferred; good references; wages 28s. JONES, 18, South Street, Leighton Buzzard.

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GARDENER (Head Working).—The Honble. Mrs. H. A. LAWRENCE highly recommends her late Gardener, who has been with her for 12½ years; thoroughly experienced in all branches; age 43; married. G. HALL, Hermitage Cottage, Minchinhampton, Glos.

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JOURNEYMAN (Inside and out); eight years' experience; good references; well recommended; age 23. P. LOCK, The Haven, Hill Head, Stubbington, Hants.

JOURNEYMAN (First or Second, Inside or Inside and Out); 6 years' experience; can take duty; good references; age 22. A. MANSFIELD, Fairchildes, Warlingham, Surrey.

JOURNEYMAN (Inside or Inside and Out); four years present situation; age 22; well recommended. E. PASSMORE, Bathealton Court, Wiveliscombe, Somerset.

J. E. PEAT, Esq., wishes to highly recommend his HEAD GARDENER (Working), who has been with him 9½ years; 6 and 7 years' previous references. H. DOVE, The Lodge, Cranmer, Mitcham, Surrey.

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M. HERBERT, Meadow Walk, Ewell, Surrey, seeks SITUATION as Improver (Inside or Inside and Out); age 18; has a good reference; Bothy preferred.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22, as UNDER GARDENER (Inside and Out); was with him 8 years. Address Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

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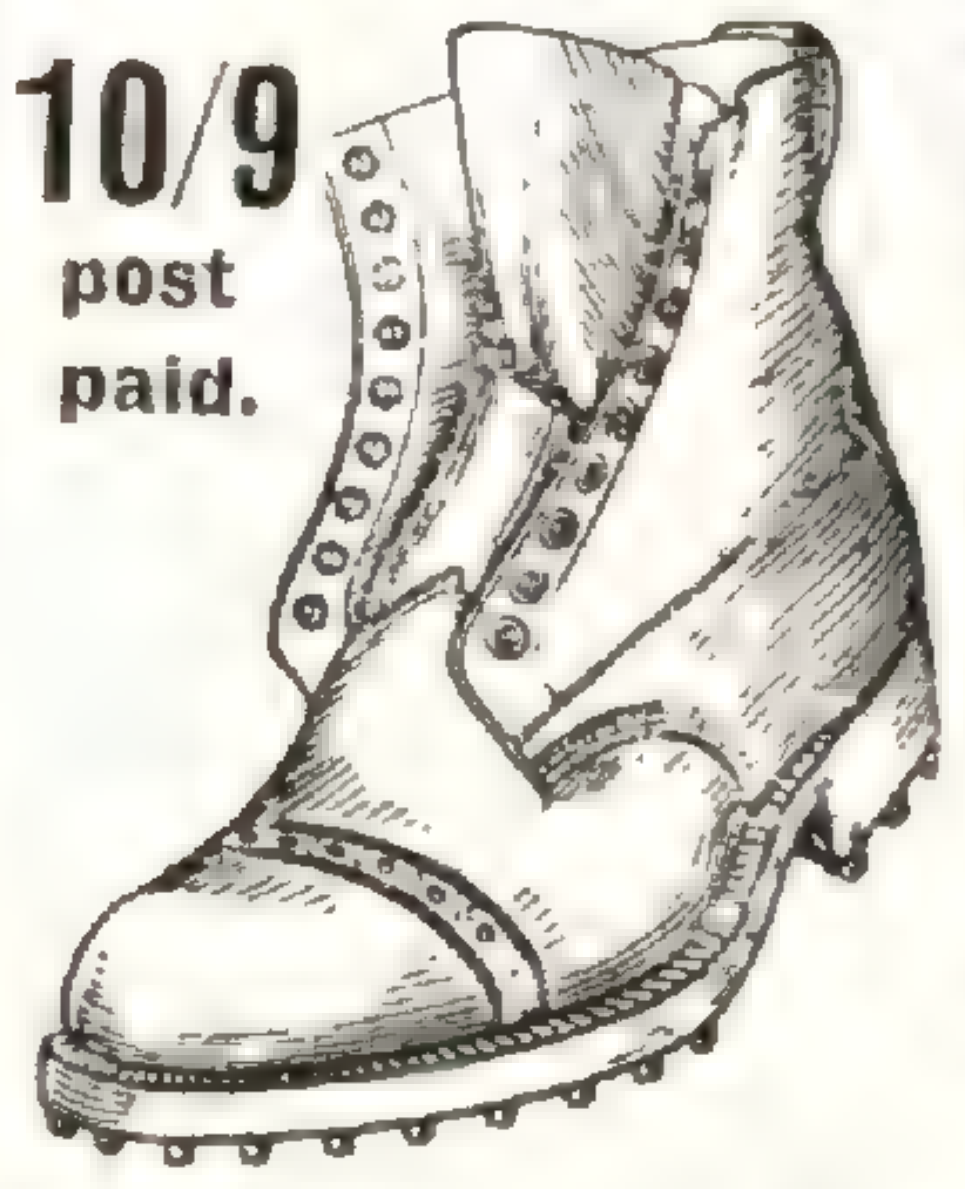

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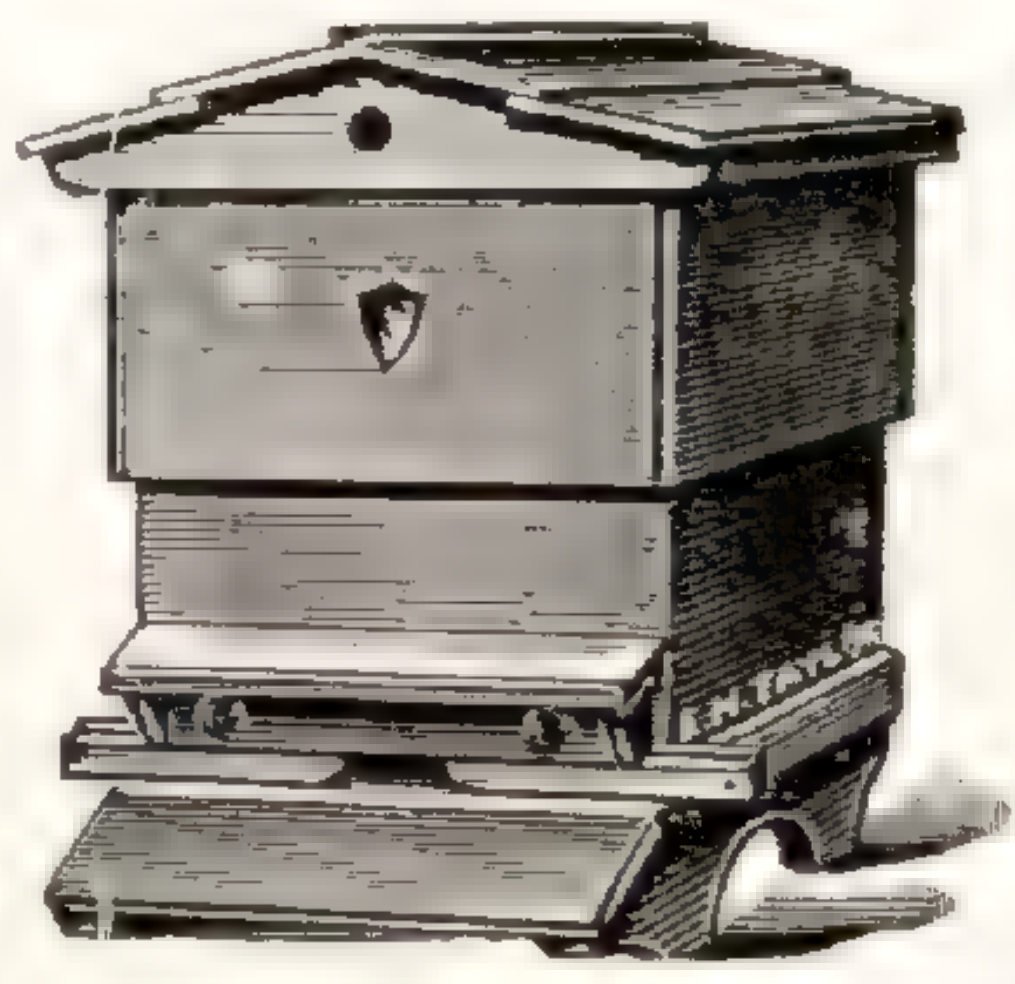

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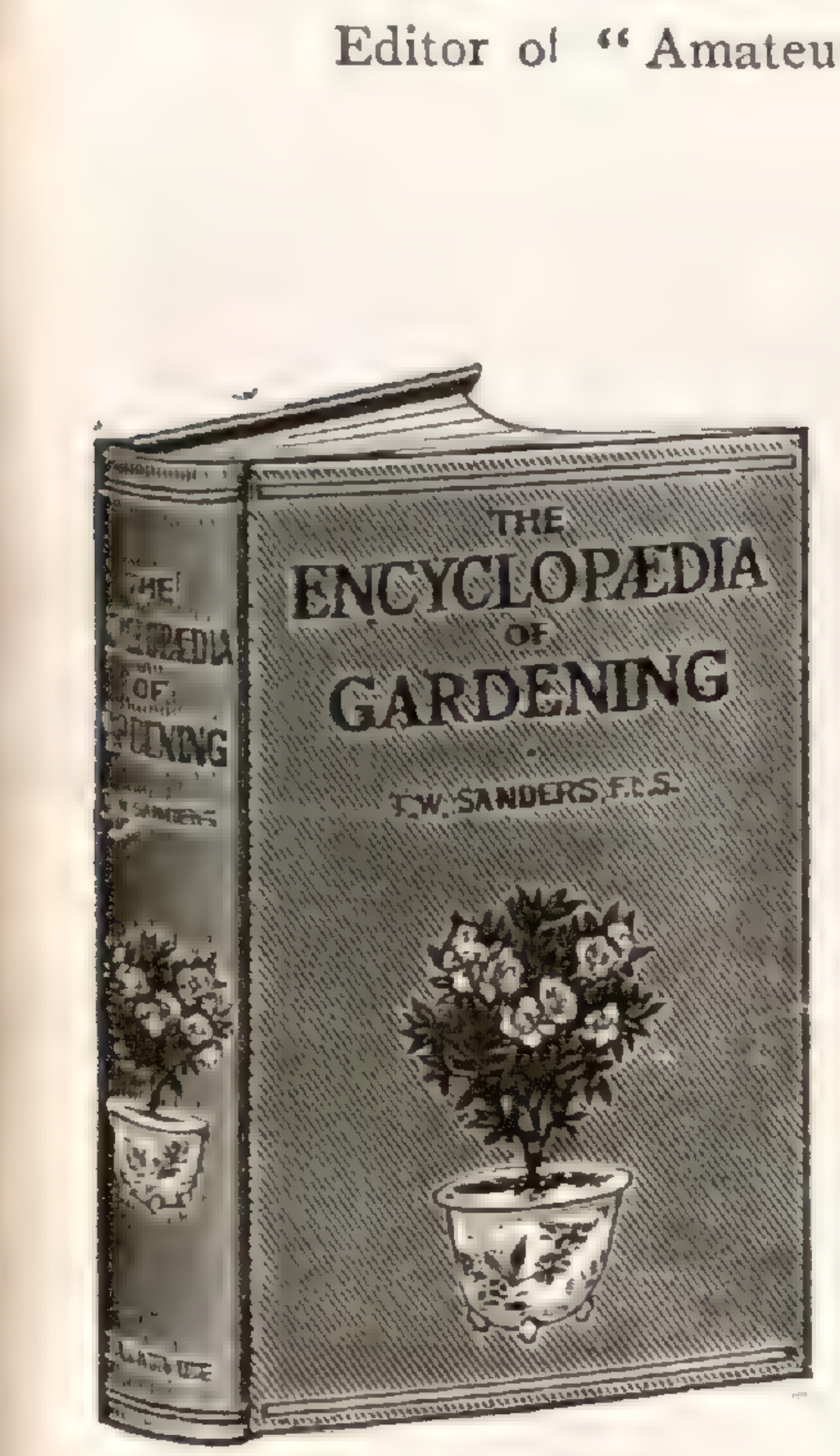

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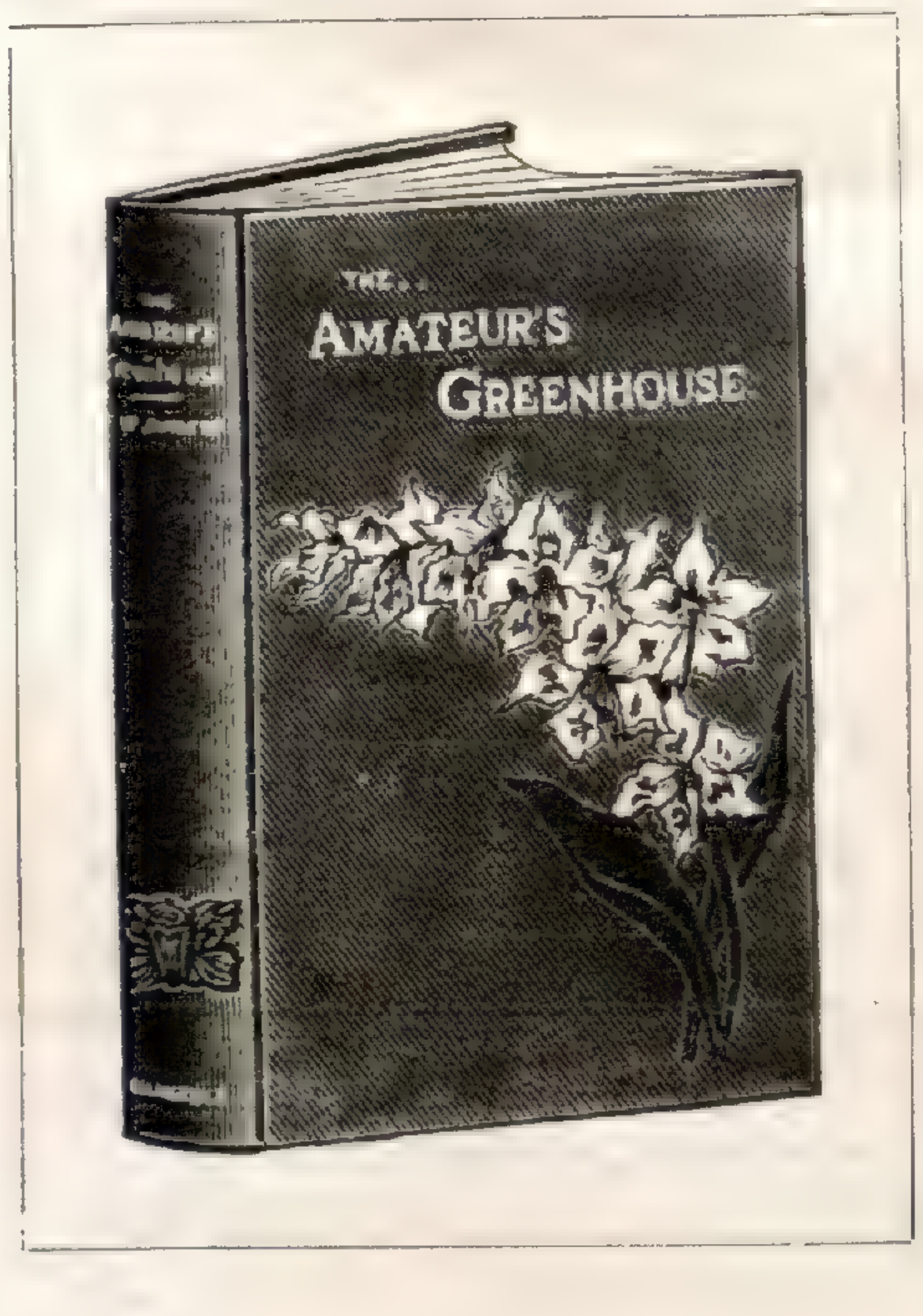

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VOL. LV.—No. 3,049. SATURDAY, APRIL 6, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Environment.

In the process of evolution of both animals and plants, the innate power of adaptation to different circumstances of their surroundings has undoubtedly played the chief rôle in bringing about that wonderful diversity which characterises their innumerable types. It must be largely due to this power that we owe all the orders, genera, and species, and also the varieties with which particularly it is the province of the animal breeder and the selective horticultural and agricultural cultivator to deal. Nevertheless, despite the immense amount of study which has been devoted to the question as to how far the power of response to environmental stimuli has led up to this diversity, it is still regarded as an open question, and the actual cause of variation as an entirely unsolved one. Some scientists maintain that without a change of environment species remain constant; but there is a great mass of evidence on the other side, in the shape of quite unaccountable "sports," where the environmental conditions appear to be identical, which go far to contradict that theory, and leave the question as much as ever in statu quo ante. In point of fact, the great mystery of the "cell," and the profundity of the marvel which is incorporated in the "nucleus" of that cell, are embodied in matter of so microscopic a nature as practically to defy investigation; and, as it is precisely in the primary cell of every "sport" that the subtle change is introduced, or originates, which eventually leads to difference of structure and even of function, the difficulty is enhanced by the fact that when such difference appears it is far too late to investigate its origin, much less to ascertain whether any environmental local difference determined it. Environment, too, is a very broad term, since, in the case of a plant, it embraces not merely the temporary local conditions of the habitat of the individual concerned, nor those of climate, soil, humidity, etc., but also the varying phases of these throughout its existence, and even prior to it, as affecting its immediate parents and ancestors, from whom it derives its constitution and peculiarities. It also embraces its relations with all the other forms of organic life which may affect it either as friend or foe. In an ordinary garden, where everything is done that can be done to favour plant development, the environment, viewed superficially, may appear to be simple enough, but in point of fact no two spots are identical in this respect. The soil, however carefully tilled, is never quite homogeneous; the tender rootlets of young plants are unequally favoured or handicapped; and below the surface the competition of other roots, the intrusion of worms, etc., come in as disturbing factors. Above the soil the presence or absence of neighbouring walls or trees, or other plants, determines differences of shelter from, or exposure to, wind and sun at all points; while in the plant concerned, it may have flavours or odours which repel or attract other organisms, all of which, as we have said, must be regarded as environmental factors. The soil itself, apart from its chemical constituents, permeability, or otherwise, is, as of late years we have learnt, a veritable cosmos of minute life, which exerts its influence in varied degrees, and which are bound to be affected by external conditions, and therefore to vary as do the plants themselves, thriving here and failing there, and thus inevitably adding to the complication of factors which render the environment even in a small suburban garden anything but a simple matter of light and shade. Added to all this, we have the most variable factor of all, the weather, with all its innumerable phases of wet and dry, heat and cold, calms, gentle breezes, and stormy winds, each and every one of which plays its part as an environmental factor in the life of a plant; and, in the case of an old tree, has had a definite record, if we could only decipher it, written in every ring of its massive trunk. Bearing all these diversities in mind, and remembering that they are universal, it is seen how difficult it must be to determine the underlying cause or causes of responsive variation to which specific evolution undoubtedly owes so much, but which, for the reason given, we can only assume as such, but not assert.

MR. J. ROGERS,
Superintendent of Battersea Park.

**Mr. J. Rogers.**—The superintendent of a large and important London park must needs have ability of no mean order, wide experience, and cultural and executive skill. Such qualities are to be found in Mr. J. Rogers, who has been superintendent of Battersea Park, one of London's most beautiful and famous open spaces, since May, 1902. He commenced his gardening career at an early age at Hursley Park, Hants, then the residence of the late Sir W. Heathcote, Bart., and added to his experience by a course of training in several private establishments in Hampshire. In 1877 he came to London, and became employed at Finsbury Park, then under the Metropolitan Board of Works. After several years' service there he was sent to Highbury Fields as foreman in charge of the work of laying out that open space. Afterwards he was foreman at Southwark Park, and in July, 1892, was appointed superintendent of the Royal Victoria Gardens, North Woolwich. Five years later he was transferred to Kennington Park, and early in 1900 was promoted to the superintendence of Waterlow Park, Highgate. Promotion to Southwark Park followed, and then came his appointment to the charge of Battersea Park. For twenty years he has been a parks superintendent in London, and has had charge of five different parks. He holds the record for long service among the parks superintendents under the London County Council, and during his service has seen many changes in the system of control and management, and in the public demands. We have so frequently referred to and illustrated examples of Mr. Rogers' work at Battersea Park, that it would be superfluous to add verbal commendations here. Indeed, Mr. Rogers would prefer that his works should praise him.

**The Royal Gardens, Kew,** promise to be unusually attractive this Eastertide. The season is an early one, and at the moment of writing there have been no serious frosts or heavy gales to spoil the beauty of the early spring flowers. The magnolias are especially fine, as also are the yellow forsythias, while the double-flowered peaches near the Directors' House and the large bed of flesh-coloured ones near the Victoria Gate are magnificent. The amelanchiers and many pyruses and prunuses will also be in bloom, while daffodils appear on every hand, in the grass, in beds and borders, on the Cumberland Mound, in great drifts near the North Gallery, and elsewhere. Tulips add their quota of gay colouring, and in the Conservatory (No. 4) and the Temperate House flowering shrubs and greenhouse flowers are making a brave show. The Rock Garden is bright with hardy heaths, saxifragas, anemones, cardamines, chionodoxas, muscaris, pulmonarias, primulas, erythroniums, and a host of other beautiful plants, while the greenery of the freshly-mown lawns and the newly-expanding leaves of many trees and shrubs add to the many attractions. In the Succulent House the Blue Amaryllis (Hippeastrum procerum) is flowering, and just outside the house is a giant specimen of Agave atrovirens coming into flower. This plant is about 9ft. high, and a dozen feet through, whilst its huge flower-spike reaches about 18ft., and is still growing. All being well, it will begin to branch from the upper portion ere long, and then produce its flowers, probably about the time of the International Horticultural Exhibition.

**Perpetual-flowering Carnation Society.**—The committee of this society have decided to entertain the American and Continental carnation growers who are visiting the Royal International Horticultural Exhibition. In accordance with this decision, the committee have arranged for a banquet at the Holborn Restaurant on Thursday, May 23, 1912.

**Fruit Prospects.**—The plum trees are now enveloped in their snowy blossoms, and the great display of flowers that whitens the landscape in districts in which plum orchards have a place is giving rise to considerable discussion as to the prospects of the yield of hardy fruits in the current year. Those who hold optimistic views suggest that, as a consequence of the thorough ripening of the wood last year, the flower buds are so abundant as to practically ensure a crop of fruit. Other observers, who are more or less pessimistic, regard the development of the flowers thus early as a certain indication of an indifferent fruit harvest. It is, however, too early to formulate an opinion on which to base an estimate of the yield of the various kinds of hardy fruit. Flower buds are plentiful, and appear to be well developed, and there will consequently be a fine display of bloom. It need hardly be pointed out, for it is a matter of common knowledge to those who take an interest in fruit culture, that the earlier the period of flowering the greater is the risk of injury from frost. It is not however, invariably the case that early flower-production is followed by a shortage in the fruit supply, or that late flowering is followed by an abundant harvest. The next six or seven weeks will be a period of great anxiety to growers of hardy fruits, and but little that will be useful can be said relating thereto, excepting to advise the protection of pear, plum, and cherry trees on walls, as far as is practicable, on the same lines as peach and nectarines are protected. In gardens an endeavour should also be made to protect bush and pyramidal fruit trees, including those of apples, even if the most primitive methods of protection have to be resorted to. The shelter of a few branches of fir, or a double thickness of old fish netting, may make all the difference between a good and an indifferent crop.

**International Horticultural Exhibition.**—We have much pleasure in recording the fact that the directors of the International Horticultural Exhibition have decided to issue transferable season tickets to the public at £3 3s., admitting whenever the exhibition is open. These tickets will be a great convenience to large numbers of those who are interested in the various aspects of horticulture that will be represented at the exhibition, and their issue should contribute materially to the financial results. To the Fellows of the Royal Horticultural Society they will be a great advantage, for in pursuance of the agreement entered into by the Council of the society with the directors of the exhibition every Fellow can purchase one of these season tickets, at a cost of £2 2s. 6d. As with all other R.H.S. privileged tickets, they can only be had by Fellows, who apply direct to the R.H.S., in accordance with the directions given on page 276 of the last Journal. Fellows who have already ordered tickets from the R.H.S. can, if they wish, change their order into a season ticket by transmitting the difference in cost, together with express instructions that their previous cheques, etc., be taken as part-payment for the season ticket. Each Fellow can only purchase one season ticket at the reduced rate.

**Presentation to Mr. W. E. Barnett.**—Much regret will be felt by all who have taken part in the great flower shows annually at Wolverhampton that Mr. W. E. Barnett has, through ill-health, been compelled to resign the secretaryship of the Wolverhampton Floral Fête. Mr. Barnett held the position he has just vacated for twenty-one years, and has seen the annual exhibition grow from a really small gathering to one of first-rate importance. At the recent general meeting the following resolution was unanimously carried: "That the members of the Wolverhampton Floral Fête, having received the resignation of their respected secretary, desire to express their deepest regret at the circumstance, and their sincere appreciation of, and thanks for, the very faithful and valuable services he has rendered in the important position he has held during the past twenty-one years, and at the same time their best wishes for his speedy restoration to health. That, as a slight token of appreciation of Mr. Barnett's invaluable services to the Wolverhampton Floral Fête, an honorarium of £150 be voted to him and sent with a copy of this resolution." Councillor R. F. Amphlett, of Messrs. Adams and Amphlett, of Darlington Street, Wolverhampton, has been unanimously elected as successor to Mr. Barnett, and those who are interested in the fête, and are acquainted with his abilities, are much gratified by his having consented to assume the responsibilities of the office.

**Trial of Violas at Wisley.**—The Rev. W. Wilks informs us that the president and Council of the Royal Horticultural Society have arranged for a trial of violas, to be conducted at the Wisley Gardens during the season of 1912. It is hoped that a large number of varieties will be sent to the superintendent, R.H.S. Gardens, Wisley, Ripley, Surrey, for this purpose, that the trial of so important and popular a flower may be made as useful as possible. Six plants of each variety should be sent at once.

**Presentation to Sir William Schlich.**—The officers of the Indian Forest Department, and the probationers for that service now under instruction at Oxford, have presented Sir William Schlich with a handsome Burmese silver bowl bearing a suitable inscription, and a cheque, on the occasion of his retirement after forty-five years' service. On the completion of nineteen years' service in India Sir William Schlich retired from the post of Inspector-General of Forests, and organised in 1885 the first School of Forestry in this country in connection with the Royal Indian Engineering College at Cooper's Hill. On the closing of the latter, the Indian School of Forestry was, in 1905, transferred to the University of Oxford. Under the late orders of the Secretary of State for India the State endowment of the chair has come to an end, but Sir William Schlich hopes to raise a sufficient sum for the endowment of a chair of forestry at the University of Oxford. He has decided to give the proceeds of the cheque presented to him, further augmented by himself, as the first donation to the endowment fund.

**New Open Space at St. Leonards.**—The owners of the gardens in the lower part of Warrior Square, St. Leonards-on-Sea, offered to present them for the use of the town. The Corporation of Hastings accepted the offer, and have decided to adapt them to public use and construct a sunken band-stand, at a cost of £4,500.

**The Flower Spikes of Eremuri** have become very popular in Paris within recent years for decorative purposes, and a considerable demand for them has arisen in the Parisian markets. Owing to the extension of their culture in the market gardens in the vicinity of the city, the prices have been considerably reduced during the past year or two, and now range from one to four francs per spike.

**Doubleness in Stocks.**—In the fourth part of the "Journal of Genetics," Miss E. R. Saunders contributes a paper on the inheritance of doubleness and other characters in stocks, in which she follows up her conclusions that have been previously published. Having proved to demonstration that certain single races of stocks produce single flowers, while others, ever sporting, produce both double and single blossoms, and that the pollen grains apparently all carry doubleness, while the ovules carry in some cases double and in others single characters, Miss Saunders now shows that the sulphur-white, a double throwing race, is also highly sportive in regard to colour of the seed-bearing parent. She states that the singles are all white, and the majority of the doubles are cream-coloured. Miss Saunders also gives expression to the belief that plants destined to produce double flowers are more vigorous in growth than are those which will bear single flowers.

## ROYAL HORTICULTURAL SOCIETY.

There was a full hall again at Westminster on April 2, and there was a grand display of glorious daffodils, a fair display of orchids, flowering shrubs, roses, and carnations. The attendance was also good, but the people seemed to be in a holiday mood.

### FLORAL COMMITTEE.

Messrs. J. Veitch and Sons, Chelsea, exhibited some new shrubs, the chief of which were the white-flowered Viburnum Davidi (A.M.), Camellia cuspidata (A.M.), with white flowers, Pæonia Delvayi with elegant foliage and red flowers, Dipelta ventricosa, with tubular pink, white, and yellow flowers, and the green-flowered Decaisnea Fargesi. The camellia and the viburnum promise to be good garden plants, and have stood several winters at Coombe Wood; the viburnum is evergreen, and has deep green leafage. Messrs. J. Cheal and Sons, Crawley, exhibited some flowering shrubs, and choice things among them were Hydrangea macrocephalum, Spiræa arguta, double peaches, and standard cytisuses. Mr. E. Renthe, Keston, had a large and interesting exhibit wherein camellias, magnolias, Himalayan rhododendrons, skimmias, hardy heaths, pieris, etc., were associated with hardy primulas, daffodils, etc. Set amid bamboos and Japanese maples, Messrs. J. Piper and Sons, Bishop's Road, Bayswater, displayed Daphne Fioniana, Primula malacoides, Caltha polypetala, the gay Azalea amœna Hinodigeri, and other choice hardy flowers.

A beautiful group of double-flowered peaches, Pyrus malus atrosanguineus, P. Scheideckeri, and P. angustifolius fl. pl., all in pots, and grandly smothered in blossom, was arranged by Messrs. Wm. Paul and Son, Waltham Cross. Clematises and hardy flowers in variety were exhibited largely by Mr. L. R. Russell, Richmond. Messrs. R. Gill and Sons, Falmouth, had a group of lovely varieties of Himalayan rhododendrons; Duke of Cornwall, Gill's Triumph, Beauty of Tremough, Shilsoni, and forms of R. arborea, with R. argenteum, and R. Thompsoni formed a fine exhibit.

Mr. C. Fielder, V.M.H., gardener to Miss Willmott, V.M.H., Warley Place, Essex, staged a very interesting collection of Primula viscosa hybrids, the colours ranging from white to deepest rose-red and purple. P. Warleyensis (A.M.) is a little low-growing kind, with bluish lilac flowers about as big over as a shilling, and freely borne on the tiny plants. Mr. Jas. Douglas, Edenside, Great Bookham, presented a collection of auriculas, the colouring being most varied, and the plants finely grown. He also exhibited several new forms of much merit of Primula intermedia, of which the finest was Mrs. J. Douglas (A.M.), the flowers large and the colour rich purplish blue.

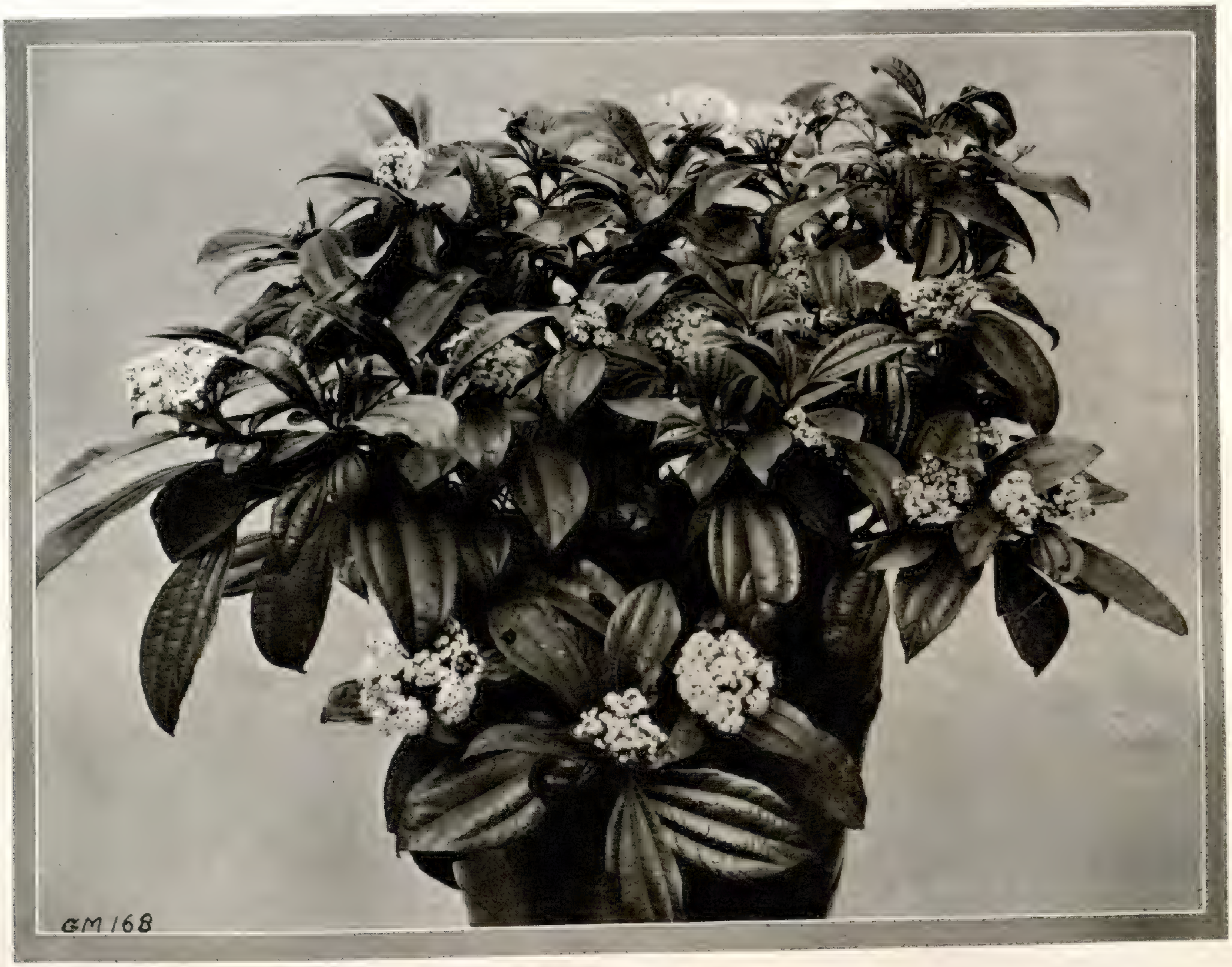
Messrs. Whitelegg and Page, Chislehurst, exhibited a pretty rock garden in one of the annexes, and on it displayed splendid masses of the dainty Saxifraga Bakeri, a particularly attractive subject for the rockery, as also another very fine variety named S. H. T. Stokes, the brilliant S. Red Admiral, which is certainly unsurpassed for vivid colouring of its large, well-formed flowers; and the fine S. Clibrani, which has beauty of form and foliage, as well as handsome flowers; they also staged their very fine new Geum Mrs. J. Bradshaw, a first-rate garden plant. Messrs. R. Wallace and Co., Colchester, were represented by Iris bucharica, aubrietias, Primula viscosa Mrs. J. H. Wilson, and other beautiful little plants.

Messrs. W. Fells and Co., Hitchen, and Messrs. J. Peed and Sons, Norwood, were exhibitors of hardy flowers, chiefly alpines. Mr. Jas. Box, Lindfield, contributed a pretty collection of anemones, primulas, and saxifragas. Messrs. Bakers', Wolverhampton, grouped Primula vera, P. frondosa, Phlox subulata, Viola gracilis, and Ranunculus montana—the latter a lovely little buttercup—on rockwork. The Guildford Hardy Plant Company had also a collection of hardy and alpine flowers. Messrs. Thompson and Charman, Bushey, were other contributors of rock gardening.

Messrs. T. S. Ware, Lim., Feltham, had colonies of Trillium californicum, Saxifraga Bathonensis, Lithospermum Heavenly Blue, Primula frondosa, P. cortusoides, aubrietias, and the large white saxifraga Arkwrighti. Messrs. G. Jackman and Son, Woking, presented colonies of Iris excelsa, I. cyanea, I. pumila Cœlestis, Muscari botryoides alba, Tulipa Greigi, and Erica mediterranea, and its white form. Primulas of the cashmiriana group, Aubrietia Prichard's A1, Daphne cneorum, the noble Caltha palustris fl. pl., and C. polypetala, with several good saxifragas, made up a pretty rock garden display from Mr. Maurice Prichard.

Messrs. H. B. May and Son, Edmonton, grouped gardenias with Rose Tausendschoy, plumose nephrolepsis, clematises, and polyantha roses. Messrs. Mount and Sons, Canterbury, displayed grand flowers of Liberty, Mrs. C. Reed (A.M.), a new cream-pink H.T. rose; Mrs. E. Alford (A.M.), a lovely rich pink H.T. variety of great beauty; and the yellow Lady Hillingdon. Among the roses displayed by Mr. George Prince, Oxford, the long flowering growths of Wm. Allen Richardson and Maréchal Niel were as attractive as the big blooms of Juliet and Mdme. Jules Gravereaux. Messrs. Frank Cant and Co., Colchester, set up some lovely rose blooms under the clock, their Lyon Rose, Molly Sharman Crawford, Lady Alice Stanley, and Mrs. Walter Easlea being very fine.

The graceful Lachenalia Nelsoni was splendidly shown by Messrs. R. and G. Cuthbert, Southgate, and a display like this was will do much to popularise a deserving plant; the firm also contributed corner groups of lilacs, magnolias, Ghent azaleas, wistarias,



VIBURNUM DAVIDI.
An evergreen Chinese species, with white flowers. A.M., R.H.S., April 2. Messrs. J. Veitch and Sons.

and laburnums. Messrs. Felton and Sons, Hanover Square, exhibited a lovely fragrant lot of lilac sprays, arranged in very artistic cane-plaited receptacles.

Cinerarias and Primula obconica formed the bulk of the contribution from Messrs. Jas. Veitch and Sons, Chelsea. Of the former their Feltham Beauty, in dark blue, carmine, white, pink, and light blue varieties were very attractive, while the striped Pompadour was very quaint and distinct, and the brilliant Matador attracted everyone. A table of cut zonal pelargoniums from Mr. H. J. Jones, Lewisham, provided a rare blaze of colour. A number of the varieties were Ryecroft seedlings, and these show exceptional vigour, and bear big blooms on huge trusses; Fred Gulliver, Mrs. Bunting, Mrs. Tom White, Harry James, and Nellie Hemsley appealed strongly to our taste.

Various greenhouse-flowering plants from Messrs. S. Low and Co., Enfield, included acacias and new hydrangeas, and perpetual carnations in great variety and beauty. Mr. Phillip Ladds, Swanley Junction, again exhibited the fine Salmon Paul Cramfel zonal pelargonium, and a very attractive rich pink variety, named Ambrosia (A.M.).

Mr. H. Burnett, Guernsey, once more delighted everyone with his splendid perpetual carnations, especially his Mrs. C. Raphael, White Wonder, and Marmion. Messrs. Allwood Brothers, Haywards Heath, and Messrs. W. Wells and Co., Merstham, both staged good collections of perpetual carnations.

Messrs. Young and Co., Hatherley, Cheltenham, put up a fine exhibit of perpetual carnations, and set up their flowers in excellent style. We were particularly struck by the fine vases of Marmion, the new A. S. Montgomery, Irene, a bright cerise; Cheltonian, Duchess of Devonshire, White Perfection, Mikado, and Havard. Messrs. W. Cutbush and Son, Highgate, presented good vases of Winsor, Enchantress, Mikado, Mrs. Fortescue, and Lord Rothschild carnations, and a capital exhibit of lilacs, the lovely fragrant Viburnum Carlesi, Iris bucharica, Iris iberica, Rhododendron Pink Pearl, and Magnolia Lennei.

## ORCHID COMMITTEE.

Mr. Chapman, gardener to Mrs. Norman Cookson, Oakwood, Wylam-on-Tyne, sent up several handsome forms of Odontoglossum crispum and O. percultum. The white-petalled Cattleya Luddemanniana Stanleyi, shown by Mr. E. V. Low, Haywards Heath, was greatly admired. F. M. Ogilvie, Esq., The Shrubbery, Oxford, showed Lælio-cattleya Myra finely, and also Brasso-cattleya Cliftoni.

Cymbidium Pauwelsi Dell variety (F.C.C.), carrying a grand arching spike of twenty large creamy buff, brown-marked flowers, was exhibited by Mr. Shill, gardener to Baron Bruno Schröder, The Dell, Egham. Odontoglossum His Majesty, of perfect shape, was staged by Mr. Alexander, grower to Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester. A fine plant of the green and black-flowered Cœlogyne pandurata, carrying a spike of ten flowers, came from Messrs. Armstrong and Brown, Tunbridge Wells.

Messrs. J. Veitch and Sons, Chelsea, showed Lælio-cattleya Oroma (A.M.), a large, rich purple flower with crimson-purple lip; and Lælio-cattleya Frederick Boyle Veitch's var. (A.M.), very beautiful. Francis Wellesley, Esq., Woking, put up the splendid Cattleya Trianæ F. McBean; and Walter Cobb, Esq., Normanhurst, Horsham, brought Odontioda Goodsoniæ Cobb's var. (A.M.), with scarlet and rose coloured flowers and a white-tipped lip. Sir Trevor Lawrence's Lælio-cattleya Trimyra, a broad flower of lovely orange-yellow hue, worthily gained a F.C.C.; Mr. White also brought a number of yellow seedling dendrobiums and some finely-flowered masdevallias from the Burford Lodge collection.

Odontiodas were charmingly shown by Mr. Black, gardener to R. G. Thwaites, Esq., Chessington, Streatham; these were forms of O. Charlesworthi, O. Cooksoniæ, O. Chessingtonense, and O. Bradshawiæ. Messrs. Hassall and Co., Southgate, were represented by the showy Cattleya trianæ Backhousiana, Cymbidium Lowianum concolor, and a fine Odontoglossum percultum. Messrs. J. and A. McBean, Cooksbridge, showed some capital odontoglossums, good forms of Cattleya Trianæ, and Odontioda Cooksoniæ.

Messrs. Sander and Sons, St. Albans, had a quite large exhibit of orchids, the whole of the centre being occupied by lovely forms of Cattleya Schroderæ; flanking these were Renanthera Imschootiana, Brasso-cattleya Mdme. Chas. Maron, Miltonia St. Andre, Cypripedium Roger Sander (A.M.), a cross between C. glaucophyllum and C. Godefroyæ, and many good odontoglossums.

Messrs. Stuart Low and Co., Enfield, showed oncidiums extensively, with Cattleya Schroderæ, L.-c. Dominiana, Lycaste Balliæ, and dendrobiums.

The odontoglossums and odontiodas exhibited by Messrs. Charlesworth and Co., Haywards Heath, were very graceful, and among the latter were noted O. Bradshawiæ, O. Vuylstekiæ, O. Felicia, and O. Lambeauianum; Lælio-cattleya Bella alba, L.-c. Feronia, and the buff-pink L.-c. Calabria were other good things.

## DAFFODIL COMMITTEE.

A large collection of daffodils, well set up by Messrs. Barr and Sons, Covent Garden, W.C., contained a very large number of new varieties; we have only space to mention a few, such as Ruby, orange cup; Lolah, a white trumpet; Clothilda, yellow flat crown; Hippolyta, a big incomparabilis; Bride of Lammermuir, cream trumpet; Aurelius, deep golden-yellow; Golden Jubilee, a fine rich incomparabilis; Ruby, a deep red crown; Cleopatra, Herod, Cassandra, etc.

In the group of daffodils from Mr. F. H. Chapman, Rotherside Gardens, Rye, there were a number of very dainty seedlings that included Rotherside, a white-petalled Barri form; Searchlight, with lovely deep orange cup; Sentry, an improved Beacon; and a number of large-flowered unnamed triondrus hybrids of great beauty. Besides these Mr. Chapman had a number of the newer daffodils already in commerce.

Messrs. Cartwright and Goodwin, Kidderminster, had an effective exhibit of daffodils, chiefly new sorts; Circlet, Creole, Harry James, Chough, Southern Star, Dorothy Pearson, Incognita, and Mohican formed a good set of flat-crowned varieties; Giant Leedsi forms were also well shown.

Messrs. J. Carter and Co., Raynes Park, contributed another very pretty spring flower garden. There was a background of conifers, with a low rockery in front, this latter filled with aubrietias, muscaris, squills, and daffodils. The foreground was a lovely green lawn, with two beds of King Alfred daffodils and a central square pool of water, with high fountain and a surrounding margin of anemones, polyanthuses, scillas, and daffodils.

Messrs. J. R. Pearson and Sons, Lowdham, Notts, presented a very cheerful lot of daffodils, all very bright and fresh. The giant Leedsi forms were very much in evidence, while of special importance were La Lune, a primrose trumpet with white perianth; Tamerlane, Macebearer, Hon. Mrs. Franklin, Patrician, Orange King, a broad rich golden trumpet variety named King George, Gold Cup, Argent, and Margaret.

The Darwin tulips grown in bowls of fibre and shown by Messrs. R. H. Bath, Lim., Wisbech, were very fine, especially such varieties as Pride of Haarlem, King Harold, Bartigon, Isis, Clara Butt, and Wm. Copeland. Among the daffodils staged by this firm Lowdham Beauty was exceptionally large and good; Firebrand, Fireflame, Pearl of Kent, Homespun, Diana, Lord Kitchener, and Rivalis, the latter a white trumpet variety of great beauty.

Messrs. R. and G. Cuthbert, Southgate, arranged a big group of tulips in pots, across the end of the hall, staging each variety in some quantity. Messrs. J. Veitch and Sons, Chelsea, had a bright exhibit of daffodils; the varieties were staged in rather large bunches. King Alfred, Van Waveren's Giant, Glory of Leiden, Silver Spur, Sunrise, and Blackwell were conspicuous varieties.

A fine bank of tulips from Messrs. W. Cutbush and Son, Highgate, provided a fine display of colour. The flowers were good, and the varieties numerous. A collection of this sort has a distinct educational value. Couleur Cardinal, Pres. Taft, Keizerkroon, Prince of Austria, Golden Lion, Rose d'Amour, White Joost van Vondel, Gris de Lin, Wouverman, and Ophir d'Or make up a good selection of varieties.

Miss F. W. Currey, Lissadel, Ireland, had a pretty and well-arranged group of daffodils that seemed to have enjoyed their journey from the Sister Isle. The blooms were large and fresh, and they included such capital varieties as Croesus, Atalanta, and Lady of the Snows, two white trumpeters; Whitewell, Gloria Mundi; Rosetta, Bernardino, Lord Kitchener, Lyric, the handsome Great Warley, and the vivid cupped Oriflamme.

The Rev. G. H. Engleheart, Dinton, Salisbury, showed a marvellous lot of seedling daffodils, round which daffodil lovers crowded all day long. There were some dainty flowers, but the huge trumpet varieties, giants, or white, gold, yellow, and cream, were the feature of a wonderful set. Such a group as this compelled people to wonder what the end of daffodil-raising is to be.

Mr. A. M. Wilson, Shovel, Bridgwater, presented a lovely lot of seedling daffodils, many of them not yet named, while the new named sorts included such lovely flat-crowned sorts as Gold Coin, Hypatia, Gaybird, Cossack, Ivorine, Tunic, Radiant, and Tara Ranee, the latter of exquisite beauty. Buttercup, Psyche, Florizel, the double Inglescombe, and Victory were other charming, chaste, and lovely varieties.

Mr. Christopher Bourne, Simpson, Bletchley, was represented by a bright exhibit, wherein Southern Star, Duke of Bedford, Buttercup, China Ware, the fine Victory, and the neat trumpeter named Lord Muncaster, were conspicuous.

## FRUIT AND VEGETABLE COMMITTEE.

Tempting spring cabbages, from Messrs. Sutton and Sons, appeared to be the only exhibit before this committee. The varieties so admirably shown were Sutton's April, Flower of Spring, and Harbinger.

## CERTIFICATES AND AWARDS.

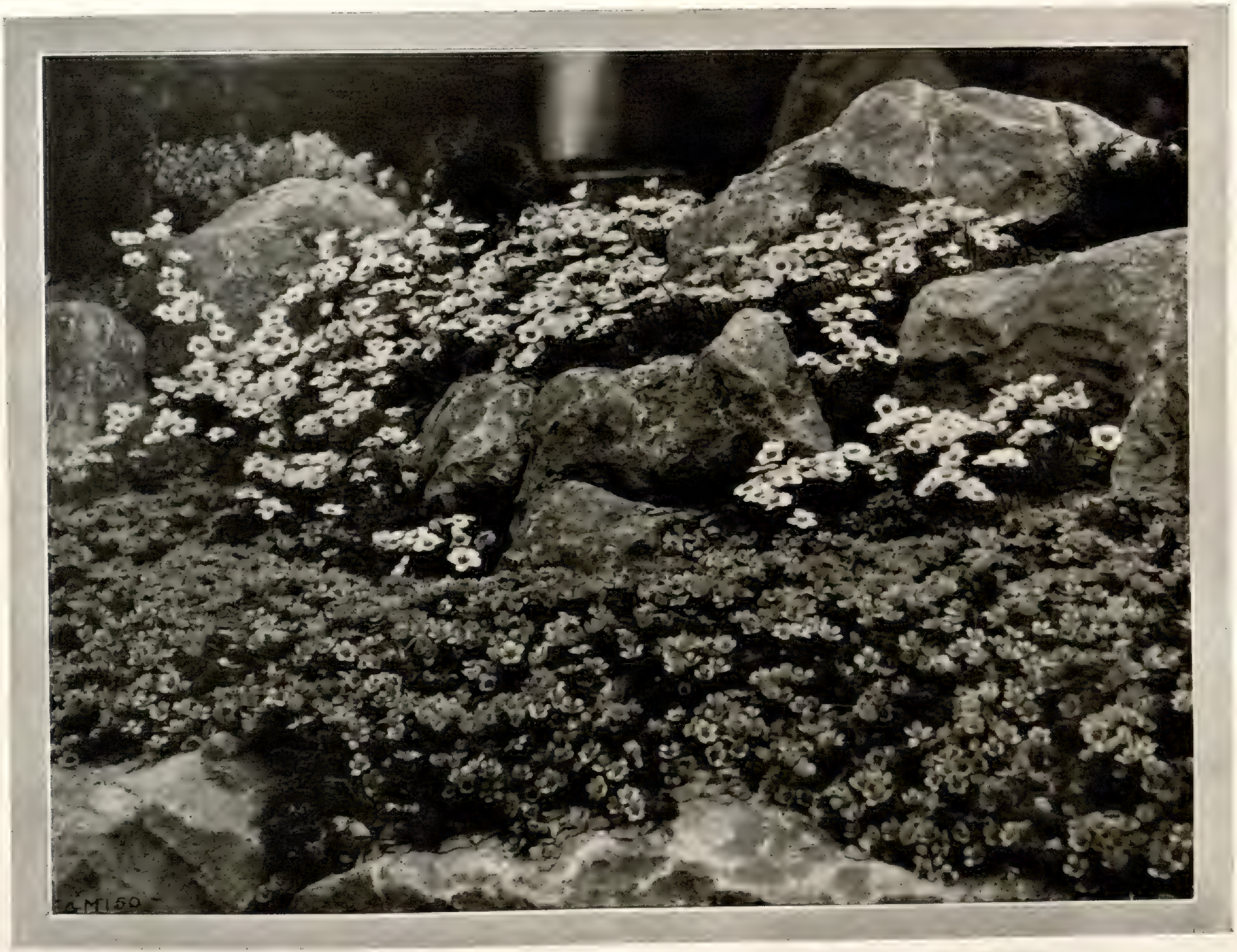
First-class Certificate.—To Narcissus Crœsus, from Mr. A. M. Wilson, Bridgwater; to Cymbidium Pauwelsi, Dell variety, from Baron Bruno Schröder (grower, Mr. Shill), The Dell, Egham; to Lælio-cattleya Trimyra, from Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking; and to Lælio-cattleya McBeaniana, from Messrs. J. and A. McBean, Cooksbridge.

Award of Merit.—To Narcissus Pedestal and Narcissus Killiecrankie, from Mr. A. M. Wilson, Bridgwater; to Camelia cuspidata and Viburnum Davidi, from Messrs. J. Veitch and Sons, Chelsea; to Primula Juliæ, from Mr. Baker, Oxford Botanic Gardens; to Primula Mrs. Jas. Douglas, from Mr. J. Douglas, Great Bookham; to H. T. roses, Mrs. E. Alford and Mrs. C. Reed, from Messrs. Low and Shawyer, Uxbridge; to Primula Warleyensis, from Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Great Warley; to Pelargonium Ambrosia, from Mr. Philip Ladds, Swanley Junction; to Odontioda Cooksoniæ, Cobb's var., from W. Cobb, Esq. (gardener, Mr. C. J. Salter), Normanhurst, Rusper, Horsham; Cypripedium Roger Sander, from Messrs. Sander and Sons, St. Albans; to Lælio-cattleya Orama, and L.-c. Frederick Boyle, Veitch's var., from Messrs. J. Veitch and Sons, Chelsea; and to Odontoglossum His Majesty, from Lieut.-Colonel Sir G. Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury.

[Owing to the pressure on our space we are compelled to defer the publication of the medal awards until our next issue.]

# THE BEST TWELVE SAXIFRAGES FOR THE ROCK GARDEN.

To select twelve saxifrages from the host of species and varieties of the numerous classes of the beautiful family is hardly less difficult than that of choosing "the hundred best books," and an effort to do so is certain to meet with considerable criticism. Yet it is often needful for the small garden, or for those who are desirous of embarking upon the cultivation of a few only of the choicest alpine flowers that attention should, so to speak, be focussed upon a few of the best. With the proviso, therefore, that the selection is a somewhat arbitrary one, and is not made in a dogmatic fashion, the twelve which follow are suggested as the best for the garden and as plants that every rockery should possess.



SAXIFRAGA BURSERIANA GLORIA AND S. OPPOSITIFOLIA SPLENDENS.
A tasteful arrangement of these two fine saxifrages, exhibited by Mr. C. Elliott, Stevenage, at a recent meeting of the Royal Horticultural Society.

### Saxifraga Burseriana Gloria.

Undoubtedly in the first rank of the beautiful Burseriana rockfoils we have the variety Gloria, which was sent out from a Yorkshire nursery a few years ago, and which has received the highest commendations. It is a lovely plant with a close carpet of small spiny foliage, above which rise in earliest spring dainty little flowers of white. Its character is well displayed in the illustration here reproduced.

### S. Elizabethæ.

Though there are several charming yellow saxifrages of much the same character, such as S. Boydi, S. Cherrytrees, and S. Faldonside, the most satisfactory of the yellow ones at the present time for all-round culture is S. Elizabethæ, named, it is said, after Queen Carmen Silva, of Roumania, and a plant even royalty might be pleased to have its name associated with. It is a charming plant, forming a low carpet of grey-green leaves surmounted by bright, yet soft yellow flowers. It is an "easy" plant to grow, but seems to prefer a dry, hard, poor soil, with the reservation that it may require some water in a summer like that of 1911. I find it likes full exposure.

### S. Wallacei.

Of its class there is no saxifrage to equal S. Wallacei, frequently said, by the way, to be synonymous with S. Camposi, but this is an error, as S. Wallacei was raised in Edinburgh, and is a hybrid plant. It is a great beauty, being practically a large "mossy" one, appearing to have some of the "blood" of the S. ceratophylla class in it, and affording a profusion of large white flowers. Hanging over a stone, it is exquisite in its season, while it is so easily cultivated that it is certainly one of the best. My finest plant is on a north-west exposure well up on a rockery, and some six feet or more above the ground level. S. Wallacei is figured in the accompanying illustration.

### S. longifolia.

When we come to the silvery saxifrages we are confronted with the difficulty of choosing a few out of the many gems included in this section. Yet S. longifolia cannot be omitted, although it suffers from the failing that it makes few offsets, and that seeds saved from flowers grown near other saxifrages have a tendency to yield plants not of the true type. Yet S. longifolia, with its symmetrical rosettes of long narrow leaves and its fine plumes of flowers, is one of the élite plants which every rockery should possess. It and the other silvery saxifrages named like a small proportion of lime in the soil, and a good amount of sun.

### S. Aizoon.

One cannot well omit to name two of the Aizoon saxifrages among our twelve elect. It is difficult to choose these, but we must make the selection, and in this case it will light upon S. Aizoon Rex and S. Aizoon rosea. The first is the finest of the white Aizoons, giving charming rosettes and lovely white flowers on good-sized panicles, and they are really of a decidedly better colour than those of most of its sister flowers.

S. Aizoon rosea is another one not too well known, although it is not such a novelty as S. Rex. It has lovely panicles of rose-coloured flowers.

### S. lantoscana superba.

Another silvery saxifrage nobody should be long without is S. lantoscana, and I prefer the fine variety, superba, which is of beautiful habit in every way, with handsome rosettes and lovely plumes of white flowers. It is a gem, and will yield but little even to S. longifolia. If anybody selects S. cotyledon, a well-known one, in preference to S. lantoscana superba I cannot well complain.

### Red Mossy Saxifrages.

Among these an ever-increasing number of "dear charmers" present themselves, and it is impossible to give satisfaction in a choice from among them. Upon the whole, I think, S. bathonensis is the finest at present offered, although I could choose a dozen almost, and say that they are lovely enough for anybody. It makes carpets of lovely green foliage covered in spring with fine red flowers. S. Rhei superba is such a dainty thing and so distinct, as being a larger grower, that it cannot well be passed by, although not one of the "novelties." It has fine flowers, opening deep rose and passing off almost white.

### S. oppositifolia.

Wonderfully hardy, and, vide the handbooks, from "Northern and Arctic regions," S. oppositifolia has much to commend it when we consider very low-growing and freely-spreading rockfoils. There is scarcely an end to the varieties of this species, and the Pyrenean forms are especially interesting. In the matter of colour S. oppositifolia splendens gives a deep shade of purplish-rose that is unusually attractive.

SAXIFRAGA WALLACEI.

A beautiful saxifrage, with pure white flowers. From a photograph taken in the nurseries of Messrs. T. S. Ware, Lim., Feltham.

### S. primuloides.

It would hardly do to confine our twelve to one or two sections of the great genus, and one would commend a dainty, easily grown one, of the London Pride section—S. primuloides—as choice and beautiful. It is only six inches high, and has neat little rosettes of leathery leaves and small pink flowers. It likes shade, and is all the more valuable on that account.

### S. cæsia.

We must not omit at least one representative of the more minute silvery saxifrages, and for the purpose in view I should include S. cæsia, a charming one which makes densely-packed silvery rosettes of miniature size, these being crowned in the flowering time with little spikes of white flowers, borne in an airy manner above the rosettes. It is a lime-lover, and likes a half-shady place, doing better, perhaps, on the moraine than on the rockery, but not difficult to grow in the latter in loam, leaf-soil, made firm, and sand, with some pieces of calcareous stone or old mortar about the plant.

Such is an endeavour to choose from among a vast number some of the saxifrages likely to give satisfaction as possibly the most beautiful plants of the class which everybody should grow.

S. Arnott.

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## THE CARDINAL FLOWER.

The herbaceous Lobelia cardinalis ranks as one of the best subjects of a half-hardy character for summer bedding. The erect stems attain a height of about two feet, and the exceedingly bright scarlet flowers are borne in profusion on terminal spikes. Given good cultivation, the flowers continue to open from the month of July into late in the autumn if the weather remains open.

Not the least of this plant's good qualities is the ease with which it can be wintered. All that is necessary is to lift with a good ball of soil on the approach of autumn frosts, and pack thickly in boxes for storing in a fairly dry place in a cool greenhouse until early in February, when they should be put in an early fruit house and be kept moist to induce them to produce new shoots. When these latter are two or three inches in height carefully divide the plants. Put them singly in small pots, using a compost of equal parts loam and leaf-soil, adding a little sand, wood ashes, and decayed manure. Place in a warm house or mild propagating frame, and water with tepid water. When it is seen that they are taking to the new soil place on a shelf in the greenhouse for a few days, and finally in a cold frame. Shift into large 60's or 48's as needed.

When once the young plants are well rooted avoid coddling them, and admit plenty of air to the frame on all favourable occasions. Except in warm districts it is not safe to plant these lobelias out until the end of May, so that it will be seen there is ample time to produce strong robust plants before then.

This and similar lobelias are most effective when massed in beds, or in colonies on the margins of shrubberies. As dot plants about the borders their true beauty is not seen to advantage.

H. T. Martin.

## PRIMULAS AT FOREST HILL.

Over a period of many years we have made an annual pilgrimage to Messrs. James Carter and Co.'s nurseries at Houston Road, Forest Hill, to see this firm's stocks of Chinese primulas, and, after due consideration, we feel quite safe in saying that never have we seen the plants so finely grown or so splendidly flowered as on the occasion of a recent visit. One is compelled to acknowledge the great beauty and usefulness of primulas when they are presented in such fine condition, and seen in large blocks of a variety. Moreover, it is only when seen in this fashion that the considerable difference in habit and size of flower between certain varieties is fully understood.

The Messrs. Carter have achieved a high reputation for Chinese primulas, and their long years of work in improving habit, increasing the number of flowers, adding to the size of the blooms, and giving purity and brilliance to the colouring, has resulted in a series of varieties second to none. And still the work goes on. It is not many years since we saw three plants only of Bouquet, the splendid white variety with foliaceous calyx; this is now largely represented, and is very popular for its extremely compact habit. Now there is another new white, soon to be sent out, and it is remarkable for the breadth and substance of its blooms and the wonderful purity of its whiteness. Several new blue varieties have been evolved, and in due course will be fixed and distributed; there is also an interesting set of cross-bred seedlings, several of which give promise of a successful future.

It is interesting to watch the work of fertilisation at this season. Fine as they are, these primulas are not grown merely to be looked at and admired, but for the production of seeds to supply an ever-increasing demand. According to the weather, the plants are dealt with once a fortnight or once a week from mid-February to the end of April, every flower being pollinated by means of skilful fingers and a camel-hair brush. Each variety and each block of a variety has its own brush, and this brush is never used for any other variety, and so the stocks are kept perfectly true. The giant strains are shy seeders as compared with the older type, and one seed vessel will contain ten or twelve seeds as against from twelve to twenty in the capsule of an older form. This means that the giants must be grown more largely to provide the necessary seeds, and it also means an increase in price.

All the varieties offered by Messrs. J. Carter and Co. in their handsome catalogue are of high merit, and the range of colours is sufficiently wide to accommodate all tastes. For those who like the colour, Giant Magenta is particularly striking, but Coral, Giant White, the lovely blush Princess May, the old vivid Vermilion, King Edward VII., a superb white, Crimson King, Rose Queen, and Elaine can hardly fail to please the most fastidious primula lover.

A capital race of Star primulas has been evolved at Forest Hill, the flowers larger and more rounded than in most strains, but on plants as free-flowering and quite as graceful. In this set the colours are lilac, white, salmon, pink, crimson (with golden eye), carmine, scarlet, and blush. In double varieties the firm has a goodly set, but Double Scarlet, unusually double, and Prince of Wales, double rose, and the new deep rose variety with oak-leaf foliage are three especially fine forms. The latter is particularly free flowering; indeed it suffers a little from its own good qualities, for if it bloomed a little less and carried its flower stems a little higher it would be still more effective.

When firms like Messrs. J. Carter and Co. take so great pains and incur such great expense in their efforts to secure purity of stock, high germinating power, good habit. fine colouring, and new shades, the work not only redounds to their own credit and adds to their business, but creates a high standard of excellence for others to aim at, and so the particular subject considered is improved throughout the country, and its culture extended as the result of such enterprise.

## PERPETUAL CARNATIONS AS BEDDING PLANTS.

The following is the text of an address given by Mr. E. F. Hawes at the Conference on Perpetual Flowering Carnations held at the Royal Horticultural Hall, S.W., on March 21:—

Prior to the formation of the Winter Flowering Carnation Society, now the Perpetual Flowering Carnation Society, had one contemplated holding a special exhibition of tree or perpetual carnations, such a display would have been considered impossible. Yet, in less than a decade, this society has become well established, and its ultimate position assured.

At first grown only for winter flowering, and in a few gardens, the decorative value of the plant, with its long-stemmed flowers, lasting quality when cut, and rich colouring even in mid-winter, soon brought it into public favour, with the result that its cultivation in this country was quickly undertaken on a large scale for market purposes. Up to this period the principal varieties, which were limited in number, had been raised in the United States, where the culture had already become established, but with its increasing popularity growers turned their attention to raising new varieties. The first British-raised seedling Britannia (scarlet) was certificated by our society in 1907, and was quickly followed by Mrs. H. Burnett (salmon-pink) in the same year. Since that date the number of new varieties raised in this country has largely increased, and several new and distinct shades of colour have been obtained.

It has also been proved by more extensive cultivation that the present race of carnations thrives better in a much lower temperature than had been previously given the older tree varieties.

Having obtained some of the first plants of Britannia that were exhibited, I raised a good stock, and planted them out in May, 1909, on a border sheltered slightly from the north-east, and facing due west. The subsoil was London clay, which is always very damp and cold during the winter and early spring months. After blooming throughout the entire summer, about thirty-six plants were left in the open ground during the winter in order to ascertain their hardiness. The lowest temperature recorded during the winter of 1909-10 was 15 deg. Fahrenheit, showing 17 degrees of frost. The last blooms opened at a minimum temperature of 22.5 Fah., and the plants then became dormant. The great majority of them passed through the winter uninjured, and commenced blooming again the following May, and continued until December. The cold winds experienced in April, 1910, killed the softer growth of a few plants, but on being cut back they rapidly made new growth, and flowered freely through summer and autumn, not a single plant being killed. These experiments have been continued and extended, and several gentlemen have had plants of many varieties growing in the open garden during the past winter, when the temperature fell below zero, and these have suffered no apparent injury, and in some the buds are even now showing colour.

Having thus established the hardy constitution of the perpetual flowering carnation, the chief object in this direction has been attained, but further series of trials will be continued.

We desire now to compare this type of carnation with the various summer bedding plants of the present day. Carnations, like roses, are always welcome, and a bed or border of these favourite flowers in continuous bloom from May to December will certainly prove a valuable acquisition to any garden. Two types of plants may be used for this purpose, i.e., (1) those well established and having several flower buds well developed, which, on planting, will flower at once and continue to give a display of bloom, until the plants become dormant owing to the low temperature usually experienced in December; (2) young plants well established in small pots, and having from three to five strong shoots, which commence to bloom within a month or six weeks after planting, and continue as above. In either case they should be planted out in May, in an open position, in either bed or border, where the soil has been previously well prepared for their reception by thorough digging and liberal manuring.

The plants should be properly staked at the time of planting, in order to secure them from damage by wind. No stopping, except by the removal of dead blooms, or the cutting of fully-developed flowers, both with long stems, is required. Water carefully, and keep the surface soil of bed stirred at intervals. Occasional spraying with a reliable insecticide will prevent serious attack from insect pests, and the plants will well repay the time involved.

To those who have not already tried these charming plants for the open garden, I would certainly say do so, as they are thoroughly deserving of attention.

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## THE ANDROSACES.

This beautiful and interesting group of plants contains some of the choicest and rarest gems for the rock garden. As they are natives of high mountainous regions, the androsaces revel in a dry atmosphere, however cold it is during the winter; hence the difficulty experienced in this country in keeping them in a healthy condition through wet and damp weather. This difficulty is to be overcome by carefully selecting suitable spots, and protecting the plants from excessive moisture during the late autumn and winter months. The majority of the species delight in sunny positions, but there are a few which thrive best when planted in half-shady situations. Sloping crevices between the rocks are the most suitable places for them, as the water drains off quickly, and does not remain round the crowns or rosettes, as it otherwise would do if the plants are grown on flat spaces. In many cases the foliage forms woolly rosettes, which naturally hold any superfluous moisture there may be about; this proves most injurious, and often fatal.

With the exception of A. carnea, A. Laggeri, and A. Vitaliana, the soil should consist of sandy loam, with plenty of limestone grit and sand mixed with it, and given sunny positions. The three mentioned thrive better when grown in half-shady situations, in a non-calcareous soil. During the late autumn and winter the most effective protection is afforded the plants, by fixing a sheet of glass overhead, leaving the sides open, to allow a current of air to pass through. There must be no attempt to coddle the plants, the protection being necessary to maintain the foliage in a fairly dry condition. When these points are attended to, much of the difficulty regarding the cultivation disappears.

Top-dressing is an important point to consider when dealing with the androsaces. Being grown in sloping crevices, the soil naturally becomes washed away by heavy rains and frequent waterings, however tightly it is packed in with stones. The top-dressing should consist of the same kind of soil as that in which the plant is growing, and be applied from time to time as may become necessary. Species having tufted growths, such as A. carnea and A. Laggeri, will require to have the soil worked well amongst the growths. Trailing species, such as A. lanuginosa, must be top-dressed round the collars of the plants, whilst the rosette-forming kinds are given fresh top soil when the young rosettes are forming, and pressed into it, when they quickly form roots. This is the quickest method of increasing the stock of all species having the latter habit of growth. The young rosettes are put into small pots, and grown on in frames. Cuttings of lanuginosa and A. Leichtlini should be taken in the early part of August, and dibbled into pots of sand. These are placed in a cold frame, and kept close for a time, when the cuttings quickly form roots. When sufficiently rooted, the young plants are potted up singly, and given frame protection, through the first winter. The following spring they may be planted out in their permanent quarters. Those species which form tufts or cushions of foliage should be increased by seeds. Division of the plants is sometimes advised, but it is rather risky, for androsaces do not care for root disturbance. The seeds are sown in April, in pots which have been filled with fine soil, and placed in a cold frame. Transplanting and potting must be attended to as the seedlings grow.

With reference to the species that should be selected for the rockery, the following may be specially recommended: A. carnea has rose-coloured flowers with yellow centres. A. coronopifolia is a biennial, and when once established, reproduces itself freely from seeds. A. Chumbyi is one of the prettiest of the androsaces, and of fairly easy cultivation. Its rosy flowers are borne in umbels on stems about three inches high. The woolly rosettes of foliage are formed on the ends of thread-like runners, and when top-dressed in July or August these rosettes will, if slightly pressed into the soil, and held in position by a small wire pin, quickly root into the soil. The variety is said to be a cross between A. sarmentosa and A. villosa. A. foliosa has rose-coloured flowers in umbels. A. helvetica is of spreading habit, the foliage being in the form of rosettes, which produce almost stemless bunches of white flowers, with yellow centres.

A. Laggeri is similar to A. carnea, with a greater freedom in flowering than the latter. A lanuginosa should be afforded a position where its slender growths can trail over the face of a stone. The flowering season of this lovely species extends over a considerable period, and a good-sized patch is usually much admired. The rose-coloured flowers are borne at the ends of the shoots, and as growth is very free during the summer, there is usually an abundance of flowers. It is one of the easiest to propagate. The young growths will root quickly in sand in August, if kept close in a cold frame. A. Leichtlini is similar to the preceding, requiring the same treatment, but having white flowers with rosy centres. A. sarmentosa has something of the habit of A. Chumbyi, but the rosettes are larger and the blossoms are more numerous than those of the latter. E. C. Pooley.

Gnaton Gardens.

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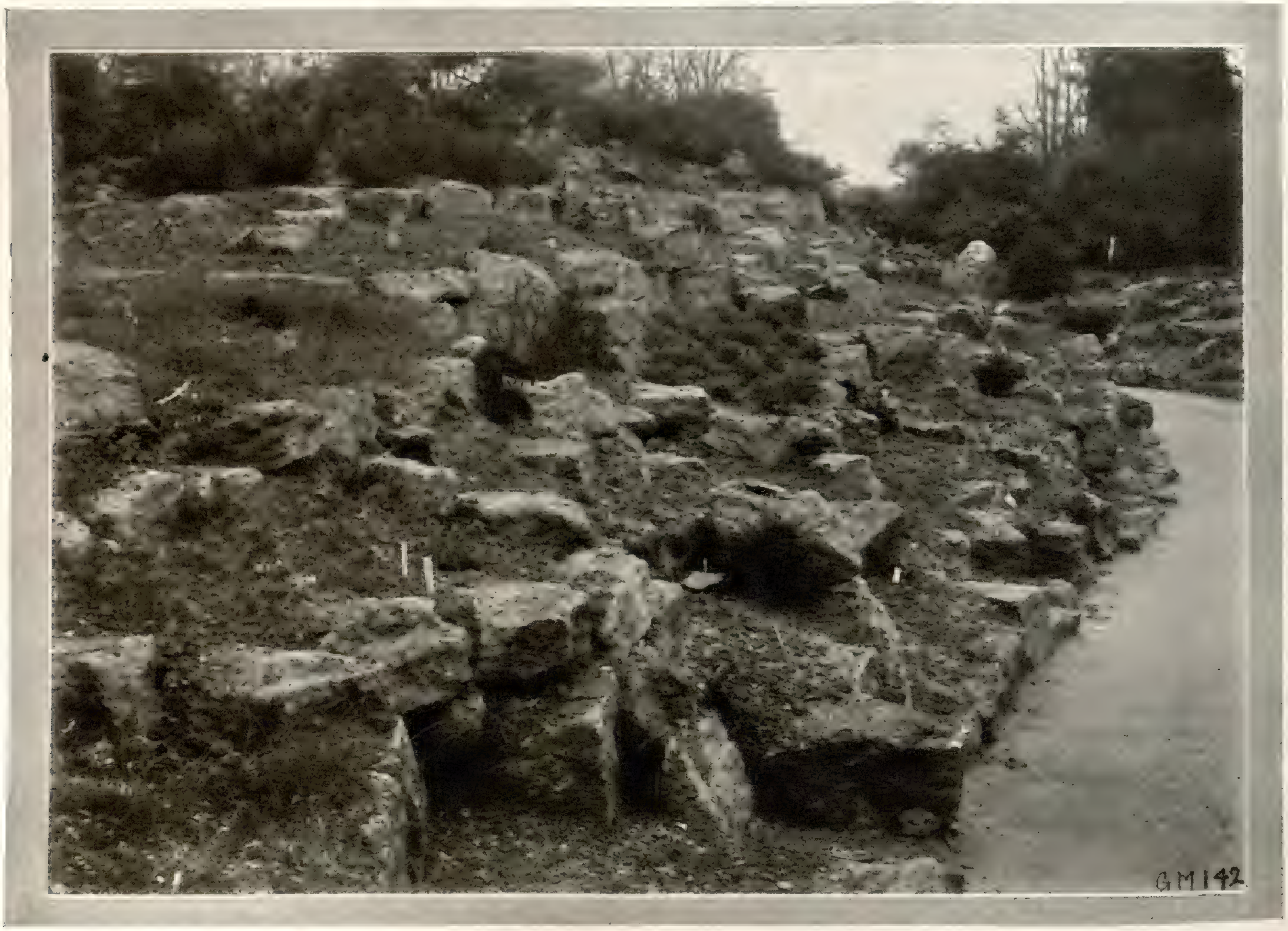
**Anemone and Pompon Chrysanthemums.**—I have noticed the endeavour of the committee of the N.C.S. to resuscitate these sections of the chrysanthemum by offering prizes for seedlings in 1913. What a project! If the committee would formulate a class or classes for one or both of these sections, and offer handsome prizes in an open class, restricting no one from entering, be he nurseryman or amateur, they would obtain a meritorious display, and would prove to the public that the varieties now in existence are not nearly so exhausted as the committee appears to think they are in 1912. To make any real progress in the subject it is useless for the society to wait until the month of March before acquainting the public of its requirements in the current season. Too late an issue of the prize schedule is not the way to ensure success.—E. M.

## RENOVATION OF ROCK GARDENS.

A rock garden may be thoroughly well constructed in every way, both in the matter of material and plants, but still it requires periodical overhauling and even rebuilding. The latter is sometimes necessary as time goes on, owing to the settling of the soil and stones throwing them out of their original positions. For no matter how well a rockery has been built, such displacement takes place to a certain extent. Also in course of time the stronger growing and more vigorous plants tend to occupy more space than was intended for them, and encroach on their weaker neighbours, to the detriment of the latter. Many plants also exhaust the soil of certain constituents which they require, and gradually become so weak that they do not produce the amount of bloom given by a younger plant. Of course, there are many plants which will grow and flourish year after year, only requiring a little top-dressing in the shape of grit and leaf-soil once or twice annually. Such a plant is Saxifraga sancta when planted in a half-shady position, where it is not likely to be burned by the sun.



REMADE AND NEWLY-PLANTED PORTION OF THE KEW ROCK GARDEN.

The reason for the rebuilding of the rockery shown in the illustration was that originally the material used for retaining the soil of the bank consisted of tree stumps, round boulders of sandstone, and various other kinds of material little suited for the choicer plants which one expects to find in a rock garden. Tree stumps may be picturesque enough, but they afford a favourite harbour for mice and other vermin, and it is only possible to grow coarser subjects as geraniums and such-like plants on the more sunny portions and ferns in the shady corners. Then the tree stumps were always undergoing the process of decay, necessitating frequent patching, which did not tend to improve the appearance of the rockery as a whole.

The stone used for rebuilding came from Gloucestershire, and is of a yellowish colour like sandstone, but is full of lime. The strata is quite evident, and in constructing care was taken to place the blocks so that this is running in one direction throughout the whole bank. But although care was taken to make a solid bed for all the stones, it may be noticed in the illustration that some of them appear to be tilting in a different direction. This fault is probably accentuated or produced by the inequality of the stone, or by the point of view from which the photograph was taken. Such defects as these are easily remedied by means of wedges of stones, and by ramming in soil till the block of stone is in its proper position.

The best time for reconstruction is in the autumn, so that if possible the plants may be back in their places well before the winter sets in. But if the alteration is too extensive for this, and it is impossible to finish the work before the winter, then the planting should be deferred till early in the spring. When commencing to rebuild a portion of the rock garden it is necessary to carefully lift all the smaller and choicer plants; and if the alteration is likely to take some time, they should be potted up temporarily and placed in some sheltered position or in cold frames till the place is ready for them again. The larger and coarser growing plants may all be packed close together in large boxes, or even on the ground in some sheltered place, with leaf-soil or other light material in between to keep them from becoming dry. When the rocks have all been pulled down, the ground should be thoroughly forked over so as to get rid of all weeds before starting to rebuild. If the soil is heavy, plenty of grit should be mixed with it, and where necessary ample drainage materials, like broken bricks or stones, should be worked into the soil. In rebuilding, the soil should be well rammed before placing the boulders in position, and in some cases it will be necessary to quite bury some blocks of stone in order to have a good foundation for others. When the building is finished, the pockets may be prepared for planting by taking out unsuitable soil, putting in plenty of drainage at the bottom, and then filling up with a suitable compost necessary for the particular plant which is to occupy the position.

Where rebuilding is not necessary, but some of the plants are out of hand or are exhausted, they should be lifted, and the old soil taken out. The new soil may be put in the pocket, and the old plants, or preferably a younger stock, be replanted. If a little replanting be done every season then the rockery will not suffer in general effect, and it will be easier to keep up with the work of renewing and replenishing so necessary from time to time. The above remarks apply to such things as aubrietias, arabis, arenarias, and such like plants that will move readily and do not suffer from replanting, in fact, they are much better for it. Some kinds are very impatient of removal, like gentians of the septemfida and asclepiadea type, and in these cases a good top-dressing of rich soil should be given from time to time. Plants like Saxifraga oppositifolia and others which form spreading carpets are benefited by having grit and leaf-soil worked in between the growing points and covering up the trailing stems.

Primulas also tend to grow out of the ground and form stems; these also should be earthed up to the base of the leaves.

Early in the spring all dead plants should be removed and the blank spaces filled up by others, taking advantage of the opportunity to change the soil in the various pockets where the plants have died. With the heavy rains during the winter the surface of the soil becomes caked, and so should now be carefully gone over with a hand fork to break it up in order to allow it to sweeten. Care should be taken not to disturb the roots by digging too deeply. Weeds at this time of year are coming on apace, and will require constant attention. W. I.

## BULBS AND IRISES BY THE WATERSIDE.

The study of reflections in water is a special branch of the painter's art. There are laws governing the shapes and colours of reflections, intricate and bewildering laws truly, since they are different for morning, afternoon, and evening, being varied by the position of the sun, the amount of cloud, the sky tints, and even the hues of neighbouring objects.

Gardeners may congratulate themselves that they can create fair water reflections without any of the perils that threaten the artist who works on canvas, and none of the other floral effects of the pleasure grounds possess quite the same charm. Perhaps the Japanese iris stands out pre-eminently as the loveliest waterside plant, but safer and less expensive displays can be made with German and English irises, which should always be closely associated in order that a succession of blossom may be gained. It should be remembered that German irises will flourish in almost any soil, high up upon banks, flanking banksides, or occupying low, marshy levels.

There are numerous iris lovers still who regard the German section as coarse, but this would not be the case if the named varieties were grown. They are a trifle less free-blooming than the familiar violet, but even this reproach cannot be applied to clumps that are well established, and have been suitably fed. A few barrow-loads of old manure and leaf-mould, wheeled round in late autumn and cast down among the iris plantations, will ensure a noble blossoming the following May.

The following may be taken as a fairly representative list of German irises, which cost from 6s. to 12s. a dozen: Maori King, yellow and crimson; Poiteau, purple and white; Sir Walter Scott, bronzy-gold and terra-cotta; Aigle d'Or, lilac, striped with violet; Cordelia, peach-mauve and purple-crimson; Celeste, lavender, with orange beard; Victorine, white, blotched with blue; Faune d'Or, gold, streaked with crimson; Harcourt Thorse, brown, streaked with violet; John Fraser, gold and white; Canary Bird, yellow; Bridesmaid, lavender and white; Gem, straw-yellow and violet; Plumeri, copper-red; and Victor Hugo, gold and red. Early autumn planting is advisable, and care should be taken only to lightly cover the rhizomes with soil, as deep planting retards development, even if it does not actually destroy the plant.

Named English irises, to closely accompany the German irises, can fortunately be planted at the same time; so colour combinations are easily accomplished. Excellent representative varieties are: White Queen, white, shaded with lavender; Pharon, claret, with purple-crimson and white; Miss Barclay, white, flaked with magenta and violet; Rosa Bonheur, white, rose, and crimson; Viceroy, peach, with purple and mauve; Lilacina, lavender, with violet and blue; Blanche Fleur, white, shading to blush; Delicatesse, white and crimson; Electra, pale blue; and King of the Blues, deep blue. Those groups that are so placed as to be reflected in water should always contain plenty of yellow or white, because blue and purples, though splendidly rich in hue, have a gloomy effect if over-massed without any relief. Against thickets of golden privet, however, golden elder, or silver-leaved trees or shrubs, they are admirable alone.

Camassias are grand plants by lakes or ponds, also on river margins, and flower in July, after the irises. The best are Camassia Leichtlini, though rare, is inexpensive, and hybrids often prove of exceeding value for yielding light tints; then the indigo-violet of C. esculenta Royal Purple is meritorious, if kept far from the ordinary blue C. esculenta. Few gardeners make sufficient use of Camassia Cusicki, a large plant with handsome foliage and spikes of lavender bloom.

With camassias nothing can tone better than the montbretias, gold and vermilion, and the latter will thrive even when planted in sedgy margins, so that their bells overhang the water, and cast spent petals of orange upon its surface. In full sunshine the florescence and the reflection of montbretias should glow like firelight when seen from a little distance.

Warm colour in September and October, upon shady banks and stretches either of soil or turf, may be spread out lavishly by the use of Colchicum byzantinum, a free-flowering rose variety of Meadow Saffron; a few groups will not make much effect, of course, but when a couple of hundred bulbs have been planted there will be a fine reward. The ruby-crimson Colchicum speciosum rubrum can be used to give a deeper shade. November crimson can be gained from a sufficiently generous use of Schizostylis coccinea. For white or pale rose flowers, produced in trusses, or umbels, on three-foot stems, out of a forest of deep green, Crinum capense cannot be rivalled, but the position must be sunny and fairly sheltered from cold winds; given such places the deeper pink Crinum Powelli should also be tried. Hyacinthus candicans is another of the numerous stately bulbous plants that are marvellously economical and safe to use for furnishing river and lake sides.

It is not always the largest plant, however, that produces the finest effect by water; as an example of this I may mention a garden in which heaps of rough rockery were thrown down against the ends of a rustic bridge, spanning a stream, and thoroughly planted with Geissorhiza rochensis. This unfamiliar South African bulb produces during June flowers of a vivid blue, blotched with crimson. M. H.

**Clerodendron fallax.**—As a bright autumn-flowering plant this is unsurpassed and an early start should be made to raise the required number so that strong plants are built up by the summer. Those raised from seed sown now, and given bottom heat, make good specimens the first year. The old plants should be placed in strong heat for the production of cuttings, and these should be taken off with a heel when two or three inches long, inserted in sandy soil, and placed in the propagating frame. Put them into small pots when rooted, and grow on a shelf near the light. Shift on into larger pots as thought necessary, using a compost consisting of two parts loam to one part each of peat, leaf-soil, and dried cow or sheep manure, adding sufficient sharp sand and wood ashes to ensure porosity. It is a mistake to overpot these plants; when well grown, seven-inch pots are large enough to flower them in.—H. T. Martin.

## PRIMULA-MARGINED RILLS.

A most delightful way of utilising the moisture-loving primulas is in the embellishment of tiny rills and streamlets. The picturesque effects evolved by the free use of these primulas along the margins of little waterways entirely justifies an adoption of the idea in gardens where at present they do not exist. The overflow from the lily pools, or a small regular flow of pure water from any given source, could be converted into a streamlet fit for the reception of the bog primulas.

In good loamy soils, moistened by the water, the primulas will grow grandly, and if, when planting, a little rough sand and a small quantity of decayed manure is added to the soil, the plants will derive greater benefit. Heavy shade must be avoided in the culture of these primulas. Though partial shade, if not too dense, is helpful to some species, particularly such forms as P. Sikkimensis and P. algida.

Of all the primulas available for the purpose in view none are better known, or more widely utilised, than the favourite P. japonica. Certainly this glorious species, and its many varieties, are exceptionally good for this work of "margining the rills." The range of colour is fairly extensive, for, in addition to the crimson-purple of the type, one gets such diverse hues as white, lilac, rose, carmine, salmon, blood-red, and various blotched and oculata forms, which, in planting, can be blended, or else kept in separate groupings. The popular P. rosea is well adapted for moist positions, and its profuse habit of blossoming and its pleasing rosy-carmine colouring, entitle it to a place in every garden. Its varieties grandiflora, an improved form of the type, and splendens, a rich-hued gem, approaching to scarlet in colouring, are both worthy of notice.

P. Sikkimensis, the delightful Himalayan cowslip, is worthy of a good place; the dainty habit and exquisite fragrance of this soft yellow species combine to make it of the utmost value. The rarer P. Poissoni, with its vigorous habit and its fine whorled spikes of purple flowers, is near to P. japonica in habit, but it is grander and nobler even than that free-growing species. In favoured localities, perhaps the splendid Javan species, P. imperialis, would prove sufficiently hardy. Certainly it would be well worth trying, particularly in the south-western counties. It makes good rosettes of foliage, and the flower spikes somewhat resemble those of P. japonica, but the flowers are of a pleasing yellow colour. P. grandis should do well at the waterside. It is a good bold-habited species and the large umbels of small yellow blossoms are distinctly pleasing.

Other good moisture-loving primulas include P. algida, with reddish-purple blossoms and glabrous leaves; P. capitata, a pretty Himalayan species with violet-coloured blossoms; P. denticulata, and its many pretty varieties, which love a moist soil, but must not be planted too low against the water; P. involucrata, a charming white-flowered Himalayan kind, and its pretty variety Munroi, suffused with pale blue; and P. luteola, a handsome yellow species, good growth and appearance. Another useful subject should be found in the recently-introduced P. decorum, a free-growing crimson-purple species from the river banks of Servia and Bulgaria.

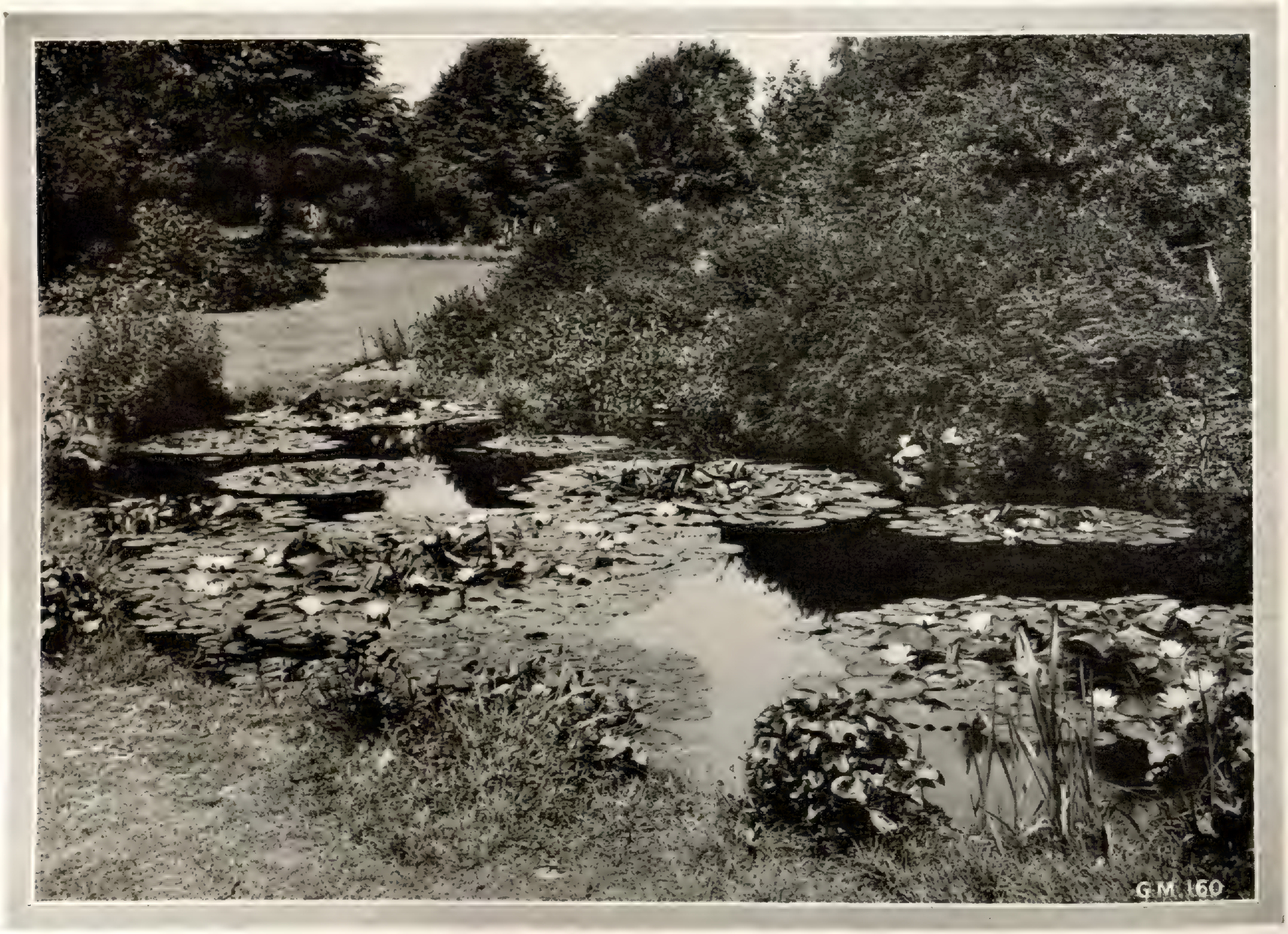
The range of moisture-lovers is certainly extensive enough for all planters, and a streamlet or narrow pool fringed during late spring and throughout the summer with these exquisite primulas will form a pretty feature of the garden.

P. S. Hayward.

## THE FINEST WATER-LILIES.

In treating upon this subject, I only propose to deal with the hardy kinds, and will leave the tender ones for future consideration.

It is some few years now since the first of the newer race of hardy hybrid water-lilies made an appearance upon our lakes and ponds in this country, thanks mainly to the indefatigable efforts of the late M. B. Latour-Marliac, who, after many years of most persevering efforts, was successful in raising those well-known varieties that have become so popular. It is only a reasonable expectation, when we survey the past, to look for newer varieties at the present time. There has been a very steady improvement, even from the first; but during the past few years a distinct advance has been made. This has been apparent in at least two ways. The newer water-lilies are, on the whole, more floriferous than the earlier ones were; while we have now several novelties in point of colour. In size, also, there has been an advance, notably during the past season or two. I have often been applied to for information as to the best kinds to grow. For the benefit of the readers of the Gardeners' Magazine I now give a list of the best up-to-date varieties that have come under my observation during the past few years.



SMALL WATER-LILY POOL AT KEW.

### White Varieties.

There are at least three under this head that stand out prominently as most desirable ones to grow.

Nymphœa virginalis, one of M. Latour-Marliac's later seedlings, is, in my opinion, the purest white yet raised. The individual flowers are of the largest size; by this I mean they are as large as N. Marliacea albida and N. Gladstoniana, two other whites. I shall not be surprised this season if N. virginalis does not surpass these in size. It has flowered here now for two seasons, and last year it improved greatly. It is one that will be suited to somewhat deeper water than many, and this is indicated by the length of the petioles, or leaf-stalks. In M. Latour-Marliac's catalogue it is described as being both early and late in flowering, as well as being sweetly scented; this latter feature is in its favour.

N. Caroliniana nivea is another variety of the purest possible white. It belongs to the odorata section, being only of medium vigour and growth. Each flower has a multiplicity of petals, somewhat narrow, which suggests its affinity to the section alluded to. It is a most suitable variety for shallow water or for fountains.

N. Gladstoniana is, I believe, an American-raised variety. It has been cultivated for some few years now, but its exquisite beauty does not appear to have been fully recognised. It was finer last year than ever before at Gunnersbury. It is a most robust grower, one of the very strongest. Its foliage, when fully matured, is quite 18in. across. The flowers are of the largest size, often as much as 9in. in diameter. The colour is very pure, the outer petals being tinged with pale green; this rather adds to its beauty than otherwise.

### Pink and Rose-coloured Varieties.

In these shades of colour N. Mrs. Richmond stands out as being pre-eminently the best and finest pale pink variety that we possess. It is possessed also of most unusual vigour. I predict for this water-lily a much-extended culture in the near future. Those who are acquainted with the somewhat old N. Leydekeri rosea will see in N. Mrs. Richmond a very much finer flower of the same distinctive colouring and features.

N. Newton, a new lily, has in its flowers something of the character of N. stellata. In colour it is of a rosy-pink shade, and when seen upon the water could be easily recognised, being so very distinct. This, too, has a good future before it.

N. colossea is well described in its name as regards its size. It comes nearest to N. Marliacea rosea in other respects, and is quite a feature upon the water here. The flowers stand well above the foliage; hence they show to the best advantage. It continues a long time in flower, being one of the earliest and one of the latest to perfect its blossoms.

### Yellow Varieties.

In this colour the best novelty, in my opinion, is N. Mooreana; it is somewhat like N. Marliacea chromatella, but with an absence of the pink shading, while the yellow is distinctly deeper. In growth it resembles the variety just named.

### Red, Vermilion, or Carmine Varieties.

In this group we have a few remarkable novelties. There are already fine varieties in N. gloriosa, N. Ellisiana, and N. James Bryden, but we have another one that bids fair to rival these. One of the finest new kinds is Nymphæa Escarboucle; this, in colour, is different from those I have already named, being more brilliant than either, having a distinct shade of vermilion in its colouring. I do not know of any lily of the same colour as N. Escarboucle.

N. atropurpurea is now fairly well known. This also is one of M. Latour-Marliac's varieties. Here, again, the colour is most distinct, but not so brilliant as in the preceding variety. We find it flower freely all the summer. The late M. B. Latour-Marliac considered N. atropurpurea to be one of the best water-lilies he ever raised.

N. Meteor is fiery red, with occasional stripes (very narrow) of white. It is quite distinct, and can be easily recognised upon the water. Other kinds that come under this colour are N. Attraction, somewhat like N. atropurpurea; N. Conqueror, which has bright red flowers; and N. Sultan, a brighter red than many, and one with very brilliant stamens in addition.

JAS. HUDSON, V.M.H.
Gunnersbury House Gardens.

## DISBUDDING PEACH TREES.

With regard to disbudding young trees, sufficient shoots should be retained, not only to furnish bearing wood, but for extension shoots. Such shoots as show great vigour must be stopped in order to realise the flow of sap, and if the resulting breaks are also vigorous, let them be also stopped. Usually lateral growths result from this second pinching, and if space permits, some of the best-placed ones may be laid in, and when attaining a length of 12 to 15 inches, pinch out the point of growth. On the first signs of aphides, dust the shoots with tobacco powder by means of a distributor, and continue to do so until such time as it will be safe to spray with a suitable insecticide. Quassia extract is a safe and reliable remedy for greenfly. To prevent panning down the soil during the operation of disbudding, lengths of trellis or boards should be used. Owing to the excessive rainfall the soil is in a saturated condition, and it will not be necessary to apply mulching material, particularly where the soil is heavy. — W. MESSENGER.

[Photo: W. J. Vasey.

VIEW IN THE BOG AND WATER GARDEN AT WATERMOUTH CASTLE, NORTH DEVON.

## FORMING A WATER GARDEN.

Water gardening is becoming very popular with a large section of the garden-loving public, for there is a great fascination about it when carried out in quite an informal style, as it makes a pleasing relief from the more formal type of flower gardening.

One of the charms of a water garden is that it is of necessity unlike another of its kind, for it must depend very largely on the surroundings and the existing natural features for its formation and character. It is not everyone who can possess a water garden, for only certain positions can be utilised, and, of course, a fair supply of water is necessary. Where there is a pond adjoining the garden the work is greatly simplified, and even a hollow dell that is within reach of a supply of water can very readily be made use of with good effect.

To be really ornamental a water garden, or, at all events, the principal pool of water should be irregular in shape, and the outline of the water may be made as varied as possible by creating small inlets and bays wherever such a proceeding is practicable. The introduction of a moderate amount of rockwork in suitable positions is often an improvement. Where a water pool has to be formed entirely, it is necessary to thoroughly line the bottom and sides with concrete or clay to make it watertight, and it should be at least two or three feet in depth in places to accommodate the more vigorous of the water lilies.

One of the most charming kinds of water gardening is that formed with a stream, as this can frequently be widened into pools here and there, which greatly add to the effect. The banks of these pools form ideal places for numerous bog plants, and thereby create a pleasing feature. It is astonishing what a little water is required to keep such a garden replenished, for, provided there is a regular inflow, the pools are easily kept up to high-water mark; at the same time a large volume of water is always more imposing, especially when the pools are on distinctly different levels, and miniature cascades can be formed from one to the other.

In the pools themselves water lilies will be the principle adornments, and to grow these successfully they require a situation where they receive full sunshine. The more vigorous kinds, like Nymphæa alba, N. candidissima, with large white flowers; N. Marliacea, and its varieties, succeed well in deep water. But in dealing with young plants it is desirable to start them in fairly shallow water until they gain strength, when they can be located in their permanent positions. Nymphæa Leydeckeri, N. Seignoureti, and N. odorata are suitable for the shallow parts, and for growing in fountain basins. April is a good time to divide and replant these lilies. Place them in baskets filled with fairly heavy loam, and sink them in the positions where they are to grow. Where it is convenient to empty the pool mounds of loam can be made up on which to plant the nymphæas, and after planting the mounds should be finished off with a few rough shingles.

Various other water plants can be planted in the same way, including Orontium aquaticum (Golden Club); Pontederia cordata, with closely-set blue flowers; Nuphar luteum, the common yellow water lily; and Aponogeton distachyon, which is scented like hawthorn. Calla palustris (the Water Arum), Sagittaria gracilis, the common Arrowhead, and Menyanthes trifoliata (the Bog Bean), should also be included. Such plants as Caltha palustris (the Marsh Marigold), Caltha polypetala, C. palustris fl. pl., Typha angustifolia, T. latifolia, Phragmites communis, and Butomus umbellatus (the Flowering Rush), are very effective when planted near the water's edge.

The banks of the water and the surrounding marshy places are ideal positions for numerous bog plants, and if planted in masses they form objects of much beauty. Senecio clivorum, S. Veitchianus, and S. Wilsonianus are very bright and showy, and they look well associated with some of the fine-leaved bamboos, which are especially ornamental growing on the banks of the stream. For this purpose none are more suitable than Arundinaria japonica, A. anceps, A. nitida, Phyllostachys aurea, and P. Quilioi, as these are especially hardy. A few of the more ornamental Japanese maples form pleasing colour effects near the stream side, and of these Acer palmatum sanguineum, A. p. dissectum, A. p. septemlobum, and A. japonicum laciniatum might with advantage be chosen for planting in such positions.

The lovely Japanese Iris Kæmpferi, Acorus calamus (the Sweet Flag), and Iris sibirica, succeed well close to the water. Cypripedium pubescens and C. spectabile grow well in a shady and moist situation, and are especially charming when in flower during May and June. Rodgersia podophylla and R. æscalifolia, handsome plants with large peltate leaves, are very striking; while Saxifraga peltata should on no account be overlooked, as its erect flower spikes are produced early in the season, in advance of its handsome foliage, which is always effective near the water. Arundo donax, Carex japonica, and Elymus glaucifolius are very telling grasses. Epilobium angustifolium, with purple flower spikes; trollius in variety, Funkia Sieboldi, Hemerocallis flava, H. aurantiaca, Buphthalmum speciosum, astilbes and spiræas in variety, especially A. Davidi, S. palmata, and S. Aruncus, are very effective. Osmunda regalis (the Royal Fern) should on no account be overlooked; while Gunnera manicata and G. scabra are very handsome planted where their roots can easily reach the moisture.

J. Gardner.

Batsford Park Gardens.

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**Propagation of Tuberous Begonias.**—These begonias are easily raised from seed, but should it be desirable to increase the stock of any particular variety, it can be done by dividing the tubers when they have started into growth, the tuber may be cut up like a potato, with a strong growth to each piece of tuber. Lime and powdered charcoal should be rubbed all over the cut side and the tuber placed in sand for a few days to heal before potting. The side shoots, if taken off as cuttings, inserted round the sides of a pot filled with a sandy compost, and put in a propagating frame, will readily root. These plants make nice tubers by the autumn. Seedlings raised in January will now be ready for pricking off into pans or boxes. As they are filled the pans or boxes should be placed in a house where a brisk temperature and moist atmosphere are maintained, and grown on for planting out in June. Seedling begonias are always best planted out the first year on a west border, and the best varieties labelled for pot culture the next season. This is an immense advantage, inasmuch as none but plants with flowers of good quality and effective in colour will be grown for conservatory decoration.—Lewis Smith.

## POPULAR PALMS.

Time was, and that well within the memory of many, when palms were not looked upon as general decorative plants, being, in fact, only regarded as choice occupants of the stove. The first to become popular in the market and to be employed for the decoration of the dwelling was that well-known Fan Palm, Latania borbonica, which botanists now tell us should be known as Livistonia sinensis. Present-day ideas favour plants of a less lumpy character than this, the result being that it is now not grown to anything like the same extent as it formerly was.

Kentias must be looked upon as the most popular of all palms, and in some nurseries they are grown literally by millions. They find a ready sale, from tiny little plants in thumb pots to large specimens a dozen feet or more in height. Large examples realise high prices, but small plants can be bought at a comparatively cheap rate. Clean, well-furnished palms, usually in 5in. or 6in. pots, may be frequently seen hawked about the streets of London. The Kentias that are generally grown are Kentia Belmoreana and Kentia Forsteriana, this last, from its looser habit, being preferred for growing as large specimens. Seeds of both are imported in large quantities during the season.

Cocos Weddeliana, with finely divided leaves, is a beautiful palm, but more exacting in its requirements than the Kentias. For table decoration and various select purposes it is much appreciated. With care it may be kept in health for a long time in the dwelling-house. Even in a quite small state this Cocos is very attractive, but another popular species only asserts itself when large. This is Cocos plumosa, or C. flexuosa, for the two names seem to be used indiscriminately. When young, the leaves of this are simple, or nearly so, but when mature they divide up into a number of narrow leaflets, and a specimen of this palm is then exceedingly light and graceful. The leaves are not of a spreading nature, and this fact, combined with their lightness, stands them in good stead for grouping purposes, as they do not occupy much lateral space in the background.

Phœnix dactylifera (Date Palm), though of great economic interest, is of little value as a decorative plant. Some members of the genus are, however, very ornamental, notably P. canariensis, among the larger growing kinds; P. rupicola, of medium size, and the pretty little P. Rœbellini. Compared with the others, the latter is of quite recent introduction, and for some years it realised a high price. Now, however, thanks to seed having been imported in quantity, well-furnished plants can be obtained at a cheap rate.

Other palms that may be specially referred to are Areca Bauerii and Areca sapida, two greenhouse species; Areca lutescens, which, before the introduction of the Kentias, was grown more than it now is; Chamærops excelsa, hardy in many districts; Chamærops humilis, a small-growing Fan Palm from Southern Europe; Corypha australis, that will stand draughts better than most palms; Rhapis flabelliformis, an exceedingly popular palm in Japan; and Seaforthia elegans, which, before Kentias were largely grown, was much more extensively cultivated. In some old conservatories very large specimens of this Seaforthia may be sometimes met with. Geonoma gracilis well merits its specific name, for in pots from four to six inches in diameter it forms an exceedingly graceful specimen, in this respect being superior to Cocos Weddeliana. The different kinds of Dæmonorops, too, are very pretty, but in their case the spiny leaf-stalks are a decided drawback.

With regard to the different names given above, it may be noted that the nomenclature of palms has undergone great changes within recent years. I have, however, referred to them by the names which are in common use.

Of the different palms enumerated above, Rhapis flabelliformis, from its habit of pushing up suckers, may be propagated by division; but for the increase of all the others it is necessary to depend upon imported seeds. These, as a rule, do not retain their germinating power for any great length of time, which accounts for the fact that they are not offered for sale to any great extent, the general practice in nurseries being to sow the seeds as soon as possible after arrival, and trust to selling the young plants afterwards. Seeds that have been kept out of the ground too long will, from their hard nut-like nature, appear to a superficial observer as sound as ever, but close inspection will reveal the fact that the embryo is shrivelled, and when this happens growth seldom takes place.

When sowing the seed, the bulk of the compost should consist of good loam, lightened by a little leaf-mould, peat, and sand. If the pans or pots in which they are sown can be plunged in a gentle hotbed, so much the better, as palms of all kinds are, during their earlier stages, greatly benefited by a little more heat than adult specimens require. Directly the first leaf is developed the young plants should be potted singly, putting them in as small pots as possible, as they very much resent too much soil around the roots. At the same time care must be taken not to injure the stout, fleshy roots. After potting they should, if possible, be again given bottom heat, in order to encourage quick growth. The after treatment will consist in shifting into larger pots when necessary and syringing freely, as palms are greatly benefited by atmospheric moisture.

For most palms a compost consisting to a great extent of good loam is very suitable, but it is most essential to guard against over-potting, for not only is the health often injuriously affected thereby, but plants in large pots are not convenient for jardinières, or for similar purposes. A stimulant in the shape of some of the concentrated manures now so much used will often prove better than re-potting. When potting becomes absolutely necessary an unexpected difficulty will often arise. In most palms the roots are of a deep descending nature, and consequently coil around the bottom of the pot, and lift the ball of earth out of its place. With these an ordinary flower pot of the required depth will be so wide as to be out of all proportion to the size of the plant. In some potteries, however, they make deep pots for palms, even among the larger sizes.

As seeds are frequently unobtainable, and seedling palms make slow progress during their earlier stages, many people prefer to buy them when they have attained an effective size. In purchasing palms one or two points should be especially borne in mind. In the first place, where palms are grown in quantity for sale, they are usually kept much warmer than is absolutely necessary, in order that they may attain a saleable size more quickly than they otherwise would do. Owing to this it will be as well to treat them to a course of hardening off, but if no conveniences exist for the purpose, the best time to purchase the plants is in June.

W. T.

## MOSS PINKS.

The pretty Alpine Moss Pink, as Phlox subulata is called, is one of the most charming and reliable subjects for rock garden planting. Of easy growth under little more than ordinary conditions, the prostrate stems form a moss-like carpet, and radiate in all directions; the leaves being evergreen, are attractive at all seasons, but specially when they provide an effective setting to the brightly-coloured blossoms that break from the stems in all directions.

It is a hardy plant, of free growth, and exceedingly free flowering, and this description applies without distinction to all its varieties, the majority of which are greatly in advance of the type, in having larger flowers; all are low-growing and rarely exceed six inches in height, whereas their spreading habit often enables them to cover over a yard in width. As carpet plants they have many uses in gardens; as edgings to borders or as groundwork for beds of early-flowering bulbs, they excel, and they are used most successfully in level planting, but their highest decorative beauty is, I think, only revealed when they are seen draping some weathered boulder on the rock garden, and in a lesser degree when suspended from the almost vertical face of a rough dry wall. In either of these positions the characteristic prostrate habit of the branches receives free expression, and the flowers likewise appear to the very best advantage; further, such positions are also most favourable to the thorough ripening of the stems, being exposed to reflected as well as direct sunlight.

Phlox subulata and its varieties succeed in any good garden soil, to which some fresh loam and a quantity of stone chips are added at the time of planting. Chalk is a valuable ingredient in the soil intended for Moss Pinks, and should be introduced wherever possible in a broken state. I have always experienced the highest results from plants grown on natural chalk formation, and this material as a soil constituent renders the plants to a great extent immune from winter damp.

Moss Pinks are propagated by cuttings or layers, the former taken in July and inserted in sandy soil in hand frames and kept close till rooted. Layering may be performed throughout the growing period, and consists of simply pressing the stems into the soil and covering them, when they emit roots freely.

Of the varieties of Phlox subulata that named G. F. Wilson is one of the most distinct, the flowers being a fine shade of mauve; the foliage is narrow and needle-like, the stems slender; old masses of this fine plant develop mounds about nine inches in height; being particularly hardy, it is one of the best for level planting. The variety lilacina, so finely illustrated here, produces flowers of a rich shade of lilac; it is not unlike G. F. Wilson in growth, but is dwarfer and rather more compact, and is altogether a spring-flowering subject most difficult to misplace. In Fairy the flowers are a near approach to lilac, of a most pleasing shade; the growth is neat and rarely exceeds six inches in height. Absolute purity is not found among the white forms, but the nearest approach occurs in Nivalis, a refined little subject of compact growth, and most free in flowering; it rarely exceeds a height of three or four inches. Nelsoni is of stronger growth, and, except for a pinkish centre, the flowers are white. The Bride is somewhat similarly coloured, the centre being a deeper red. A variety of outstanding merit is The Sprite; in this the flowers are bright rose colour, the centre being crimson. Other varieties of merit include Brightness, bright rose; Daisy Hill, a deeper shade than last; Little Dot, one of the dwarfest, having distinct flowers of white and blue; and Model, in which the flowers are pink.

The fact that Moss Pinks are in flower from April till June enables this fine class to be used in spring bedding arrangements, to which they add by their distinctiveness; they bear moving in June without any ill after-effects, so that by simply dividing them, the same plants will do for several years.

Thomas Smith.

[Photo: S. Arnott.

PHLOX SUBULATA LILACINA.

A beautiful variety, with lilac-coloured flowers.

## AUBRIETIAS ON A WALL.

Nature has often a happy way of garlanding the face of a bare wall with flowering plants, and in the illustration on page 285 may be seen a high wall over the face of which numbers of self-sown aubrietias have spread into large breadths, and are very beautiful when in full flower. Every endeavour should be made to modify the original unattractiveness of bare walls by clothing them with plant life. Walls may be rendered objects of beauty, instead of eyesores. Nature gives us proof of this again and again. Here she faces a wall with countless upright, yellow-white spikes of navelwort rising from flat rosettes of rounded leaves; here she drapes the flat surface with lilac flower-trails of mother-of-thousands; here crimson-leaved herb, Robert and pimitory, paint the wall with red and yellow. Nature works wonders with her self-sown seedlings, perfecting her plants in the most unexpected and often apparently impossible spots. From the dry wall her chimney campanulas rise robustly with crowded stems, five feet or more in height; from the narrow chink between the country station wall and the paved platform, down which one can hardly pass a knife-blade, rise strong plants of valerian, a yard in height, and from mortar not five years old seedlings of shrubby veronicas push a few inches of growth. Man may often be discouraged in comparing his ill-fortune with Nature's apparently never-failing success. He has sown in carefully-prepared soil a packet of seed, out of which, perhaps, scarcely one has germinated. Nature's seed, thrown on a rock or into the midst of weeds, flourishes amazingly. But one only sees Nature's successes and knows nothing of her failures. Indeed of these latter she is heedless, "so careful of the type she seems, so careless of the single life," and man may well take heart of grace if his expectations be but half fulfilled.

Many simple cottage gardens are rendered charming in the springtide of the year by aubrietias, which are of the easiest culture, and succeed almost as well in heavy soil as in porous compost. On sloping banks and in retaining walls the aubrietia will flourish and produce its ever-enlarging mantle of flowers year by year. Although ornamental under such diverse circumstances, it is, perhaps, when planted in rockwork, where its roots can strike backward into the cool, moist soil behind the stones, while its foliage and flowers enjoy the fullest amount of sunshine possible, that the rock cress is seen at its best. Here it hangs, its dense mat of leafage hidden during the spring by a prodigal display of blossom, delightful in its shades of purple, lavender, or soft pink. Sometimes after a succession of hard frosts, alternating with sudden thaws, the aubrietia presents but a sorry appearance, but the plant has wonderful recuperative powers, and, with the advent of more genial weather, soon commences to furnish its leafless shoots with green, to be followed later on by a profuse, though somewhat retarded, flower display.

Wyndham Fitzherbert.

## FUCHSIAS.

When well grown there are but few, if any, greenhouse plants more useful than fuchsias, and certainly none that make a finer display when in bloom. Whether grown as standards, pyramids, bushes, trained up pillars, under the rafters, or in hanging baskets they are charming subjects. They are also most useful for outdoor decorations, for nothing has a more pleasing effect than a fine bed of fuchsias carpeted with some low-growing plant that harmonises with the colour of the flowers above. The cultivation of these plants is so simple that no one who has the convenience to grow them should be without a few.

Propagation is effected either by seeds or cuttings, but the latter is the most general method adopted, particularly where it is necessary to have a number of one variety. Cuttings of the young shoots may be inserted in a light sandy soil, and placed in heat, either in the autumn or spring, but those who are desirous of obtaining fine specimens in one season should take the points of the young shoots in September. If these are inserted in such numbers as are required in six-inch pots, which should be plunged in a slight hotbed, they will readily take root. Those, however, who only need small plants would do well to root the cuttings in spring. Seeds may also be sown at that time.

Autumn-rooted cuttings should be potted as soon as ready, and the plants ought to be grown in gentle heat through the winter. It is not advisable to have the temperature too high, or the growth made would be spindly; from 50 to 55 degrees is ample. By the middle of February the plants will require a shift into 48's, for if they have received proper attention, they should be about a foot high by this time; a hundred plants of this size do not take up much room, but after potting the space they will occupy will be much greater; therefore preparations must be made accordingly. When repotted return the plants to the same temperature as that they previously had that there may be no check. It should now be determined whether the plants are to be grown as standards, pyramids, bushes, as pillar plants, for growing up rafters, or for baskets. If the former, keep them to a single stem until the desired height is attained, then pinch out the points of the shoots to induce lateral growths, which operation should be repeated as fresh growth is made. Pyramids are formed by stopping the leading shoot so as to induce side growths to be made, and these, all but the leading one, should again be pinched until the desired shape is attained, when stopping should cease. Some varieties make much better pyramids than others, being more dense in their habit of growth, and such will require far less pinching to induce them to assume the desired form. Bush plants should be stopped when small, and then allowed to assume their natural habit, which will be that of a drooping nature.

When the plants have filled the 48's pots with roots they should be shifted into others two or three sizes larger, according to their strength and the variety grown. To produce specimen plants in one season from six to eight feet high, constant attention must be given; they must not receive a check from the time the cuttings are rooted until in bloom. We have often grown plants of this size from cuttings inserted in September, by the end of the following May, and had them in full bloom from June until the end of September. When potting do not ram the soil very firm, especially if the loam be of a heavy texture, for even though it is made light by the addition of leaf-soil and decayed manure, it has a tendency to become too solid when rammed hard. As the plants proceed in growth a neat stake should be put to the central shoot for support, and the side growth should be looped up to this to prevent them from being snapped off by their weight, and to assist in regulating the distance between them.

Fuchsias are gross feeders, and they will need artificial manure; we have found nothing better than dried blood. This is easily applied, either as liquid manure or in the powdered state; if the former, all one has to do is to put a handful into the watering-pot, fill, and then stir up with a stick. By the latter end of April or early in May the plants should be large enough for their final shift, and will require pots of the size of 8's or 6's. After the final potting they should be re-staked, using neat bamboo rods from six to seven feet or more in length, according to the height they will in all probability attain; at the same time care should be taken to loop up the side shoots to the main stem.

If the fuchsias are intended for furnishing flower beds, they should be stood out of doors towards the end of May, choosing a sheltered position so as to avoid their being broken by high winds, which are usually very prevalent about the first week in June. Such plants as these make a fine show in large beds when planted a sufficient distance apart to show themselves to advantage. The groundwork should be such as to harmonise with the colour of the flowers. If the fuchsias are self-coloured there is no difficulty. We have planted large beds of Blushing Bride carpeted with pink ivy-leaved geraniums, which had a charming effect; Merinka, with a groundwork of fibrous begonias; Lustre, with Royal Sovereign violas; and Charming with a groundwork of white heliotropes. The single varieties are most suitable for bedding, though some of the double forms such as Ballet Girl, Berliner Kind, and Frau Emma Topfer do well.

For specimens the plants should on no account be overcrowded even when in a young state, as their beauty would be spoiled if once they become drawn to one side. They ought to be turned round occasionally, so that all sides may receive a due share of light. Pinching should cease as soon as the plants have attained the desired proportions in order that the growth made afterwards may assume a natural habit, as the graceful drooping sprays will show themselves to advantage if allowed to extend freely. It is difficult to grow fine specimens of such varieties as Phenomenal, as this has a strong rampant growth, but the large showy flowers well repay the cultivator for the extra pains needed to grow it to perfection. Champion of the World is also another of this class.

For growing under the rafters of houses there is no variety that makes such a fine show as Olympia. When liberally treated this is a perfect mass of flowers hanging from the root in a most graceful manner. The long salmon-pink tubes and scarlet corolla produce a charming effect. Blushing Bride and General Grenfell are also useful for this purpose. Of course, there are many others, and each season we find new additions to the long list of varieties already in culture.

As basket plants fuchsias are most suitable, and when employed in this manner it is preferable to root the cuttings in spring. After growing them in pots until they are a foot or fifteen inches high transfer them to the baskets in which they are intended to bloom. The number of plants required to fill a basket must in a measure depend on the size of the basket; it is, however, well to plant sufficient to produce a good effect.

Though I have only dealt with young plants, there is no reason why older ones could not be grown with a like success, but as far as my experience goes young plants are far less trouble, and give a greater wealth of bloom for the labour bestowed on them, and, except in the case of pillar or roof plants, which are usually planted out, they retain their flowers much longer. Young plants take up but little room; one could put five hundred in a two-light pit or frame until potted a second time.

H. C. Prinsep.

## PROGRESS IN APPLE BREEDING.

A bulletin received from the Director of the Dominion Experimental Farms, Ottawa, Canada, is of much interest as showing what may be accomplished in the breeding of apples for a cold climate. When the experimental farms were established in Canada one was located in each of the then organised provinces of the Dominion. This resulted in one being established in Manitoba, and another in the North-west Territories. At that time no apples of merit were known to be sufficiently hardy to admit of their successful cultivation in the North-west plains country. On the suggestion of Messrs. Budd and Gibb, of Iowa and Quebec respectively, who had a short time previously made a journey through Russia, attention was turned to the steppe country of Russia for primary forms of the apple, with which to commence the work of raising varieties that, while of good quality, would be adapted to the climatic conditions that obtain in the North-west Territories. In the result the crab known as Pyrus baccata was imported, and seedlings raised from it, and as soon after as possible crosses were made with the hardiest apples and the cultivated crab. The crosses were numerous, and they were remarkably successful in securing hybrids. The trees came into bearing early, and some twenty varieties have been described and named, and distributed to settlers throughout the provinces of Alberta, Manitoba, and Saskatchewan. The fruits of P. baccata have a diameter of about half an inch, and many of the crossbreeds of the first generation have fruits that are twelve or fourteen times their weight. Crosses were made with Prunus prunifolia and cultivated apples, and some of these have borne fruits that were two inches in diameter. The flesh of this race of hybrids is mostly fine grained, juicy, with traces of astringency. No crossbreeds have as yet been produced that can be included with the dessert varieties, but it is hoped they will be evolved in due course.

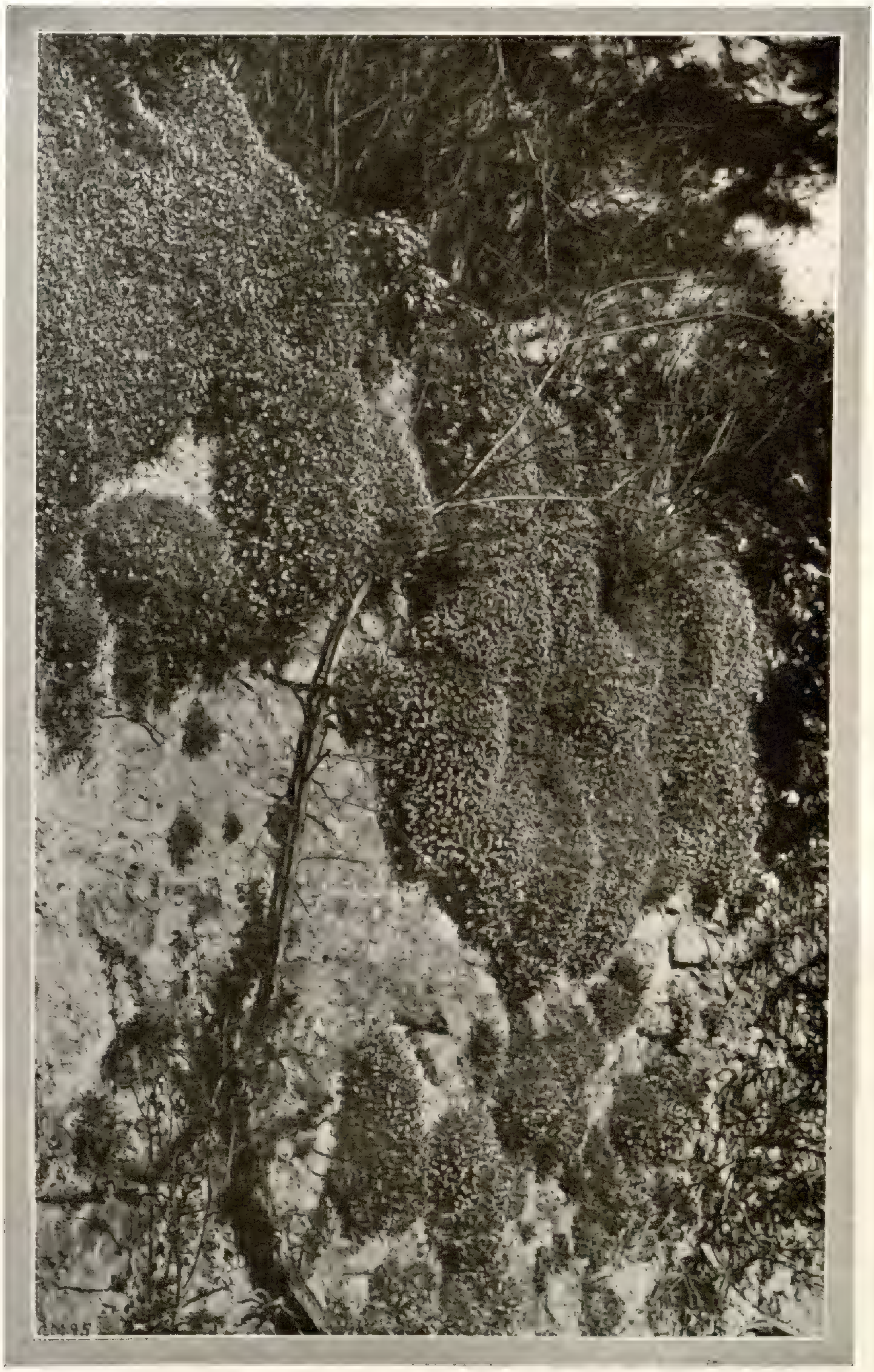
## SCOTTISH FORESTRY REPORT.

The report of the Scottish Committee on Forestry, recently issued, is a valuable document, and one that should mark a definite advance in the development of forestry in Scotland. It has been an open secret in forestry circles for some time that the committee had decided to recommend Aberdeen as the most suitable centre for the higher forestry teaching of Scotland, and the fact that Aberdeen has been suggested by the Commissioners for such has given much satisfaction in the north. It is felt that an opinion coming from such an influential committee cannot fail to carry weight, and to render it impossible for the powers that be to overlook or ignore the claim which was recently laid before them for the development of the Forestry School at Aberdeen. There are, broadly speaking, two crying needs in Scotland in connection with forestry—the necessity for an official survey of the area suitable for afforestation, and a model forest where forester apprentices can be trained and the science of sylviculture built up. This report brings us within the practical realisation of these two needs, and it points to Aberdeen as the centre best located in every way for the establishment of a university school of forestry, being nearest to the hub of the existing woodlands and largest afforestable area. The Commissioners add that "it would follow from this that the location of the demonstration forest area should be fixed mainly with reference to Aberdeen, though it would still be desirable that the forest should be, as far as possible, accessible from all parts of Scotland."

The quotation given prompts the query—Is there, then, within easy reach of Aberdeen such an area? As a matter of fact there is not one but several areas within the present jurisdiction of the Aberdeen Forestry Department. They are to be found in Kincardineshire, Morayshire (Speyside), and in Ross-shire. There are to be found in each of these districts—apart from Aberdeenshire—areas which would amply fulfil the requirements laid down in the report. The Kincardineshire area is within thirty miles of Aberdeen, and is, besides, much larger than that stipulated for by the committee. It could, besides, be taken over with comparatively little delay, and in other respects this area is easily adaptable for the early operation of a forestry school. Indeed, to find forests of any size in Britain the authorities must come to the north-east of Scotland. It is there, and there alone, that forestry as an industry can be said to exist in Scotland, and it is because of this that the committee has very properly recommended that the centre of forestry teaching should be placed at Aberdeen. Our chief woodlands are all in the north-east and north of Scotland, and it is there where the teaching centre should be placed, and not in the south where there is little or no timber grown. One has only to look at the map of Scotland accompanying the committee's report, and the important table given of the afforested and afforestable acreage in each county, to see how clearly this is brought out. In dealing with the subject of forestry, let us not forget that it is not a theoretical or purely scientific subject that can be carried on in the classroom and laboratory. It is an intensely practical subject, and it can only be efficiently taught in close contact with woodlands and forests. In devising a proper forestry course arrangements must be made for practical instruction in the State demonstration forest and in private forests. For this reason the Forestry Centre must be within easy reach of the great timber-growing areas of the country. The students must have access to the regions where sylviculture is carried on upon a commercial scale. They must be in touch with the industry so that the whole system of teaching may be practical and alive. It is considerations such as these which have very properly led the committee to recommend Aberdeen as the centre for forestry teaching in Scotland.

Keeping all these things in view, one need not be surprised to learn that the authorities in charge of the Forestry School at Aberdeen are to take immediate action. Their contention is to be pressed home, and pressed home at once. It is felt that there has been of late years far too much cry and little 'oo (wool), but with the issue of this valuable and practical report decisive action will now be taken. Now that the public interest is thoroughly aroused on the subject, and with the driving power of the committee's report behind it, one cannot but think that afforestation in Scotland should now be pushed forward to the stage of practical and definite work.

W. K.



AUBRIETIAS ON THE FACE OF A ROUGH WALL.

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**Conifers..**—April is a good month in which to transplant conifers, as they are about to commence new growth. Lift them with a good ball of soil attached to the roots, and give them a good watering when they are placed in their new positions. Hollies can also be successfully transplanted now. Some of the variegated varieties make ideal specimens; while drooping standard hollies are very ornamental.—J. Gardner.

## WORK FOR THE WEEK.

### THE ORCHID HOUSES.

THE WARM HOUSE.—Dendrobiums comprise some of the most easily grown orchids in cultivation, and also some of the most difficult to manage. Because a plant is difficult to grow it should not be discarded, but rather persevered with, so that we may produce it year after year in perfection. It is to the difficult species I refer, such as D. Johnsoniæ, D. superbum, D. superbiens, D. Goldei, D. atroviolaceum, and D. Phalænopsis Schroderianum. I think I am quite right in assuming that a great many growers are not as successful with this latter orchid as they would wish, and it is to this that I am referring particularly this week.

DENDROBIUM PHALÆNOPSIS. — The chief points of culture to observe are as follows: Keep the plants in comparatively small receptacles, and grow all that will admit of it in pans, for they are usually more at home when suspended from the roof than when standing on the stages. Strong, erect-growing plants must of necessity stand on the stages. The roots will remain a long time in a sound and healthy condition if not over-watered. The resting season of most of these species is now about over, but at no time are they capable of withstanding such a low temperature as the deciduous dendrobiums. After they have completed their growths, they enjoy a long, dry rest, but must on no account be allowed to shrivel, and must be given just sufficient water to keep them plump and healthy. The whole of this section inhabit some of the hottest portions of the earth, and when in full growth they delight in an abundance of heat and light, and will succeed in a plant stove or a similarly-heated house, where they can be protected from the direct rays of the sun during the hottest part of the day. When the pans are full of roots these dendrobiums delight in copious supplies of moisture, both at the roots and in the atmosphere. During hot weather they should be syringed or sprayed at least two or three times a day.

COMPOST.—Dendrobiums, to my mind, are fastidious as regards compost, and whatever material is used it should be thoroughly prepared and have all the earthy particles removed. The fibre used should be of the best, and it should not have been cut for any length of time, so as to have lost its life. The compost should resemble, as near as possible, the live material in which the roots of these orchids revel in their native habitats. A suitable compost is made up of equal portions of peat, polypodium and osmunda fibre, and sphagnum moss, all thoroughly mixed together.

POTTING.—When potting plants that are grown in a high temperature it is essential that the compost be warmed to about the same temperature as the house in which the plants are cultivated. Dendrobiums should be potted moderately firm, and if the compost is prepared as advised there will be no danger of getting it too hard and solid. After repotting they should be kept rather dry, giving sufficient water only to prevent shrivelling and to slightly assist the new growths; they will then proceed steadily, but surely, and but few, if any, will be lost through damping off. Every encouragement should be given the plants to enable them to become established in the new compost.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

TUBEROUS-ROOTED BEGONIAS that have been stored and kept dry during the winter will by now have commenced to make new growth. The tubers are best brought on in batches, and the most forward tubers should be selected and placed in boxes in a light compost of loam, leaf-soil, and coarse silver sand, just covering them. The boxes may be put in a light house or frame, with a temperature of 55 degrees, and if the tubers are sprinkled with water through a fine rose the growth will be rapid. When the tubers have started, and the large leaves developing, they should be put into suitable sized pots, according to the size of the plant. The pots must be clean, and the compost should consist of two parts fibrous loam, one part each of leaf-soil and sand, and the pots be well drained. Begonias are best shifted on gradually, and not overpotted at any time. They like plenty of water when growing, and a stimulant when the pots are full of roots. A light position is necessary, otherwise they become drawn and spindly; and during their earlier growth, when not shaded, care must be taken in watering not to drop any water on the foliage, or the sun will scorch it.

SHOW PELARGONIUMS will be growing freely, and will need constant attention. Those requiring more root space should have their final shift. Old plants of last year will easily fill an eight-inch pot. When they are rooting freely in the new compost, the shoots should be pinched over for the last time. Keep them as near the glass as possible. Pelargoniums require light and air to keep them healthy, and are benefited by liquid manure when well rooted.

ZONAL PELARGONIUMS.—These will soon make a fine display. Plants that have been flowering throughout the winter and have become leggy should have the tops of the shoots taken off, and inserted in small pots. They soon become shapely again. Cuttings rooted last autumn and growing freely in 60's, will be ready to shift into 32's preparatory to standing out on the ash bed to be grown on for the autumn display. The flower spikes must be removed, and growths pinched frequently to encourage sturdy growth.

SHADING.—Owing to the very unsettled state of the weather, but little sunshine has been recorded; but the temperature has been high, and the growth under glass very rapid. Shading has not yet been required, but shading material should be in readiness for use when wanted. Fix all roller blinds in position, and where permanent shading, such as lime, summer cloud, etc., is used, have it ready to apply any day. A good permanent shade is made by mixing 1lb. of Paris green to two quarts of sour milk, and is readily applied with a whitning brush.—Lewis Smith, Shotesham Park Gardens.

## THE KITCHEN GARDEN.

MAINCROP POTATOES.—Weather permitting, it will be time to prepare for planting maincrop potatoes. Providing the site was treated as earlier advised, only surface stirring will now be necessary before planting the sets, but I fear many plots mapped out for potatoes on heavy lands have not even been touched, owing to the continuous rainfall experienced. Should this be the case, the ground must be very finely forked up and well broken, planting the sets as the work proceeds. A quantity of well-decayed manure, leaf-soil, and lime, with burnt garden refuse, should have been prepared under cover during wet weather, and this should be spread along the bottom of the trench when digging, immediately under each line of potatoes, and within easy reach of the sets. To place it in the proper position and distance, peg or stake the plot before commencing to dig, at two feet apart, and thirty inches for the stronger growing kinds. The potatoes should be properly sprouted, with two strong, sturdy shoots each; plant four to five inches deep, and eighteen inches apart in the rows; cover very carefully to avoid breaking the shoots. A little old leaf-soil and any old cucumber bed soil that may be available should be placed over the "sets" before adding the ordinary soil. This doubles the crop of potatoes. Excellent maincrop varieties are Superlative, Windsor Castle, Snowdrop, and Up-to-Date.

WINTER GREENS, BROCCOLI, AND CAULIFLOWERS.—The general sowing of all these will now need to be made. Choose an open position on ground that contains no fresh manure. Well beat and tread the surface, bringing it down to a nice firm and fine tilth; over this strew a heavy dressing of wood ashes and lime, and rake or fork it in. Sow in beds, or in drills, ten inches apart; the latter are perhaps preferable, as the Dutch hoe can then be readily brought into play. Should the turnip fly be troublesome, spray with a paraffin emulsion, or scatter equal parts of lime and sulphur over the seedlings early in the morning, when the leaves are damp with dew. Make a further sowing of the later varieties the first week in May. It is usual to make a sowing of leeks for use twelve months hence. When sowing is completed well net the whole bed as a protection against birds.

PARSLEY.—The early sown batch, which has been pricked off in boxes, etc., will need planting out on well-enriched ground; providing it is properly hardened off, plant at one foot apart, place a ring of cinder ashes around each plant to ward off slugs, and give occasional dustings of lime and soot alternately. Sow a good batch in the open.

ASPARAGUS.—After the heavy rains the beds should be carefully examined, slightly pricking the surface up to loosen and warm it, as on heavy land the beds will be very firm and wet. When the beds have had a good airing give a light dressing of salt, scattering over this some spent mushroom bed manure or similar material. A quick-acting artificial manure will also be very beneficial. Sow seeds on a warm border in a light soil for future beds. If tended with due care, good roots will be ready for new beds twelve months hence. Plant four inches deep on ridges. Three rows are usual on a bed, and the plants should be eighteen inches apart each way.—G. Ellwood.

SEAKALE.—The thongs treated as advised earlier are in excellent condition for planting out. Plant in lines at eighteen inches apart, and one foot from set to set; plant firmly, and place cinder ashes around the sets to prevent trouble from slugs. If lime is lacking in the soil, apply a dressing before planting. Soot and salt are great helps to seakale.—G. Ellwood, Swanmore Park Gardens.

## HARDY FRUITS.

DISBUDDING PEACHES AND NECTARINES.—This is one of the most important operations the hardy fruit grower has to perform. The future well-being of the tree is mainly dependent upon the manner in which the work is carried out, and it requires a considerable amount of forethought and discrimination on the part of the operator to select and retain those shoots which will preserve the balance and symmetry of the tree. This operation should be carried out so that no perceptible check is given. To avoid this danger it must be done by degrees, extending over a period of three to four weeks. The first thinning may consist of the removal of foreright and backright shoots—that is, shoots standing at right angles to the wall; also a slight thinning of the remainder, taking care to preserve the basal shoot. In about a week later a further reduction may be made. At the final thinning the basal and extension shoots only should be left, unless circumstances determine otherwise. There may be gaps to be filled, and where the previous season's growth has been allowed to extend for this purpose, select a well-placed shoot about 12 inches above the basal growth. In all cases have a shoot at the tip, which may be stopped later on should there not be space for training it in full length. By all means avoid overcrowding of the growths.

STRAWBERRIES.—All dead leaves should be removed from the plants. A dusting of equal parts of lime and soot round and about the crowns will make it unpleasant for slugs, and strengthen the young growths and flower spikes. For old plantations the pointing in of some well-decayed manure was advised in a previous calendar; it is not too late to make up arrears in this matter. If artificial manures are used, it should be with caution, otherwise an over-luxuriance of foliage may be induced. The surface soil of newly-planted beds should be kept well stirred with the hoe, and all weeds eradicated as far as possible prior to applying the mulching material, which usually consists of long stable litter freed from all the finer and shorter portions, and applied direct from the stables. If laid down in good time it will become sweetened by rain sometime before the fruit ripens; on light soils an application is desirable to prevent evaporation of moisture. In cold low-lying localities, where late frosts often occur and ruin the early blossoms, means should be afforded of protecting the opening flowers; thin strips of tiffany are most suitable for the purpose, or a temporary framework of splines and short posts erected to carry some kind of protecting material, which may be readily put on and off as required.—W. Messenger, Woolverstone Park Gardens.

"Carnations, Picotees, and Pinks" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## CULTIVATION OF PERPETUAL CARNATIONS BY AMATEURS.

The following is the text of the paper read by F. Fitch at the Conference held by the Perpetual Carnation Society at the Royal Horticultural Hall, March 21:—

The rapid increase in popularity of the perpetual flowering carnation, as well as the improvement in the flower itself, during the past few years, is little short of marvellous. Many of our friends would claim that the perpetual flowering carnation already competed with the rose for the first place in popular favour. It has become so indispensable as a decorative flower, especially during the dull, dark days of winter, that we might well wonder how we did without it before its introduction.

It is essentially a flower for the amateur, for besides its many other qualities, it is easy to grow, will flower practically the whole year round, will last longer when cut, and travel better than any flower I am acquainted with. During the past two months I have sent one or two hundred blooms every week to the South of France by parcels post, and I hear that they arrive in perfect condition. I know of no other flower that is so profitable to grow, for one can always go to the carnation house and be sure of finding some flowers fit to cut, and that, not for just two or three weeks, but in almost any week in the year.

If the amateur can devote a house to the culture of these flowers, I would advise him to do so; as the dry, buoyant, airy atmosphere essential to their well-being is more difficult to maintain if the house contains other plants requiring different treatment. The house should be placed so as to obtain all the sun possible during the dull days of winter. Ventilators should be arranged along the roof and at the sides of the house, which should be heated with pipes sufficient to maintain a temperature of 50 degrees while the top ventilators are open.

### Raising Young Plants.

Propagation should be effected between December and March; cuttings rooted in January, of course, making the best plants. There is no doubt that one of the chief essentials to the successful culture is the selection of the right kind of cuttings. They should be chosen from strong, healthy plants, for one cannot expect to have strong examples if the cuttings are taken from weaklings, or healthy ones if taken from diseased plants. This is a most important matter, and one that cannot be too strongly emphasised, and any little trouble taken in selecting cuttings for the future stock is well repaid. The best cuttings are those found half-way up the stem, and should be taken off when about three inches long, with a gentle downward pull, bringing with them a little of the old stem. This should be removed with a sharp knife.

Cuttings root in a temperature of 50 degrees to 55 degrees, and a bottom heat of about 60 degrees. The American, and our large market growers, make a bed of soft bricks placed over a pit with hot-water pipes enclosed about two feet below them. On the bricks is then placed some sharp sand about three inches deep, made firm, and watered with a fine rose. In this the cuttings are inserted in rows about two inches apart, and one inch from cutting to cutting. The whole being covered with a glass case.

The amateur, of course, could not carry out his operations on such an extensive scale as the market growers, but if he can produce the same essential conditions, although in a more limited way, as the man who grows for profit, he will not go far wrong. The soft brick bottom absorbs the moisture from the sand and returns it again when the sand becomes dry, so that the bottom of the cutting is always at a uniform moisture.

A good plan for the amateur is to place a case, a box with a sheet of glass over the top, or a handlight, in a corner of the house where it will have the requisite amount of bottom heat, and place in it cocoanut-fibre refuse, or some such material, and then take some seed pans or strawberry saucers, and fill them with sand, moisten with a fine rose, and insert the cuttings. Place the pans in the case where they will require very little more water until they are rooted, which should be from three to four weeks; but on no account should the sand be allowed to dry through. This mode is better for the amateur in several ways than pricking out in the bed, for it not only produces the effect of the soft bricks, as nearly as possible, but as some varieties are longer in rooting than others, each pan can be removed from the case as they become rooted, leaving the others to enjoy the closer atmosphere. Care should be taken that the cuttings do not lie about or get dry, but are inserted as soon as possible after being taken off the plants. After they are placed in the frame, put on the glass, shade from bright sun, and admit air for an hour or so each day, wiping the glass free from any moisture. If these directions are followed, the cuttings will be sturdy and strong, and no larger than when inserted. It is a great mistake to allow the cutting to begin growth until rooted.

Many other means would suggest themselves to the amateur under different circumstances; for instance, anyone only wanting a few plants might procure a 10 or 12-inch pot, put some good drainage in the bottom, and fill up to within five or six inches of the top with sand. Put in the cuttings, and place a piece of glass upon the top of the pot, stand it on the top of a hot-water pipe, and treat in the same manner as in the propagating case.

(To be Continued.)

## MANURING OF FRUIT TREES.

For the benefit of those interested in this question we have pleasure in reproducing here a few useful practical hints by Mr. C. Heine, head gardener in the Posen Botanical Gardens.

Fruit trees naturally require all the ingredients found in animal manure, such as nitrogen, potash, phosphate, and lime. Their requirements, however, in potash, phosphate, and lime are, on an average, much greater than has hitherto been supposed. The application of these various constituents will depend on the position of the tree, the nature of the soil, and likewise the development of the several parts of the tree, such as the wood, buds, etc., so that quite as much harm may be done by a one-sided manuring as by no manuring at all.

In kainit, which contains, besides the necessary potash for wood, leaf, and fruit formation, a corresponding amount of common salt, we have a means of strengthening the trees' resistance to disease, especially in the case of the stone fruits. For spring application the sulphate or muriate of potash should be used.

The application of phosphate in the form of basic slag or superphosphate promotes bud and fruit formation, at the same time producing a good flavour. The lime combined with the phosphate is necessary for the stone formation.

In the case of sour land, on which the trees suffer principally from disease and canker, an application of fresh ground lime will prove beneficial. This will purify the soil, and the trees will soon become healthy and fertile again. At the same time the lime will have the effect of decomposing the plant food in the soil and making it available for the trees.

According to experiments it is specially important, in order to obtain the best results, to apply the different manurial constituents at the proper time. This applies particularly to potash and phosphate. It is known that in dry soils both these ingredients will remain a long time undissolved and useless, for moisture is necessary to dissolve them, and to render them available as plant food. For this reason it is essential to distribute the manure as early as possible. In this connection it must also be remembered that in fruit plantations, where other crops are still grown between the trees, these require a large part of the manure, so that if the application is deferred too long, nothing or very little is left to the trees. It follows therefore that the potash and phosphate dressings will only show a favourable effect when they are given early.

## NORTH OF ENGLAND HORTICULTURAL SOCIETY'S MEDAL.

The medal for the North of England Horticultural Society, of which we give an illustration herewith, possesses considerable artistic merit. It has been designed by F. Ranson, Esq., from sketches submitted by the makers of the medal, Messrs. Fattorini and Sons, Lim., art medallists, Bradford.

The main feature of the design is the figure of Mother Earth, known in Latin as Ceres, and in Greek as Demeter, one of the great divinities in Greek mythology, the Goddess of the Earth. She is shown as bearing in her right hand a bunch of poppies, and in her left hand a basket of assorted fruit. She is standing in a field of wheat, and on one side the corn is shown in growth, and on the other in sheaves. Behind the field is the sun with its rays extending over the upper portion of the medal, amongst which are the letters N.E.H.S.

The treatment of the subject is happy, and the medal has been much admired by those who have had an opportunity of seeing it.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, April 9.—Weybridge Horticultural Society's Monthly Meeting.

WEDNESDAY, April 10.—Edinburgh Spring Show; two days.
Kingsbridge Daffodil Show.
East Anglian Horticultural Club.

THURSDAY, April 11.—Cornwall Daffodil Show, at Truro; two days.

FRIDAY, April 12.—Warninglid Gardeners' Society.

TUESDAY, April 16.—Royal Horticultural Society: Narcissus Committee meets at 11.30 a.m.; Fruit, Floral, and Orchid Committee meet at 12 o'clock; Lecture at 3 p.m. on "Darwin as Ecologist," by Rev. Prof. G. Henslow. Scientific Committee at 4 o'clock.
Royal Horticultural Society's Daffodil Show; two days.
Shrewsbury Spring Show.

WEDNESDAY, April 17.—Royal Horticultural Society's Examination for Teachers.
Royal Horticultural Society of Ireland, Spring Show.
Royal Meteorological Society.
Royal Society of Arts.

THURSDAY, April 18.—Ipswich Spring Show.
Linnean Society Meeting.
Manchester and North of England Orchid Society.
Hereford Spring Show.
Devon Daffodil and Spring Flower Show, at Plymouth; two days.

SATURDAY, April 20.—Chislehurst Spring Show.

TUESDAY, April 23.—Breconshire Daffodil Show.

WEDNESDAY, April 24.—Royal Botanic Society Meeting.
North of England Horticultural Society, at Leeds.

THURSDAY, April 25.—Midland Daffodil Show at Birmingham; two days.
Norwich Spring Show.
Falmouth Spring Show; two days.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

# EXHIBITIONS AND MEETINGS.

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## Torquay Spring Show.

The Torquay District Gardeners' Association held its show at the Bath Saloons on March 28, a very early date, far in advance of any of the Cornish shows. The exhibition was a great success, the classes being well filled, and the entries so numerous that there was not room for all the plants in the large saloon, and an adjacent room had to be utilised. Amaryllis were the great feature of the exhibition, the richly-coloured flowers shown being superb, and the two groups of splendid plants staged were greatly admired. Cyclamen also were especially fine, the plants carrying enormous flowers borne in great profusion.

The chief prize winner was Colonel Cary, who was first for six foliage plants, three azaleas, a specimen azalea, group of palms and ferns, six primulas, three spiræas, six flowering table plants, six foliage table plants, six amaryllis, one specimen palm, three cinerarias, twelve pots of polyanthuses, a dozen carnation blooms, and a collection of vegetables. Mrs. Tottenham won the challenge cup for a group of orchids, and another cup for a group of greenhouse and stove plants; she was also first for six flowering plants, equal first with Mr. F. Pershore for a dozen hyacinths, and first for six pots of tulips. Mr. F. Pershore, the Hon. Helen Cubitt, Mrs. H. Greswolde Williams, Mr. H. E. Bowring, Mrs. Gordon Cumming, and Mrs. Cogan were other leading prize-winners, the Hon. Helen Cubitt winning the silver cup for a group of daffodil blooms.

The nurserymen's exhibits added much to the attractiveness of the show. The Devon Rosery, Torquay, showed pot roses in full flower, deutzias, Cytisus præcox, Acacia armata, Boronia heterophylla, Arctotis aureola, Lopezia miniata, Ribes sanguineum, Manettia bicolor, Clematis Fortunei, Erica lusitanica, Amygdalus persica flore pleno, Pyrus malus floribunda, Spiræa Thunbergi, S. prunifolia, Cydonia Maulei, C. Apple Blossom, C. nivalis, Forsythia suspensa, and a collection of rock plants, including Saxifraga Guildford Seedling, S. pylosa, S. caphilipis, S. Lindsayana, S. tenuifolia, S. Red Admiral, Arabis variegata, Sedum lydium, S. mauveanum, S. glaucum, Phlox setacea, and Thymus lanuginosa; while they also staged a fine collection of twenty apples in splendid condition. Messrs. Robert Veitch and Son, Exeter, had an interesting stand containing Correa bicolor, C. magnifica, C. cardinalis, Azalea obtusa (scarlet), Anemone pulsatilla, Eriostemon linearifolium, Primula malacoides, Jasminum primulinum, Chorizema Lowi, Hibbertia dentata, Cydonia japonica, Forsythia viridissima, Gerbera hybrida, Acacia Riceana, A. lineata, A. ovata, A. hybrida, A. Drummondi, A. diffusa, A. cordata, Cyrtomium Rochfordi, Eupatorium ionantha, Magnolia nigra, M. Alexandrina, a collection of winter-flowering carnations, and rock plants.

Mr. W. B. Smale, Torquay, showed Cineraria Pompadour, C. Antique Rose, C. Matador, C. stellata, C. Azure Blue, C. Boule de Neige, Clerodendron Balfouri, and Primula obconica, Queen of Roses. Messrs. Barr and Sons staged a superb collection of daffodils, including Vesuvius, Sir Galahad, Venus, Queen Sophia, Pedestal, Sunbeam, Van Waveren's Giant, Capax plenus, Isolde, Firebrand, Lycidas, Czarina, Hulda, Mascotte, Albatross, Michael Angelo, Macebearer, White Queen, and Torchlight. Messrs. Burridge and Sons staged azaleas in all colours, arranged with palms and ferns. Mr. H. Mayne, Torquay, showed hyacinths, tulips, carnations, hydrangeas, Lilium longiflorum, camellias, primulas, zonal pelargoniums, mignonette, narcissi, and orange trees in fruit. Miss Josephine Gundry, of Foot's Cray, Kent, exhibited a very beautiful selection of water-colour paintings of garden scenes.

## French Horticultural Society of London.

Under the genial presidency of Mr. N. N. Sherwood, V.M.H., the annual dinner of the above society was held on Saturday, March 30, at the Café Royal, Regent Street, London. There was a large attendance, and the British horticultural trade was well represented. Following an excellent repast, the Chairman proposed "The King and Queen and Royal Family," and "The President of the French Republic," the National Anthem and the Marseillaise being sung by the audience. "Success to the Society" was pleasantly proposed by Mr. Sherwood, who suggested further meetings than the annual one for bringing together British and Continental horticulturists. The great value of the society's work in looking after young French, Belgian, and Swiss gardeners who came over to England, and placing them in situations, was eulogised, as also was the educational work carried on by means of monthly meetings and lectures. Mr. Sherwood very kindly invited the members of the society to visit him at Kelvedon in the summer, promising them good cheer and a hearty welcome, as well as educational opportunities among the seed trials carried out by Messrs. Hurst and Sons. Mr. G. Schneider, the founder and president of the society, responded, and thanked the chairman for his presence, and for his kindly invitation. "The Officers and Committee" was proposed in French by Mr. F. Gaskill, and M. Caspari, who eloquently responded, also gave "The Horticultural Press," to which Mr. Chas. H. Curtis, of the GARDENERS' MAGAZINE, responded, and said that the society was strongly supported by British horticulturists from a rather selfish motive, and this was the hope that when the members returned home and entered business on their own account they would take as close an interest in young Britishers entering Continental nurseries and gardens as was shown to themselves while here.

Mr. W. A. Bilney proposed "The Chairman," and this toast was enthusiastically received, and accorded musical honours. Special thanks were accorded M. Ripard for decorating the tables, and to Mr. Hiehle for able assistance freely given in the conduct of the society and the arrangements for the dinner.

A lengthy and excellent programme of music, etc., was provided by the chairman, who, however, declared that Mr. Edward Sherwood was responsible. The speeches were all commendably short, and the proceedings concluded about 11 p.m.

Sir Albert Rollit, Mr. Harry J. Veitch, Mr. Gilbert Beale, and Mr. Stuart Low were unavoidably absent, but there were present: Messrs. H. B. May, Alfred Watkins, Harold Beale, W. Cox, E. White, T. Geoffrey Henslow, J. Bridgford, A. Dawkins, Tivey, G. H. Bard, C. Harman Payne, Murison, J. McKerchar, T. Bevan, J. Frogbrook, Prickett, E. F. Hawes, etc., among Britishers.

**Asparagus tenuissimus.**—The leafage of this asparagus is excessively slender, yet, at the same time, the plant is of a free branching habit of growth. What is more, unlike most of the now popular kinds, it will root readily from cuttings. Plants obtained in this way and kept in small pots are very useful for dropping into the small jardinières now so much in vogue, as they afford a pleasing variety to the ferns and small palms now frequently used. Beside this, A. tenuissimus may, like the better-known A. plumosus, be employed as a rafter or screen plant. Liberally treated it grows freely, and so fine is the foliage that when bedewed over with the syringe it presents at a little distance the appearance of a greenish mist. Spring and early summer is the best time in which to insert the cuttings.—S. W.

Robinsons' Guaranteed Gardenalities

have gained the praise of the greatest gardening authorities and experts. The reason why is because they always satisfy—are always reliable, and produce unequalled results. Professionals, amateurs, market-gardeners, and allotment-holders alike testify to their unexcelled superiority. What about fertilizers this year? Without fertilization time and labour is wasted.

"CARMONA" FERTILIZERS ARE THE CHAMPIONS.

This has been proved over and over again. They are scientific to a degree—pure, sure, and dependable. The plants assimilate their vital elements with avidity, and your products and crops bear testimony to this. A slight expense means a wonderfully increased profit. Made in many varieties to suit all needs. Special attention is drawn to the "Carmona" Sweet Pea Fertilizer. Bulks and prices are as follows:—1 cwt., 20s.; ½ cwt., 12s. 6d.; 28lbs., 7s. 6d.; 14lbs., 4s. 6d.; 7lbs., 2s. 6d. 1s and 6d. tins. Of all Seedsmen and Agents, or write direct.

CLIFT'S FLUID INSECTICIDE.

Messrs. Robinson Bros., Ltd., most strongly advise every gardener to write for a copy of the very convincing reports upon the extensive laboratory and outdoor experiments, conducted by an eminent expert, in relation to the efficacy of Clift's Fluid Insecticide. The facts and figures contained therein will at once demonstrate the absolute superiority of this standard insecticide. The prices are:—40 galls., per gall. 4s. 6d.; 20 galls., per gall. 5s.; 10 galls., per gall. 5s. 3d.; 5 gallons per gall. 5s. 6d.; 1 gall., 6s.; ½ gall., 3s. 6d.; 1 pint, 1s.

ROBINSON'S GRAND £350 SHOW.

This will be held on August 28th and 29th next at the Botanical Gardens, Edgbaston, Birmingham, and all may compete. Numerous cash prizes and many Championship Medals. Free entry to every buyer of "Carmona" Fertilizers—look out for the free entry "fee" coupon contained in each packet. Send now for the Show Schedules and make early entry.

HAVE YOU A LAWN?

To obtain perfect grass colouring, and to be rid of foreign plants, apply "Velvas" Lawn Sand. It transforms the worst lawn into the best. Of all Seedsmen and Agents, or write direct.

WEEDS ARE NOT WANTED, and are soon expelled if you apply "Eradiweed" (the guaranteed cent. per cent. weed-killer).

ROBINSON'S INVITATION.

Send for their two famous booklets, Robinson's Guaranteed Gardenalities Booklet, and Robinson's Garden Enemies Booklet. Full of hints, advice, and information. Gratis and post free on application to—

ROBINSON BROS., LTD., WEST BROMWICH, STAFFS.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

PANSIES AND VIOLAS FROM SEEDS.—A. P. P., Acton: Please let me know the best time and method of raising pansies and violas from seeds.—Pansy seeds should be sown at once in pans or boxes of light soil, and be placed in a warm frame or greenhouse until germination takes place; a cold frame will then suffice. Prick out the seedlings in the frame, and when they are sufficiently large and well rooted plant them out where they are to flower, watering and mulching them as necessary. If they are not needed to flower before next spring, then defer sowing until June, and sow in the open or in a cold frame, and plant out early in the autumn. Sow some of the viola seeds in pans in a cold frame at once, and the other part out of doors in rich light soil; prick out the seedlings into nursery beds, and subsequently plant in the permanent quarters when large and strong enough. Given good treatment, these should flower well in the autumn.

WIRE NETTING FOR PEAS.—J. G., Corbridge: Will you kindly let me know whether one row of 4-inch mesh wire netting will suffice for peas, or should there be two rows of netting to each run of peas?—We have seen sweet peas growing well against a single row of wide-meshed wire netting, but the plants were kept regularly tied to the support. In the case of culinary peas, two rows of netting should be provided or the plants will be severely damaged during winds and heavy rains.

SECATEURS VERSUS PRUNING KNIFE.—M. E. J., Ross: Do you consider secateurs are as suitable as a knife for pruning anything but a hedge?—In most secateurs we have handled there is but one cutting blade, and the other blade is very apt to cause a bruise on the side of the shoot pruned, opposite to the direction of the cut. If may happen that this bruise is so severe as to cause decay. Whenever and wherever practicable, the knife should be used in preference to the secateurs, but there are occasions when the work is so great, and the time so short, that one has to take the risks—and they are not really great—and use the secateurs.

IZAL POWDER IN SOIL.—W. H. F., Bristol: Some time ago I used a couple of kegs of Vaporite, and recently came across what appeared to be a part of a keg of this material. As I was making a new border across the end of a tennis court I used some of the material in the keg. This was a month ago, and now I am told that it was izal powder for disinfecting. Do you think I have spoiled our chances of growing half-hardy annuals in the border, and can you suggest anything to counteract the effects of the powder? I may say that the border was double dug, and the powder worked into the bottom spit. Eight rambling roses, for pillars, were planted in the site last autumn, and these so far do not appear to have suffered the least from the effects of the powder. Possibly the wet weather has washed the material further down.—We do not know the composition of izal, but we imagine it is not likely to do any harm. Work the soil frequently to aerate it until the annuals are planted, and then use the Dutch hoe regularly. Too much care cannot be taken in labelling and storing insecticides, artificial manures, fungicides, weed killers, disinfectants, and other preparations used in a garden, and particularly any that contain poison. Directly the materials are received they should have a stout and legibly written label attached unless there is a prominent one already on.

PEACH FRUITS DROPPING.—Peaches, Somerset: Late last autumn I took charge of a large number of peaches and nectarines in pots, and these I was instructed to force for fruiting in May. The trees had all been repotted, and so loosely that when moved they rocked in the pots. After every care and attention and an apparently good set, the little fruits have fallen wholesale, and there will be a very poor crop, even if all those remaining come to perfection. Do you think the failure is due to the loose potting?—Yes, certainly. Peaches and nectarines in pots must be potted firmly or they make few useful roots, and unless they are well rooted it is impossible to force them successfully. You must pay close attention to disbudding, so that light and air reach all parts of the trees; keep the foliage clean, duly harden off, and place outside and repot firmly directly the leaves begin to turn colour, instead of waiting for them to fall.

DISEASE ON VIOLET LEAVES.—W. E., Heathfield: Kindly tell me what is the cause of the disease that appears to be attacking the leaves of Admiral Avellan violet. The attack does not seem to affect the plants much as they are flowering quite freely.—The leaves show evidence of a very slight attack of violet mildew. Spray with a potassium sulphide solution, and afford abundance of fresh air, at the same time keeping the plants a little drier than usual.

FRUITING OF THE STEPHANOTIS.—S. W. writes: "With regard to the fruiting of Stephanotis floribunda, referred to by your correspondent, 'E. R. B.,' page 268, the following may be of interest: Some years ago I had a large pod form on a plant of stephanotis trained to the roof of the stove. I have no data of the time it took to ripen, but it was a long while before the pod split, and showed the seeds with their silky appendages. When ripe I sowed a number of the seeds, which germinated quickly, and the young plants grew away freely; in fact, too freely, as they covered a considerable space before I obtained any flowers, and when they did bloom they were not so free as those obtained from cuttings. None showed any improvement on the parent plant, and some did not flower at all. I got tired of my seedlings, and threw them away, and resolved for the future to follow the old-fashioned plan of propagating any I might require by means of cuttings."

### NAMES OF PLANTS.

G. S., Ryde.—Erica mediterranea.

W. E., Heathfield.—Iris Eucharica.

J. G., Potter's Bar.—1, Anemone pulsatilla; 2, A. acutiloba; 3, A. hepatica.

D. D., Rochester.—1, Erica carnea; 2, Forsythia suspensa; 3, Pieris japonica.

Y. C. W., Chesterfield.—1, Anemone apennina; 2, Pulmonaria angustifolia; 3, Primula viscosa; 4, P. malacoides.

L. R. J., Faringdon.—1, Erythronium citrinum; 2, Galax aphylla; 3, Cardamine pinnata; 4, Erica mediterranea.

F. E. R., Bletchley.—1, Magnolia stellata; 2, Prunus triloba; 3, probably Amelanchier canadensis, very poor specimen.

H. M., Wareham.—1, Spiræa Thunbergi; 2, probably a Ferula, send again when flowering; 3, probably Buddleia globosa, send when in flower; 4, Pieris floribunda; 5, Erica mediterranea; 6, Prunus Pissardi.

**Rose Claire Jacquier.**—I can assure "White Lady" she need have no qualms about this rose being sufficiently hardy to flourish in the open. I have grown it fully in the open, and with an eastern aspect, for many years, and have always found it a great success. The nankeen yellow blossoms harmonise well with the tinted wood and young leaves, and as for freedom of flower, I know of no rose more free. Plants of this rose do not require so long a period ere they flower freely, as in the case of Aglaia, for example.—E. M.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| 1912. MARCH 24 TO MARCH 30. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Mar. 24—Sunday …… | 2 36 | 50 | 46 | 55 | 42 |
| ,, 25—Monday …… | 0 42 | 54 | 52 | 60 | 50 |
| ,, 26—Tuesday …… | 5 12 | 52 | 47 | 59 | 49 |
| ,, 27—Wednesday.. | 8 30 | 50 | 46 | 57 | 47 |
| ,, 28—Thursday …. | 1 18 | 52 | 50 | 57 | 47 |
| ,, 29—Friday …….. | 11 0 | 46 | 41 | 52 | 57 |
| ,, 30—Saturday ….. | 9 48 | 47 | 46 | 53 | 40 |
| Means … | (total) 39 6 | 50 | 47 | 56 | 44 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS |
|---|---|---|---|---|---|
| 1912. MARCH 24 TO MARCH 30. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Mar. 24—Sunday …… | trace | 45 | 44 | 46 | 41 |
| ,, 25—Monday …… | — | 48 | 45 | 46 | 46 |
| ,, 26 Tuesday …… | — | 49 | 46 | 46 | 44 |
| ,, 27—Wednesday.. | 0·01 | 49 | 47 | 46 | 41 |
| ,, 28—Thursday …. | — | 51 | 48 | 47 | 42 |
| ,, 29—Friday …….. | — | 48 | 48 | 47 | 29 |
| ,, 30—Saturday …. | — | 47 | 47 | 47 | 32 |
| Means … | (total) 0·01 | 48 | 46 | 46 | 39 |

## COMING EVENTS.

Devon Daffodil and Spring Flower Show.—At Plymouth, on April 18 and 19, instead of April 16 and 17, as previously arranged.

Hereford Spring Flower Society.—Third Annual Exhibition on Thursday, April 18.

Chislehurst Horticultural Society: Spring Flower Show April 20; Summer Show, July 6, at Kemnal Warren.

Royal Counties Agricultural Society.—Flower Show at Guildford, June 11 to 14.

Penarth Rose Show, July 3.

Weybridge Horticultural Society, July 3, in the Old Palace Gardens.

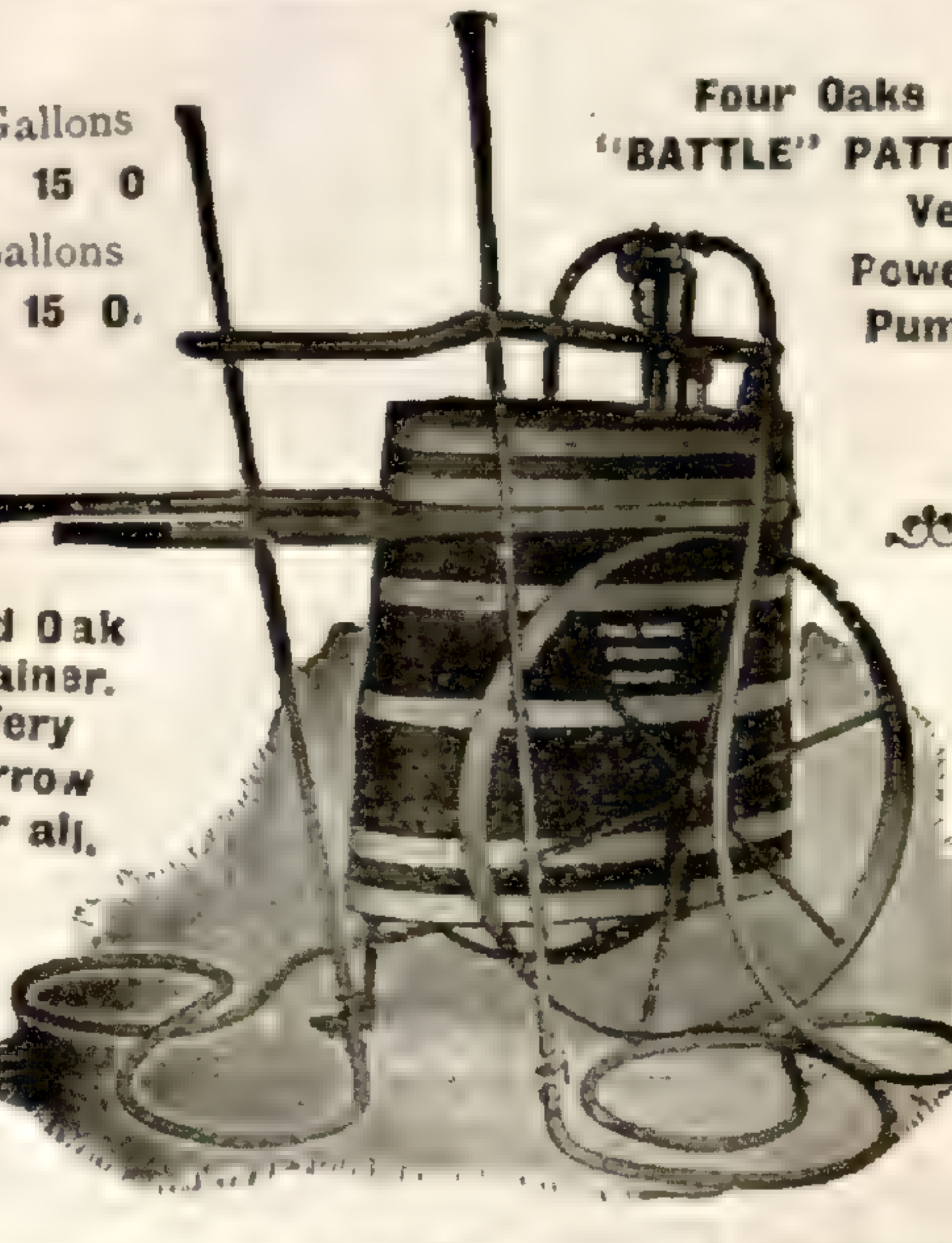
Wolverhampton Floral Fete.—In the West Park, on July 9, 10, and 11.

Bath Floral Fete.—In the Sydney Gardens, on July 10 and 11.

Sevenoaks Horticultural Society, July 10, in Knowle Park and Gardens.

Formby Horticultural Society, Summer Show, July 10; Autumn Show, November 9.

Ouseeliffe Rose and Sweet Pea Show.—Assembly Rooms, York, on Thursday, July 11.



→ Spraying. ←

One of England's leading Fruit Growers says: "I consider the 'Four Oaks' Spraying Machine, 'Battle' Pattern, to be the only practical machine on the market."

18 Gallons £13 15 0
25 Gallons £13 15 0.

Four Oaks "BATTLE" PATTERN Very Powerful Pump.

Solid Oak Container. Very narrow over all.

Complete Catalogues of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers:-THE FOUR OAKS SPRAYING MACHINE CO., No. 3G, Sutton Coldfield.

# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Business is moderate for Easter time, but supplies are ample to meet the demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Arums | per doz. | 2 6 | | 4 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azaleas | per doz. bun. | 3 0 | | 4 0 |
| Camellias | per box | 1 6 | | 2 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 15 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 6 | | 3 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Freesias | per doz. bun. | 1 3 | | 1 6 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Hellebores | per doz. | 1 6 | | 2 0 |
| Iris, Spanish | per doz. bun. | 15 0 | | 18 0 |
| Lilac | per bunch | 2 0 | | 3 6 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 2 6 |
| ,, longiflorum | per doz. | 3 0 | | 5 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 2 0 | | 2 6 |
| Mignonette | per doz. bun. | 2 0 | | 2 6 |
| Narcissus | per doz. bun. | 0 9 | | 2 6 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 8 0 | | 12 0 |
| Primroses | per doz. bun. | 1 0 | | 1 6 |
| Roses | per doz. | 1 6 | | 5 0 |
| Smilax | per doz. trails | 2 0 | | 3 6 |
| Spiræa | per doz. bun. | 2 0 | | 2 6 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips | per doz. bun. | 5 0 | | 7 0 |
| Violets | per doz. bun. | 1 3 | | 3 0 |
| Wallflowers | per doz. bun. | 1 6 | | 2 0 |

### Fruits.

There is an excellent demand for apples and oranges, and a fair request for all other fruits on offer.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, English, cooking | per bush | 5 0 | 7 6 |
| ,, Nova Scotia | per barrel | 10 0 | 22 0 |
| ,, Canadian | per barrel | 12 0 | 22 0 |
| ,, American | per barrel | 20 0 | 38 0 |
| ,, Californian | per case | 7 0 | 11 0 |
| ,, Australian | per box | 7 0 | 18 0 |
| ,, Cape | per box | 4 0 | 8 0 |
| Bananas | per bun. | 3 6 | 10 6 |
| Cob Nuts | per doz. lb. | 6 0 | 7 0 |
| Cranberries | per case | 9 0 | 12 0 |
| Grapes, English | per lb. | 1 4 | 3 6 |
| ,, Belgian | per lb. | 1 3 | 2 0 |
| ,, Almeria | per barrel | 12 0 | 18 0 |
| ,, Cape | per case | 4 0 | 8 0 |
| Lemons | per case | 6 0 | 30 0 |
| Oranges, Denia | per case | 15 0 | 34 0 |
| ,, Jamaica | per case | 9 0 | 11 0 |
| ,, Californian | per case | 14 0 | 21 0 |
| ,, Seville | per box | 15 0 | 18 0 |
| ,, Valencia | per case | 10 0 | 18 0 |
| Pears, American | per barrel | 21 0 | 26 0 |
| ,, Cape | per box | 3 0 | 5 0 |
| ,, Californian | per case | 8 6 | 16 0 |
| Pineapples | each | 2 6 | 5 0 |
| ,, Cape | per doz. | 4 0 | 7 6 |
| Plums, Cape | per case | 3 0 | 6 0 |
| Strawberries | per lb. | 2 6 | 10 0 |

### Vegetables.

A steady demand continues, and prices are firm.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 0 | to | 4 0 |
| ,, Jerusalem | per ½-bush. | 1 6 | | 2 0 |
| Asparagus | per bun. | 3 0 | | 4 6 |
| Beans, Guernsey | per lb. | 1 0 | | 1 3 |
| Beet | per bush. | 2 0 | | 3 0 |
| Broccoli, Sprouting | per bag | 2 0 | | 3 0 |
| Cabbage | per tally | 5 0 | | 10 0 |
| ,, New Cornish | per doz. | 1 0 | | 1 3 |
| Carrots | per doz. bun. | 1 6 | | 3 0 |
| Cauliflowers | per doz. | 1 6 | | 3 0 |
| ,, Cornish | per crate | 5 0 | | 8 0 |
| Celery | per doz. bundles | 6 0 | | 14 0 |
| Chicory | per lb. | 0 4 | | 0 5 |
| Cucumbers | per doz. | 2 0 | | 4 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 14 0 |
| Leeks | per doz. | 1 6 | | 2 6 |
| Lettuce | per doz. | 0 9 | | 1 3 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Mint | per doz. bun. | 4 0 | | 5 0 |
| Onions | per case | 8 0 | | 9 0 |
| Parsley | per ½-sieve | 1 0 | | 2 0 |
| Parsnips | per bag | 4 0 | | 5 6 |
| Peas, French | per pad | 5 0 | | 6 0 |
| Radishes | per doz. bun. | 0 9 | | 1 6 |
| Rhubarb | per doz. bun. | 0 8 | | 1 0 |
| Savoys | per tally | 7 0 | | 12 0 |
| Seakale | per bun. | 0 8 | | 1 0 |
| Spinach | per bush. | 3 0 | | 4 0 |
| Tomatoes, Canary | per pack | 10 0 | | 12 0 |
| Turnips | per doz. bun. | 2 6 | | 3 0 |
| Turnip Tops | per bag | 2 0 | | 2 6 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

There are still large supplies on hand, and business shows no improvement.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Blackland | per ton | 60 0 | to | 65 0 |
| British Queen | per ton | 70 0 | | 80 0 |
| Essex | per ton | 70 0 | | 80 0 |
| Evergood | per ton | 60 0 | | 65 0 |
| King Edward | per ton | 75 0 | | 80 0 |
| Up-to-Date | per ton | 75 0 | | 80 0 |
| Teneriffe, New | per cwt. | 10 0 | | 14 0 |
| Algerian, New | per cwt. | 12 0 | | 14 0 |

## CATALOGUES RECEIVED.

YOUNG AND CO., HATHERLEY.—These specialists in carnations issue a neat and handy catalogue of perpetual-flowering varieties, and have the courage to include a list of varieties they consider to be superseded by later introductions.

HARRISON AND SONS, LEICESTER.—A very interesting, useful, and capitally-arranged catalogue of select garden seeds. Sixteen pages of excellent illustrations occupy the centre of the catalogue.

THOMAS S. WARE, LIM., FELTHAM.—A very complete and freely illustrated catalogue of hardy plants suitable for various purposes. Dahlias and roses are also listed.

E. H. TAYLOR, WELWYN.—A large proportion of gardeners are bee keepers, and they will be interested in the new and illustrated catalogue of beekeepers' supplies issued by the Welwyn expert.

**SPECIAL OFFER TO CLEAR LAND FOR PLANTING, OF WELL-GROWN, EXTRA TRANSPLANTED EVERGREENS, FOR PLANTING DURING APRIL AND MAY.**

AUCUBAS, VARIEGATED AND GREEN.
1½ft. to 2ft. ... 7/6 doz. 50/- per 100 400/- per 1,000
2ft. to 2½ft. ... 12/- doz. 75/- per 100. 650/- per 1,000

CEDRUS DEODARA.
2ft. to 3ft. ... ... ... ... ... 18/- doz. 125/- per 100
3ft. to 4ft. ... ... ... ... ... 30/- doz. 200/- per 100
4ft. to 5ft. ... ... ... ... ... 36/- doz. 250/- per 100

HOLLIES (of sorts).
2½ft. to 3ft. ... ... ... ... ... 32/6 doz. 225/- per 100
3ft. to 4ft. ... ... ... ... ... 42/- doz. 300/- per 100
4ft. to 5ft. ... ... ... ... ... 72/- doz. 500/- per 100
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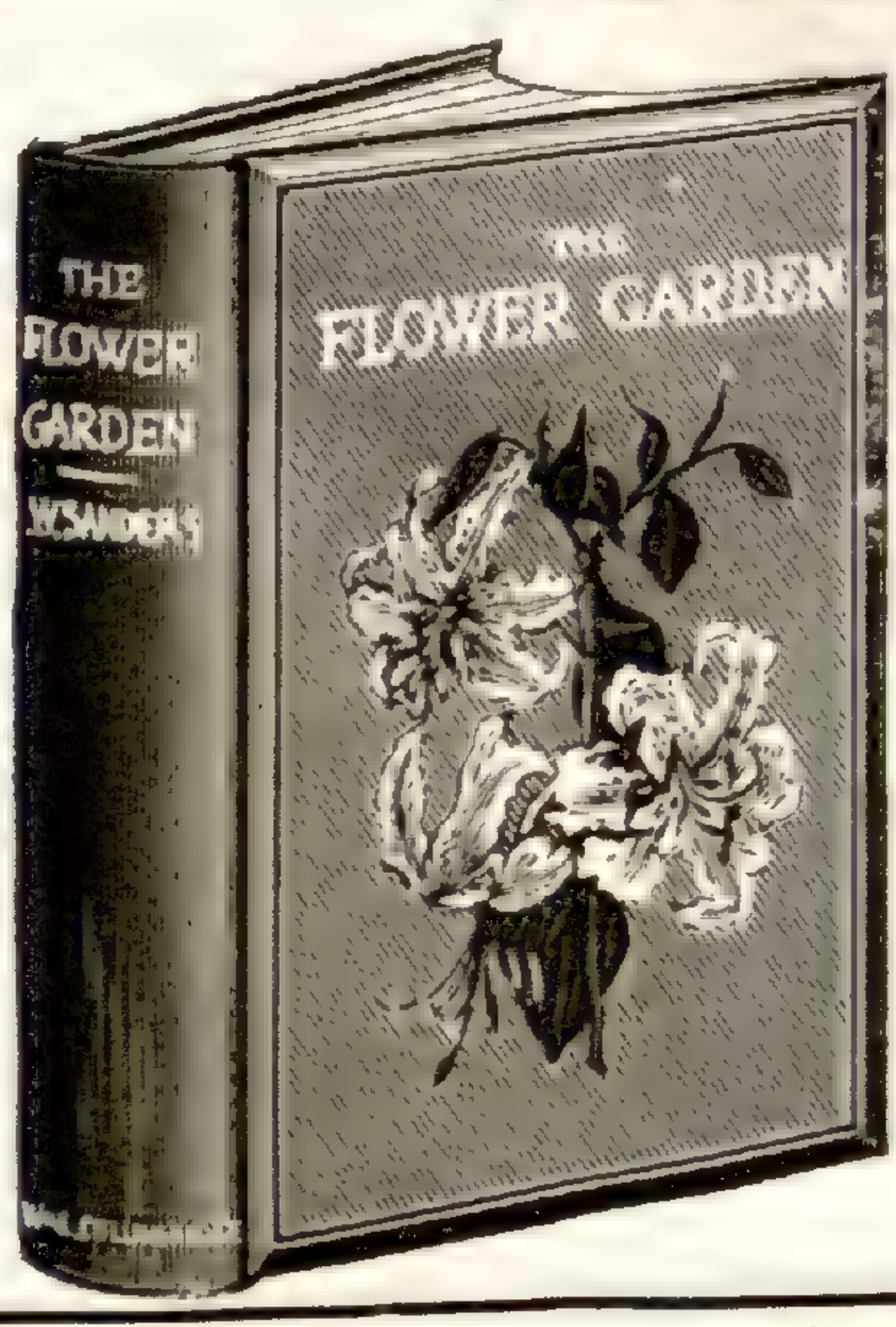

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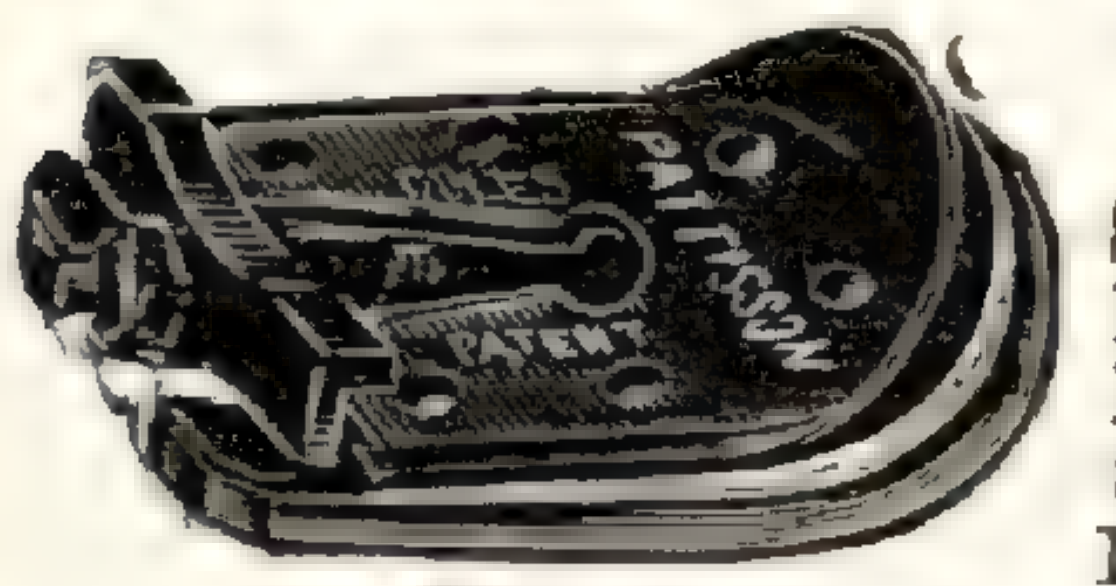

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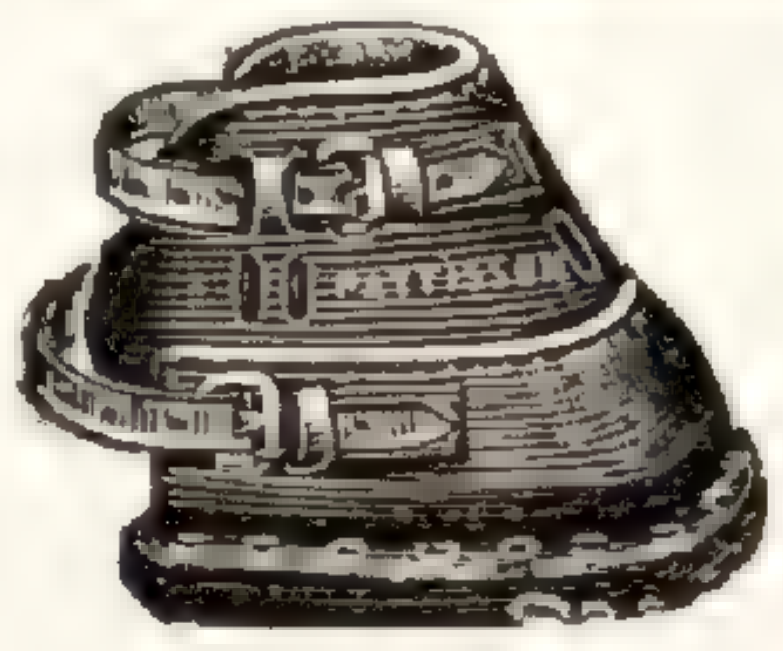

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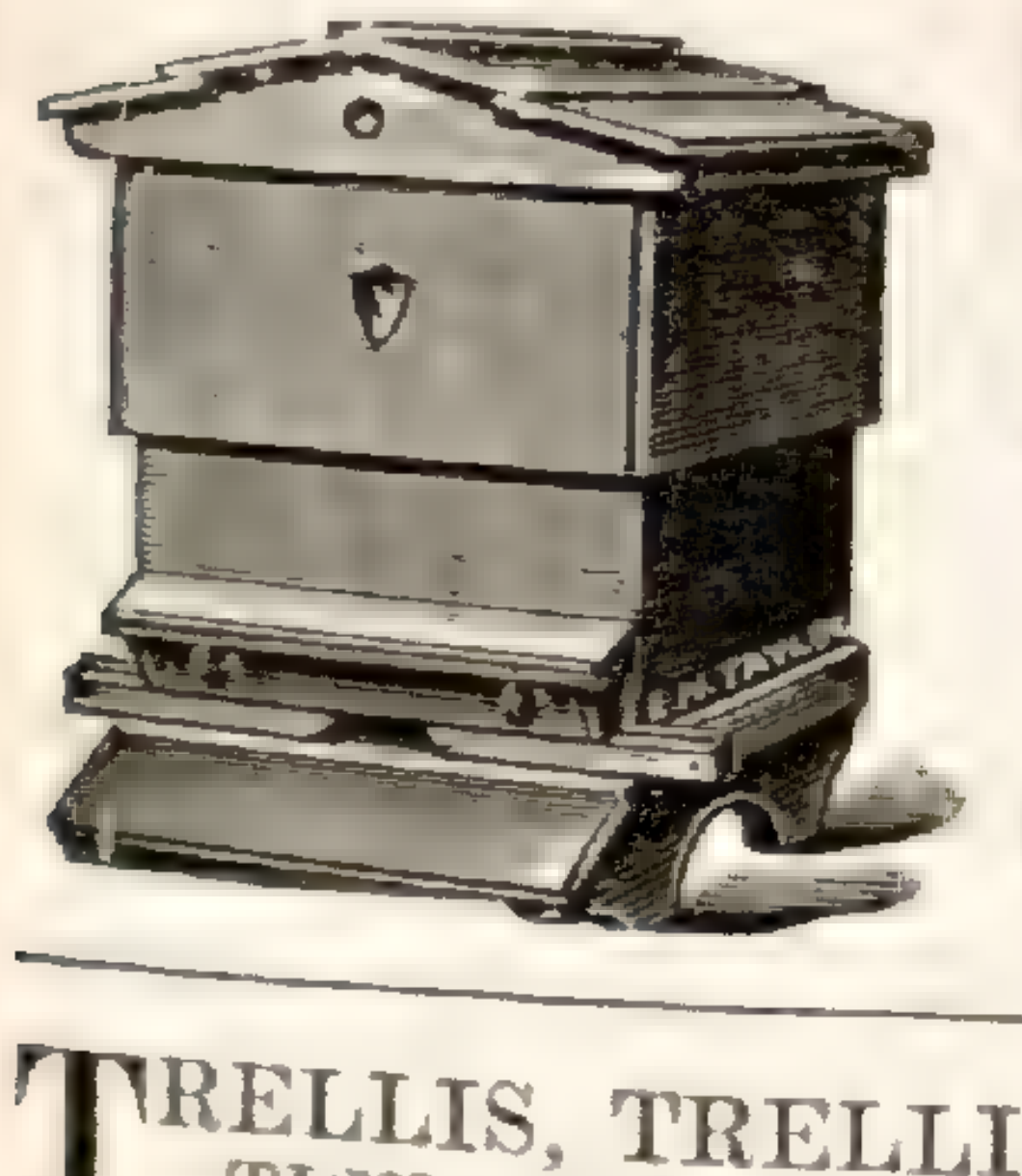

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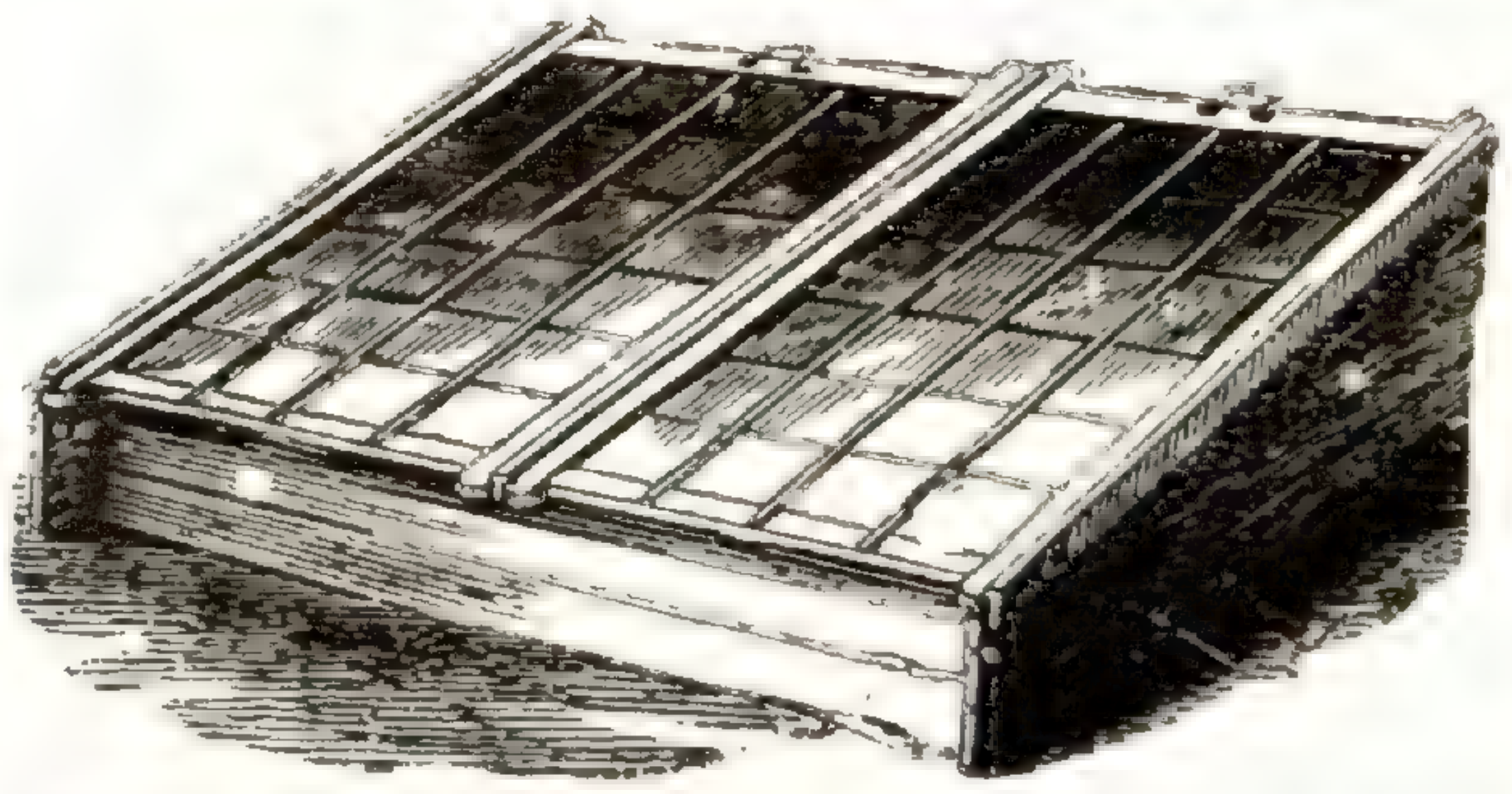

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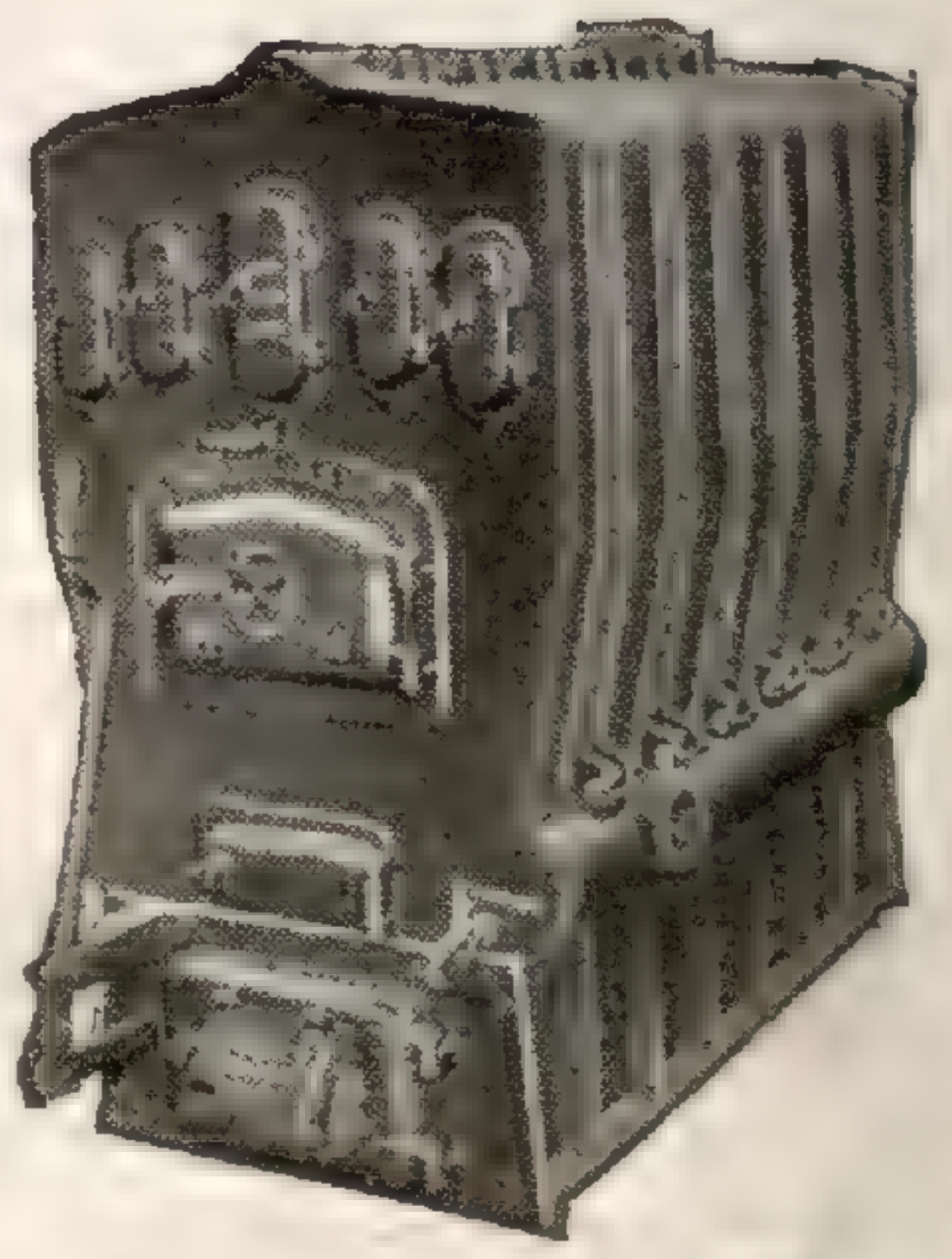

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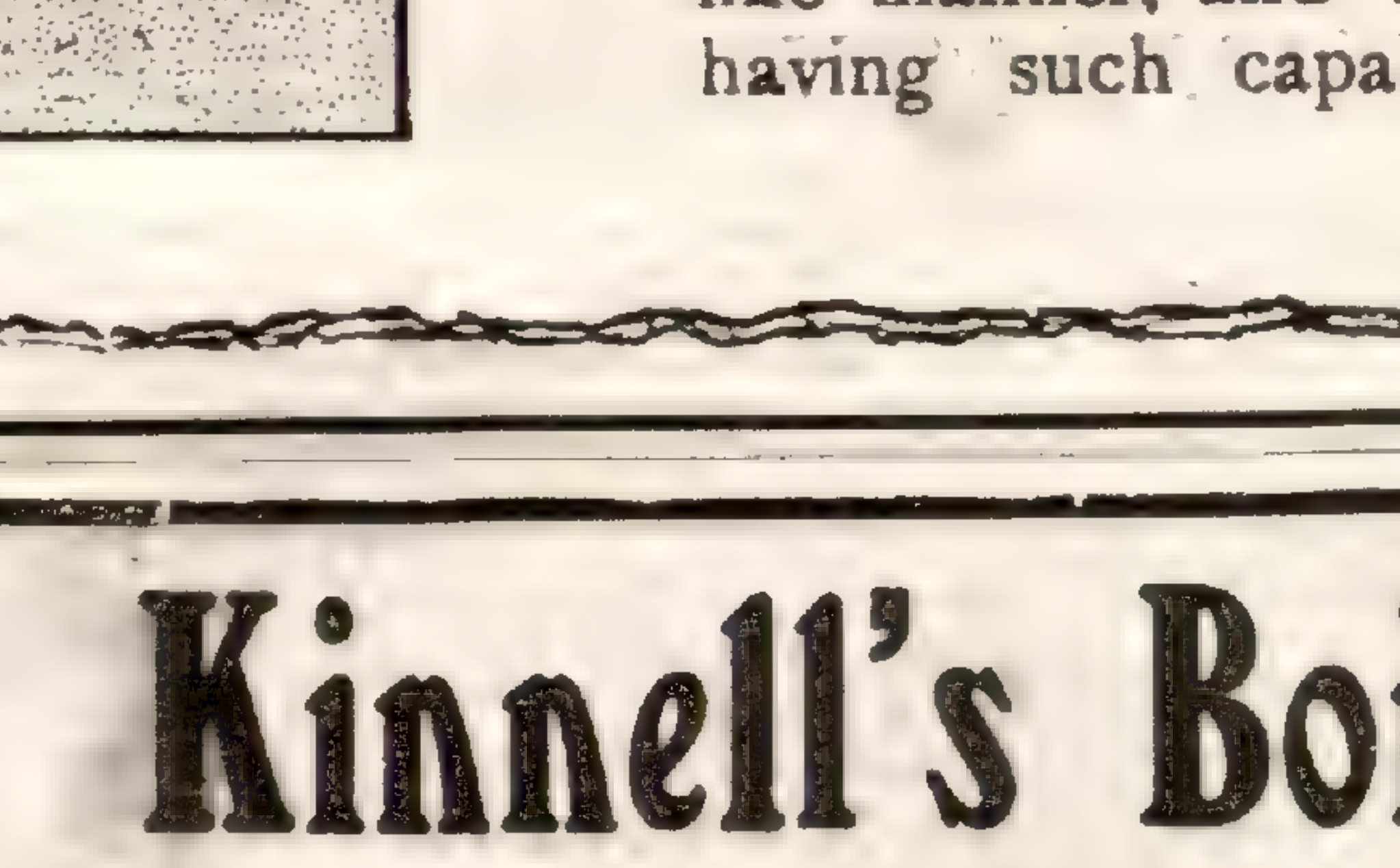

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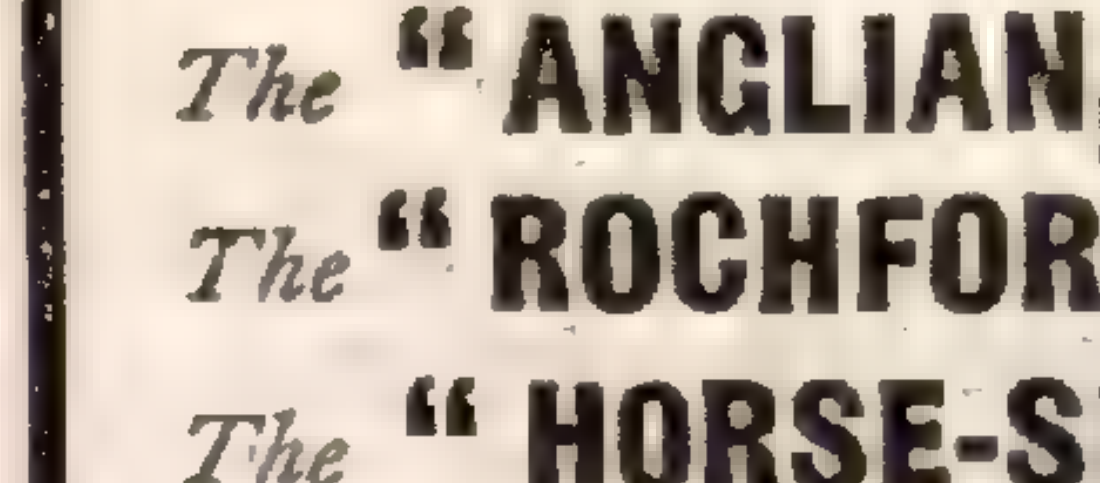

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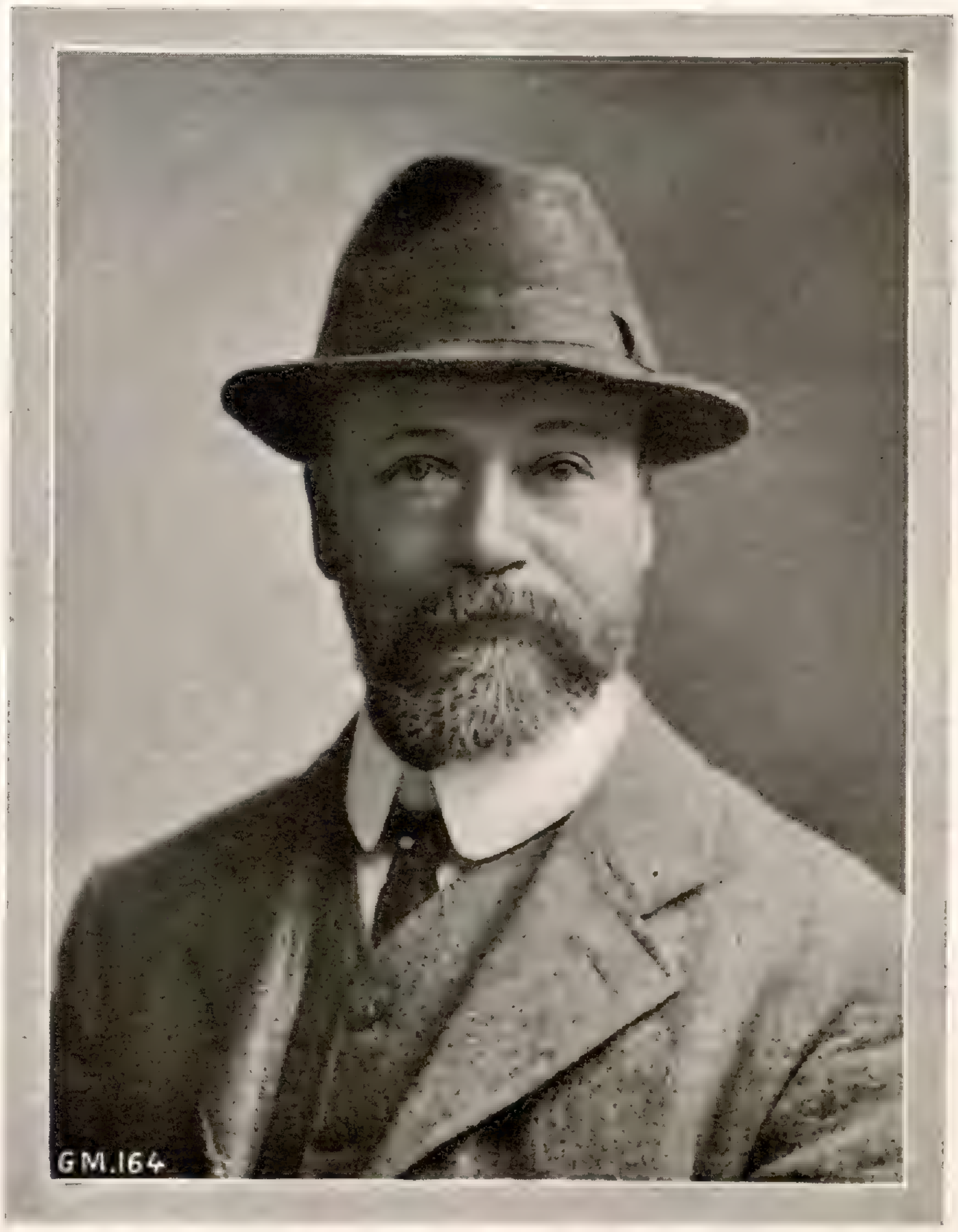
VOL. LV.—No. 3,050. SATURDAY, APRIL 13, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Fertility of Fruit Trees.

Although there are many thousands of fruit trees in the gardens and orchards of this country, that have passed through their lives without having received assistance from the direct application of manurial matter to the soil in which they are growing, there is no occasion to refer in these pages to the fact that in the production of hardy and other fruits the judicious use of fertilisers is not less essential to success than in the cultivation of the various kinds of vegetables that have a place in the cropping of the kitchen garden. It is not necessary to do so because we, and our contributors, have constantly reminded our readers that while an apple or a plum tree will yield more or less fruit when wholly left to itself, the crops will be far inferior both in quantity and quality to what they would have been had the cultivator enriched the soil with suitable fertilisers in accordance with the requirements of the tree. Taking a still broader view of this question, there is not, in the present state of knowledge, so much a necessity for urging the importance of manuring as an essential factor in the cultivation of hardy fruits, as of calling attention to the desirability of adopting a strictly scientific method in maintaining the fertility of orchards and fruit plantations, such method, in fact, as would find favour with those who, by their work have established their claims to be regarded as authorities on fruit culture. Lest there may be any misapprehension upon the point, it may with advantage be stated that a scientific method is not necessarily one that is involved in complexity. So far from this being so in this case, it is characterised by extreme simplicity, and may be readily adopted by those who have had some experience in fruit production, and usually give full consideration to the matters they have in hand. Scientific method is frequently associated in the popular mind with experimental operations, but it need hardly be said that they are wholly different, for, in the one case, the details are carried out in strict accordance with the knowledge previously obtained, while in the other they are conducted for the purpose of obtaining definite information upon doubtful points. To state the case in the fewest words, the scientific method of manuring fruit trees is the enrichment of the soil with such constituents of plant food as will assist them to produce heavy crops of fruit of high quality, and to apply them at the most suitable times, and in such quantities as may appear desirable. The time of application is an important factor in the use of fertilisers in the fruit plantation and orchard, and while, in many instances, it may, in a general way, be advisable to dress the ground late in autumn or during the winter, manure may, in many cases, be applied at other seasons with still greater advantage. Should the trees have borne a good crop in the season previous, and are only moderately vigorous, a winter dressing will be beneficial, as, indeed, would be the case if they were unfruitful the previous season, and yet wanting in vigour. In cases well nigh innumerable there are trees that are sufficiently vigorous to suggest that unless they bear a full crop they will make so luxuriant a growth as to fail to produce well-developed fruit buds in the course of the summer, and a crop in the following year. Should, however, these trees set a good crop of fruit, they will require some manurial assistance to enable them to bring it to perfection, and this it cannot be too widely known, can be readily given when the fruits are beginning to swell freely, and a proper estimate made of the extent of the crop. By adopting this method all element of chance is eliminated, and the trees are supplied with food in accordance with their requirements, and the growth most favourable to fruit production ensured. With regard to the manures most suitable for fruit trees, it cannot be too distinctly understood that elaborate mixtures are wholly unnecessary. It is quite true that calcium, chlorine, iron, magnesia, nitrogen, phosphorus, potassium, and sulphur enter into the composition of fruit trees, as of many other forms of vegetation. But it does not follow, as some writers would have us believe, that we should apply them all to the soil when the trees are in need of additional supplies of plant food, because the soil usually, with the exception of nitrogen, phosphoric acid, and potash, contains them all in sufficient quantities for the requirements of the trees. Those who have an ample supply of stable or farmyard manure at their command will, in its use, add all the constituents of plant food to the soil, but the three last-named may not be in sufficient proportions, thus rendering it necessary to increase the percentage of those deficient as indicated by the growth of the trees. The only substances with which fruit growers need concern themselves with are the nitrogenous, phosphatic, and potassic manures, and lime in its various forms, and with these they should become well acquainted, with a view to using them to the best advantage. Nitrogen is of much importance for the aid it renders in the development of the wood and



MR. W. STRUGNELL.

leaf. If insufficient for the needs of the tree the growth is more or less stunted, and, when in excess in the soil, the leaf and stem undergoes rapid development, the tissues are soft, and the foliage is liable to fungoid attacks. Nitrate of soda and sulphate of ammonia are the two chief nitrogenous manures, both rapidly become available as plant food when applied to the soil, and unless taken up by the roots a considerable proportion of their fertilising properties will be carried away by the drainage water. Nitrate of soda should be used in preference to sulphate of ammonia in soils containing a large percentage of lime, and the soda base has the power of converting a small percentage of the potash contained in soils into a form available as plant food. Phosphatic manures promote early root development, and fruit production, and, therefore, of much value as aids in fruit culture. The more important of these to fruit growers are basic slag and superphosphate of lime. The first is rather the cheaper of the two, and, owing to its relatively slow action, is best applied during the winter, while the superphosphate of lime is the most suitable for use after growth has commenced. Potash is essential to the process of assimilation, and contributes liberally to the production of starch, sugar, and cellulose in the trees and their fruits. It also assists in the development of the tissues, and renders the plant better able to resist the attacks of fungoid and other diseases. Kainit is the cheapest of the potassic compounds, but the more expensive muriate of potash is more rapid in action, and, therefore, the best for use when growth has commenced. Applications of potassic manures are the most beneficial on light soils, in which potash is usually deficient, and, as a rule, should be made during the winter. Lime is useful in improving the physical condition of soils, in promoting the activity of the beneficial bacteria, and in converting potash in the soil into an available form; and it is essential to success in the cultivation of stone fruits. The fertilisers of special value for use when the fruit is set are superphosphate of lime and nitrate of soda, to be used at the rate of 3oz. and 1oz. respectively to the square yard. The effects should be closely watched, and if the growth is not so strong as could be desired a second dressing at about half the rate of sulphate of ammonia may be given a month later. But for the reason stated, it is important that nitrogenous manures be not used in excess of requirements.

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**Mr. W. Strugnell,** who has for nearly twenty years been in charge of the charming and highly-kept gardens at Rood Ashton, Trowbridge, has long occupied a leading position among practical horticulturists in the West of England. During the period Mr. Strugnell has occupied his present position many alterations and improvements have been carried out in the Rood Ashton gardens. These have included the cutting down and clearing of overgrown timber and shrubs, and the introduction of new features, among the latter being the construction of pergolas for roses and other climbing plants, rock gardens, herbaceous borders, and shrubland extensions. Mr. Strugnell is well known in the western counties as an exhibitor of fruit and vegetables, where he has won many of the leading prizes in good company, and at the Royal Horticultural Society's exhibitions of fruits his name occasionally appears among those of other prize winners in the classes for hardy fruits. Specimen lawn trees are the special pleasure of his employer, the Right Hon. Walter Long, M.P., and these are frequently added to by the planting of commemorative specimens by Royal and other visitors. Prior to his engagement at Rood Ashton, Mr. Strugnell was for some time with the late A. R. Baily, Esq., Willow Vale, Frome, removing there from Benham Court, Newbury. At both places such excellent work was done as to establish his reputation. Foreman under Mr. W. Iggulden, at Marston, for two years, Mr. Strugnell became much interested in the production and exhibition of high-class fruit, vegetables, and plants. Mr. Strugnell occupied for some time a similar position in the extensive gardens of Buckland, Breconshire, South Wales, the residence of J. G. Gwynne-Holford, Esq., and, as at Marston, he had the advantage of being under one of the leading exponents of the gardening art. In the earlier days of his probation Mr. Strugnell occupied positions in the gardens of Brentry House, near Bristol, and Sneyd Park, Clifton, both places of note, and it is evident from the success achieved in the management of the gardens of which he has had full charge, and notably those of Rood Ashton, that full advantage was taken of the excellent opportunities he had for the acquisition of a knowledge of high-class gardening.

**The Bank Holiday.**—Although the weather was much colder on Monday than for several days previously the holiday makers took full advantage of the opportunities they had for enjoying the manifold attractions of public parks and gardens and other open spaces within a short distance of the metropolis. Those parks and gardens in which there are displays of early flowers attracted many thousands of visitors, but large numbers also went to Hampstead Heath and Epping Forest. The increasing popularity of the Royal Gardens, Kew, was evidenced by the fact that 127,000 visitors passed through the gates during the day. The immense specimen of Agave atrovirens, which is now coming into bloom, attracted much attention, and the crowds that thronged the arboretum showed the glorious displays of daffodils in the grass were highly appreciated.

**Accident to Miss G. F. Lindsell.**—The many friends of Mr. G. B. Lindsell will deeply regret to learn of the loss he has sustained by the death of Miss G. F. Lindsell from an accident which occurred at Hastings on the 2nd inst. Miss Lindsell, who was on a visit to her brother at Bexhill, was fond of climbing, and somewhat reckless in relation thereto, and when on her way to Hastings along the cliffs she appears to have slipped near Ecclesbourne, and fallen to the foot of the cliffs there, and to have been killed instantaneously.

**Peter Barr Memorial Fund.**—In 1910 numerous daffodil lovers expressed a desire to see a fund raised for the purpose of commemorating the life and work of the late Mr. Peter Barr, V.M.H. The members of the Royal Horticultural Society's Narcissus and Floral Committees considered the matter, and the proposals most favoured were the institution of a Peter Barr Memorial Medal and the provision of a fund for the maintenance of an orphan through the medium of the Royal Gardeners' Orphan Fund. To give effect to these proposals, Messrs. J. T. Bennett-Poë, M.A., V.M.H., William Cuthbertson, J.P., R. Hooper Pearson, William Poupart, Chas. E. Shea, Walter T. Ware, and the Rev. J. Jacob were elected to form an executive committee, with Mr. Wm. Marshall, V.M.H., as chairman; Mr. H. B. May, V.M.H., as treasurer; and Mr. Chas. H. Curtis as hon. secretary. Donations were invited, and have been received from all parts of the world where daffodils are grown, and for these the committee wish to tender their thanks. At a meeting held on Tuesday, April 2, the committee closed the fund, which, with £3 7s. 1d. interest, amounted to £309 15s. 5d. Receipt books, stationery, printing, and postage amounted to £3 1s. 7d., and the silver-gilt Peter Barr Memorial Cup (which does not involve the creation of a trust, as an annual medal would have done) cost £39 17s. 6d., leaving a balance of £266 16s. 4d., which has been handed over to the Royal Gardeners' Orphan Fund. The handsome cup, designed and made by Messrs. Elkington, will "be awarded annually in connection with work among daffodils," and the honour of holding it for the first year falls to the Rev. G. H. Engleheart, V.M.H., and it will be presented to him at 11.30 a.m. on April 16, in the No. 3 room at the Royal Horticultural Hall. Although the fund is closed, the committee does not dissolve at present, but will meet annually for the purpose of awarding the cup in accordance with the original suggestion.

**Ghent International Exhibition.**—An International Exhibition will be held next year at Ghent which, it is hoped, will rival in size and importance the exhibition that was held at Brussels in 1910. This exhibition will be organised in conjunction with the great quinquennial flower show of the Royal Society of Agriculture and Botany. The park of 250 acres in which the exhibition will be held will, in accordance with the announcement we were able to make some time since, contain the magnificent building which has been designed for the society mentioned.

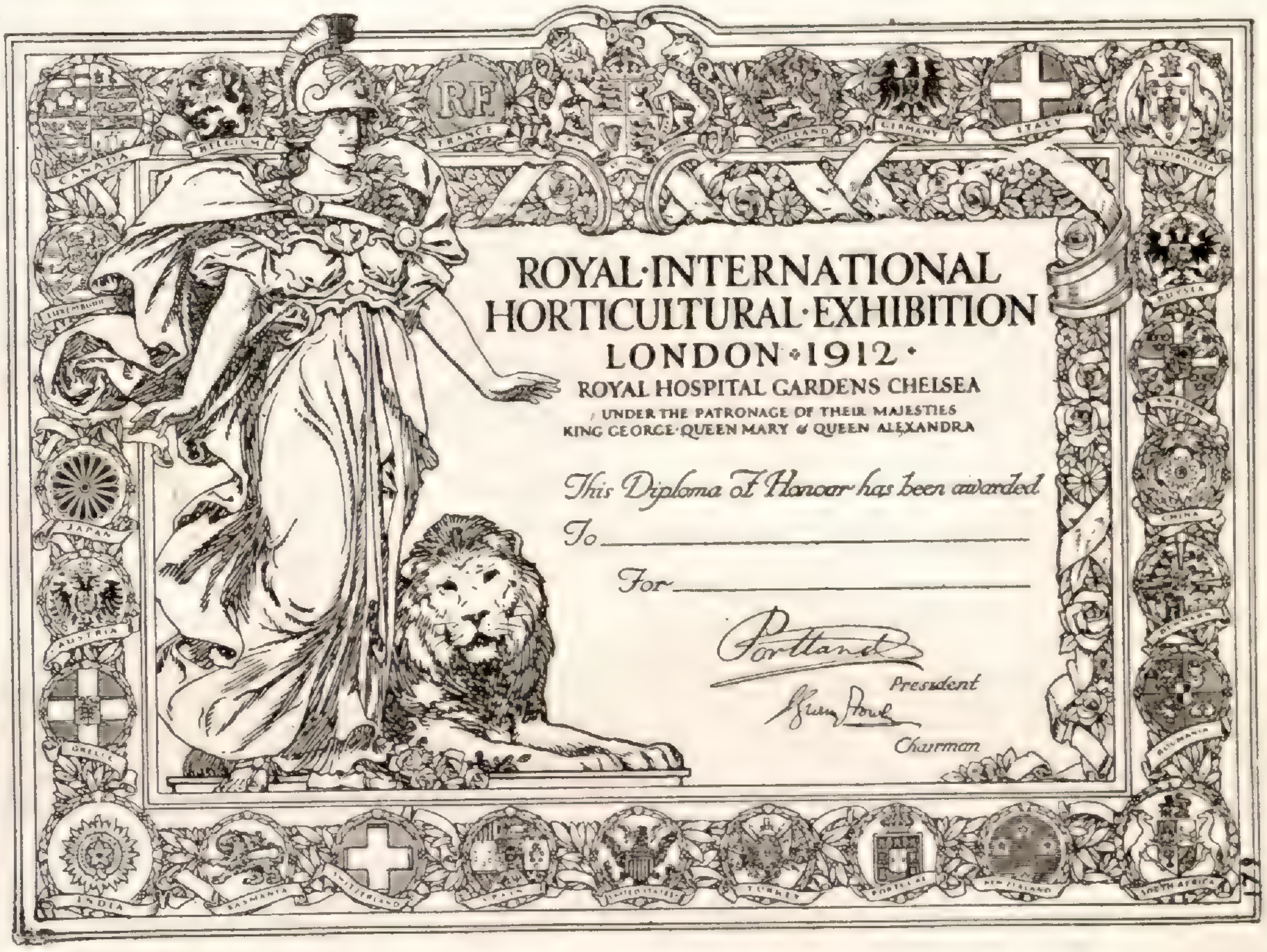
**The Early Potato Crop.**—The planting of potatoes in Jersey during March was much delayed by the heavy rains, and some part of the early crop in the island may be rather later in coming to market than usual. Much, of course, will depend upon the weather that will be experienced during the next few weeks. Breadths that were planted early in February present a very promising appearance, for the growth is even, and much earthing up has been already done. The haulm is hardly so stout as usual at this period of growth, but with the brighter weather that has been experienced of late it will soon evince a material improvement in this respect. The planting of early potatoes in Ayrshire commenced, in the Girvan district, under favourable conditions about the middle of February, but owing to the wet weather that has been experienced it was not possible to proceed with the work so expeditiously as in most years. The early plantings have made an excellent growth, and are now pushing freely through the ground. In the districts in Cheshire and Lancashire, where early potatoes are largely grown, planting is fully a fortnight later than usual, and, owing to the wet state of the soil, it is feared that, excepting where the soil is light and sandy, the growths will not start away so freely as could be wished.

**South African Fruits in London.**—The supplies of grapes, pears, and plums from South Africa were received during the past fortnight in exceptionally large quantities, and as they were landed when the railway traffic was in a disorganised state owing to the coal strike, they realised at Covent Garden very low prices. The consignment brought by the Union Castle liner "Edinburgh Castle" consisted of 27,750 packages, and was the largest that has yet been received from South Africa. It consisted of grapes, pears, and plums. The grapes included Red and White Hanpoot, Raisin Blanc, Barbarossa, Gros Colmar, and Waltham Cross. The pears comprised Beurre Bosc, Beurre Hardy, Doyenne du Comice, and Winter Nelis. The plums consisted of the variety known as Kelsey. The grapes realised from 2s. to 8s. per box, Kelsey plums (28's to 32's) from 5s. to 6s. per box. Pears of ordinary quality realised from 3s. to 5s. per box of 10lb., while trays of Doyenne du Comice containing from 18 to 28 fruit, realised from 10s. to 14s. per tray. It was interesting to find among the grapes from South Africa the variety Waltham Cross, which was introduced by Mr. W. Paul, of Waltham Cross, and received a first-class certificate from the Royal Horticultural Society in 1871. Waltham Cross is a large and handsome grape, with long tapering bunches and large amber-coloured berries, and of excellent flavour. The variety has not of late years been regarded with much favour by cultivators in this country, but in South Africa it is evidently popular for culture for the British markets.

**American Gooseberry Mildew.**—The Board of Agriculture and Fisheries have issued an order dated March 30, entitled "The American Gooseberry Mildew (Fruit) Order of 1912," to England and Wales. Under the Order the sale or exposure for sale of diseased gooseberries is prohibited, and any person who knowingly sells or exposes for sale diseased gooseberries, or causes or permits any such sale or exposure, shall be liable on conviction to a penalty not exceeding £10. The landing in England or Wales of any gooseberries brought from any place outside Great Britain (except the Channel Islands) is prohibited, except where there is attached to the package in which the fruit is imported a label bearing the words "Imported gooseberries," and stating the name of the consignor and the country and district in which the fruit was produced. Other clauses of the Order deal with Information to be Given as to Imported Gooseberries, Cleansing of Packages containing Diseased Gooseberries, Powers of Inspectors to Enforce Cleansing of Packages, Powers of Entry, and Offences.

**Botany of a Hedgerow.**—Before the members of the Sheffield Naturalists' Club on the 23rd ult., Dr. T. W. Woodhead, of the Huddersfield Technical College, gave a highly interesting lecture on the botanical aspects of the hedgerow. Hedgerows, it was pointed out, are artificial structures which followed in the wake of man, and were quite unknown as natural features in the vegetation of the country. Although the dominant one, the hawthorn was by no means the only tree or shrub of the hedgerow. Large trees occupied an important place in the landscape, and their appearance in the hedgerow was largely due to the fact that frequently they had been introduced by man so as to afford shelter for cattle. Nearly all the British shrubs might also be found in the hedgerows, while another interesting group of plants were the climbers, among which all gradations and modifications of the climbing habit might be found. Referring to the biological aspect of the hedgerow flowers, Dr. Woodhead stated that insects and these flowers were intimately associated, and that there was much evidence in favour of the view that they had developed side by side, and that modifications of the one had been accompanied by parallel modifications of the other. Hedgerows and hedgebanks, he said, were doubtless used on a small scale near dwellings long before they extended to the more distant cultivated plots, but the custom of leaving a dividing line of unploughed turf, on which trees and shrubs often grew, would suggest and would long serve as the forerunners of the hedgerows which to-day added so much to the beauty of the country.

**Royal International Horticultural Exhibition.**—Through the courtesy of the executive we are able to give herewith an illustration of the handsome diploma that will be awarded at the Royal International Horticultural Exhibition to be held at Chelsea next month. A description of the diploma is unnecessary, but it may be mentioned with much satisfaction that the international character of the gathering is admirably shown in the design, which has the merit of combining boldness with elegance.



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SOUTH AFRICA

DIPLOMA OF THE ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.

**Practical Instruction in Forestry.**—As an essential part of the first course in forestry at the Edinburgh University, the students have ten days' practical work at Raith, the finely-wooded estate of Mr. Munro Ferguson, M.P., who has kindly placed his woods at the disposal of the students. The first contingent of students numbered 26, and, leaving Edinburgh early in the morning of March 21, they reached Raith in the forenoon, and were soon at work in accordance with a well-devised plan. They commenced operations in the nursery under the supervision of Mr. Grant, the head forester, and his assistants, and throughout the ten days the whole of the manual work was done by the students except carrying out the trees when engaged in thinning. The programme of work comprised planting, thinning, nursery operations, measuring the volume of standing woods, testing the soil of an area to ascertain the most useful trees to plant therein, inspecting fences for the purpose of making estimates of cost, and becoming acquainted with the method of formation. Work commenced each day at 8.30 a.m., and concluded at 5 p.m., with an interval for lunch, and although much of it was decidedly arduous, the students applied themselves with energy to the operations, and proved to demonstration that they had been fully impressed with the importance of a thorough acquaintance with practical work. The woods and plantations of Raith have long had special attention given to them, as evidenced by the fact that records of them extending over nearly two centuries are in possession of Mr. Munro Ferguson.

**Influence of Magnesia on Roses.**—In a contribution to the issue of the "Journal des Roses" for February last M. Cochet-Cochets gives the results obtained from his experiments with magnesia as a manure for roses. He states that the experiments were carefully conducted with a large number of roses in pots, and some 1,800 plants of multiflora roses growing in the open ground, and that the magnesia exercised a distinct effect on the growth of the roses. Used in the form known as carbonate of magnesia as a dressing to the ground in which the multiflora roses were growing, it increased the development of the growth, which continued until late in the autumn, and caused the leaves to retain their freshness until a much later period than usual.

**Sewage Sickness in Soil.**—Dr. E. J. Russell and Mr. J. Golding, of the Rothamsted Experiment Station, Harpenden, have made an investigation of the state into which the soil of sewage farms arrives after the continued application of sewage, whereby it is so far injured both in its physical and biological conditions that it will no longer either let the sewage percolate or purify what passes through. In the course of their investigations they found that sewage-sick soil possessed a very limited bacterial activity, and was exceptionally rich in those protozoan organisms which Russell and Hutchinson have regarded as the limiting factor in the development of bacteria in soils. Partial sterilisation of the soil, either by treatment with antiseptics or by heating, was followed by a very large increase in the number of bacteria; in one case they rose from about 40 millions to over 400 millions per gram of the soil. Accompanying this increase in bacterial activity there was a renewal of the purifying effect of the soil upon the sewage, and it was found possible to restore the sewage-sick soil and make it become an even more effective filter than before, either by heating the soil sufficiently to char it slightly or by treating it with the vapour of toluene.

# ROYAL CALEDONIAN HORTICULTURAL. SOCIETY.

The spring show of this society was held in the Waverley Market, Edinburgh, on April 10 and 11, and, notwithstanding the difficulties of railway transport, the display was a very successful one. Several of the larger English trade exhibitors were not in evidence, which made this part of the show rather thin compared with what it is in normal circumstances, but in the competitive classes the entries were in excess of last year's, and the staging was very full. The show was also favoured with fine weather, and the atmosphere within the market was rendered quite genial and pleasant by means of the new heating installation, which was put in operation for the first time in connection with a flower show. The show was opened by the Marquis of Tullibardine, and there was a good attendance of the public all through the opening day.

## GROUPS AND PLANTS.

The leading class was for a group of orchids, arranged in a space not exceeding 12 feet by 6 feet, to be seen from one side only. Ferns and foliage plants were permitted in the arrangement, and variety, quality, and decorative effect were to be considered. There were two entrants in the class, and the first prize, consisting of the Sander Cup, value 25 guineas (which has to be won three times before it becomes the property of the exhibitor), and £3 3s., fell to R. Brooman White, Esq., of Arddarroch (gardener, Mr. J. Smith); while Jas. Wood, Esq., of Wallhouse, Bathgate (gardener, Mr. F. Henderson), was awarded the second prize. This is the second time in succession that Mr. Brooman White has carried off the cup. His collection contained a very choice selection of odontoglossums, hybrid cypripediums, and other kinds, among which were noted Odontioda Charlesworthi, fine varieties of Cattleya Schröderæ, Odontoglossum crispum Mercedes, Cymbidium Lowianum concolor, Cypripedium Euryades New Hall Hey variety, very fine hybrids from Odontoglossum Edwardi, and other fine things.

For four orchids, distinct, A. Dryburgh, Esq., Gogar, Midlothian (gardener, Mr. A. Findlay), was first; and R. Hindle, Esq., Edinburgh (gardener, Mr. A. Rae), was second. Chas. Cowan, Esq., Dalhousie Castle, Midlothian (gardener, Mr. W. G. Pirie), was first for one orchid; the Right Hon. R. C. Munro Ferguson, M.P., Raith, Kirkcaldy (gardener, Mr. D. McLean), was second; and A. Dryburgh, Esq., third.

For four stove or greenhouse plants, in flower, the first prize of £2 2s., presented by Messrs. Mackenzie and Moncur, Lim., Edinburgh, was awarded to Provost Ballantyne, Neuk, Peebles (gardener, Mr. A. Smith); the second to A. Dryburgh, Esq.; and the third to Sir Robt. Usher, Norton Park, Ratho (gardener, Mr. G. McKinna). Sir R. Usher was first for six plants in bloom; Sir John Murray, Challenger Lodge, Edinburgh (gardener, Mr. J. McIntyre), was second; and the Earl of Home, Douglas Castle, Lanark (gardener, Mr. A. McMillan), was third. For two greenhouse rhododendrons, Lord Elphinstone, Carberry Tower, Musselburgh (gardener, Mr. D. Kidd), was the only entrant, and was awarded the first prize. Sir John Murray was first for hardy rhododendrons in pots or tubs, and Sir Robt. Usher was second.

For four Azalea indica, in seven-inch pots, the first prize went to the Hon. Mrs. Baillie Hamilton, Langton, Duns (gardener, Mr. G. D. Kerr); the second to Sir John Gilmour, Montrane, Leven (gardener, Mr. I. Wilson); and the third to C. E. Green, Esq., Grace Mount, Liberton (gardener, Mr. P. MacLachlan). Colonel More Nisbet, The Drum, Midlothian, was first for two Azalea indica; Mrs. Bickmore, Beechwood, Murrayfield (gardener, Mr. J. Pearson), second; and Sir John Gilmour third. Mrs. Bickmore was first for six hardy azaleas, Lord Elphinstone second, and the Earl of Home third. In the fern classes the Earl of Home was first for three exotic ferns; R. A. Robertson, Esq., Kirklands, Gogar (gardener, Mr. T. Hermiston), first for three adiantums; and Miss Balfour Melville, Pilrig House, Edinburgh (gardener, Mr. W. Robertson), first for six dwarf hardy ferns.

The Earl of Home was first for four foliage plants (excluding palms), and also for six foliage plants in pots not exceeding 9in. diameter. The same exhibitor was also first for six table plants, three crotons, and six palms. Sir A. B. Milne, Inveresk Gate, Musselburgh (gardener, Mr. R. McAndie), was first for four palms, and J. McKelvie, Esq., Hatton House, Midlothian (gardener, Mr. J. R. Findlay), was first for a single palm. Mrs. Hutchison, Carlonerie, Kirkliston (gardener, Mr. J. Thom), was first for three dracænas.

In the rose classes, Mrs. Hutchison was first for a dozen roses in pots, for six H.P. roses, and for six H.T. roses; and Mrs. Dewar, Drylaw House, Midlothian (gardener, Mr. W. T. Galloway), was first for two climbing roses. Lord Elphinstone was first for four amaryllis; Mrs. Hog, Gogar Burn, Midlothian (gardener, Mr. W. Brow), for four ivy-leaved pelargoniums, and for four show pelargoniums; and Colonel More Nisbet for four zonal pelargoniums. The Right Hon. R. C. Munro Ferguson was first for four caladiums; the Earl of Home for six cinerarias (large-flowered); and Hon. Mrs. Baillie Hamilton for six Cineraria stellata.

Mrs. Bickmore was first for one deutzia, two deutzias in 7in. pots, three Guelder roses, and three lilacs; Provost Balantyne was first for two hydrangeas; Mrs. Dewar for three Viburnum plicatum; A. Geddes, Esq., Colinton (gardener, Mr. J. Todd), for two Dicentra spectabilis, and two pots of mignonette; Colonel More Nisbet for three pots lily of valley and four schizanthuses; Hon. Mrs. Baillie Hamilton led for six Primula japonica and six single Primula vulgaris varieties; Sir John Gilmour for six streptocarpus, six pots of polyanthus narcissus, and six pots of tulips; the Earl of Wemyss, Gosford (gardener, Mr. W. Galloway), scored for six calceolarias; Miss Balfour Melville for six pots of Primula japonica, six alpine auriculas, three auriculas, six auriculas, one auricula (grey-edged), and one auricula (self). C. E. Green, Esq., was first for six cyclamen; Charles Cowan, Esq., was first for two dozen alpine plants, for six alpine plants (excluding bulbs), and for one white-edged auricula. M. G. Thorburn, Esq., Glenormiston, Peebles (gardener, Mr. A. Dickson), was first for six plants of Primula Sieboldi; Dr. Scott, Musselburgh (gardener, Mr. W. Armstrong), for four astilbes; Miss Spott, Dunbar (gardener, Mr. J. Cossar), for one green-edged auricula; and Sir J. Gilmour for six pots of tulips.

## CUT FLOWERS.

In the rose classes, Mrs. Hutchison, Carlowrie, took first place for twenty-four blooms in not less than eight varieties, and for twelve blooms in not less than six varieties. Mrs. Bickmore was first for twelve blooms of Gloire de Dijon in vases, and for a dozen Marechal Niels in vases. Miss Wauchope, Manor House, Musselburgh (gardener, Mr. W. Hebdon), was first for twelve blooms of any other variety in vases. In the carnation classes the Earl of Home was first for three vases of Malmaisons; Sir John Gilmour for four and two vases exclusive of Malmaisons. Charles Cowan, Esq., was first for a dozen bunches of narcissi, three vases of daffodils arranged for effect, and three bowls of daffodils arranged for effect. M. G. Thorburn, Esq., was first for six vases of hardy spring flowers. In the tulip classes, Mrs. Dewar was first for three vases of parrot varieties; the Earl of Home for six vases any other kind; and the Right Hon. R. C. Munro Ferguson for three vases of any other kind. Sir John Murray was first for a dozen trusses of hardy rhododendrons, and Mr. A Johnstone, Hay Lodge, Edinburgh, for twelve trusses of greenhouse rhododendrons. Colonel Stewart Richardson, Ballathie, Perth (gardener, Mr. J. E. Davis), was first for a dozen bunches of stove or greenhouse flowers; and Charles Dickson, Esq., Viewbank, Lasswade (gardener, Mr. D. McKay), was first for six spikes of orchids.

In the section for floral arrangements, first honours went to T. G. Bishop, Esq., Dalmore, Helensburgh (gardener, Mr. J. Hood), for the white bouquet; to Sheriff Blair, Rockend, Helensburgh (gardener, Mr. W. Holmes), for a coloured bouquet; to Mr. W. Raeburn, Dalkeith, for button-hole bouquets and ladies' sprays; and to Sheriff Blair for any other floral design. There were four entries in the decorated dinner table class, and the awards were made in order to Sir John Gilmour, T. G. Bishop, Esq., and Lord Elphinstone.

## FRUIT.

The only fruit shown was a dish of strawberries, by Lord Elphinstone (first prize); pot vines, white and black grapes, from Colonel Stewart Richardson (first for black); and six bottles of preserved fruit, from Mrs. Hamilton Ogilvie, Archerfield, Dirleton (gardener, Mr. Thos. McPhail).

## NON-COMPETITIVE EXHIBITS.

Messrs. Young and Co., Hatherly, had a very fine exhibit of perpetual flowering carnations, including such varieties as Duchess of Devonshire, Cheltonia, A. S. Montgomery, Golden Glory, Queen, Rose Dore, Edith Waters, Hon. Lady Neeld, etc. (gold medal). Messrs. Hogg and Robertson, Dublin, had a very large exhibit of narcissi, including most of the best varieties, and several unnamed seedlings, and also a fine lot of tulips. The flowers were extremely fine (gold medal). Messrs. Stuart Low and Co., Enfield, showed perpetual-flowering carnations, orchids, and several other plants (silver-gilt medal).

Mr. H. N. Ellison, West Bromwich, showed a collection of ferns and hybrid gerberas (silver-gilt medal). Messrs. Cunningham, Fraser, and Co., Edinburgh, had a very neat exhibit of their alpine specialities, arranged on rockwork (silver-gilt medal). Messrs. Dobbie and Co. showed a fine lot of tulips, and some other bulbs (silver-gilt medal). Messrs. John Forbes (Hawick), Lim., had a nice exhibit of primulas and other alpine plants, tree pæonies, etc. (silver-gilt medal). Mr. G. Reuthe, Keston, Kent, exhibited an interesting lot of Indian and other rhododendron species, magnolias, and a variety of other hardy shrubby plants (silver medal).

Messrs. R. B. Laird and Sons, Lim., Edinburgh, had a large and artistically arranged group on the floor, the centre part of which consisted of large rhododendrons, with roses, azaleas, maples, etc. Mr. D. W. Thomson, Edinburgh, had an extensive exhibit of narcissi, hyacinths, and tulips, in fine condition. Mr. John Phillips showed a nice group of palms, dracænas, azaleas, clematis, roses, and ferns. Messrs. Bakers, Wolverhampton, set up a pretty exhibit of primulas, alpine, and other plants. Messrs. Sander and Sons, St. Albans, and Mr. McLeod, Chorlton-cum-Hardy, had each an exhibit of choice orchids. Messrs. Dickson and Co., Edinburgh, exhibited a fine lot of their new seedling hybrid amaryllis, and a collection of roses in vases, including My Maryland, Dean Hole, Franz Deegan, etc.

## AWARDS.

A First-Class Certificate was awarded to Carnation Duchess of Devonshire, exhibited by Messrs. Young and Co.; and an Award of Merit to Carnation Lady Alington, exhibited by Messrs. Stuart Low and Co.

## DRIFTS OF BLOSSOM.

If there is one thing about a rock garden that gives particular pleasure, it is certainly the use of informal drifts of blossom. The draping of crags, the carpeting of gentle slopes, and masses of foliage and blossom, finding their way from one level to another between the rocks, is ever a pleasurable feature from the garden-lover's point of view.

It is well, where space and a sufficiency of plants permit, to concentrate upon drifts or sweeps of blossoms, as being much more effective than clumps or dot plants of given subjects. Planting for effect is better than endeavouring to get a collection of, say, a thousand single specimens. Rather than forego my pleasurable "drifts of blossom," I would refuse the offer of countless rarities, and trust to one's own exertions in the raising of novelties from the stock in hand, to maintain the interest of the garden. It matters little what group of rock plants is taken, the majority can be made to yield a maximum of beauty if planted on the drift system. Even if one has but a few large plantings these will emphasise and accentuate the beauty and effect of the whole garden they are situated in.

DRIFTS OF BLOSSOM.
A charming scene in an East Anglian Rock Garden.

I enclose with these notes an illustration in the Holland House rock garden, here at Southcliff. It is one of several blossom drifts, and shows a group of Saxifraga umbrosa, continued by Aubriétia Rose Queen, culminating on a higher level with a mass of Nepeta Mussini and helianthemums. A pleasing combination, showing what can be done in the way of drift planting.

Bulbs can be utilised with rock plants in forming drifts, and one has in mind trails of Fritillaria meleagris winding through colonies of violas, primulas, and saxifrages, and giving one of the prettiest of spring effects. Muscari azureum, M. botyroides, M. botyroides alba, and M. conicum Heavenly Blue are fine when rising en masse above close-growing alpines, and are charming with miniature daffodils, such as N. moschatus, N. Queen of Spain, etc. Crocuses gemming masses of Thymus coccineus, chionodoxas running riot with saxifrages like S. apiculata, S. sancta, etc., and the soft blues of the puschkinias mingling with miniature yellow-flowered alpines, are each and all productive of delightful results.

Rock plants, which are capable of exquisite drifts of colour, naturally include the aubrietias, especially the fine varieties (of which Dr. Mules is so splendidly decorative); the alyssums, particularly the saxatile forms, and a few of the smaller species; violas of the gracilis character, rich, illuminative, and profuse; Zauschneria californica, a blaze of scarlet in late summer; helianthemums, particularly those with the silvery foliage, and golden or rosy colourings; the taller saxifrages and their kindred, the heucheras, which give such light misty masses of pinkish and scarlet blossoms must also be noted. Snowy cerastiums are invaluable for draping otherwise bare and steep places; the ethereal beauty of the phloxes of the setacea and subulata groups, and many of the dianthuses, sedums, and irises, all deserve the closest attention in this connection.

And these are but a few. There are veronicas, gentians, and the primulas and linarias. Ridges gay with alpine poppies, slopes, and crevices thick with campanulas of many species, and bold masses of nepetas and iberis, are all effective.

One might go further, and denote many other subjects, but the idea given may assist the reader to the effective planting of the slopes of the rock garden. Rock garden steps also may be brought into the scheme by running colonies of low-growing plants between the stones, and so linking up groupings of similar plants on either side of the pathway. In itself the idea of growing plants in the crevices between the stones of the footway is a commendable one, and if these self-same plants appear to be roving colonists, which have come from one side of the garden to the other, the thought of natural effects and simple plant groupings is brought before one at every turn.

P. S. Hayward.

## STANDARD AZALEAS.

Within the last few years standard plants of many different subjects have been extensively grown, and the Indian azalea is one of them. I do not mean plants with a clear stem of about a foot, such as we have always been familiar with, but standards with stems from 3ft. to 5ft. high or thereabouts. These tall plants are very useful for grouping, as they serve to relieve the monotony of the more lowly specimens. A characteristic specimen was illustrated in the Gardeners' Magazine of March 18, 1911. The varieties so grown form a good representative selection of this beautiful class of plants, but one cannot fail to notice the disappearance among Indian azaleas of many of those varieties whose flowers are of some shade of magenta, even Madame Van der Cruyssen, which has been a favourite as long as I can remember, being now little grown. On the other hand, semi-double flowers of a rose or salmon-rose tint, with a white or light-coloured border, of which Imperatrice des Indes was one of the earliest examples, are now largely grown. Standards of Azalea mollis in several forms are often met with; in fact, as above stated, a great many plants are now grown in this way. Of summer subjects, Salvia splendens, Plumbago capensis, abutilons, heliotropes, and, of course, fuchsias, may be mentioned, as their habit eminently fits them for growing as standards.—W. T.

## VIOLET CULTURE.

At the present time violet plants in frames that have provided a supply of flowers throughout the winter will have, in this respect, very nearly completed their period of usefulness; consequently arrangements for the propagation and after-culture of a stock for another season can very soon be carried out. The past year, in most parts, was far from being an ideal one for the growth of violets during the summer months, the abnormal heat and drought, combined in very many instances with an inadequate water supply, or owing to the press of work in other directions, the impracticability of applying it when it would have been most beneficial, found the plants in autumn much below their usual standard of size and vigour; while the foliage presented that sickly hue denoting an attack of red spider in an aggravated form. So much was this in evidence that most of the older leaves retained upon the plants when transferred to frames were soon after cleared off as rubbish, leaving the crowns almost bare, and very unpromising for supplying flowers in quantity during the dark days of winter. This forecast proved correct, for the flowering capacities showed considerable diminution for a time compared with previous years; but, with gradually lengthening days and an increase of sunlight, the plants responded to the improved conditions, and for some weeks past flowers in abundance and of good size and quality have been available.

### Propagation.

It is now obvious that the supply of rooted rhizomes, or runners, usually depended upon for increase of stock for the ensuing season will not be so readily obtained as formerly, for the simple reason that, owing to poverty of growth last year, such were very sparingly produced. Hence recourse must be had to the division of the plants now flowering. With the double varieties there is no difficulty in doing this, as usually a number of crowns, or offsets, are clustered about each root-stock, and these, pulled apart and divested of the older leaves, and having any lengthy roots reduced, answer the purpose well. The single-flowered varieties are not quite so prolific in this respect, as growth with them is more inclined to concentrate in a main stem, but generally a good number of offsets may be detached therefrom with a few roots formed, or in process of formation, that will speedily accommodate themselves in genial surroundings.

### Summer Quarters.

In southern districts the practice often followed of selecting a north border or other partly-shaded position for growing violets is best; but further north considerable modification of this course, according to soil, site, and latitude of the situation, would probably give better results. Here it has been found that the single-flowered varieties thrive best, and give better returns by way of flowers when grown fully exposed in the open garden; while those having double flowers make better progress upon a border having a western aspect, in this case having a wall at the back, which, of course, affords good protection from scathing winds, which are apt to prevail in this part in the spring months. If not already done, the intended site or sites should at once be prepared by receiving, if thought necessary, a liberal supply of short, well-rotted dung or leaf-mould, and be deeply turned over with a spade. After lying in the rough state for a few days, or until it becomes dry and workable, a dressing of soot might with considerable after-benefit be given, and the whole surface be reduced to a fine tilth by means of a rake, at the same time making it uniformly firm and level. Soil that has been well enriched for a previous crop, or that is known to be of good sustaining power, would be better without any fresh manure; deep digging and the soot-dressing alone would suffice. Soil over-rich is not desirable, as such is likely to cause a too-luxuriant growth, with the attendant evils of coarse blooms and excessive damping and dying-off of the foliage in the winter season.

### Planting.

One foot apart every way is ample space for the double violets, and it also allows room for such necessary work as the removal of runners and occasional stirring of the surface. The single kinds require from three to six inches more space, owing to their longer leaf-stalks and more robust character. In planting, a little fresh, well-prepared soil should, if possible, be used wherein to insert the roots, thus giving the plants a kindly start. Disused chrysanthemum soil, well pulverised and sifted to remove any crocks or roots, is excellent for this; but a suitable mixture is easily composed of loam and leaf-mould. Planting is best done with a trowel, making a cavity that will hold a handful of soil as stated; in this insert the roots, and press firmly all around. Watering may be necessary, according to the weather; and, if means are at hand for shading for a few days should drying winds prevail, a light shade will prove of material benefit, and represent time well spent.

After-cultivation consists principally of keeping the surface soil in a loose, friable condition by means of the hoe, and removing all small, slender shoots as they form, to concentrate the energies of the plant as far as possible on the central crown. By allowing more space, three or five of the strongest runners may be allowed to remain, and be secured in the soil at equal distances around the parent plant, where they will become rooted and self-supporting; but, as more space must be allowed both in the open and when removed to frames, the system, though very adaptable, has not much to recommend it.

### Good Varieties to Cultivate.

Formerly the double varieties, as Neapolitan and Marie Louise, were almost exclusively grown for frame culture, and answered the purpose well. The introduction, however, of several single violets with longer flower-stems, rendering their arrangement into various forms of decoration an easy matter, and having richer colours, and perfume quite equal to the older kinds, has resulted in these having been ousted from the position they once held; though for pot culture, and flowering late in the season, they are yet of great value.

Marie Louise, lavender-blue; Neapolitan, lavender; Lady Hume Campbell, an improved form of the latter; and Comte de Brazza, white, are four variously-coloured and reliable double varieties. Among the singles Princess of Wales, light blue, is one of the best, being large and very long-stemmed; Italia, deep blue; Wellsiana, purple; Baroness Rothschild, purple, very large; and Admiral Avellan, rosy-violet, having smaller flowers, but considered by many to be the sweetest-scented of any, and one that thrives and flowers freely in the open, are sufficient to provide variety, though there are several others that nearly equal them, and that might with advantage be added to any comprehensive collection. JAMES DAY.

Galloway House, Wigtonshire.

## PATHS AND EDGINGS.

Gardens are constantly being made out of new land, and old gardens are always being altered, but few gardeners realise that it is the paths which so largely determine the success or failure of the whole. If walks are cut where they intercept beautiful views a great deal is sacrificed. A noble broad border of roses, or a magnificent sweep of turf, must be ruined by being cut in two or more portions by a gravel or tiled strip. No matter how desirable it may be to obtain sufficient methods for traversing the grounds, a beautiful feature should not be injured. By giving winds and turns to a walk it is always possible to leave certain portions of land intact, and the more paths meander the more charming a garden becomes.

One noteworthy plan for making a large garden original is to form it on the zigzag principle after the chief lawn has been passed. The walks may describe the curves followed by a tired horse dragging a load uphill. When shrubbery groups have been set in place here and there against the slanted walks there will be nooks formed, different aspects created, and the eye will no longer tire of a monotonous expanse that can be surveyed from all sides. In small gardens it is seldom that the walks are of sufficient breadth to be pleasant to walk along. This can be obviated by having fewer paths, and turning those about so that the ground for planting is at no point too wide to be easily tended.

Another method is to have only one extra-broad walk running down the middle of the garden. This looks best when the edges are curved, either regularly or unevenly, either so as to make opposite bays or so as to form a walk that winds. When there is no lawn in a small garden this centre path may well be of turf, since the green grass has a value all its own, as a contrast to blossom colour. If it is objected that the turf will not be fit always to walk upon—a contention that need not be granted, however—the difficulty can be met by letting a narrow gravel path encircle the whole garden, leaving narrow borders against the walls, but wide borders flanking the grass. By the sufficient use of lawn mower, roller, and broom, grass can be kept in a condition that incites one at all seasons. After a frost or heavy dew a sweeping will soon dissipate the surface moisture, and the earth below will be level and hard still.

The beauty of rockery edgings to paths is undoubted. Their disadvantages are the manner in which they harbour insects, and the way in which they conduct rain down upon the gravel. If the spaces between the rocks are sometimes dusted with lime, and catch-drains are made at the sides of the walk, these evils disappear. Behind the rockery edging plants of from nine inches to a foot in height can be freely indulged in; behind a row of tiles, box, or a belt of turf, these would appear too tall. The more taller plants can be located the greater will be the supplies of cut blossom.

An altogether novel edging for a wide border, or a plot of low-lying land, consists of a trench, puddled with clay, fed with water from the tap of a rainwater butt, and simply planted on each side with perennials that love moisture. There will be no washed-down soil, because the little canal will lie between the main portion of the ground and the walk; the row of plants against the walk should be evergreen, and close-habited species, such as London pride and other saxifrages, mimulas, Bellis perennis, woodruff, and primroses. Coloured burrs are sadly out of place in what may be called romantic gardens, those, namely, in which beautiful natural effects are imitated, but in prim villa gardens they have their uses, especially to edge borders beside the tiled walks from gate to front door. They do not harbour insects as do old grey stones, and their dark shades show off the hues of polyanthuses, violas, aubrietias, arabises, and alyssums.

Pinks can edge walks alone, their foliage soon gaining a sufficient solidity to hold in the soil, especially if the young shoots are pegged down twice yearly. The beauty of a long edging in which numerous varieties of pinks are alternated must be seen when in perfection to be correctly appreciated. Mossy saxifrages, pink, white, and crimson, are equally suitable, the vivid green of the foliage giving a winter splendour of immense worth, being apparently uninjured by any kind of insect pest. When tiles have to be employed, and their inartistic aspect is a subject of annoyance, dwarf close-growing perennials should be planted closely behind them, and the material will soon be hidden in leaf and bloom.

M. H.

## THE FORSYTHIAS.

Although attention has often been directed to the various species of forsythia, they are of such general use and of such a showy character that their virtues still bear discussion. Thriving in all except the very coldest parts of the country, they may be used in the largest and smallest gardens, for, whether massed in large groups or grown as single plants, they grow and flower equally well. They are not very particular regarding soil, although that of a loamy character is best suited to their requirements. Propagation is easily effected, providing care is taken to obtain cuttings from quite young wood, say, in June or early July, for at that time, if inserted in sandy soil in a close frame roots are formed in about three weeks, but if the wood is allowed to become hard before the cuttings are made, a much longer time is required for the formation of roots, and the subsequent growth is very weak in comparison to that formed by cuttings taken at an earlier date. It is a good practice to plant the cuttings out as soon as well rooted, for they thus become well established before winter, and form strong buds for the ensuing season's growth. By cutting the branches back once or twice during the first summer, nice bushy plants are formed the first year.

Subsequent pruning must be done after flowering is over, but the amount depends entirely on the object for which the plants are grown. F. viridissima and F. intermedia do not require pruning annually and what pruning is done is for the object of thinning the branches and reducing the bushes when out-growing their positions. By doing this as soon as the flowers fade, a long growing season is obtained for the production of wood for the following year.

With F. suspensa the pruning is done on different lines. Left unpruned, it forms a loose-habited bush, 10 to 15ft. high, with long, slender, pendant secondary branches, and in this form it is useful for many purposes. It may, however, be pruned hard each year to form a denser bush with more upright shoots. To obtain the desired result, the younger branches are pruned hard back each year as soon as the flowers are over. A foundation of strong branches is necessary in the first place. These branches are allowed to grow about 2½ft. high. They are then cut over, and from them vigorous upright shoots, 3½ to 4½ft. long, are formed during summer, which bloom from nearly every bud, from base to summit, the following spring. After the flowers are over the shoots are cut back to within two or three eyes of the base, and another set of flowering branches is produced for the following year. This system of culture is an exhaustive one; therefore steps must be taken by top-dressing the bushes with well-rotted manure to keep them in a healthy and vigorous condition. When, however, plants show serious signs of enfeebled health, it is as well to destroy them and start again with young plants in fresh soil.

Forsythias are useful plants for forcing, especially F. suspensa, and useful specimens may be grown in large pots or tubs and used several years in succession by feeding them during the growing period. Large plants lifted from the open in October also afford plenty of flowers in January by gentle forcing.

F. suspensa is a Chinese species which may be easily recognised by its bright brown branches, and by some of the leaves being ternate and others two-lobed; the majority, however, are single. An examination of the yellow bell-shaped flowers will reveal the fact that some have styles which protrude beyond the stamens; whilst in other cases the styles are hidden by the anthers. The varying character of the species has given rise to more than one name being adopted for the plant, a fairly common one being F. Fortunei. It is, however, as F. suspensa that the species is correctly named. Its time of flowering varies considerably according to the weather experienced during the early months of the year, for sometimes, as in the present year, the blossoms were as far advanced by the end of the first week in March as they are in some other years by the end of the month.

F. viridissima is a second Chinese species, which differs rather widely in habit from the last-named. The branches are stiff, green, and upright, attaining a height of 4 or 5ft. The leaves are distinct in shade, and show none of the variable form peculiar to F. suspensa. Flowering is a week or more later than in the case of the last-named species. The yellow flowers are, however, borne freely.

F. intermedia is a hybrid between the two species referred to. Of vigorous constitution, it grows quite 8ft. high, and branches freely, the habit being intermediate between that of the parents. Flowers are borne profusely most years, although now and then a lean year is experienced. Two very floriferous forms have been selected for varietal names. These are densiflora and spectabilis. Both are superior to the type, and ought to be selected for preference where a few plants only are required.

F. europæa was introduced from Albania a few years ago. Of rather stiff, upright habit, it grows into a somewhat spare shrub 5 or 6ft. high. Yellow flowers are borne a week or two later than in the case of the Chinese kinds, and they are rarely in sufficient quantity to make a good show. Altogether, it is a disappointing shrub, and is not worth introducing for decorative effect, although it may be included in scientific collections of shrubs.

W. Dallimore.

PRIMULA MRS. JAMES DOUGLAS.
A beautiful little plant with a neat habit, and flowers of a rich purplish blue shade.
A.M., R.H.S., April 2. Mr. James Douglas, Great Bookham. (See page 305.)

# POLLINATION OF HARDY FRUITS.

The following notes from the "Journal" of the Royal Horticultural Society on the experiments conducted by Mr. C. H. Hooper, M.R.A.C., on the pollination of hardy fruits, are of special interest at the present season:

The experiments recorded were designed to gain information upon the following points:—(1) To what extent can our ordinary fruits set without the visits of insects to the blossoms? (2) To what extent fruit flowers set when pollinated with their own pollen, whether from the same flower, the same tree, or another tree of the same variety? (3) Do fruit blossoms, when pollinated with pollen from another variety, set fruit more plentifully and of better quality than when pollinated with pollen of the same variety?

Mr. W. E. S. Erle Drax most kindly gave me permission to carry out my trials in his garden at Olantigh, his gardener, Mr. Bond, kindly giving me information as to varieties, etc.

## The Trials.

1. To test the effect of excluding insects, fine muslin paper bags were placed over unopened flower buds; where any flowers had already opened they were picked off. The bags were tied at the mouth with twine, with label giving date, variety, and number. After about three weeks, when the fruits outside had set, the truss inside the bag was examined and notes taken as to results, the bag was taken off, leaving label with notes, etc.

2. To test whether fruit blossoms set fruit when pollinated with their own pollen or pollen of the same variety, muslin or paper bags were placed over unopened blossoms, which were tied up and labelled. When the flowers opened the stigmas were dusted with pollen of the same variety either with a camel's hair brush or by the use of a pair of forceps, taking the stamens from another flower, the anthers of which were shedding their pollen, and touching the stigmas with these anthers. In order to avoid mixing pollen, the brush was after use dipped in methylated spirit and dried before using again for other pollen, so four or five brushes were needed for the work. After pollination the flowers were again bagged, the date of pollination added to the label, and in some cases a note of the number of flowers taken, with any note of injury by caterpillars, or other point influencing results. Where the blossoms were not all open at once, as in gooseberries, currants, and cherries, pollination was repeated; in some cases there were three separate pollinations. The bags were kept on for a fortnight or more after pollination; when the bags were removed, the labels saying what had been done were left on.

3. To test whether foreign pollen—i.e., pollen of another variety—gave better results than pollen of the same variety, unopened blossoms were bagged. Accepting the fact shown by experiments in the U.S.A. and by Mr. F. J. Chittenden, that most varieties will not set fruit with their own pollen, when the flowers opened I took pollen from other varieties, either by brush or by carrying the stamens with forceps, and dusted it on the stigmas of the bagged flowers without emasculation. The only variety that had all the flowers experimented upon emasculated before the anthers shed their pollen was a Cox's Orange tree, on which I tried pollen of nine different varieties of apple; but in two trials of Cox's Orange Pippin pollinated with its own pollen, in neither case did fruit mature, and in five trials bagged and not touched none set any fruit. Emasculation would therefore seem unnecessary.

For these trials I used some 200 muslin bags, most of them of green colour and fine mesh, and about 100 paper bags, as used by bakers and grocers. The season being dry, the latter answered quite well, and did not come ungummed. Green muslin bags were used for the sake of the appearance of the garden. The only insects I found in any of the bags, to the best of my remembrance, were caterpillars, apple sucker, and aphis, and sawfly in the young apples, the eggs of which must apparently have been on the flower buds when bagged. The results seemed similar whether in paper bag or muslin bag. With the fruits experimented on I think very little pollen was blown about, and none came through the muslin bags to affect results. Glazed, transparent paper bags may be the very best of all to use, and if I make further trials I propose using them to try and avoid possibility of error.

## Gooseberries, Red and White Currants.

Bags were placed over small boughs of unopened blossoms, with the result that very few fruits set, and those chiefly at the tip and at the base, where rubbed by the bags. The pollen of gooseberries and currants is sticky, and cannot be transferred from the anthers to the stigmas without mechanical means, and these plants are therefore dependent on insects to do this office for them in order to set fruit. They are self-fertile—i.e., set fruit perfectly when pollinated with pollen of the same flower or same variety.

## Cherries.

On some ten varieties of cherries on which unopened blossoms were bagged and left untouched, not a single fruit set; when pollinated with their own pollen several set, but none matured except on Morello cherries, whilst in the five cases in which I bagged and afterwards pollinated with pollen of another variety all set fruit. It appears necessary when growing cherries to have several varieties for cross-pollination, and to have plenty of bees to carry the pollen.

## Plums.

I made trials on eleven varieties of plums —viz.: Victoria, Czar, Rivers' Early Prolific, Early Orleans, Bittern, Cox's Emperor, Jefferson, Denniston's Superb, Pond's Seedling, Greengage, and July Greengage. Of those bagged and left untouched, four varieties set fruit out of eleven, but only fruits of two varieties came to maturity—namely, Victoria and Czar—and these were not as large as others in the open.

Of those bagged and afterwards pollinated with their own pollen, seven of the eleven varieties started by setting fruit, but only five matured—viz., Victoria, Czar, Denniston's Superb, Bittern, and Rivers' Early Prolific.

Out of ten cross-pollination trials, I had good fruit mature on five (the pollen coming from the second named)—namely, Victoria × Czar; Victoria × Denniston's Superb; Rivers' Early Prolific × Victoria; Rivers' Early Prolific × Denniston's Superb; and Pond's Seedling × Czar; the fruit produced by the cross being generally larger than that where self-pollinated. All the varieties, except perhaps Victoria, seem to set finer fruit more plentifully when pollinated with another variety.

With plums also it appears advantageous to grow several varieties for cross-pollination, and have bees in the neighbourhood.

## Pears.

Whilst the pears were in flower in 1911 in Kent, although the weather was sunny and warm, the wind during most of the time was boisterous and too rough for hive and humble bees to work in, which accounts, I think, for the short crop of pears this year.

Out of twenty-two varieties of which I bagged blossoms and left them afterwards untouched, only Duchesse d'Angoulême, Colmar d'Eté, General Todleben, Dr. Jules Guyot, Joséphine de Malines, and Durondeau set fruit; all the fruits, however, fell before maturity.

Of those blossoms bagged and pollinated with pollen of the same variety, about the same number proportionately set, but only two kinds thus treated—viz., Duchesse d'Angoulême and Colmar d'Eté—matured their fruit. I thought to have been able to include General Todleben also as self-fertile, but the fruit withered after July 7. I did not make many cross-pollinations in pears, but apparently the pollen of Duchesse d'Angoulême sets the fruit of Williams' Bon Chrêtien well, the pollen of Conference that of General Todleben, and vice versa.

In the case of Vicar of Winkfield, I bagged four buds, and afterwards pollinated them with Winter Crasanne, and had two fine pears, some of the best on a large tree, there being only about ten fruits, though plenty of blossom. This, I think, exemplifies the importance and value of pollination with another variety.

The twenty-two varieties of pears of which flower buds were bagged and then left untouched were: Joséphine de Malines, Duchesse d'Angoulême, Beurré Alexandre Lucas, Durondeau, Conference, Clapp's Favourite, Doyenné du Comice, General Todleben, Winter Crasanne, Marie Louise, Colmar d'Eté, Dr. Jules Guyot, Margaret Marillat, Beurré Diel, Catillac, Citron des Carmes, Uvedale's St. Germain, St. Luke, Louise Bonne of Jersey, Souvenir du Congrès, Beurré Superfin, and Pitmaston Duchess.

## Apples.

Out of sixty-three varieties of apples on which unopened blossoms were bagged and left untouched, the only fruit that set and matured was on Irish Peach, and this was very good; of those bagged and pollinated with their own pollen by brush or anthers the following set and matured their fruit: Irish Peach, White Transparent, Newton Wonder, Ecklinville, Summer Golden Pippin, Baumann's Red Winter Reinette, Peasgood's Nonesuch (very fine), Christmas Pearmain, King of the Pippins (damaged by sawfly, eventually fell); Washington and Adams' Pearmain fell in June. I believe American Mother and James Grieve set with their own pollen, but am not quite certain.

In nearly all the crosses made, good fruits resulted; out of the sixty-four varieties crossed forty-eight were successful. Among the best may be mentioned: Brabant Bellefleur with pollen of Beauty of Bath, Gladstone with Beauty of Bath, Alfriston with Beauty of Bath, Allington Pippin with Summer Golden Pippin (the finest on tree), Grenadier with Seaton House, Hoary Morning with Seaton House and vice versa, Christmas Pearmain with Cox's Pomona, Mère de Ménage with Lady Sudeley, Sandringham with Hormead Pearmain, Beauty of Bath with Summer Golden Pippin, High Cannons with Grenadier, The Queen with Baumann's Red Winter Reinette, Lane's Prince Albert with The Queen, Golden Spire with Hollandbury and Bismarck, and Cellini with Graham's Royal Jubilee.

These crosses were made without removing the stamens from the flowers, which were pollinated by brush or anthers; if the brush was used it was dipped in methylated spirits and allowed to dry before using with another pollen; but in the case of a tree of Cox's Orange Pippin, nine bunches of unopened blossoms had their stamens taken out with forceps, and were pollinated by camel's hair brush or anthers with the pollen of nine different varieties of apple to try to find out which would give the best result. Fruit set with pollen of the eight following varieties: Bramley's Seedling, High Cannons, Grenadier, Lady Henniker, Golden Spire, Duchess's Favourite, The Queen, and with its own pollen; only with Peasgood's Nonesuch did fruit not set; however, all gradually fell before maturity except those pollinated with Bramley's Seedling and High Cannons.

The following is a list of apples experimented on.—Self-fertile: Irish Peach, White Transparent, Newton Wonder, Ecklinville, Summer Golden Pippin, Baumann's Red Reinette, Peasgood's Nonesuch, Christmas Pearmain, King of the Pippins, Adams' Pearmain, Washington, American Mother (?), James Grieve (?). Self-sterile, or, perhaps better, those that did not set or mature fruit with their own pollen in these trials: Allington Pippin, Annie Elizabeth, Alfriston, Astrachan, Beauty of Bath, Belle de Pontoise, Beauty of Kent, Ben's Red, Bismarck, Blenheim Orange, Brabant Bellefleur, Cellini, Cox's Orange Pippin, Cockle Pippin, Cox's Pomona, Duchess's Favourite, Egremont Russet, Fearn's Pippin, Gladstone, Golden Noble, Golden Spire, Graham's Royal Jubilee, Grenadier, Hambling's Seedling, High Cannons, Hoary Morning, Hollandbury, King of Tompkins' County, Lane's Prince Albert, Lady Henniker, Lady Sudeley, Loddington, Lord Derby, Lord Suffield, Mère de Ménage, Old Hawthornden, Old Nonpareil, The Queen, Ribston Pippin, Rival, Graham's Royal Jubilee, Sandringham, Seaton House, Stirling Castle, Striped Beefing, Sturmer Pippin, Waltham Abbey Seedling, Warner's King, William's Favourite, and Worcester Pearmain.

### Strawberries

seem to be less dependent on insect pollination than any other of our hardy fruits, though to these bees are probably beneficial, especially when during a dull, rainy season there are intervals when these insects can work.

To test the effect of excluding bees and other insects from strawberry blossoms, the frame of a hand-light was placed over a strawberry plant, muslin was tied over this by a string round the upper rim of the frame. The weather during blossoming time was fine, with a good deal of wind. The fruit set and matured on the enclosed plant practically as well as on those around in the open; muslin bags were also placed over unopened blossoms of plants of several varieties, but in general these set their fruit as well, or nearly as well, as those not enclosed. Apparently the movement of the wind carries the pollen from the anthers to the stigma of the strawberry flower in the open field or garden.

### Raspberries and Loganberries.

Where these flowers were bagged in muslin the fruits set, but were not generally so large and well developed as those in the open.

### General Conclusions.

Fruit blossoms generally are dependent on the visits of insects, and from want of these many fruit plantations do not yield their best; bees are absolutely essential to gooseberries, black and red currants, and very largely so to pear, apple, plum, and cherry, and where there are not hive bees near and but few wild bees, one or more hives of bees should be placed in the plantation.

In the case of most varieties of apples, pears, plums, and cherries, it is advantageous to have a different variety flowering at approximately the same time in every third or fourth row for better cross-pollination and consequent setting of fruit.

## A BEAUTIFUL WATER LILY.

In the list of water lilies contributed to our issue of the 6th inst., Mr. J. Hudson, V.M.H., mentions the beautiful Nymphæa Attraction, which is unquestionably one of the finest of the brilliant red-crimson varieties. It is free in growth and profuse in flowering, and the large brilliantly-coloured flowers present so attractive an appearance as to at once attract the attention of those who have had an opportunity of seeing the fine collection of water lilies in the Gunnersbury House gardens. Some finely-developed blooms of this variety and Mrs. Richmond, which received an Award of Merit, were shown by Mr. Hudson at one of the meetings held by the Royal Horticultural Society in August last, and both varieties attracted much attention, more especially from those who are interested in the water lilies and appreciate their value in enhancing the attractions and interest of the garden.

NYMPHÆA ATTRACTION.

A recently introduced water lily, remarkable for the fine form and rich colour of its flowers. The bloom illustrated is one of several shown by Mr. J. Hudson, V.M.H., at one of the R.H.S. meetings in August last.

## PLANT VEINS.

The venation, or vein system, of all plants is extremely interesting. It differs from that of animals in one important respect. In animals, speaking generally, there is a double system, one which conveys the blood, revitalised by contact with oxygen in the lungs, to the system of arteries and minor channels which pervade the body, and by means of this supply do all the work of repair and growth. The other system gathers up the now-exhausted blood and carries it to the lungs for revivification, the waste of the system which it has collected in its course being practically burnt up there, with the consequent production of the carbonic acid which is always present in our expired breath. In plants, on the other hand, there is only one system, which, commencing in the roots, gathers up there the requisite water and earthy salts, and transmits it upwards to the leaves, wherein the materials it contains are utilised under the influence of the light, and combine with the carbonic acid which the leaves have absorbed from the air to form the materials of growth, and the fruits, and the myriads of products, boons and banes, which, as we know, vegetation provides.

There is thus in plants no obvious return venous system, but, nevertheless, it is quite obvious that a return flow exists, since from the leaves all the materials are derived for the growth of supporting stems or trunks, or the fabrication of flowers, seeds, and fruits, which do little or none of the manufacturing aforesaid, the green cells alone being the active agency. Thus in the potato, for example, we see large masses of nutritious starchy material store up in the tuber, all of which has been transmitted thither from the foliage above. Neither do we find in plants, as in animals, the same clearly defined tubular channels for the conveyance even of the main supply of sap. A section of a tree trunk, or branch, or twig, shows merely a core of wood and a cover of bark or skin, and between the two, by the aid of a lens, we will find an arrangement of cells whose province it is to convey sap in one direction to the leaves, and in the other direction to receive, and, in part, to transmit, the material for building up the annual ring of wood upon the central core.

If, as in the grasses, we find a hollow centre, this plays no part as a vein, but merely means an economy of material plus an increase of strength, since, curiously enough, a tube of fair thickness is stronger than a solid of same diameter in many ways, as we may see by the relative resistance against bending or breaking of a bamboo and a cane. The transmission of sap and return material must take place largely through the permeability of the walls of the cells, which cells are, however, often transformed into minute spiral ducts to facilitate the passage. It is in the leaves themselves that we best may see the vein systems proper.

In the dicotyledons, to which most of our trees belong, i.e., plants with seeds that produce two primary leaves on germination, we see the greatest diversity, so great indeed that it would be difficult to match exactly in plan the vein systems of the leaves of any two species, or even varieties. We have only to select leaves from any of the shrubs or trees in our gardens to note the wonderful differences in the delicate networks which their leaves present, while most certainly we could never match any two in detail even from the same plant. In each we can note how, commencing with a main vein, really a continuation of the stalk itself, lateral veins branch off, and divide and ramify, and form interconnections, until eventually they constitute a continuous network, the meshes of which are filled with the tiny green cells that form the leaf proper.

In the monocotyledons, or plants with only one primary seed leaf, the diversity is much less, since in these plants, whether they be humble grasses or stately palms, the veins run longitudinally from end to end of each leaf, or subdivision, and are easily torn into strips, which it is impossible to do in the case of a netted venation. Apart from the mere question of transport of the sap of plants, or blood of animals, there is also, between the two, the immense difference involved in the presence in the latter of a definite impelling force, viz., the heart, which acts as a force-pump by its incessant muscular contractions, and thus keeps the blood in active circulation throughout the venous and arterial systems.

In the plant there is nothing analogous to this, and the circulation is entirely induced by the fact that water is being constantly evaporated through the pores of the leaves, or used up in them as building material, which water is replaced by absorption from cell to cell, in the first place, and, in the second, a draft upon the nearest veinlet, such draft being transmitted then to the larger and larger ones, until finally, no matter how large the tree or plant may be, it reaches the root system, which collects it from the soil through a myriad absorbent points, and it is the province of that system to extend in precise proportion to the foliar demands above the ground.

CHAS. T. DRUERY, V.M.H., F.L.S.

# DOUBLE ROCKETS.

Double Rockets are among those flowers to which the term "old-fashioned" is applied—a word which to the multitude conveys the idea of something superseded, on account of lack of merit, by new-comers of more brilliant attractions. To the select few, however, old-fashioned things have the charm of association, independent of their intrinsic worth, connected, as they are, with the less ostentatious beauties of the past, and fraught with the fragrant memories of old times. The Rocket, however, although somewhat neglected, is quite able to stand on its own merits, and with its white spires of bloom, and the perfume that on still, dewy evenings of early summer fills the soft air with exquisite fragrance, it possesses charms which are certainly not inferior to those of the gaudy, scentless pelargonium, by which it and other lovely old plants have been ousted.

A GROUP OF DOUBLE ROCKETS.
Sweetly-scented, old-fashioned flowers of great beauty.

Of yore, despite bars and bolts, the hidden daughters of Araby revealed to their chosen the secrets of their hearts, and oftentimes, in like manner, the unseen occupants of sequestered gardens waft, by the aid of their accomplice, the wandering zephyr, sweet messages to the passer-by and to one who loves flowers and can rightly interpret their language, rockets, clove carnations, and clustering roses, silently, by their ambrosial breath, disclose their presence within the secluded walls of their sanctuary as surely as if their loveliness were visible to the eye.

Although grown to some extent in herbaceous borders, it is rarely, save in cottage gardens, that double rockets are seen at their best. It is often in the humblest plot that one finds the sweet old-fashioned flowers growing in the greatest luxuriance. At such times one is tempted to wonder if the possibility exists of plants being swayed by sentiment; if it is the desire to brighten the lowly lives that prompts such bounteous blossoming, for, surely, in many cases, the surroundings do not appear especially adapted to induce vigorous growth. A cottage garden is now in my mind's eye. It is but a small space of ground, yet it is filled with sweet old flowers. There the rockets grow in masses; from the glaucous cushions of the white pinks arises the delicate essence from the countless fringed blooms. Madonna lilies lift their snowy, scented spires; the moss rose and sweet brier exhale from flower and leaf their mingled fragrances; the jasmine above the porch distils its sweetness from a thousand snowy stars, and the passing breeze is odorous with the scent of the blossoms that crown the great lilac bush with a veil of rosy-lavender.

The pleasures of the garden are manifold, but there are none that transcend that of fragrance, not even the delight of the eye in suave colour harmonies, effective contrasts or breadths of lovely tints. At the almshouse the border between the cobbled path and the building is but a narrow strip, raised above the path by an edging of stones. It does not suffer, indeed, from lack of solicitude, but its attendants are women, and "women's knees are weak;" and these women are old—very old, and past work, but the flowers repay the necessarily limited labour with lavish prodigality, seemingly taking the will for the deed, for there is no conscious neglect of their wants. Here the old double white rockets throw up great spires of flower, well nigh three feet high, and their scent floats gently down the quiet valley to the corner hard by the thatched forge, where cluster roses wreathe cottage walls and chimneys.

The double white rocket (Hesperis matronalis alba plena), though, strictly speaking, a perennial, does best, if divided every autumn, and given fresh soil. Treated in this manner, strong, flowering plants are secured, and the stock is also rapidly increased. It is not necessary to replant each year in a different spot, removal of a portion of the soil and the substitution of some fresh compost being quite sufficient to encourage strong and healthy growth. The flowering season is a prolonged one if the precaution of removing the central spike as soon as faded be taken, the plants thus relieved producing a good show of bloom from the secondary shoots.

There is, besides the white form, a purple variety of the double rocket, which is, however, far less ornamental. Such fragrant flowers as these should be in every garden, for perfume is almost as valuable an accessory to a blossom as are beauty of form and colour. Wyndham Fitzherbert.

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**Cordyline australis lentiginosa.**—This is a very distinct variety of Cordyline australis, which last, by the way, is often known in gardens as Dracæna indivisa. In lentiginosa the leaves are of a reddish-brown or bronzy-red tint, quite different from the normal green of the type, to which, for decorative purposes, it forms a marked contrast.—W.

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## MARSH MARIGOLDS.

MARSH MARIGOLDS BY THE WATERSIDE.

There are but few plants flowering during the spring months that in their season contribute more liberally to the charms of the environment of running stream and silent pool than the

> "Brave marsh marybuds, rich and yellow,"

and there are certainly none capable of producing a richer display of colour in the bog garden, provided it is sufficiently open to enable them to enjoy to the full the advantages of exposure to sunshine and a free circulation of air. There is no occasion to remind my readers of the fact that the common marsh marigold (Caltha palustris) is a member of the British flora, and that many are the districts in which it may be seen growing so abundantly in swampy places as, in the season of flowering, to produce surprisingly rich colour effects. This species is not, however, peculiar to the British Isles, nor is it limited to the lowlands, as may be assumed from the frequency with which it is met with alongside streams and on the margins of lakes and ponds in the valley. The plant is as much at home on a mountain of a considerable height as in a deep valley, provided its roots have access to soil that is saturated with moisture, and one of the finest displays—and I have seen many that have been good—that has yet come under my notice was on the Wengen Alp, at an altitude of over 7,000 feet. Growing in the boggy soil were several large breadths, the largest probably extending over half an acre, and the effect produced by the myriads of glistening yellow flowers as seen under the influence of sunshine of intense brilliancy was such as is not likely to be soon forgotten.

At the present time we are only concerned with the marsh marigolds in their relation to the garden, and in the first place it may be suggested that in the planting of the bog garden and moist places in the pleasure grounds they should be judiciously utilised. The common form is worthy of a place in the garden, but with the other fine forms now available, it should be sparingly planted. There are two double forms, both effective, which are known as C. palustris plena and C. p. monstrosa plena respectively. They are both deserving of attention, and it is somewhat of a matter of taste as to which is the best. I prefer the first-named, as the flowers have a lighter appearance, but others who appreciate the charms of moisture-loving plants may have a preference for the large double blooms of the second of the two varieties mentioned, and I suggest that the selection be left to individual taste. The rare C. palustris Tyermani is distinct from, and superior to, all the other varieties, but it is yet too costly to admit of it being planted otherwise than sparingly. It is of robust, yet dwarf, growth, and bears in great profusion large rich yellow single flowers of fine form. In addition to the foregoing there is the large-growing C. polypetala. The flowers are single and of large size, and the glossy green leaves measure ten or more inches across. For planting on the margin of large lakes or in open spaces in the bog garden, where bold effects are desired, this species has much to recommend it. G.

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**Japanese Maples.**—In many districts these are of greater value for the embellishment of the greenhouse or conservatory than for the open ground, where their tender unfolding foliage is often scarred by spring frosts and cutting winds. Under glass this does not occur, and they there form a delightful spring feature.—S. W.

## POINTS ABOUT PERRY PEARS.

One hardly ever picks up a horticultural paper without reading something about pears, but the pears that claim the attention of the average writer on fruit culture are the dessert and culinary varieties that are so familiar to gardeners all over the country. There is another family of pears, however, that is very little written about, perhaps because it is unknown outside the few counties in which it flourishes, and perhaps also because it belongs to the orchard on the farm rather than to the garden and commercial fruit plantation. I refer, of course, to the perry pears, which possess none of those qualities that are needed on the dessert table, but which nevertheless serve a useful purpose in providing the juice to make the beverage which most West Country men know and appreciate.

In various parts of these islands fine pear trees are to be seen, but for size of limb and girth of stem, there is nothing equal to the perry pears, and as you travel through the orchard lands of Gloucestershire you may observe specimens that are more like great forest trees than anything else. Many of them look as if they were about half as old as Time itself, and centuries must have rolled away since they were first planted. A few interested persons have endeavoured to trace the history of some of the old perry pears in the West, and most notable amongst them was the late Mr. Radcliffe Cook, who did more than anyone in his time to popularise the West Country beverages cider and perry, and as a consequence, when he sat for a Parliamentary division of Herefordshire, was often referred to as the honourable member for Cider. I have no data before me of Mr. Radcliffe Cook's investigations, but he obtained abundant evidence to prove the great age of many of the perry pear trees that are still alive and fruitful, and they flourished in West Country orchards centuries before fruit culture was treated seriously as a commercial industry.

Hundreds of the old trees have, of course, dropped out, every year a few more are laid flat by winter gales, and the last purpose the old veterans serve is to provide firewood for the farmer, but many still remain, and one wonders where the perry will come from when they are gone. One is led to this thought by the fact that most of the perry that is made comes from old trees, and in recent years there has been a tendency to plant market varieties at the expense of vintage fruit. This is a pity, because there is room for both, and happily, during the past few seasons, more attention has again been turned to the planting of perry pears. It is only in the farm orchards where the perry pears grow, and they were first planted to feed the old stone cider mill in the barn. The latter simple and cumbersome apparatus has for the most part given way to the modern cider mill, which chews and grinds up the fruit in its cruel teeth, but the same old perry pears feed it, and the farmer values each specimen by the number of gallons of juice he gets from it and the edible quality of the same. There is not so much perry made as cider because pears are not so plentiful as apples, and on some farms both fruits are mixed and ground up together, but the best of perry is a beverage for the gods, and when bottled and matured it is not far below the standard of champagne.

It would appear as if Nature had selected the districts best suited to perry pears, and though trees in these parts are numerous, the varieties are few. So far as I am aware, no one has introduced a new perry pear for generations past, and the name of a variety in most cases indicates its origin. Doubtless they were all natural seedlings, and one can fancy a farmer generations ago picking out a promising looking seedling that sprang up from a seed thrown out with the pulp from the mill. He grew his seedling into a tree which eventually bore fruit, and, as this made good perry, he gave it a name of his own, enlarged on its good qualities at market and elsewhere, and presented grafts to his neighbours, who in turn worked it, and established trees of their own. With variation in detail, perhaps, this is the history of most of the West Country perry pears, and apparently they suffice, as no one troubles to introduce any more.

Amongst the varieties, the names of which are local household words, there is a big towering tree, which is grown in the vale of the Severn, and is known as the Blakeney Red from the fact that it originated somewhere in the vicinity of the old Severn-side village of Blakeney. Some of the trees of this variety are really grand specimens, and the fruit, though not the best for perry making, is brightly coloured, and has a pleasing appearance. For this reason, it does not all go to the mill; for in some seasons tons of Blakeney Reds are sent to Covent Garden and other great fruit markets, where they fetch a price that is more lucrative to growers than making perry. It is their appearance that sells the fruit, and I have heard them referred to as "one bites," from the contention that the buyer who is attracted by the pleasing look of the fruit takes one bite and consigns the remainder to the gutter.

Taynton Squash is another variety that owes its name to a little village near to Gloucester, though there do not appear to be many trees now in the place of its origin. Among connoisseurs there are few who have not a good word to say for Oldfield perry. Trees of the Oldfield variety are to be found in many a Gloucestershire orchard, and it is not unusual for the farmer to keep this fruit separate, and the juice goes into a special cask, and later into special bottles, and the fact that this is for his own particular consumption speaks volumes for its quality. In another part Barland perry is the particular brand that is most favoured, and this is made from the Barland pear, a popular variety that grows into a big spreading tree. In his "Fruit Manual," Dr. Hogg mentioned the Barland pear, and it is there stated that the original tree grew in a field called Bare Lands, in the parish of Bosbury, also that the Barland pear was grown in Herefordshire prior to the publication of Evelyn's "Pomona" in 1674. It is quite possible that some of the trees then described are still standing. The Bull pear is another variety for perry, and so also is the Moorcroft, but there are not very many more that are generally met with in West Country orchards.

Last year was not what is called a good season for perry pears, but when the crop is good, an old orchard tree will produce an enormous quantity of fruit. These perry pears are possessed of a characteristic native hardiness, and they suffer but little through insect pests, and the scab which plays such havoc amongst dessert varieties is almost unknown amongst them. If appearances go for anything, there should be plenty of perry fruit this year, as the trees are thickly studded with blossom, and I know of nothing more beautiful in Nature than a big old Gloucestershire perry pear in April, when every branch and twig is wreathed with pearly-white blossom. These veteran perry pears seem to have little in common with table varieties and modern fruit culture, but they stand like great sentinels, keeping watch over other trees in the orchards, remaining fruitful so long as a spark of life is left or the gale spares them, and they serve as a kind of connecting-link between the present generation of farmers and their forebears, who quaffed the perry which the old trees produced in days gone by, when manners and customs in other respects were different to what they are now.

H.

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## OVERCROWDING.

Overcrowding is a fault with which almost all gardeners may be charged at some time or other, but it is the inexperienced who most often—it might almost be said always—fall into the error. We need imagination and knowledge to keep us from erring in this respect—imagination which, coupled with experience, will enable us to picture to ourselves the plants or trees after months or years of growth; and, at the same time, knowledge principally of the functions of the leaves—how they breathe, how by means of the chlorophyll in their tissues, they break up the carbonic acid of the air into carbon and oxygen (carbon forming, next to water, the principal constituent of vegetable matter), and how, finally, they produce the elaborated sap to be distributed to all parts of the plant for building up its tissues.

Thus we see how important it is that sunshine, direct or diffused, should fall upon as much leaf surface as possible, the ideal condition being that in which the maximum amount of sunlight falls upon every leaf of the plant. But, even when we know all this, our desire to obtain all we can out of the earth is often the cause of our getting less than we should do otherwise. That it is the insufficiency of sunlight as well as of nutriment which is a prime factor in the poor development of crowded plants is proved by the fact of large plants growing in comparatively small flower pots, and by the difference in character among the leaves on the same plant according as they are fully exposed to the light, or more or less smothered by other leaves. If we bear this in mind we shall give plants more space in shady, or partially shaded, positions, than in sunny ones. To the observant gardener the wonderful summer of 1911 was an object-lesson in the thick leaves, well-developed fruit and leaf buds, and the vigour and healthy promise of the crowns and root stocks of herbaceous plants as autumn came on, indications of the strengthening of the plants and trees which became even more marked during the winter.

One of the commonest forms of overcrowding is in the sowing of annuals. Many have little idea of the size annuals will attain if they have a fair chance. When they are grown too closely together we have little more than one thin stem, branching a little near the top, and thus capable of keeping up no succession of blossom, whereas, when given sufficient room, many of them make bushes instead of slender plants, and the succession of blossom is prolonged for several weeks. The contrast between Shirley poppies grown on the two systems is especially striking, as they are one of the briefest of joys in the first case, whereas, when allowed sufficient space, they make fine plants three or four feet in height and two feet through, with correspondingly fine blossoms. Many instances showing scarcely less contrast might be given, and some will occur to every reader. However good our intentions may be in the matter of thinning, and however well we may carry them out, seedlings often suffer irremediable injury through being too thick in the seed-bed before they are big enough to thin out.

Even the greediest of hardy perennials suffer quite as much from being grown too closely together, or, what is the same in principle, from the shoots not being thinned out in the spring (e.g., varieties of Helianthus rigidus), especially if there is insufficient rainfall during the summer. Many which make such handsome specimen plants or groups when given enough space are not worth growing when starved by being grown too closely together, or too near other strong-growing plants, the flowers being small, their duration short (both as regards the individual blossoms and the whole display of the plant), and the appearance of the plants after flowering more ragged than they would be if able to use their foliage for recuperation.

Rudbeckia Golden Glow, for instance, when well managed, will produce a succession of large double flowers, resembling African marigolds, for a period of six weeks or more, and after flowering is finished, and the plant begins to become untidy, the stems may be cut down to give full development to the handsome basal leaves which follow. When crowded and starved, the blossoms are half the size, and do not last very long, the whole plant suffering from drought, and presenting a deplorable appearance, the new root leaves being thin and straggling. We have all seen plants of many perennials suffering no less from bad cultivation, of which insufficient space is a prominent feature. If perennials are given plenty of space for their summer development the intervening spaces can be used for spring bulbs and such early-flowering plants as primroses, forget-me-nots, alyssums, silenes, limnanthes, Leopard's bane, honesty, wallflowers, etc., all of which can be pulled up later, care being taken that the young growths of the perennials are not too much shaded by them.

Less obvious, but none the less real, are the evils of overcrowding in fruit trees. Careful inspection, however, will show the harm done to the trees, which is mainly in the form of the poor development of what should be fruit buds, owing to the insufficient nutriment supplied to them by their leaves; the amount of sunlight they receive does not enable them to elaborate enough sap for their needs. This becomes patent in the lessened amount of blossom on all parts of the tree which suffer in this way, whether it is on the inner branches of an apple tree or a gooseberry bush, or even on the outer branches if the trees are growing too closely together. It may also be seen in the failure of unfavourably placed blossom to produce fruit, while in the course of a few years many fruit spurs and small twiggy branches with have been becoming weaker and weaker owing to mal-nutrition will die away altogether. Alger Petts.

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**Rhododendron racemosum.**—This charming little rhododendron cannot now be looked upon as a novelty, and neat little flowering plants may be purchased at a comparatively cheap rate. This is to a great extent owing to the fact that it can be readily raised from seed. This was by a long way the first of what may be regarded as the recent introductions from China, yet in my opinion at least it far surpasses any that have been sent out since. Planted as at Kew, in breadths or masses, it is remarkably effective in the open ground, while brought on gently under glass it is an exceedingly pleasing object in the greenhouse.—W.

## IVY-LEAVED PELARGONIUMS.

Sufficient use is not made of ivy-leaved pelargoniums for garden decoration in the summertime, although there is a distinct improvement in this direction. Isolated pyramidal specimens are splendid on the lawn, while smaller examples in beds, with an undergrowth of dwarfer subjects, look well. For window boxes hardly any plant is superior to the ivy-leaved pelargonium, especially if the position is a sunny one, and such varieties as Madame Crousse, Galilee, Souv. de Charles Turner, Achievement, and Rycroft Surprise are used. The old pink Madame Crousse is by no means to be despised, as probably there is no variety to surpass it for extreme freedom of flowering. In the sheltered parts of the south-west of England and the warm parts of Wales, this old variety is sometimes found filling a large wall space on a house front, and providing a most elegant and effective display during a long season. An example of this method of employing Pelargonium Madame Crousse is illustrated in the present issue. In this instance an old plant occupies a position between the window and the front door, and this site it has occupied without removal or protection for many years. But the house and plant are at Beaumaris.

IVY-LEAVED PELARGONIUM MDME. CROUSSE, ON A HOUSE FRONT AT BEAUMARIS, ANGLESEY.

## VARIETIES OF GRAPES.

New varieties of grapes are but sparingly introduced, and it takes a long time to establish a new one in public favour, even if it possesses merits above the ordinary. For instance, Prince of Wales, a sport from Mrs. Pince, was introduced many years ago, but has not made much headway, although in many ways desirable. I think, however, that gardeners have tired of including so many varieties, especially during the last ten years. Some twenty or thirty years ago prizes were offered for ten or twelve varieties at some of the leading shows, and experience proved that many of the dozen sorts were quite worthless, or inferior to others of the same colour. In my own case, I planted a dozen sorts over thirty years ago. The number is now under eight, and probably that leaves too many.

At the present time there is a tendency among gardeners to raise their own vines from eyes in January, grow the plants rapidly, and plant them in May or June. Whether this is real economy or not I do not profess to say, but I doubt it. My experience has been the opposite, and thus I advise planting year-old canes

Black Hamburgh was imported during the early part of the seventeenth century, and still ranks as the finest black grape we have for all general purposes. It will ripen quite early in April if required, and equally so in September; none can equal it for ease of growth and adaptability to site, and for quality it stands quite in the forefront. Madresfield Court is a seedling from Muscat of Alexandria and Black Morocco, and was sent out about 1870. This is very popular, more so now than formerly, when its splitting propensities were not understood. Nothing but praise can be given this grape, as it grows well in a warm house, and equally well in a peach house or greenhouse, and it is quite first class.

Mrs. Pince is a chance seedling, raised some fifty years ago. To those requiring a late-keeping grape with a Muscat flavour this is a desirable variety. Though somewhat capricious in its behaviour, when it succeeds it is excellent. Lady Downes is quite the best of late black grapes; it does not give a showy bunch, but more from a utilitarian standpoint it is first rate. It is a Yorkshire-raised grape, and appeared about 1835. I do not know of a grape that will keep longer and retain its pleasant flavour. Muscat Hamburgh was raised about fifty years ago, and where high flavour is required no grape can equal it; apart from that I do not advise its inclusion in a limited collection. Appley Towers is a desirable grape where large bunches and better flavour is required than obtained from Lady Downes, and for this reason it is desirable, while its good keeping qualities enhance its reputation.

Alicante is supposed to be of Spanish origin, and is quite the easiest of all grapes to grow; indeed, it is a capital amateur's grape, succeeding under cool conditions, and it will carry a heavier crop without injury to the vines than any other sort. In point of quality it is exceedingly poor. The above varieties include all that are necessary for any purpose among black grapes, except, perhaps, for market culture, and then I should add Gros Colmar, but my notes are not written from a commercial point of view. There are several other black grapes which some exhibitors admire, because they have a fine appearance, but the less said about their quality the better. I allude to such sorts as Gros Maroc, Alnwick Seedling, Gros Guillaume, Diamond Jubilee, and Directeur Tisserand.

White grapes are fewer in number. The best early white variety is Buckland Sweetwater. This is an English-raised variety from Continental seed, and appeared prior to 1860. Foster's Seedling was raised about the year 1835, and it is more free fruiting than Buckland Sweetwater, but not so good in quality, though for its hardiness and heavier cropping qualities it is sometimes preferred. Muscat of Alexandria is by far the finest of white grapes; how and when it was raised it is difficult to say. It has many synonyms, but I do not consider any variety distinct save Canon Hall Muscat. With the exception of an early variety, and the late-keeping Lady Hutt, I do not think it necessary to grow another white grape, except, perhaps, on account of requiring an early bunch along with such sorts as Black Hamburgh. Muscat of Alexandria, does not succeed with the latter; indeed, it is best grown alone.

Although there are several other white grapes, such as Duke of Buccleuch, White Tokay, Frontignan, White Lady Downes Seedling, White Nice, Trebbiano, Royal Muscadine, Raisin de Calabre, Mrs. Pearson, Golden Queen, Golden Hamburgh, Chasselas Musque, and Duchess of Buccleuch. I do not consider any one is required except under special circumstances.

E. Molyneux.

## ORNAMENTAL ASPARAGUS.

Since the introduction from South Africa of the various ornamental asparagus, much has been said and written in their favour, and deservedly so, for but few plants, from a florist's point of view, have been more useful. Some of the species have almost ousted the once-popular Adiantum cuneatum, and where houses were occupied with this latter for furnishing supplies of the fronds for market, we find them filled up with the various forms of asparagus. Although these latter are so generally grown, it is not always one sees them in that state of perfection so desirable, for not infrequently the foliage is so disfigured with red spider and other pests as to render it quite useless for any purpose, and the plants, instead of being an ornament, are an annoyance and trouble. Now, when we consider that most of the species of asparagus grow very rapidly, there can be little wonder that they become starved when their roots are confined in a limited space, and where this limitation of root room is considerable the plants soon begin to suffer unless recourse be had to extra feeding.

With due care and attention there is no reason why the foliage of these useful plants should not always be fresh and green. The old foliage is sure to become somewhat shabby, but this ought to be removed so that the young growths may have more room to develop. One of the greatest mistakes the cultivator makes is in keeping them too long. Young plants grow away far more rapidly, and give infinitely better results than old worn-out ones. Therefore, a batch of fresh plants should be raised each season to take the place of those that have become exhausted.

There are several species and varieties of ornamental asparagus. Some have been known to cultivators for a considerable time; others are of more recent introduction. Take A. falcatus, for instance; this was introduced from the East Indies far more than a hundred years ago. It grows much after the manner of A. Sprengeri, but is more loose in habit, and when well looked after and liberally treated will produce shoots in one season from fifteen to twenty feet in length. This species, like A. tenuissimus, has the habit of making a quantity of laterals from the joints below where a piece has been removed, and these growths are most useful, as they make fine sprays from eighteen inches to two feet long, which may be used for decorative purposes. Unfortunately, this plant grows too large for the ordinary stove, therefore is not so well adapted for small places. To grow it to perfection ample room should be given, and when planted out against the back wall of a large stove and allowed to ramble at will it grows away rapidly.

For baskets A. Sprengeri certainly has but few equals. Its bright green glossy foliage is always cheering, whether the plants are large or small. For cutting it is in great request, as the stems are stiff, and, therefore, well suited for decorative purposes. When plants become old they will fruit most freely. We have had them in fruit through the winter months, when their bright red berries, interspersed amongst the bright green foliage, produce a charming effect, especially when the plants are well grown, having growths from five to six feet in length.

A. plumosus scandens is a rambling kind, and when in a robust state of health will make growths from fifteen to twenty feet long. It is more suited for training under rafters than for growing in pots, as its loose nature renders it necessary to have supports of some kind. The foliage is produced in flat sprays, which makes it most useful for arranging with cut flowers, etc. There are several varieties of A. plumosus. One called nanus I have not seen in fruit, though I have grown some thousands of plants. We always propagate this by dividing the plants. It has pale green foliage, and does not grow more than a foot or fifteen inches high. There is a variety of plumosus that has a very slender habit, and instead of the foliage being produced in flat sprays they are of a more feathery nature. This is one of the most useful for cutting, as it is so well adapted for making shower bouquets, etc. It is, indeed, the most useful of all the asparagus, as it makes such nice plants in small pots, thousands of plants being raised for this purpose.

A. tenuissimus is a peculiar asparagus, having light feathery foliage, and is most valuable for cutting. When grown against the back wall of a house, where ample moisture can be provided, it will send out abundance of roots from the joints, therefore there is no difficulty in working up a stock in a short time. It should be grown by all who have large quantities of cut flowers to arrange, as its light pale green foliage is very telling with choice flowers.

A. deflexus is admirably adapted for baskets. Its drooping growths, which are thickly clothed with heavy foliage of a dark green hue, renders it a most useful plant for baskets, or for like purposes, but it does not make a good pot plant.

A. myriocladus is a most useful kind, of neat habit, and is worthy of a place in all gardens.

Asparagus are gross feeders, therefore soon exhaust the soil in which they are planted, and unless the nutrient matter is replenished from time to time by liberal supplies of artificial manures, the plants will soon show signs of poverty.

Most of the kinds make thick fleshy roots; in fact, some of them have roots quite tuberous, and as these soon fill the limited space of a pot, there is but little room for the soil, unless those of extra size are employed, which is not always convenient.

Where plants are grown in pots specially for house or conservatory decorations a batch or two should be raised each year. Seeds of most of the kinds are very cheap, therefore there should be no difficulty in working up a stock, but as some of the species root so freely either from layers or cuttings, propagation may be effected in this manner. The stock may also be increased by dividing the roots, but it is not well to let the plants attain a considerable age before this is effected. The asparagus delight in ample moisture both at the roots and over the foliage, but they will not grow in stagnant water. Given a good rich soil and ample moisture, with a suitable atmosphere, they will grow most luxuriantly, whereas in a dry atmosphere and high temperature they soon become shabby, and when once this happens it is far better to work up a young stock than to try to bring the old plants into health again.

H. C. Prinsep.

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**Azara integrifolia variegata.**—In the milder parts of the country the azaras form valuable outdoor shrubs, but in other districts the protection of a wall or glass is necessary. That above mentioned forms a very pretty greenhouse shrub, the small, roundish, dark green, shining leaves being heavily margined with cream, and often suffused with red.—T.

## NEW PLANTS, ETC.

### NARCISSUS.

Crœsus.—One of the finest and most brilliant of the flat-crowned varieties. It has a fine cream-white perianth, and a broad, frilled, flattened crown of brilliant orange-yellow shade. F.C.C., R.H.S., April 2. Mr. A. M. Wilson, Shovel, Bridgwater.

Pedestal. — A handsome trumpet variety with a shapely and regular white perianth, and a rather straight-cut golden trumpet of deep shade. A.M., R.H.S., April 2. Mr. A. M. Wilson.

Killiecrankie.—A beautiful trumpet daffodil with soft creamy perianth and yellow, frilled trumpet. A.M., R.H.S., April 2. Mr. A. M. Wilson, Shovel, Bridgwater.

### PRIMULA MRS. JAMES DOUGLAS.

This handsome primula is of quite auricula-like character, the stout leaves having a little mealiness. The flower stem is stout and erect, and carries a cluster of bright purplish-blue flowers of about the same size as a good alpine auricula. A.M., R.H.S., April 2. Mr. Jas. Douglas, Great Bookham.

### ROSES.

Mrs. E. Alford.—A beautiful new H.T. rose of good size and shape; the colour is rich pink. The outer petals have their margins rolled back a little after the fashion of La France. A.M., R.H.S., April 2. Messrs. Lowe and Shawyer, Uxbridge.

Mrs. C. Reed.—A large, full, and finely-formed H.T. rose of soft cream colour, the cream being faintly and exquisitely suffused with the merest suggestion of pink. A lovely H.T. variety. A.M., R.H.S., April 2. Messrs. Lowe and Shawyer, Uxbridge.

### PRIMULA JULIÆ.

A new hardy primula found in the Caucasus. It has smooth, crenate leaves, and produces its purple-mauve flowers after the fashion of the common primrose. A.M., R.H.S., April 2. Mr. Baker, Oxford Botanic Gardens.

### PELARGONIUM AMBROSIA.

A very effective zonal pelargonium, and of excellent habit for summer bedding. The neat leaves have a well-marked dark zone; the flowers are large, borne in good trusses on stout stems, and their colour is a pleasing shade of pink. A.M., R.H.S., April 2. Mr. Phillip Ladds, Swanley Junction.

### CYMBIDIUM PAUWELSI, THE DELL VARIETY.

A splendid plant of this fine orchid was shown, carrying a long arching spike of twenty large flowers. The parents were C. Lowianum and C. insigne. The flowers are creamy-buff, dotted and lined with rich brown, and with heavier bright brown markings on the lip. F.C.C., R.H.S., April 2. Baron Bruno Schröder (grower, Mr. Shill), The Dell, Egham.

### LÆLIO-CATTLEYA McBEANIANA.

This charming hybrid was obtained by crossing Lælia anceps Schröderiana with Cattleya Schröderæ. The flowers are of good cattleya size, with broad white sepals and petals, boldly marked with deep purple. F.C.C., R.H.S., April 2. Messrs. J. and A. McBean, Cooksbridge.

### LÆLIO-CATTLEYA ORAMA.

This is a splendid orchid derived from L.-c. Dominiana and L.-c. Bletchleyensis. It is much like the former, but of finer size and rich colouring. The sepals and petals are rich purple, while the large lip is dark crimson-purple. A.M., R.H.S., April 2. Messrs. Jas. Veitch and Sons, Chelsea.

### CYPRIPEDIUM ROGER SANDER.

A small, neat, and interesting flower that has resulted from crossing C. Godefroyæ and C. glaucophyllum. The ground colour is whitish, and this is freely veined and shaded with deep red-purple. A.M., R.H.S., April 2. Messrs. Sander and Sons, St. Albans.

### ODONTIODA COOKSONIÆ, COBB'S VARIETY.

A very fine and showy variety with flowers of good size. The colouring is intense crimson-scarlet, flushed with rose towards the edges of sepals and petals, and with a few light whitish marks. The apex of the lip is pure white. A.M., R.H.S., April 2. Walter Cobb, Esq. (gardener, Mr. C. J. Salter), Normanhurst, Rusper, Horsham.

### ODONTOGLOSSUM HIS MAJESTY.

A bold and handsome odontoglossum of unrecorded parentage. The flowers are of excellent size and shape, and disposed with wonderful regularity on the spike. The bright and rich purplish-brown colouring has almost obliterated the creamy ground colour. A.M., R.H.S., April 2. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### VIBURNUM DAVIDI.

As shown, this is a low-growing evergreen shrub with glossy leaves that are fairly large for an evergreen species. The flowers are white and borne in neat terminal clusters. This newcomer was figured on page 273 of our issue of April 6. A.M., R.H.S., April 2; Messrs. Jas. Veitch and Sons, Chelsea.

NARCISSUS KILLIECRANKIE.
A fine daffodil with creamy perianth and yellow, frilled trumpet. A.M., R.H.S., April 2. Mr. A. M. Wilson, Bridgwater.

### LÆLIO-CATTLEYA TRIMYRA.

A particularly beautiful hybrid obtained by crossing Cattleya Trianæ with L.c. Myra. The spike shown carried three flowers, each as large as a good C. Trianæ bloom. The colour is a lovely shade of rich, yet soft orange-apricot, with a little deeper orange shading in the wavy lip. F.C.C., R.H.S., April 2. Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

### LÆLIO-CATTLEYA FREDERIC BOYLE, VEITCH'S VAR.

This is one of the few hybrids having Lælia anceps as one parent. It is finer than the original hybrid, being larger and with a bright golden-yellow throat to the purple-tipped lip. A.M., R.H.S., April 2. Messrs. James Veitch and Sons, Chelsea.

### PRIMULA WARLEYENSIS.

A tiny little plant, as shown, but a very free-flowering one; even when in bloom it is only about two inches high, but its purplish lilac flowers are of quite good size, and they are freely produced. This should be a good rock garden plant if it proves amenable to cultivation. A.M., R.H.S., April 2. Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Great Warley.

# WORK FOR THE WEEK.

## STOVE PLANTS.

ERANTHEMUM PULCHELLUM.—Blue flowers are not plentiful in the winter and early spring months, and a good batch of this eranthemum is well worth a place. It is very free flowering, and is easily propagated now from cuttings taken from old plants, and inserted in sandy soil. Place in the propagating frame, and when rooted pot singly into 3-inch pots and grow them freely on a shelf in the stove. When well-established repot into 6-inch or 7-inch pots, and grow them during the summer in an intermediate house or pit. Keep the points pinched out as growth proceeds, to induce a bushy habit, and when the pots are well filled with roots give weekly applications of diluted liquid cow manure with a little soot added. Where large specimens are in demand the old plants may be shaken out and repotted into larger pots. A suitable compost consists of two parts fibrous loam to one each of leaf-soil and peat, adding plenty of sharp sand. The compost should be used in a lumpy state, and made firm.

WINTER-FLOWERING BEGONIAS.—Pay special attention to the propagation of sufficient numbers of these indispensable plants at this time. As advised in a previous calendar, early propagation is essential, and the best material for cuttings is to be had from the earliest flowered plants that were cut down some time back. These will have produced new shoots, and some of them may be repotted and again grown as specimens for early flowering. The large-flowered varieties, such as Winter Cheer, Julius, and the like, are not usually so ready to produce cuttings, and every encouragement should be given the old plants to induce them to break into growth. Take the cuttings when an inch or two in length, and insert them in sandy soil, and place in the propagating frame. Immediately they are rooted place on a light shelf and pot off into thumb pots.

CISSUS DISCOLOR.—As an ornamental climbing foliage plant for rafters, or walls in the stove, this plant is unique. It is of free growth, and, although good results may be obtained by keeping the plants in large pots, the growth will be more luxuriant when the plant is in a restricted border. A compost of two parts loam to one each of peat and leaf-soil, with sand and broken charcoal added, will suit the plants, using it in a rough condition. Cuttings will readily emit roots if taken when three or four inches long and plunged in heat.

OTHER CLIMBERS.—All climbers need close attention now that growth is active; regulate the shoots or they will quickly become entangled and damaged. Watch must be kept for insect pests. All climbers should be kept scrupulously clean or the insects will fall upon plants growing beneath them.—H. T. Martin, Warren Wood Gardens.

## THE ORCHID HOUSES.

THE INTERMEDIATE HOUSE.—Odontoglossum citrosmum having been well rested throughout the winter, will now be pushing flower spikes from the centre of the new growths, and the plants so doing may be given more water at the roots. They should be suspended from the rafters of the house, a position in which the pendant flower-scapes show to advantage, and where the increased light is beneficial. The best time to afford fresh rooting material is directly the flowers are over, and as it is not a very strong-rooting subject the receptacles should only be just large enough to accommodate the plants and allow for their development for two seasons. They succeed either in pots, pans, or teakwood baskets, but in whichever receptacle they are grown, the drainage must be ample, but only a thin layer of compost is necessary. The rooting materials should be pressed moderately firm about the roots, and water should be sparingly applied until new roots begin to develop freely, but afterwards a liberal supply of moisture is needed. In the autumn, when the pseudo-bulbs are fully matured, watering at long intervals will suffice to keep the growths plump and the roots healthy. O. citrosmum enjoys more heat than O. crispum, and others of that class, and therefore should be grown at the cool end of the intermediate house. Direct sunshine is not advisable, but the less the plants are shaded, provided the foliage is uninjured by scorching, the better. It is surprising the quantity of sunlight the plants will withstand without evil effects, provided the atmosphere is kept moist, and ventilation is free. After being disturbed at the roots, the plants often shrivel, therefore every care is necessary, after potting, not to expose the plants to too much light until they are re-established.

EPIPHRONITIS VEITCHI. — This delightful bigeneric hybrid is now passing out of bloom, and should have attention. Many growers fail to grow it satisfactorily through leaving it too long in the same compost. Like some of the epidendrums, it has a habit of growing itself out of the compost, and should therefore be cut down, and the stems made up again into neat little specimens. As soon as it has finished flowering is the best time to perform this operation. Many grow it too cool; I find it succeeds admirably, at the cool end of the intermediate house, grown in shallow pans, in the kind of compost used for cattleyas. Water must be administered with great care after the plants have been disturbed, but this holds good in every case, and too much care cannot be bestowed upon watering newly-potted plants, to whatsoever genus they belong.

EPIDENDRUMS. — The long-stemmed species, such as E. Wallisi, E. Endresi, E. xanthinum, E. radicans, and the hybrids from them, are now becoming active and pushing out new roots, and the present time is, therefore, favourable for repotting them, should it be a necessity. They will all succeed in the intermediate house, and should be grown in ordinary flower pots, using a compost as for cattleyas. E. radicans and others of rambling habit, which emit roots throughout the whole length of their stems, should have stout stakes placed in the pots for support, and the plants should, as far as possible, be trained into a presentable shape. Being subject to attacks of red-spider they should be syringed or sprayed, especially on the under sides of their leaves.

INSECT PESTS.—Should an attack of any insect pest develop, we may conclude that the plant is not in its proper place as regards moisture, temperature, or even shade and light. A sickly plant is subject to every kind of attack.—J. T. Barker, The West Hill Gardens.

## FRUITS UNDER GLASS.

FRUITING POT VINES.—The berries will (if they have not already) soon commence to colour where the cultural details have been properly attended to; strict attention must be paid to watering, as vines must not become dry at any time. Syringing should be discontinued, and the damping down of the house reduced to a minimum; admit air freely when possible, both by the top and side ventilators, allowing a little ventilation to remain on at night. Endeavour to maintain a brisk, buoyant atmosphere, not overcharged with moisture. Weak applications of liquid manure and chemical stimulants should be administered three or four times a week until the berries have nearly finished ripening, when they should be discontinued. It may be necessary, and it is also very beneficial at the present time, to give the plants a slight top-dressing, with good rich loam, with a little old mortar rubbish added. The laterals may be allowed to grow more freely before being stopped during the ripening period, but not in such a manner as to cause the foliage to become dense and confused. Keep a sharp look out for red spider, and, should it make its appearance, thoroughly syringe the affected leaves with soapy water. Maintain a steady bottom heat, with a night temperature in the house of from 65 deg. to 68 deg.

POT FIGS.—The fruits will be swelling away freely now, and the day and night temperature should be slightly increased. Create plenty of atmospheric moisture by frequently damping down the house and syringing the plants; copious supplies of water will be necessary, and the soil in the pots should not approach dryness at any time. Give stimulating liquids occasionally, to accelerate the swelling and full development of good-sized fruits. If red spider is troublesome, syringe the plants several times with a solution of sulphur, or dust the affected parts with dry flowers of sulphur. When the fruits commence to ripen, drier atmospheric conditions must prevail; but, at the same time, it should be borne in mind that the roots of the plants should not be allowed to suffer for want of water under any circumstances.

STRAWBERRIES.—Continue to introduce batches of plants into heat, to maintain a succession; give clear liquid manure alternately with pure water, unless the plants are disposed to make too much foliage, when stimulants of any kind must be moderated. Thin out the fruits to the required number as soon as set. Gather fruits which are ripe daily, laying them carefully in single layers, in shallow trays or baskets.

PINEAPPLES.—Plants that have been recently potted should be watered carefully until the roots have permeated the new compost; lightly spray the plants daily, and, as the season advances, admit air more liberally as weather permits. Maintain a dry atmosphere where the plants are ripening off their fruits, with a temperature of 85 deg., allowing a rise of 10 deg., with sun heat.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

EARLY-FLOWERING SHRUBS.—These have burst into blossom unusually early this spring, and various subjects are quite gay, and especially full of flower. The flowering currants form picturesque objects on the outskirts of the shrubberies. Nuttallia cerasiformis is producing its racemes of greenish-white flowers with great profusion. The magnolias are a mass of bloom, a large group of Magnolia stellata forming an especially fine picture. The forsythias are flowering abundantly, and a huge bed of F. suspensa against a background of dwarf pines is a very picturesque sight. Shrubs like the forsythias and Chimonanthus fragrans should be pruned back closely immediately after flowering.

ANNUALS.—Those that have been reserved for outdoor sowing should be sown now that the surface soil can be raked down finely for their reception. It is advisable to sow where the plants are to flower, and afterwards to thin them out to a suitable distance apart. Bare spaces in the front of the flower borders and shrubberies are suitable for many annuals, while those intended to produce blooms to use in a cut state should be given a border to themselves. Clarkias, godetias, nigellas, coreopsis, and mignonette are suitable for sowing outdoors at the present time.

SUMMER BEDDING PLANTS.—Fuchsias, pelargoniums, swainsonias, heliotropes, and calceolarias that are established in pots from which they will be planted out, can now be removed to cold frames so as to harden them off slowly. As soon as they are accustomed to the change, give plenty of air, and remove the lights entirely during mild weather; attend to the pinching of the long shoots so as to produce neat, bushy specimens. Hardy annuals in boxes, in cold frames, can be placed outside, provided that adequate means of protection can be afforded in case of frosty nights. Lobelias and pyrethrums that are grown for edging purposes can either be grown in shallow boxes or pricked off in cold frames near the glass, where they will make sturdy plants, and can gradually be hardened off.—J. Gardner, Batsford Park Gardens.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE, April 2.

Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair), Sir John Llewelyn, Messrs. J. O'Brien, J. Fraser, W. Hales, G. Gordon, E. M. Holmes, A. W. Hill, and C. E. Shea.

SCHOMBURGKIA LUDDEMANNI. — Sir Frederick Moore sent a flowering spike of this uncommon species, figured in the "Bot. Mag.," t. 8427. Some discussion arose regarding its distinctness from S. undulata, but the Director of the Royal Botanic Gardens, Kew, to whom it was referred, says it is distinguished from that species by a bright yellow crest to the lip and other differences. It appears to have been lost sight of since 1862, and even now its habitat is unknown. S. undulata has been figured several times (see Lindl. "Bot. Reg., xxxi., t. 53; Will. "Orch. Alb.," v., t. 335; Warn. "Sel. Orch., ii., t. 21; Cogn. "Dict. Orch. Draw," xlix., t. 33), and always without the yellow disc.

DRABA RUPESTRIS. — Mr. J. Fraser showed a specimen of Draba rupestris in a pot, under which condition the plant grows much more dwarf and compact than when in a rock garden in free soil, attaining under the latter conditions to about six inches in height, and under the former to only about three inches, though flowering quite as freely.

CLIVIA MINIATA. — Mr. J. W. Odell showed an inflorescence of Clivia miniata with one of the bracts foliose and about seven inches in length.

NARCISSUS SPORTING.—Mr. C. E. Shea showed a variety of daffodil which had appeared among Empress, but which had a much flatter perianth and no green colouration at the back; the mouth of the corona was wider and the colour somewhat paler. The evidence as to its origin did not appear conclusive, and the committee were inclined to regard it as probably a seedling from Empress.

NARCISSUS MALFORMED. — Mr. Jacob sent a flower of narcissus having the perianth pieces three-lobed instead of entire as is usually the case.

ELÆAGNUS SP. FRUITING.—Mr. F. R. Durham sent from Salcombe, S. Devon, Elæagnus macrophylla, E. Frederici Anna, and E. pungens variegata, each bearing ripe fruits. The pink berries of the first-named with their silver scales are particularly beautiful.

### MEDAL AWARDS, APRIL 2.

Silver-gilt Flora.—To Mr. A. M. Wilson, Bridgwater, for new daffodils; to Rev. G. H. Engleheart, V.M.H., Dinton, for new daffodils; to Messrs. Barr and Sons, Covent Garden, for daffodils; to Messrs. Sander and Sons, St. Albans, for orchids.

Silver-gilt Banksian.—To Messrs. W. Cutbush and Son, Highgate, for tulips; to Messrs. R. and G. Cuthbert, Southgate, for flowering shrubs and lachenalias.

Silver Flora.—To Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids; to Messrs. W. Cutbush and Son, Highgate, for carnations, shrubs, etc.; to Messrs. R. Gill and Sons, Falmouth, for rhododendrons; to Messrs. G. Mount and Sons, Canterbury, for roses; to Messrs. A. Piper and Sons, Bayswater, for shrubs and hardy flowers; to Mr. L. R. Russell, Richmond, for clematises, etc.; to Messrs. Jas. Veitch and Sons, Chelsea, for cinerarias and primulas; to Messrs. Cartwright and Goodwin, Kidderminster, for daffodils; to Messrs. R. H. Bath, Wisbech, for tulips and daffodils; to Miss F. W. Currey, Lismore, Ireland, for daffodils; to Mr. C. Bourne, Simpson, Bletchley, for daffodils.

Silver Banksian.—To R. G. Thwaites, Esq., Streatham, for orchids; to Messrs. Hassall and Co., Southgate, for orchids; to Messrs. J. and A. McBean, Cooksbridge, for orchids; to Messrs. J. R. Pearson and Sons, Lowdham, for daffodils; to Mr. F. H. Chapman, Rotherside Gardens, Rye, for daffodils; to Mr. H. Burnett, Guernsey, for carnations; to Messrs. H. Cannell and Sons, Swanley, for zonal pelargoniums; to Messrs. F. Cant and Co., Colchester, for roses; to Messrs. G. Jackman and Son, Woking, for hardy plants; to Mr. H. J. Jones, Lewisham, for zonal pelargoniums; to Messrs. Wm. Paul and Son, Waltham Cross, for flowering shrubs; to Mr. M. Prichard, Christchurch, for hardy flowers; to Mr. G. Prince, Longworth, for roses; to Mr. G. Reuthe, Keston, for hardy plants and flowering shrubs; to Messrs. T. S. Ware, Lim., Feltham, for hardy flowers; to Messrs. Young and Co., Cheltenham, for carnations.

Bronze Flora.—To Messrs. Whitelegg and Page, Chislehurst, for saxifrages, etc.; to Messrs. R. Felton and Sons, Hanover Square, W., for cut lilac.

## The Nurserymen, Market Gardeners', and General Hailstorm Insurance Corporation, Lim.

The seventeenth annual meeting of this company was held at 41 and 42, King Street, Covent Garden, on the 29th ult.

Mr. Harry J. Veitch, who presided, congratulated the shareholders on the growth of the company, and the strength to which it had attained. The company had been of great service to nurserymen, and the directors had recently seen their way to grant a bonus of 15 per cent. to policy-holders in reduction of their annual premiums. A strong reserve fund had been accumulated out of revenue account. Six claims had been paid during the past year, and since the books had been closed four other claims had been received.

To illustrate the prompt way in which claims were met, he read the following letter from Mr. Ladds, of Swanley:

"Dear Sir,—In consideration of the generous and prompt manner in which you settled with me, following on my claim on your company for glass broken by the severe storm of March 4th, I wish to convey my best thanks to you personally for the courtesy and fairness shown me when here on the following day, and to the company for their unquestionably fair method of business. I do not desire a repetition of the storm, but in these untoward occurrences it is very gratifying to know that "The Hailstorm Insurance Company" are always ready to extend every advantage of their company to the glass-house owner.—Yours faithfully,

FRANK W. LADDS, Manager.

## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 2nd inst. Mr. Massie, the president, was in the chair, and there was an attendance of 125 members.

Mr. Wm. Cuthbertson, J.P., of Messrs. Dobbie and Co., Edinburgh, delivered a lecture entitled "Sweet Peas Up-to-date," illustrated by a series of beautiful lantern slides, many of them in natural colours, of the leading varieties. He dealt with the great development of the sweet pea during the last ten years. In 1901 the first waved flower was exhibited in London by Mr. Silas Cole, gardener to Earl Spencer, at Althorpe Park, Nottinghamshire. This variety was named Countess Spencer, and it is still largely grown, and deservedly popular. Mr. Cole claimed that it was the result of crossing two of the older unwaved varieties, but within the last few days unmistakable evidence had come into his (the lecturer's) hands that an exactly similar flower had appeared in Somersetshire in the same year in the form of a variation from Prima Donna, one of the varieties which, according to Mr. Cole, entered into the parentage of Countess Spencer. This fact, along with Mr. Unwin's statement that Gladys Unwin was also a variation from Prima Donna, leads to the conclusion that the waved sweet pea arose as a mutation, and was not the result of crossing. It appeared in several different parts of the country, as many sports or variations in other plants have done. Very many of the beautiful varieties now in commerce arose as simple variations from Countess Spencer, including John Ingman, Helen Lewis, Nubian, Elfrida Pearson, Mrs. Cuthbertson, Princess Victoria, The Marquis, and others.

After Countess Spencer was distributed for sale in 1904, crossing with it began, and in the course of the last few years varieties have been introduced which are the direct results of such crossing. These include such varieties as Evelyn Hemus, Elsie Herbert, Etta Dyke, Red Star, The King, and May Campbell.

On the motion of Mr. Greene, Mr. Cuthbertson received a very cordial vote of thanks.

The exhibits were: Richardia africana flowers from Miss Burton, Polton; apples Mere de Menage and Lane's Prince Albert, from Mr. A. C. Scott, Riccarton, Midlothian; Narcissus King Alfred, from Messrs. James Grieve and Sons, Edinburgh.

At a meeting on May 7 Mr. James Whytock, Dalkeith Palace Gardens, will give a lecture entitled "Some Impressions of America and its Horticulture," illustrated by limelight views.

## Bournemouth Gardeners' Association.

There was a very good show of flowering and foliage plants staged at the fortnightly meeting held on April 2. The cinerarias exhibited by Mr. Charles Pearce, gardener to Mrs. Ormond, and Mr. Pavey, respectively, were fine specimens. They belonged to the stellata type, and the largest measured 3ft. across the head of blossoms, and was 3ft. in height. Mr. Heath, gardener to G. G. Russel, Esq., had a very fine specimen of Azalea indica, and Mr. Evans, gardener to G. J. Fenwick, Esq., Crag Head, staged good table plants. The points awarded to the exhibits were the highest given to any during this session, so far.

Mr. J. B. Stevenson presided at the meeting, the evening being devoted to questions. Usually, the questions are written on slips of paper, the latter being placed in a box,

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taken out, one at a time, by the chairman, and read; the members reply, and a discussion follows. But at this meeting a change was made—a slip of paper containing a question being taken from the box by all the members present, and then in due order each member read the query he had drawn out and answered it, other members joining in a discussion. The innovation was a popular one, and it had the merit of inducing new and younger members to take a part in the discussion.

The following were a few of the principal queries: "When is the best time to sow seeds of Primula sinensis for general purposes?" "What is the best remedy for the grub which attacks the roots of primulas?" "Are cyclamen plants better the second year than the first?" "How should zonal pelargoniums be treated to flower well in spring?" "Are arum lilies better dried off or planted out?" "What is the best treatment of aubrietias after flowering?" A few questions were not dealt with owing to lack of time, and a hearty vote of thanks to the chairman closed a very interesting meeting.

### Bristol Gardeners' Association.

The usual fortnightly meeting was held at St. John's Parish Rooms. Mr. Thoday presided over a good attendance. Mr. Harvey, of Cricket St. Thomas, read an interesting paper on "Annuals." The lecturer emphasised the usefulness of annuals grown in pots for indoor purposes, and gave schizanthus, godetias, clarkias, mignonette, nemesias, alonsias, and petunias, as a good selection; and for sowing outdoors in April, hemp, centaureas, godetias, clarkias, lavateras, mignonette, and poppies. In giving a description of borders, Mr. Harvey said a few years ago he made several large borders sixty yards in length, where rock had to be quarried out to a depth of four feet, and this was utilised for road-making on the estate. The top spit from a meadow was then requisitioned for the borders, and this, with a good dressing of cow manure added, had given most satisfactory results.

For two Cineraria stellata, Messrs. Young, Shelton, and Mawditt won in the order given. Mr. Ayres was awarded a Certificate for two plants of Tom Thumb cineraria, and Mr. Thoday a special for six amaryllis seedlings.

### Reading Gardeners' Association.

There was an excellent attendance at the fortnightly meeting which took place on Monday week in the Abbey Hall, Mr. F. G. Drew (chairman of committee) presiding. It has been customary for several years past for the Reading Association to exchange lecturers with the flourishing kindred society at Redhill and Reigate. Recently, Mr. T. J. Powell visited Redhill as representative of the Reading Association, and for the evening under notice Mr. W. Wells, jun., journeyed to Reading as delegate from the Redhill and Reigate Society. Mr. Wells's subject was "Early Flowering Chrysanthemums," and the lecturer is one of the best authorities in the country on the culture of these popular favourites. Mr. Wells gave a comprehensive selection of the best varieties to grow, the names being eagerly noted by the appreciative audience. A beautiful group of Star cinerarias, staged by Mr. H. C. Loader, head gardener to Mr. M. H. F. Sutton, Erlegh Park, was awarded the association's certificate of cultural merit. The Chairman exhibited two boxes of Newton Wonder apple in splendid condition, exemplifying the ideal system of packing in vogue at the Reading University College Gardens.

**Grape Culture.**—An illustrated guide to the culture and management of vines in greenhouses and in the open air is published at Gardeners' Magazine Office, 148, Aldersgate Street, London, price 1s. net (by post 1s. 2d.), or bound in cloth 1s. 6d. (by post 1s. 8d.). Full particulars are also given as to renovating old vines, and the best varieties to grow.

## ANSWERS TO CORRESPONDENTS.

APPLE BESS POOL.—J. M., Southampton: I enclose a few samples of a very fine late-keeping apple, and should be glad if you could give me its name and any particulars concerning it. I had a splendid crop last season, and every one who has seen the fruits has greatly admired them. Whatever the variety is, I feel sure it ought to be more widely known and grown.—The very fine clean fruits sent represent the apple named Bess Pool at its best. This is unquestionably a fine variety, but unfortunately it does not fruit freely or regularly until the trees have attained some age. The flowers open late, and so escape frosts as a rule. Dr. Hogg stated that in a communication he received from the late Mr. J. R. Pearson, of Chilwell, the latter wrote: "My father became so in love with the Bess Pool that he planted it largely. He used to tell how a girl named Bess Pool found in a wood the seedling tree full of ripe fruit; how, showing the apples in her father's house—he kept a village inn—the tree became known, and my grandfather procured grafts. He would then show the seven first-planted trees of the kind in one of our nurseries; tell how Loudon had been to see them, and given an account of them in his Gardeners' Magazine; make his visitors try to clasp round their boles, and measure the space covered by their branches. He would then boast how, one season, when apples were very scarce, the fruit of these trees was sold at 7s. 6d. a peck, and made £70, or an average of £10 a tree. So far from thinking the Bess Pool a regular bearer, I believe it to be a very uncertain one, and anything but a profitable one to plant." Mr. S. T. Wright, the superintendent of the Royal Horticultural Society's Gardens, at Wisley, tells us that when living at Ross he found Bess Pool a most useful apple, and in May he could sell every fruit without difficulty, and at top prices.

CHRYSANTHEMUMS. — E. W., Orpington: My first crown varieties of chrysanthemums, like Master David, are just beginning to break. They are strong and healthy, but I hardly know what to do with them.—Master David is one of the varieties best managed if allowed to break naturally, and the first crown bud is taken. Keep the plants as sturdy as possible by admitting abundance of air to the frame, except during bitter winds and frosts, when the ventilation must be reduced. During the recent fine weather the lights might well have been removed entirely during the day from well-rooted plants.

STOPPING PERPETUAL CARNATIONS.—H., York: How many times should perpetual carnations be stopped in the case of cuttings rooted in January for flowering from early November onward through the winter? I have a good batch of plants from layers made last autumn; these are in five-inch pots, have been stopped once, and are making healthy growths. How many times should they be stopped for winter flowering? Which are preferable—autumn layers or January struck cuttings—for winter flowering?—Where continuity of the flowering season, rather than a burst of bloom at one time, is desired, and this is the best method for private gardens, young plants should be stopped at the sixth joint from the base, and the subsequent growths also stopped at the fifth or sixth joint. The batches of plants should be examined every week as growth develops, and all new growths that are of sufficient size should then be stopped. For flowering in early November, such varieties as Britannia, Carola, Mikado, and Mrs. Burnett should not be stopped after the middle of June; Lady Alington, Lady Bountiful, Mrs. R. F. Felton, and Pink Delight should not be stopped later than the first week in July; while the last stopping for Enchantress, Mrs. T. W. Lawson, May Day, Rose Pink Enchantress, Scarlet Glow, White Enchantress, White Perfection, and Winsor should take place at mid-July. The layered

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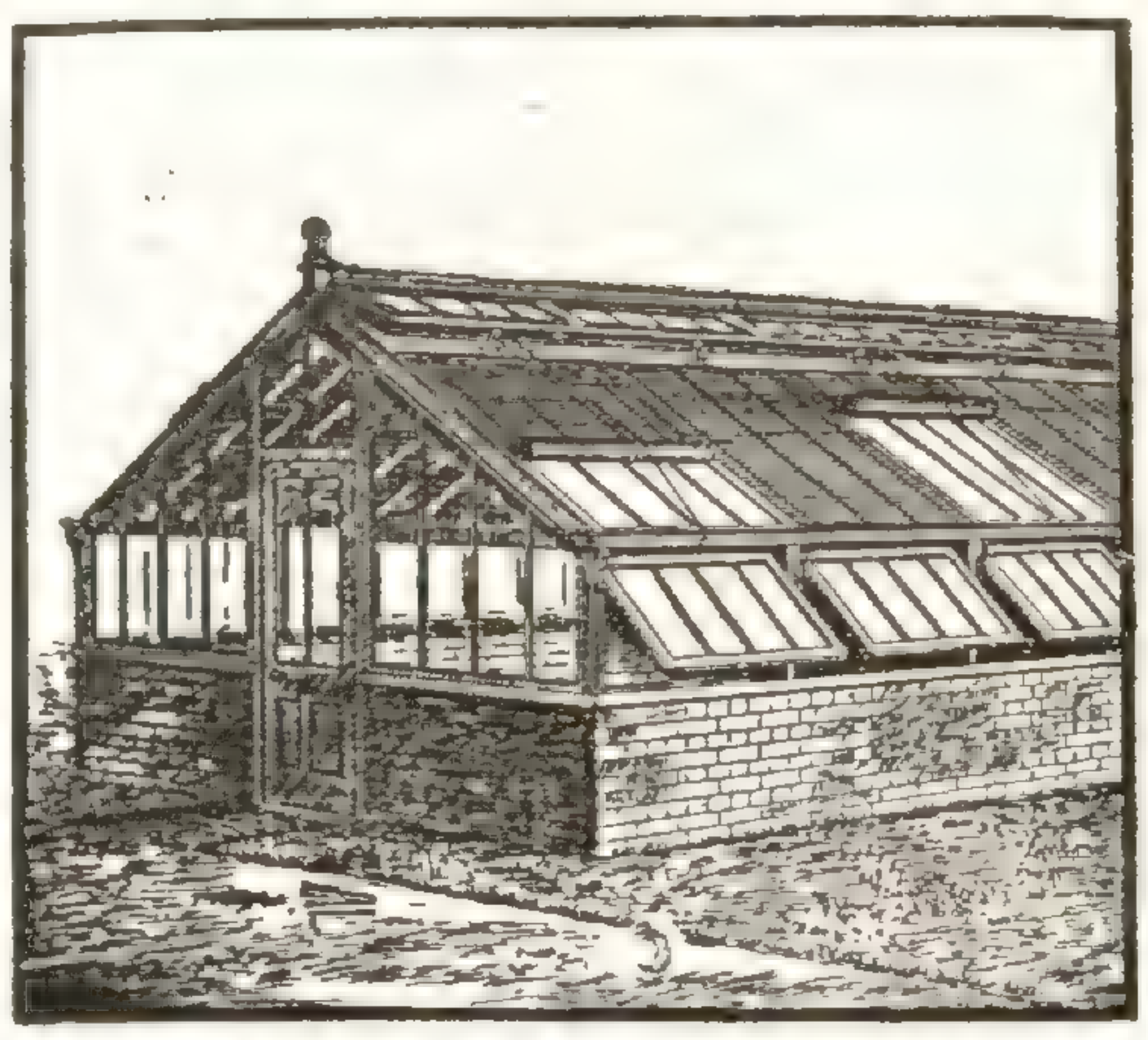

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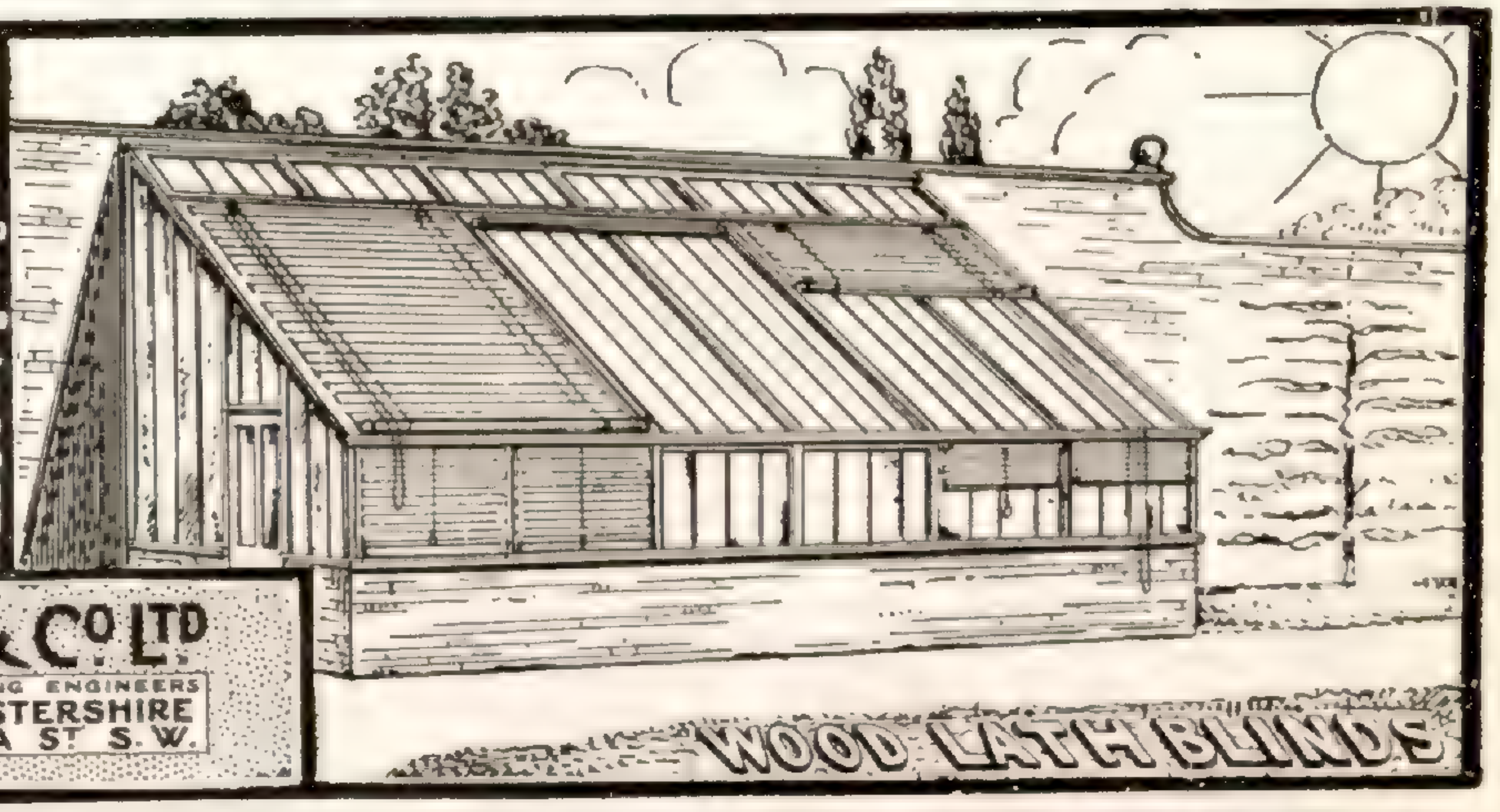

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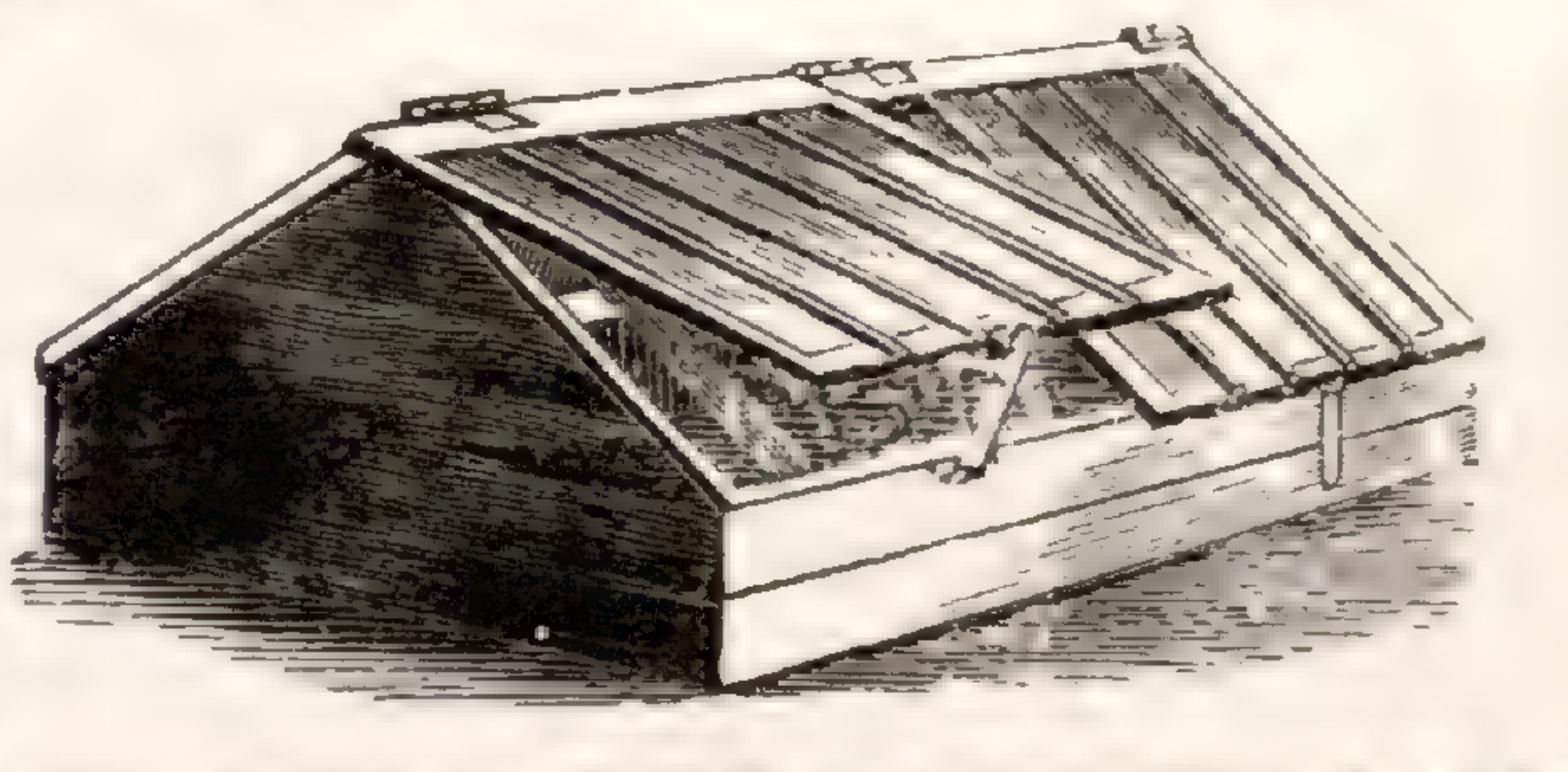

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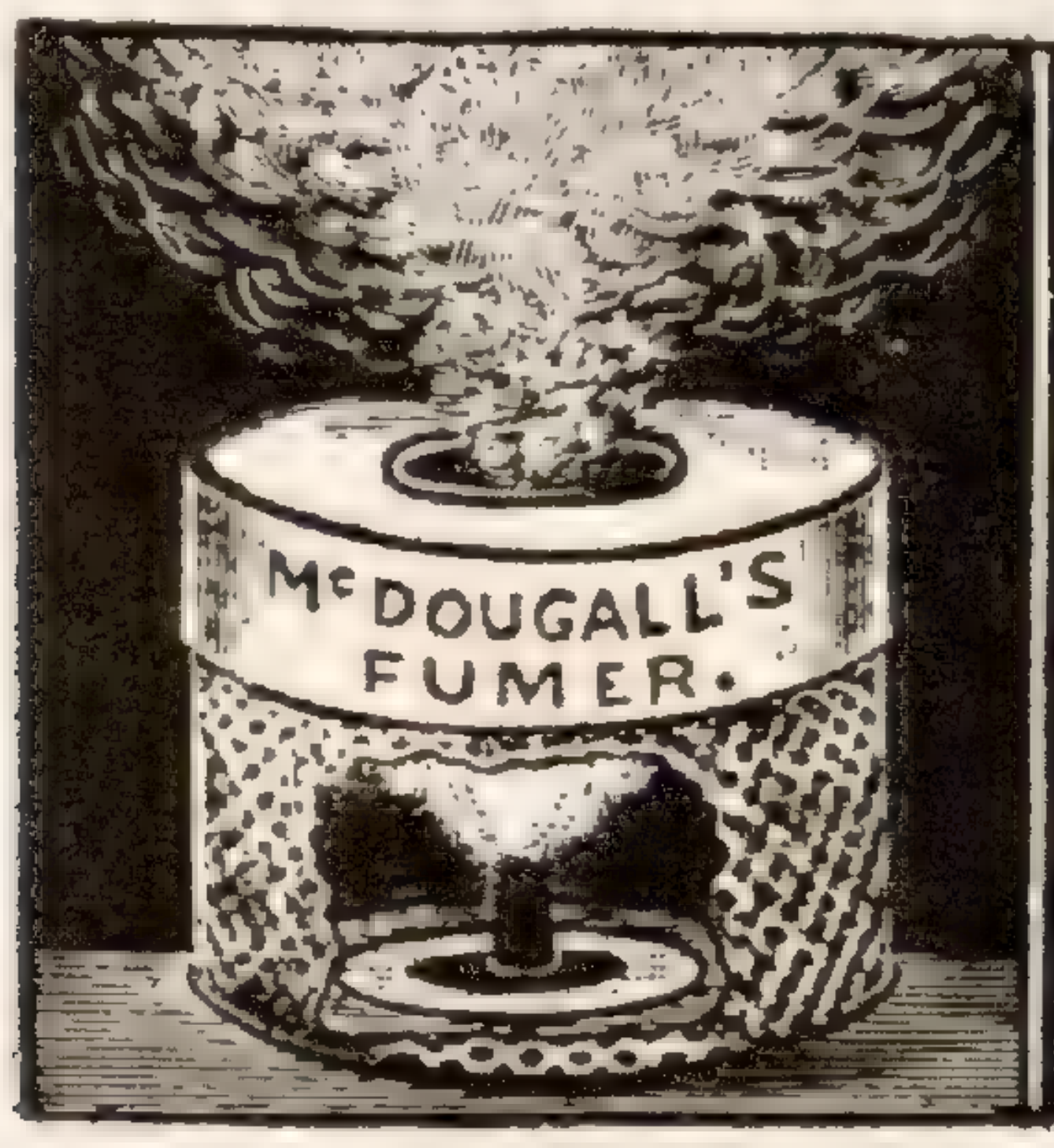
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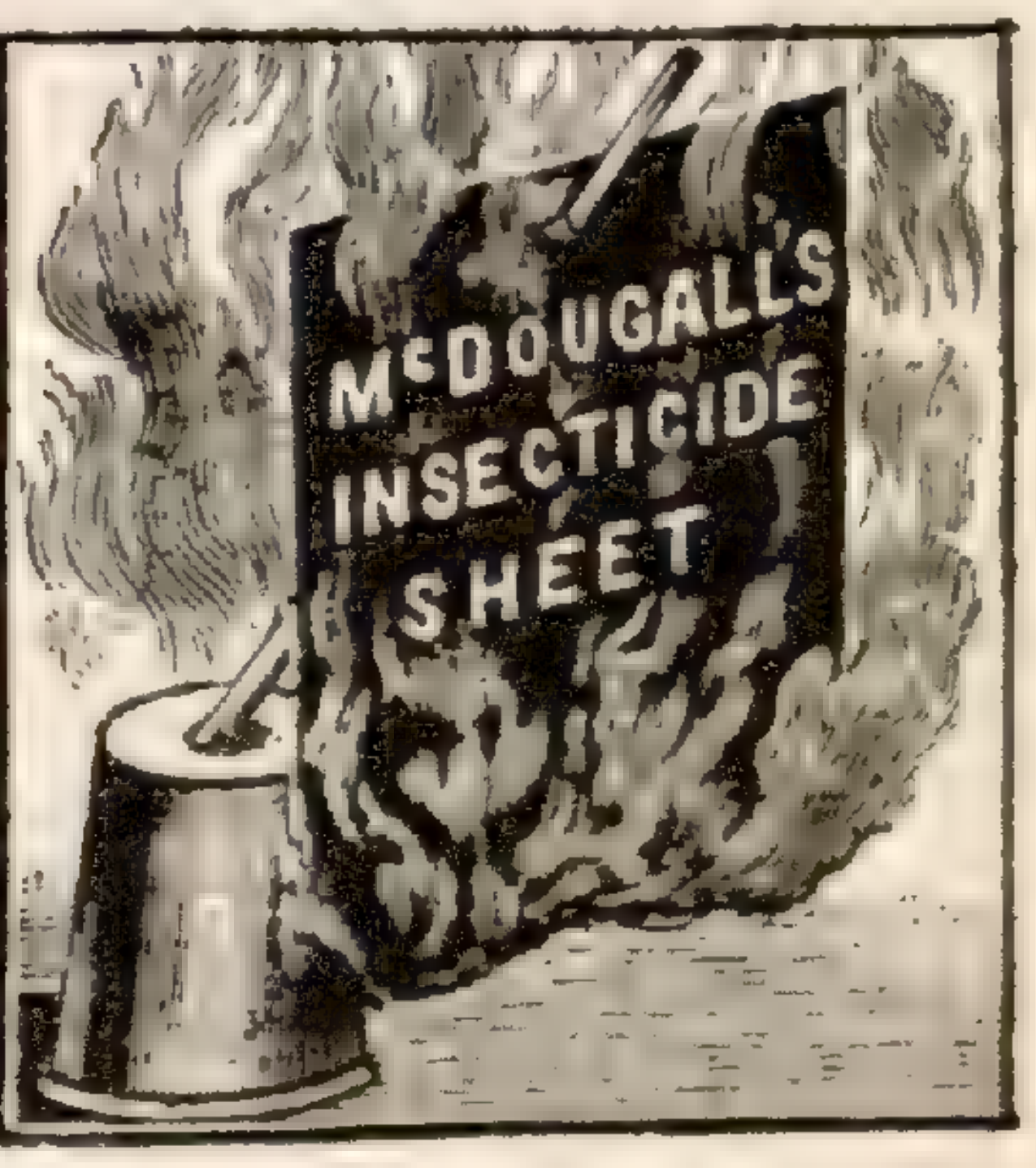

plants will probably give more flowers than the cuttings, but they will need larger pots, and in other ways take up more time and room. Most growers put their faith entirely in cuttings.

SALVIA HORMINUM.—B. M., Swindon: Is Salvia Horminum hardy, and, if so, how is it propagated? I saw some plants last year, and much admired them.—Salvia Horminum is hardy in the southern part of England in light warm soils. It is easily propagated from seeds sown in heat in February or March, or sown in the open in April. Plant the seedlings in groups when strong enough, setting them about nine inches apart each way.

ORCHID SEEDLINGS.—J. H., Plumstead: About the middle of February, 1911, a small quantity of orchid seed was sown on a small piece of peat placed in a thumb pot, and placed in a temperature of from 65 to 70 degrees. These are now sturdy seedlings about a quarter of an inch long, and fairly close together. Will you kindly inform me what the next proceeding should be? At present I have only a warm greenhouse.—Prepare a compost of finely-cut peat-fibre and sphagnum, the latter predominating, and use this as a compost for the seedlings, putting it into little pots or pans over ample drainage. Press it firmly, water with tepid water, and transfer the seedlings one by one with the utmost care, gently pressing the loosened compost up to them. Set them about an inch apart, and keep those of about one size together. Keep the pots in a warm, moist corner, and shade from bright light and sunshine. This is, of course, a general instruction, and we cannot be more particular, as you do not tell us what kind of orchid seeds were sown.

### NAMES OF PLANTS.

J. W. B., Oxford.—Clematis cirrhosa.

A. J. G., Calne.—We do not recognise the hyacinth; the little creeping plant is Helxine Solieroli.

C. H., Fotheringham.—1, Odontoglossum cirrhosum; 2, Sophronitis grandiflora; 3, Cattleva Schroderæ; 4, Goethea Wiotti.

M. E. B., Ipswich.—1, Cydonia Maulei; 2, Arabis albida flora plena; 3, Forsythia suspensa; 4, Deutzia crenata; 5, Prunus Pissardi; 6, Berberis Darwini.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.
Height above Sea-level, 150 feet.

| Date. 1912. March 31 to April 6. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Mar. 31—Sunday ...... | 0 30 | 46 | 46 | 49 | 40 |
| Apr. 1—Monday ...... | 7 30 | 41 | 37 | 49 | 36 |
| ,, 2—Tuesday...... | 9 0 | 41 | 38 | 54 | 31 |
| ,, 3—Wednesday.. | 11 0 | 48 | 45 | 60 | 38 |
| ,, 4—Thursday.... | 2 6 | 46 | 46 | 52 | 41 |
| ,, 5—Friday........ | 2 30 | 51 | 50 | 62 | 46 |
| ,, 6—Saturday..... | 10 36 | 57 | 54 | 64 | 50 |
| Means ... | (total) 43 12 | 47·1 | 45·1 | 55·5 | 40·2 |

| Date. 1912. March 31 to April 6. | Rain. | Temperature of the Soil at 9 a.m. | | | Lowest Temperature on Grass |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Mar. 31—Sunday ...... | 0.18 | 46 | 46 | 47 | 30 |
| Apr. 1—Monday ...... | 0·02 | 45 | 46 | 47 | 27 |
| ,, 2—Tuesday...... | — | 44 | 46 | 47 | 21 |
| ,, 3—Wednesday.. | — | 46 | 46 | 47 | 26 |
| ,, 4—Thursday.... | — | 48 | 47 | 47 | 34 |
| ,, 5—Friday........ | — | 48 | 47 | 47 | 39 |
| ,, 6—Saturday .... | — | 49 | 47 | 47 | 39 |
| Means ... | (total) 0·20 | 46·4 | 46·3 | 47 | 30·6 |

## GARDENING ENGAGEMENTS.

Mr. A. Brown, who has occupied the position of foreman during the past three years in the gardens of Melchet Court, has succeeded Mr. G. Hall as gardener there.

Mr. Thos. Crosswell, for twenty-five years head gardener at Homewood, Eden Park, Beckenham, has entered upon his new duties as head gardener to Mrs. English, Pickhurst Manor, Hayes, Kent. Mr. Crosswell's late employer left him a legacy of £100, free of duty.

Mr. J. Hepburn, in charge of the Hardy Plant Department, Glasgow Botanic Garden, has been appointed gardener to the Marquis of Ailsa, Culzean Castle, Ayr.

Mr. W. H. Johns, of Kilmarnock, N.B., has been appointed horticultural instructor to the Belfast Corporation.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, April 16.—Royal Horticultural Society: Narcissus Committee meets at 11.30 a.m.; Fruit, Floral, and Orchid Committee meet at 12 o'clock; Lecture at 3 p.m. on "Darwin as Ecologist," by Rev. Prof. G. Henslow. Scientific Committee at 4 o'clock.
Royal Horticultural Society's Daffodil Show; two days.
Shrewsbury Spring Show.

WEDNESDAY, April 17.—Royal Horticultural Society's Examination for Teachers.
Royal Horticultural Society of Ireland, Spring Show.
Royal Meteorological Society.
Royal Society of Arts.

THURSDAY, April 18.—Ipswich Spring Show.
Linnean Society Meeting.
Manchester and North of England Orchid Society.
Hereford Spring Show.
Devon Daffodil and Spring Flower Show, at Plymouth; two days.

SATURDAY, April 20.—Chislehurst Spring Show.

TUESDAY, April 23.—Breconshire Daffodil Show.

WEDNESDAY, April 24.—Royal Botanic Society Meeting.
North of England Horticultural Society, at Leeds.

THURSDAY, April 25.—Midland Daffodil Show at Birmingham; two days.
Norwich Spring Show.
Falmouth Spring Show; two days.

## TRADE NOTE.

The disorganisation of railway traffic consequent on the coal strike placed so many difficulties in the way of firms whose business extends over a wide area, that it is of much interest to learn that Messrs. Richard Sankey and Son, Lim., of the Bulwell Potteries, Nottingham, were able to execute all orders for their garden pots with their customary promptness throughout the period over which the strike extended.

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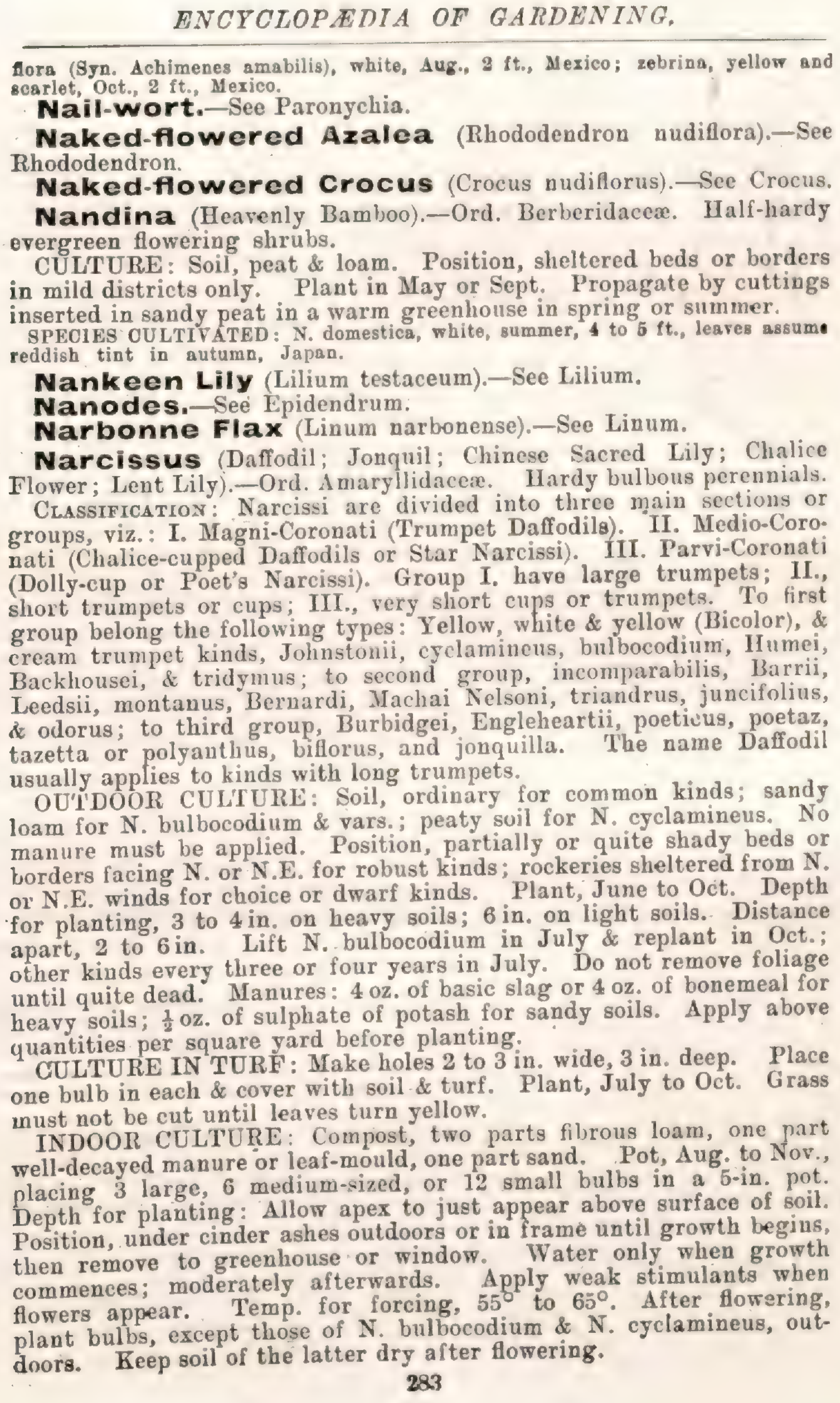
## *SPECIMEN PAGE.*



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flora (Syn. Achimenes amabilis), white, Aug., 2 ft., Mexico; zebrina, yellow and scarlet, Oct., 2 ft., Mexico.

**Nail-wort.**—See Paronychia.

**Naked-flowered Azalea** (Rhododendron nudiflora).—See Rhododendron.

**Naked-flowered Crocus** (Crocus nudiflorus).—See Crocus.

**Nandina** (Heavenly Bamboo).—Ord. Berberidaceæ. Half-hardy evergreen flowering shrubs.

CULTURE: Soil, peat & loam. Position, sheltered beds or borders in mild districts only. Plant in May or Sept. Propagate by cuttings inserted in sandy peat in a warm greenhouse in spring or summer.

SPECIES CULTIVATED: N. domestica, white, summer, 4 to 5 ft., leaves assume reddish tint in autumn, Japan.

**Nankeen Lily** (Lilium testaceum).—See Lilium.

**Nanodes.**—See Epidendrum.

**Narbonne Flax** (Linum narbonense).—See Linum.

**Narcissus** (Daffodil; Jonquil; Chinese Sacred Lily; Chalice Flower; Lent Lily).—Ord. Amaryllidaceæ. Hardy bulbous perennials.

CLASSIFICATION: Narcissi are divided into three main sections or groups, viz.: I. Magni-Coronati (Trumpet Daffodils). II. Medio-Coronati (Chalice-cupped Daffodils or Star Narcissi). III. Parvi-Coronati (Dolly-cup or Poet's Narcissi). Group I. have large trumpets; II., short trumpets or cups; III., very short cups or trumpets. To first group belong the following types: Yellow, white & yellow (Bicolor), & cream trumpet kinds, Johnstonii, cyclamineus, bulbocodium, Humei, Backhousei, & tridymus; to second group, incomparabilis, Barrii, Leedsii, montanus, Bernardi, Machai Nelsoni, triandrus, juncifolius, & odorus; to third group, Burbidgei, Engleheartii, poeticus, poetaz, tazetta or polyanthus, biflorus, and jonquilla. The name Daffodil usually applies to kinds with long trumpets.

OUTDOOR CULTURE: Soil, ordinary for common kinds; sandy loam for N. bulbocodium & vars.; peaty soil for N. cyclamineus. No manure must be applied. Position, partially or quite shady beds or borders facing N. or N.E. for robust kinds; rockeries sheltered from N. or N.E. winds for choice or dwarf kinds. Plant, June to Oct. Depth for planting, 3 to 4 in. on heavy soils; 6 in. on light soils. Distance apart, 2 to 6 in. Lift N. bulbocodium in July & replant in Oct.; other kinds every three or four years in July. Do not remove foliage until quite dead. Manures: 4 oz. of basic slag or 4 oz. of bonemeal for heavy soils; ½ oz. of sulphate of potash for sandy soils. Apply above quantities per square yard before planting.

CULTURE IN TURF: Make holes 2 to 3 in. wide, 3 in. deep. Place one bulb in each & cover with soil & turf. Plant, July to Oct. Grass must not be cut until leaves turn yellow.

INDOOR CULTURE: Compost, two parts fibrous loam, one part well-decayed manure or leaf-mould, one part sand. Pot, Aug. to Nov., placing 3 large, 6 medium-sized, or 12 small bulbs in a 5-in. pot. Depth for planting: Allow apex to just appear above surface of soil. Position, under cinder ashes outdoors or in frame until growth begins, then remove to greenhouse or window. Water only when growth commences; moderately afterwards. Apply weak stimulants when flowers appear. Temp. for forcing, 55° to 65°. After flowering, plant bulbs, except those of N. bulbocodium & N. cyclamineus, outdoors. Keep soil of the latter dry after flowering.

283

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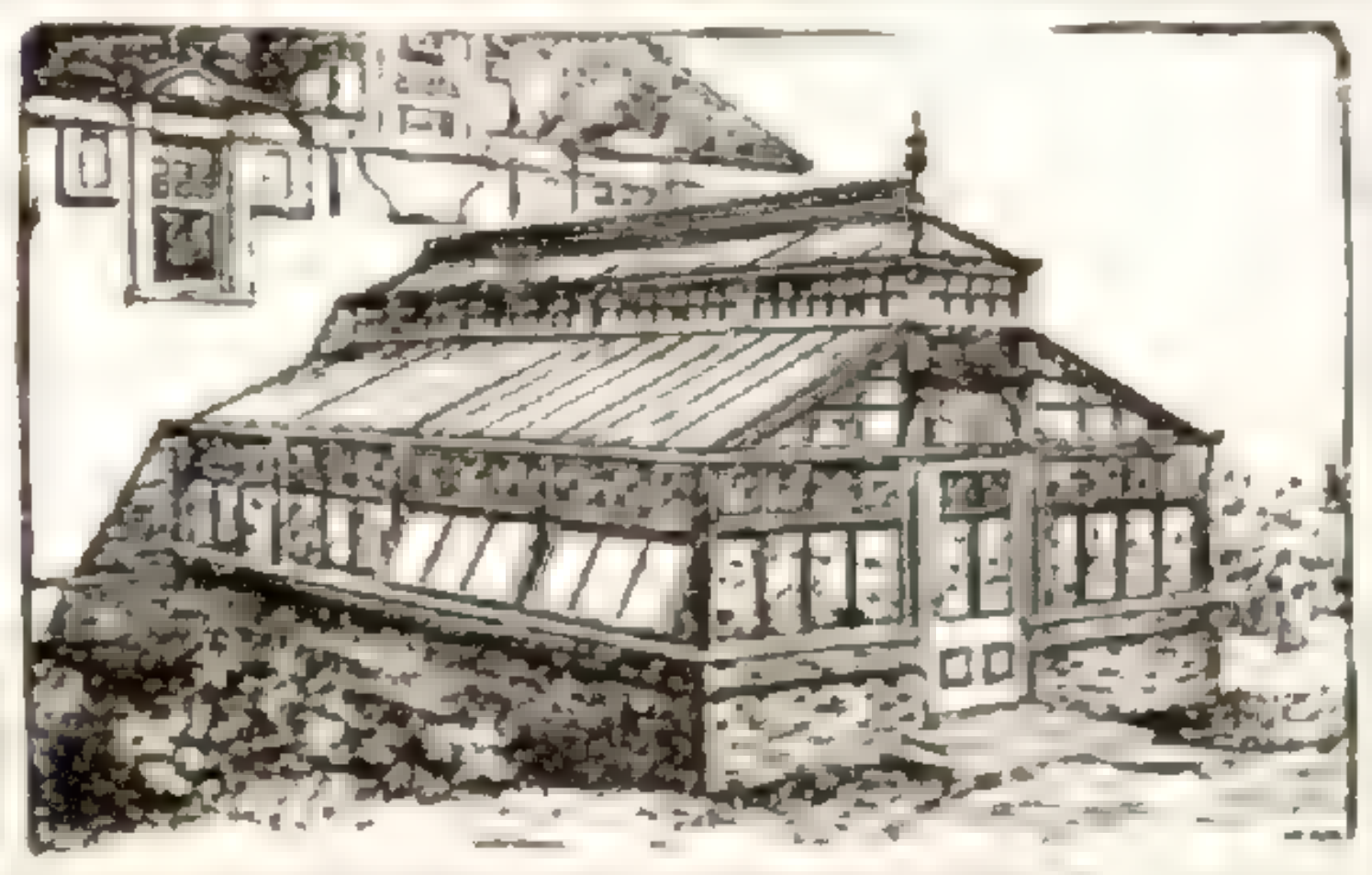

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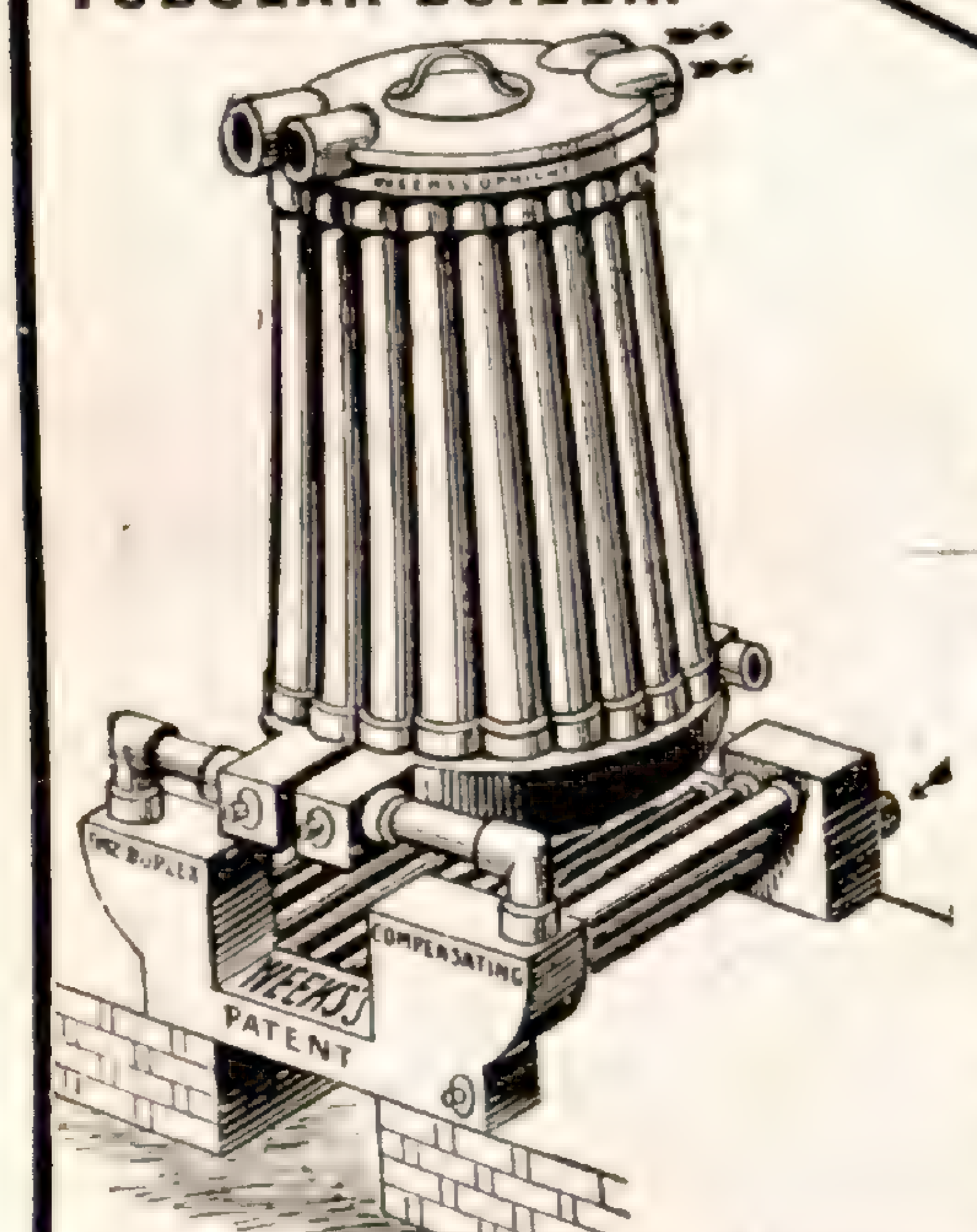

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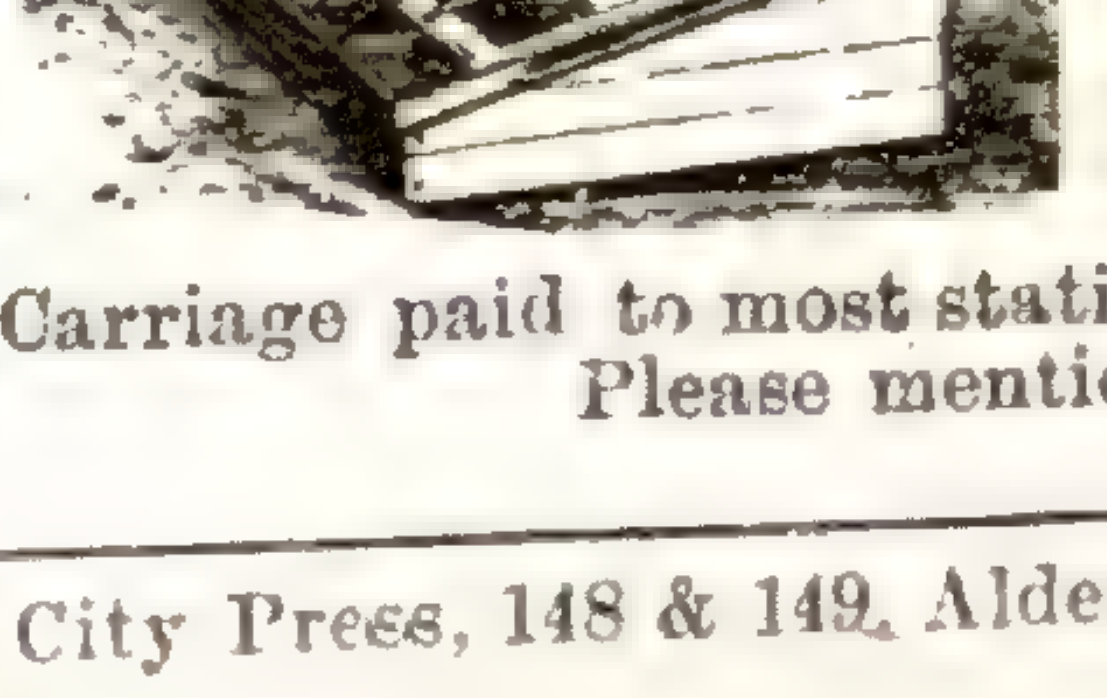

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# THE GARDENERS' MAGAZINE.

No. 3,051.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
SATURDAY, APRIL 20, 1912.
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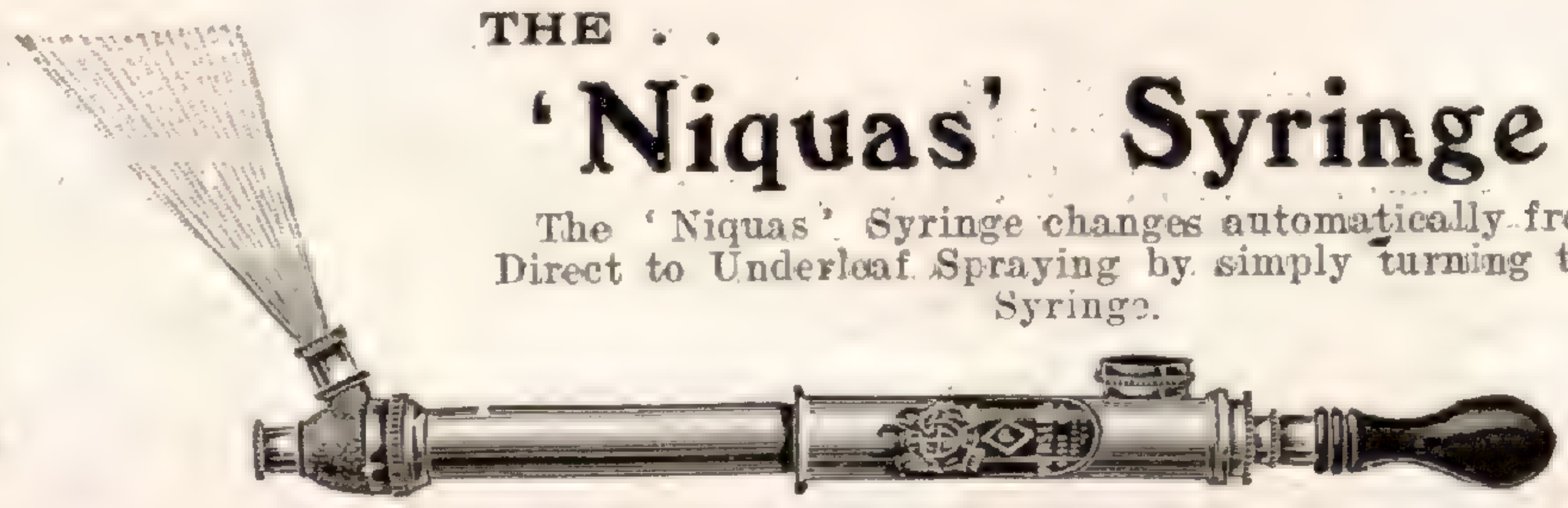

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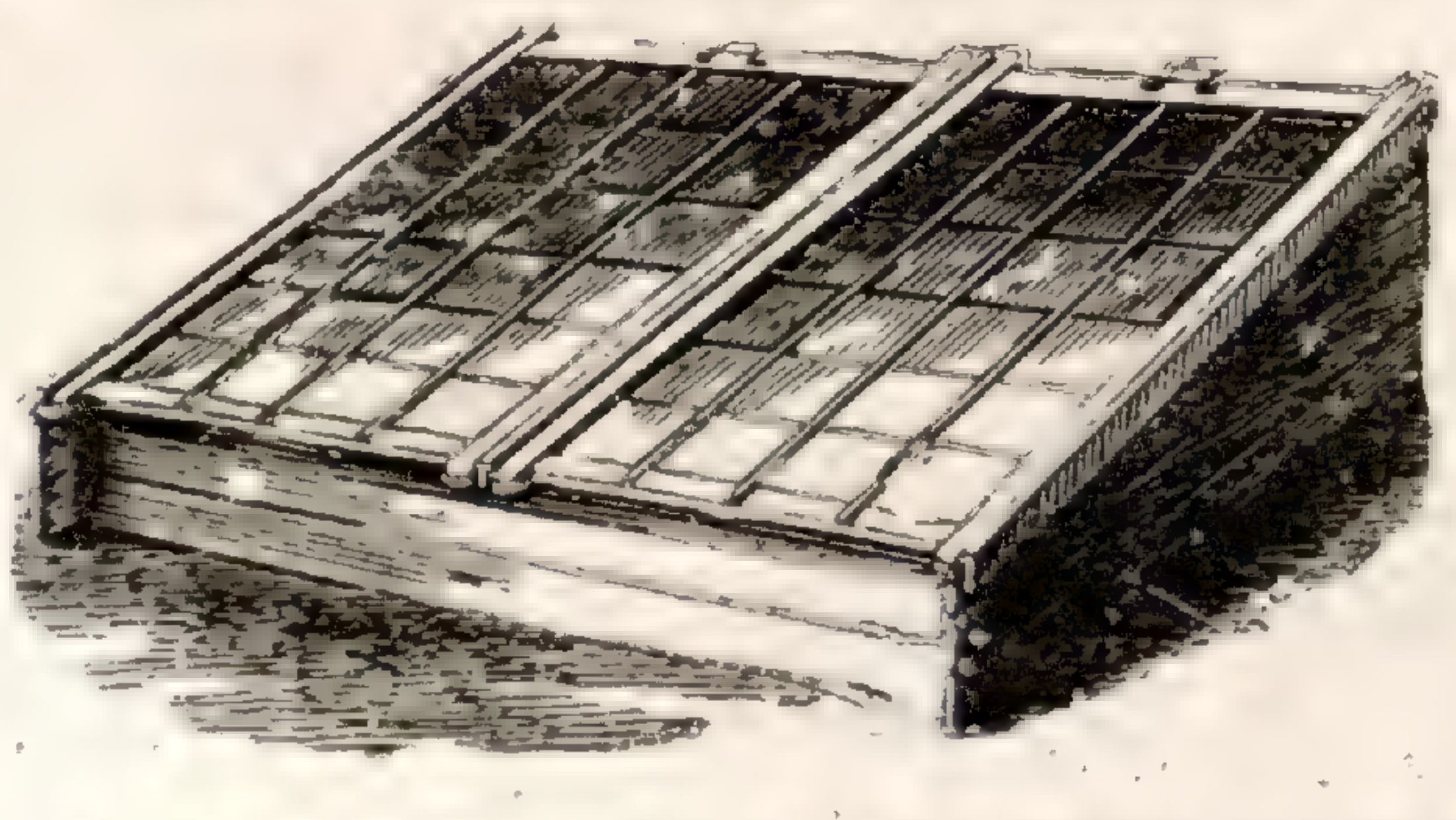

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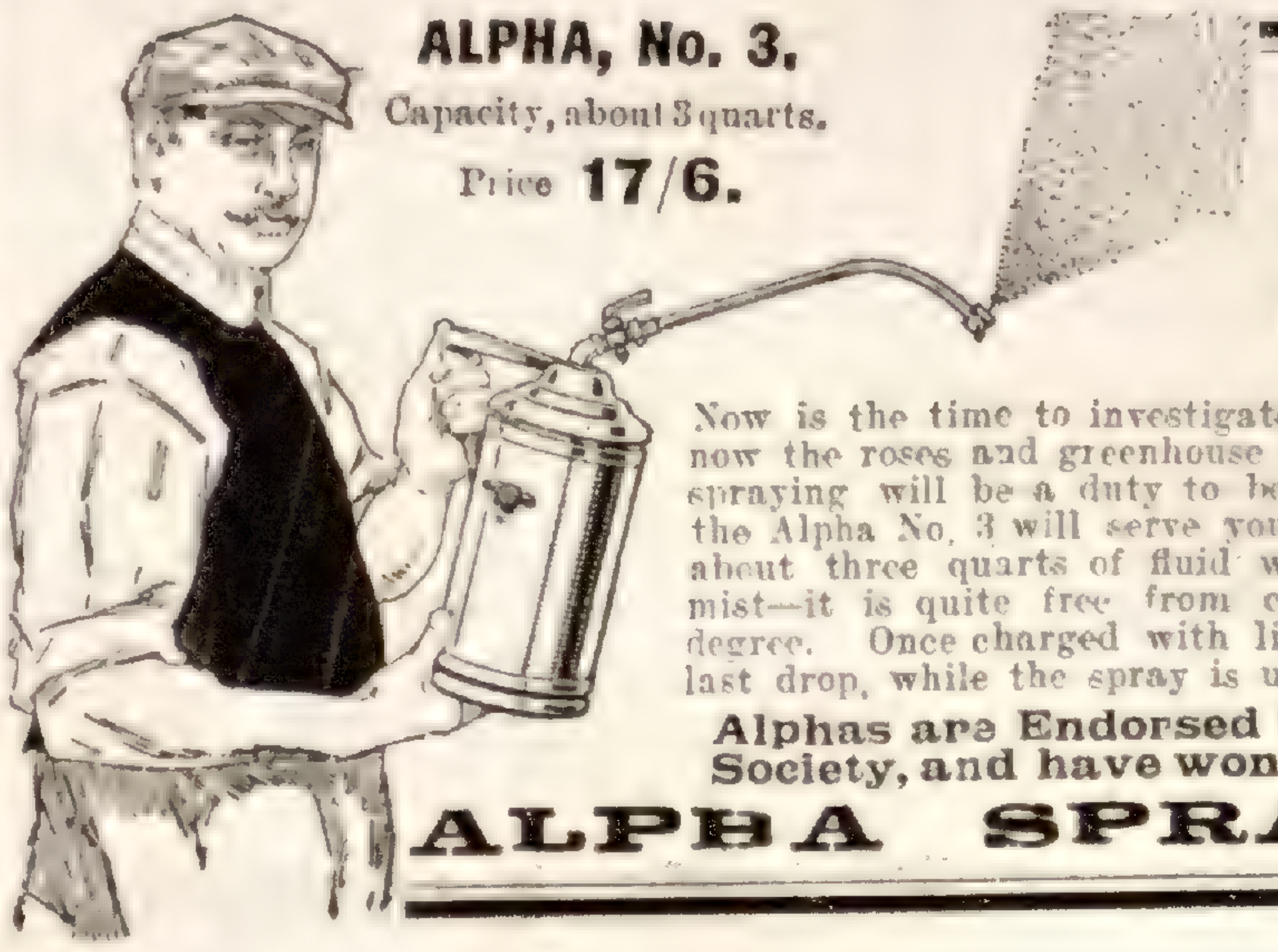

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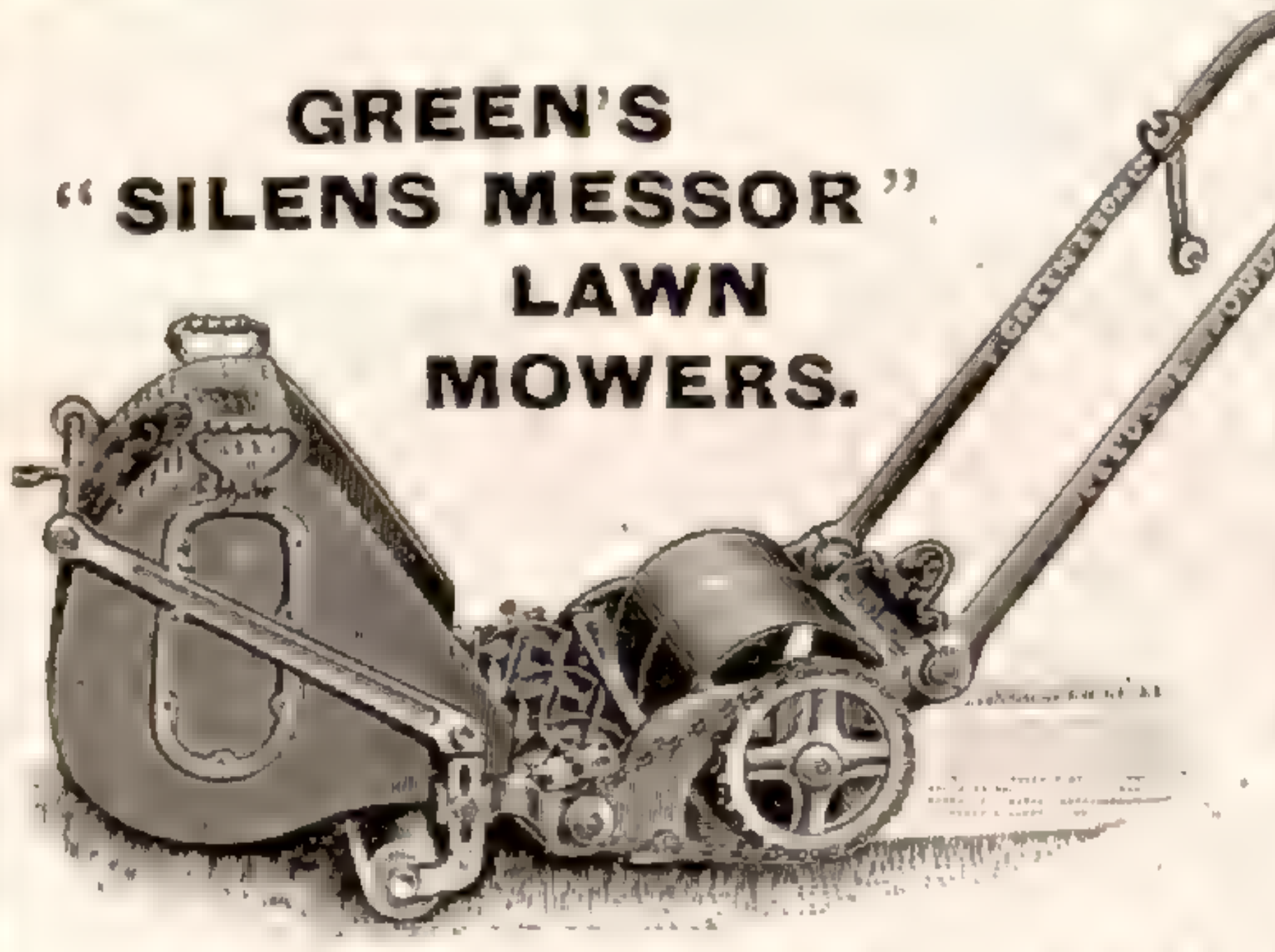

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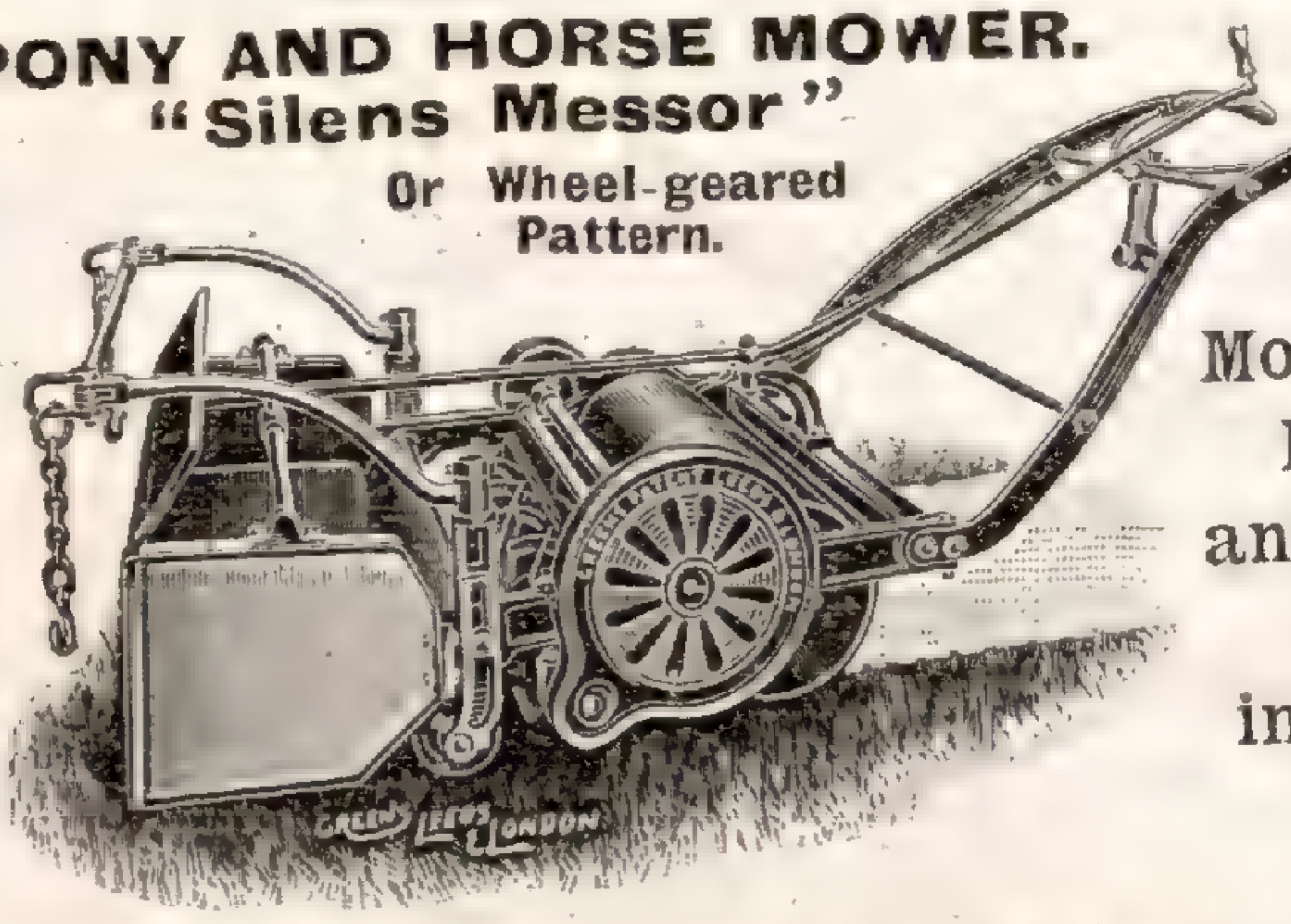

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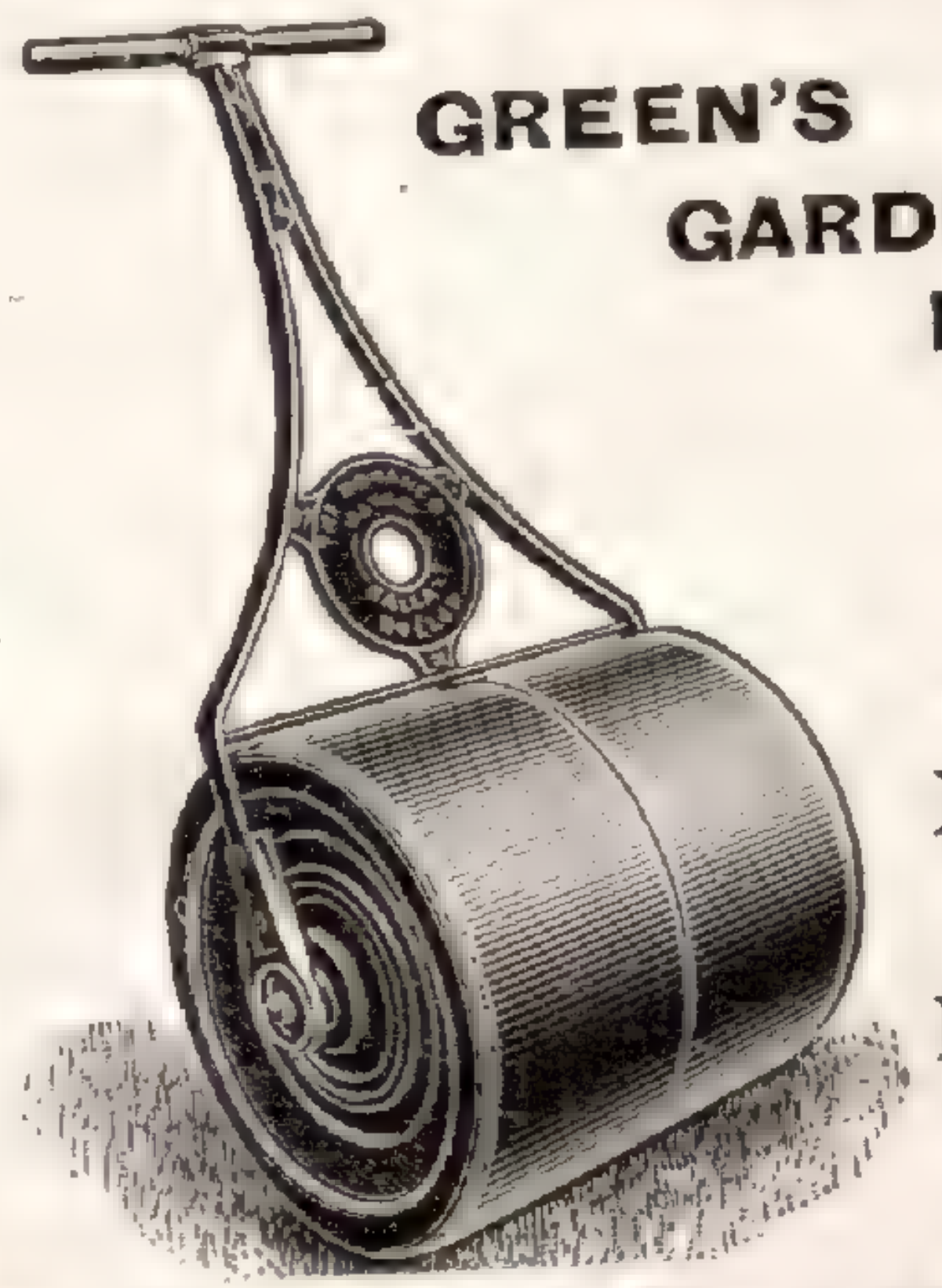

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VOL. LV.—No. 3,051. SATURDAY, APRIL 20, 1912.

THE GARDENERS' MAGAZINE

# NOTE OF THE WEEK.

## Progress with Daffodils.

The exhibition of daffodils which the Fellows of the Royal Horticultural Society and other visitors had the opportunity of enjoying on Tuesday and Wednesday, if not quite so extensive or of so high a degree of excellence as could have been desired, was highly interesting, and, as a whole, remarkably good, considering the somewhat unfavourable character of the season. This year the period of flowering was fully a fortnight in advance of the average dates, and, owing to the brilliant sunlight and the dry easterly winds to which the flowers were exposed within a short time of their full development, they retained their freshness for so short a time that cultivators might well have been excused had they cried, with Herrick:

> "Fair daffodils, we weep to see
> You haste away so soon."

The great heat and drought that were experienced during the summer and early in the autumn of last year, had, there can be no doubt, a material influence upon the flowering of daffodils this season. The bulbs matured quickly and thoroughly, and owing to the dryness of the soil until moistened by the October rains, the roots were late in resuming activity. When new growth commenced it was, favoured by the mild winter, very rapid, and the development of the flowers completed in a shorter time than in an average season. As evidenced by bulbs that are planted late in the autumn, a short season of growth is invariably followed by flowers more or less wanting in substance, and, therefore, unable to resist to an appreciable extent the effect of brilliant sunshine and drying winds. This was, generally speaking, the case in the present season, and, having regard to the conditions that have obtained, it is somewhat surprising the daffodils should have attained to so high a state of development, and contributed such glorious floral pictures to gardens in which their merits are fully appreciated, and their cultural requirements understood.

MR. FRANK W. WRIGHT.

Notwithstanding the fact that a large proportion of the flowers grown by some of the exhibitors were past their best before the dates of the show, there were more than sufficient to interest the visitors, and large numbers were represented in a manner that indicated cultural skill of a high order. To us the interest of the exhibition largely consisted in its forming, metaphorically speaking, a new landmark in the history of a flower that is now doing so much to render our gardens bright and attractive at a season of the year, when in the distant past it was dull and uninteresting, because of the absence of flowers in any considerable numbers. We have had exhibitions of daffodils in London, and some of them memorable ones, and there have been competitive gatherings in the provinces, but not until now has there been an exhibition in the Metropolis at which growers could meet and enter into competition for the cups and other prizes offered for their favourite flower. We were specially interested in the exhibition because it reminded us of the Daffodil Conference that was held under the auspices of the Royal Horticultural Society at Kensington twenty-eight years ago, and also afforded an excellent opportunity for forming an estimate of the progress that has been made during the intervening period. On that occasion there was a large and attractive exhibition, possessing educational value of a high order, and at the conference of cultivators and others, work of far-reaching importance was accomplished. The proceedings were commenced by a comprehensive paper on daffodils, and the discussion which followed was almost wholly devoted to questions of nomenclature. A large number of the beautiful varieties that during the first half of the last century had been raised by the late Mr. Leeds and Mr. W. Backhouse were being distributed, and following the usual custom were given Latin names. Some of the leading cultivators of daffodils had evidently become impressed with the fact, as John Parkinson had been more than two centuries previously, that "There hath been great confusion among many of our modern writers of plants in not distinguishing the manifold varieties of daffodils." Hence it was that much attention was devoted to the question of the naming of varieties. At the close of the discussion a resolution was passed unanimously to the effect that uniformity of nomenclature was desirable, and that garden varieties of narcissi, whether known hybrids or natural seedlings, should be given English names in accordance with the practice that obtained among florists. A committee was appointed to give practical effect to the resolution, and as the result of their labours the number of species was reduced to thirteen, and popular names were adopted for the varieties. For the splendid work that was accomplished as the result of the conference, all who are in any way concerned with daffodils have good cause for being thankful, for not only are popular names more easy to remember and pronounce, but they do not, as in the case of Latin ones, present a barrier to those who may be attracted by the beauty of daffodils, engaging in their cultivation. This change in the naming of daffodils has unquestionably contributed to the high degree of popularity which these flowers now enjoy, and the advantage of simplicity of naming has not at any time been more marked than now. Since 1884, the year in which the Daffodil Conference was held, there has been rapid and continuous progress. All the finest of the varieties of the period that have good constitutions have been propagated in such immense numbers as to have been for some years past within the reach of all who possess a garden, and to have rendered it possible to develop an industry of considerable importance in the production of flowers for market. While commercial cultivators have been busily engaged in the growth of bulbs of standard varieties to meet the requirements of private gardens and market establishments, raisers have increased and achieved a degree of success that renders it difficult to place a proper estimate on their work without suggesting some amount of flattery. We have only to glance through one of the principal trade catalogues to see how many are the varieties of outstanding merit that have been placed at the command of cultivators, and to visit an exhibition to obtain a good idea of the large number of beautiful forms that will be at their disposal within a comparatively short time. It would give us much pleasure to refer to the work of the principal raisers did space permit of their having justice done them. That, however, is impossible, and it must suffice to mention that the presentation of the Peter Barr Memorial Cup to the Rev. G. H. Engleheart, V.M.H., formed a pleasant episode in the first day's proceedings. Mr. Engleheart was one of the first of the amateurs belonging to the present generation to engage in the systematic raising of seedlings, and the persistence and judgment with which he has carried on the work for so long a period fully justifies the committee in presenting him with the handsome cup, which will for all time remind daffodil lovers of the pioneer of the cult of the daffodil, and the splendid work he accomplished during his long and active life.

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**Mr. Frank W. Wright,** the able superintendent of Finsbury Park, affords an excellent proof of the great value of a thorough training early in life, and thoroughness and perseverance after the probationary stage has been passed, as aids to obtaining a high position in avocations involving the exercise of both hands and head. His training extended over about nine years, and during this period he occupied positions of nearly equal length in such important gardens as those of Norris Green, Liverpool; The Firs, Lewisham; Abberley Hall, Worcester; and Croxteth Park, Liverpool; in all of which he would be engaged in practice of them both. On the completion of his training he was appointed gardener to Sir G. Wyatt Truscott, and achieved much success during the occupancy of that position. Being much interested in the horticultural features of public parks, he entered the service of the London County Council, starting work in the ranks at Battersea Park, under Mr. Coppin. About a year later he was appointed as foreman at Peckham Rye Park, and the success achieved obtained for him, at the end of the second year, the position of foreman-in-charge at Bethnal Green Gardens. After a further two years' service Mr. Wright was transferred as foreman to Victoria Park, and after a two years' stay was appointed superintendent of the Victoria and Albert Embankment Gardens. The next step upwards was the charge of Myatt's Fields, and on the Embankment Gardens being raised to a higher grade Mr. Wright returned to them, and remained in charge five years. He was then promoted to the position of superintendent of Southwark Park, and later succeeded the late Mr. J. Melville at Finsbury, one of the first-class parks under the control of the London County Council. We mention these details as showing that by those possessing the necessary degree of ability and perseverance, it is possible, in the case of the London parks, to rise from the ranks to one of the highest appointments at the disposal of the Council. We have during the past ten years or so had opportunities for seeing Mr. Wright's work in the various open spaces of which he has had charge, and have been much impressed by the taste and skill displayed in carrying out the multiferous details involved in park management. We remember with pleasure the splendid work that was accomplished by Mr. Wright's predecessors in the provision of beautiful displays of spring and summer flowers and exhibitions of chrysanthemums, and in the interest of the residents in the north of London, and of park management generally, we are much gratified that they should have had a successor possessing so high a degree of ability.

**Entries for the Royal International Horticultural Exhibition.**—Exhibitors are reminded that Wednesday, May 1, is the latest date for the making of any alterations or withdrawals which may be occasioned by exigencies of weather, season, or other causes.

**Sale of Rejected Seedling Daffodils.**—In connection with the raising of new daffodils, it appears to us that the time has come when the question of a change in the method of dealing with bulbs of rejected seedlings might be considered with advantage to all concerned. As so well known, the percentage of seedlings of sufficient merit to introduce to cultivation is small, and, this being so, an immense number of bulbs have to be destroyed. This represents much waste, and we suggest that this might be avoided with advantage both to raisers and cultivators by placing the bulbs at the disposal of the latter at a moderate price. These seedlings, if selected according to their class, would prove of interest to amateurs who are not able to purchase named varieties until several years after they have left the hands of the raisers, and be useful for naturalising. The evidence that may be derived from the tuberous begonias is sufficient to show that the question is worth considering. From the first much success was achieved in the hybridisation of the several species that were utilised in the creation of the new race, and there was a brisk demand for the novelties, but there was but little profit associated with their production until tubers that were left after the varieties for naming had been selected were, instead of being destroyed, sold at prices proportionate to their quality. The case of the begonias and daffodils may not be on all fours, but the question is well worth discussing, as an interchange of opinion may result in avoiding the difficulties likely to arise.

**Presentation of the Peter Barr Memorial Cup.**—In accordance with the arrangements already notified, Mr. H. B. May, V.M.H., treasurer of the Peter Barr Memorial Fund, presented the handsome silver-gilt cup (figured in the present issue) to the Rev. G. H. Engleheart, V.M.H., on Tuesday morning last, at the meeting of the Royal Horticultural Society's Daffodil Committee. There was a large attendance, when, in a few graceful words, Mr. May referred to the great work of the late Mr. Peter Barr among daffodils, the desire to perpetuate his memory, and the great skill of Mr. Engleheart as a raiser, skill that had enriched British gardens in a remarkable degree. Mr. May said that the Memorial Committee were unanimous in conferring this award for the first year upon the Rev. G. H. Engleheart. The famous raiser expressed his appreciation of the honour conferred upon him, but it was obvious that the memories stirred by such a presentation were almost overwhelming, and he concluded with the hope that the younger raisers would continue their excellent work on behalf of daffodils, so that in due course the honour of holding the Peter Barr Memorial Cup would fall upon more worthy shoulders than his own. Meanwhile, he was proud to be the first holder of the handsome memorial to one whose pioneer work had enabled others to produce the results now so apparent each springtime.

**Rothamsted Experimental Station.**—At a recent meeting of the Lawes Agricultural Trust, Mr. A. D. Hall, director of this important station, tendered his resignation, which was accepted with regret. Mr. Hall's resignation takes effect in September next, after which he will devote his whole time to the work of the Development Commission. The committee of the Trust will proceed to the election of a new director in June. Mr. Hall has rendered splendid work in connection with agricultural science and education. He was the first principal of the South-Eastern Agricultural College, Wye, when it was opened in 1894, and during the eight years he occupied that position, he laid down the lines on which the work of the college has developed. In 1902 he was appointed director of the Rothamsted Experimental Station, and in this position he has also done excellent work. The old features of the station have been maintained, and new investigations have been developed in other directions, more especially those connected with the solution of various soil problems. Mr. Hall has been a member of the Development Commission since its formation two years since, and his appointment to a permanent position under the Development Act is giving general satisfaction.

**Flower Shows at Birmingham.**—The Birmingham Botanical and Horticultural Society have again decided to hold two flower shows during the present summer at the Botanical Gardens, Edgbaston. The first will be held on June 12 (orchids and early summer flowers), and the second on July 17 (roses and midsummer flowers). Honorary exhibits of flowers, fruits, and vegetables will be welcomed. Particulars may be obtained from the Hon. Secretaries, Botanical Gardens, Edgbaston.

**Extension of Wimbledon Common.**—The committee of the Wimbledon and Putney Commons Extension Fund has issued a report on the work which has been done both in securing options on land in Kingston Vale and in raising the necessary funds for the purchase of the land. The original scheme was for the acquisition of 172 acres, at a cost of £52,500. A portion of the land has already been secured, but 110 acres still remain to be purchased at a cost of £36,150. Votes of different amounts have been made by various public bodies in the district, and the sum of £19,270 has yet to be raised. The report points out that the burden of private subscription has fallen largely on Wimbledon residents, who already maintain the Common, and it is felt that the cause is a general belief that Wimbledon Common is maintained by public funds, as is the case with Hampstead Heath and Epping Forest. It is also stated that the contributions have come rather from residents of modest incomes than from those who are in a position to give large sums.

**Horticulture at Sandringham.**—The King has given permission for the Sandringham Estate Horticultural Show to be held in Sandringham Park on Wednesday, July 24. His Majesty and the Queen are offering prizes for the best-kept cottages and the best-cultured gardens.

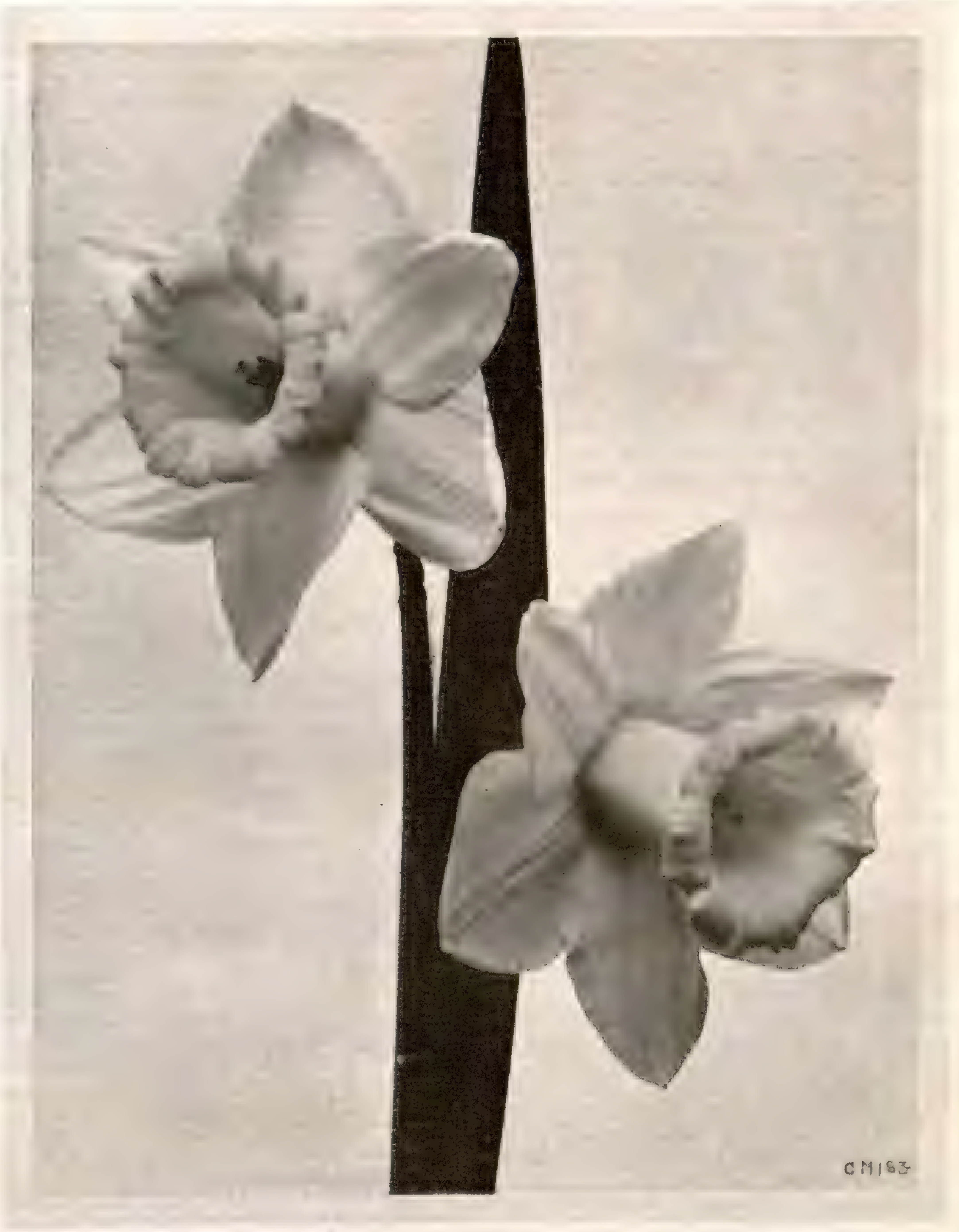
**Gloucestershire Orchards.**—With reference to the present appearance of the Gloucestershire orchards, Mr. H. C. Prinsep writes: "I have never seen the bloom of pears and plums so fine as it is this year. I have within the past few weeks driven through miles of orchards, and find it the same everywhere. When you ascend one of the hills and look across the valleys, the great masses of snowy blossom present an appearance that is exceedingly beautiful. We had a sharp frost the other night, but I do not think much harm has been done."

**Birmingham Daffodil Show.**—The extreme earliness of the daffodil season suggests that the Birmingham Show, to be held at the Edgbaston Botanic Gardens on April 25 and 26, may not be so extensive as usual, but we feel sure that if everyone who has daffodils, and appreciates the efforts made over so many years by Mr. Robert Sydenham and his friends on behalf of daffodils and daffodil lovers, will take the best of their remaining blooms to the Midland show, then the extent of the exhibition will not suffer, and probably the quality will be finer than most expect. Our friends in the North of England ought to turn up in large numbers, so that "Uncle Robert" may not be disappointed.

**Old Garden Furniture.**—"La Vie à la Campagne," the fortnightly French publication, has a department, so to speak, that deals with horticulture. Several special issues have been of great interest to the gardener. The last issue to hand (March 15) is devoted entirely to the subject of old garden decorations, and with such authorities as MM. Maumené, Gibault, and Lambert, our readers may well imagine the way in which such an interesting subject is treated. The illustrations to the text are profuse, and comprise views of old gardens, and all kinds of garden ornaments and accessories, such as sundials, terraces, fountains, seats, balustrades steps, and staircases, vases, and the like. Of these there are close on 200, a varied and interesting collection made from many sources.

**Loss of a Fine Pine.**—Mr. W. Graysmark writes from Bury Hill Gardens, Dorking: "I am very sorry to tell you that we lost our fine Pinus cembra during the great gale on March 4. It was sixty-one feet high, and clothed to the ground, and between six and seven feet in circumference at the base. Do any of your readers know of any specimen larger than this in England? It is a great loss to us, and there is now a great opening in our flower garden where it used to stand."

**Potash Manure.**—It is well known to cultivators that both garden and farm crops have to be supplied with manures in some form that contain nitrogen or ammonia, phosphate, and potash; and that, if any one of these is deficient, the results will be more or less unsatisfactory. It is also generally known that there are various sources of nitrogen and phosphate, but that in the case of potash the only sources of importance are the deposits at Stassfurt, in Germany. Notwithstanding the last-named fact, potash is a common and widely-distributed substance, and it has been estimated that it forms about 2.8 per cent. of the crust of the earth. The whole of the potash can be traced back to the original rocks—granite and others of a similar composition—and to the more recent rocks of volcanic origin. Usually the minerals containing potash are associated with such large proportions of quartz that the percentage of potash is very small. There are, however, in various parts of the world large deposits of rocks and minerals containing much higher percentages. It is essential, in forming an estimate of the value of a material as a potassic manure, to know not only the percentage of potash, but the condition in which it exists. The importance of this will be understood when it is stated that potash in a soil or manure may be in an available state in which the plant can take it up at once, or in such condition that some years' exposure is necessary to convert it into an available state. The availability of the potash is an important factor, as shown by the fact that a clay soil may contain 2 per cent. of potash, and that, owing to it not being in a condition for the plant to utilise it, a dressing of soluble potash manure may be necessary to ensure a satisfactory crop. Potassic manures usually employed are kainit, sulphate, and muriate of potash, and these are so readily soluble in water that the plants can make use of them at once. It is of some practical importance to know that, notwithstanding their solubility, there is, owing to the absorbent properties of the soil, very little risk of loss through drainage.



NEW TRUMPET DAFFODIL, MRS. ERNST H. KRELAGE.

Flowers cream-white. A.M., R.H.S., April 16. Messrs. Krelage and Son, Haarlem.

**Effect of Lime-Sulphur Wash on Scale Insects.**—In the investigations conducted at the Michigan Agricultural College with a view to ascertain the effects of lime-sulphur wash on scale insects, no proof could be obtained that the wash had penetrated into the tissues of the insects. It appeared to have very little effect on large insects having heavy chitinous walls. Various theories were tested, and the results were such as to suggest that its action on scale insects was due partly to the fact that it takes up oxygen in comparatively large quantities, thus indirectly suffocating the insect which it covers, and partly to the effect on the wax at the margin of the scale, which results in the insects being absolutely sealed in under the scale covering.

## LETTUCE CULTURE.

In a lecture recently delivered at Bradford, Mr. W. F. Giles dealt with various salad plants, but paid special attention to lettuce culture.

He pointed out that among salad plants the lettuce is usually considered the most important. In its many varieties the cos type proves itself to be extremely useful, and under various conditions of culture can be had practically all the year round.

Generally speaking, lettuces may be divided into three groups:

(1) Winter lettuces—that is to say, those which when sown in the autumn in a fairly sheltered position will stand through the winter, and heart up in spring and early summer.

(2) Spring, or forcing lettuces—that is, those which when sown in gentle heat early in the year, and either grown entirely under glass, or planted out on a hotbed, heart up very quickly, but, generally speaking, do not remain in condition long before running to seed.

(3) Summer lettuces—that is, those usually sown in the spring and summer and grown in the open to provide a supply all through the summer and autumn.

It is, however, difficult to draw any hard and fast line between these sections, because with so large a number of varieties, there are some which do not perfectly fit into either section, but it may be taken that broadly speaking, varieties that do well in one class are not of much use in another. There are, of course, exceptions, especially with the cabbage varieties, but, although the cos type is useful for sowing in autumn or spring, it is not of so much value in the forcing section.

If these so-called winter varieties are sown towards the latter part of August and in September, and planted out in October and onwards on some well-drained ground, they will usually go through most of the winters experienced in England, although in exceptional weather it is as well to give them a little protection.

The deep English pattern frames are usually planted with the forcing type of cabbage lettuce. This is the style of culture which may be seen in many English gardens early in the spring, and differs from the French method, chiefly in the type of the frame, the hotbed, and the fact that the lettuces are grown by themselves instead of with other crops as in France. This being the class of culture in which the French gardener excels, Mr. Giles gave a few notes on his methods.

About October he forks over an old border or spent hotbed and sows his lettuce seeds under the cloches or bell jars. These cloches are really very useful articles. They are made in various sizes and shapes, and admit light on all sides. Some are made with a knob at top, others not. The form without the knob is that mostly in use around Paris; the others are more generally used in the South of France.

As soon as the seedlings are large enough, they are pricked out under other cloches, about two dozen under a glass. This is to encourage root action, and the plants remain here until they are wanted for their final quarters in January or February. If the weather is at all severe, mats made of rye straw are rolled over the cloches, or dry litter is placed around for protection. Then about January or February the French gardener commences to make up his hotbeds. He does not make them as many do in England, entirely above ground, but digs out his soil, where the bed or beds will be, to a depth of nine or twelve inches. Then he places in the trench manure made of old and new in about equal parts to a depth of one, two, or three feet, according to the season and to whether he requires the bed for vegetables and salads, or melons. When the manure is well trodden down, about four or five inches of good soil is placed on the top and the whole is then ready for sowing or planting.

The advantage, of course, is that being below the level of the ground it retains its heat much longer than would otherwise be the case. The bed having been made ready, it is then sown broadcast thinly, with carrot and radish seed, and planted with lettuces. Usually under a cloche one cos and three or four cabbage type are put, and cos are also planted between the cloches.

The beds are made in the same way and of the same size, whether they are to be fitted with cloches or frames. The French frames are made much more shallow than the usual English patterns, so that the plants may be grown near to the glass, and thereby not become drawn. In the frame four crops may be growing together, radishes, cabbage lettuces, cos lettuces, and carrots. The radishes come off first, then the cabbage lettuce, after this the cos, which then gives the carrots plenty of room to develop; and whilst they are growing plants of cauliflower are put out amongst them, so as to occupy the ground after the other crops are cleared. These shallow frames are really very useful and quite cheap, and if they are required for taller growing plants, they can be raised at the corners with flower pots or bricks, and manure put round at the bottom to keep out the cold. The gentle warmth from the hotbeds, combined with copious waterings, causes the crops to grow very quickly, and it is this quick growth which makes them so tender. It does not do to have much heat for salads, otherwise the lettuces become flabby and the radishes run to foliage. The French gardener finds about 55 to 60 degrees is quite enough.

There is no doubt whatever that a few of these cloches, or a shallow French frame, are useful things in any garden, as by their means salads can be grown very quickly, and therefore very tender; besides which, they can be produced at seasons of the year which would be almost impossible without them, or unless one had house room; but I should be one of the last to advise everyone to take up French gardening on commercial lines, for, although a large number of crops can be produced from a small area of ground, there is a good deal of work and anxiety, besides expense, attached to it. The system, however, is good, and, attempted on a small scale, would enable one to obtain a good deal out of a small space.

Whilst on the subject of frames, I should like to refer to the kind of light that is used in Holland. It is made of a single sheet of glass which slides in a groove, and is kept in position by two blocks of wood at the bottom. The lights are about 60 inches by 32, and are used on shallow frames similar to those used in France. The great advantage is that there is no obstruction to the light, and no drip caused by glass overlapping.

The disadvantage is that if you have an accident you have broken rather a large pane of glass, but in Holland, although the men wear sabots, or wooden shoes, it is not often the lights get broken. They can, as will be gathered, be made very cheaply. Thousands are sometimes to be seen in one place, and they are almost exclusively used for small salads and cucumbers.

The next class of lettuce is probably the one most generally grown—the summer kind. Of these the number of varieties is very large, sufficient to satisfy all tastes. In addition to the cos and cabbage types of lettuce, there is a class which is not often seen in this country. It is the "cutting" lettuce, and is much grown in some parts of America, and also on the Continent. It does not make a head, but produces a considerable quantity of tender salading. It is very useful for spring or autumn sowing.

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**Helenium Riverton Gem.** — Under the dry burning conditions experienced last summer, this proved so satisfactory that it can be well recommended for its floral display. It reaches a height of about four feet, and continues to bloom from the latter part of July till the autumn is well advanced. When the flowers first open they are of a warm terra-cotta tint, but after a time they change considerably to more of a wallflower-like hue.—W.

## SUNSHINE AND FOG.

At a recent meeting of the Royal Society of Edinburgh, an interesting communication on "The Sun as a Fog Producer" was read by Mr. A. Watt, on behalf of Dr. John Aitken, F.R.S., who was unable to be present. Some years ago, Dr. Aitken said, it was noticed by him that at Falkirk fogs frequently began to form in the mornings just at sunrise, and observations of all the meteorological conditions were begun to see if their appearance was in accordance with any laws in nature, or were what are generally called fortuitous. Observations were therefore made of the humidity of the air at the time, as it always plays an important part in the formation of fogs. As the fogs were probably produced by some impurities in the air, the direction of the wind was noted, so as to ascertain whether the air came from polluted areas or not; the velocity of the wind was also observed, as it would determine the degree of concentration of the impurities. The transparency of the air, that is, the amount of haze or fog, was also observed before and after sunrise, also the amount of sunshine in the morning. These observations have been made during the last four winters. The result of the observations shows that when the wind was light and blew from an impure direction—that is, brought air from densely inhabited areas and was damp—a fog invariably formed if the sun shone; whilst it did not form if there was no sunshine; also that if the wind was from a pure direction the sun had no effect on it. The rest of the investigation deals with the way in which the sun acts on the impurities in the atmosphere and causes haze and fog, and with some suggestions as to their prevention.

As these fogs were thus shown to be caused by some impurities in the air coming from the densely inhabited areas, an investigation of the impurities in the atmosphere coming from these areas was begun to try to find out how the sun acted on them and caused fogging. As the air coming from the polluted areas contains a large amount of the products of the combustion of coal, attention was directed to them, and from the well-known products of combustion of sulphur, attention was first directed to it, as all coal contains a large amount of sulphur which is burned with the coal, and gets mixed and carried along with the passing air.

Among the gases in the air produced by the combustion of coal which change the sulphur products to the solid or liquid condition, it was found that ammonia, hydrogen peroxide, and ozone all acted powerfully. Their action, however, plays no part in the morning fogs, because the sun has no action on them, and they can act on the sulphur products in the dark. The products from a clear coal fire and also from a coke fire were tested and found to act exactly like the products of burning sulphur. If the products from the fire are filtered, so as to remove all particles, and then exposed to the action of light, radium, etc., they give a very dense condensation, due to the particles formed by the light out of the sulphur products from the fire. When, however, the products of combustion of ordinary household gas were tested in the same way, it was found that neither light nor any of the other influences had any effect on them, and they remained free from all particles which cause haze or fog.

It is pointed out that these sunshine fogs are probably caused by the sun acting directly in the manner shown on the products of the sulphur in the coal, and also to the sunshine forming hydrogen peroxide in the air. This gas, as shown, combines with the products of the sulphur and forms particles which can condense vapour in unsaturated air, which accounts for these sun fogs forming in air that is not saturated, while in pure air fogs only form when it is saturated. One conclusion pointed out is that though we may have smokeless fires and furnaces, yet we will be subjected to these fogs, and in order to be rid of them we must prevent the escape of the invisible products of the sulphur.

# SPRING-FLOWERING HEATHS.

A great deal of attention has been given during recent years to the various kinds of Erica suitable for outdoor planting, and in places where they thrive there are few groups of shrubs which are more worthy. Their flowering period is a long one, for it is rare in those gardens where a full collection is grown that one or more cannot be found in bloom from the earliest days of the year to the latest.

BANK OF ERICA MEDITERRANEA AND OTHER SPRING-FLOWERING HEATHS AT KEW.

The spring-flowering set alone blossom over a period of six months, for it is usual for the earliest one to open some of its flowers in November, while the later ones are scarcely over before the end of May. The best time is from early March to the middle of May, and during that period the majority of the kinds are perfect masses of bloom.

Heaths, as a class, cannot tolerate lime, for although one or two kinds are occasionally found growing in soil where lime is rather plentiful, they are rarely so well developed as plants growing in other positions where lime is not much in evidence. Rather light soil, either peat or loam, suits them, and there is no necessity to go to any great trouble or expense in the preparation of ground, providing it is free from coarse weeds. If dug over to a depth of twelve or fifteen inches that is quite sufficient, while by digging a few inches of decayed leaves or peat into the surface of loamy soil, a much better rooting medium is formed than would be the case if a bed were excavated to a depth of twelve inches or so and filled up entirely with peat.

Numerous methods may be adopted for the disposal of heaths throughout the garden, but the most satisfactory results are usually obtained by grouping, the groups either being formed of one sort, or of a number of kinds. If it is desired to add height to the groups, this may easily be done by using dot plants of some taller-growing subject.

A few of the spring-flowering heaths are not very hardy, therefore those kinds ought not to be planted in places where severe frosts are common. In most gardens in the Midlands, South, and West, however, they may be expected to thrive satisfactorily, though there may come a severe frost now and then to injure them. With this in view, it is as well to root a pot of cuttings of each of the Southern European kinds every autumn. These, kept in a cold frame for the winter, will ensure a stock should anything happen to the old plants.

### Erica arborea.

This is a tall-growing species, widely distributed in the region of the Mediterranean. At its best it may attain a height of from twelve to eighteen feet, with a considerable diameter. In this country, however, we are more familiar with it as a bush from three to six feet in height, and from three to five feet through. Its tiny leaves are of a very dark shade of green, and against them the small white bell-shaped flowers are well set off. The presence of this plant in a garden is soon detected by the fragrance of the blossoms. Unfortunately it is rather tender. The variety alpina is hardier than the type, and it may be distinguished by its more fastigiate habit and rather brighter leaves. From burrs formed on the roots of E. arborea the famous briar-root pipes of commerce are manufactured.

### E. australis.

Although this is the most tender of the various species, it is one of the most distinct and beautiful. Of loose, straggling habit, it grows three to five feet high, with dark green leaves. The flowers are larger than those of any other species in the section, and they are bright red in colour. A native of Portugal and parts of Spain, it was introduced many years ago, but was rarely seen until about fifteen years ago.

### E. carnea.

This is one of the hardiest of all the heaths. Of low-growing habit, it scarcely reaches nine inches in height, but spreads widely, and forms a carpet of greenery throughout the summer and winter, and a mass of reddish flowers from the middle of February until the middle of May. A native of the Alpine regions of Europe, it is perhaps the most widely grown of all the spring-flowering heaths. E. c. alba is a duplicate of the type in all except the colour of the flowers, which is white.

### E. lusitanica.

A native of Spain and Portugal, this is better known in some gardens under the name of E. codonodes. It is very popular in the south-west counties, where it may sometimes be met with up to ten or twelve feet in height. Sometimes confused with E. arborea, it may be easily distinguished from that species by its more plumose habit, brighter green leaves, and longer, tubular, scentless flowers, which are pink in the bud stage and white when expanded. It often commences to open its flowers during winter, but is at its best during March and April.

### E. mediterranea.

This is a native of Spain and South-west France. Under normal conditions it grows into a shapely bush, four to six feet high, though plants have been known to attain a height of twelve feet in the vicinity of London. Blossoms appear with great freedom; they are reddish-purple in colour, and at their best in March and April. There are numerous varieties, nana, of dwarf habit, and alba, with white flowers, being very distinct. The variety hibernica is found wild in Ireland.

### Hybrids.

E. mediterranea hybrida is doubtless a hybrid between E. mediterranea and E. carnea. It is very hardy, grows twelve to sixteen inches high, spreads freely, and bears reddish-purple flowers, usually from November to May. It was later than usual during the past winter in commencing to flower.

E. Veitchi is another hybrid, the parents in its case being E. arborea and E. lusitanica. Intermediate between the two species, it is exceptionally floriferous, and a great acquisition. W. Dallimore.

Kew.

## SPRING-SOWN LAWNS.

Where ground has been levelled for a lawn, and the soil is free from the seeds of coarse grasses and other undesirable forms of plant life, the best time in spring to sow it with lawn grass seeds is from the middle to the end of April. The heavier soils are colder than the lighter ones. Consequently, the more tenacious mediums are better left until the later date. In either case, advantage should be taken of a dry spell to work the surface into a fine tilth, make good any "slacks," and secure uniformity in solidity throughout. This is best attained by forking over the ground to a depth of about three inches, then carefully treading with the heels, to find out the weak parts, filling these up, retreading, and raking till the desired level and fineness of mould is secured. In some instances, a roller will be useful for breaking up lumps in the preparation of the soil, even although it is useless for levelling or solidifying purposes, as only the high and hard parts are affected by it.

Ordinary hay rakes are excellent implements for drawing over the ground, with the teeth one inch deep in the soil, in preparation for the seed, and when this is sown then drawing cross-ways to cover it. A heavy roller should be used on light soils, and a light roller on heavy soils to fasten the seed, and then a dusting of slaked lime at the rate of about 4oz. to the square yard should be given to the surface to protect the seeds from birds. Besides being a good protection for the seed, it also acts most beneficially on the young plants by breaking up both organic and inorganic compounds in the soil, neutralising acidity, and providing a liberal supply of available food to the seedling grasses. I always use 1lb. of seeds to 30 square yards of ground, but there will be no harm in allowing more than this, as the quality of a lawn is often the result of the amount of seed employed.

Hibernia.

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**Alonsoa incisifolia.**—Some of the alonsoas are justly appreciated annuals, and make a goodly show out of doors during the summer months. The species under notice is, however, of a more shrubby character, and it is really a very valuable plant for the decoration of the greenhouse during the spring and summer months. It is naturally of a freely-branched habit of growth, and the flowers, which are borne in great profusion, are disposed in dense spikes, and the colour, a kind of orange-vermilion, is very effective. Alonsoas are quite distinct from any other occupants of the greenhouse. With an occasional stimulant the plants of this alonsoa will flower for months together. It is as easily struck from cuttings as a fuchsia.—W. T.

## SPRING FLOWERS AT HAMPTON COURT.

In the Gardeners' Magazine for September 9 last year a portrait was given of Mr. W. J. Marlow, the Superintendent of Hampton Court Park and Gardens. The accompanying letterpress dealt with the great and successful work that he has carried out during his tenure of office, particular reference being made to the high class of both the spring and summer bedding, examples of which are often taken as a model for other establishments.

This season the spring bedding is again splendid, and during Easter time it was the admiration of thousands. All tastes and ideas are provided for, as numerous examples occur of bold masses of colour, as well as most pleasing and harmonious combinations.

Taking first the long border, which stretches from the Palace to the limit of the gardens in the direction of Bushey Park, a magnificent display is provided. The principle there adopted is much the same as that followed in the summer, namely, the different flowering subjects are arranged in masses or clumps, a sufficient number of each being employed to form, as it were, an object on which the eye can rest. The following flowers are all very freely represented—hyacinths in various colours, tulips just as numerous, wallflowers of sorts, narcissi, polyanthuses, Aubrietia Dr. Mules, very rich in its colouring, muscaris, forget-me-nots, double daisies of different sorts, etc., the whole being edged with the double arabis, which, at Hampton Court, does not seem to be attacked by pigeons as I have sometimes seen it. A notable feature in this border is a group of numerous plants of the double Japanese cherry, which in height forms quite a break away from its associates. One more feature in this border must on no account be passed over, namely, a charming group of the slender-growing Lady Tulip (Tulipa Clusiana), whose flowers, though small compared with those of the florists' varieties, are much admired. In colour they are white, with a central stripe of red.

Hampton Court Gardens have long been famous for their strain of polyanthus, and though probably owing to the excessively hot and dry weather of last summer they are, I think, not quite up to the standard of some years, they are very beautiful, and play an important part in some pleasing combinations. Among the most prominent of these are yellow polyanthuses associated with white and pink tulips, dark polyanthuses dotted over with Joost Van Vondel crimson, and Joost Van Vondel white tulips, yellow polyanthuses plentifully sprinkled over with Lady Palmerston tulip, a semi-double satiny-rose flower.

A particularly striking bed, in fact, looked upon by some as the most attractive of all, has a groundwork of bright yellow Alyssum saxatile overtopped by the blush Hyacinth Van der Hoop, above which stand numerous well-flowered and brightly-coloured examples of Dielytra spectabilis. Another bed, lowly in stature, but very pretty and uncommon, is planted with Auricula King of the Yellows and Primula Sieboldi, the whole being sprinkled over with Tulip Cottage Maid. Wallflowers are freely represented, and, in some instances, are very fine, but personally I do not care for those of dull undecided tints. One bed is, however, at a distance very quaint, being planted with Wallflower Eastern Queen and the orange-coloured Tulip Thomas Moore, though when closely inspected the effect is not so striking. Dark wallflowers are also associated with this tulip, while a bed of the pale yellow Primrose Dame has as a companion the orange-scarlet Tulip Grace Darling. Other combinations worthy of especial mention are Hyacinth Grand Maitre, blue, and pink Tulip Cottage Maid, over a carpet of double white arabis; Hyacinths, Fabiola, rosy-red, and La Franchise, blush, with single white arabis; Hyacinths, Leonides, blue, and La Grandesse, white, springing from a bed of double arabis; a carpet of Aubrietia Dr. Mules and large white daisies, with an overgrowth of Narcissus Madame de Graaff, very uncommon and pretty; single arabis and forget-me-not, and above that Hyacinth Gertrude, red, and white tulips; double arabis and Hyacinth King of the Blues; the same arabis with Fabiola and Gigantea, blush hyacinths, with Tulip Cottage Maid. Beside these there are some very fine beds of tulips, including such well-known kinds as Artus, Chrysolora, Cottage Maid, Keiserskroon, Thomas Moore, Joost Van Vondel, and others.

With so much to admire it may perhaps be looked upon as out of place to criticise, but in the naming of the flowers in the beds some improvement is desirable, for scarcely any of the tulips are labelled. This is a most important omission in a public garden, where so many come to admire and seek inspiration. I noted, however, that every bed of polyanthuses bore a conspicuous label.

In the case of the flower beds at Hampton Court the beauty of their occupants is enhanced by the splendid condition of the turf which surrounds them, and the numerous yews which form, in many instances, a very suitable background for the brilliantly coloured blossoms. W. T.

## FRUIT PROSPECTS.

In the southern part of Hampshire and in Dorsetshire the prospects of a good fruit year are encouraging, as far as the show of blossom goes. Pears are exceptionally well laden, plums and cherries are promising, and apples have an abundance of flower buds. I notice that Allington Pippin, Lane's Prince Albert, and Warner's King have blossoms above the average. Pear Doyenne du Comice even bears blooms at the extreme ends of the shoots in many instances. Of course, this is a result of the maturing of the wood last year. The young shoots of black currants were not as gross as in many previous years, and, as they are so well ripened, the crop may be a grand one.

In one garden I visited recently I saw a number of pear trees confined to one main stem, but having side shoots 1ft. to 18in. in length, and they were bristling with fruit buds. These trees are not trained as cordons proper, but on that principle, and it is really wonderful the number of trees that can be accommodated in a small garden. I have been able to watch the trees in question for several years past, and they never fail to crop satisfactorily. Peaches and nectarines, also apricots on outside walls, are very promising. Gooseberries, red and white currants, and raspberries, also look well.

In a few instances trees of a somewhat stunted character are carrying too many flowers, and it is quite possible that most of the latter will fall off. But generally the trees are well laden with flowers without being overcrowded. So very much depends on the weather conditions. Last year a severe frost on April 5 blackened the pear blossom wholesale. I am preparing to lightly protect a number of small bushes, and thus avoid running any risk of injury.

Geo. Garner.

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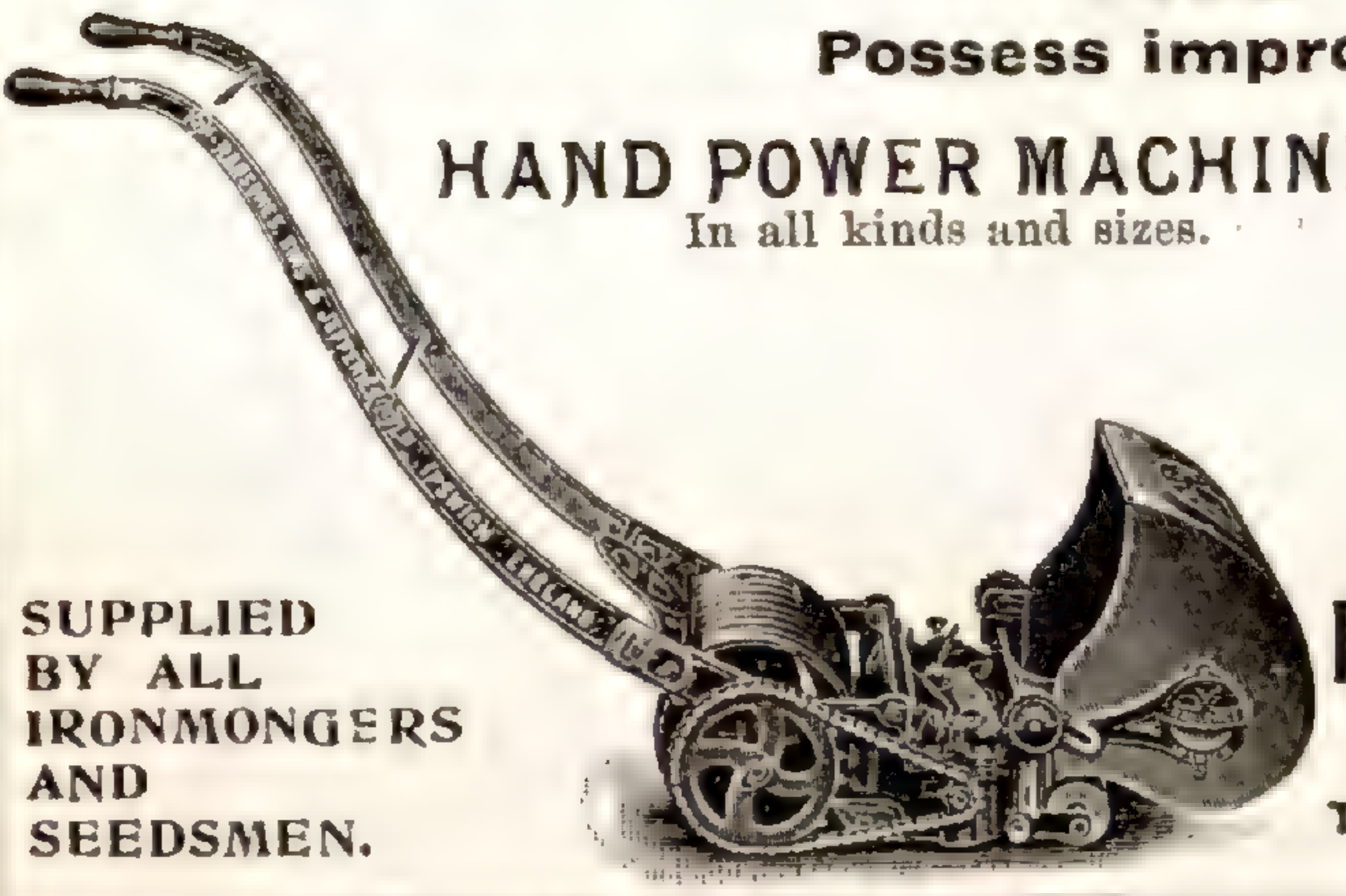

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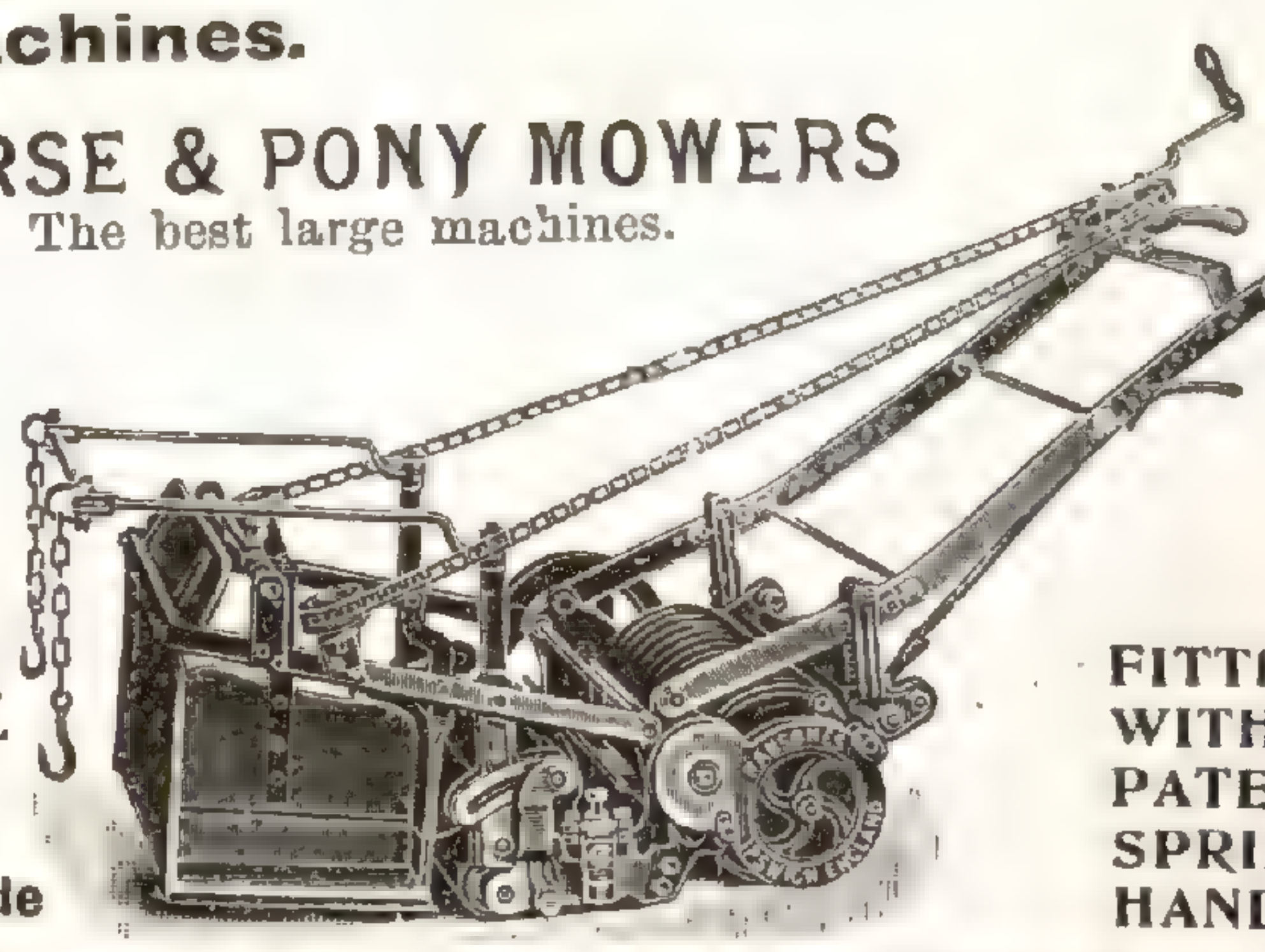

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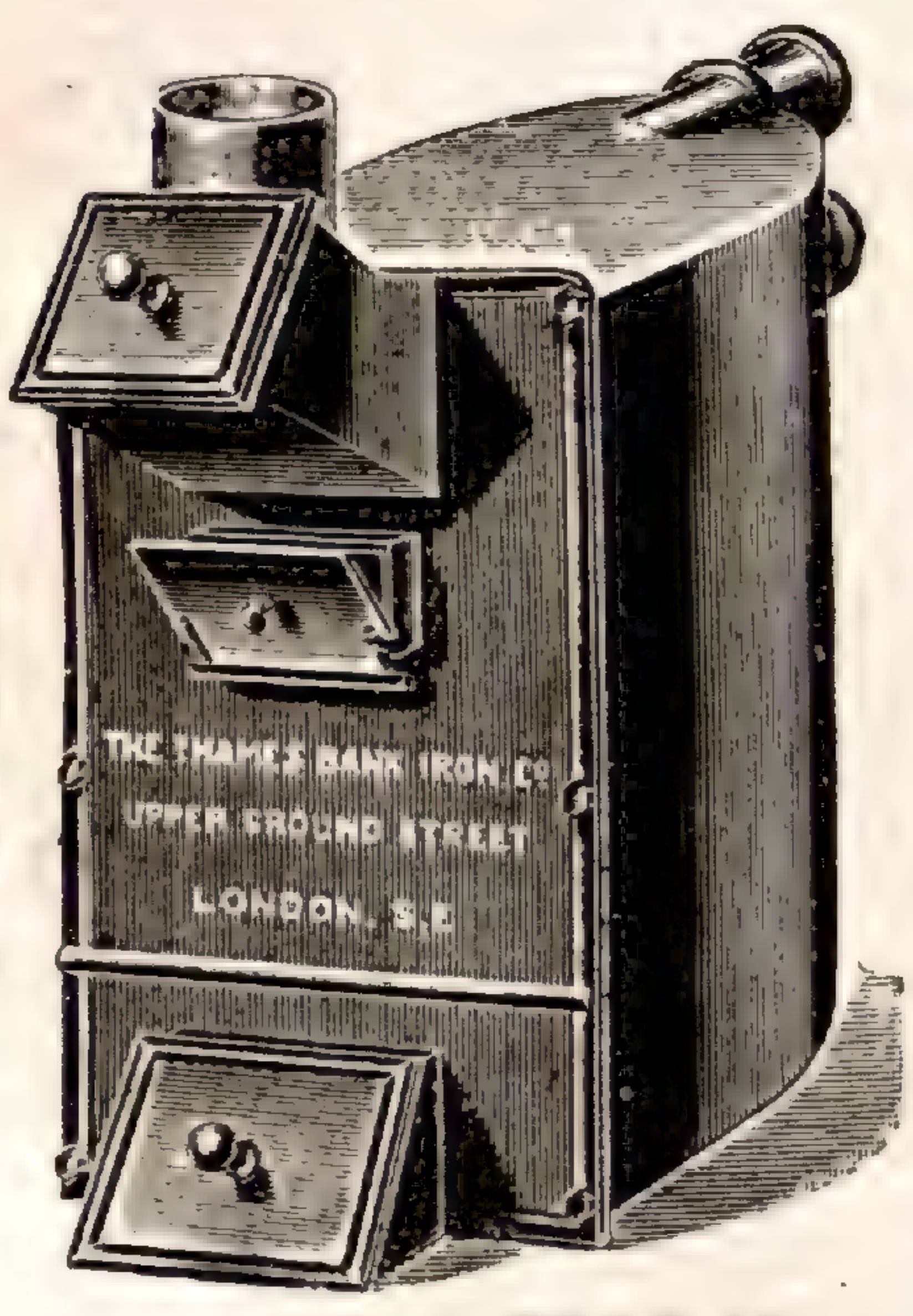

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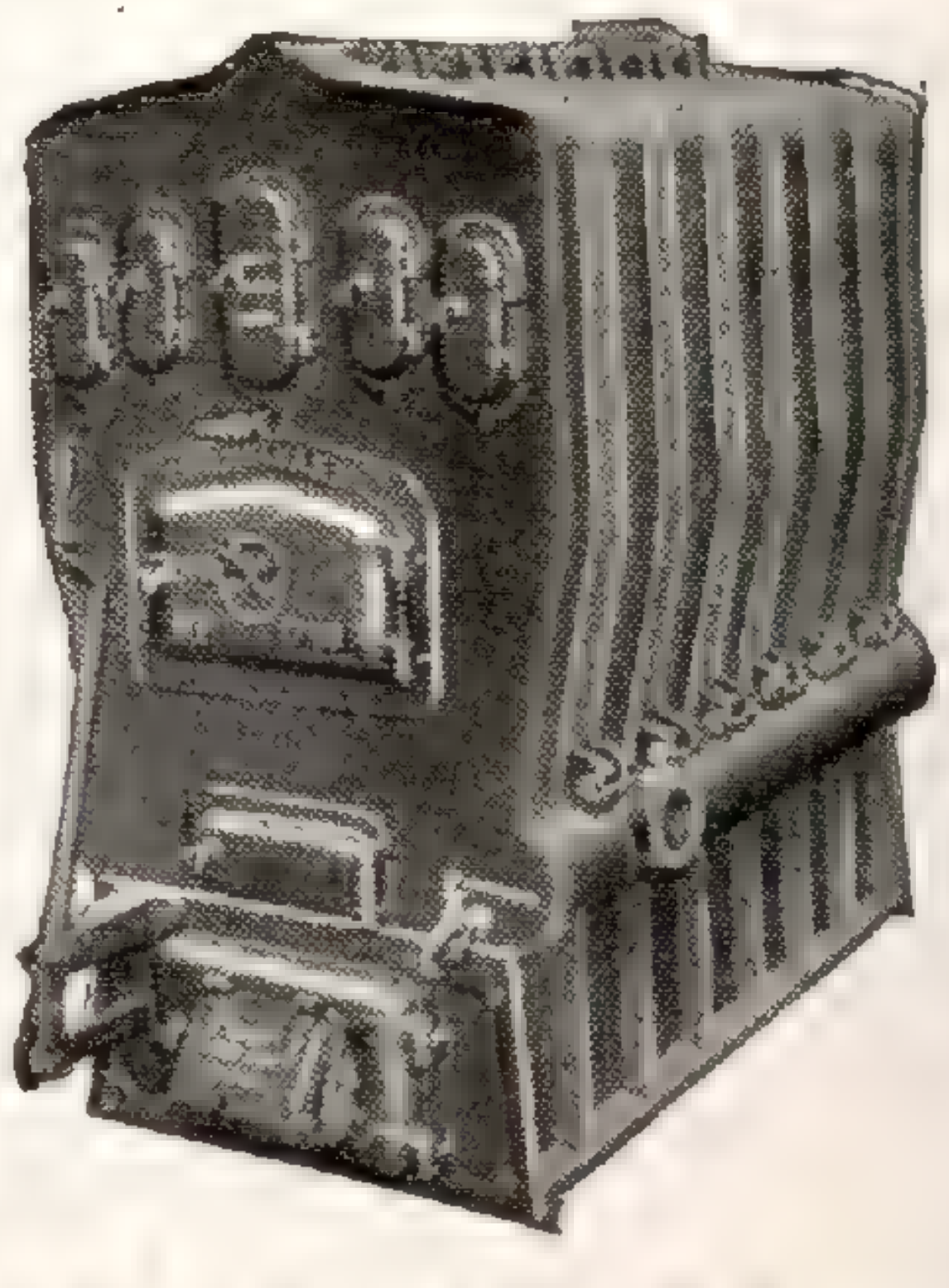

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GARDEN NETTING (best tanned only).— 25 yds. x 8 yds., 50 x 4 yds., 100 x 2 yds, 8s each; 25 x 4 yds., 50 x 2 yds., 100 x 1 yd., 4s. each. All other sizes made at ½d. square yard. EVANS 14, Beresford Road, Lowestoft.

## ANCHUSA ITALICA, DROPMORE VARIETY.

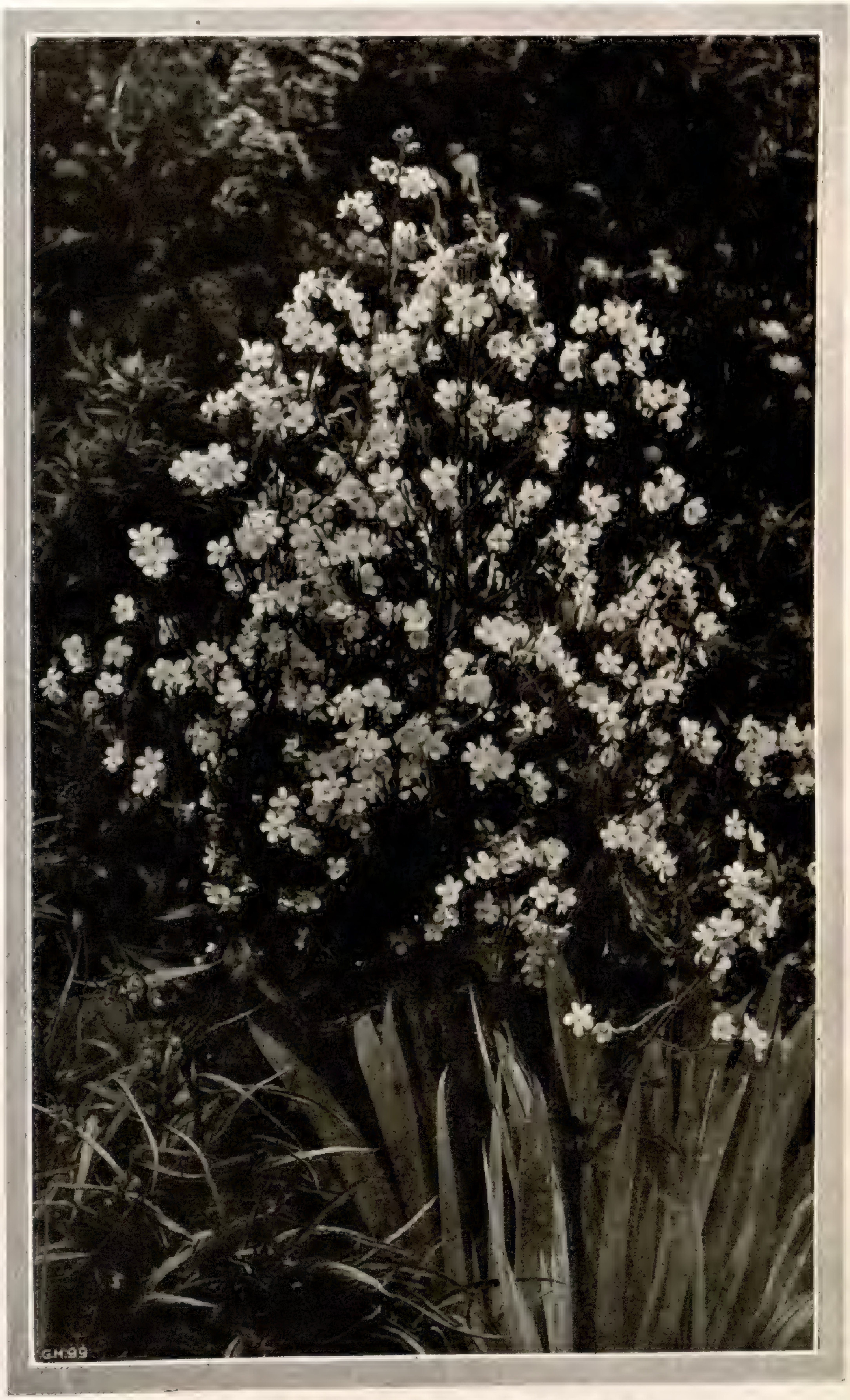
Unsurpassed for effect in the herbaceous border is this splendid introduction, being, indeed, the finest of all the larger blue-flowered perennial plants. This, in the face of the handsome family of the larkspurs or delphiniums, with its countless fine named varieties, may appear a rash statement, but anyone who has seen this Alkanet at its best will admit that it possesses attractive qualities of the very highest order. It is so far superior to the type that it might well pass for a distinct species, but the fact that it does not come true from seed, and that the seedlings have a tendency to produce flowers as small, or nearly as small, as those of the common type, tend to prove that this is its parent.

The flowers of the type are so small that it is not a sufficiently effective plant for the herbaceous border, but the blossoms of the Dropmore variety are rather over an inch across, and are borne in such profusion that the whole plant becomes a sheet of deepest blue. A vigorous example will attain a height of from 6ft. to 7ft., with a diameter nearly as great; and, if not shut in and shaded by other plants, a specimen will be, from the ground level to the topmost shoot, a cloud of blue that invariably attracts universal admiration. Were its flowers short-lived its beauty is so great that it would be welcomed in the border, but it has the additional merit of lasting in bloom for a very lengthened period.

The plants generally commence to flower towards the end of May, and at the close of July still hold sufficient blossom to be attractive. If the shoots that have flowered are cut off the plants will throw up side shoots and bloom again in the autumn. This plant was raised by Mr. Charles Herrin, late head gardener at Dropmore. Curiously enough the Dropmore variety has not proved as hardy as the type. In the South-west the type never dies in the winter, even though totally unprotected, but in many cases, the Dropmore variety has failed to appear again in the spring after dying down. It is therefore advisable to raise a pyramid of leaf-mould over the plants when they die down as a protection during the winter months. In open spaces in the wild garden this anchusa produces a beautiful picture when in full flower, and a group of plants on a sloping lawn are also most effective. For indoor decoration the flower shoots are very valuable, and when cut at a length of four feet or so, they form delightful arrangements in tall glass and other vases.

As has already been mentioned, seedlings of this variety are generally very inferior to their parent. Propagation must therefore be necessarily effected in some other manner, and root cuttings have been proved a successful method. The plants must be lifted in the winter and the roots cut into pieces one inch to two inches in length, and inserted in boxes or pans of very sandy soil. In a few weeks growth will appear, and the little plants may be grown on until ready for planting out. There are many varieties of Anchusa italica superior to the type. Many years ago a fine variety, with larger and brighter flowers of a good blue appeared. This was called amœna. Then came the Dropmore variety, with flowers half as large again, since when other forms named superba and grandiflora have been raised. Opal is lighter in colour than the Dropmore variety, with flowers of the same size, and azurea, a pale blue, owes its introduction to Mr. E. Molyneux.

Wyndham Fitzherbert.



ANCHUSA ITALICA, DROPMORE VARIETY.
A beautiful blue-flowered perennial plant.

## RUBUS SPECTABILIS.

This is the earliest of the many hardy brambles to open its flowers, and it is usual for it to be at its best before the end of April. Belonging to the raspberry section of the genus, it is seen as a clump five to six feet high, made up of numerous bright brown upright stems, which bear green raspberry-like leaves, and showy rosy-purple flowers, the latter appearing from axillary buds. The flowers are followed by golden-coloured fruits, which ripen in early summer. They are medium sized and juicy, and although not put to any use, Loudon recommends them for culinary purposes. A native of Western North America, it is found from the Columbia River southwards to California, from whence it was introduced about eighty years ago.

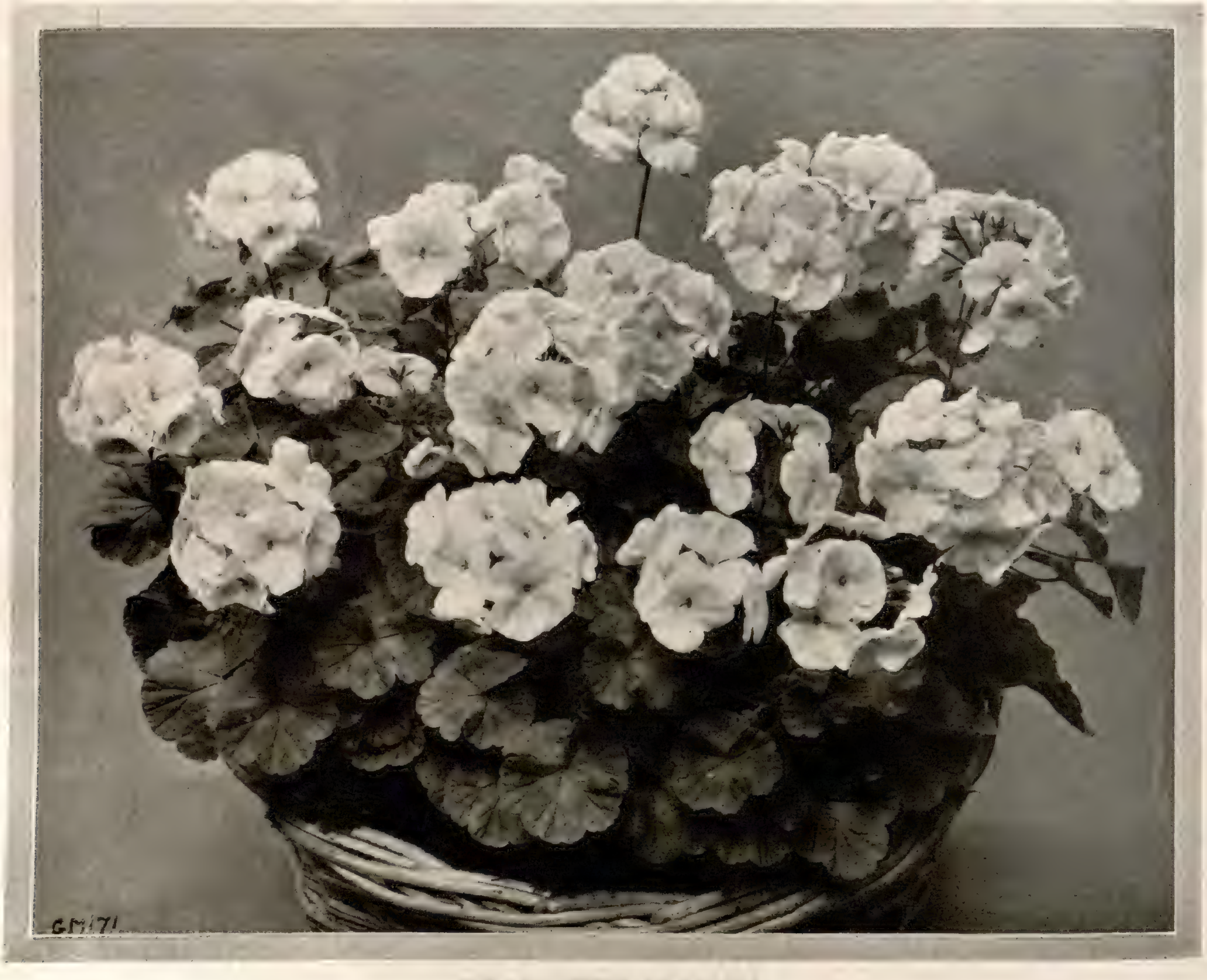
Planted in good soil it gives little trouble other than an annual cutting over in summer to remove the old canes, therefore it is well suited for planting in a shrubbery where the plants have to look after themselves to a large extent. Its free habit of producing suckers fits it for a place in the wild garden, where it can be given ample room for development, whilst it may also be planted, in places where the shade is not very dense, for cover. Propagation is readily effected by division of the clumps during autumn or winter.

W. D.

CHRYSANTHEMUMS.—For full instructions on the Culture of Early-flowering Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of Chrysanthemums for Garden and Greenhouse, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## PELARGONIUM AMBROSIA.

New pelargoniums of special merit for summer bedding, are not raised so frequently now as in former years, when it was more the fashion to provide the summer display of flowers by means of tender subjects than at present. The lack of special demand for new bedding varieties has doubtless been largely responsible for the scarcity of the supply, but there is always room for a first-rate plant, and when the variety Paul Crampel was introduced for bedding it rapidly became popular because of its good habit, fine flowers, large trusses, and rich colouring. A variety that promises to have a long run of popularity is figured in the present issue. It is named Ambrosia, and gained an Award of Merit from the Royal Horticultural Society on April 2, when exhibited by Mr. Philip Ladds, of Swanley Junction. As already indicated in these pages, Ambrosia bears large shapely flowers in good trusses, carrying these well above the deep green, dark-zoned leaves. A basket of plants was exhibited by Mr. Ladds, who is one of the largest growers for market, and every one was short jointed, freely branched, and in every way perfect for the purpose proposed for it. The colour is a distinct and beautiful shade of rose-pink, at once pleasing and effective.



PELARGONIUM AMBROSIA.
A fine new, pink-flowered bedding variety. A.M., R.H.S., April 2. Mr. Philip Ladds, Swanley Junction.

## CARPETING PLANTS.

A number of plants that have a dwarf, prostrate, and spreading habit are of great utility in the garden. Such plants are naturally identified with the rock garden, where they form delightful mounds of greenery and coloured foliage, to say nothing of the wealth of florescence that is produced in many instances in due season. Then they may be utilised to furnish banks and spaces underneath large trees, it being a difficult and laborious task to maintain grass in good condition under such circumstances. A few at least may find a home in the front of the herbaceous border, and thus contribute life and greenery in the dull season.

Further, at this season we are reminded of their value for covering mother earth in the beds and borders devoted to spring-flowering bulbs, and it is no longer necessary to gaze upon bare soil in this part of the garden during the winter, while the carpet plants do much to enhance the beauty of the whole when in blossom. It is superfluous to dwell upon the merits of such well-known and popular plants as the arabises and aubrietias, the saxifrages, sedums, and stonecrops, which are well represented in most gardens.

The New Zealand Burrs, or Acænas, supply us with first-rate material as carpeting plants, and a very attractive species is A. microphylla, with bright red burrs and distinctly pretty foliage. Scarcely less desirable is A. argentea, and both are of wide-spreading habit. The grey foliage of Thymus serpyllum lanuginosus is soft and pleasing, and it is advisable to cultivate the plants in pots, and plunge them in the beds in autumn, returning them to the reserve garden in late spring. Among the alpine pinks, perhaps Dianthus cæsius and D. deltoides are the best for this purpose, and with regard to arenarias, A. montana and A. balearica must be written down as first-rate. That useful old plant, the Creeping Jenny (Lysimachia nummularia) cannot be ignored, while its variety aurea is a brilliant subject, and I noted 5ft. high banks of it on either side of a carriage drive, which presented a solid golden mass, in a western garden last season, and was much impressed with the effect created and the capabilities of the plant in this direction. It is employed in some of the London parks to form a very wide belt around large flower beds, and is, I think, unsurpassed for brilliance. There are many gardens from which at present wholly absent where both the green and golden leaved forms might be used with advantage.

Alyssum serpyllifolius gives us sheets of hairy foliage, while Mentha Requini is responsible for delicate greenery that is very pleasing to the eye. Herniaria glabra and its variety aurea, Linaria hepaticæfolia and pallida extend the list, not forgetting Galax aphylla, with leathery green leaves which assume a crimson shade when placed in the direct sunshine, or Geum montanum, Phlox procumbens, and Megaseas in nearly a score of kinds. Primroses, polyanthuses, daisies, and myosotis also play an important part in the decorative scheme in relation to spring bedding, especially when representing good strains.

Walter H. Aggett.

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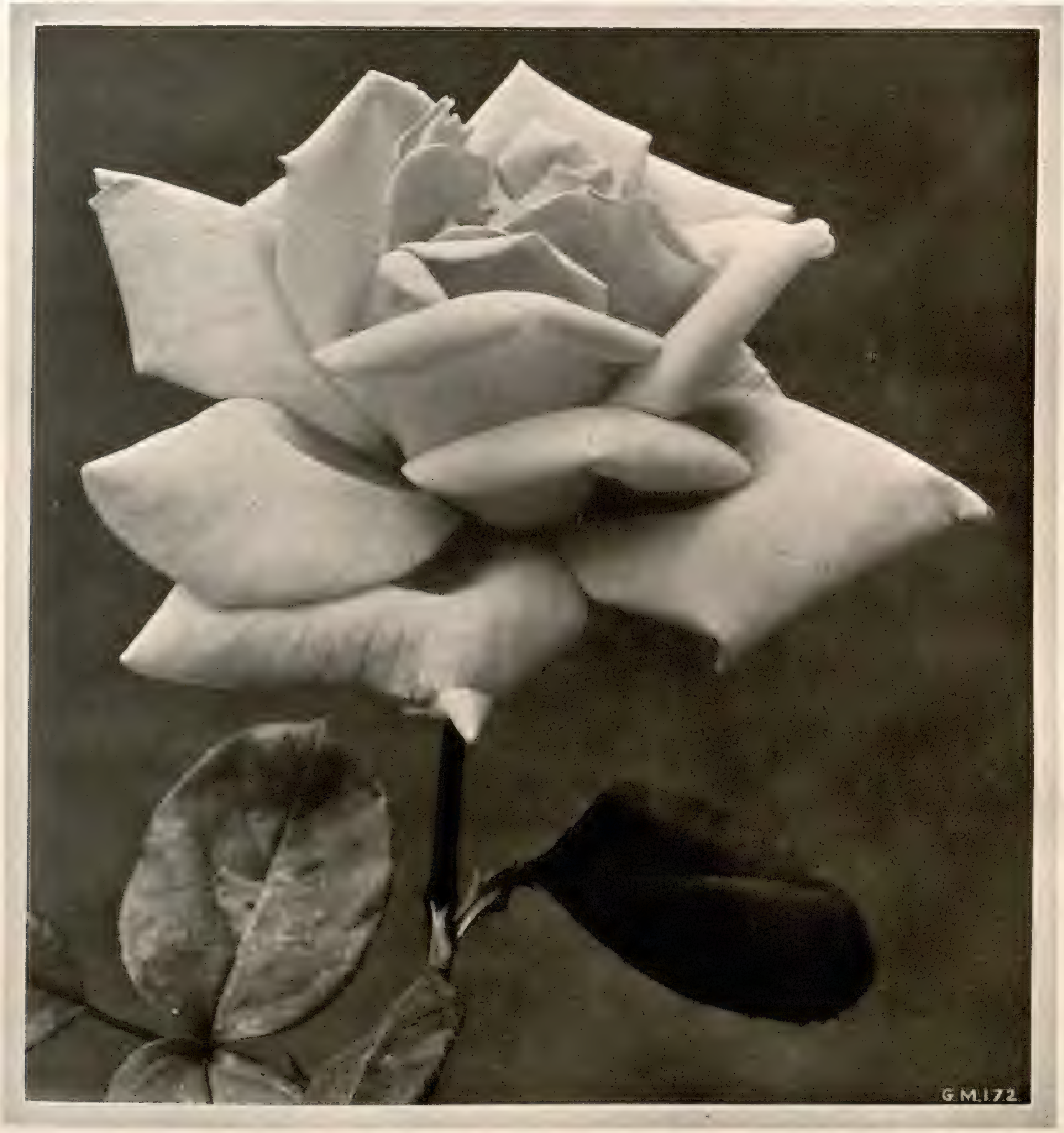
An edition of "SWEET PEAS AND THEIR CULTIVATION," by C. H. Curtis, has been issued for 1912, and consequently this is an up-to-date work on the subject. The price, by post, is 1s. 2d. (cloth, 1s. 9d.) from the Publishers, 148-9, Aldersgate Street, London, E.C.

## NEW ROSE, MRS. C. REED.

This appears to be a most promising new hybrid tea rose, and certainly it is a fine one for forcing. The flowers are of large size, and fine form, full, broad petalled, and extremely beautiful. The colour is creamy-buff, exquisitely suffused with pink, forming an art shade that costumiers are sure to imitate quickly. The flowers are borne on long stout stems, and the foliage suggests that the rose has a good constitution.



NEW H.T. ROSE, MRS. C. REED.
Flowers cream-buff, suffused with pink. A.M., R.H.S., April 2. Messrs. Lowe and Shawyer.

The variety was capitally shown by Messrs. Lowe and Shawyer, Uxbridge, at the Royal Horticultural Hall, on April 2, and was then granted an Award of Merit.

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**Franciscea calycina floribunda.** — This exceedingly floriferous variety of a well-known and popular plant has been shown at several of the Horticultural Society's meetings this year, and has gained many admirers. For the warm greenhouse or stove it is a useful subject, and its lilac-purple flowers are most attractive.—K.

## HARDY PINKS.

These popular old favourites provide a class of plants which are excellent for edging purposes in flower borders. Coming into blossom before the carnations, they are highly appreciated for cutting, as the blooms last well and are deliciously fragrant. They thrive best in a free, open soil, made fairly rich with well-decayed manure. Where soil is heavy, a liberal quantity of old mortar rubble and sand should be added. Although quite hardy, pinks frequently succumb to excessive moisture when planted in heavy, retentive soils.

Undoubtedly the best results are obtained from two years' old plants, as after this age pinks have a tendency to become weak and straggly, and the natural outcome of this is a poor crop of flowers. To maintain a good stock of healthy plants, propagation must be carried out annually, and the best time to accomplish this is immediately the flowers are past. Material suitable for propagation, pipings, or slips is produced by the side growths, which are found growing from the stem below the old flower spike. These should be carefully drawn off, with a downward pull. All the preparation necessary is to trim off the ragged ends caused by removal, and a few of the lower leaves. A bed of sand should be placed in a cold frame, or, if only a few plants are required, a hand-light will suffice, and the cuttings inserted in it. When the cuttings are put in the bed give them a good watering to settle the sand firmly round them. Shading will be necessary for a short time during bright days. Keep the frame close, and damp the cuttings overhead once or twice daily.

Providing the cuttings are in good condition when they are put in, there will be very few failures under this method of propagation. Pure sand is an excellent material for rooting pinks in, but close attention must be afforded to prevent it becoming dry. Should this occur, it will mean a great drawback to the rooting of the cuttings, and many losses will result from the neglect. Of course, slips will root when inserted in the open border, but not so freely as they will under the foregoing method of propagation.

An excellent white for general purposes is Her Majesty, with large and fragrant flowers freely borne; others are Snowflake, Albino, and Mrs. Simkins. The newer Progress, with rosy mauve flowers, is an exceptionally fine variety of vigorous habit, and with strong flower stems. Evelyn, white ground, with pink lacing; Ernest Ladhams, blush, darker centre; Empress of India, dark-red; Lady Craven, red; Marion, rose pink; George White, purple; and Minerva, dark-red, are all good and free-flowering pinks.

Gnaton Gardens. E. C. Pooley.

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## EARLY FLOWERING MAGNOLIAS ON WALLS.

With the exception of Magnolia grandiflora no great prominence is given the members of this genus for the purpose of clothing walls, yet in the colder parts of these islands, at least, no choicer subjects can be conceived for such a purpose, while even in favoured districts they attain a degree of beauty under these conditions that warrants much greater use being made of these than heretofore. Although hardy in most parts of the country, even when planted in the open, it is always necessary to plant in sheltered places, as, owing to the wax-like texture of the petals, the flowers are exceedingly liable to damage from sun scorch following upon frost, or from chafing against the branches during rough winds. It is against accidents such as these that the advantage of wall protection becomes apparent.

Of early-flowering kinds, Magnolia stellata is first to unfold, the flowers opening toward the end of February or early in March, according to the season; the flowers are white, and the strap-like petals reflex at the points, and give the expanded flowers a star-like appearance. It forms a well-rounded bush when grown in the open, and although not quite the best type of wall shrub, it readily adapts itself to these conditions; once well-established, growth becomes fairly rapid, the plant fills up well, and flowers with a freedom that marks it as one of the best of our deciduous flowering shrubs. Like other members of this genus, it resents lime in the soil, succeeding best in a cool deep sandy loam.

Magnolia conspicua (the Yulan) blooms early in April, producing large white scented cup-shaped flowers, that are borne erect on the points of the branches. It is a fast-growing shrub, and flowers so freely as to appear clad in white, and a good specimen constitutes quite a floral triumph in the garden in spring. Magnolia Soulangeana is only a few days later in opening than conspicua; it is regarded as a natural hybrid between the last-named species and obovata, resembling conspicua in the large size of the flowers, but differing in colour, the flowers being heavily suffused with purple externally.

Magnolias succeed best in a fairly rich loamy soil, and in a warm sheltered spot open to the sun. For the early-flowering section a south-west or west aspect is much to be preferred, as there the early frosts are dispelled from the blossoms before the morning sun falls upon them. Magnolias resent disturbance at the roots, so that planting should be regarded as permanent in character, and ample space be provided for lateral development at the time of planting.

T. S.

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## CULTIVATION OF PERPETUAL CARNATIONS BY AMATEURS.

(Continued from page 287.)

### Newly-rooted Plants.

When the cuttings become rooted, gradually harden them off, and put them into two-inch pots, using a compost of equal parts of loam, leaf-soil, and sand, with a few wood ashes added, then place in a light position in a temperature of 50 to 55 deg. Shade them from bright sun for a few days until established, and water carefully, remembering that for the first few days the plants have few roots, and so will not be taking up a quantity of moisture from the soil, which, if kept wet soon becomes sour. A slight spraying overhead might be given with advantage on bright days, but this should always be done early in the morning, so that the foliage will become dry before night. A word of caution might be given as to the manner of removing the cuttings from the sand. Do not pull them up, or most of the lower roots will be broken and left behind in the sand, but take a label or flat piece of wood, and push under the cuttings so as to break the sand, and lift up the cutting with the roots entire. Keep them growing, and as soon as the roots show round the sides of the pots, they should be shifted into 3½in. or 4in. size. For this shift use a compost of three parts of good loam that has been stacked for some time, one of good flaky leaf-soil, and one of old mortar rubble or screenings from a clay or smother fire, and sand with a good sprinkling of wood ashes. Pass the whole through a quarter-inch sieve. Take care at each potting that the stem of the plant is not buried lower than previously, or stem-rot is likely to set in.

Continue to grow on in light, airy position in a house with a temperature of 48 to 55 deg., and in a few weeks they will require another move into their flowering pots, the larger into seven-inch, and the smaller into six-inch pots. Use the same mixture of soil as before, except that it should be coarser, not requiring sifting, and adding a six-inch pot of bone-meal to every barrowful of soil.

In potting it is essential that both the soil and plant should be in the right condition. The soil should be moist, but not so wet that it will stick to the hands. The plant also should not be too wet or too dry. If wet, the ball of the plant is liable to break and injure the roots, and it is impossible to make the new soil properly firm, while, if dry, it is difficult for the water to percolate through the new soil, and so reach the roots, which consequently suffer.

### Stopping the Growths.

Stopping is an important item in the culture of perpetual-flowering carnations, and is performed in the first place to insure a compact bushy habit, and also to increase the size of the plant, and the number of the flowering growths. The first stopping should take place just after the young plants have received their second potting (i.e., into 3½ or 4in. pots), and are about six inches high, and have perhaps six or eight fully-developed leaves. The points of the plants should be pinched out, so as to leave about four joints.

It may appear to the novice to be waste of time to grow a plant for some time and then take away what looks like the best part of it, and he would probably say, "Why not stop earlier," but it is best to exercise patience. The plant has been building up and becoming stronger and more active in root growth, and, what is more important, the whole of the four joints are matured and more likely to break into growth at one time, and so lay the foundation for a larger and better plant than if stopped earlier, when it would probably break into two growths instead of four. It will be seen that the correct method of this first stopping makes all the difference between large and shapely plants and leggy weak specimens. In the same way, if they have been allowed to become pot bound, and then stopped instead of being kept growing and potted as soon as required, and stopped while the roots are in active growth, one could hardly expect such clean growths from the former plants as the latter. From this time, the plants should be attended to once or twice a week, and those growths stopped which are just beginning to run, or are six to eight inches long. Stop back to the matured wood, leaving four to six joints. If not more than one or two growths on the same plant be stopped at the same time, it will help to keep up the perpetual flowering character of the plant, for naturally, if all the shoots were stopped at the same time they would flower at very nearly the same time. The stopping of most of the varieties should be discontinued at the beginning of July, a few of the more freer growing a fortnight or so later.

### Summer Management.

About the beginning of April the plants may be removed into unheated frames and gradually hardened off as the season advances. About a month later they may be stood outdoors on an ash bed, but means should be taken by which they may be easily covered with glass lights, should a rainy period occur.

Nothing will cause carnations to become unhealthy quicker than being continually wet at the roots, and especially is this the case with plants that are not well rooted, which, of course, the carnations would not be at this early stage of their growth. During the summer, watering must be carefully attended to, and when they are well rooted, weak applications of soot water may be given. During warm weather they are much benefited by spraying over with the syringe in the late afternoon, wetting the ashes around them to cause a moist atmosphere. If the amateur cannot attend to his carnations by looking round them two or three times a day during hot weather, it is a good plan to plunge the pots in ashes, so that they will not dry out so quickly. But otherwise I prefer not to plunge, because in our capricious climate we are just as likely to have a dull time, and I think the plants benefit by the air playing around the pots.

Staking and tying should be attended to as soon as becomes necessary. This operation should be begun early, not delayed until the growths begin to bend or they will not make shapely plants. On windy days, the grower will be much happier to know his carnations are safe from being blown about, and some of the best shoots broken. Place a stake in the pots long enough so that it will not want replacing during the plant's growth, for strong-growing varieties this should be 2½ to 3ft. long. There are some patent wire rings on the market, which can be used as substitutes, for tying later, and these if carefully placed, will keep the plants in good shape, and save much labour in tying as well as when cutting the flowers.

(To be continued.)

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**Escallonia Langleyensis.**—One seldom sees this recommended as a wall or screen plant, yet I know of nothing more beautiful for the purpose. If the main branches are secured to a wall, fence, or other support and the minor shoots are allowed to dispose themselves at will, they assume a more or less semi-pendulous habit of growth, and a charming effect is thereby produced. More than this, the clusters of reddish rose flowers are borne in great profusion, and a succession is kept up for some time. Beautiful as many of the escallonias are, I look upon this as one of the best. It is surprising that it has not gained the First Class Certificate of the Royal Horticultural Society, though it was given an Award of Merit some years ago. Escallonia Langleyensis was raised in Messrs. Veitch's nursery at Langley, the parents being E. macrantha and E. philippiana. This last-named is deciduous, while the other parent is evergreen, and as might be expected, the progeny is sub-evergreen in character. There is a particularly fine specimen of this escallonia at Coombe Wood.—S. W.

## AMONG THE ALPINE FLOWERS.

"I have found Violets. April hath come on,
And the cool winds feel softer, and the rain
Falls in the beaded drops of summer time.
You may hear birds at morning."

So sung Nathaniel Willis, the American poet, in speaking of April, and though we have long had violets, we can yet, I think, enter into the spirit of his joyous notes as we wander among the flowers of the time. April is, indeed, one of our most delightful months among the alpine flowers, even though we are as yet but on the threshold of our temple of pleasure. There may yet be hard times in store for our flowers. Winter is not so readily defeated by the approaches of spring. Despite her soft wooing, he is reluctant to yield, and so we enjoy our floral treasures with some slight shadow of fear upon us, lest they may be cut off in the midst of their beauty. Happily, however, our alpine flowers are not so tender or so frail as to be unable to withstand the usual weather of the season, and so we delight in their loveliness, even though the rockeries are white with late hoar frosts on some mornings. These beauties of ours can brave the changes of the seasons wonderfully, and so we take pleasure in their "pleasant delites," as an old writer said. Wherever we turn there are bright flowers, and not only those which usually open at this season are in bloom, but I think there are still a larger number than are wont to remain of the more courageous blossoms which have dared the winter months, and abide with us until the spring flowers call upon us to admire their charms in preference to those of their forerunners. There are many claimants upon our notice, and so we feel at a loss which to select for our appreciation. Many of our finest flowers have been praised before, but we may yet find a number of gems which call for our notice at this time.

### Primula The General.

We have of late been endowed with a wonderful number of new primulas, either novel species or hybrids recently raised. Some of these are lovely things, revealing to us a wide field of beauty, and promising to us and to our successors in gardening many vistas of loveliness. Yet some of the older hybrids and varieties deserve more than a passing notice. The one, called The General, raised, I think, by the late Dr. Stuart, of Chirnside, though I say this subject to correction, is one which I have proved to be a more reliable plant under comparatively simple treatment than almost any other primula that I have cultivated. It is derived from P. ciliata, and is an excellent grower, standing well on the rockery without calling for any special treatment, flowering freely, and giving a goodly number of its deep scarlet flowers. All it requires appear to be a rather open, yet firm soil, with plenty of stones about it, top-dressing in spring, and an occasional division. I am a little surprised that it is still so scarce, and can only say that it deserves the love and admiration of many cultivators of rock plants. These ciliata primulas all like a cool place, and my best plant of The General is well shaded from the forenoon and afternoon sun.

### Primula Bulleyana.

Mr. A. K. Bulley's primula is showing for bloom already, and it seems strange that we shall probably see it in perfection at the great International Horticultural Exhibition, just as we have admired it at the Temple Shows. One has been a little doubtful of some of these Chinese primulas, so far as regards their perennial habit, and hardiness under average conditions. But we need not, I think, have any lingering fear even respecting Primula Bulleyana. It has passed through more than one winter, and is quite at home in a low, damp spot in the rock garden. Unlike the ciliata varieties, it is not a saxatile species, and takes pleasure in moisture, being thus a plant for those who have places in which they can plant this and other moisture-loving primulas. It is truly handsome and vigorous, sending up tall stems of flowers in whorls, and of a fine orange and apricot colour. It is delightful in itself, and it holds in prospect treasures as yet untold, in the shape of its progeny, for the lover of the primula. We may doff our hats to the finder of this fine plant, and thank him for the benison he has bestowed on all lovers of the race.

### Waldsteinia geoides.

Time was when the writer despised the plant known as Waldsteinia geoides, and accounted it as much less worthy than its sister flowers, W. fragarioides and W. trifoliata. But that was ere it was seen in specimen form, and now he has been delighting in one which is of considerable dimensions. It is delightful indeed this April, with its little geum-like leaves and its crowds of small yellow flowers, spangled thickly over the foliage. It conveys a lesson, i.e., not to be too hasty in condemning a plant, seeing that it has been known to the writer for a goodly number of years, has been cultivated in his garden for a considerable time, and has been frequently seen elsewhere. It is certainly not a flower for the worshipper of size and beauty in the individual bloom, but as a rock garden plant, trailing over a low stone in a moist place, it is not by any means to be despised. But it must not be a plant with a dozen or so of flowers, but a specimen which can boast of a hundred or more together. It is a lover of moisture, and, at least, partial shade.

### Other Flowers.

But now we must draw to a close amid a galaxy of beauties which would claim our notice. There are, for example, anemones galore, from the dainty A. vernalis to the many varieties of our wood anemone, Anemone nemorosa, which have found their way here. A. blanda has not yet gone to rest, and Mr. Ingram's dark blue one is still resplendent. A. apennina is yet in full glory; A. ranunculoides, in three varieties, is very bright, with its little starry flowers. As for the nemorosa varieties, who can do justice to them? Snow white, palest blue, opal, purple, deepest blue, with intermediate shades, they are lovely, and fascinate us as we stand and stoop to admire. Their allies, the hepaticas of gardens, still give us a few flowers. Saxifrages are delightful, and the later ones bristle with blooms over their sheets of moss-like verdure, or send from their silvery rosettes little spikes or towering plumes which are rising fast into bloom.

Other primulas than those mentioned are in bloom, or fast making progress. Arabises are sheets of snowy white, and aubrietias, not yet at the zenith of their loveliness, give us masses of colour.

The moss pinks are bristling with buds, and a page almost would be necessary were we to enter fully on the flowers now in flower. In bulbous plants alone there are narcissi, frittilarias, ornithogalums, scillas—italica being now in bloom, with two or three more. Tulips, muscaris, and others with bulbous or tuberous roots bear company with the many beauties of the time.

Truly "the winter of our discontent" is past, and we are in the glorious, yet sweet and attractive, spring—the Elysian period of the lover of the alpine flowers.

S. Arnott.

## THYMES IN GARDEN DECORATION.

The use of old flag-stone paths and dry walls in gardens, so much in favour at present, brings into prominence certain plants that otherwise would have but a limited use. Of the highest utility in this direction are the various species and varieties of thymes, many of which have the merit of being exceedingly profuse and beautiful when in flower, and the majority are among the most delectable of scented plants, the fragrance of Thymus Serpyllum lanuginosus being remarkable for its elusive character, as it is difficult to inhale by direct contact, yet when diffused in the surrounding air, it is both powerful, and one of the most exclusive of perfumes, appealing to every taste.

Among thymes we recognise two distinct types of growths. The stems of T. Serpyllum assume a decumbent habit, while those of T. vulgaris grow erect; the former has an extended use for planting in the joints of paved walks as the prostrate stems are not materially damaged by being trodden upon, while an occasional plant of the erect type, by giving contrast, will increase the general effect.

The best known creeping thyme is T. Serpyllum, a native plant that grows wild in chalk districts, on sunny banks and similar places; of this species there are several distinct varieties worthy of a place in the garden scheme, such as I have suggested, or for arid sunny spots on the rock garden. T. S. albus is a pure white flowered form, and is easily distinguished in winter and spring by the vivid, bright green tint of stems and leaves. T. S. carnosus is slightly hirsute on the leaves, which have a slight grey tint, while the flowers are a bright shade of pale magenta. T. S. coccineus is a rich crimson flowered variety, and is readily recognised in winter by the dark purple tint of the leaves. There is also a form sold as grandiflora, much larger in its parts than any of these, but equally profuse in flowering, the colour approaching that of T. S. carnosus. T. S. lanuginosus is grown entirely for the sake of its leaves, which are densely hoary, the plant forming a luxuriant mat of grey leafage that is most delicately scented. T. S. citriodorus is the Lemon-scented thyme, of which there is a golden-leaved form, and also a form in which the leaves are variegated white and green; the latter retains its colour at all seasons, being very bright in positions where it obtains plenty of sun; all the varieties of citriodorus grow erect.

Thymus Chamædrys is a distinct species that gives several desirable varieties of prostrate growth; T. C. nummularius is one of the freest growth, with flowers of a light purple; T. C. montanus is a refined variety, with much smaller foliage than the last-named; this variety succeeds best in a dry stone wall, with the interstices filled with soil; otherwise, in flat planting it is liable to die off from damp in winter; the habit of growth and rich shade of green render it very distinct.

Thymus villosus, regarded as a species, is a dense woolly-leaved plant, much in the way of T. S. lanuginosus, but lacking the refined perfume of the last-named; the stems are quite prostrate, and the plant is vigorous and a reliable grower in any position. All the varieties of thymes are propagated by division or cuttings; the latter root readily at any season if placed in a close frame, while division is best carried out in spring or autumn.

Thomas Smith.

Coombe Court Gardens.

## THE OLD-FASHIONED GARDEN.

A garden of old-fashioned flowers may be made either according to a regular or an informal plan, but probably the first method gives most pleasure if it can be carried out on a fairly large scale, the second being better suited to the small plot that can be overseen at a glance. A round lawn is an attractive centrepiece for the formal garden; it should be surrounded by borders that would make the whole into a square if continued on all sides; the necessary exits and entrances from the lawn may be four in number, one at each side, and had better be also of turf, leading to a wide gravel walk, that, in its turn, is flanked by a four-feet to six-feet border. If there is space another gravel path may follow this border, flanked by a border ending in a trim hedge of evergreens.

Here we have the foundation for a successful regular old-fashioned garden; by the time a sundial is stationed in the centre of the lawn, and the four grass paths are each spanned by a rose and jasmine-covered arch, the scene will be already attractive. In the wide gravel walk, opposite each grass path, may stand a round or square green-painted tub containing a variety of subjects, according to choice. Heliotropes and chrysanthemums, rhododendrons, Madonna lilies, moss roses, Michaelmas daisies, snapdragons, phloxes, clove carnations, all may be successfully cultivated in sufficiently deep and well-drained receptacles.

The border between the two paths should contain a massing of all kinds of plants. A Maiden's Blush rose bush can spring out of a group of polyanthuses, lavender may be surrounded by giant pansies, and the old Cabbage rose with Lilium candidum by its side and hen-and-chicken daisies in front will always please. Here should be tree lupins, as well as others, congregations of rich-tinted sweet williams, some of the older kinds of dahlias, striped carnations, wallflowers and stocks in abundance, with asters of the ancient types, not the modern Comet and Ostrich Plume varieties. French honeysuckle should not be forgotten, nor lychnises and pentstemons, while pinks must be in great evidence.

Where a shady bit of border exists violets can blossom in profusion, with St. John's wort, honesty, Solomon's seal, woodruff, London pride, and ferns. Occupants for the border by the hedge should include day lilies, the cottager's orange lily, monkshood, single hollyhocks, and phloxes.

The informal old-fashioned garden ought to be so planted that the special trees and shrubs make obstacles to the view, and create "spots of mystery" beyond them. A thicket of briar roses, a bit of hedge formed of everlasting peas, a bower of honeysuckle and sweet briar mingled, will effect this, so, too, will avenues of hollyhocks, and a hedge of lavender.

A paved walk, with a wide border, hedge-backed on either side, will make a charming old-fashioned garden within the garden proper. It should lead to an arbour and seat at the end, and may be spanned by an archway or two. A round arch of ivy is a fitting entrance to it. The borders should be edged with double daisies, pansies, pinks, polyanthuses, etc. All the tall plants ought to be kept well to the back, as the grouping of high perennials or annuals in a foreground is of distinctly modern origin.

The gardener who makes a feature of an old-world rose garden will be helping to preserve among us the dear ancient varieties that are in danger of being discarded.

M. H.

## A QUEER FERN.

In all classes of vegetation there are very queer or curious forms to be found, some specific and others varietal; but it is fairly certain that the queer forms assumed by some of our native hardy ferns entitle them to rank amongst the most curious of all. A recent find near Woody Bay, in North Devon, suggests these notes.

I visited that paradise of ferns which exists under the shelter of the umbrageous woods which clothe the slopes leading downward to the sea in that beautiful locality. On one of the more exposed declivities, covered by oak trees stunted somewhat by their direct exposure to the wind, I found the soil composed of largish fragments of stone, more or less buried in deposits of oakleaf-mould, the accumulated result of centuries of autumnal sheddings. The trees affording shade of not too dense a nature, this soil had become the home of innumerable large plants of the hart's-tongue fern, which extended in all directions as far as the eye could penetrate the recesses of the wood. The large majority of these, owing to the stony character of the soil, were isolated plants, and consequently well developed and of large size.

For a long time, though examination was so easy, I could not find the slightest abnormality, every frond was of perfectly normal outline, varying only to the extent of small differences in width or a tendency to slight waviness or frilling of the usually flat, strap-like fronds. Suddenly, however, my eye caught sight of a frond with divided ends, on the lines of the common lobatum, or forked type. I noticed, however, that, instead of tapering to the usual blunt point, each division was quite round, and on nearer examination I found all the frond tips so characterised, some fronds dividing into two near the top, and others being simple. I found this to be due to the fact that in every case the midrib, which normally continues to the very point, suddenly stopped short, the veins then radiating from it, and carrying the leaf-tissue with them in such a way as to form a perfectly semicircular finial; while the long sausage-shaped dual spore heaps, hitherto arranged herring-bone fashion on each side of the midrib, radiated at regular intervals in conformity, exactly like the figures of the upper half of a clock dial.

As an undivided, but otherwise similar, form is already in collections named by me "radiosorum," in allusion to this peculiarity, I have named this new find "S. v. radiosorum lobatum," to indicate also the secondary character. It is, of course, impossible to imagine the cause of such a singular and thorough alteration of structure. The plant was, as I have indicated, one of many thousands, all growing under identical environmental conditions; there was nothing to check development; it was perfectly healthy and robust; and yet, in each and every frond, the unrolling midrib altered its mind, as it were, when nearing the end of its task, and, instead of forming a normal tip to the frond, finished it up in this symmetrical and neat fashion.

This type must be allocated to what is known as the truncate section of the hart's-tongue variants, which embraces a number of distinct forms, all characterised by a sudden stoppage of the midrib development. Usually, however, it continues externally to the frond for a short distance, forming a thorn-like projection, constituting the "cornutum" or horned section, this horn protruding either from the front or the back of the abbreviated frond tip. Or it may spring from the centre or elsewhere of a sort of pocket (peraferens); and, if conjoined, as has been done, by crossing with branching forms, such pockets and thorns may be produced at the terminals of each division, the midribs obeying, as it were, the law of the varietal section concerned, and invariably stopping short of forming a normal tip. Where the normally round basal lobes of the frond are extended so as to show independent midribs, these, too, will stop and form basal pockets (triperaferens).

This trick, if we may so term it, curious as it is, since it cannot possibly be imputed to any environmental check upon growth, is by no means peculiar to the hart's-tongue, though in that species it assumes many forms. It is also seen in Lastrea filix mas, L. montana (quite frequently in the wild state), Polypodium vulgare (in irregular lines), P. hexagonopterum, Athyricum filix foemina (excurrens), Polystichum angulare, and Osmunda regalis; and, outside the ferns, we see it in the leaves of the tulip tree.

Chas. T. Druery, V.M.H., F.L.S.

## POND-WEED AND COPPER SULPHATE.

A frequent application for advice made to Kew is from correspondents whose ponds or lakes are infested during summer by the various forms of algæ or "weed," found in British waters. Everyone, writes "W. J. B.," in the "Kew Bulletin," knows the unpleasant nature of the scum-like and other growths that are nearly always seen at that season on still, or nearly still, water. They not only frequently destroy the beauty of ponds entirely for a time, but are offensive to the nostrils as well. A good deal of this annoyance may be avoided by the use of copper sulphate. Owing to the water of the Lake at Kew being pumped for garden purposes (including the watering of ferns and other low types of vegetation) it is considered inadvisable to use copper sulphate there, but it is employed with advantage in the smaller ponds. The proportion used is one part copper sulphate to anywhere from 750,000 to 1,000,000 parts of water. It is first necessary to ascertain, approximately at least, the cubic contents of the water to be treated. The sulphate of copper should be obtained in a pulverised state, placed in a porous bag, and dragged through the water until dissolved. It does not matter how the sulphate is distributed so long as it is done thoroughly. It may be dissolved previously and sprayed evenly over the surface, provided no water-lilies or other aquatic phanerogams are in growth. It may be mentioned that a cubic foot of water weighs about 62¼lb.

During the last two summers a striking example of the effective use of copper sulphate has been provided in St. James's Park. Previously, it had been a costly and troublesome matter to keep the water there presentable in hot weather by employing men in boats to remove the weed with rakes, etc. The copper sulphate treatment was adopted, with the result, we learn, that at a much less expenditure in money and labour it can now be kept practically free from weed.

A fact of considerable interest has also been reported by the Superintendent. The ponds are cleaned out triennially and the surplus fish disposed of. In recent years it has been found that many of the fish were badly attacked by fungus, so much so that it became doubtful whether it was advisable to transfer them to other waters. We learn that at the last cleaning out the fish were quite free from fungoid disease and remarkably clean and silvery. This is of especial interest because one of the doubtful matters about the use of copper sulphate in water was its effect on fish. It has been found in America that certain delicate species were affected, but usually when a considerably stronger application was used than that mentioned above.

## LEEKS.

The leek (Allium porrum) is said to have been cultivated in this country prior to 1562. It is a hardy biennial plant, thought to be a native of Switzerland, and introduced into this country about the middle of the sixteenth century. There is no doubt that one would have some difficulty in naming many more useful vegetables than the leek. The utility of this esculent, boiled, stewed, or in soup, is not at all under-estimated by the Welsh and Scotch; but in the South it is not so highly esteemed. If leeks are boiled, and the first water thrown away just before they are quite cooked, they are rendered as mild as a Spanish onion. Boiled in salt and water until they are tender, and eaten with melted butter, like asparagus or seakale, the water being changed when the leeks are half-cooked, the leek is a most excellent vegetable. When used in soup, leeks should be boiled, cut into two-inch lengths, and used plentifully by stewing them afterwards with the soup itself.

In the districts around Edinburgh the leek is cultivated on a comparatively large scale. It is said that, of all vegetables grown for market, leeks have the principal claim on the Edinburgh market gardener's attention, as the season commences at the end of August, and continues until May—eight clear months without intermission. There is no need to wonder, therefore, why every effort is put forth to keep up a continuous supply. In fact, it was once remarked by a Scottish writer that leeks are the only vegetable that the foreigners—Englishmen and Irishmen as well—left them to have the pleasure to supply, as none came from beyond their own country to their markets.

To the shopkeeper leeks are useful, for they present an admirable appearance for shop display, especially when extra fine, long, even, and well-blanched stems can be secured. For market purposes leeks are almost invariably bunched, the size of the bundle varying according to the demand. It is also customary to make up large bunches of second-grade produce, somewhat after the style of the large carrot bunch, with a slightly spreading base; these bunches are tied with soft willows. Leeks are decidedly one of the most profitable crops that the market gardener can turn his attention to. When grown under an intensive system of culture, they usually average from between 1½ to 2 or 3lb. per root, and are of excellent quality. Such leeks as these find a ready sale, wholesale, at about 6d. per dozen, and would probably fetch more if sent to distant markets.

To cultivate leeks successfully, a light, rich soil and an open situation are preferable. Where it is desired to secure first-class specimens, such as would be worthy of a prize if exhibited, the plan usually adopted is to take out a trench, after the fashion of preparing the ground for celery. This trench need not be more than two feet deep and about 18in. wide for a single row of leeks, and sufficient nourishment can be provided by forking in a liberal supply of well-decomposed farmyard manure with the bottom spit. Of course, exhibition culture will entail a certain amount of extra care and attention, but the ordinary cultivation of the leek is most simple.

Leeks are sown during the first or second week in March for ordinary purposes, and the seed-bed should be well enriched with plant food, and fully exposed in a warm, open situation. Further, care must be taken not to make the sowings too thick, for the plants will grow much better and stronger if they are given plenty of room during their early stages of growth. Where plants are required for exhibition purposes sowings should be made from the middle to the end of January, and before planting out the bottom of the trench should be forked up, and a portion of the better soil removed in making the trench spread over it, the whole being trodden down firm when dry. To secure the best individual specimens, some growers prefer to excavate square-bottomed trenches; while another plan is to bore large holes in the ground with a dibble, inserting the plants therein, and filling up the whole with some specially prepared compost.

For exhibition purposes leeks are generally blanched by means of stout brown-paper collars placed around each stem. These can be purchased, or a useful substitute can be found in the cardboard tubes used for despatching plans, etc., through the post. The latter can be cut to any length required, and allow the stem and upper leaves of the plant to remain free. As the plant increases in length, the soil should be carefully drawn up around the base, and the paper collar raised. Leeks will usually be fully blanched by the middle of July, but the stems will subsequently continue to increase in diameter.

PETER BARR MEMORIAL CUP.
Presented to the Rev. G. H. Engleheart, V.M.H., at the R.H.S. Daffodil Show on Tuesday.

Liquid manure is largely used in the production of exhibition leeks, but if this is not available its place can well be taken by any of the well-known fertilising compounds on the market. If ordinary liquid manure from a stable or farmyard is used, it must be diluted with at least five parts of water, and should not be given more than twice a week during the growing period. Where intended for marketing purposes, the stems cannot very well be too long or too thick, for the gross bulk of blanched portion is the most edible part of the vegetable.

J. C. Newsham.

Old Basing.

## WORK FOR THE WEEK.

### CONSERVATORY AND GREENHOUSE.

CHRYSANTHEMUMS.—Plants intended for the production of big blooms will now be ready for a shift into 6-inch pots. The compost for chrysanthemums should be at all times of the very best quality, and should consist at this potting of two parts fibrous loam, one part decayed farmyard manure, a sprinkling of soot, a 32-pot full of wood ashes to each barrow-load of compost, and plenty of coarse sand, the whole being passed through a coarse sieve. The plants should be watered a couple of hours before they are repotted to ensure the soil being moist. After potting they should be placed in a cold frame on an ash base, and when they begin to root freely they must have plenty of air, eventually pulling the lights off on all favourable occasions. In some establishments large blooms are no longer favoured, and attention is devoted to producing large quantities of flowers for cutting. For house and table decoration nothing can be more useful and give a better effect than the single varieties grown naturally. These need good culture, and it is best to pinch the tops out about a fortnight before each potting to ensure a bushy growth. Where large quantities of bloom have to be produced throughout the winter it will, perhaps, be as well to give the method we practise here. We rely on a few of the best, and grow a quantity of each. The cuttings are rooted in boxes, about 200 cuttings in each, and placed in cold frames. The first week in May they are planted out on a long border, two feet from row to row, and 18 inches from plant to plant. They are pinched frequently until the middle of August. Early in October they are lifted with a little soil, if possible, but this does not matter much, and planted thickly in a long row of slightly heated pits that have been sunk so that the growths are a foot from the glass. If they are thoroughly sprayed over for a few days they will be nothing the worse for the shift. The varieties we grow like this are Edith Pagram, Shasta, Mary Richardson, Mary Anderson, Western King, Niveus, Source d'Or, F. S. Vallis, and Church Brothers' White.

WINTER-FLOWERING CARNATIONS.—With the increased light the growths have strengthened, and the flower stems will be self-supporting. The flowers are now of much better quality than those opening earlier in this year. Young plants rooted in December or early in the new year, and potted into 60's when rooted, will have filled their pots, and are ready for another shift. These have been pinched, and are breaking freely. They should be shifted into 5-inch pots and shaded slightly for a few days. The temperature of the carnation houses should be kept about 60 deg. by day and 50 to 55 deg. at night; give abundance of air at all times.

PROPAGATION. — There will be abundance of work in this direction, and almost anything will root freely now. A propagating frame in a warm house is absolutely necessary. Salvia splendens, S. Pitcheri, S. rutilans, Coleus thyrsoideus, fuchsias, brugmansias, bougainvilleas, eupatoriums, Begonia Gloire de Lorraine, Streptosolon Jamesoni, bouvardias, and many more subjects will all require to be rooted now. Place four cuttings in a three-inch pot, and when the cuttings are ready for potting the ball of soil can be broken equally in four parts, thus keeping the roots of the four plants intact. A sandy compost will suit most cuttings.

GENERAL REMARKS. — Lilies of the speciosum section, such as L. rubrum, L. album, and L. Melpomene, with L. auratum, will now need top-dressing as they are emitting roots freely from the stems. Arum lilies as they pass out of flower should be stood outside in a sheltered spot preparatory to planting out. Crinum Moorei and C.

Powelli have commenced to grow, and should have plenty of water. Keep all dead flower spikes and leaves removed, and tidy up and rearrange the flowering plants frequently.—Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

APRICOTS.—The young fruits are rapidly swelling, and a preliminary thinning is advisable where a good set has occurred. As there is a considerable difference in the size of the fruits of various varieties, some special knowledge is necessary to carry out the operation of thinning with satisfactory results. With such a small-fruited variety as Breda, the fruits may be left more closely together than would be advisable for the larger fruiting Large Early Montgamet, Hemskirk, and Grosse Peche. Thinning should be carried out by degrees, first removing those fruits which are found growing between the wall and the branches, and where they have set in pairs take away the smaller fruit. A weekly examination will enable the operator to note those fruits likely to take the lead, and a further reduction of the smaller fruits can be made. Rather more fruits should be left than will be required for a full crop until stoning is finished, when the final thinning should take place. The usual distance apart allowed for the larger fruits is eight inches, small fruits (as Breda) five inches apart. The strength and vigour of the tree should be considered; vigorous trees may be cropped more heavily than those which are not so robust, but it is far better to have a medium crop of fine fruits than a heavy crop of small, tasteless fruits.

DISBUDDING.—The extension branches of young trees and those of older trees laid in to fill gaps should have all growths at the back removed, also all foreright shoots not required to form spurs, laying in only sufficient of the young growths required to fill the allotted spaces. Frequently it will be found that old-established spurs have more growths than are necessary, and these, if allowed to grow, crowd each other, and consequently air and sunlight are excluded, preventing proper development of fruit buds for the ensuing season. It is, therefore, advisable to thin out the extra growths, so that each one left will have space to develop its leaves and permit air and light to have access for the ripening of the young wood. Stop all shoots left for spurs at the third or fourth leaf, and any subsequent growth to one leaf. The thinning of the fruits and disbudding may be done at one and the same time. In laying in young branches avoid overcrowding. Sufficient space must be allowed for the future development of fruit-bearing spurs. Fortunately, the apricot is not troubled with many insect pests; at times, however, the apricot moth attacks the young foliage, and this becomes apparent by the leaves curling up; by pressing the curled-up leaves between the finger and thumb, the caterpillar is destroyed. All exposed portions of main branches and the stem should be covered with sacking as a protection from sun-heat.

GRAFTED TREES.—As we are experiencing a period of drying winds, take care that the clay does not become dry, crack, and fall off; a little moss tied over the clay and moistened occasionally will prevent damage.

PLANTING-OUT FORCED STRAWBERRY PLANTS.—By planting these at the earliest suitable opportunity, it is possible to obtain a fair crop of fruits quite late in the season. Plants of Royal Sovereign, carefully hardened off and attended to in the way of watering and syringing will usually throw up flower spikes during the late summer months, and by affording a slight protection it is possible to have ripe fruits during October and even into November. Later batches of forced plants are most suitable to plant out for next season's supply. During the hardening-off process, the plants should have careful attention for too often, after fruiting is over, they are removed to some out-of-the-way corner and neglected.—W. Messenger, Woolverstone Park Gardens.

## THE ORCHID HOUSES.

ONCIDIUMS.—The oncidiums constitute one of the largest families of orchids, and the genus is also an important one from a garden point of view; for there are no other inexpensive orchids that surpass them in beauty. Oncidiums are represented among warm, intermediate, and cool orchids, but by far the largest portion can be cultivated in a cool intermediate house without any great difficulty, though some require great care to maintain them in a robust condition, as the large, branching, many-flowered inflorescences often enfeeble the plants to such an extent that it seems almost useless to try to revive them. With the commoner kinds this is not of much consequence, as plants are imported annually in such quantities that fresh specimens can be purchased at a very small cost. In the case of special sorts it is not advisable to overtax them, therefore the flower-spikes should be removed before they develop each alternate year. The spring and early summer-flowering oncidiums, such as O. Marshallianum, O. concolor, O. cucutatum, and O. microchilum, are developing their flower-spikes in the cool intermediate house. All these require a moderate supply of moisture at the roots. O. varicosum and other late summer and autumn-flowering species, such as O. Forbesi, O. crispum, O. dasytyle, O. tigrinum, O. Gardneri, and O. Mantini, are now starting into growth after their long rest since flowering last season. New roots soon push forth from the base of the young growths, and this is the best possible time to afford new rooting material to any that may require it. For dwarf-habited and compact growing oncidiums, shallow pans are the most suitable receptables, and these should be provided with a fair amount of drainage. Use the same kind of compost as for odontoglossums, but add a more liberal supply of half-decayed oak leaves. Potting should be moderately firm. These oncidiums are best grown close up to the roof glass in a cool intermediate house where they can receive plenty of fresh air. During the early stages of growth water must be applied with care, as an excess would cause the new growths to damp off, but when the young roots have established themselves in the new compost they must have an abundant supply both at the roots and in the atmosphere. Spraying and syringing should be practised on fine days, as a dry atmosphere favours the spread of thrips and red spider, both serious pests.

MILTONIA VEXILLARIA is now pushing up its spikes, and the young pseudo-bulbs should be making roots from their base. They must not be allowed to suffer for want of water at the roots. The present is a favourable time to remove the plants from the quarters they have occupied all the winter, into a cool intermediate house, or the warm end of the cool house, where the flowers will develop with much more substance and a finer colour than they would do in a higher temperature. Removing them also gives one the opportunity of thoroughly cleansing them, and at the same time liberating any leaves that may adhere together, as they often do at this season. Woodlice are very fond of the young roots, and if not diligently sought after and killed, they will destroy every root immediately it becomes visible. These pests may be trapped by laying some pieces of vegetable, such as potato, turnip, or carrot, with the centre scooped out, on the surface of the compost. M. vexillaria delights in an even temperature the whole year round, and, when in full growth, an abundant supply of moisture, both at the roots and in the atmosphere. Yellow thrip is very persistent in attacking this orchid, especially in a high temperature, and every means must be taken to keep it in subjection.—J. T. Barker, The West Hill Gardens.

## THE KITCHEN GARDEN.

ONIONS.—Those that were raised early in the year should now be sufficiently hardened to plant in the beds which have been prepared for their reception. The surface should be pricked over to create a fine tilth; over this scatter a dressing of soot and burnt garden refuse, then tread the plot over level, and plant the onions in lines eighteen inches apart, and fifteen inches from plant to plant. Lift the onions carefully from the boxes, and plant firmly. If dry weather prevails water the plants at the time of planting, and give regular sprinklings of water each afternoon should hot weather continue. Regular hoeings and occasional dustings of soot will be found very beneficial.

LEEKS.—Seedlings that are nicely established in boxes, and pots, must now be planted in well prepared trenches, providing the plants are well hardened off. If there is any doubt about this, delay the operation for ten days. Prepare trenches as for celery, eighteen inches in depth; add a good layer of decayed farmyard manure, and place thereon old marrow bed soil or old light potting soil, with some burnt garden refuse, especially if the soil is retentive. Plant very carefully in single lines at one foot apart, water in, and spray during favourable weather. Good varieties are Prizetaker, Lyon, and International.

PEAS.—The various sowings made in boxes will now need transplanting to their permanent lines. Prepare drills one foot in width, finishing the surface two inches below the surrounding level, to allow for watering during dry weather, and afford shelter from cold, cutting winds. Yew or spruce boughs are also very helpful to ward off frosts and cold winds if placed on the north and east sides. Plant in double lines as for broad beans, and water in if dry. To maintain a constant supply, sow quantities according to the demands at intervals of ten days, in prepared drills. Duke of Albany, Criterion, Quite Content, Senator, and Superlative are excellent varieties for main-crop.

SALSAFY AND SCORZONERA.—These two vegetables are becoming more popular each year, and are much sought after during the early spring months. Well-prepared light soil suits their needs best. If sown now very few will run to flower as earlier sowings are apt to do. Sow the seeds in drills eighteen inches apart, and scatter a quantity of old potting soil over the seeds before filling in the drill.

CAULIFLOWERS.—Plant further batches of later sown plants on well-tilled ground, water in, and ward off slugs with finely-sifted cinder ashes. Make another sowing of the fine autumn varieties, and prick off immediately they are large enough to handle.

CARDOONS.—Sow seeds singly in small pots in gentle heat, and transfer the plants to trenches prepared as for celery during May, or sow the seeds in drills at the end of April, and thin out the seedlings to eighteen inches apart when large enough.

VEGETABLE MARROWS.—Sow a good batch of the favourite varieties, putting one seed in each large 60-sized pot; place in gentle heat, duly harden off, and transplant when all danger of frost is past. Attend to those now growing in frames. Keep them well supplied with water, and ply the syringe regularly about them to promote quick growth. Fertilise the flowers and stop leading growths.

CUCUMBERS.—Sow a good strain of the old Telegraph for placing in frames and pits as room becomes available by the removal of bedding plants. Make sowings of various herbs, turnip, spinach, lettuces, and a few French beans.—Geo. Elwood, Swanmore Park Gardens.

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**Allium neapolitanum.**—An easily-grown bulb that might with advantage have its merits more generally recognised than they are is this member of the onion family. Bulbs of it are cheap, and six or eight together in a pot five inches in diameter form effective little masses, which are extremely useful for greenhouse decoration. It is also very pretty grown in a suspended basket.—W. T.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

There were more exhibits than usual at the Royal Horticultural Hall on the occasion of the fortnightly meeting held on April 16 and 17. It is curiously true that, whenever there is a two-day show the applications for space are always larger and more numerous than for an ordinary meeting. On this date the first competitive daffodil show was held, and, though not so extensive or fine as would have been the case in an ordinary season, the promoters were satisfied with the result of this first attempt, remembering that daffodils are fully a fortnight earlier than usual.

Orchids were fewer than usual, but daffodils, forced flowering shrubs, auriculas, the inevitable carnations, and a host of rock garden exhibits, combined to fill all the available space. A big crowd thronged the hall all through the day until about 5,30; apparently few remembered that the show remained open until 8 p.m., for beyond attendants, few people were present at 7 o'clock.

### FLORAL COMMITTEE.

A magnificent group of forced shrubs from Messrs. Wm. Cutbush and Son, Highgate, N., was very beautiful. Lilacs, mollis azaleas, laburnums, graceful wistarias, Prunus triloba, Azalea Yodogama, A. Hinodigiri, the splendid Rhododendron Pink Pearl, cytisuses, hydrangeas, were all most tastefully arranged right opposite the entrance, and constituted the largest and one of the most attractive of the many fine contributions in the hall. Besides their big group of forced shrubs Messrs. W. Cutbush and Son contributed an exhibit of greenhouse plants, and a handsome lot of perpetual carnations, these latter including fine flowers of Mrs. W. Ward, Countess of Onslow, Lady Meyer, the buff and scarlet Mrs. Waldorf Astor, Lord Rothschild, and Mikado.

Rhododendron Kewensis, R. arboreum, R. grande, R. campanulatum, R. Aucklandi rubrum, and many other splendid species, varieties and hybrids, with other rare hardy flowers, were all shown well by Mr. G. Reuthe, Keston, Kent. The rhododendrons displayed by Messrs. R. Gill and Sons, Falmouth, excited admiration, especially the giant trusses of R. Falconeri, R. Broughtoni aurea, R. Aucklandi, and the brilliant R. Shilsoni.

Pillar roses in pots were delightfully shown by Messrs. Wm. Paul and Son, Waltham Cross; Tausendschon, Sylvia, Fairy, and the White Tausendschon were all very fine. Messrs. G. Mount and Sons, Canterbury, delighted the ladies with their beautiful long-stemmed blooms of such roses as Liberty, Mrs. G. Shawyer, Mdme. Abel Chatenay, A. R. Goodwin, Lady Hillingdon, Molly Sharman Crawford, and Richmond.

The roses from Mr. G. Prince, Longworth, were very handsome, especially the blooms of Rayon d'Or, Mrs. E. Mawley, Mrs. A. Cocker, White Killarney, and Mrs. A. R. Waddell. Messrs. B. R. Cant and Sons, Colchester, exhibited roses finely, and had lovely flowers of Mrs. E. Mawley, Rose du Barri, Lady Reay, Anna Oliver, and the new pale pink H.T. variety named St. Helena.

Gorgeous hippeastrums from Messrs. Jas. Veitch and Sons, Chelsea, were splendid in size, form, and colour; Paradox, Endera, Jadera, the crimson Brilliant, and Hermia were all grand. The same firm submitted the dark blue form of Cineraria Feltham Beauty, the white, blue-tipped Cineraria hybrida (A.M.), obtained by crossing Cineraria cruenta with Senecio tussilagensis. Gerbera hybrids and the graceful Crowea augustifolia came from the same firm. Very graceful and beautiful were the plumose Nipholepis Neuberti, Adiantum cardiochlæna, davallias, and Pteris Childsi, shown by Messrs. H. B. May and Sons, Edmonton.

Mr. James Douglas, Great Bookham, provided a treat for auricula lovers by exhibiting a grand collection of well-grown plants. The variety of colouring was excellent, and especially good were Mrs. Gardiner, Canary, Roxburgh, purple (A.M.); Janet, Prince Charming, Elaine, lavender-mauve with white centre; Regalia, and Narcissus, palest sulphur. Mr. Douglas showed three tubs of the giant forget-me-not Mysotidium nobile. Very beautiful were the sheaves of Gerbera hybrids, finely exhibited by Mr. H. Ellison, West Bromwich. Spanish irises were set up in large, bold bunches by Mr. R. D'E. Day, Sutton Scotney, and very showy they were.

Messrs. Stuart Low and Co., Enfield, were represented by a bank of perpetual carnations, in which Lady Alington, the new, flaked, Samuel Gratrix, R. F. Felton, Empire Day, My Favourite, and the quaintly-coloured Cinnabar were conspicuous. Greenhouse plants from the same firm included large bushes of Metrosideros floribunda, carrying numbers of its red bottle-brush inflorescences. Superb flowers of such fine perpetual carnations as Carola, Mrs. C. F. Raphael, White Chief, White Wonder, Orpheus, and Beacon, were staged in fine large sheaves by Mr. H. Burnett, Guernsey. Messrs. W. Wells and Co., Merstham, gained an A.M. for carnation Wodenethe, a new white, sweetly scented, perpetual variety, raised in America, and one that bids fair to have a great future.

Messrs. Allwood Brothers, Haywards Heath, had fine flowers of Empire Day, Fairmount—a glorified Mikado, Marmion, the showy Fireglow, and other fine carnations. Mr. C. Engelmann's carnations were good, as usual, and included the famous Carola, the yellow Sunstar, and the brilliant red-flaked Harlequin.

Echium fastuosum, carrying seventeen spikes of bluish flowers, was shown by Mrs. Henderson, Sedgwick Park, Horsham. The rosy-flowered and free Azalea Maxwelli (hardy), was well shown by Messrs. R. and G. Cuthbert, Southgate. Mr. J. Phillips, gardener to the Hon. H. B. Portman, Buxted Park, Sussex, contributed a group of large and well-grown schizanthuses, showing the usefulness of these flowers for conservatory decoration in spring.

Messrs. Whitelegg and Page, Chislehurst, again showed fine groups of Saxifraga Red Admiral, S. Pencilled Beauty, S. Lady Dean, and S. Rhei superba. Messrs. G. and A. Clark, Dover, filled a rock garden with popular subjects, and also showed Spiræa arguta, the bright Geum Mrs. Bradshaw, anemones, polyanthuses, and glaucous-leaved junipers. Messrs. J. Cheal and Sons, Crawley, made good use of small flowering shrubs, cytisuses, rhododendrons, azaleas, Japanese maples, etc., in their rock garden exhibit, and used popular subjects in the foreground. Tree pæonies were a feature of the exhibit from Mr. James Box, Lindfield, but the scarlet Anemone Rouge Ponceau was not less attractive.

Messrs. G. Jackman and Son's exhibit of hardy flowers included trolliuses, iberis, Primula Sieboldi in variety, and the pretty, dwarf forms of Iris pumila. Mr. Maurice Prichard, Christchurch, had a rock garden, and here Saxifraga R. W. Hosier was very fine, and so were Primula Cashmeriana, Fairy Queen, Phlox canadense, Violet Queen, Saxifraga Bathonensis, and Cytisus Ardoinei. Mr. Clarence Elliott, Stevenage, had lovely colonies of Viola gracilis, Oxalis enneaphylla, Androsace Chumbyi, Saxifraga Bathonensis, and Gentiana acaulis, on a low rock garden. Mr. Prichard, Wimborne; Mr. L. Greening, Richmond; and the Misses Hopkins, Shepperton, all staged rock garden exhibits. Messrs. Jas. Peed and Sons, Norwood, had a quite good exhibit of alpine flowers, arranged on rockwork; aubrietias and iberis were very good.

Messrs. J. Piper and Son, Bayswater, had a large rock garden exhibit, raised well above the level of the floor, and thus easy to inspect. Azaleas, acers, and bamboos formed a background for beautiful groupings of Primula malacoides, Allysum saxatile citrinum, Primula Veitchi, Lithospernum Heavenly Blue, Aubrietia Lavender, and other charming subjects. Another rock garden and a very pretty one, because it was not overdone, was arranged by Messrs. T. S. Ware, Lim., Feltham. Libertia pulchellum, Saxifraga Bathonensis, Trillum grandiflorum, Daphne Cneorum, Orchis papilionacea, Phlox amœna, and Alyssum montanum were interesting in this display.

The brilliant pelargoniums from Messrs. H. Cannell and Sons, Swanley, were a great attraction, especially the bunches of Arabic, Uranus, New York, Vesta, King Victor, Hall Caine, and Paul Crampel. Exceptionally fine were the splendid bunches of cut pelargoniums staged by Mr. H. J. Jones, Ryecroft, Lewisham. In the variety Mrs. F. Huggett the individual blooms were 3½in. across, while Tom White, Arabic, Mrs. Henry Wood, Hibernian, Fred Gulliver, and Fred Tozer were all of wonderful size and colour. Mr. Vincent Slade was also an exhibitor of pelargoniums, bringing bright blooms from Taunton.

### ORCHID COMMITTEE.

The deep purple Pleione juunanense was well shown by Mr. F. W. Godman, Esq., South Lodge, Horsham, who also submitted Odontoglossum Godmani with long drooping spikes of purple and white flowers. A giant spike of Odontoglossum Souv. de Victor Hye de Crom carrying twenty-one flowers and buds was shown by Mr. Stables, gardener to De Barri Crawshay, Esq., Rosefield, Sevenoaks. Mr. H. T. Pitt, Rosslyn, Stamford Hill, showed a little group containing Cypripedium Chapmani, Odontoglossum Souv. de Victor Hye de Crom, and Lælio-cattleya Rosslyn.

A pretty little group of orchids from Messrs. J. and A. McBean, Cooksbridge, contained lovely spikes of fine forms of Odontoglossum crispum, Cattleya Mossiæ, C. Mendeli, and other good things. Odontoglossums from Mr. H. J. Chapman, gardener to Mrs. Norman Cookson, Oakwood, Wylam-on-Tyne, included O. crispum Leonard Perfect (grand), O. c. Chapmani, O. c. Clive, O. c. Angela, O. c. Pittæ, O. Titania, O. ardentissimum, O. splendidissimum, O. percultum, O. Solon, and Odontioda Cooksoniæ. The brilliant Lælio-cattleya G. S. Ball was finely shown by Messrs. Hassall and Co., Southgate, and with these were Brasso-cattleya Alexandria, Miltonia Bleuana, Odontoglossum eximium, a fine form of O. percultum and Renanthera Imschootiana shown in fine condition.

Mr. Hopkins, gardener to Francis Wellesley, Esq., showed Lælio-cattleya Bertram, a splendid cross between L.-c. Hopkinsi and L.-c. Cappei (A.M.), with orange sepals and petals, and an intense crimson purple lip. Mr. Shill, grower to Baron Bruno Schroder, The Dell, Egham, exhibited Cattleya Schroderæ Empress with eleven beautiful blooms. From the Liverpool Orchid Nursery Company, Gateacre, came a beautiful set of Lælio-cattleya G. S. Ball and a few other orchids.

Odontioda Bradshawiæ, with two fine spikes, Miltonia Bleuana rosea, with six spikes, a good Odontoglossum ardentissimum, the red-spotted O. Aira, and the grand Brasso-cattleya Queen Alexandra were exhibited by Messrs. Charlesworth and Co., Hayward's Heath. M. Claes, Brussels, Messrs. Peeters and Co., Brussels, and M. Lambeau, each sent a few orchids, chiefly cattleyas and miltonias. Messrs. Cypher and Sons, Cheltenham, made a capital display of orchids, and exhibited Lælia Latona, Cattleya Skinneri, Odontioda Cooksoniæ, the old Miltonia stellata, Odontoglossum Edwardi, Oncidium concolor, and the bright Renanthera Imschootiana and the fine Brasso-cattleya Leeana, among many other good things.

Messrs. Sander and Sons, St. Albans, made a good display with the pretty Dendrobium Devonianum, Cattleya Schroderæ, Brasso-cattleya Langleyensis and Cattleya Fernand Denis. In Messrs. Stuart Low and Co.'s group from Enfield, Cattleya Schroderæ, Odontoglossum Edwardi, Cattleya Mendeli, and Brasso-cattleya Imperatrice de Russie were especially noteworthy.

Mr. J. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, exhibited the lovely Cattleya Mendeli Thule (A.M.) and the handsome Odontoglossum crispum Saga which received a First Class Certificate.

### DAFFODIL COMMITTEE.

This body had plenty of work to do. Many of its members acted as judges in the competitive classes, and afterwards had to adjudicate upon groups and discuss the merits of about two dozen novelties. At the committee meeting Mr. H. B. May, representing the Peter Barr Memorial Committee presented the Rev. G. H. Engleheart with the handsome Peter Barr Cup, to be held by him for the ensuing year.

Messrs. Barr and Sons presented a beautiful collection of choice daffodils, with a few tulips. A few especially fine daffodils in this excellent lot were Falcon, Lord Kitchener, the shapely Monarch, Cæsar (a fine poet), the pretty cream trumpet Loveliness, Lord Roberts, The Bride, Cleopatra, St. George, Ibis, and a quaint little seedling with a deep orange-red eye and heavy orange staining along half the length of the perianth segments. Messrs. Cartwright and Goodwin, Kidderminster, had a fresh and bright group of daffodils, and here the bold frilled trumpet variety Titanic was, curiously enough, the most attractive flower. Nemesis, White Star, the lovely White Cristalla, White Cloud, May Hanson, and White Rose, all lovely triandrus forms, with Cairngorm, Herod, Van Waveren's Giant, were all very fine.

Messrs. R. H. Bath, Lim., Wisbech, filled a large space with a capital lot of daffodils and tulips; among the former we made special note of Queen of Poets, Horace, Maggie May, Hypatia, Weardale Perfection, Orange Maid, Marie Hall with straight yellow trumpet, Whitewell, and Dorothy Kingsmill. Some new daffodils from Mr. A. M. Kingsmill, Shovel, Bridgwater, were almost all unnamed, and included some wonderfully fine things with broad, flat crowns. Anchorite, Sarchedon, Buttercup, Zouave, Victory, and Moonbeam were splendid named sorts. From Dublin, Messrs. Hogg and Robertson brought over a collection of tulips and daffodils, the former constituting the leading feature, and Hecla, Dr. Wagner, Gesnereana lutea, Clara Butt, Flambeau, Fire King, Bartigon, and Fairy Queen were exceptionally good.

Some beautiful daffodils from the Lissadell Bulb Farm, Lissadell, Sligo, lost somewhat in effectiveness by being rather crowded in the vases. Nevertheless, the white triardous seedlings were lovely, and very fine were Mdme. de Graaff, Muriel, Will Scarlett, Acme, Mars, and Maggie May. Messrs. Jas. Veitch and Sons, Chelsea, had a goodly set of daffodils, but their flowers were rather too closely together. Cœur de Lion, West Loedt, Glory, Lord Roberts, King Alfred, Argent, Homer, Lucifer, and Horace were all good.

Splendidly set up were the daffodils from Miss F. W. Currey, Lismore, Ireland. Each variety was set well apart from its neighbour, and in the case of Sunset, Queen Sophia, Will Scarlett, Lord Kitchener, Cossack, Warley Scarlet, Red Emperor, Firetail, Ermine, and Challenger, the blooms were of extreme beauty; the last named has a deep orange rim to an orange-yellow cup. Mr. C. Bourne, Bletchley, had Queen of Hearts, the fine shapely Imperialist with soft orange crown—a beauty, Mrs. J. H. Veitch, Weardale Perfection, Gloria Mundi, and a few other good things.

Mr. H. D. Phillips, Olton, put up a capital lot of daffodils in the lower annexe, but everyone looked at the fine new Seville with its broad, flat, orange-red crown (A.M.), and seemed to have little admiration left for the other fine things Mr. Phillips showed. A fresh and bright lot of daffodils from Mr. Robt. Sydenham, Birmingham, included some very good specimens of Una, Will Scarlett, Flamingo, Watchfire, Bert Ponting (very bright), Orange King, Great Warley, Monarch, Occident, and Glory of Leiden. Lily of the valley, tulips, liliums, and anemones were also included in the exhibit.

The Rev. G. H. Engleheart put up a splendid lot of seedling daffodils, and showed a fine series of poeticus varieties and others closely akin to this race; he also had a few very large trumpet varieties, and some flat-crowned sorts of great beauty, but the varieties were staged under number only. Messrs. E. H. Krelage and Son, Haarlem, showed several new seedling daffodils, and the lovely creamy-white trumpet variety Mrs. Ernst H. Krelage, gained an A.M. Mr. C. Van Tubergen, jun., also showed several good new daffodils, as did Mr. Chapman, gardener to Mrs. Norman Cookson, Wylam, whose variety Mrs. N. C. Cookson was much admired.

### FRUIT AND VEGETABLE COMMITTEE.

A group of early vegetables and salads from Messrs. Sutton and Sons, Reading, proved very interesting, and the exhibit included White Gem turnip, Snow White broccoli, Golden Ball lettuces, Winter Beauty tomatoes, Satisfaction cucumber, Satisfaction mushrooms, Tender and True French beans, and April cabbages.

Mr. Funge, gardener to Mrs. Bischoffsheim, Warren House, Stanmore, showed two boxes of fine fruits of Royal Sovereign strawberry.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Odontoglossum crispum Saga, from J. Gurney Fowler, Esq. (Gardener, Mr. J. Davis), Glebelands, South Woodford.

Award of Merit. — To Narcissus Mrs. Ernst H. Krelage, from Messrs. E. H. Krelage and Son, Haarlem; to Narcissus Silver Spangle, from Mr. F. H. Chapman, Rotherside Gardens, Rye; to Narcissus Seville, from Mr. H. D. Phillips, Olton, Warwickshire; to Freesia Le Phare, from Mr. C. Van Tubergen, jun., Haarlem; to Cineraria hybrida, from Messrs. Jas. Veitch and Sons, Chelsea; to Carnation Wodenethe, from Messrs. W. Wells and Co., Merstham; to Alpine Auricula Roxburgh, from Mr. Jas. Douglas, Great Bookham; to Cattleya Mendeli Thule, from J. Gurney Fowler, Esq., Glebelands, South Woodford; to Lælio-cattleya Bertram, from Francis Wellesley, Esq. (gardener, Mr. Hopkins), Westfield, Woking.

### MEDALS.

Silver-gilt Flora.—To Messrs. Wm. Cutbush and Son, Highgate, for flowering shrubs, carnations, etc.; to Messrs. Barr and Sons, Covent Garden, for daffodils; to Miss F. W. Currey, Lismore, Ireland, for daffodils.

Silver Flora.—To Mr. H. Burnett, Guernsey, for carnations; to Mr. J. Douglas, Great Bookham, for auriculas; to Messrs. H. B. May and Sons, Edmonton, for ferns; to Messrs. J. Piper and Son, Bayswater, for alpines, etc.; to Messrs. R. H. Bath, Lim., Wisbech, for daffodils and tulips; to Mr. H. D. Phillips, Olton, for daffodils; to Messrs. Hassall and Co., Southgate, for orchids; to Mr. Chapman, gardener to Mrs. Norman Cookson, Oakwood, Wylam-on-Tyne, for orchids; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids.

Silver Banksian.—To Messrs. Cartwright and Goodwin, Kidderminster, for daffodils; to Lissadell Bulb Farm, Lissadell, Sligo, for daffodils; to Mr. C. Bourne, Bletchley ,for daffodils; to Mr. Funge, Warren House Gardens, Stanmore, for strawberries; to Messrs. Charlesworth and Co., Haywards Heath, for orchids; to the Liverpool Orchid Co., Gateacre, for orchids; to Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. R. Gill and Sons, Falmouth, for rhododendrons; to Messrs. G. Mount and Sons, Canterbury, for roses; to Messrs. Wm. Paul and Son, Waltham Cross, for roses; to Mr. M. Prichard, Christchurch, for alpines, etc.; to Messrs. T. S. Ware, Lim., Feltham, for rock garden.

Bronze Banksian.—To Messrs. H. Cannell and Sons, Swanley, for pelargoniums; to Messrs. J. Cheal and Sons, Crawley, for rock garden; to Mr. R. D'E. Day, Sutton Scotney, for Spanish irises; to Mr. C. Engelman, Saffron Walden, for carnations; to Messrs. G. Jackman and Son, Woking, for hardy plants; to Mr. H. J. Jones, Lewisham, for pelargoniums; to Mrs. L. Edwards, Llangollen, for saxifrages; to Mr. G. Prince, Longworth, for roses; to Messrs. Whitelegg and Page, Chislehurst, for saxifrages, etc.

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## Daffodil Show.

Evidently the framers of the schedule of the Royal Horticultural Society's Daffodil Show, held on April 16 and 17, were under the impression that they should provide for all classes of exhibitors, as they arranged for a most comprehensive show. The classes, however, were poorly supported, as far as entries were concerned, owing to the abnormally early season, but the quality throughout was of a fairly high order of merit.

The premier class for forty-eight varieties, representing all sections, only produced one exhibitor, Mr. C. Bourne, Olde Wharf House, Bletchley, who was awarded the premier honours—a gold medal. The most striking varieties were White Knight, Will Scarlett, Lemon Belle, White Lady, Lord Roberts, Madame de Graaff, Alys, and Monarch. A fine collection for such a dry period. In the class for twelve trumpet varieties, three flowers to each vase, Mr. J. Mallender, Scrooby, Bawtry, was the only exhibitor, and won the first prize with fresh blooms of The Miller's Daughter, The Colonel, Sybil Foster, Weardale Perfection, and some seedlings. For twelve incomparabilis varieties, Mr. Mallender received the chief award, his most conspicuous sorts being Royal Star, Torch, Homespun, Gloria Mundi, James Janson, and Lucifer.

There were two entrants for twelve vases of Barri varieties. Here Mr. F. H. Chapman, Rotherside Gardens, Rye, won first prize with well-staged examples of Equinox, Odalisque, Tritoma, Beacon, Memento, Satellite, Cossack, Ember, and Maybird. Mr. C. Bourne was second with clean flowers of Occident, Red Chief, Queen of Hearts, White Ensign, and Egret. In a similar class for Leedsi varieties, there was but a single entrant, Mr. J. Mallender, who had some promising seedlings, with Katherine Spurrell, White Lady, Armada, Waterwitch, and Miss Langhorne. For nine poeticus varieties, the first prize was well won by Mr. F. H. Chapman, who had a beautiful exhibit of Idyll, Kestrel, Ruskin, Horace, Socrates, Nocturne, and Cassandra. Mr. C. Bourne was placed second with excellent vases of Sonnet, Epic, Acme, Horace, Homer, Almira, and Lullaby.

### AMATEURS.

The premier amateur class was for twenty-four varieties, fairly representing all sections, the first prize, a silver cup, being deservedly awarded to the Rev. T. Buncombe, Black Torrington, North Devon, who had nice, clean examples of Red Chief, P. R. Barr, Juliet, Glory of Leiden, Chryseis, Evangeline, Leonie, Cassandra, and Mrs. Langtry. The second prize was awarded to Mr. H. R. Darlington, Park House, Potter's Bar, who had good examples of King Alfred, Weardale Perfection, Glory, Virgil, and Bullfinch. For six trumpet varieties, there were three entries, the Rev. T. Buncombe leading off well with fine examples of Treasure Trove, Grandis, Cornelia, Sybil Foster, and Madame de Graaff. Mr. H. R. Darlington came second; his most attractive blooms were King Alfred, Monarch, and Cornelia. The Duke of Rutland (gardener, Mr. W. H. Divers), Belvoir Castle, Grantham, was third.

The class for six incomparabilis varieties secured a better competition, the Rev. T. Buncombe coming first with Gloria Mundi, Chryseis, Leonie, Whitewell, and Rosy. Mr. H. R. Darlington was second, while Mr. W. H. Divers brought up the rear. The Barri varieties secured two entries, the Rev. T. Buncombe winning first with nice vases of Stone Chat, Broad Wing, and Ptarmigan; Mr. H. R. Darlington was a close second.

In a smaller class for six Leedsi varieties Mr. H. R. Darlington won well with White

Lady, Maggie May, and Enid. The Rev. T. Buncombe was a good second, and Mr. W. H. Divers had to be content with third place. For six vases of poeticus varieties Mr. H. R. Darlington was awarded first prize for good clean blooms of Virgil, Epic, Sidney, and Horace, while the same exhibitor was equally successful for three vases of double varieties, staging Golden Rose, Sulphurens, and Golden Phœnix in first-rate condition; Mr. W. H. Divers was second. There were two competitors.

In the class for a collection of twelve varieties, here Mr. W. B. Cranfield, East Lodge, Enfield Chase, N., came to the fore, with really good examples of Glory of Leiden, Mrs. H. G. Veitch, Noble, White Queen, Lady Mary Boscawen, Peter Barr, Horace, and Lemon Queen. The second prize was won by Mr. G. F. H. Banks, Couchmore, Crawley, with some nice trumpet varieties, while for three vases of trumpets, Mr. R. Morton, Grange Dene, Woodside Park, N., was first with Lord Muncaster, Glory of Leiden, and Monarch. Mr. G. Stocks, 44, Bentley Road, Doncaster, was a fair second. For three trumpet varieties, Mr. W. B. Cranfield was easily in front with Madame de Graaff, Florence Pearson, and Weardale Perfection, while Messrs. G. Stocks and R. Morton followed in the order named. The incomparabilis varieties of three vases only produced two exhibits, Mr. W. B. Cranfield being placed first, with Mr. R. Morton second. In the Barri section Mr. W. B. Cranfield was first with good examples of Aftermath, Barri conspicuus, and Castile. For three Barri varieties Mr. R. Morton was to the front with good typical flowers of Incognita and Royal Star. In the Leedsi section Mr. R. Morton was placed first with fine examples of White Queen and Lord Kitchener. Mr. W. B. Cranfield was second, while in the poeticus class the same exhibitor was most successful, with fine flowers of Horace, Elegy, and Kingsley, Messrs. Morton and Banks were placed equal seconds.

### NEW VARIETIES.

Mr. C. Bourne was the only cultivator to stage in the class for twelve varieties placed on the market since 1907, and he won the silver cup with Whitewell, Golden Idol, Lemon Belle, Great Warley, Orange King, etc. For twelve varieties not in commerce, Mr. E. M. Crosfield, Cossington House, Bridgwater, won the first prize and gold medal with fine flowers of Dick Turpin, Mougli, Pedestal, Honeymaid, and a number of seedlings; Mr. F. H. Chapman followed with some very pretty varieties, which were under number. Mr. C. Bourne was the first prize-winner for three varieties not in commerce, staging Queen of Hearts, Symphony, and Golden Idol, while Mr. W. B. Cranfield followed, and the Rev. T. Buncombe brought up the rear.

In the class for six seedling varieties raised by the exhibitor, Mr. E. M. Crosfield proved the victor, staging Mougli, Touchstone, Anchorite, and Dulcimer. Messrs. E. H. Krelage and Son, Haarlem, came second with some nice numbered seedlings, and Mr. F. H. Chapman was third, Bridegroom being his best variety. For three poeticus seedlings Mr. A. M. Wilson, Shovel, North Petherton, Somerset, was most successful, while Messrs. Krelage and Son won first prize with a good white trumpet variety named Mrs. Ernst H. Krelage, Mr. C. Bourne following with Orange King, and Mr. W. Welchman, Wisbech, was third.

## Cornwall Daffodil and Spring Flower Society.

This flourishing society is fortunate in its patronage, for the patronesses are Her Majesty Queen Mary and her Majesty Queen Alexandra, while among the vice-presidents are the Viscountess Falmouth, the Earl of Mount Edgcumbe, Sir Arthur Pendarves Vivian, and Mr. T. A. Dorrien Smith. The shows are always a leading feature in the West, and though in the present season the severe frost early in February killed a number of the rarer and tenderer shrubs, and the earliness of the season has made daffodils scarce, the exhibition was quite equal to those of former years, though some who won first prizes in earlier shows were unable to compete.

The show was held in the great Market Hall at Truro on April 11, a late date for Cornwall, whose shows are usually held at the commencement of the month. Ever since the inception of the society the position of hon. secretary has been held by the Hon. John Boscawen, and under his invariable tact and courtesy, every arrangement is carried out to perfection, and no complaints have ever been made. During the afternoon the hall was crowded, visitors arriving from all parts of England as well as London, while everyone of note in Cornwall and Devon appeared to be present.

The most interesting class in the daffodil section was that for thirty varieties in commerce or not in commerce. In this class the first prize was won by Mr. T. C. Williams, who took first prize last year, with a most beautiful stand, composed of seedlings raised by himself. Unfortunately only two were named, all the rest being numbered, which rather detracted from the interest of the stand. Among the most attractive were 184, white perianth with deep yellow cup, edged orange; 12, a fine bicolor trumpet; 419, white perianth, spreading flat cup of bright orange; 354, bright golden trumpet of fine form; 142, creamy-white perianth, with spreading golden cup, edged bright orange; 47, white perianth, pale orange flat cup; A 12, very large incomparabilis, with canary-yellow perianth and deep yellow cup; 266, white trumpet slightly drooping; 401, white perianth, with bright orange-scarlet cup. In the class for the best collection of daffodils in commerce, the first prize was won by Mrs. Soltau-Symons, with a good stand in which Rosella, Tangerine, Cœur de Lion, Ptarmigan, Beacon, Red Chief, Eoster, Scarlet Eye, and Salamander were especially good. In the next twelve classes the prices of bulbs were limited to 10s. The premier awards were made as follows: Six magni-coronati, Mrs. Soltau-Symons; six incomparabilis, Miss Mabel Williams; six Barri, Mrs. Soltau-Symons; six Leedsi, Mrs. Soltau-Symons; three poeticus, Mrs. Soltau-Symons; fifteen distinct varieties, Mrs. Soltau-Symons, with Weardale Perfection, Mdme. de Graaff, White Lady, Tangerine, Maggie May, Horace, Oriana, Eoster, Rosella, Cavalier, Beacon, Ptarmigan, Red Chief; finest bloom magni-coronati, Miss Clarice Vivian, with Mdme. de Graaff; finest bloom incomparabilis, Miss Mabel Williams, with Gloria Mundi; finest bloom Barri, Mrs. Soltau-Symons, with Red Chief; finest bloom Leedsi, Miss Clarice Vivian, with Bianca; finest bloom triandrus and cyclaminens hybrids, Mrs. Soltau-Symons, with Dorothy Kingsmill; finest bloom poeticus, Mrs. Soltau-Symons, with Horace; three varieties double, Mrs. Parlby; fifteen varieties, any section in commerce, or not in commerce, Mr. P. D. Williams, with a very perfect stand, containing Moonbeam, White Wax, Snow King, Susan, Madrigal, Ormolu, Princess, and eight unnamed seedlings.

In the classes in which there was no restriction as to the price of bulbs: Finest bloom magni-coronati, Miss Clarice Vivian first, with Diogenes; finest bloom incomparabilis, Miss Clarice Vivian first, with Wagtail; finest bloom poeticus, Colonel R. Nowell Usticke first, with Cassandra; three finest blooms magni-coronata, Mr. P. D. Williams first; three finest blooms incomparabilis, Mr. J. C. Williams first; three finest blooms Barri, Mr. J. C. Williams first; three finest blooms triandrus hybrids, Mr. P. D. Williams first; three finest blooms poeticus, Mr. J. C. Williams first. There were also classes for children under fifteen years of age.

For three bunches of anemones, Mr. R. Fox first, with immense crimson flowers of A. coronaria. He staged thirty vases of these superb flowers, and was given an Award of Merit for them. Mrs. C. Williams was first for polyanthuses in three varieties in a basket; and Lady Margaret Boscawen for primroses in three varieties in a basket. In competition for the prizes for a collection of twelve hardy spring flowers, Mr. P. D. Williams was first with Iris bucharica, Caltha platypetala, Muscari Heavenly Blue, Pulmonaria arvernense, Viola gracilis, Fritillaria hybrid, Iris tingitana, Saxifraga speciosa, Anemone apennina, Tulipa retroflexa, Anemone pulsatilla, and a vase of hybrid daffodils, a cross between Minnie Hume and triandrus. For six hardy spring flowers, Mr. T. B. Bolitho obtained premier honours with Muscari botryoides album, Anemone Robinsoniana, Fritillaria meleagris, Myosotidium nobile, Muscari Heavenly Blue, and Artus tulip. An excellent collection of hardy plants arranged as a rockery was shown by Mr. E. J. P. Magor. In competition for the prizes for three bunches of double violets in three varieties, Captain W. Tremayne was first with Neapolitan, Mrs. J. J. Astor, and De Parme. Colonel H. F. Trefusis was first for three bunches single violets one variety, with La France. For three bunches of double violets in one variety, Captain W. Tremayne was first with Neapolitan. Lady Margaret Boscawen won for six vases of roses, and for three vases of roses Mr. G. J. Cookson obtained premier honours. Carnations in the two classes for three vases were well shown by Mr. G. J. Cookson. The finest plant of rhododendron was shown by Colonel H. F. Trefusis. The best group of rhododendron blooms was contributed by Mr. J. C. Williams with a collection of seedlings. The first prize for six varieties of rhododendrons from out of doors was contributed by Mr. J. C. Williams. Mr. J. C. Danbuz had three trusses of large-leaved rhododendrons. The best six trusses of rhododendrons from under glass came from Mr. D. H. Shilson. The finest truss of rhododendron from out of doors came from Mr. R. Fox, who was first for a truss of hybrid Sikkim rhododendron. The best bloom of camellia was a splendid flower of C. reticulata from Mr. J. C. Williams. For three large jars of sprays of outdoor camellias in three varieties, Mrs. John Williams was first, and for twenty varieties of hardwood flowering shrubs the premier award was made to Mr. R. Fox, who showed Andromeda japonica, Acacia diffusa, Daphne indica, Cytisus racemosus, Pieris formosa, Azalea carminata splendens, camellias, Pittosporum eugenoides, Magnolia Soulangeana, M. stellata, Daphne taureola, Staplylea colchica, Embothrium coccineum, Erica mediterranea, Berberis Darwini, Erica Veitchi, Cerasus Watereri, Grevillea sulphurea, Erica australis, Cytisus albus. There was a good deal of dissatisfaction at the judging in this class. In competition for the prizes for six varieties of hardwood flowering shrubs Sir Arthur Pendarves Vivian was first with Chorizema Lowi, Clematis indivisa, Embothrium coccineum, Viburnum rugosum, Cerasus Watereri, Acacia Riceana.

The nurserymen's exhibits added much to the attractions of the show. The Devon Rosery, Torquay, who received an Award of Merit, showed a fine collection of pot roses in full flower, these including Lady Helen Stuart, Prince Camille de Rohan, Beauty of Waltham, Camille Bernardin, Frau Karl Druschki, Captain Hayward, Prince de Bulgaria, Leonie Lamesch, Mrs. Sharman Crawford, Lady Quartus Ewart, and Abel Carriere. They also had some fine large-

→ Spraying ←

The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested

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flowered clematises in full bloom, amongst which were Marcel Moser, Fairy Queen, Lord Neville, Venus Victrix, Lady Caroline Neville, and Princess of Wales. Messrs. Robert Veitch and Son, Exeter, received a First Class Certificate for Osmanthus Delavayi, and an Award of Merit for their stand, which contained winter-flowering carnations Carola, Mrs. T. M. Crook, Colossus, Scarlet Glow, May Day, Lady Audley Neeld, Godiva, Enchantress, White House, Daphne poniana, D. collina, D. alpina, D. Cneorum, Eriostemon neriifolium, E. linearifolium, E. scaber, E. myoporoides, Cytisus Kewensis, Myrtus bullatus, Illicum religiosum, Rhododendron racemosum, R. eximium, R. Dr. Stocker, R. Princess Juliana, R. yunnanense, R. Smithi aureum, Correa bicolor, C. cardinalis, C. curiosa, Psoralea pinnata, Lonicera pileata, and Cytisus Beani. Mr. G. Reuthe, Keston, Kent, received an Award of Merit for Calypso borealis and Bryanthus erectus (rare). In his stand were included Cassiope tetragona, Rhapithamnus cyanocarpus, Rhododendron campylocarpum, R. Aucklandi, Boronia heterophylla, Callistemon salignus, Mertensia virginica, and a fine collection of rock plants, including Androsace carnea, Saxifraga calyciflora, S. ambigua, S. luteo viridis, S. lantoscana superba, S. Salomoni, S. valdensis, S. thessalica, S. balcana, S. porophylla, S. bronchialis, S. cochlearis, S. Vandelti, S. Stuarti, S. diapensoides. Messrs. Barr and Sons received an Award of Merit for Narcissi Ruby and Florizel, and showed a remarkably fine collection, among which were Cossack, Cœur de Lion, Ruby Marie Louise, Cingalee, Will Scarlett, Snow King, Cleopatra, Falcon, Peter Barr, Florizel, Magpie, Sheba, Dresden, Snowsprite, Red Prince, Socrates, Noblesse, Epic, Bloodstone, Peace, and Buccaneer. Messrs. Cartwright and Goodwin gained an Award of Merit for Narcissus Nemesis, and had an attractive stand on which were Amyas Leigh, Glory of Leiden, Royal Sovereign, Orangeman, Monarch, Inga, Evangeline, Castile, Pilgrim, Brilliancy, Cornelia, Creole, Weardale Perfection, Long Tom, Barcarolle, Fairy, Chloe, White Star, Heroine, Ben Avon, Cristilla, Fairy Queen, and Southern Star. Mr. H. E. Jephson received an Award of Merit for a varied collection of alpines.

A First Class Certificate was awarded to the Rev. A. T. Boscawen for Prostanthera rotundifolia, which he showed with vases of Gladiolus tristis. Mr. J. C. Williams received an Award of Merit for Rhododendron Augustini, and Mr. R. Fox for Rhododendron Liliani. Mr. J. D. Enys contributed a large stand, not for competition, containing Myosotidium nobile, Embothrium coccineum, Cerasus japonica, Magnolia Lennei, M. Osaka, M. Alexandra, Prunus sinensis flore pleno, Daphne Genkwa, Magnolia stellata, ericas, rhododendrons, and azaleas. Lady Falmouth and Mrs. John Williams showed branches of camellias, and Messrs. J. C. Danbuz and H. H. Williams collections of apples.

## Bristol Gardeners' Association.

The usual fortnightly meeting was held on March 11, at St. John's Parish Rooms. Dr. Shaw presided over a good attendance. A lecture on "Vegetables" was given by Mr. Binfield, gardener to Colonel Tagart, Sneyd Park. The lecturer selected four kinds for consideration, namely, potatoes, onions, runner beans, and peas, as being the most important and valuable vegetables grown. Mr. Binfield said the potatoes do not require fresh manure; good varieties are May Queen, Sharp's Express, and Up-to-Date. He stated that onions, runners, and peas require well-trenched and manured ground, and to mulch the two latter in dry weather. Dr. Shaw, and Messrs. Scott, Ayres, Springham, Curtis, and Woodward took part in the discussion.

For two schizanthuses, Messrs. Spry, Springham, and Bastin won in the order given. Messrs. Ayres and Garnish were awarded certificates, the former for apples, the latter for narcissi and stocks. Mr. Jennings was granted a special award for a specimen of Cymbidium Lowianum.

## Parkstone Gardeners' Association.

On April 11 Mr. G. Garner gave a lecture on "Twentieth Century Gardening" before a large attendance of members of the above association. The President, Dr. Crallan, presided.

Mr. Garner briefly reviewed the principal features connected with gardening during the past few years, drawing attention to the improvements made of late in bedding-out arrangements, to the more extended use of herbaceous, alpine, and rock plants, the advance made in sweet peas, in hardy and half-hardy annuals, generally; tuberous begonias, roses, and winter-flowering carnations. The lecturer also referred to the increase in the number of exhibitions, to the great good accruing through healthy competition, to the fact that gardening was being taken up more and more every year by amateurs; to the eagerness of the gardening public in seeking for information from the gardening journals, and to the generous supply of such information by the journals.

Reference was made to Gardeners' Mutual Improvement Associations, and to the good they are doing, especially in assisting young members to obtain information.

The President took the lead in a free discussion which followed, and said that quality of produce was being recognised now, more than ever, and he gave much praise to the horticultural Press for the valuable work it was doing. Mr. Hill remarked on the advance made in the culture of herbaceous plants, to the greatly improved way of arranging them in the borders, and to their increased use as cut flowers for table and house decoration. Mr. King referred to the extended use of chemical manures. Other members took part in the discussion, and put a number of questions to the lecturer on various subjects. Votes of thanks to the president and the lecturer brought to a close a very pleasant evening.

## United Horticultural Benefit and Provident Society.

The usual monthly committee meeting was held at the Royal Horticultural Hall, Vincent Square, Westminster, on Monday evening, April 15. Mr. Charles H. Curtis presided. The Secretary reported that three deaths had occurred since the preceding meeting, and the sums standing to the credit of the late members were granted to their nominees, the largest amount being £62 4s. 6d. Several members over 60 years of age withdrew their interest, and one member over 70 years of age withdrew his deposit account, being the large sum of £130 5s. 2d., leaving £10 in the society till death. The amount of sick pay for the month was £57 15s. The matter of the Insurance Act as affecting this society is now in the hands of the actuary.

## Dundee Horticultural Association.

The ordinary monthly meeting was held in the Technical College on the evening of 11th inst. Mr. Wm. Christeson presided. The lecturer was Mr. Alex. Innes, gardener at Hallyburton, who had for his subject "Chrysanthemum Growing Up-to-date." After briefly tracing the early history and evolution of the chrysanthemum in an interesting manner, the lecturer dealt with the practical aspect as practised with excellent results in the gardens under his charge. The various groups were in turn treated upon, the practice of up-to-date methods being easily recognised, leaving little scope for discussion, which was chiefly of a complimentary nature, all the speakers testifying to the abilities of the lecturer and the high qualities of the lecture.

The exhibits consisted of chrysanthemum plants illustrating the lecture, six vases of violets in variety, and a fourteen-year-old cyclamen in a 7-inch pot carrying a profusion of superb flowers, all from Mr. Innes, who was cordially thanked for his lecture and exhibits on the motion of Mr. D. C. Hutcheson and Mr. Wm. Grant.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—D. S. T., Morpeth: You will greatly oblige me by giving the name and address of the secretary of the Royal Caledonian Horticultural Society, and stating terms of membership?—The secretary of the society is Mr. Donald Mackenzie, 23, Rutland Square, Edinburgh. There are different rates of payment, members paying £2 2s., £1 1s., 10s. 6d., and 5s. respectively.

PLANTING OUT FORCED DAFFODILS.—H. G., Rochdale: Is it worth while saving forced daffodils after they have flowered, and planting them out in shrubbery or other borders?—Certainly. If the bulbs have not been too severely forced, and provided they are carefully treated as soon as the flowers are over, they may be planted out in any suitable place almost at once. When removed from the conservatory they should receive the shelter of a frame, and be provided with sufficient water. A process of hardening off should follow, and planting take place in April while the leaves are still green. Excepting for the removal of the crocks, each potful of bulbs should not be disturbed.

LOSS OF SEEDLING STOCKS.—P. N., Weedon: A very large number of young seedling stocks have failed this year, and appear to have damped off. Can you tell me the reason of failure?—Seedling stocks are very impatient of an excess of moisture, and will damp off wholesale if the soil in which they are sown becomes sour in the least degree. It is better to raise seedling stocks in shallow pans or boxes, than in pots. In any case, extreme care in watering is necessary, as well as a light position near the glass, as soon as the seedlings appear.

FAILURE WITH SWEET PEAS.—F. B. C., Canterbury: I obtained my sweet pea seeds from a well-known seedsman, and am very disappointed with the results. Quite a number of the seeds have failed to germinate, and many more were slow to make growth. The seeds were sown in pots at the end of February, in a cool greenhouse, and so far as I am able to judge, they have been well cared for. It sems to me the seeds must have been of poor quality; but perhaps you may be able to indicate a cause of failure.—In the absence of specimens of seeds that have not germinated we can only suggest that failure is chiefly due to the hardness of the skin of the seeds; if these seeds had been taken from the soil as soon as a number of others sown at the same time had germinated, and the skin or shell had been just cut or filed through, germination would in all probability have followed.

CHEAP TICKETS FOR INTERNATIONAL HORTICULTURAL EXHIBITION.—J. M. S., Chew Magna: Could you kindly give me any information regarding the coming International Show to be held in May next? I have only taken your splendid paper for three months, but during that period have failed to find anything relating to cheap tickets for bona fide gardeners.—Where can such cheap tickets be obtained?—The directors of the International Horticultural Exhibition give us very little information respecting arrangements, and are not taking that opportunity which the advertising pages of the horticultural Press afford for giving publicity to the forthcoming event. But what little information has reached us we have published, and in our issue of March 2 we issued a list of the county secretaries, a list supplied at our request and on behalf of a correspondent. It is, we understand, to the county secretaries gardeners should apply for cheap tickets. You should apply to Mr. W. Jefferies, Cirencester, who is the county secretary for Gloucestershire; or to Mr. F. W. Cooling, 11, Northgate Street, Bath, who is county secretary for Somerset.

EMPLOYMENT AT KEW.—J. C., Slough: Kindly tell me how to proceed for the purpose of obtaining employment in the Royal Gardens, Kew.—Apply for employment, and address your letter to the Curator, Royal Gardens, Kew, Surrey. State age and experience. You will then receive a form to fill up and return, and if everything is satisfactory you will then wait your turn for admission.

LÆLIO-CATTLEYA WHITELEGGEI.—M. B., Swanley: Please tell me the parentage of L.-c. Whiteleggei, or L.-c. G. G. Whiteleggei.—L.-c. Whiteleggei was raised by crossing Cattleya Hardyana with L.-c. callistoglossa, and is named after Mr. Whitelegg, who was formerly gardener to Mr. Bradshaw, and is now a nurseryman at Chislehurst. Cattleya Hardyana is a hybrid between C. Dowiana and C. Warscewiczi, and L.-c. callistoglossa is derived from C. Warscewiczi and Lælia purpurata, the latter being the seed parent.

RUST ON PINKS.—S. R. J., Coventry: I have some pinks in pots, and have been growing them in frames; they looked very well until lately, when the leaves became rusted like the enclosed specimens. Please tell me the cause and cure of the trouble.—The disease is due to the presence of the Pink Rust (Puccinia arenariæ), which invariably makes itself evident by means of circular clusters of small blackish spots. A moist and close atmosphere weakens the tissues and encourages the disease, so that opposite conditions militate against the disease. Your best plan is to frequently sponge the leaves with a rose-red solution of permanganate of potassium.

SHORT-LIVED DAFFODILS. — S. S., Cambridge: Can you suggest a reason for the especially short daffodil season we are experiencing this year?—Many circumstances have combined to make the daffodil season of 1912 a very short one. The hot summer of 1911 ripened leafage and bulbs excessively, and so perhaps there was less substance than usual in the bulbs. Then the ground was dry at planting time in many cases, and so rooting did not immediately commence. A wet, comparatively mild winter induced early growth, and the daffodils were forced into bloom in a mild, early springtime, and as soon as the bulk were in flower the brilliant sunshine and drying winds quickly took all the brightness out of the flowers, so that individual blooms were not long available for exhibition purposes, though looking well enough in the mass. One large grower and raiser has already labelled 1912 as "a most impossible season for daffodils."

## NAMES OF PLANTS.

W. C., Epsom.—Davallia hirta cristata.

J. B., Cirencester.—1, Odontoglossum crispum; 2, a good Cattleya Trianæ.

R. C. W., Woking.—1, Pieris japonica; 2, Prunus triloba; 3, not recognised; 4, probably an Uvularia.

S. E. G., Andover.—1, Erythronium Denscanis; 2, Erica mediterranea; 3, Episcia chontalensis; 4, Begonia fuchsioides.

W. E. H., Kingston Hill.—1, Spiræa prunifolia; 2, Pieris japonica; 3, Pyrus malus floribundus; 4, Berberis Darwini; 5, poor specimen, probably Epimedium Perralderianum.

F. W., Oxon.—1, Triteleia uniflora; 2, Helleborus fœtidus; 3, a Fritillaria, possibly F. Meleagris; 4, looks like the root stock of Rodgersia podophylla; 5, not recognised, should have been sent in flower.

## OBITUARY.

◆

### MR. GEORGE WREN PIPER.

With much regret we have to record the death of this veteran rosarian, which occurred at Uckfield on the 9th inst. in his 74th year. For a long period Mr. Piper was a frequent exhibitor of roses at the shows of the National Rose Society, and other of the leading societies. Some years ago he introduced to commerce the well-known tea-scented rose Sunrise, and later he distributed the variety known as Peace. Owing to failing health Mr. Piper had lately lived in comparative retirement at Uckfield, Sussex. He leaves three sons and two daughters, and the business established at Uckfield by him about 1860 will be carried on under the management of Mr. Thomas W. Piper.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, April 23.—Breconshire Daffodil Show.

WEDNESDAY, April 24.—Royal Botanic Society Meeting.
North of England Horticultural Society, at Leeds.

THURSDAY, April 25.—Midland Daffodil Show at Birmingham; two days.
Norwich Spring Show.
Falmouth Spring Show; two days.

TUESDAY, April 30.—Royal Horticultural Society; Narcissus Committee meets at 11.30 a.m.; Fruit, Floral and Orchid Committees at 12 o'clock; Lecture at 3 p.m. on "Potatoes" by Dr. Redcliffe Salmon; Scientific Committee at 4 o'clock.
National Auricula and Primula Society's Show at the Royal Horticultural Hall.

WEDNESDAY, May 1.—National Auricula and Primula Society, Midland Section, at Birmingham.

THURSDAY, May 2. Linnean Society Meeting.
Manchester and North of England Orchid Society.

SATURDAY, May 4.—French Horticultural Society of London.
North of England Horticultural Society; Conference on "Horticulture in Secondary Schools and Farm Institutes," at Newcastle.

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# MARKETS.

## COVENT GARDEN.

### Flowers.

There is a steady demand for good flowers; daffodils are having a short season; tulips are very fine.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 | 0 | to | 8 | 0 |
| Arums | per doz. | 2 | 6 | | 3 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 15 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azaleas | per doz. bun. | 3 | 0 | | 4 | 0 |
| Camellias | per box | 1 | 6 | | 3 | 0 |
| Carnations | per doz. | 1 | 6 | | 2 | 0 |
| ,, | per doz. bun. | 10 | 0 | | 15 | 0 |
| Cattleyas | per doz. | 10 | 0 | | 12 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Eucharis | per doz. | 2 | 6 | | 3 | 6 |
| Forget-me-not | per doz. bun. | 3 | 0 | | 4 | 0 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Freesias | per doz. bun. | 1 | 3 | | 1 | 6 |
| Gardenias | per doz. | 2 | 0 | | 3 | 0 |
| Hellebores | per doz. | 1 | 6 | | 2 | 0 |
| Iris, Spanish | per doz. bun. | 12 | 0 | | 18 | 0 |
| Lilac | per bunch | 2 | 0 | | 3 | 6 |
| Lilium auratum | per doz. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 3 | 6 |
| ,, longiflorum | per doz. | 3 | 0 | | 4 | 6 |
| Lily of the Valley | per doz. bun. | 8 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 0 | | 2 | 6 |
| Mignonette | per doz. bun. | 2 | 0 | | 2 | 6 |
| Narcissus | per doz. bun. | 1 | 0 | | 2 | 6 |
| Odontoglossums | per doz. blms. | 3 | 0 | | 4 | 6 |
| Pelargoniums | per doz. bun. | 8 | 0 | | 12 | 0 |
| Primroses | per doz. bun. | 1 | 0 | | 1 | 6 |
| Roses | per doz. | 1 | 6 | | 4 | 6 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 6 |
| Spiræa | per doz. bun. | 4 | 0 | | 7 | 0 |
| Sweet Peas | per doz. bun. | 2 | 0 | | 2 | 6 |
| Tuberoses | per doz. | 0 | 5 | | 0 | 9 |
| Tulips | per doz. bun. | 5 | 0 | | 9 | 0 |
| Wallflowers | per doz. bun. | 1 | 6 | | 2 | 6 |

### Fruits.

Business is brisk. Cape grapes are meeting a ready sale, and they have arrived in good condition. Bananas, oranges, and apples sell well.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, Nova Scotia | per barrel. | 9 | 0 | | 20 | 0 |
| ,, Canadian | per barrel | 12 | 0 | | 22 | 0 |
| ,, American | per barrel | 20 | 0 | | 35 | 0 |
| ,, Californian | per case | 7 | 0 | | 10 | 0 |
| ,, Australian | per box | 7 | 0 | | 18 | 0 |
| ,, Cape | per box | 6 | 0 | | 10 | 0 |
| Bananas | per bun. | 3 | 6 | | 10 | 6 |
| Cranberries | per case | 9 | 0 | | 12 | 0 |
| Grapes, English | per lb. | 1 | 8 | | 3 | 6 |
| ,, Belgian | per lb. | 1 | 3 | | 2 | 6 |
| ,, Almeria | per barrel | 12 | 0 | | 18 | 0 |
| ,, Cape | per case | 3 | 0 | | 10 | 0 |
| Lemons | per case | 6 | 0 | | 30 | 0 |
| Oranges, Denia | per case | 15 | 0 | | 34 | 0 |
| ,, Jamaica | per case | 9 | 0 | | 11 | 0 |
| ,, Californian | per case | 14 | 0 | | 21 | 0 |
| ,, Seville | per box | 15 | 0 | | 18 | 0 |
| ,, Valencia | per case | 10 | 0 | | 18 | 0 |
| Pears, Cape | per box. | 3 | 0 | | 5 | 0 |
| ,, Californian | per case | 8 | 6 | | 16 | 0 |
| Pineapples | each | 2 | 6 | | 5 | 6 |
| ,, Cape | per doz. | 4 | 0 | | 15 | 0 |
| Plums, Cape | per case | 6 | 0 | | 12 | 0 |
| Strawberries | per lb. | 2 | 0 | | 5 | 0 |

### Vegetables.

Prices continue firm, and supplies are about equal to the demand.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 | 0 | to | 4 | 0 |
| ,, Jerusalem | per ½-bush. | 1 | 6 | | 2 | 0 |
| Asparagus | per bun. | 3 | 0 | | 4 | 6 |
| Beans, Guernsey | per lb. | 0 | 9 | | 1 | 0 |
| Beet | per bush. | 2 | 0 | | 3 | 0 |
| Broccoli, Sprouting | per bag | 2 | 0 | | 4 | 0 |
| Cabbage, New French | per doz. | 2 | 6 | | 3 | 0 |
| ,, New Cornish | per doz. | 1 | 6 | | 3 | 0 |
| Carrots | per doz. bun. | 1 | 6 | | 3 | 0 |
| Cauliflowers | per doz. | 2 | 0 | | 4 | 0 |
| ,, Cornish | per crate | 10 | 0 | | 16 | 0 |
| Celery | per doz. bundles | 6 | 0 | | 10 | 0 |
| Chicory | per lb. | 0 | 4 | | 0 | 5 |
| Cucumbers | per doz. | 2 | 0 | | 6 | 0 |
| Endive | per doz. | 2 | 0 | | 2 | 6 |
| Horseradish | per doz. bun. | 10 | 0 | | 14 | 0 |
| Leeks | per doz. | 2 | 0 | | 4 | 0 |
| Lettuce | per doz. | 0 | 9 | | 1 | 3 |
| Mint | per doz. bun. | 2 | 0 | | 3 | 0 |
| Mushrooms | per doz. lb. | 8 | 0 | | 10 | 0 |
| Onions | per case | 8 | 0 | | 9 | 0 |
| Parsley | per ½-sieve | 1 | 0 | | 2 | 6 |
| Parsnips | per bag | 4 | 0 | | 5 | 6 |
| Peas, French | per pad | 5 | 0 | | 6 | 0 |
| ,, Guernsey | per lb. | 1 | 0 | | 2 | 0 |
| Radishes | per doz. bun. | 0 | 9 | | 1 | 0 |
| Rhubarb | per doz. bun. | 0 | 8 | | 2 | 0 |
| Seakale | per bun. | 0 | 8 | | 0 | 10 |
| Spinach | per bush. | 4 | 0 | | 6 | 0 |
| Tomatoes, Canary | per pack. | 10 | 0 | | 15 | 0 |
| Turnips | per doz. bun. | 2 | 6 | | 3 | 0 |

## LONDON POTATO MARKETS.

Supplies have shortened somewhat, and so prices are firmer.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Blackland | per ton | 60 | 0 | to | 65 | 0 |
| British Queen | per ton | 80 | 0 | | 100 | 0 |
| Essex | per ton | 70 | 0 | | 80 | 0 |
| Evergood | per ton | 65 | 0 | | 80 | 0 |
| King Edward | per ton | 75 | 0 | | 85 | 0 |
| Up-to-Date | per ton | 75 | 0 | | 80 | 0 |
| Teneriffe, New | per cwt. | 10 | 0 | | 14 | 0 |
| Algerian, New | per cwt. | 12 | 0 | | 14 | 0 |

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| 1912. April 7 to April 13. | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Apr. 7—Sunday | 2 12 | 53 | 50 | 61 | 46 |
| ,, 8—Monday | 1 36 | 48 | 46 | 54 | 48 |
| ,, 9—Tuesday | 11 36 | 42 | 36 | 50 | 37 |
| ,, 10—Wednesday | 6 54 | 45 | 40 | 51 | 40 |
| ,, 11—Thursday | 11 18 | 46 | 40 | 53 | 32 |
| ,, 12—Friday | 10 0 | 46 | 39 | 53 | 27 |
| ,, 13—Saturday | 5 0 | 46 | 42 | 54 | 37 |
| Means | (total) 48 36 | 47 | 42 | 54 | 38 |

| Date. | Rain. | Temperature of the Soil at 9 a.m. | | | Lowest Temperature on Grass |
|---|---|---|---|---|---|
| 1912. April 7 to April 13. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Apr. 7—Sunday | — | 50 | 48 | 47 | 37 |
| ,, 8—Monday | — | 51 | 49 | 48 | 45 |
| ,, 9 Tuesday | trace | 48 | 48 | 48 | 28 |
| ,, 10—Wednesday | — | 47 | 48 | 48 | 30 |
| ,, 11—Thursday | — | 46 | 47 | 48 | 21 |
| ,, 12 -Friday | — | 45 | 47 | 48 | 15 |
| ,, 13—Saturday | — | 47 | 47 | 48 | 27 |
| Means | (total) — | 48 | 48 | 48 | 29 |

Plum buds, pear and other blossom damaged on Friday, 12th, when 17½ deg. of frost were registered on the grass.

# CATALOGUES RECEIVED.

H. CANNELL AND SONS, SWANLEY.—As usual, the spring catalogue from Swanley is a most comprehensive one, and deals with begonias, pelargoniums, dahlias, fuchsias, cannas, violas, chrysanthemums, carnations, and a host of other useful and interesting subjects.

PHIPPS AND IRELAND, BARNHAM, SUSSEX.—Alpine and herbaceous plants are described and listed in the handy little catalogue received from Barnham.

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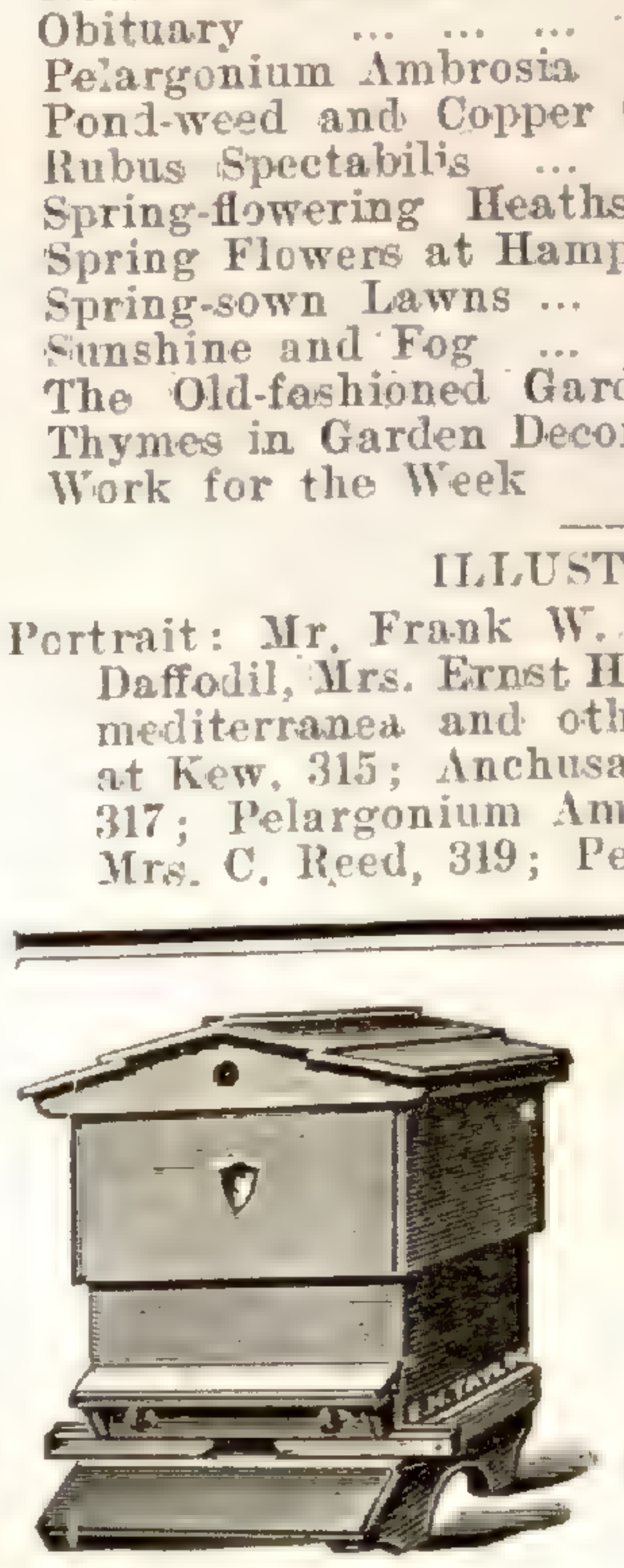

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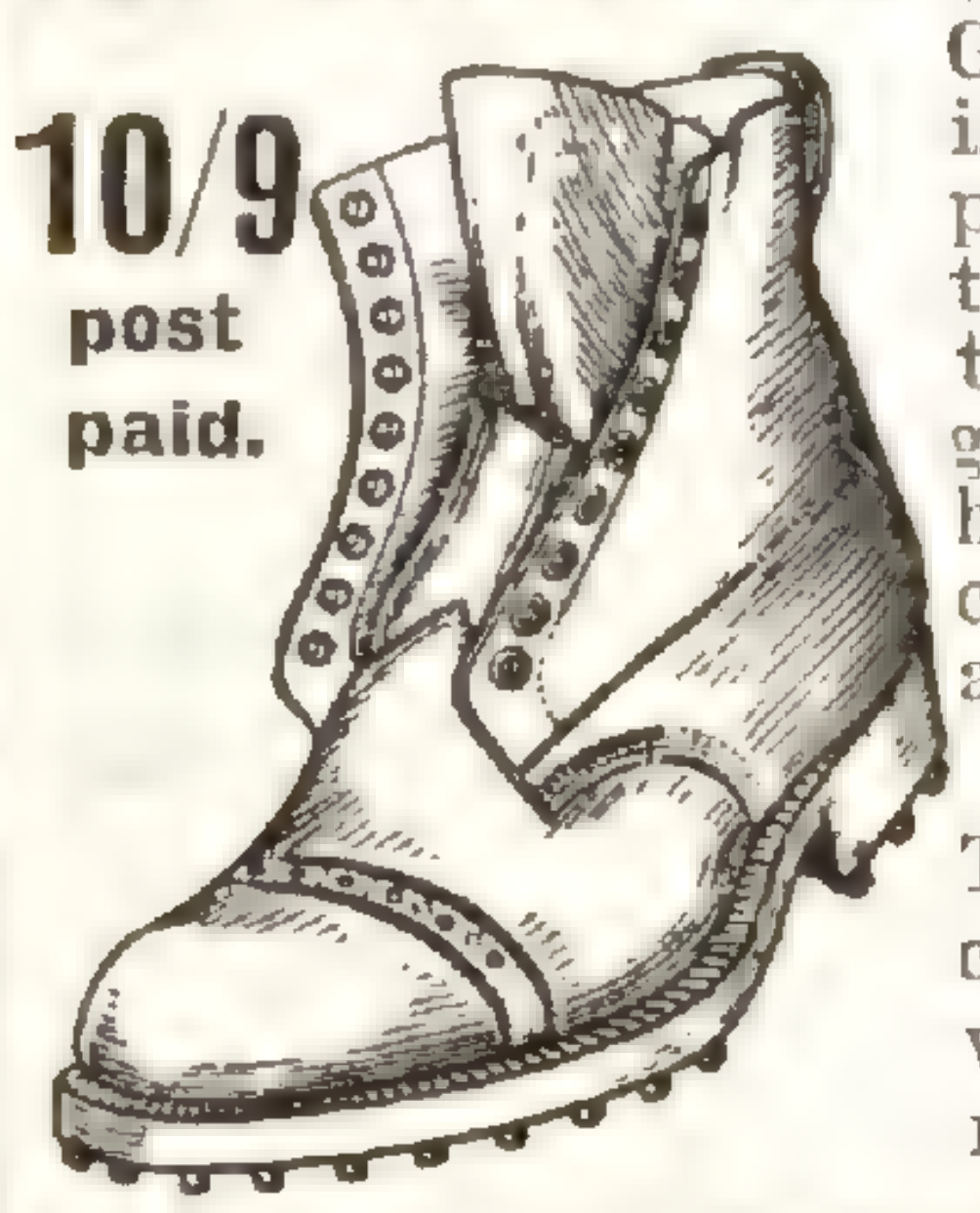

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

ADVERTISER, age 18½, seeks SITUATION as Improver in Gentleman's Garden; 4½ years' experience, partly Inside and Out; good reference. J. WILKINS, Abbotsmead, Elstree.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

E. VENTIN, Gardener to A. D. SELKIRK, Esq., can with every confidence recommend Young Man, age 18, as JOURNEYMAN, or IMPROVER in good establishment; disengaged. J. EATON, Government Lodge, Clewer, near Windsor.

ELECTRICIAN wants SITUATION; Gas and Oil Engines; own repairs; married; well recommended; and fill up spare time in Garden. Apply E. COOK, Debden Hall, Loughton, Essex.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GENTLEMAN wishes to recommend his GARDENER (Head Working) to any Lady or Gentleman; 15 years' experience in all branches; age 30; married, no children. G. BRUNTON, Charlesfield Road, Horley.

GARDENER (Head of three or more); life experience in all branches Inside and Out; excellent references; age 32. G. GRICE, The Gardens, Combermere Abbey, Whitchurch, Salop.

JOURNEYMAN (Second, Inside) under Foreman; 5½ years' experience; age 21; disengaged; can be well recommended; Bothy preferred. Apply A. PUGSLEY, Poltimore, near Exeter.

GARDENER seeks RE-ENGAGEMENT, Single-handed or otherwise. fully experienced, both Inside and Out; accustomed to both large and small gardens; highly recommended, and good characters; disengaged when suited; single. Apply 2,494, Office of this Journal.

GARDENER (Inside and Outside); age 25; single; 7½ years in present position. Apply A. MERRY, Station Hill, Handborough, near Woodstock, Oxon.

GARDENER, single, seeks SITUATION as Under, or Single-handed; no objection to pony and trap; 4 years' good character; disengaged. Apply to T. HARLAND, Black Boys Common, Sussex.

GARDENER (Head); life experience in all branches of the profession; also the Management of Estate, Animals, Woods, etc.; 5½ years in present situation; highly recommended by present and previous employers; age 38; married. W. MOORE, The Gardens, Dornden, Tunbridge Wells.

GARDENER. — MR. HIGGIE, Stanwick Park, Darlington, highly recommends E. SMITH, who has been General Foreman 9 years, to any Lady or Gentleman requiring Head; experienced in all branches, Inside and Out; age 33. Address, Stanwick Park, Darlington.

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**Read what an Advertiser writes re "Gardeners' Magazine."**

March 31, 1912.

Dear Sirs,—

Will you kindly discontinue my advt. in your "G. M.," as I am suited. I obtained more answers through the medium of your paper than through any other source, and have obtained this position through same. Thank you very much.

Yours, etc.,
E. D.

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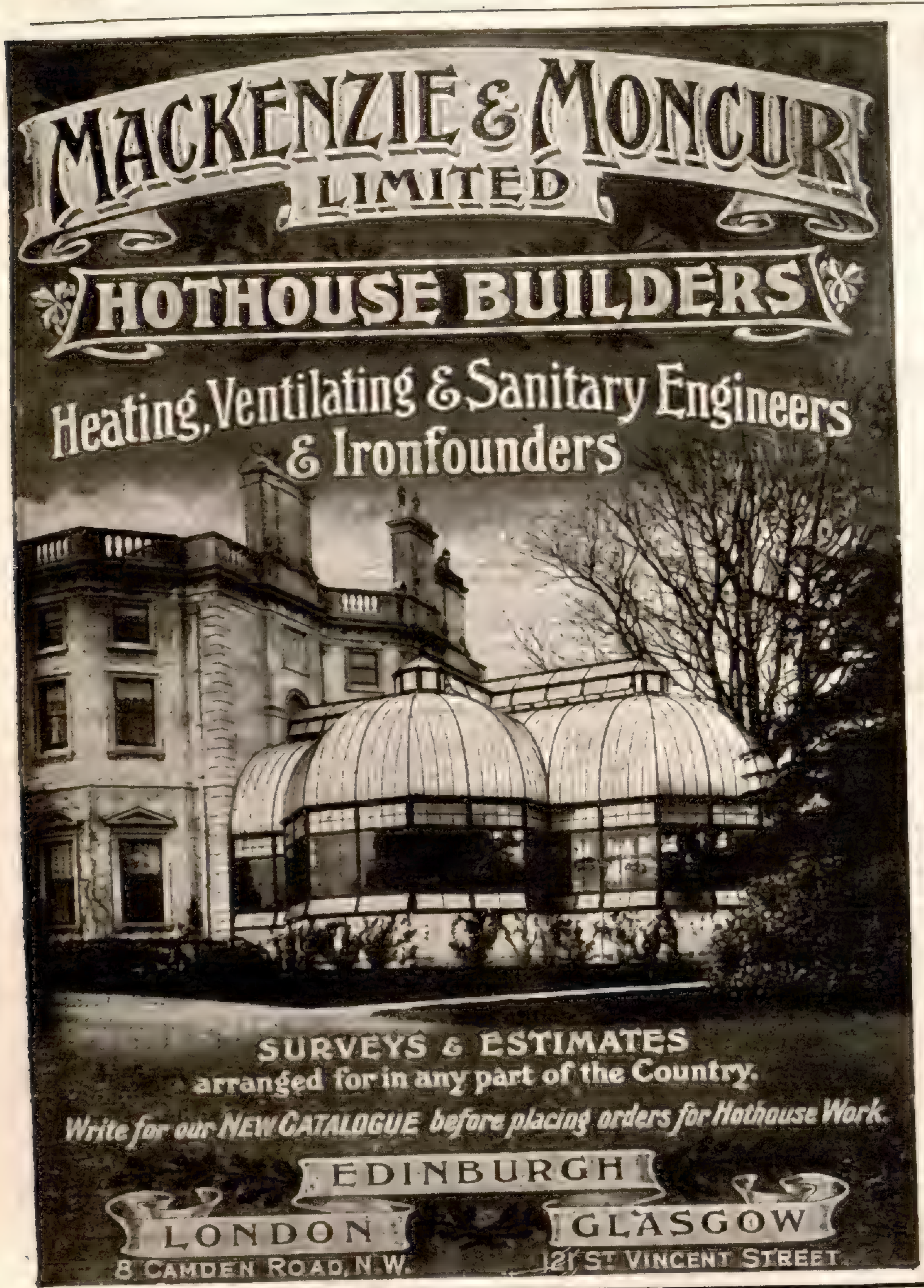
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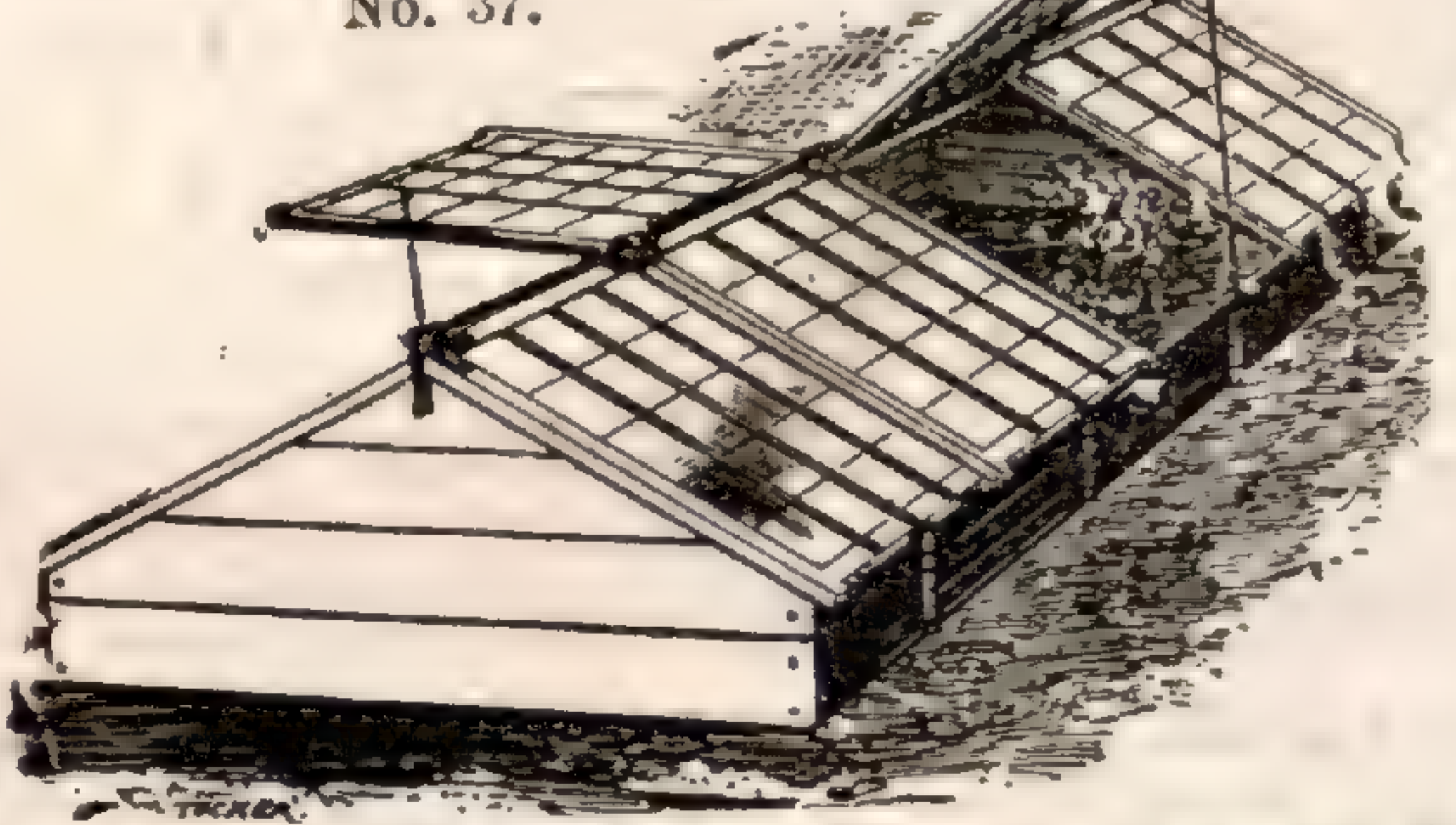

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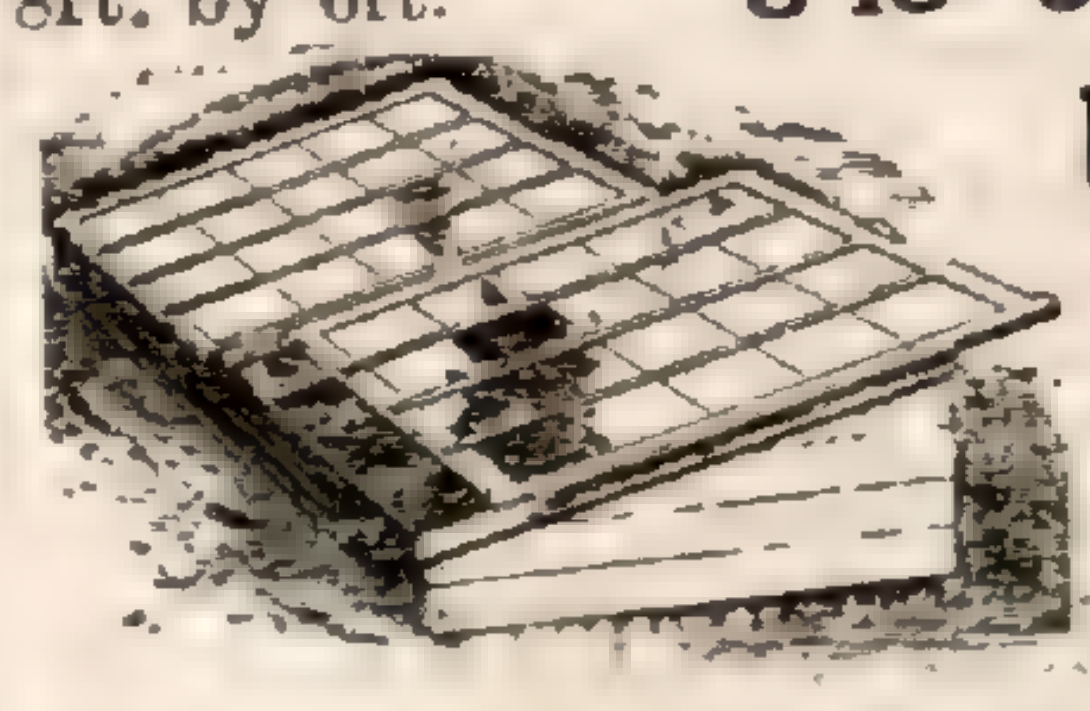

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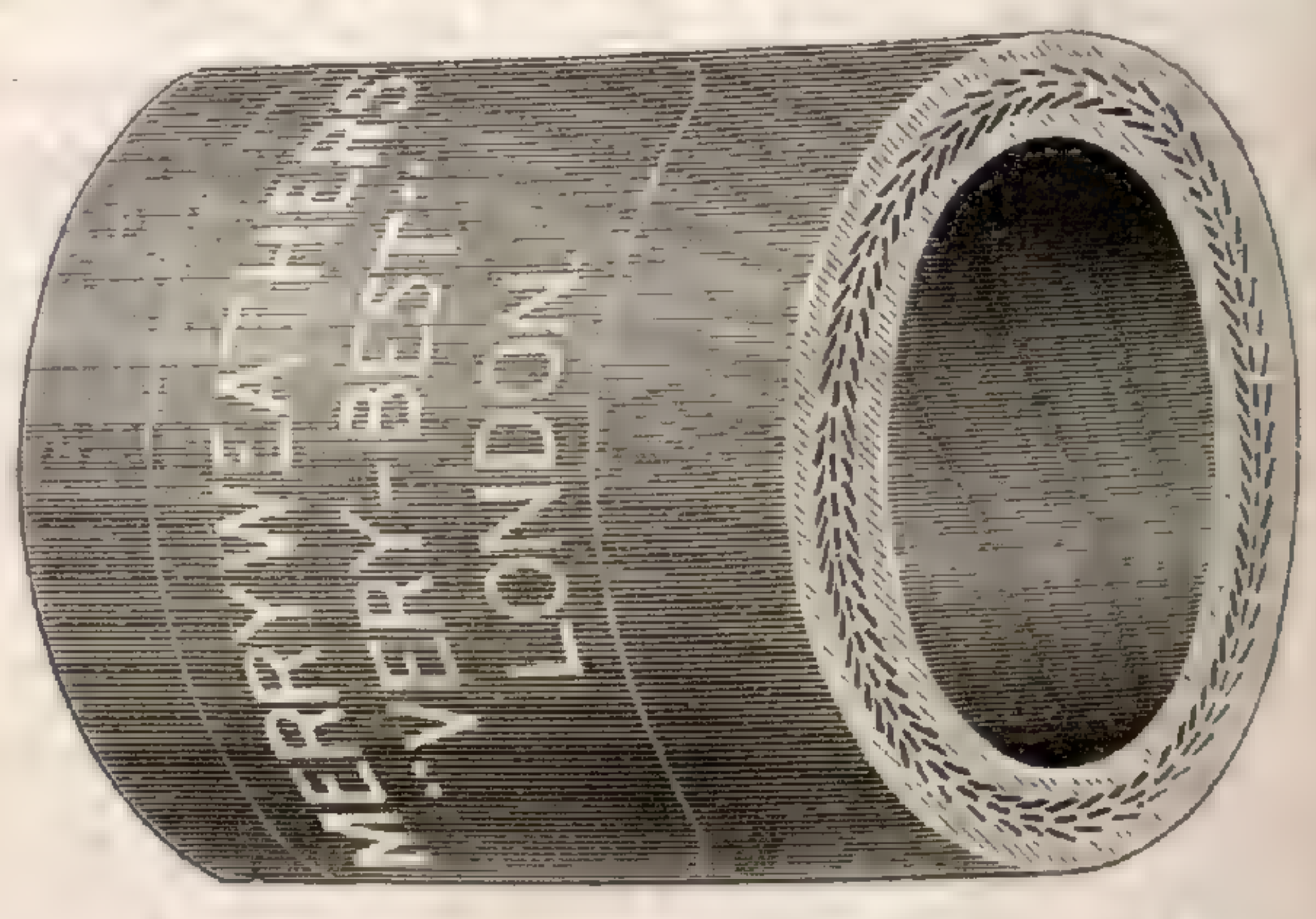

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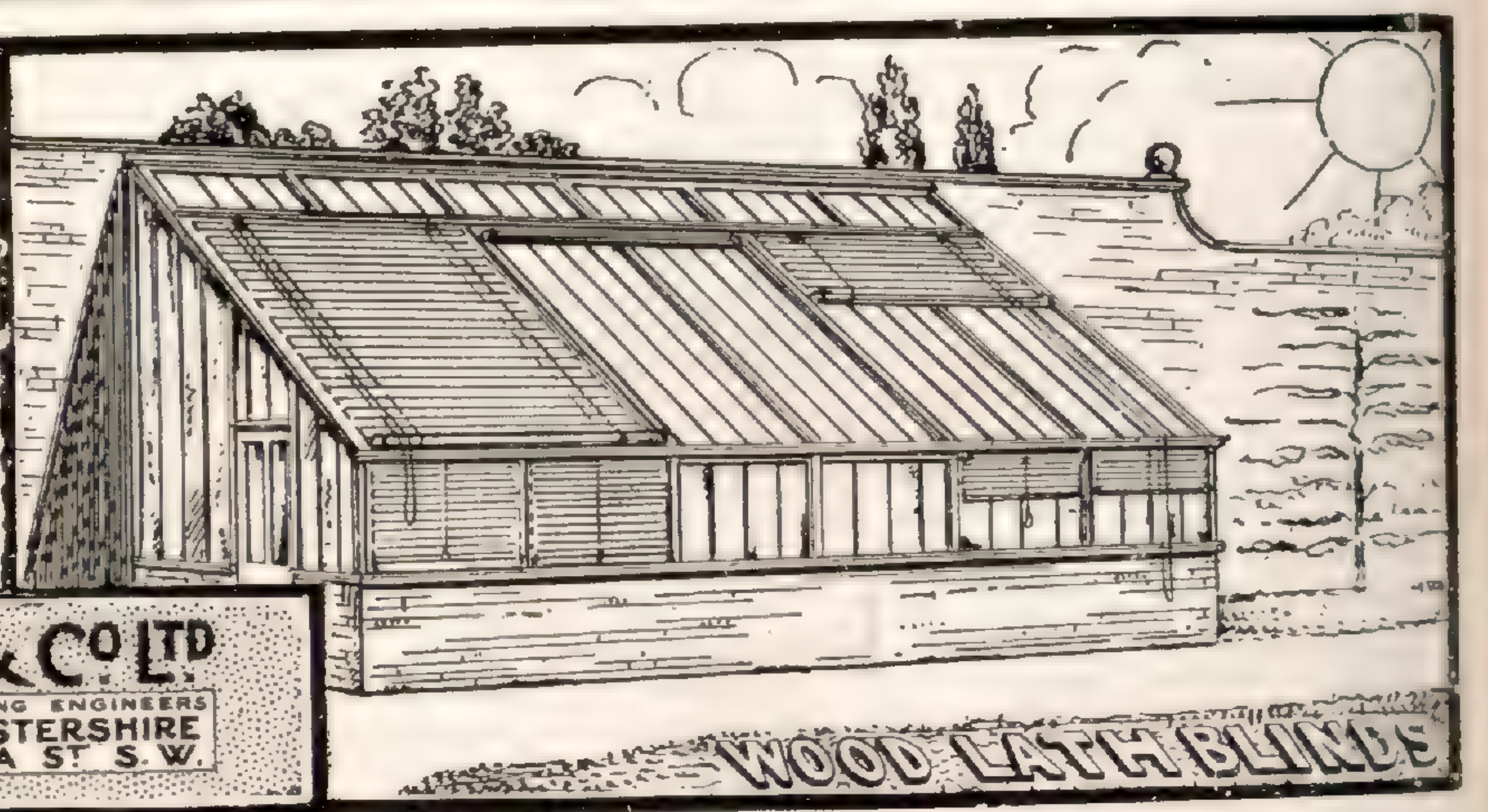

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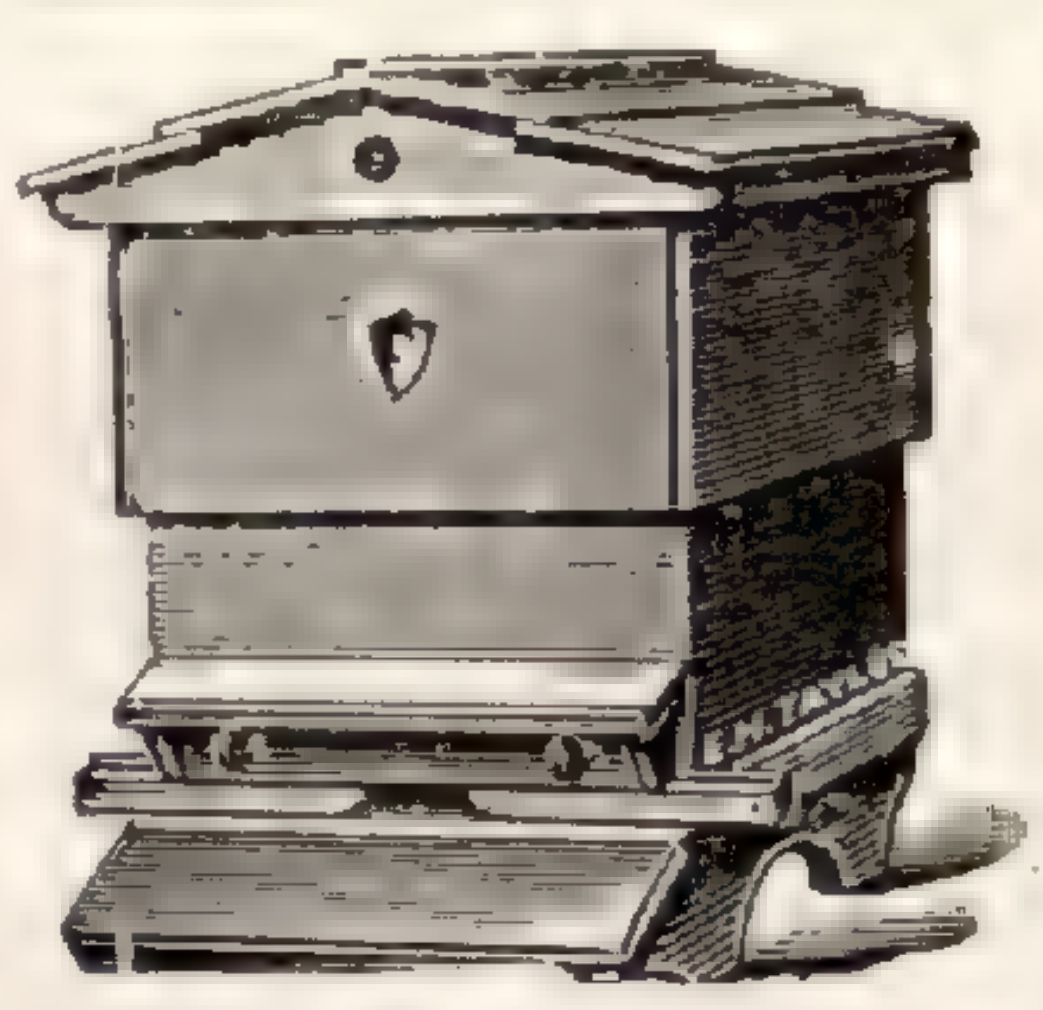

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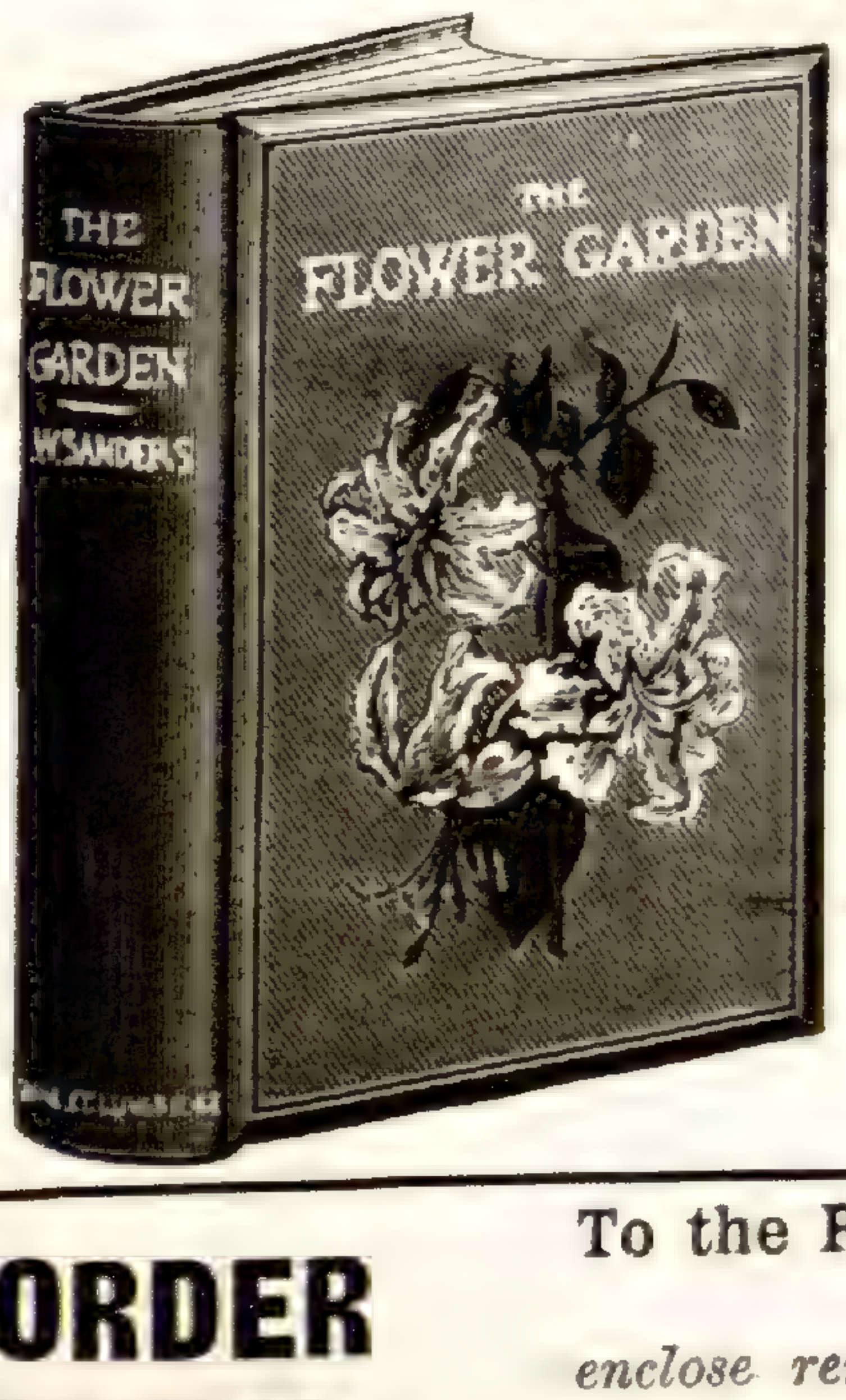

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# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

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### Selective Culture.

Selective culture, which implies the influence of man's needs and taste as distinct from the purely natural selection, which has led to such infinite diversity of type in both the animal and vegetable kingdoms, must have been commenced at a period long antecedent to any human records. At the outset, no doubt, the unsophisticated roots, foliage, and fruits were devoured with but little discrimination by savage nomad races, as they came across them in their hunting expeditions, or were forced in times of stress to seek for anything which appeared to be edible. Experience would in time teach them what to choose and what must be avoided. It may, then, be assumed that, when circumstances permitted the formation of a settlement, such forms of vegetation which had proved to be nutritious would be encouraged to grow in the locality by the scattering of seed or by transplanting; so that, in this way, the foundation of agricultural methods would be laid. Here, already, selection would have begun by choosing the fittest wild types, and obviously the next step would be the selection of any of these which showed improvement under the rude culture afforded them. The result of these operations was that in the earliest botanical records extant we find a number of fruits, vegetables, and cereals which had already been so transformed by long-continued selection that it is difficult, and sometimes even impossible, now to indicate which was the originally wild species whence these varieties sprung. It may even be possible that in the process of evolution the original wild species has disappeared, its varietal descendants only surviving by virtue of the protection afforded by constant cultivation. The wonder, in this connection, is that so many wild species have been gifted with such powers of variation and responsiveness to culture as to yield the marvellous results which we see around us nowadays. If we visit our flower, fruit, and vegetable shows, we see a practical infinity of forms of vegetation, in which size, shape, flavour, scent, habit, and, in short, every vegetative character has been utterly transformed by man's selection. The few tiny, hard seeds of the grass tribe are multiplied and swollen into the comparatively large ones of wheat, barley, oat, and maize, and all their kin; the sour or acrid berry of wild plum or gean is represented by a host of luscious plums or cherries; the leather-coated almond has hidden itself, as it were, behind the blushing, blooming cheeks of peach or nectarine; the simple petals of the rose family, such as dot the wild bushes in our hedges, are transformed into cataracts of brilliantly-coloured blossoms or huge individual ones of queenly beauty and unimaginable delicacy; the tough, fibrous roots of the wild carrot, turnip, etc., have been transformed into great masses of tender nutritious material; small, hard tubers into huge edible ones; and even the foliage, as in the cabbage, has been expanded and varied in many ways to form valuable food for man, and so much of the animal kingdom as he, in like selective fashion, has brought under his sway. In considering all this series of transformations, it is folly not to recognise the debt we owe to that beneficent creative power which has endowed all these plants not merely with the capacity of responding to cultural conditions by increased growth, but of varying every now and again on different lines, and thus leading up to different forms, which do away with that monotony which a mere accretion of growth would have involved. Thanks to this capacity for sporting, which appears to be utterly beyond man's powers to induce or determine, we have now a practically infinite variety of fruits, vegetables, and flowers to choose from, as our exhibitions demonstrate. To some extent, also, we are beginning to comprehend the laws which underlie the inheritance of those characters which form the selective cultivator's opportunities, and are consequently becoming able to determine with greater certainty the lines of progress to be pursued; while simultaneously scientific research is revealing day by day fresh methods of increasing the fertility of the land, and thus expanding its productiveness.

MR. EDWARD BULL.
Proprietor of Messrs. William Bull and Sons, Chelsea.

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**Mr. Edward Bull,** proprietor of the firm of Messrs. William Bull and Sons, King's Road, Chelsea, is widely known among horticulturists, as business duties take him to many parts of the British Isles. He was educated at Ravensnowle, Anerley, and the City of London School, and, after receiving private tuition, entered his father's business at an early age. After the death of his father and the illness of his elder brother, the responsibility of the business fell upon his shoulders. About 1901 he conceived the idea of raising seedling orchids in large quantities, to see if it were not possible to place really good varieties before the public at a modest outlay as compared with the high prices paid for the finest forms of imported species. With Mr. Lakin's help he has carried out this idea with great success, and, incidentally, has maintained the reputation of his firm for new and rare plants. In recent years he has taken up the work of improving hippeastrums, and with happy results. Indeed, Mr. Edward Bull is as keen on introducing hybrid and cross-bred novelties, as his father was in introducing new plants from all the ends of the earth. To encourage plant breeders, he is giving three silver cups at the Royal International Horticultural Exhibition for the best hybrid odontoglossum, the best hybrid cattleya, and the best odontioda respectively.

**Royal International Horticultural Exhibition.**—In connection with this great gathering two conferences will be held in the Recreation Hall, Chelsea Royal Hospital, at which subjects of an international character will be discussed. The Right Hon. A. H. Dyke Acland, the chairman of the Science and Education Committee, will preside at both conferences. The first will be held on May 23, commencing punctually at two p.m., and the subject for discussion will be Horticultural Education. The speakers will be Professor L. H. Bailey, Cornell University, U.S.A., who will deal with the question of "Horticultural Education in America"; Herr K. Weinhausen, of Berlin, who will speak on "Horticultural Education in Germany"; and W. Hales, Esq., of Chelsea Physic Garden, who will give an address on "The Education of a Gardener." The second conference is arranged for May 24, and will commence at 9.30 a.m. The subject will be "Legislation in Connection with Plant Diseases and Pests," and the speakers will be Professor Ritzema Bos, of Holland, who will give an address on "The Value of Importation Regulations as a means of Preventing the Introduction of Plant Pests from Abroad"; A. G. L. Rogers, Esq., of the Board of Agriculture, who will deal with "The Aims of Legislation in Great Britain"; H. Maxwell Lefroy, Esq., M.A., F.Z.S., F.E.S., of the Indian Department of Agriculture, who will speak on "Legislation in Connection with Insect Pests"; and H. J. Güssow, Esq., F.R.M.S., Botanist to the Canadian Government, who will give an address on "Legislation in Connection with Fungus Diseases." The several addresses at each conference will be followed by a discussion.

**Rose Conference and Dinner.**—The National Rose Society will hold a Rose Conference at the Holborn Restaurant on May 20, at five p.m., when the president, Rev. J. H. Pemberton, will deliver a lecture on "The Modern Development of the Rose." The lecture will be followed by a discussion. There will be no charge for admission. At seven p.m. the same day the members of the society will dine together, and to the dinner some of the leading foreign rosarians, who will be over for the International Horticultural Exhibition, have been invited as guests of the society. The charge for dinner will be 5s., exclusive of wine and coffee. Mr. Edward Mawley, V.M.H., Berkhamstead, hon. secretary, should be applied to for tickets.

**Rainfall of the Winter,** 1911-12.—In an interesting letter which appeared in the "Times" of Tuesday, April 16, on the rainfall of the past six months, Dr. H. R. Mill states that, taking the average rainfall for that period as 100, that of the winter half-year 1911-12 in Scotland was 111, in Ireland 136, in England and Wales 141, and in the British Isles as a whole 131, the excess over all being very nearly equal to two months' rainfall. It places the excessive rainfall of the six months in a striking light when it is recognised that as much water was deposited on the surface of the British Isles in that time as during the whole year 1887. Dr. Mill expresses the opinion that it is not as a rule, safe to pay much attention to extreme readings at individual stations, as there is always the possibility that an error of observation or transcription may infect them; but the general rainfall of large areas can be accepted as free from such risk. He gives particulars of the general rainfall of the Thames Valley above Teddington, an area of about 3,800 square miles, for a period of 29 years. The average rainfall of this large region for the year has been estimated as about 27in., of which 12.50in. fall in the summer six months, and 14.50in. in the winter six months. Considering the year broken as near the equinoxes as the end of the months allows, and composed of the summer six months with the next following winter six months, it was found that there has not been an instance of greater disparity between the summer and winter rainfall than in 1911-12, when from April to September there fell only 8.11in. of rain, and from October to March 23.53in. The summer rainfall was 35 per cent. below the summer average, the winter rainfall 62 per cent. above the winter average. The summer half-year of 1893 was a little drier, with 7.82in., or a deficiency of 39 per cent.; but no other winter since the comparison became possible in 1883-84 was so wet. The nearest approach was the winter six months of 1903-04 with 19.33in., an excess of 35 per cent.; but, instead of being preceded by one of the driest summers, that winter had been preceded by the very wettest summer in the record. The six months' winter rainfall of 1911-12 was greater than the whole rainfall of seven out of the 29 years under consideration, viz., 1887-8, 22.20in.; 1890-1, 21.65in.; 1893-4, 22.41in.; 1897-8, 21.79in.; 1901-2, 22.32in.; 1904-5, 22.08in.; 1906-7, 22.87in.

**Royal Botanic Society and the International Exhibition.**—We learn that the Royal Botanic Society have offered a plant of the giant water-lily—Victoria regia—for exhibition at the forthcoming Royal International Horticultural Exhibition at Chelsea, and have also offered two large gold and two silver medals for roses and carnations.

**Racemose Gooseberry.** — Mr. Worthington G. Smith, of Dunstable, recently sent drawings to the R.H.S. Scientific Committee, illustrating flowers and fruit of a racemose form of gooseberry, which had been referred to previously as a hybrid between the gooseberry and the black currant on account of the thickly-produced clusters of very dark berries and their flavour, which was said to be intermediate between the gooseberry and black currant. On careful examination of the flowers and fruit he had, however, been unable to find any trace of black currant. The plant appeared to be wholly gooseberry with flowers and fruit borne in racemes of from two to five. He could detect no black currant flavour, although the taste was delicious and strong. No oil glands are present on any part of this new form, and the fruits are perfectly glabrous. The pollen is exactly that of the garden gooseberry. It flowers three weeks in advance of the black currant. The merit of the plant lies in its great fruit-producing properties, as on a given length of branch it produces more fruit in weight than, probably, any other bush extant. The colour of the fruit when ripe is deep, almost black, maroon or dark mahogany, becoming black. The cuttings strike freely in any soil, many of last year's shoots being nearly a yard in length. Seeds planted by Mr. Smith did not germinate. The plant originated as a seedling in a market-grower's garden in the South of England, where it was regarded as a variety more curious than useful. Mr. R. H. Nicholls, of Dunstable, has acquired the stock.

**Relative Popularity of Show Auriculas.**—In an interesting contribution to the report of the Southern Section of the National Auricula Society Mr. J. L. Gibson gives a list of the show varieties exhibited not less than ten times during the years 1902-11. The names of the varieties and the number of times staged are as follows: Acme, 141; Mrs. Henwood, 101; Heather Bell, 93; Ruby, 91; Mrs. Potts, 88; George Lightbody, 84; George Rudd, 80; Abraham Barker, 78; Rev. F. D. Horner, 75; Shirley Hibberd, 71; Abbe Liszt, 65; Rachel, 58; Richd. Headley, 57; Favourite, 44; Mrs. Phillips, 40; Miss Barnett, 36; Black Bess, 35; Gerald, 32; Mikado, 32; Olympus, 31; Lancashire Hero, 30; Cleopatra, 30; Conservative, 28; Heroine, 26; Col. Champneys, 26; Wm. Brockbank, 24; Harrison Weir, 22; Marmion, 21; Dr. Hardy, 20; Dinham, 18; Mrs. Dodwell, 18; Jas. Hannaford, 16; Miss Ethel, 13; Prince Charming, 11; Perseverance, 11; Brunette, 11; Gladiator, 11; Eucharis, 10; Frank, 10; Beauty, 10. With reference to the relative positions of the varieties, Mr. Gibson observes: "Some old-time favourites owe a relatively high position only to past glories; while some of the younger competitors, like Harrison Weir, Mikado, and Favourite, would have been higher but for their youth. Favourite, for instance, has largely supplanted Mrs. Potts, and Black Bess, constantly exhibited up till 1906, is now never seen; while Mikado, gaining its credentials in that year, has steadily come to the front, and is now recognised as one of the finest selfs."

**Monsieur Jules Vacherot.**—A portrait of this distinguished French landscape gardener appears in the last issue of our contemporary "Jardinage." His work in laying out the grounds of the great Paris International Exhibitions of 1889 and 1900 is well known, and appreciated. He also designs the spring and autumn shows of the National Horticultural Society. He laid out the French Section at the Franco-British Exhibition at Shepherd's Bush, has remodelled the King of the Belgians' gardens at Laeken, and done much other useful work.

**Front Garden Competition at Kingston.**—For many years the authorities at Kingston-on-Thames have interested themselves in the improvement of flower gardening, especially in connection with front gardens attached to the dwellings of artisans. This has led to a considerable improvement in the appearance of the town. This year the Mayor of Kingston, Councillor G. E. J. Street, is offering a silver challenge cup for the best-kept front garden in the borough. Kingston's example might well be followed by other towns.

**Horticultural Conference at Newcastle.**—Under the auspices of the North of England Horticultural Society, a conference will be held at Armstrong College, Newcastle, on Saturday, May 4. Earl Grey will preside, and proceedings commence at three o'clock, when Sir Thomas H. Elliott, permanent secretary of the Board of Agriculture, will lecture on "Horticulture in Secondary Schools and the New Farm Institutes." Mr. H. J. Chapman, of Oakwood Gardens, Wylam, will follow with an address on "The International Horticultural Exhibition of 1912."

**New Experimental Garden for Lancashire.**—The new experimental garden at the Lancashire County Council's farm near Preston is nearly completed, and should prove an important factor in the horticultural education that is being carried on in the county. The garden is situate within a ten-minutes' walk of Hutton and Howick railway station, and was established in the latter part of last year. The ground, which previously formed part of a pasture farm, consists of four acres of good loam overlaying a bed of marly clay. The garden has been established for educational and experimental purposes, and not as a source of profit; but the work will be so arranged as to have a commercial value. Botanical beds have been provided for the use of students, and for the information of market growers various fruits and vegetables will be grown, and their value for market tested. In the interest of fruit growers experiments have been arranged to demonstrate the results of the various methods of planting, pruning, training, and spraying of fruit trees; the effect of lime and the various kinds of manures; and the prevention and destruction of insect and fungoid pests. Arrangements are being made for training elementary school teachers to take the subject of gardening in the day schools. One of the features will be a model cottage, which is being erected on a special part of the Hutton farm, with a garden to be devoted to horticultural instruction conducted on commercial lines. The garden has an area of 20 rods, part of which will be devoted to the cultivation of vegetables under a proper system of rotation, and part to fruit and flowers. A strict account will be kept of the receipts and expenditure. The fruits that will be grown in the garden will comprise apples, pears, plums, gooseberries, black currants, raspberries, strawberries, and rhubarb. A so-called French garden, with an area of one-sixtieth part of an acre, is being formed with the object of determining whether the climatic conditions in Lancashire are favourable to the growth of early vegetables and saladings under the French system. The head gardener is Mr. J. Gillett, and the horticultural instructor for Lancashire is Mr. A. G. Sowman, who has written an excellent description of the garden and its objects.

**Victorian Fruit Exports.**—According to information received by the Agent-General for Victoria, Australia, about 318,000 cases of fruit will be despatched from Melbourne to London and Antwerp during the present season.

**Spring Flowers at Sefton Park, Liverpool.** — Mr. Jas. Guttridge, superintendent of the Liverpool Parks, is to be congratulated upon the beautiful display of early flowers in the large palm house at Sefton Park. Near the north door is a fine group of hippeastrums surrounding the lovely marble representation of Highland Mary, with lachenalias overhead. Near the opposite door is a mixed group of lilacs, rhododendrons, spiræas, genistas, wistarias, azaleas, and tulips. Cineraria stellata is good, and Senecio Moorei, mixed with daffodils, was delightful a week or two ago. Facing the marble seat is a group of choice orchids, including many lælio-cattleyas, oncidiums, and dendrobiums, with tulips, roses, and ferns as a basal setting.

**American Gooseberry Mildew.** Having received information that the summer stage of the Gooseberry Mildew (Sphaerotheca Mors uvæ )was found in a Cambridgeshire garden on April 15, the Board of Agriculture urges gooseberry growers to carefully examine their bushes, promptly report the presence of the disease, and, if the least evidence of the fungus is found, to spray the gooseberries with potassium sulphide used at the rate of 1lb. to each 32 gallons of water.

**Tobacco Growing in Ireland.**—From the annual report of the Department of Agriculture and Technical Instruction for Ireland, we learn that in 1911 pipe varieties of tobacco were planted on one hundred acres, cigarette varieties on twenty-eight acres, cigar varieties on five acres, and varieties for the production of nicotine on one acre. The season of 1911 was, on the whole, exceptionally favourable for tobacco growing. The crop would probably have been the best both as to average yield and as to quality that has been grown since the beginning of the experiments had it not been for the fact that the tobacco on about fifteen acres was injured by insects and disease. The tobacco grown in 1910 at all centres except two was sold to manufacturers, the average price obtained being 5¼d. per lb. The prices ranged from 4d. to 6½d. per lb. for pipe varieties, 6d. per lb. for cigarette varieties, and from 3½d. to 8d. per lb. for cigar varieties. The reports of the manufacturers who purchased the crop were similar to those made on the 1907 and 1908 crops. Most of the tobacco was blended carefully with foreign leaf, but in one case Irish-grown tobacco alone was used with successful results.

**Tulips at Sheffield.**—Last Sunday was a great day at the Sheffield Botanic Gardens because of the wonderful display of tulips that greeted visitors. Thirty thousand were on view, and most of them had their flowers all fresh and newly opened. Proserpine, Belle Alliance, Vermilion Brilliant, Keizerskroon, and White Hawk were particularly fine, the purity of the white blooms of the latter causing not a little comment, and it was generally conceded that the coal strike, and consequent reduction of black smoke and dust, was largely responsible for this pleasing state of affairs.

**Sweet Pea Prizes for Children.**—One of the special features of the exhibition of the National Sweet Pea Society, to be held at Boston, U.S.A., July 13 and 14, which is attracting much attention, is the proposed display by school children. A leaflet has been issued showing the schedule of some twenty-four classes, open only to school children, and carrying simple suggestions for the successful growing of sweet peas. A large number of these has been distributed through school superintendents in Boston and vicinity, and an interesting exhibition is anticipated. The "Weekly Florists' Review" states that the seed stores note a considerable demand for seeds as a consequence of these school children's prizes.

**A Newly-discovered Fossil Plant.**—At the monthly meeting of the Royal Society of Edinburgh, a communication from Dr. W. T. Gordon, Edinburgh, was read by Professor James Geikie on "Rhetinangium Arberi, a New Fossil Stem from Pettycur." This newly-discovered fossil plant has, according to Dr. Gordon, several features which render the type rather important from an evolutionary standpoint. The specimens, of which three have so far been obtained, were derived from rocks of Lower Carboniferous age at Pettycur, Fife, and Edrom, Berwickshire. The Pettycur specimens are better preserved, and anatomical description was therefore based on the stems and petioles from that locality. One important feature was the occurrence of resin ducts and sacs in practically every tissue in the stem—wood, inner cortex, and outer cortex—and the first part of the generic name denotes this characteristic. At the same time, the monostelic axis and the general anatomy of that axis are distinctly of the Heterangium type. The generic name therefore represented two well-marked features of the stem. The specific name was given in honour of Dr. E. A. Newell Arber, who supervised the work of the author when in Cambridge. The affinities of this new plant were interesting; for, while it resembled Heterangium in many points, there were several characteristics which seemed to indicate some relation with Sutcliffia and the other coal measure Pteridosperms. But there was no genus with which it seemed more closely allied than Dr. Kidston's new genus, Stenomyclon. Indeed, Rhetinangium was a possible phyllogenetic link between the lower Pteridosperms as represented by Heterangium and the higher members of that group.

## YELLOW SAXIFRAGES.

Only a few years ago the number of saxifrages with yellow flowers was very limited, and the writer can well remember the enthusiasm among alpine cultivators when such beautiful flowers as Saxifraga Boydi were brought within their ken. Since then many new species and varieties have made their advent, and it may be said that we have now a good choice of plants of this colour. We had, then, it is true, a small number of yellow saxifrages, but some of these did not accommodate themselves to the ordinary conditions of our gardens, and there were others which did not flower freely enough to give satisfaction to their growers.

### Saxifraga Hirculus.

One of the older plants is the native Saxifraga Hirculus, the Marsh Saxifrage, whose limitations as to position are indicated by the popular name it bears and never does really well anywhere where it cannot receive an ample supply of moisture. It is at its best by the side of a little streamlet; an artificial or natural bog in the garden; or the margin of some little tank or pool where it can obtain plenty of the moisture it calls for.

The ordinary S. Hirculus is an upright-growing plant about six inches high, and having narrow leaves, and bearing fair-sized good yellow flowers on the tops of the stems. There is a scarce, but superior variety, S. Hirculus major, which is taller, has larger flowers, and is altogether more desirable.

### Saxifraga aizoides.

Here we have another and desirable native plant with yellow flowers, and also a lover of moisture. It is a low-growing, more tufted plant, making small cushions of pretty foliage and bearing pleasing yellow flowers. It is eclipsed in colouring by the fine variety S. aizoides aurantiaca, which is now rather scarce, and has its blooms of a deep orange yellow. It is rather a pretty plant, and is withal not quite so desirous of moisture as S. Hirculus. The writer, in default of an ideal position, such as the edge of a pond or stream, grew it for several years on the lower part of the shady side of a small rockery, giving it good soakings of water every few days. It will also do well on wet rocks. There is a later-flowering variety, called S. aizoides autumnalis.

### Yellow Varieties of S. aizoon.

We have now two very beautiful yellow varieties of Saxifraga aizoon, one of our most useful Silver Saxifrages. They are beautiful enough when not in flower, their rosettes of silver-edged leaves giving great pleasure, but they are still more so when they throw up their little spikes of yellow flowers. The finer of the two is called S. aizoon flacescens, and this has beautiful little flowers of a good lemon-yellow. The other, S. aizoon lutea, is not so bright in its colouring, but it is much cheaper than its ally. These should have a sunny place and gritty soil.

### Saxifraga aspera.

Some will object to the inclusion of this among the "yellow" saxifrages, but its blooms are of a kind of butter colour, and may be included in a somewhat broad list. It is of mossy habit, and can be grown in sun or shade on the rockery. It is easily cultivated in a mixture of peat and loam with sand and grit, or with leaf-soil substituted for the peat.

### Saxifraga apiculata.

This charming little saxifrage is one of the most valuable for the rockery, and is one which is not at all difficult to cultivate. It makes neat, flat cushions of small leaves, and has charming little primrose-coloured blooms in early spring. It likes a sunny place in gritty soil. As it blooms very early, its beauty is prolonged by protecting it from the stress of the spring showers of rain and sleet by a sheet of glass. It is quite hardy, however.

### Saxifraga aretioides.

Here we have a scarce and lovely saxifrage, which makes exquisite little silvery tufts of dainty rosettes, surmounted by beautiful yellow flowers, which are wonderfully large for such a small plant. Its variety primulina, with paler flowers, is rare indeed now, although formerly better known. These require a choice spot in sun and a gritty soil with peat and sand, or leaf-soil and sand. These are among the daintiest of our yellow saxifrages.

### Saxifraga Boydi and its Varieties.

Saxifraga Boydi is a lovely plant, which originated in a Scottish garden, and forms beautiful little plants of grey-green, surmounted by charming, bright yellow flowers. It has not a good reputation in the garden, but is very lovely. The raiser grows it in sun, and in a soil largely composed of sand, and this proves as good a treatment as can be suggested. There are two varieties with paler flowers, the one named S. Cherrytrees and the other S. Faldonside.

### S. cymbalaria.

Here we have a lovely annual saxifrage, with glossy leaves and delightful yellow flowers. It begins to flower when only about an inch high, and gradually rises, flowering all the time, until it is about six inches high. It loves shade and moisture, and sows itself so freely that it is practically a perennial.

### Saxifraga Elizabethæ.

Queen Elizabeth's saxifrage is a delightful plant, and a much better doer than such favourites as S. Boydi, while the flowers are of excellent colour, and the habit of the plant capital. It makes a good clump of deep green leaves, surmounted by many bright, almost saffron-yellow flowers. I think it blooms more freely in small plants than when large, but it is one of the best of all the yellows in this glorious family of flowers. It does well in gritty soil in sun.

### S. Ferdinandi-Coburgi.

This is a rare beauty, an ardent lover of the sun, and also having a liking for lime. It is a rock-loving species, and a charming thing with little tufts of silvery-grey and good yellow flowers.

### S. juniperifolia (or juniperina).

Probably named the Juniper-leaved Saxifrage on account of its spiny leaves, this is one of the yellow saxifrages which is rather a disappointment to many. It is usually a shy bloomer, and makes big tufts of foliage (for a plant of its class, I mean), but bearing few of the rather dull yellow flowers. I have always found it flower best if it had a sheet of glass or a handlight over it, but it is inferior by a long way to S. Elizabethæ and others of its class.

### S. sancta.

We may make the same remark about S. sancta, which, however, seems to do better in some places than in others. It makes large masses of pretty leaves, but bears few of its nice yellow flowers in proportion.

### Other Species.

S. mutata, a curious rosetted one with coppery flowers; S. Kotschyi, pale yellow; S. pseudo-Haussmanni, S. scardica, and the true S. luteo-viridis, may be mentioned among other yellow-flowered saxifrages. The new and very lovely S. Paulinæ should not be forgotten by those wishing to form a good collection of these charming yellow forms, or who wish to purchase a few to associate with their lovely kinswomen of different hues. S. Arnott.

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## THINNING GARDEN CROPS.

The importance of thinning crops is often overlooked, or neglected, until considerable damage has been done, in some instances irreparably so. Most people who are interested in a garden have no doubt noticed how soon plants that stand close together in the seed beds become drawn, and when planted out seldom present that sturdy appearance one likes to see. It is, however, not only seedlings that are apt to be neglected, but even plants in the herbaceous and shrubbery borders are often left far too long in an overcrowded condition, thus spoiling what might otherwise have been noble specimens.

Let us first deal with the thinning of vegetable crops, as that is all-important at this season of the year. No doubt some have made special note of the difference in the cropping of early peas that were raised under glass to those sown in the open ground. Those raised artificially being planted out at regular intervals, have ample room to develop in their early stage, commencing to make lateral growths near the ground, while those that are left thickly together, where they are sown, make no laterals at all. Though it is advisable to always sow thicker than the plants are intended to stand, thinning should be attended to as soon as it is safe to do so, in order that the plants may grow sturdy from the commencement, for unless they have ample room to develop their foliage, it cannot be expected they will produce an abundant crop of the finest fully-developed pods. Some varieties require more room than others, their foliage being much larger, and it is advisable to allow those that are sown during the summer more space than the early sowings. Thinning, however, must be done with judgment, so as to allow all plants the same amount of space between them.

Many no doubt have observed how quickly radishes that stand singly are ready for use, and the small amount of foliage they make compared with those that grow thickly together. If this is the case with radishes, it also applies to other crops, therefore those who are desirous of having them mature quickly must pay attention to thinning at the earliest possible moment. Turnips that are much crowded together seldom make bulbs good in shape or of the finest quality. To have them bulb early they should be thinned to the proper distance when the plants are quite small, otherwise instead of having sweet, fleshy roots, there will be nothing but plants with thick leaf stalks and overgrown foliage, which soon run to seed, and should a few of them form bulbs such are usually tough and stringy, having been too long in arriving at maturity. The distance allowed between each must depend on the variety grown, as some make far more foliage than others. The strap-leaved kinds may be grown closer together than the others; in each case, if the plants are too close together, there will be a superabundance of foliage and very poor roots. The same remark applies to early carrots, though these making but slight leaves may be allowed to stand much closer together, as not being so dense in foliage the light and air passes through it more freely. Late carrots should be allowed a greater distance between them, as these, making more ample foliage and larger roots, need more space in which to develop, if nice clean well-shaped roots are to be had. Beetroot and parsnips grown on rich soil make a quantity of foliage, the latter especially, and unless ample space be allowed the roots are never so good.

It is seldom that onions require much thinning unless they are sown thickly, as the foliage is not overabundant, and if the bulbs touch each other it is of no consequence unless they are required for exhibition purposes, when, of course, they must be allowed more room. It is seldom that lettuce remain where they are sown, being transplanted from the seed bed in order that they may have more room to develop. Bulbous or fleshy-rooted plants, with few exceptions, do not succeed when transplanted, therefore they must be thinned to the proper distance where they are sown. Thinning, then, is done with a twofold object—one to induce the plants to develop more rapidly, therefore to arrive at maturity more quickly; the other to produce finer specimens, whether of flowers, fruit, or vegetables.

It is useless to thin the crops when the mischief has been done, for if one is to obtain the full benefit of the operation this should be performed as soon as circumstances will permit. Advantage should always be taken of showery weather for thinning vegetable crops, as the plants then come up much easier, and those that are left soon recover themselves after having the others removed. When thinning is completed, run the Dutch hoe between the rows to destroy any small weeds that may be appearing. H. C. P.

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## SOME OF THE NEWER TEA-SCENTED ROSES.

I look upon Mrs. Foley Hobbs (A. Dickson and Sons, 1910) as the best of recently-introduced tea-scented roses, both for exhibition and garden use. The blooms are large, shapely, with thick shell-shaped petals. In colour it is a delicate ivory-white, faintly tinged with pink on the edge of the petals.

Miss Alice de Rothschild (A. Dickson and Sons, 1910) is rich citron-yellow. The high, pointed flowers are freely produced on vigorous plants.

Mrs. Herbert Stevens (McGredy and Son, 1910) is a free-growing, floriferous variety, with shapely flowers. The colour is white, with a distinct peach shading towards the centre.

Lady Hillingdon (Lowe and Shawyer, 1910) is now so well known in the exhibition tent and for table decoration that it seems superfluous to say anything further. Under glass this rose is simply charming, and the deep apricot-yellow buds on long stems are all that could be desired, except, perhaps, that the flower-stems are a little weakly, and need support. As an outdoor variety it is a little early to speak of it. My plant last year gave flowers freely, but they had the same failing—weak stems.

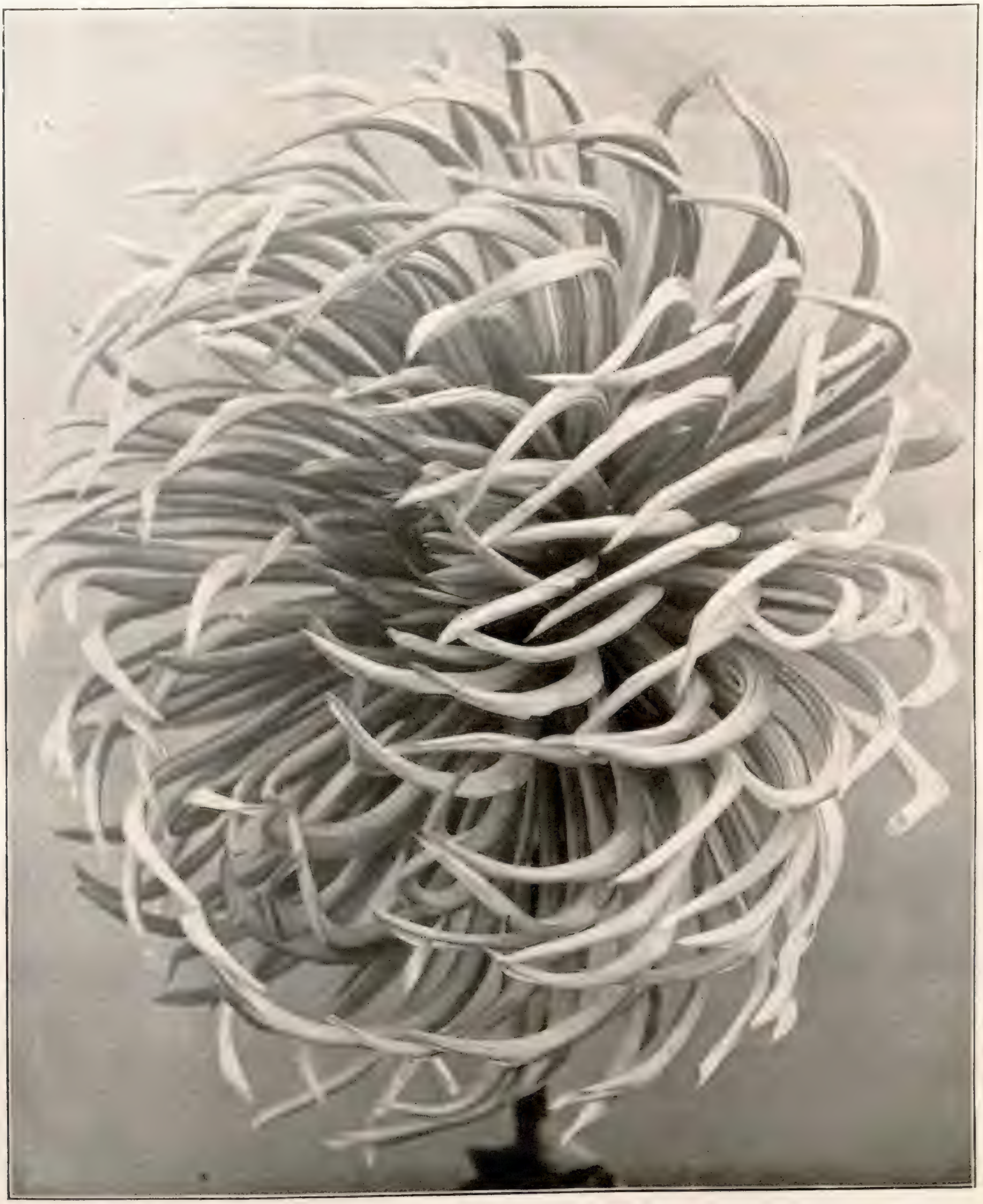
Alexander Hill Gray (A. Dickson and Sons, 1911) is said to be the largest pure yellow tea-scented rose yet introduced, with a strong likeness to Maréchal Niel in perfume and colour, the latter deepening as it develops. As a pot rose, it should be valuable, and as an autumn-flowering variety, too, it should be useful in the open.

Mrs. Hubert Taylor (A. Dickson and Sons, 1909), shell-pink, edges of petals ivory-white, and of vigorous growth; free-flowering. E. Molyneux.

## THE NEWER CACTUS DAHLIAS.

Early in the month of May most lovers of the dahlia look up their note-books or diaries for the past year before deciding which of the newer varieties they intend to grow. Now it is always a difficult matter to select new varieties from show boards; for, while one can form a pretty good idea of the flower itself, we can only guess at the habit of the plant, and the kind of stem it carries flowers on.

Now the latter point is one that has received far more attention from amateurs during the past four years than previously, and the first query one receives when mentioning a new dahlia is, "What sort of a stem has it got?" One is pleased to note that our raisers are now paying attention to this point, and I feel quite sure that in the next few years we shall see the end of the hideous syphon-like stems that have been all too closely associated with the exhibition cactus dahlia.



CACTUS DAHLIA MISS STREDWICK.

A beautiful cactus variety raised by Messrs. J. Stredwick and Son, St. Leonard's-on-Sea. The blooms are of large size, and the colour mauve-pink passing to light pink at the tips of the florets, the centre soft yellow.

Coming to the new varieties that will be sent out early in May this year, I find we have about the usual number; but amateurs, as a rule, only add a limited set to their collections, so that they want the most distinct. It is a difficult matter to obtain new colours in the cactus section now, although new shades are produced; so the chief improvement is in the form and habit of the plants. It will be generally admitted that last season was a most unfavourable one for flowering new varieties, at all events in the month of September; though later, with a cooler atmosphere, there was a decided improvement.

Although I did not see all the new varieties, I think I saw the majority of them, and, on looking up my notes, I find I was most favourably impressed with the following varieties: Miss Stredwick, I consider the most distinct seedling of the year; it is best described as mauve-pink, with a yellow tinge at the base of the florets, and is a very handsome flower. Golden Wave, a soft golden-yellow, is somewhat after the build of Harold Peerman, but considered to be a deeper flower. Frederick Wenham is a fine variety, a warm fawn-pink in colour, and a very desirable shade. Richard Box should make a fine addition to this section, being a soft pale yellow, and a deep, elegant flower. Mrs. H. S. Brandt is a very large flower, after the type of William Marshall, but the colour is salmon-buff, shaded yellow in the centre. John Woolman is a fine scarlet-shaded rose, quite a distinct form; while Fulgent should make a splendid addition to this class, being a bright dazzling scarlet, and the flower is deep and of good form.

DAHLIA DUCHESS OF MARLBOROUGH.

A charming variety belonging to the garden cactus section, raised by Messrs. J. Cheal and Sons, Crawley. The flowers are of good form, and the colour silvery-pink.

Coming now to the garden cactus type, it is a pleasure to record the rapid strides that are being made to produce a class that will flower freely in our gardens, and at the same time exhibit all their flowers well above the foliage. Of the new varieties, Duchess of Marlborough stands out clearly as an improvement on Mauve Queen; it is similar in colour, but possesses a more bushy habit. Sunlight is an ideal form, the colour—yellow, shaded orange—being quite distinct, and there is no question as to its flowering capabilities. Stability, a mauve-pink variety, is another pleasing addition to this class.

It may be added that, although the past season did not help this particular section in its relation to other cactus kinds, there were several of the 1911 varieties that will maintain their reputation for some time to come. Sweet Briar is a charming pink, very free-flowering, and a splendid habit. White Ensign is worthy of its name, carrying its flowers well above the foliage without any sign of drooping. Mrs. Forrester Paton, scarlet-crimson, forms a mass of flowers. Mrs. Landale, a yellow ground, edged rose, is free-flowering, and has a capital habit.

The striking new cactus varieties for 1910 were somewhat limited in number, though it is not right to condemn any variety after one season's trial, and that an unsatisfactory season. The following gave the best results, and are quite distinct: Claudius, a bright, bold crimson, every flower good. Dr. Roy Appleton, best described as a glorified C. E. Wilkins, being larger and deeper in form than the latter variety. Flossie Ridout, the best yellow of the year, of free habit, and with perfect flowers. Golden Eagle, bright yellow, suffused fawn and rose. Kingfisher, a pure lilac flower, most distinct; rather tall a grower for exposed positions. Mrs. Chas. Wyatt and Mrs. Douglas Flemming are both white, and are both excellent in their way. New York, orange-yellow, was very constant right through the season. Sherlock, bright orange-cinnamon, is the best of its colour.

J. B. Riding.

## ORANGE CULTURE.

For conservatories and as decorative plants in pots, orange trees are very much appreciated in some gardens. They are not, however, grown as extensively as they deserve to be. The trouble and expense is not really great, and specimens last for a considerable time in excellent condition if ordinary care be taken of them. Having had considerable experience in the cultivation of oranges on a fairly large scale for private purposes, I will briefly give a few hints which may prove serviceable to those cultivators who have not had much experience in the production of oranges.

### Sowing Seeds.

Fill a few pots with light but rich loam two-thirds, leaf-soil one-third, and a fair quantity of coarse sand. Sow one seed in each small 60-sized pot, and then plunge the pots to the rims in a bottom heat of about 75 deg. When the resultant plants are 2in. high they must have more air and light, and be transferred to larger pots when sufficient roots have formed. But it is advisable to partly plunge the pots, after the repotting, for about two weeks, then stand them on the warm bed for a week, and finally place them in cooler quarters, giving abundance of air night and day on all favourable occasions.

### Cuttings.

If cuttings are rooted in the autumn, the current year's shoots, with a heel of older wood attached, should be selected. They must be placed in a very sandy compost in a cool frame, but safe from frost. If cuttings are rooted in spring, younger wood—shoots without a heel of hard wood attached to each one—must be chosen, and inserted in almost pure sand. Plunge the pots in a strong bottom heat in a close, moist atmosphere, and maintain the sandy compost in a very moist state. Roots will soon form, and then the cultivator must gradually inure the young plants to air in a greenhouse. During the first year plants nearly 2ft. high may be grown. Rich fibrous loam, leaf-soil, well-rotted cow manure, and sand to ensure drainage, form the best compost.

### Grafting.

Young seedlings may be cut back, and grafts inserted. Those about four months old will serve for stocks; and if they can be grafted while in a warm house, with a moist, close atmosphere, and the pots plunged in a warm bed, only damp moss will be needed for wrapping round scion and stock, after making both secure with soft matting.

Both the citron and shaddock make good, robust stocks, and they are most serviceable in cases where the trees are intended to be planted out in beds in an orangery, or grown on large tubs.

### Cleanliness.

The leaves of oranges soon become soiled even in districts where there is not much smoke from surrounding chimneys, and so syringing and sponging are necessary to keep the foliage quite clean and healthy. Fresh air, whenever the weather is favourable, must be admitted by night, as well as in the daytime.

The St. Michael's, the Mandarin, and Blood Red are three good varieties to grow.

Geo. Garner.

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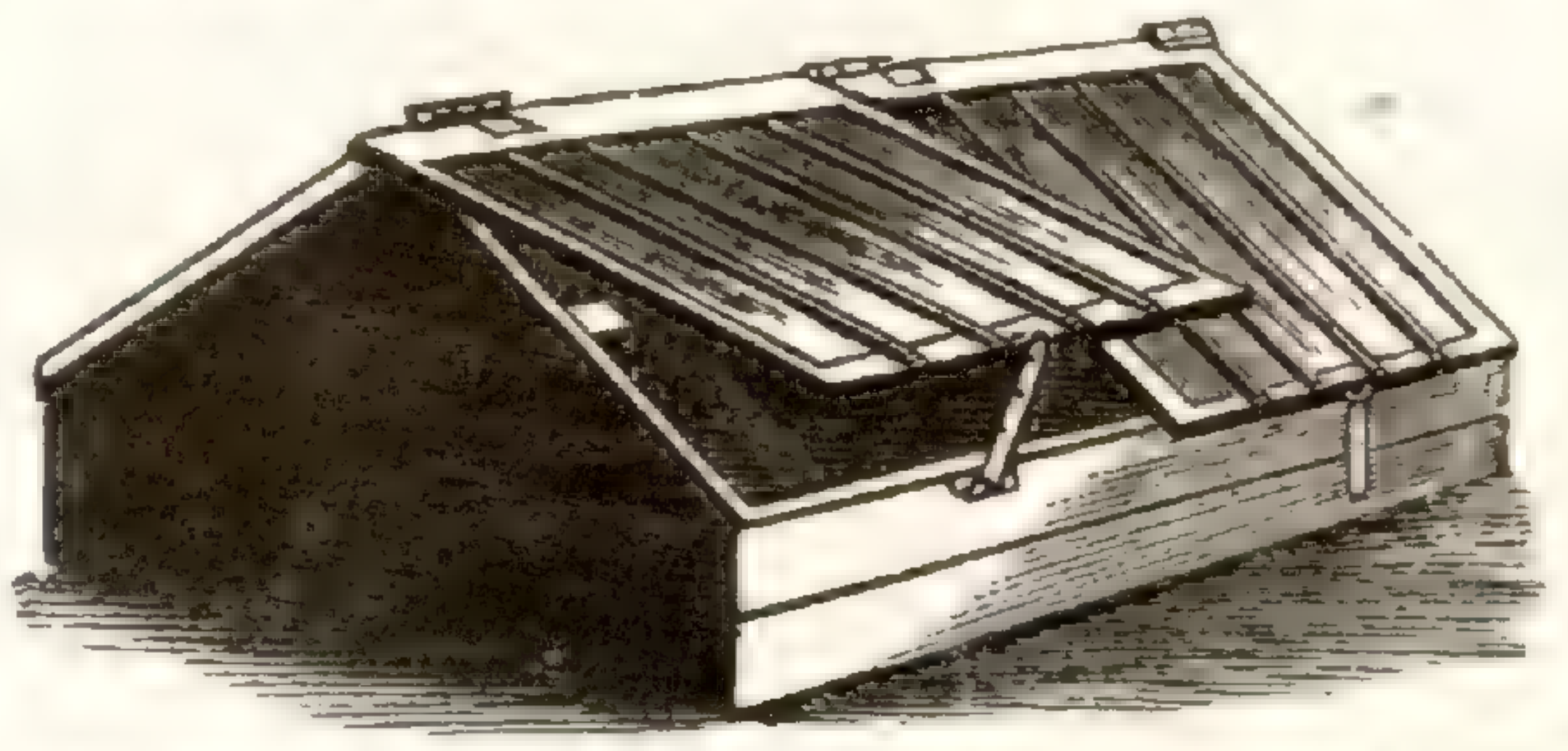

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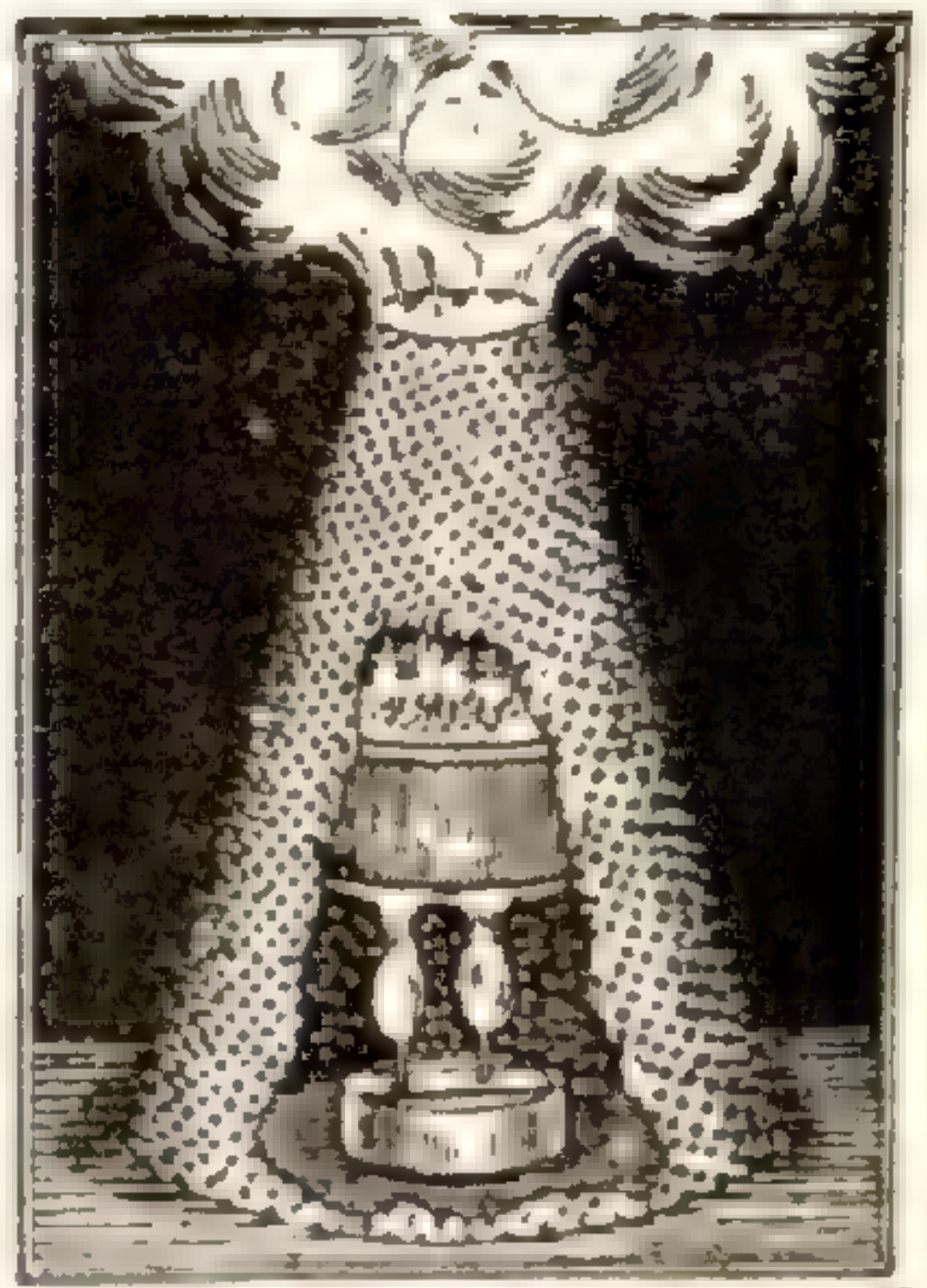

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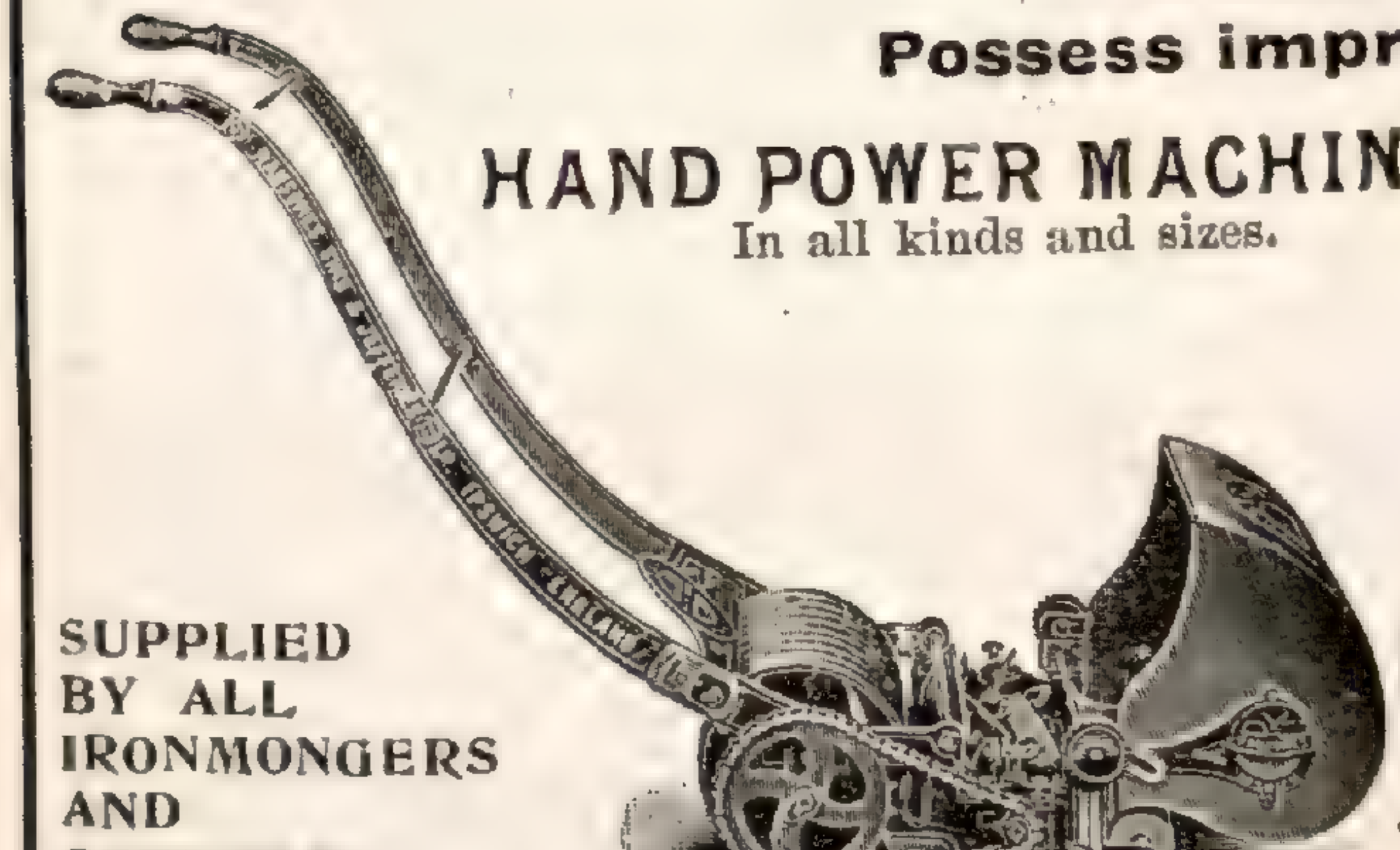

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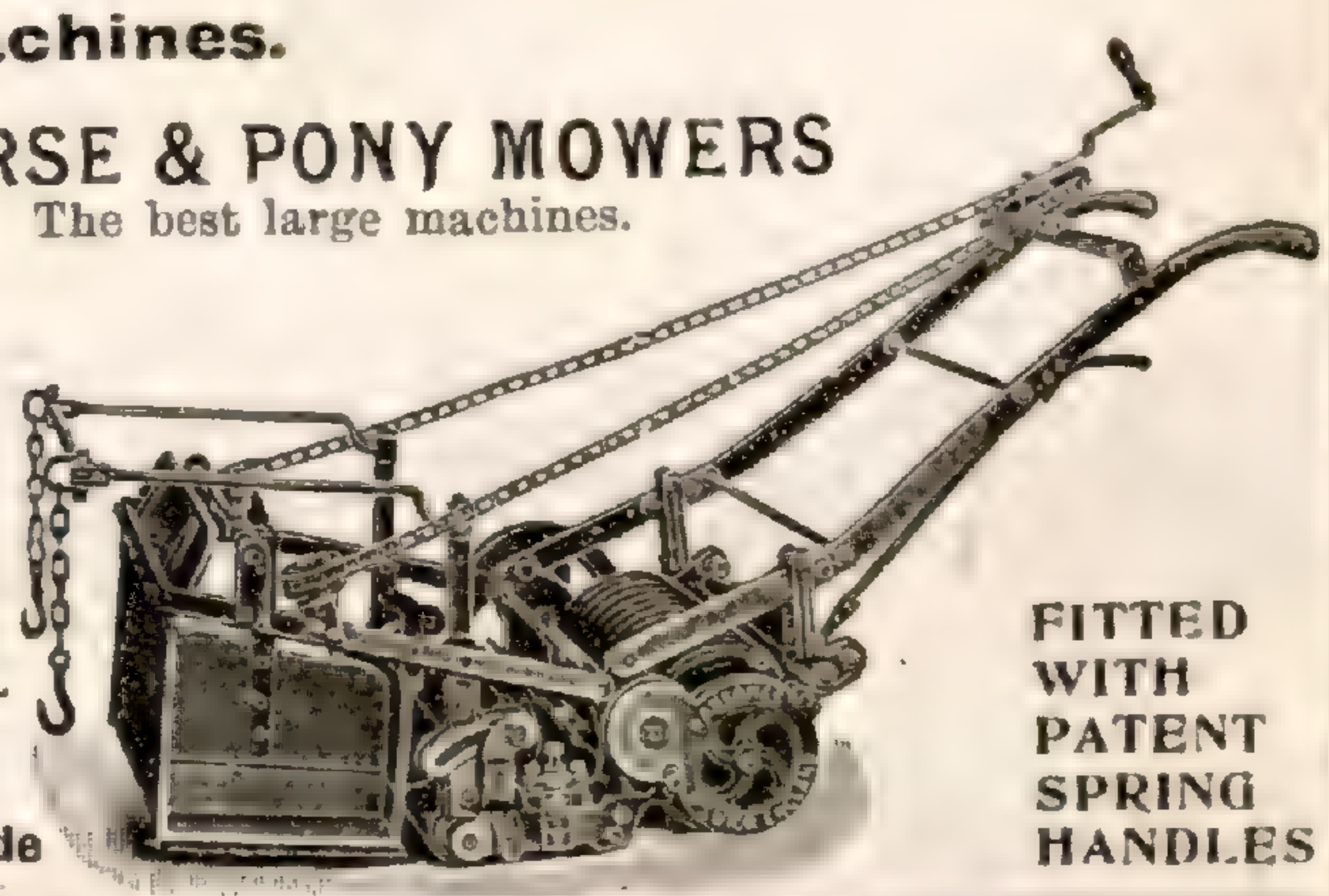

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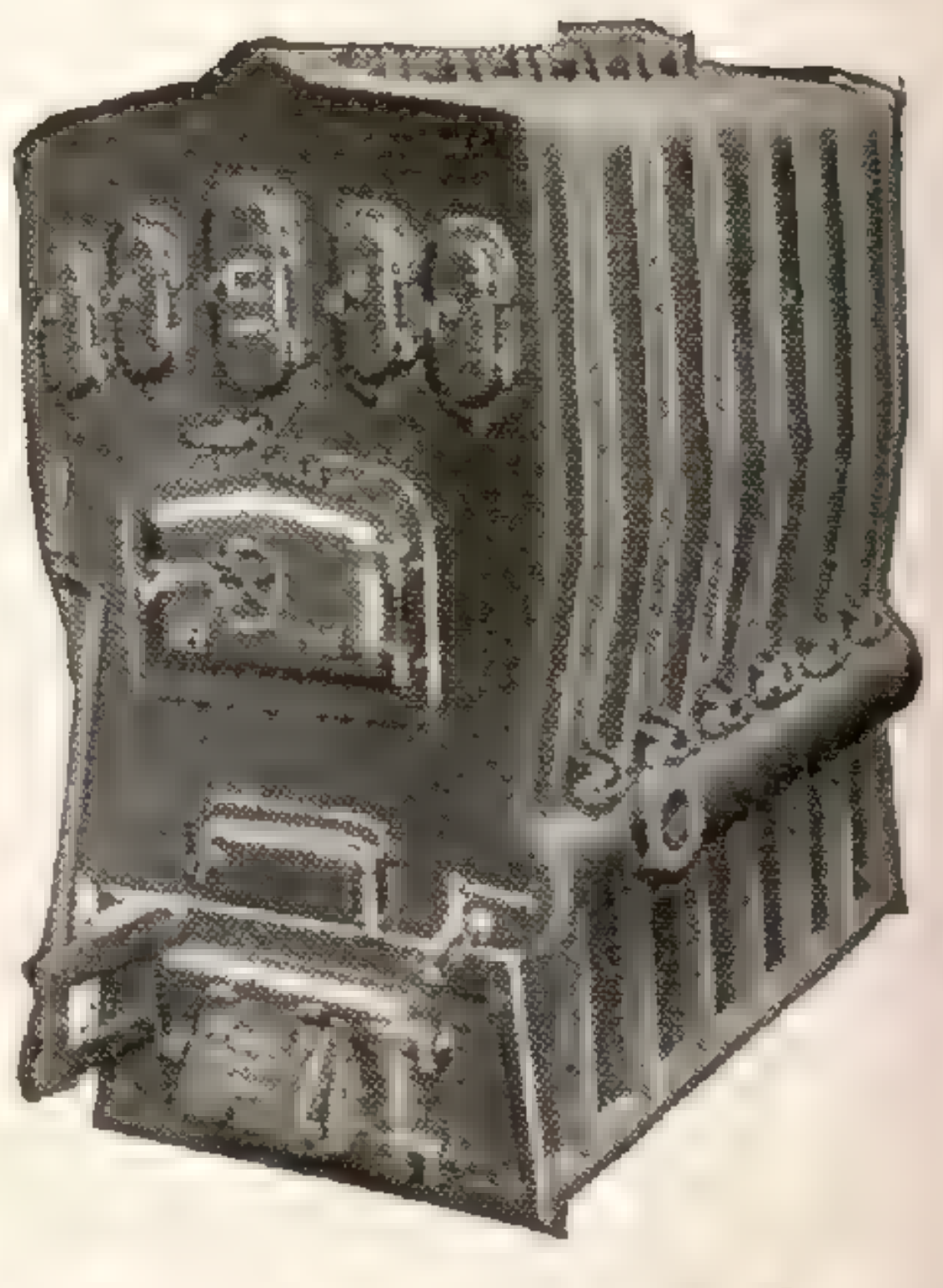

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## CULTIVATION OF PERPETUAL CARNATIONS BY AMATEURS.

(Concluded from page 320.)

### Autumn and Winter Management.

About the middle of August the carnations should be removed into the house. We often have cold, dewy nights at the beginning of September, and I feel sure that rust and other fungoid diseases are often due to plants being left outdoors too late in the season. The house should be well scrubbed with hot water and soft soap, and everything made clean before the plants are put into it. Keep the house cool by giving plenty of air, and, if the weather is hot, sprinkle the paths during the day, being sure that there is time for it to become dry before night. It is a good plan to fumigate the house as soon as it is filled to make sure of having them clean for the winter.

At the end of September or early in October, according to the weather, fire heat must be commenced, but do not have the temperature above 50 degrees at night, and if the morning is warm and bright, shut off the fires early so as to avoid a too sudden rise in the temperature.

During the winter months the secret of success is to water carefully, and maintain a buoyant atmosphere in the house. Give air on all favourable occasions—in fact, the ventilators should not be entirely closed, but air admitted by the top ventilators even in foggy weather, if the pipes are warm in the house. When watering, do not splash water about, especially during dull days, but take advantage of a bright morning to syringe the plants about once a fortnight with salt water (one ounce to a gallon), to keep down red spider, syringing with clear water two days afterwards. Continue to keep the growths tied, to disbud, and keep everything clean, picking off all dead leaves and weeds, pricking up the soil occasionally when the opportunity may be taken of sprinkling in some approved manure. Manures, however, should be very carefully applied during the winter months, or a sappy, soft growth and poor flowers is the result.

### Watering and Syringing.

From March to June, when the pots are filled with roots, the old soil becoming exhausted, and when more air can be given to harden the growths, then more frequent applications of manure of greater strength may be given. In April, May, and June, even farmyard or sheep manure placed in a bag and soaked in a tub of water may be given with advantage.

The greatest difficulty amateurs seem to have, is to distinguish between application of water and syringing in winter and late spring. In the dull days of winter as little water as possible should be used in the house, and a dry, airy atmosphere maintained; but in late spring and early summer, during sunny, warm days, the plants should be syringed and the paths sprinkled to maintain a more humid atmosphere, as evaporation is taking place quicker. Shading should also be applied at this time of the year, either in the form of blinds, or the glass sprinkled with whiting, to which a little size and blue stone are added, to make it stick. Perpetual flowering carnations are subject, like most plants, to a variety of diseases and pests, but so long as the plants are kept growing under proper conditions, and prompt measures taken to destroy them on their first appearance, they will cause very little trouble. Red spider, I have always said, can be destroyed by syringing with salt water, and in the winter, and when syringing is best not practised, paint the hot-water pipes with a paste of lime and sulphur. Green fly is easily destroyed by fumigating with some form of nicotine, or spraying in the summer with ivory or nicotine, soft soap, or boiled quassia chips and soft soap.

## NEW PLANTS.

◆

### ODONTOGLOSSUM CRISPUM SAGA.

This fine variety of an old favourite carried a handsome spike of seventeen flowers. The blooms are individually of excellent shape and size and set closely along the spike. The ground colour is white, shaded with rose, and heavily blotched with bright purple-brown. F.C.C., R.H.S., April 16. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

### CATTLEYA MENDELI THULE.

This very large-flowered white form is extremely beautiful; the only bright colouring is a blush shading on the lip and a yellow throat. A.M., R.H.S., April 16. J. Gurney Fowler, Esq., Glebelands, South Woodford.

### LÆLIO-CATTLEYA BERTRAM.

A very brilliant secondary hybrid obtained by crossing L.-c. Hopkinsi with L.-c. Cappei. The sepals and petals are golden-orange, shaded with rose, while the lip is of the most intense and rich ruby-crimson shade. A most effective orchid. A.M., R.H.S., April 16. Francis Wellesley, Esq., J.P. (gardener, Mr. Hopkins), Westfield, Woking.

### DAFFODILS.

Mrs. Ernst H. Krelage.—A very beautiful, exquisitely formed, and finely-balanced flower, with cream-white perianth and elegant frilled trumpet. A.M., R.H.S., April 16. Messrs. E. H. Krelage and Son, Haarlem.

Seville.—A showy variety, with white perianth segments and a broad flat crown of rich orange colour. Seville Orange would have been an excellent name. A.M., R.H.S., April 16. Mr. H. D. Phillips, Olton, Warwick.

Silver Spangle.—A charming daffodil of medium size, with white perianth segments and a broad, flattish, crimped crown of soft yellow hue. A.M., R.H.S., April 16. Mr. F. H. Chapman, Rye.

### CARNATION WODENETHE.

A splendid American-raised, white-flowering perpetual carnation; the blooms are of large size and fine substance, and carried on excellent stems. One special attraction of this variety is its delightful fragrance. A.M., R.H.S., April 16, Messrs. W. Wells and Co., Merstham.

### AURICULA ROXBURGH.

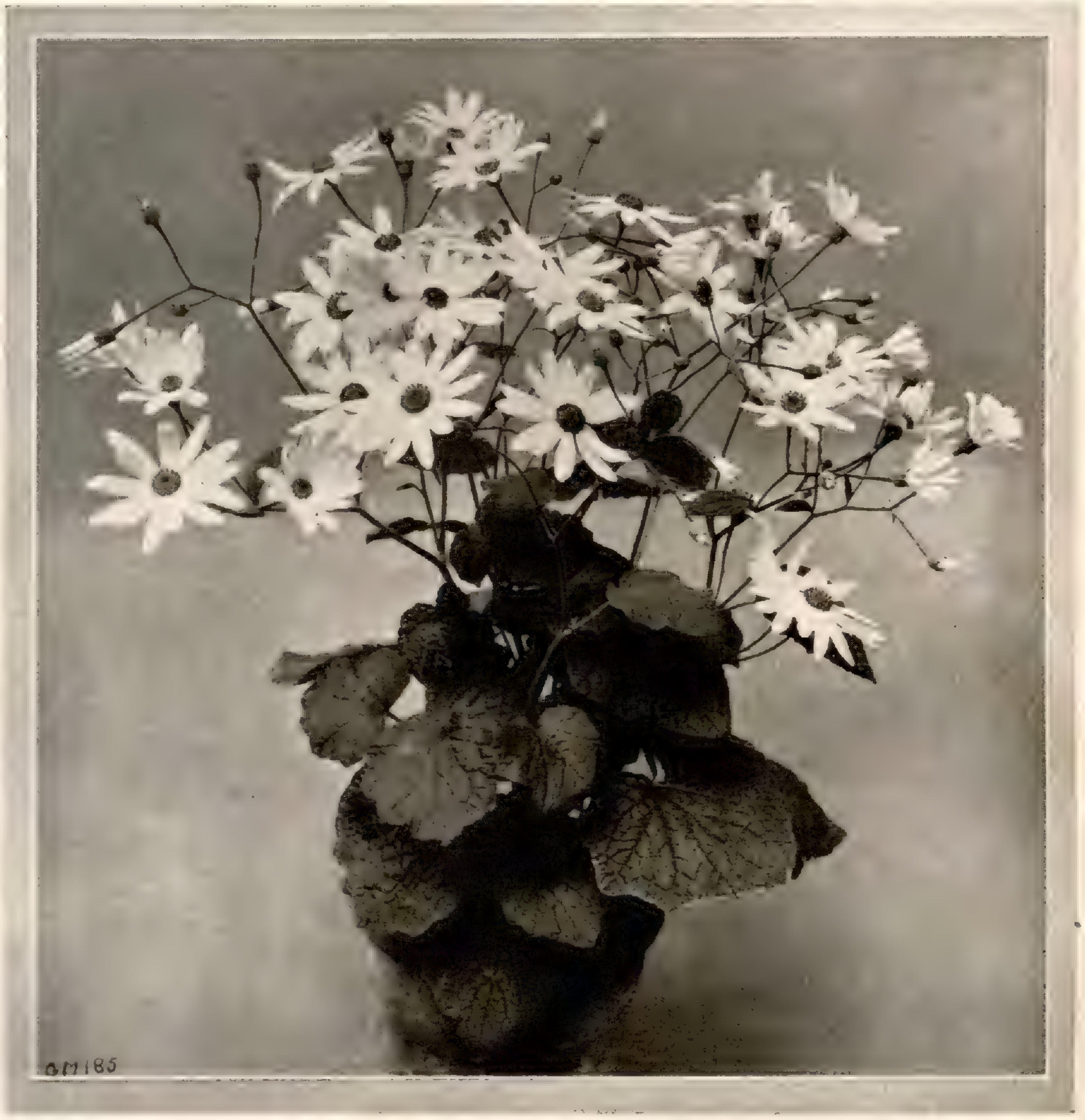
A very fine Alpine auricula, bearing its deep purple-blue flowers on sturdy trusses. Each flower has a well-defined white centre. A.M., R.H.S., April 16. Mr. James Douglas, Great Bookham.

### CINERARIA HYBRIDA.

An elegant hybrid described as having been derived from the intercrossing of Cineraria cruenta and Senecio tussilaginis. The plants are of lighter, looser habit than the old florist's forms, and the white, blue-tipped flowers are very pretty. The leafage suggests Cineraria Heritieri, rather than C. cruenta, as one of the parents, but that does not affect the merit of the hybrid which is very high. A.M., R.H.S., April 16. Messrs. James Veitch and Sons, Chelsea.

### FREESIA LE PHARE.

A useful addition to the steadily growing group of coloured freesias. This newcomer has smaller flowers than those of the well-known F. refracta alba, and the colour is rose, suffused with violet. A.M., R.H.S., April 16. Mr. C. van Tubergen, jun., Haarlem.



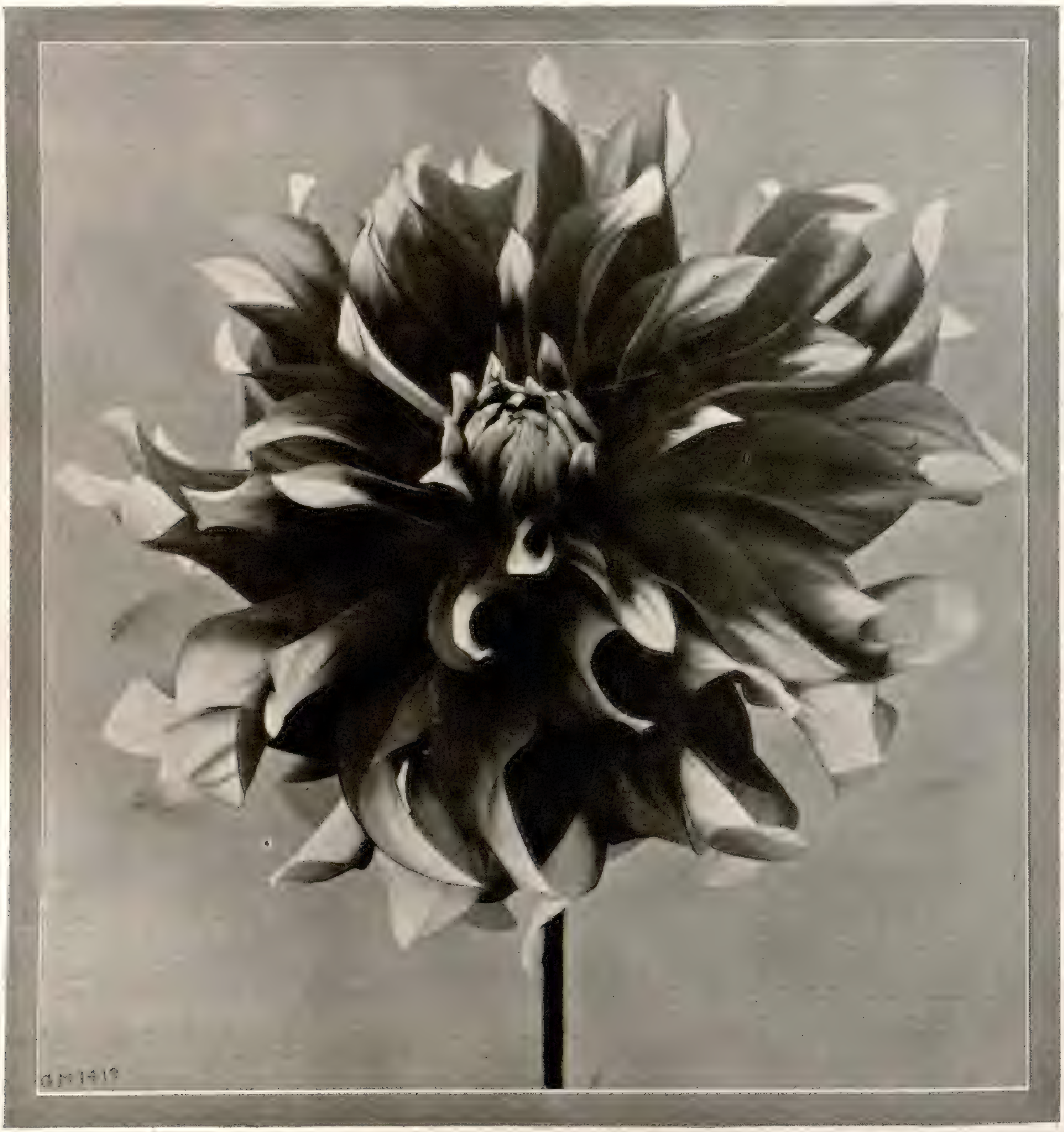
CINERARIA HYBRIDA.

Raised by crossing Cineraria cruenta with Senecio tussilaginis. Flowers white, tipped with blue. A.M., R.H.S., April 16. Messrs. J. Veitch and Sons, Chelsea.

## GIANT DECORATIVE DAHLIAS.

This section or type of garden dahlia, which is sometimes referred to as the "Douzon" type, originated in France; and most of the varieties, judging by their names, were raised in that country.

Although of such immense size, the blooms are not by any means coarse; and, what is very important for garden decoration, the flowers are borne on long, stiff stems, well above the foliage. In profusion of flowering and continuity these giant-flowered sorts equal the best of the cactus section. As they are particularly vigorous in growth, a few plants will suffice in small gardens, but in large public parks and private establishments these varieties should be grown in quantity for massing. Being tall in growth, they may be planted in wide shrubbery borders, in large groups of one variety or as a background for varieties of less stature. There is another side to their value, and that is for cutting. The long, stiff stems enable the giant decorative dahlias to be used extensively for large vases. A dozen flowers and buds of the variety Souvenir de Gustave Douzon, with 30in. stems, in a large vase, would be difficult to surpass, when a bold effect is desired.



DAHLIA ATTRACTION.

A remarkably handsome giant decorative variety, the blooms of large size and of a deep crimson-maroon colour, with light rose-coloured tips to the florets. Raised by Mr. C. Turner, Slough.

No trouble is experienced in the propagation of the giant decorative dahlias; in fact, the old stools, when placed in heat, produce cuttings more freely than most sections. In one season, from cuttings, the flowers are not only gigantic, but the tubers as well.

### Varieties.

Souvenir de Gustave Douzon.—The blooms of this dahlia are truly "gigantic." Some six or seven years ago, when not so well known, a large bed containing upwards of one hundred plants of this variety at Kew, created quite a sensation among the visitors. In good soil the plants grow 6ft. to 7ft. in height. The colour is a pleasing shade of orange-red. The blooms are well formed, and borne erect, with plenty of substance in the broad petals.

Le Colosse.—This is a very large, showy variety, with broad petals. The plants are vigorous, the red flowers being borne well above the foliage.

Yellow Colosse.—A useful companion plant to the foregoing, with bright yellow flowers. These, as will be seen from the illustration, are similar in form and size to the red variety.

Jeanne Charmet.—A charming combination of colours, lilac-pink at the edges shading to white in the centre of the flower, with a yellow shade at the base of the petals. The flowers are very large, and freely produced on long, stiff stalks.

Madame Van Der Dael.—A pretty shade of silvery-pink best describes the well-built flowers of this variety.

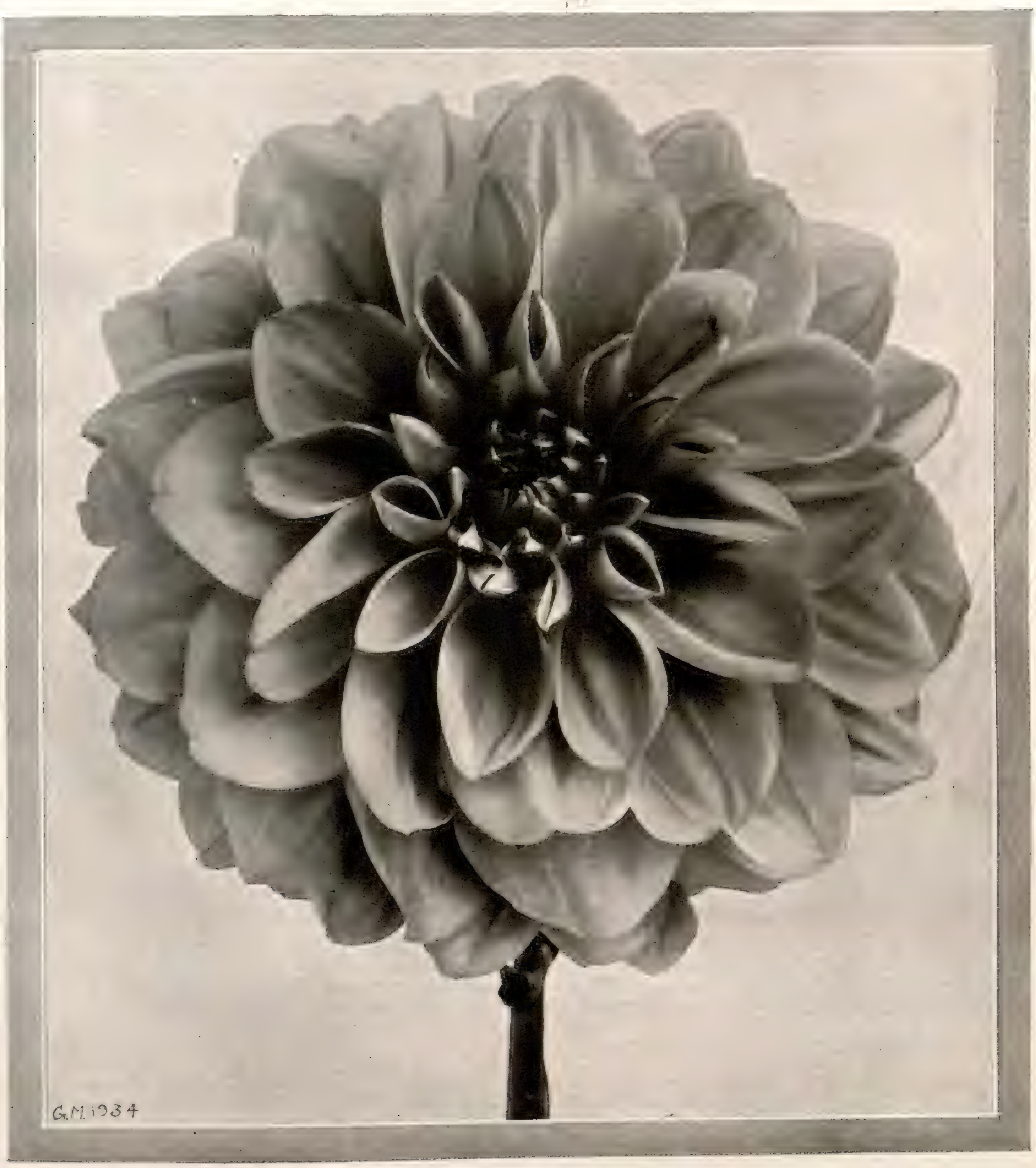
Papa Charmet.—An effective variety with large crimson-maroon blooms. The petals are broad, and prettily crimped or curled.

Madame A. Lumiere.—An exquisite flower, pure white, the petals tipped with violet-red, distinct and free.

Mdlle. Hélène Charmet.—The best white variety of the true giant-flowered double decorative type. Most catalogues also include two other white varieties in this section, namely Grand Duc Alexis and Perle de la Tête d'Or. Both are beautiful, free-flowering varieties for garden decoration, but of rather different build to the Douzon type. In some catalogues the name Charmet is spelt Charvet.

Attraction.—This variety, which is illustrated, was raised by Mr. C. Turner. The ground colour is crimson-maroon, with light rosy tips. The broad petals have a slight twist, which adds considerably to the charming effect of the flowers. This variety must not be confused with a single cactus variety which also, unfortunately, bears the name of Attraction. A. Osborne.

Kew.



DAHLIA YELLOW COLOSSE.
A distinct and attractive yellow-flowered variety, belonging to the giant decorative section.

## ROSE NOTES.

When using the knife among our roses this season it was gratifying to notice how firm and sound the majority of the shoots were. I do not deny that in many cases the top growth was not so well developed as might have been desired, but we have little use for that, and when cut down to where we meant to leave them, the buds were particularly sound and promising.

Even during the autumn of last year I noted how sound, and with the favourable russet-brown bark, the base of our maiden plants were. Doubtless much of this may be attributed to the excessively dry weather at that time, and consequent compulsory steady growth. But I am sorry to find that much wood was too soft upon the Wichuraianas to stand the sharp snap of frost at the end of January and early in February. The season was so moist and mild here that growth scarcely ceased in sheltered positions, and so was naturally unable to stand many degrees of frost. Quite half of their length, however, was nicely sound; also, owing to the very steady way the first growth was produced, the ripened eyes are much closer together than usual. Although we shall probably have more blossom in a closer compass, I fear the effect will not be so pleasing as when the trusses are far enough apart for ample foliage to come between. A simple mass or bunch of flowers does not appeal to me to the same extent as the association of the clusters of flowers with the glistening green foliage.

In cutting off the shoulders of budded standards, also the tops of dwarf stocks, I find the buds inserted last summer have passed through the winter in a very satisfactory manner, and are now quite ready to burst, being plump and bright looking. It has already been remarked that these set to the stock better than usual when inserted, and I then suggested the steady growth of stock as a great factor to this end. So far as our own buds are concerned, they never looked more promising, and we are surely safe from severe frosts now. Young growth, however, will have much to pass through yet, unless we have an abnormal spring.

Late in winter or early in spring is the time we find most suitable for planting stocks made up from cuttings, such as the Manetti, briar, De la Grifferaie, and polyantha stocks. To plant these in the autumn means full exposure through the winter of the bark that has been underground during the previous winter and summer. This is, therefore, rather soft and tender, and I prefer not to expose it unnecessarily early. In the case of seedling briars we run no such risks because the crown of these has been exposed from the first. It is well to give a little consideration to distance when planting stocks, and this depends very much upon the variety to be worked. If dwarf growers of a habit such as Killarney, Madame Abel Chatenay, and Lady Ashtown, the stocks will be at a suitable distance if planted nine inches apart in the row, and the rows two feet from each other. But with those of stronger growth, Lady Waterlow, Gustave Regis, and Gruss an Teplitz, for example, we must give a little more room. One foot from stock to stock, and the rows two and a-half feet apart, will be found suitable. Extra strong growers should be worked upon stocks fifteen inches apart in the row, and the latter three to three and a-half feet from each other.

I give these hints because it is a pity to have such wide differences of growth, with only one uniform distance allowed for development. It will be found better to work the stocks in small beds, rather than where the plants are to remain. There is not the same length of untidiness, and it is better to lift and trim off any suckers that may be forming before putting the roses into their permanent quarters. Nor can one be so sure of a "take" as to allow of stocks being in their permanent quarters from the commencement.

I would like to say a word or two about the grouping of roses. Too often we find beds and borders containing varieties of such vastly different habit of growth that much of the effect is discounted; in fact, it is only a muddle, instead of an artistic effect. No doubt the best effect is gained by one variety in a bed, or, at most, two or three. It is very easy to find these of suitable habit, and of almost any desired colours, among the numerous grand bedding roses now available, and a little thought in this direction will be repaid.

Under glass the roses should now be in full growth and flower, except in quite cool structures. Careful ventilation and watering has much to do with keeping clear of mildew. As usual, insects are certain to be in evidence, and I can only once more refer to the necessity for prompt measures against these. The various insecticides and methods of application having been so often treated upon I do not propose any additional remarks, except to warn against the use of too powerful solutions. This also applies to the use of liquid stimulants, which will be much needed by roses in pots. So many failures have come to my knowledge that were undoubtedly caused by using these too strong, on the supposition that as a little did good more must be better, that I ask no excuse for once more advising a freer use, if you like, but do not increase the strength.

ROSARIAN.

# STREAK DISEASE IN SWEET PEAS.—I.

Much has been written about the cause of "streak" in sweet peas, and if printers' ink could have cured the disease it would have long ago ceased to trouble us.

A high authority says: "The name by which the disease is known to-day—Thielavia basicola—was given to it by Zopf in 1876, since when, it has engaged the attention of various scientists, all of whom by various and different methods have arrived at the conclusion that errors of watering and manuring were largely responsible for the existence of the disease wherever it occurred.

Probably no one cause contributing to the weakening of the root, and thus laying it open to attack by the fungus, will be found that will fit all cases of disease, but there seems no doubt that if care be taken to avoid every possible check to root development and activity, the 'streak disease' will cease to be so troublesome."

The same authority says, "Overwatering must be avoided at all costs." Whilst freely admitting that "overwatering" would destroy plants, let us rather seek the primary cause of "streak disease" in some other direction, for sweet peas growing under glass are ordinarily watered daily if necessary, and not infrequently twice a day, and yet there is no appearance of "streak."

Instead of concerning ourselves with the name of the disease, or even as to its nature, we may consider the physiology of the plant and its functions.

The sweet pea belongs to the leguminose family of plants, all of which are naturally supported by nodules on the root containing nitrogen-gathering bacteria, which, in their turn, assimilate the free nitrogen of the atmosphere for the use of the plant. I said naturally, for this function seems to be imperative, as when we unnaturally feed any of the leguminous plants mainly on nitrates or nitrogen-containing material, these plants freely feed on the nitrates of the soil, and it appears that nitrogen-gathering bacteria in the root nodules die of inanition; in fact, an unnatural balance is set up in the economy of the plant, which assumes a parlous condition, susceptible of any and all diseases to which the plant is liable, and death ensues.

"Streak," or any of the fungoid diseases, may be latent, developing when suitable conditions are afforded.

I do not feel concerned to prove this, for it is sufficient to know that plants of sweet peas remain healthy, and free from "streak" and other diseases, when nitrates and nitrogen-containing materials are not applied to the soil in which the plants are to be grown.

It is an established fact that the legumes of our pastures are all destroyed by the too free application of nitrogenous manures, and it is not surprising that the sweet pea should also be susceptible, and succumb to similar treatment.

E. W. Duckwall, in "Bacteriological Technique," says: "The bacteria which prove so valuable in fixing the atmospheric nitrogen for the benefit of peas, have a peculiar life history. They are widely distributed in the air, water, and soil, but are frequently absent in some localities, or are so few in numbers as to be of little value to peas grown in such places. When through inoculation, bacteria gain entrance, rapid multiplication takes place, so that in a short time the sap is teeming with countless myriads of these tiny organisms, which fill up all the channels, multiplying, until this cycle of their life history is accomplished."

In a general way, for the healthy growth of sweet peas, most soils require an annual application of phosphates and potash, chalk or lime (ad lib.), with small quantities of magnesia salts, etc., and all these may be applied without being associated with nitrogen-containing material, such as animal manure and the like.

A question may naturally arise. If the use of dung and other kinds of organic manure are to be avoided in the growth of sweet peas, how is the necessary supply of humus in the soil to be maintained? The answer is by manuring the preceding crop with organic manures containing nitrogen, if this be necessary.

If it should be desirable to grow sweet peas on the same land year after year, the supply of humus may be maintained by the application of well-rotted manure, which has been prepared by remaining in a heap for about twelve months, for it has been ascertained, that stable manure loses, approximately, 25 per cent. of its nitrogen every three months, and the soil bacteria during the twelve months would have worked up the nitrogen-containing material successively into nitrates, and free nitrogen, and the latter would by this time have been liberated, and lost in the atmosphere, the residue being mainly organic manure minus nitrogen.

A question might arise, if nitrogenous manures are not to be used, how are plants to be fed and to be made to produce exhibition blooms? The answer must be: Wait until the plants become well matured before applying any nitrogen, then, possibly, an addition might do but little harm, and might be the means of winning the cup, even although it might ultimately injure the plants.

It does not follow that because nitrogen is absolutely essential to the successful growth of most crops it should be so for all plants.

Nitrogen acts as a poison to sweet peas and all legumes, and the sooner this is recognised, and acted upon, the better.—

ROBERT HOLMES.

Tuckswood Farm, Old Lakenham.

# RUBUS ARCTICUS.

This diminutive rubus is not frequently found in gardens, probably because it is not always an easy subject to establish, but when once thoroughly at home it proves an exceedingly interesting and attractive plant for the rock garden. This spring it is producing its lovely rose-pink blossoms in profusion.

It enjoys partial shade, and a colony of it here, that is partly shaded by the overhanging Prunus prostrata, is growing splendidly. Though perfectly hardy, it practically disappears during winter, and commences growth in the early spring. Its diminutive stems are never more than a few inches high, and its bright green foliage makes a fitting setting for the beautiful flowers, while in the autumn the leaves assume a pleasing shade of bronze.

A well-drained site should be chosen for it, such as a position in the forefront of a rockery, for which it is well suited. A soil in which peat predominates suits it best, and in this it thrives, sending out underground stems, which come up around the original plant. About the time growth is commencing, a light top-dressing of soil similar to that in which the plant is growing can be given with advantage. During bright summer weather, Rubus arcticus deserves much benefit from being damped over late in the afternoon. If the plant is given this treatment, and kept free from weeds, its cultivation should be attended with success.

J. GARDNER.

## DAHLIA CULTIVATION FOR EXHIBITION & DECORATION.

In May dahlia growers turn their attention to the land. Quite early in the month they thoroughly dig over the plot devoted to dahlias, and where the soil is of a heavy, more or less clayey, nature, this operation will leave it in a rough state. Of course, the best way to treat soil of this description is to let the clods get dry, and then wait for a shower, when it is mere child's play to break up the masses of what a few hours previously was very hard earth. But there is a danger in leaving heavy land in a rough state, and that is the possibility of not having rain before planting time, so it is perhaps the wiser plan to knock down the clods as soon as sufficiently dry, and then turn the fine soil underneath, and bring another lot of heavy soil to the top. In our case, we have to dig and break down again as many times as will suffice to get a friable condition to a good depth, which is sometimes a matter of four diggings.

It is, however, impossible to lay down any definite rule as to working the land, as in the case of one grower, it may be possible to plant out, even after a heavy rain, whereas on another class of soil, it would be folly to attempt it. One general principle must be followed, and that is, prepare a deep, well-worked, and manured subsoil, as well as surface. I must here state that I have never had any experience with soil on which dahlias grew so luxuriantly that they buried the flowers, and so can give no advice as to treatment in such cases. In the south the trouble is to get them strong enough, and to this end good cultivation is the general rule.

Returning now to the young plants in the frames. These should be growing rapidly, albeit not so much upwards as in sturdiness, and only one danger is met with here, but this is a somewhat general one. I refer to allowing the plants to become root-bound. At this period, if a plant is examined, it will be seen that strong thick roots, three to six or so in number, are pushing through the soil. These are to form the tubers for next autumn. These should not become twined round inside the pot. Anyone who plants out a root-bound plant can very easily see the result when lifting the tuber in the autumn, as instead of a spreading free lot of roots, the tubers have formed a compact mass resembling a club, and have not derived full benefit from the manure even at a short distance away from them. About a week previous to the day when it is intended to plant out, begin to harden off by having the lights, at first partially, and then wholly, removed at night time.

Other details of management have been referred to as important, but the work of planting out is doubly so. While on the one hand we exhibitors may go to one extreme, it is only too often that the dahlia has to put up with the other. A brief outline of the work of transferring to the open ground may perhaps explain the system usually in vogue amongst exhibitors, who are not troubled by an undue exuberance as regards foliage, and a corresponding scarcity of bloom. Where the dahlias are grown in rows, measure off the plot, allowing 5ft. between each row and 4ft. between the plants in the row. Having thus parcelled out the plot, dig out a hole about 18in. square, and rather over 12in. deep, where each plant is to be placed. Next put about two fork-loads of manure in the bottom, and thoroughly incorporate this with the soil; this operation will also enlarge and deepen the hole. Having replaced all the soil previously dug out, and lightly pressed it down, all is ready for the planter.

I need hardly mention in detail all the little items connected with the work of holing, such as working to a line, and so on, as any grower will soon arrange a system of his own, so as to finish up one row of holes before starting the next. Before transferring the plants to the open ground dip them in a strong insecticide.

Where dahlias are planted in shrubberies or for decoration generally, it will pay to put manure under them just the same as for exhibition purposes. In the case of pompons and singles, it is usual to withhold manure, or the flowers will be too large and coarse-grained for competition. It may appear quite an easy matter to obtain a small flower, but to get a really tiny but perfect pompon is not so easy, for if starved the plants produce shallow flowers, and if grown freely they may become too gross. I have seen good flowers grown on poor land, on little wiry-wooded plants; and on the other hand, I have seen large plants covered with small compact flowers, the quantity of growth serving as a check to size. In the case of doubles the only fear is in having the plants too gross and succulent, as by so doing, although huge flowers may result, they will lack neatness and symmetry.

In planting the different sections, put out the cactus varieties any time after May 25, for late August or September shows, the doubles rather later, and the pompons and singles any time, as these flower earlier and continue indefinitely.

One more word as to planting, and that is, don't put the ball of earth too deep, just comfortably under the surface of the soil is sufficient. I saw some tubers last autumn which had been eight inches deep, i.e., eight inches of stem under the soil. One other little matter I always insist upon, and that is to have a stout stake placed to each plant at once.

H. Stredwick.

## THE GENTIAN CUP.

We have much pleasure in giving our readers an illustration of the Gentian Cup which Messrs. R. Wallace and Co., Colchester, are offering as a prize at the forthcoming International Horticultural Exhibition, for the best rock garden in a space not exceeding 100 square feet in the amateur section. The cup is a particularly handsome one, and quite distinct in design from the majority of prize cups. It is of silver, and the vase or cup proper represents a large upright bloom of the lovely Gentiana acaule; while over the base, and in a most natural manner, appear representations of other gentianas. So distinct a prize is worthy of a keen competition, and Messrs. Wallace are to be congratulated upon the success of a design that is entirely in keeping with the class in which it will be offered. Such a splendid memento of the International Horticultural Exhibition is calculated to inspire competitors, and induce them to put forth their very best work in rock-garden construction and furnishing, in an effort to win it. The cup has been manufactured by Messrs. Johnson, Walker, and Tolhurst, 80, Aldersgate Street, London, where it is on view, from a design by Mr. George Dilliston, who is in the employ of the Messrs. Wallace.

THE GENTIAN CUP.
Offered by Messrs. R. Wallace and Co. as a prize at the Royal International Horticultural Exhibition.

**Camellia Apollo.**—Camellias have flowered remarkably well in the open air in the Bournemouth district this year. But none have excelled the flowers of the abovenamed variety, which commenced to open the first week in March in Mr. W. Child Clark's garden at Michelgrove House. Some blooms were shown in a large flat bowl at the spring show held on March 26 and 27, and they were perfect. The colour was very clear and an intense crimson. Some of the blooms measured more than 1ft. in circumference.—G. B.

## SUPERNUMERARY VINES.

When planting a vinery it is an excellent plan to put in a row of supernumerary canes at a reasonable distance from the front, and permanent, row, so that the vinery may be fully utilised, and a double crop of fruit obtained for several years. The permanent vines need not be cropped so heavily when this is done, and this is in their favour for the future, remembering that the vines should bear continuously and well for forty years, at least.

The planting of an extra row of canes means making a special border for their use for a few years; this is easily done by using freshly-cut turves as a retaining wall. The extra canes need not have so much space as the permanent rods, and three feet apart will suffice. They will fruit heavily and well for ten years if necessary. I need hardly say the length of these vines depends upon the width of the vinery; if this is eighteen feet wide then the life of the extra vines is prolonged. The point to attend to and to guide the grower is how the permanent vines are extending, for as these progress the lower spurs of the extra rods should be removed.

One of the best examples of the use of supernumerary vines I have seen for a long time was at Aldenham House last year, where Mr. Beckett had replanted an old vinery mainly with Muscats. From the extra canes he obtained from six to eight bunches of very fine grapes, and at the same time his permanent vines were growing away sturdily with a good promise for the future.

For supernumerary vines stout year-old plants should be employed, and instead of cutting them down to within a couple of eyes of the base, as is the best plan in pruning the permanent rods, the canes are left long enough to give three shoots on the wires; a pair of side growths and a leader. There may be exceptions to this method of pruning, such as an extra high roof, when the vine rods might not be long enough. The remedy then is to prune to a suitable eye, and train the leading shoot upwards on to the wire. In this case there is a probable loss of a season's fruiting, therefore in selecting the canes preference should be given to the special circumstances.

When planting new vineries, especially where the structure is a span-roofed one, and devoted entirely to grapes, and perhaps one hundred feet long, and about twenty feet wide, the plan of curtailing the number of plants and training the vines afterwards on the extension principle is on the increase, and rightly so, because the method has many advantages. For instance, the cost of plants to furnish both sides of a house of the dimensions noted, on the older plan of one vine to every yard or four feet, is a considerable item. No fewer than fifty canes will be needed at the wider distance apart. In the case of the extension principle six vines will suffice, or at the most eight, four on each side. The saving, too, in border making is considerable, especially when we consider how difficult it is to procure suitable soil in some localities. When planting on the single rod system a continuous border is necessary the whole length of the house and on both sides; it need not be more than a yard wide the first year, but it will require extending the next. In the case of the six or eight vines for extension, a border for each plant, eight feet long, will last several years.

The method of extending the vines is that of encouraging a vigorous growth on each of the main stems, laying a rod along the bottom wire at right angles from the main stem, and from this basal, horizontal rod taking up other rods resulting from the growths selected at not less than four feet apart. It is surprising how quickly a house can be furnished with vines under this system of training, for in a few years as many as one hundred bunches can be taken from each vine, ranging in weight from three pounds to six pounds in the case of such sorts as Alicante, Madresfield Court and Muscat of Alexandria, which succeed admirably on this principle. I well remember the original vine from which the late Mr. J. Meredith, Garston Vineyard, cut the bunches that were the means of illustrating the value of this grape, and thus bringing it prominently before the public. The vine was planted at one end of a vinery, with a partition in, and as the vine grew the partition was removed to allow of extension, and right well did it succeed. This was in the year 1872, or thereabouts. E. Molyneux.

Swanmore Park.

## THINNING AND STAKING ANNUALS.

Early thinning is one of the most important points in the culture of annuals when they are sown outside. Immediately the seedlings are large enough to handle they should be slightly thinned out, and then in a short time, when they have grown close together again, the final thinning should be accomplished. The space allowed for the development of each plant must be governed by the size it is likely to attain. Take, for instance, a single plant of the blue cornflower, which, when given sufficient space, grows into a bush of fine dimensions, and the Shirley poppies make large plants when provided with plenty of room. Not only is thinning conducive to large-sized plants, but the flowering season is considerably lengthened. When the seedlings are allowed to remain in the beds or clumps just as they come up, the result is thin growth, small flowers, and a very short season.

The cornflowers and tall coreopsis, and, in fact, all annuals of similar growth, require from eighteen inches to two feet of space to attain full development. The smaller-growing kinds, such as godetias, clarkias, etc., must be thinned according to their habit. Careful thought is necessary when thinning a bed or clump of mixed colours of any particular kind. Among mixed larkspurs the plants of one colour are stronger growing than those of another colour, therefore, when dealing with them it is highly important that neither all the large nor all the small seedlings are removed, otherwise only one colour will be the result from a packet of mixed seeds.

Many annuals require support of some kind, and how to obtain a natural effect while giving this necessary support is, in many cases, a difficult problem to solve. The principal idea should be to provide something of sufficient strength to keep the plants in an upright position, and to allow them to grow as naturally as possible. Anything in the shape of formality should always be avoided, for nothing looks worse than bunched-up plants. Unless the plants absolutely require staking, the latter should not be attempted. Gaillardias, alonsoas, and others with similar habit, provide a more pleasing effect when they are allowed to grow naturally. Salpiglossis, cosmeas, etc., which produce a single stem and branch from it, require one stick, and when the side shoots become heavy they must be looped up. For the majority, the twiggy ends of pea sticks will be found most useful. E. C. Pooley.

## MESSRS. WILLIAM BULL AND SONS' NURSERIES.

The name of William Bull has been associated with the introduction of new plants over a long series of years, and it would be an easy matter to compile a very long list of subjects that have been distributed from the establishment in King's Road, Chelsea. In the earlier years of the firm's history stove plants, economic plants and species of orchids, were the principal novelties, though other subjects were not omitted; and, if memory serves us aright, Mr. Wm. Bull sent out the first new sweet pea—Bronze Prince—raised by the late Mr. Henry Eckford.

But other times bring other manners, and at present the firm, now conducted by Mr. E. Bull, the younger son of the late Mr. William Bull, is very largely occupied in producing hybrid orchids. Fifteen years or so ago many of the houses at Chelsea were filled with large batches of orchid species, whereas to-day no fewer than eleven houses are devoted to seedling orchids that range in size from the merest little green blob that indicates a fully germinated seed, up to goodly plants carrying numerous spikes of elegant flowers.

Any doubts as to the possibility of cultivating orchids in London would be immediately set at rest by a visit to Messrs. Bull's establishment at Chelsea. Only one difficulty seems to arise in this orchid manufactory, and it is the one of opening the flowers of some kinds, notably the cattleyas and their hybrids, during the dull months of the year. Judging by the wonderfully healthy appearance of the almost innumerable seedlings, and the fine growth and spikes made by the young plants just reaching their time of first flowering, one might be tempted to assert that the subdued light of London town is altogether conducive to the best results in connection with the vastly interesting work of raising orchids from seeds.

It was in 1903 that Messrs. William Bull and Sons commenced in real earnest to raise new orchids by cross-fertilisation and hybridisation, and in the person of Mr. J. Lakin they have found a clever raiser and a capable grower. It is of interest to learn that at Chelsea there seems to be no specially suitable time of the year for sowing orchid seeds, and even those that germinate late in the year only remain somnolent, as it were, until the new year arrives, and then they grow away capitally. The seeds are kept for a little while after ripening, and are then sown, no matter what the time of year. Another point of great interest is that the seeds are never sown in or on a specially prepared medium, but always on the surface of the compost around a newly-established plant of several years old, which will not need repotting for some little time.

With the help of a magnifying glass the seeds may be seen in various stages of germination, while, of course, it is quite easy to follow the development of seedlings from the time they make a first tiny leaf. Mr. Lakin has no faith in the use of the various fern fibres for quite young seedlings, believing that good peat fibre is far better until the plants are approaching the flowering stage, when the various peat substitutes may be used with advantage. The batches of seedling odontoglossums and odontiodas are a fascinating study, and one may readily pick out those derived from Odontoglossum Edwardii, O. Rossi, and, at a certain stage, O. crispum. Odontoglossums are most extensively grown, and of special importance on the occasion of a recent visit was a large batch just opening their flowers, and derived from crossing O. crispum Franz Mazreel and O. c. Alphonso. The earliest of these have given a number of very finely blotched forms and so far there has not been a poor variety. The plants are about three and a-half years old. O. Zena (O. sceptrum × O. Harryanum), with bright yellow and brown flowers, is a very effective hybrid. O. splendidissimum, obtained by crossing O. Pescatorei with O. ardentissimum, is giving a fine series of large, shapely, and well-marked flowers of good substance. O. Pescatorei crossed with O. luteopurpureum, named O. Brandtiæ, is an attractive and most variable hybrid, the extreme forms quite closely resembling one parent or the other.

Odontoglossum Thompsoni is very fine, and the oldest batch is producing a perfect forest of long, graceful spikes, to be presently studded with purple flowers. The unflowered seedlings are extremely promising, and among these we made special note of those derived from O. Edwardi × O. Vuylstekeæ, O. Rossi × O. percultum, O. Rossi × O Lambeauianum, O. ardentissimum × O. Uro Skinneri, O. triumphans × O. Rossi, and O. Rossi × O. Harryano-crispum, which combination has already produced the distinct and handsome O. Smithi.

A batch of Odontioda Bradshawiæ was interesting, as showing the fairly wide range of colouring this hybrid will give, though it is the brilliant crimson-scarlet forms that are usually seen at exhibitions. The useful rosy Odontioda Chelseaensis is flowering freely, and is a very useful and easily grown hybrid.

Two little batches round which considerable hopes centre are the result, respectively, of crossing Miltonia Bleuana virginalis with M. vexillaria Cobbiana, and Oncidium crispum, crossed with Cochlioda Noetzliana. One plant of the former, still quite a youngster, was found to be producing a little spike on the occasion of our visit.

One large house is wellnigh full of cattleya, lælio-cattleya, and brasso-cattleya hybrids that ought soon to reach a flowering stage, but tiny seedlings of these groups are not numerous, few being raised, because, as already stated, their first flowers do not open kindly in town. Of Lælio-cattleya Baden Powell, L.-c. Bletchleyensis, L.-c. Lady Wigan, L.-c. Aphrodite, L.-c. Myra, etc., there were first-rate batches, mostly in sheath or showing flower buds.

Cypripediums do capitally at Chelsea, and of C. bellatulum, C. Tautzianum, C. Fowlerianum magnificum, C. Maudiæ magnificum, and numerous hybrids of C. bellatulum and C. niveum, there were particularly fine healthy examples; while the whole range of autumn and winter flowering sorts were fully represented, and seedlings were noticed in all stages of development. Certainly the orchid department shows what skill can do in the raising and cultivation of orchids in towns, and, at the same time, incidentally demonstrates how widespread is the love of orchids, because it would obviously be useless to keep on raising crossbreds and hybrids unless there were plenty of people ready to buy them. A nursery is not run on philanthropic lines.

Besides the orchids, the chief plants grown largely at Chelsea by Messrs. William Bull and Sons are palms, from tiny seedlings up to the big specimens in the large winter garden; liliums of many kinds, and amaryllis. Of these latter the firm has now an excellent strain, as was made evident on the occasion of the firm's centenary celebration last year. If they can be kept back sufficiently these brilliant flowers will be largely shown by the Messrs. Bull at the forthcoming International Exhibition. At the present moment spring cleaning is in full force at Chelsea, and the large winter garden and its occupants are being prepared for the elegant and beautiful display annually provided during May.

SEEDLING ORCHIDS.

Part of a house filled with seedling Odontoglossums and Odontiodas at Messrs. William Bull and Sons' Nurseries, Chelsea.

Passing through the packing sheds we saw in full working order the arrangements provided for the careful and prompt despatch of orders, and a question, suggested by the numerous cwt. bags of Bull's plant food, led to the information that this fertilising speciality meets a first-rate demand, and it is quite a common occurrence for the firm to despatch two tons in a day.

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**Celosia pyramidalis.** — While many bedding plants proved very unsatisfactory in 1911, the different forms of this celosia showed that the weather conditions just suited them. During late years a very improved strain has become popular, the habit of the plants being much better and the colours more clearly defined than was at one time the case. A very effective arrangement noted in Regent's Park last summer was one in which some fine, brilliantly-coloured examples of this celosia were disposed thinly over a carpet of Lotus peliorhynchus, the greyish foliage of the latter serving as a foil to their bright hue.—W. T.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

DENDROBIUMS.—For some weeks past the numerous species and hybrids have formed a prominent feature in the orchid houses. Many of them have now passed out of flower, and are pushing forth new growths from the stem-like pseudo-bulbs, which will produce roots when they are a few inches high. It is at this time that any necessary repotting should be attended to. Healthy plants which have sufficient room for development need not be disturbed, but may, for appearance sake, be surfaced with new material. Young, vigorous plants that are root-bound should be shifted on with as little root disturbance as possible, using receptacles that will accommodate the plants for two years. Overpotting is detrimental. For strong growing kinds like D. nobile, D. Wiganiæ, D. Ainsworthi, D. Rolfeæ, D. Blacki, and others of this class, the ordinary flower pots is suitable; while for the dwarf growing species, and those of pendulous habit, as D. crassinode, D. cretaceum, and D. crepidatum, shallow pans which can be suspended close up to the root are preferable. Remove all useless back-bulbs that have flowered, and remove as much of the compost from the back part of the plant as is practicable. By this means smaller pots than otherwise would be possible can be used. My remarks in the issue of April 6 in respect to compost for Dendrobiums is also applicable to this class; in fact, all of them will succeed in such a compost. As the plants are potted a few stakes should be inserted, and a number of the pseudo-bulbs tied to them to keep the plant from rocking. If this matter is left to a later period, there is a danger of injuring the young roots. Place them in the East Indian house, or warm plant stove, keeping them well up towards the light. Dendrobiums also thrive exceedingly well in warm vineries, but unless they are scrupulously clean, they are not desirable companions to vines. They delight in early morning sunshine, and also in afternoon sun; but until new pseudo-bulbs begin to form they must be shaded during the hottest and brightest part of the day. Keep the compost rather dry for several weeks after repotting, until the new roots are seen to be pushing through the compost. When well established a more abundant supply of water at the roots is necessary. The undersides of the leaves may be syringed lightly with tepid rain-water, several times a day in warm and bright weather. During the growing season a moist, humid atmosphere must be maintained at all times, as dendrobiums resent a dry, parched atmosphere, which will undoubtedly bring in its train an attack of thrip and other insect pests.

PROPAGATION.—It is desirable each year to propagate a few plants, especially of the rare varieties, to replace plants that have become exhausted through over-flowering, or any other cause. This is done by cutting off some of the old pseudo-bulbs that have failed to bloom, those that have flowered being useless. These should be laid upon some damp sphagnum moss in a hot, moist propagating frame, or upon the surface of living sphagnum moss, in the pots of Ærides and Vandas growing in the East Indian house. Young plants may also be obtained by cutting the bulbs into short lengths, taking care to have a sound eye or bud to each piece, and placing these firmly in small pots filled with sphagnum moss, being careful that the eye or bud rests just at the surface of the moss. Young growths will soon appear, and when they produce roots they should be potted up in small pots like the other plants. The eyes, or buds, should, if possible, be put into a propagating frame to produce growths, being afterwards gradually hardened off, until they are able to withstand the ordinary conditions of the house. Young seedling dendrobiums may be repotted at this season.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

DIPLADENIA BOLIVIENSIS.—This is a pretty and useful species, bearing a profusion of white flowers with a rich yellow throat. Unlike the majority of the dipladenias, this is not so subject to that dreaded pest mealy bug, and as the leaves have a smooth surface, they can be readily cleaned. The flowers are exceedingly useful for wreaths and bouquets when wired. The best position for the plant is upon wires near the roof-glass of the stove, or it may be grown as a specimen upon a balloon-shaped trellis. Propagation is readily effected by cuttings of the short, half-ripened, spur-like shoots. Insert these in small pots filled with peat and sand, and plunge in a hotbed. When nicely rooted pot singly, and again plunge until well established, when a stage or shelf near the light will answer. Shift into larger pots as thought necessary, using peat in a lumpy condition, and plenty of sharp sand, and small pieces of charcoal. Ample drainage is essential.

CELOSIAS.—Golden rules to observe in the cultivation of these useful plants are, plenty of heat, accompanied with humidity during the season of active growth; and free, unchecked growth from the time the seedlings are pricked off until flowering time. Seeds should be procured from a reliable source, as this is one of those plants hardly worth growing unless the strain be of the best. When one has a good strain it is good policy to perpetuate it by saving seeds annually. Assuming that seeds have already been sown for an early batch of plants, the seedlings should be given a shift into small pots as soon as large enough, and encouraged to make quick growth. The present time is opportune for making the principal sowing, and the resulting plants, if well grown, will produce their plumes at a time when most useful. This batch will have a better chance than the earlier one, owing to the increasing hours of daylight and more congenial conditions generally. A good compost consists of about three parts fibrous loam to one each of leaf-soil and dried cow manure, adding plenty of sand, and a sprinkling of wood-ash or soot. Plenty of humidity in the atmosphere of the house or pit in which the plants are grown is absolutely essential, for the double purpose of ensuring luxuriant growth, and to keep down red spider and thrips.

CYPERUS NATALENSIS.—When kept in quite small pots we find this graceful little plant most useful for associating with both ornamental foliaged plants, or flowering plants in the houses, or for decorative purposes in the dwelling. They are easily raised from seed, and by sowing a pinch, say, once a month, we ensure a succession of small plants to replace others that have become pot-bound, or otherwise damaged. Sow the seeds in heat, and when about an inch high, lift carefully with a pointed stick in small clumps of about 6 or 8 plants, and pot in small 60's, in which size they remain. By placing several seedlings in the centre of each pot the growth made is fine and grass-like, therefore more graceful than when only two or three are used.

TEMPERATURE.—More natural conditions for the free growth of the various plants now prevail, and the temperature of the various structures may accordingly be increased. Close early in the afternoons, and syringe heavily overhead and among the pots in which the plants are growing. The floors and walls also should be damped at least once in the evening. Avoid using more fire-heat than is absolutely necessary to maintain the proper temperature throughout the night.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY MELONS.—The fruits will have attained a good size, and some means should be adopted to support them, either by the use of nets or boards. Care should be exercised not to make use of any supports until absolutely necessary, or the fruits will often assume a shape and form that is not characteristic of the particular variety grown. Continue to give manurial assistance frequently, until the fruits are fully developed, and show signs of ripening, when it must be discontinued, using only clear tepid water until the fruits are ripe. Attend to the stopping of the laterals, and remove all leaves that show signs of decay, using a sharp knife. Keep a sharp look-out for canker in the main stems, and, if discovered, the affected parts should be well rubbed with dry lime; in fact, we always use lime around the base of the stems of our plants as a preventative, and water is never allowed to come in contact with the base at any time. Discontinue the use of the syringe, and admit air freely when possible by the top and side ventilators, leaving them open a little at night during the ripening period. All fruits should be cut immediately they are ripe, and placed in a warm fruit room for a day or two before being used.

SUCCESSIONAL PLANTS.—Carefully attend to the pinching and tying of the shoots, and fertilise the female flowers as they open until the required number are set. Give plenty of water, but exercise care in the use of stimulating manures at this period. Plants that were raised from seeds a few weeks ago should be potted on into 6-inch and 7-inch pots, and these will be found very useful to take the place of those in the early house, after the crop is finished.

SECOND EARLY VINES.—Constant care will be required in the final thinning of the berries; this work should be allocated to a capable workman, who thoroughly understands the requirements of the particular varieties to be operated upon. Great assistance is afforded for the proper development of the berries if the shoulders of the bunches are carefully tied up to the wires by slender pieces of matting; this work requires a certain amount of skill and judicious care. Give liquid and chemical stimulants frequently to vines that are carrying a heavy crop, and during the stoning period several applications of lime-water should be given.

PEACHES AND NECTARINES. — The fruits in the early houses have almost completed their stoning, so freely syringe the trees to keep the foliage clean and healthy, but it must be discontinued when the fruits commence to ripen. Continue to water frequently with chemical and farmyard liquid manure, until the ripening stage is reached, when clean tepid water will be sufficient. Admit air by the top and side ventilators, allowing a little to remain on at night. Stop all second growths at one leaf, and endeavour to expose the fruits to sunlight.

LATE PEACHES.—The trees in the later houses are much on a par with each other, the exceptionally mild spring we have experienced having induced the trees in the late houses to flower at the same time as the second early ones. Pay attention to the young growths, thin the fruits judiciously, and give the roots a copious supply of clean tepid water. As the days lengthen and the sun gains power, the syringe must be frequently used to keep the foliage clean and healthy.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

SUB-TROPICAL PLANTS IN THE GARDEN.—These are very effective when arranged in a position exposed to full sunshine, but protected from the high winds. The ground should be well trenched and manured for their reception, as a deep and rich rooting medium is essential to vigorous growth. From now until the first week in June, which is the best time to plant them out, the plants should be gradually hardened off; and it is essential to have vigorous specimens in 6-inch pots by planting time. Among the more effective plants for this style of gardening the cannas are especially suitable; they are now obtained in varied and charming colours, and their foliage is most effective. Ricinus in variety are specially handsome foliage plants. Some of the solanums are very desirable, and S. robustum, S. marginatum, and S. pyracanthum should be chosen. Melianthus major is an effective foliage plant, and can either be raised from seeds annually, or the roots can be kept from year to year.

HARDY BAMBOOS.—The present is the best time to plant these elegant subjects, and in gardens where the soil is of a heavy loamy nature they succeed admirably when given positions sheltered from the cold winds. The best to plant are Arundinaria nitida, a tall graceful bamboo with small leaves; A. anceps, a very desirable kind; A. aristata, a distinct plant; A. spathiflora, tall, with dense plumose growths; and A. japonica, a popular and vigorous grower. Bambusa fastuosa forms a tall noble plant; B. palmata is quite distinct, with broad leaves; and B. quadrangularis is a striking bamboo with square stems. Among the phylloastachys, P. aurea is a good one for massing in beds, while P. castillonis, P. flexuosa, P. Quilioi, P. violescens and P. vividi-glaucescens are all handsome and worthy of inclusion. Arundinaria auricoma is a dwarf variegated form, and A. Veitchi is a lowly grower, suitable for planting towards the back of the rock garden. Bamboos succeed best in a rich, moist soil, which should be deeply cultivated before they are planted. At this season of the year they derive much benefit from a liberal top-dressing of manure, and any old or dead stems should be cut out near the base.

GENERAL WORK.—Subjects like pampas grass, rheums, and gaunneras can be successfully transplanted now, and where it is so desired they can be increased by division of the roots. Place some fresh soil around them, and give a thorough watering after planting. It is wise to have material at hand to provide protection against frost for tender subjects. Frequently hoe over the surface of the flower borders and beds. The present is a good time to apply weed killer to paths, but it is more effective when put on during showery weather. Take care that box edges and grass verges are not damaged by its use, and guard against the utensils employed being used for other purposes.—F. Gardner, Batsford Park Gardens.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE.

April 16.—Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Rev. Canon Fowler, Dr. A. B. Rendle, Professor G. Henslow, Messrs. A. Rolfe, W. E. Ledger, W. Hales, J. T. Bennett-Poë, A. W. Sutton, A. Worsley, J. Fraser, and J. F. Chittenden (hon. secretary).

STACHYS PALUSTRIS.—Mr. J. Fraser showed a specimen of the rhizome of this common British plant, and remarked on the similarity between it and the Chinese Stachys tuberifera, the rhizomes of which are edible.

WALLFLOWERS.—Professor G. Henslow showed a series of dark red and paler yellow wallflowers which had been grown at Wisley from seed obtained by him in 1911 by crossing a virescent wallflower with carpellary stamens with pollen from red and yellow plants respectively. No malformed flowers had appeared in this generation.

TASMANIAN ORCHIDS. — Mr. Odell showed, on behalf of Mr. Andrew Kingsmill, an interesting series of coloured photographs of Tasmanian orchids, representing the following terrestrial genera: Pterostylis, Chiloglottis, Caladenia, Diuris, Calochilos, Dipodium, Glossodia, and Diplarrhena.

DOUBLE RANUNCULUS FICARIA.—Mr. Chittenden showed a semi-double form of Ranunculus ficaria, having several series of strap-shaped petals green on the outside, as well as two or three whorls of stamens, which had appeared in the garden at Wisley.

CARPENTARIA CALIFORNICA. — Mr. Odell showed foliage of this plant spotted with numerous brown spots, owing to the attack of the fungus Cladosporium herbarum.

DISEASED LILIUM CANDIDUM.—Mr. E. H. Jenkins sent leaves of Lilium candidum showing numerous æcidia of a Uromyces, which was referred to Mr. Chittenden for further examination.

PETRÆA VOLUBILIS.—Rev. F. Page-Roberts sent a dried inflorescence of a climbing plant with blue flowers from Ceylon, which was recognised as the American Petræa volubilis (see "Botanical Magazine 628), a plant which varies considerably in colour.

SAXIFRAGA GRANULATA.—A reputed hybrid of S. granulata was referred to Mr. J. Fraser for report.

BI-COLOURED HYACINTH.—Mr. W. B. Gingell, of Dulwich Park, sent an inflorescence of a hyacinth having one side red, the other blue, which was referred to Rev. Prof. Henslow for further examination.

## Devon Daffodil and Spring Flower Society.

The annual exhibition of this society was opened on April 18 in the Guildhall, Plymouth. It was certainly not so large a show as those of the past few years, which was accounted for by the extreme earliness of the season which had brought on the daffodils so rapidly that at the date of the show the majority of them were over. However, some very excellent narcissi were exhibited, and the hard-wooded flowering shrubs were never better, several splendid stands being present.

In the class for twenty-four varieties of daffodils, first prize was won by Miss Ida Pope with a fine stand containing Bernardine, King's Norton, Ben Simonite, Victory, Silene, Colonist, Japonica, Bird's Eye, Ruby Cup, Albatross, and Estelle. In the class for a group of daffodil seedlings not yet in commerce, Mr. T. Batson was first with a collection of fine flowers. Among them were white perianth, with wide yellow cup; cream perianth, with spreading orange cup; white perianth, yellow cup, edged crimson; primrose-yellow perianth, with orange-scarlet wide cup; pale yellow perianth, with gold cup, centre green, very large golden trumpet, bicolor trumpet, and white trumpet.

Mr. W. A. Watts showed, not for competition, some very attractive new seedlings, namely, White Rose, a double-flowered white with deep cup, for which he was awarded a First-class Certificate; Red Beacon, white perianth with flat orange-scarlet eye; Tinsel, white perianth, yellow eye, edged orange; and Verdant Green, perianth white, stained with green, and green eye. For nine trumpets, Mr. T. Batson was first with King Alfred, excellent; J. B. M. Camm, Mrs. Camm, Cleopatra, Treasure Trove, Rev. D. R. Williamson, Mdme. de Graaff, Grandee, and Weardale Perfection. In the class for three incomparabilis, Mr. T. Batson occupied the first place with Princess Mary, Homespun, and Gloria Mundi. The same exhibitor was first also with three incomparabilis bicolor, with Will Scarlett, Consul, and Chryseis; and for three Barri, yellow, with Blood Orange, Glitter, and Stonechat. In competition for three Barri bicolor, Miss Ida Pope obtained premier honours with Cossack, Firebrand, and Circlet; and for three Leedsi with White Lady, Elaine, and White Queen. The Hon. Mrs. Colborne was first for three poeticus with Horace, Cassandra, and Comus. In the single bloom classes the awards were made as follows: Trumpet, Mrs. Soltau-Symons first with Mdme. de Graaff; incomparabilis, Miss Ida Pope first with Victory; Leedsi, Mrs. Soltau-Symons first with White Lady; Barri, Mr. H. G. Hawker first with Greeneye; poeticus, Mrs. Soltau-Symons first with Cassandra. There were also twelve classes, confined to residents in the county of Devon.

In the class for a collection of twelve varieties of hardy spring flowers, Mr. H. W. Grigg occupied the first place with a very good stand, containing Trillium grandiflorum, Fritillaria imperialis yellow, Fritillaria imperalis red, Muscari Heavenly Blue, Fritillaria meleagris, Anemone Robinsoniana, Erythronium grandiflorum, Ranunculus asiaticus, Trillium erectum, Trollius citrinus, Leucojum æstivum, and Fritillaria persica. For a collection of nine varieties of hardy spring flowers, Mrs. Ashley Froude first with a very excellent selection, comprising Fritillaria meleagris, Iris tingitana, Tulipa strangulata, picta, Anemone pulsatilla, Caltha platypetala, Tulipa Greigi, Epimedium niveum, Iris Susiana, and Primrose Pompadour.

In competition for the prizes for fifteen varieties of hard-wooded flowering shrubs, Mr. T. B. Bolitho occupied the first place with Viburnum rugosum, Cytisus præcox, Prunus sinensis alba flore-pleno, Pyrus malus floribunda, Jasminum primulinum, Correa bicolor, Cydonia Maulei, Acacia cultriformis, Corokia cotoneaster, Acacia diffusa, Clianthus puniceus, Clianthus puniceus albus, Ribes aureum, Grevillea ornithopoda, Grevillea sulphurea. For six varieties of hard-wooded flowering shrubs, Mr. H. W. Grigg was first with the beautiful scented Viburnum Carlesi, for which he received an Award of Merit, Calceolaria violacea, Distyllum racemosum, Boronia heterophylla, Eriostemon neriifolium, and Correa cardinalis.

The attractiveness of the show was considerably increased by the exhibits staged by the several nurserymen. The Devon Rosery, Torquay, had a most attractive arrangement with a quantity of pot roses in full bloom. Among these were Lady Hillingdon, Climbing Mrs. Grant, Francesca Kruger, Snowstorm, Countess of Derby, Irish Engineer, Mrs. Sophia Neate, Beaute Inconstante, Etoile de France, and Caroline Testout. There was a fine collection of tulips in which were Bouton d'Or, Pride of Haarlem, Flamingo, Clara Butt, Rembrandt, Cottage Maid, and Golden Queen, very fine. A few flower sprays of the rare Gladiolus tristis were shown, and there was a fine specimen plant of Petræa volubilis in full flower, as well as fifteen dishes of apples in excellent condition. Messrs. Robert Veitch and Son, Exeter, showed, in fine condition, Rhododendron Dr. Stocker, R. concinnum, R. Williamsi, R. yunnanense, R. Yodogama, R. Fordi, R. racemosum, Azalea Hexe, Erica mediterranea, E. arborea, E. Veitchi, E. australis, Chorizema Lowi, Eriostemon nerriifolium, E. scaber, E. myoporoides, Grevillea alpina, Correa cardinalis, C. curiosa, C. bicolor, C. ventricosa, Cyrtomium Rochfordi, Osmanthus Delavayi, Lomatia ferruginea, Hibbertia dentata, Viburnum Sieboldi, V. plicatum, Eupatorium ionanthe, Dracæna lentiginosa, D. Draco, Beschorneria yuccoides, Acacia lineata, A. Drummondi, and Boronia megastigma. Messrs. Barr and Sons contributed a fine stand of daffodils, in which were Will Scarlett, Aspasia, Cygnet, Glitter, Queen of the North, Challenger, Monarch, Vivid, Anak Firebrand, Bianca, Orangeman, Ariadne, Mascotte, Snowcrest, Red Beacon, Minerva, Venus, Cleopatra, Sheba, Ibis, St. George, and Enid. Messrs. H. B. May and Sons, Upper Edmonton, showed a splendid selection of ferns and clematis.

## Bournemouth Gardeners' Association.

Short lectures on the "Cultivation of the White and the Yellow Arum Lily" were given at the last fortnightly meeting by Messrs. Evans and Pavey respectively. Both gentlemen have had some considerable experience with these useful plants, and spoke with confidence as to the treatment that suited them best.

Mr. Evans dealt with the white arum, and strongly advocated planting out the plants after flowering. He said the ground in which the plants are grown during the summer months should be well manured if it was at all poor in quality, as it was a great mistake to starve the plants. The better they were treated in this respect the more freely would they flower. Single roots in 6in. pots were best, and these, if well cultivated, would bear five or six spathes in a year. The lecturer did not advocate the use of chemical manures, but good farmyard liquid manure properly diluted. He said all small offsets should be removed when the plants were being put out, and not at the time of lifting and repotting.

Mr. Pavey, in dealing with the yellow arum, said it was not as free-flowering, of course, as the white kind, but the spathes retained their freshness much longer, and owing to its decorative value, the plant deserved a more extended culture than it at present received. Plants raised from seeds flowered at the end of the fifth season; offsets at the end of the third season. The flower stems were very brittle, and soon snapped off, and if care was not taken afterwards, the collar of the plant split up and decayed. When the plants were first started, said the lecturer, they should have a rather high temperature to grow in, but directly the flower stems appeared, a greenhouse temperature was the most suitable. Green fly soon attacked the young growths, and the latter must be kept free from the pest.

There was a free discussion at the conclusion of the two lectures. Some beautiful plants in pots, and cut flowers in vases were staged, namely: cinerarias, crotons, genistas, roses, narcissi, and zonal pelargoniums. Mr. Heath, gardener to G. G. Russell, Esq., ably presided, and was accorded, with the lecturers, a hearty vote of thanks.

## Norwich Exhibition of Spring Flowers.

The spring show of the Norfolk and Norwich Horticultural Society, held in St. Andrew's Hall, Norwich, on the 18th inst., may be regarded as a success. In the outside bulb classes a shortage of exhibits was noticeable, due, of course, to the fact that these flowers are so very early this season. The quality of the other hardy flowers, greenhouse flowers, and pot plants was high, and both as regards the quality and quantity, were of a high degree of excellence. The public evidently thought the show was a good one, as may be gathered from the fact that there was an increase of £20 upon last year's gate money.

There was only one circular group set up for the challenge cup presented by Colonel Petre, this coming from Mr. T. Notley, gardener to E. G. Buxton, Esq., Catton Hall. It consisted mainly of Stellata cinerarias, lilies, and roses, with suitable foliage plants. Mr. Notley is an adept at arrangement, as was made evident on this occasion.

In the cut flower section Mr. Lewis Smith, gardener to Robert Fellowes, Esq., Shotesham Park, achieved a great success, winning first for twelve bunches exotic, and first for twelve bunches hardy flowers. He had fine bunches of orchids in the first-mentioned, whilst among the hardy flowers the attractive feature was the bold bunch of gentians and the beautiful hardy irises of several kinds. Mr. George Davison, gardener to Colonel Petre, Westwick House, Norwich, had lead in the narcissi section. His stand of thirty-six varieties was a wonderful exhibit. The substance and freshness of the flowers was an education. Mr. Davison has been working for some years in hybridising the trumpet varieties, and he has raised some splendid things. He had one or two shown here under number, and it would have needed a bold bid to have secured the stock of either of them. Mr. Woodhouse, gardener to the Master of the Rolls, staged in this section some fine blooms of the most up-to-date sorts. S. Cozens Hardy, Esq., J. Cator, Esq., M.P., Mr. Frank Neave, and Mr. W. Chettleburgh, gardener to Colonel Rous, Worstead, were also prominent exhibitors and winners for narcissi.

Violets were well represented, and it was a grand half dozen bunches which Mr. F. J. Endersby, gardener to J. H. Gurney, Esq., Keswick, took first place with. Pansies, polyanthus, flowering shrubs, and tulips all had their devotees, and contributed largely to the brilliant display of cut flowers.

In the pot plant section first mention is due to the orchids from Miss V. Fellowes, Shotesham. She was placed first in both classes, and the exhibit was awarded a R.H.S. medal for the best exhibit in the pot plant section.

Next to these, we think, came the six calceolarias staged by Mr. F. Williams, gardener to Louis Tillett, Esq., Catton. They were shown just in the best of condition, with well-balanced heads of bloom. Cinerarias of the stellata type made a bold show, but the award of the judges was open to much doubt. Mr. E. Greene, gardener to E. Reeve, Esq., was certainly not distinctly beaten by those from Dr. Osburne's gardener. Mr. A. Coombe, gardener to Lord de Ramsey, Haverland, easily took first for cyclamen, and deserved all the praise that his fellow gardeners bestowed upon him for plants which were so fresh for such a late date. Pelargoniums (zonal and regal), primulas, lily of the valley, mignonette, and other seasonable subjects were also staged.

Strawberries were the only fruits shown, and the primary awards went to Mr. F. J. Endersby and Mr. W. Chettleburgh. Vegetables were fairly well represented, and in the section Mr. W. Chettleburgh achieved the greatest success.

The trade made a very effective display. Messrs. Daniels Bros., Lim., Town Close Nurseries, Norwich, were well to the fore from an educational point of view, with a varied exhibit, comprising forced shrubs of all kinds, roses of the newest and best, carnations, and hardy rockery plants in pots, which went to prove that at any time buyers can obtain these for immediate planting and effect. Awarded silver medal. Hobbies, Lim., Dereham, made one of their unique displays of roses, using ramblers for the back rows and the newest H.T.'s for the front. It would be futile to start giving names; suffice it to say that the best were there. (Silver medal.)

Messrs. A. J. and C. Allen, Hergham, Norwich, had a large and varied collection of roses in pots. They secured certificates for Duchess of Westminster and Edward Mawley. Juliet was well shown, both as standards and bush plants, whilst a good thing in yellow ramblers was Shower of Gold. (Silver medal.)

Mr. R. C. Notcutt, Woodbridge, made a great feature of flowering shrubs, forced lilacs, genistas, viburnums, and wistarias being very attractive.

A word of praise is certainly due to the energetic hon. secretary, Mr. C. E. Pilling, for initiating new ideas of arrangement, and giving the Norwich Spring Show a start under improved conditions.

## Reading Gardeners' Association.

The final meeting of the present session took place in the Abbey Hall on Monday, when the President occupied the chair. There was a good attendance, including a number of ladies.

By special request, Mr. T. J. Powell, of The Gardens, Park Place, Henley-on-Thames, had consented to give another of his "Practical Demonstrations in Artistic Floral Work." As is well known, Mr. Powell is inimitable in the art of floral decoration, and his efforts on the present occasion were of the same high order as his previous demonstrations. As a preliminary, Mr. Powell gave examples of the different methods to be adopted in the display of cut flowers, first in a vase, afterwards in a bowl. The subjects used were spiræas, magnolias, and forsythias, each in turn being most cleverly handled. Mr. Powell then gave two examples of the way in which a dinner table should be decorated. With a table of sufficient size to seat about twelve or fourteen persons, he first gave a most artistic and at the same time delightfully simple example, making use of only delicate young beech foliage as a setting to the blossom of wild cherry. A centre bowl, with subsidiary bowls, was brought into service, and the whole produced a really delightful effect.

In his second example, Mr. Powell dispensed with the bowls, but requisitioned wire arches with striking effect. The arches were first covered with Asparagus Sprengeri, among which bunches of Pelargonium Fire Dragon were afterwards studded. The table under the centre arch was embellished with Liberty silk in a soft eau-de-nil shade; this in turn being covered with foliage and geranium blooms. Mr. Powell suggested, too, that the same arches covered in season with the foliage and flowers of the climbing rose, Dorothy Perkins, would give a charming effect. At the conclusion of his demonstration, Mr. Powell received a very hearty vote of thanks.

Members were at this meeting invited to contribute flowers for use at the Royal Berkshire Hospital and Reading Union, and a fine display of spring blossoms was staged. The flowers, contributed by a large number of members, consisted of schizanthus, wallflowers, arabis, auriculas, polyanthus, narcissi of sorts, Cineraria stellata, berberis, arums, tulips, spiræa, myosotis, begonias, ferns, roses, asparagus, stocks, fuchsias, primulas, rhododendrons, etc., and were duly forwarded to these institutions the following morning. A collection taken during the evening on behalf of the funds of the hospital amounted to £2 10s., and this sum, with the Society's annual subscription, will be forwarded to the secretary through the Reading Workpeople's Hospital Association. The tables, etc., were kindly lent by Mr. J. E. Phillips, London Street, Reading. A specimen orchid Dendrobium densiflorum was exhibited by Mr. H. Sims.

## North of Scotland Horticultural and Arboricultural Association.

A most successful opening session of this recently resuscitated society has just been brought to a close. It has extended from November, 1911, to April, 1912, during which period some capital papers were read. Dr. James W. H. Trail, Professor of Botany in Aberdeen University, gave the first paper, dealing in a most admirable manner with the subject of "How to obtain improved races of Cultivated Plants," and then there followed papers on Vegetables and Fruits, the Sweet Pea, Meteorological Lessons, the Carnation, Garden Cities, Cottage Gardening, and Hardy Spring Flowers. All of these subjects were dealt with in a most interesting and instructive manner, and an outstanding feature of the session was the enormous attendances.

It was exceedingly gratifying to see meeting after meeting in the Botany Classroom, Aberdeen University, where the society met, crowded to the doors with intelligent and enthusiastic audiences. The discussions, too, were warmly entered into, and a wealth of information extracted.

To the officials the warmest congratulations are due for the fine way in which everything was engineered, and it is no mere lip service to say that to the president, Mr. John McKinnon, Haddo House Gardens; the vice-president, Mr. A. Robson, Aberdeen; the secretary, Mr. William Reid, 8, Hadden Street, Aberdeen; and the treasurer, Mr. William Wyllie, 18, Market Street, Aberdeen. the members feel deeply indebted for their unwearied efforts—efforts ungrudgingly and whole-heartedly given.

At the closing meeting, Mr. Robson, through the unavoidable absence of Mr. McKinnon, took the chair. The subject for the evening was a paper sent by Mr. Joseph Sangster, Lissadell Gardens, Sligo, Ireland, on "Hardy Spring Flowers." Mr. Sangster, who knows it well, dealt with the climate of the north of Scotland and its suitability for the cultivation of spring flowers. Many spring flowers, Mr. Sangster contended, which would make progress in the north-east of Scotland during the winter months would succumb to the rigours of a winter in the midlands of England. He also dealt in an instructive manner as to the time bulbs should be planted, how they should be planted, their cultivation and flowering, etc. A hearty vote of thanks was given the secretary, Mr. Reid, for reading the paper, and he was instructed to convey the warm thanks of the meeting to Mr. Sangster for his valuable contribution.

It was agreed, on the motion of Mr. C. S. France, F.B.S., to remit to a committee to consider the question of a summer excursion to gardens in the vicinity of Aberdeen. Mr. France also moved that it be remitted to the committee to consider the advisability of promoting an exhibition of spring flowers next year. Undoubtedly there has been a growing interest in the cultivation of bulbs and spring flowers in the north-east of Scot-

and in recent years, and it is felt a show would be welcomed and well patronised. The motion was heartily agreed to.

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### Croydon Gardeners' Society.

The culture of sweet peas for exhibition was the subject of a paper read before the members of the Croydon and District Society at the Sunflower Temperance Hotel on the 16th inst. Such a popular subject accounted for the big attendance of members, and many were anxious to hear from Mr. Thos. Stevenson, Woburn Place Gardens, Addlestone, his methods of producing the magnificent blooms, for which he is world famous. Although sweet peas may be grown in any good soil, that of slightly heavy nature will produce the best blooms.

To prepare the soil was Mr. Stevenson's first advice, and this operation must be done in the winter months by trenching the ground three spits deep, and where rows are wanted the trench should be opened 5ft. to 6ft. in width. Where ground lays cold the subsoil should be left at the bottom and incorporated with this fresh cow manure and leaf-soil. The advantage of this will be found in hot, dry summers, such as that experienced last year. Leave the surface in a rough state for the weather to pulverise during the winter; then before the plants are put out it can be broken down into a friable state with a fork. A little bone meal and superphosphate may be added with beneficial results to the plants.

The autumn sown seeds will be found to do the best, and, in Mr. Stevenson's experience, he has found these plants almost immune from disease, especially the dreaded streak disease. Seed should be sown in 48's pots, although smaller sizes may be used, or even boxes, using a good open soil for them; place in a cold frame and keep closed until they have germinated. Then give air on all favourable occasions, even a little in the middle of the day when snow or frost prevails. The pots containing the seedlings should be placed in spent ashes up to the brim; this method will conserve moisture to a marked degree. When frames are closed, and in severe weather, a mat thrown over them will keep out the frost. Avoid coddling them as much as possible to get a strong growth in the plants.

If sowing in spring is resorted to, the best time is in the first week of February. The plants may be raised in a cool greenhouse on a top shelf near the glass, or on a slight hotbed; the idea at all times is to keep them steadily growing into sturdy plants. About the middle of March, if the weather is suitable, they should be planted in the open ground after well hardening off, and a fine tilth of soil for their reception must be obtained. The seedlings are best shaken free of all soil, and a hole deep enough to allow the long tap root to be straightened out should be made. Plant with care to avoid bruising the roots as much as possible. In staking, birch or beech boughs placed near them will give the young plants support for their tendrils. Straight canes may be used for exhibition flowers, but only two or three growths may be left, and these tied up loosely with raffia. Good bushy sticks may be used where flowers for ordinary decoration are required, and these placed at a fairly good space from the plant, and slightly bending forward at the top. Train the plants on the outside of the sticks to allow them to obtain as much air as possible.

The hoe should be kept in use along the sides of the rows at least once a week to aerate the surface soil. When the first flowers are out a mulch of decayed manure or leaf-soil should be put along the sides of each row or around clumps where they are grown in this form, and, in Mr. Stevenson's opinion, watering is not necessary until after the mulch is put on. Artificial manures, such as a special sweet pea manure, or a little nitrate of potash, nitrate of soda, or sulphate of ammonia, may be used, but administer these sparingly.

Greenfly and thrips must be kept down by using a safe insecticide, and as a precaution against streak the plants should be syringed at intervals with a solution of sulphide of potassium, using ¼oz. to one gallon of water, or permanganate of potash will act in the same way. Where exhibition blooms are required, remove all flowers excepting those showing colour a few days prior to the show. The stems should be cut several hours previous to staging them, and placed in water at once; they will expand considerably after being cut, providing they are not in too young a state before severing from the plant. Staging for exhibition was a point in Mr. Stevenson's remarks greatly emphasised.

With such a popular subject there was plenty of discussion at the end of Mr. Stevenson's discourse, and he supplemented his remarks considerably when replying to questions put to him.

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### GARDENING ENGAGEMENTS.

Mr. H. J. Salloway, for the past four years foreman in Closes Hall Gardens, Gisburn, Yorks, and previously foreman at Dutton Park, Cheshire, has been appointed gardener to the Countess of Cardigan, Deene Park, Wansford, Northants.

Mr. H. Dove, of Cranmere, Mitcham, has been appointed gardener to Mrs. Druce Thornhill, Sevenoaks, Kent.

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**Cotoneaster lumifusa.** — For clothing steep banks this Chinese cotoneaster is one of the most useful of the genus. It is of a strictly procumbent habit, has neat, roundish, evergreen leaves of a dark green tint, while the berries are deep scarlet in colour. Of rapid growth, this cotoneaster will, under favourable conditions, soon cover a considerable space.—S. W.

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# THE PEA MOTH (ENDOPISA NIGRICANA STPH).

This moth, writes R. Stewart MacDougall, M.A., D.Sc., in the "Journal of the Board of Agriculture," appears in the literature under a number of names, the generic names being Grapholitha, Tortrix, Laspeyresia, and Endopisa, while the specific names are nigricana, pisana, nebritana, and proximana. The pea moth is well known in Central and in South Europe. It is found over Britain to Perthshire, and also in Ireland.

The caterpillars of the moth are the cause of the so-called worm-eaten peas. The moth is a widely-distributed one, and the damage done is frequently great; yet the references to this insect, in the economic literature, are comparatively rare. In 1911, from different parishes in England—some of them noted for their pea-growing—complaints came to the Board of Agriculture regarding loss due to the ravages of the caterpillar. One correspondent wrote that while "peas without grubs were selling at 110 shillings a quarter, similar peas infested by the caterpillar fetched only 85 shillings a quarter." An interesting point in the communication was that, during the past summer, whereas most of the samples grown on land that carries peas once in 10 years or so were infested, there was not the slightest trace of the insect on land, somewhat remote from other pea-growing fields, in which it was known that peas had not been grown for 80 years.

The moths fly at the time of flowering of the pea; the caterpillars live in the pods, and when full-fed leave the pods and creep a little way into the soil. The caterpillar is destructive to both field and garden peas. One or two other leguminous plants have been named as possible host plants, the seed in each case being sought while still forming in the pod.

## Description of Adult Insect.

The fore-wings of the moth are dark-brown or black, and have a metallic sheen or gloss; at the front margin of the fore-wings short white streaks or spots may be seen; there is a very faint eye-like mark towards the apex of each fore-wing, this mark containing within it small black streaks; near the hind margin, about the middle of the wing, is a curved white streak; fringes to the wing resemble the ground-colour. The hind wings are pale- brown or bronzy-brown, with white fringes. The underside of all four wings is pale and with a leaden gloss. The antennæ are black-brown. The moth measures 1-5 inch in length, and from ½ inch to ⅝ inch in spread of wings.

## Larva.

The caterpillar is 16-footed, and measures 1-3 inch when full-fed. The colour is a very pale green or yellowish-white; the head is brown or blackish, and lobed; on the upper surface of the joint behind the head is a dark horny plate; the segments of the body have a number of dark dots or warts, each of which carries a bristle-like hair.

## Life History.

The moths are found flying in June and July (some may be found in flight in August). The Continental text-books write of the flight taking place soon after sunset. Barrett, on the other hand, writes of the moth as "found in plenty sometimes along the hedges bordering a field which has produced a crop of peas in the preceding year," and as "loving to sit in the bright sunshine on oak and other bushes, flying away with extraordinary swiftness if disturbed to revel in the sunshine in another bush," and he adds, "as it seems to be on the wing throughout the day there seems no reason to suppose that it flies also at dusk."

The females lay their eggs on the young pea-pods. The same female may lay "1 or 2 or 3" eggs on a pod. The caterpillar on hatching eats through the pod in order to reach its normal food, i.e., the seed or pea. The tiny entrance-hole heals up, so that externally the pod may appear quite undamaged, while inside the peas are being attacked by the caterpillar. Some peas are gnawed, others more or less destroyed. Caterpillars may be found at work from July onwards. The caterpillar, on attaining its full size, leaves the pod and passes a little way into the soil, where it spins a web round itself, and so passes the winter. In the next spring pupation takes place, and the adults appear in due course.

Taschenberg states that infested pods ripen earlier than those not infested, and open slightly, so that the full-grown caterpillars can creep or press themselves out. The caterpillar may eat its way out of the pod.

Correspondents sometimes confuse the work of this caterpillar with the destructive work of the larva of the Pea Beetle, described in Leaflet No. 150. The following distinctions may prevent confusion:

Caterpillar of Pea Moth: Caterpillar has sixteen legs; pupation in soil; the peas are irregularly gnawed externally; the attacked peas are often woven together by silk threads, and there is a marked granular excrement. Grub of Pea Beetle: Grub legless; pupation in pea; the peas are eaten internally; there is no sign of spun threads and the hollowed peas appear clean, without external excrement.

A closely-allied species, known as Grapholitha or Laspeyresia dorsana, is rarer in Britain. It is found in the North of England, and in Scotland has been taken as far north as Inverness. Its caterpillar is longer than that of E. nigricana, and is orange-yellow in colour. On the Continent it appears as a pest on peas, with a life-history resembling that of E. nigricana.

In Britain wild species of Lathyrus have been named as host plants.

## Preventive and Remedial Measures.

The time when this pest of the pea can be most advantageously fought is when the caterpillar is in the soil for its winter rest. Where possible a thorough raking or deep hoeing of the soil as soon as it is free from peas would turn up and destroy many of the caterpillars. A field attack should be followed by deep ploughing before winter.

The collection and burning of infested pods, and the firming of the soil at the foot of the plants to hinder the entrance of the caterpillars, have also been recommended. When peas are "shelled" for culinary use all larvæ found should be destroyed.

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**The Testing of Sanitary Compounds.**—At the twenty-seventh ordinary general meeting of Jeyes' Sanitary Compounds Company, Lim., held recently at the offices of the company, 64, Cannon Street, the Chairman, Mr. H. H. Nelson, stated that Dr. Klein had been appointed scientific adviser to the company. He mentioned that Dr. Klein was the originator in this country of the special branch of research in which the company was most interested, and no man to-day stood higher both as regards professional and personal estimation. All the standard products of the company—Jeyes' Fluid, Cyllin and Corporation Fluid — were now tested by Dr. Klein, and certified as regards their relative guaranteed values (by the Rideal-Walker test), whilst every tender issued by the company was accompanied by the method of test, with every detail exactly set out, so that such values might be checked upon precisely similar lines and conditions. He hoped this arrangement would tend to abolish the disputes which had proved inseparable from guaranteed standards often checked by operators unaccustomed to manipulating such delicate tests. The company always used the Rideal-Walker test because their scientific adviser and other distinguished authorities regarded it as the most accurate. It was the business of Jeyes' Sanitary Compound Company to meet the demands of the public, and it had been the policy of the company for 27 years not to allow themselves to be surpassed as regards the excellence of the various products they supplied.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

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OXLIP OR COWSLIP.—S. P. R., Fulham: Will you kindly tell me if the larger of the two specimens sent is the true oxlip (Primula elatior). It comes from Corfe Castle, Dorset, and, although the specimen is from a plant which has been cultivated at Corfe for a year, I am assured the field ones are just as large. This example was found growing among cowslips. Sorry I have not a whole plant to send, but I enclose some cowslips for comparison.—The specimen sent carries its flowers in a somewhat horizontal fashion, and there is also an absence of the folding at the mouth of the corolla, both characters which help very largely to distinguish the oxlip from the cowslip.

PROPAGATING BUNCH PRIMROSES.—H. C. C., St. Neots: I have a fine bed of bunch primroses, and so many of the varieties are so good that I propose to increase the stock and plant more largely for next spring's display. Of course, I understand that the plants may be increased by division, but I am anxious to carry out the work with the best possible results, and therefore seek your advice.—Proceed at once to prepare a plot or border in a semi-shaded spot, for the reception of the bunch primroses; if the ground has been well dug and manured during the winter, little need be done beyond adding a goodly dressing of leaf-soil and forking this into the top six inches. When the plants have lost their floral beauty propagation should not be delayed. Give the bed a good watering (failing moist weather) overnight, and lift the plants next morning, putting them in a shady place as lifted. We assume you have already placed a label to the plants you wish to increase, with the colour recorded thereon. Deal with one plant, or colour, at a time, and cover the rest of the plants with a damp mat. With a large, strong, and sharp knife, carefully divide each specimen, doing the work so that each growth, or each division, has its complement of roots. Plant with a trowel, and give a good watering. The distance at which to plant will depend upon the size of the divisions and the space at disposal; but if the rows are eighteen inches apart and the plants a foot apart, that will allow plenty of room for development, for hoeing and for a subsequent top-dressing of leaf-soil and old manure, when the stock becomes established, and is growing freely. All this may appear to be much ado about bunch primroses, but, here, as in so many cases, it is chiefly the proper consideration of many

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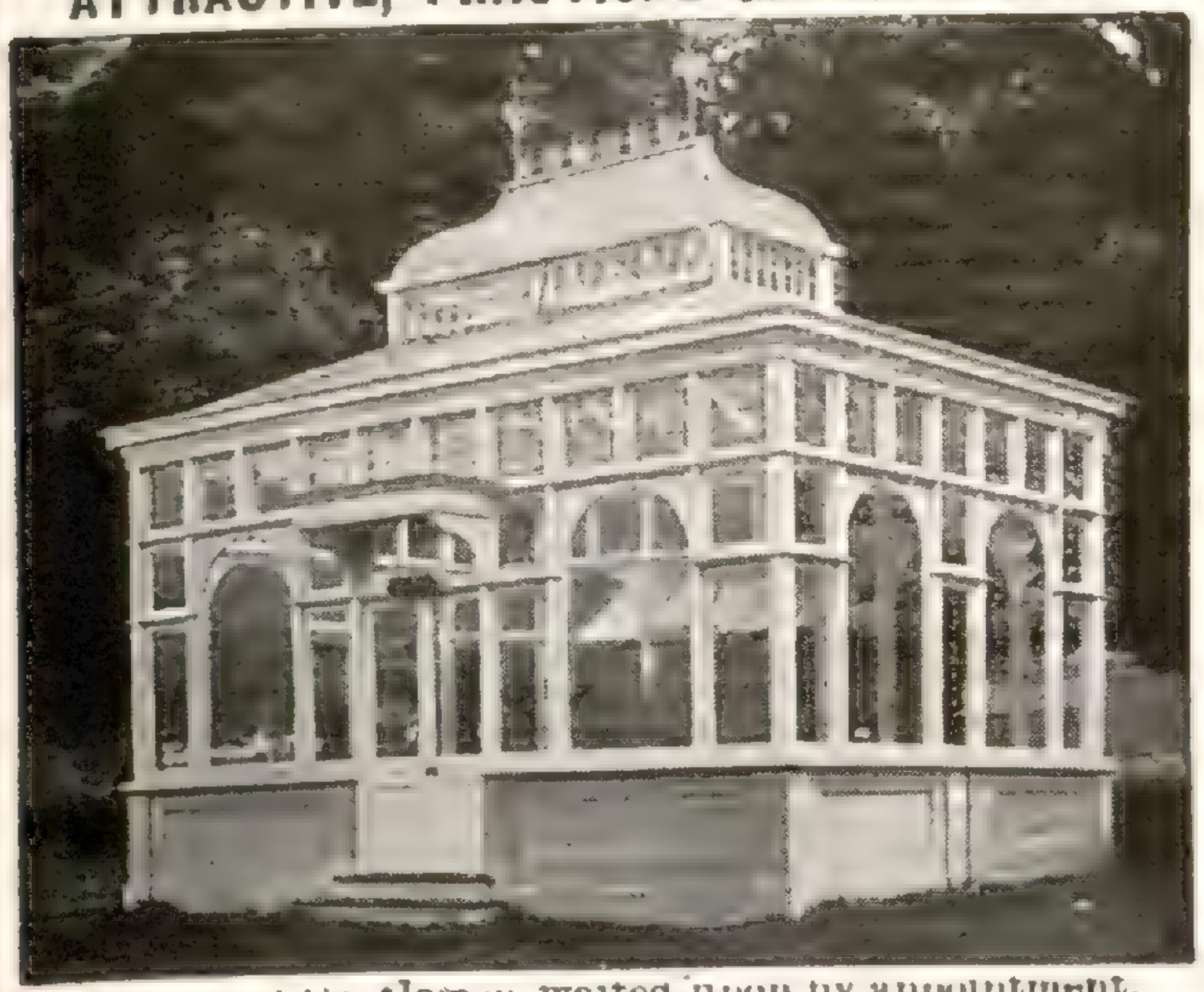

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All parts are numbered ready for easy re-erection by any handy man.

apparently little matters that make for success, even in connection with simple, beautiful and common hardy flowers.

LAYERING PERPETUAL-FLOWERING CARNATIONS.—Mr. F. James, of Falcondale Gardens, Lampeter, South Wales, has very kindly sent us the following interesting note in relation to the point raised in these columns in our issue of April 13, respecting the advantages of layered perpetual carnations over plants from cuttings: "Having been a regular reader of your valuable paper for several years, I take the liberty of writing you with reference to the layering of perpetual-flowering carnations as raised by your correspondent in the Gardeners' Magazine of April 13. When we layered our Malmaison carnations on August 1, 1911, we had several old plants of perpetual varieties, and by way of experiment we layered several. The rooted layers were potted on September 25. They were not stopped, but allowed to grow along with the Malmaisons through the winter in a temperature of 45 to 50 degrees. They commenced to flower at the end of March, and are now (April 18) carrying from nine to twelve fine blooms each, with plenty of healthy growths which will be stopped in due time, and the plants will be potted again for flowering next winter. As we have had such great success from propagation by layers we shall more largely increase our stock by this means towards the end of the summer. Whether this experience is worthy of publication I do not know, but I thought possibly the information might be helpful to some of your readers." We are obliged to Mr. James for this useful letter.

DISFIGURED PHYLLOCACTUS.—C. B., Hounslow: Will you kindly tell me what is the cause of the disease which attacks my cacti, and what can be done to cure and prevent it? I have made the specimen a good deal worse than it was by dusting sulphur on it. I have used carbolic soap with little success. Before they were attacked my plants looked even healthier than those at Kew. The leaf sent is from a plant that was but a tiny slip, two inches high, two years ago.—There is no trace of fungus disease on the specimen sent, and so we conclude the injury is due to some error in cultivation, possibly in connection with watering and temperature. Cacti often look quite green and healthy, and the temptation to increase their vigour by free applications of water is great, but the result is collapse.

COTTON AS AN ORNAMENTAL PLANT.—C. W. C., Cardiff: My employer has sent me a pod or boll of cotton, containing seeds, and I should like to raise a few plants, as I understand these are of a very ornamental character when carrying their open-end seed pods. Any information you can give me in this matter will greatly oblige.—Cotton (Gossypuim) is quite ornamental when well grown and carrying a considerable number of expanded seed pods, each showing its contents of silky cotton. The plants are not easy to manage, and it is very desirable that an early start should be made, owing to the great difficulty experienced in keeping the plants safely through the winter. You are too late to make a successful start unless circumstances are unusually favourable. Sow the seeds in light soil, in a hot moist pit or stove, and pot the seedlings separately as soon as they are large enough to be so treated, using light rich soil. Give larger pots as the need arises, and keep the plants in the stove until they begin to flower, when a drier atmosphere should be provided, but not necessarily a lower temperature, though this latter may be permitted when the pods burst. Save a few of the seeds and start them into growth in brisk heat next January or February.

## NAMES OF PLANTS.

F. H. C., Worcester.—1, Alyssum saxatile citrina; 2, Geum montanum; 3, Vitis Coignetiæ.

L. B., Charlbury.—1, Amelanchier canadensis; 2, Triteleia uniflora; 3, Berberis Darwini; 4, Lycaste cruenta; 5, Odontoglossum Rossi; 6, O. cirrhosum.

B. S. A., Hants.—1, Prunus sinensis; 2, double, flesh-coloured peach; 3, double rose-coloured peach; 4, Pyrus eleagnifolia; 5, Magnolia stellata; 6, Forsythia suspensa.

W. B., Uckfield.—1, Asparagus verticillatus; 2, probably Blechnum brasiliense, poor specimens; 3, Phlebodium aureum; 4, Cyrtomium falcatum; 5, a sedum, send when in flower.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, April 30.—Royal Horticultural Society; Narcissus Committee meets at 11.30 a.m.; Fruit, Floral and Orchid Committees at 12 o'clock; Lecture at 3 p.m. on "Potatoes" by Dr. Redcliffe Salmon; Scientific Committee at 4 o'clock.
National Auricula and Primula Society's Show at the Royal Horticultural Hall.
WEDNESDAY, May 1.—National Auricula and Primula Society, Midland Section, at Birmingham.
THURSDAY, May 2. Linnean Society Meeting.
Manchester and North of England Orchid Society.
SATURDAY, May 4.—French Horticultural Society of London.
North of England Horticultural Society; Conference on "Horticulture in Secondary Schools and Farm Institutes," at Newcastle.
TUESDAY, May 7.—Scottish Horticultural Association.
WEDNESDAY, May 8.—East Anglian Horticultural Club.
Royal Society of Arts.
MONDAY, May 13.—United Horticultural Benefit and Provident Society.
TUESDAY, May 14.—Royal Horticultural Society; Committees meet at 12 o'clock; Master's Memorial Lecture at 3 p.m. on "Gardening and Drought," by Professor J. Bayley Balfour, F.R.S., V.M.H.; Scientific Committee at 4 o'clock.
National Tulip Society's Exhibition at the Royal Horticultural Hall.
Devon County Show at Plymouth.
WEDNESDAY, May 15.—North of England Horticultural Society, at Leeds.
THURSDAY, May 16.—Manchester and North of England Horticultural Society.

## OBITUARY.

◆

### MR. JAMES BLACKLOCK.

It is with regret that many will learn of the death of Mr. James Blacklock, for many years gardener at Southwick, the Kirkcudbrightshire seat of Sir M. J. M'Taggart Stewart, Bart. Mr. Blacklock, who has been in failing health for some years, died at Castle-Douglas, where he has been residing, having retired two or three years ago because of the condition of his health. He was an exceptionally able all-round gardener, never allowing his favourite subjects to monopolise his attention, and the gardens at Southwick were always maintained in good condition, although the staff was somewhat limited for the size of the place. Mr. Blacklock was highly esteemed in horticultural and other circles. He was a well-read and studious man, and as he was always genial and kindly his company was much appreciated, and he was held in very high respect in and around Southwick, where he had been for many years.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.
Height above Sea-level, 150 feet.

| Date. 1912. April 14 to April 20. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Apr. 14—Sunday ...... | 1 0 | 50 | 47 | 57 | 45 |
| ,, 15—Monday ...... | 5 54 | 43 | 42 | 56 | 37 |
| ,, 16—Tuesday ..... | 8 0 | 47 | 45 | 56 | 33 |
| ,, 17—Wednesday.. | 8 0 | 47 | 45 | 59 | 41 |
| ,, 18—Thursday.... | 7 36 | 48 | 45 | 64 | 34 |
| ,, 19—Friday........ | 13 6 | 58 | 49 | 66 | 37 |
| ,, 20—Saturday..... | 7 0 | 60 | 52 | 62 | 34 |
| Means .. | (total)<br>50 36 | 50 | 46 | 60 | 37 |

| Date. 1912. April 14 to April 20. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Apr. 14—Sunday ...... | — | 48 | 47 | 48 | 36 |
| ,, 15—Monday ...... | — | 48 | 48 | 48 | 26 |
| ,, 16—Tuesday...... | — | 48 | 48 | 48 | 21 |
| ,, 17—Wednesday.. | — | 48 | 47 | 49 | 25 |
| ,, 13—Thursday.... | — | 48 | 48 | 48 | 23 |
| ,, 19—Friday.. ..... | — | 49 | 49 | 48 | 24 |
| ,, 20—Saturday .... | — | 50 | 49 | 48 | 25 |
| Means ... | (total)<br>— | 48 | 48 | 48 | 26 |

## NEW BOOKS.

### FERNS AND FERN CULTURE.

By J. Birkenhead, revised by F. Parsons. (H. B. May and Sons, Upper Edmonton, and W. H. and L. Collingridge, 148 and 149, Aldersgate Street, E.C.) Price 1s.

The largely-increased interest that is now being taken in both British and exotic ferns, renders the appearance of a new edition of this excellent handbook on these elegant and interesting plants most opportune and welcome. It has been our duty as well as pleasure, to speak in highly appreciative terms of previous editions, but, whatever may have been the praise previously bestowed upon the work, such praise would fall considerably below the present requirements. The author, who for many years cultivated ferns on a large scale, possessed a wide knowledge of the various genera, species, and varieties, and contrived to give within the compass of a shilling handbook an immense amount of information on the cultural details and the making of selections for various purposes. Since the second edition was prepared and published by the author, there have been many changes in connection with ferns, as with other classes of plants, and it was wisely decided that the third edition, the one now before us, should be subjected to a thorough revision.

This important task was entrusted to Mr. F. Parsons, who occupies a leading position in Messrs. H. B. May and Son's establishment at Upper Edmonton, and has a thorough acquaintance with all that relates to the various classes of ferns and their cultural requirements. The knowledge possessed by Mr. Parsons of ferns and selaginellas, these latter being also included in the book, has been fully utilised in the work of revision, which has been so thorough in every respect as to deserve the highest praise. The book is freely illustrated and admirably printed, and will be found equally valuable to all classes of cultivators.

### VINES AND VINE CULTURE.

By A. F. Barron, V.M.H. ("Journal of Horticulture," 10, Essex Street, Strand, W.C.) Price 5s.

The publication of the fifth edition of "Vines and Vine Culture" reminds us of one whose memory will long remain fresh in the minds of those who are conversant with the services he rendered in the cause of fruit culture, and of the unabated interest that is being taken in grapes and their cultivation. Prominent among the services that the late Mr. Barron rendered during his long and active life was the publication of the work now before us, which during the past thirty-nine years has been regarded as the most important text-book on the subject with which it deals. Possessing a knowledge that was quite unique, both of the many varieties of grapes and of their cultural requirements, he was not slow to recognise the fact that growers would require in a book of the first-class something more than information on the making of vine borders, planting vines, watering, syringing, and details of a similar character. He therefore set himself the task, which was by no means a light one, of dealing with the grape vine in its relation to the commercial establishment as well as the private garden, of giving a sketch of the ancient and modern history of the grape vine, and preparing a list of varieties in which their distinctive characteristics, cultural requirements, and historical aspects would be dealt with.

In a word, Mr. Barron recognised the necessity of a comprehensive work on the subject of grape growing, and he achieved a degree of success that evoked the warmest praise, and secured for it a continuous demand throughout the long period that has elapsed since the publication of the first edition. New editions have been published from time to time, and of these, three were prepared by Mr. Barron himself, who was thus responsible for the first four issues. The fifth edition has been prepared for publication by Mr. W. P. Thompson, who was for some years with Mr. Barron at Chiswick, and has long been regarded as an authority on grapes. Mr. Thompson has, in his revision of the work, shown remarkable judgment. He has in no way altered the plan of the work, which admittedly is a good one, but has done whatever has been necessary to bring it up-to-date, and thus place it fully abreast of the most advanced views on the production of grapes for private use and the market. Therefore, those who take "Vines and Vine Culture" as their guide will find that it will give them the fullest information on the many and varied details with which those who are responsible for the management of vineries should be acquainted.

### ROSES.

By H. R. Darlington. (Messrs. T. C. and E. C. Jack, 67, Long Acre, London, W.C.) Price 2s. 6d.

The book on roses is one of the latest of the additions that have been made by Messrs. Jack to their series of works on present-day gardening.

### THE EVERYDAY USES OF PORTLAND CEMENT.

(The Associated Portland Cement Manufacturers (1900), Lim., Portland House, Lloyd's Avenue, London, E.C.) Price 2s. 6d. net.

The use of Portland cement has been greatly extended within recent years, and it is now utilised in many ways that were not contemplated a few years since. This extension has been due in part to the improvement in its manufacture and consequent reduction in cost, and in part to a fuller recognition of its possibilities in the building art. The object of the book before us is not so much to instruct the builder, but to furnish the farmer, gardener, estate owner, and manufacturer with some account of the many uses to which the material can be put with advantage. It, however, supplies the members of the technical professions and trades with a comprehensive and clear summary of certain aspects of the subject upon which hitherto there has not been much trustworthy information available. The work is freely illustrated, the illustrations of garden accessories being of special interest, and to those who are familiar with the use of Portland cement it will be found of much service as a reminder and reference book.

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## MARKETS.

### COVENT GARDEN.

### Flowers.

Daffodils are a short supply, but tulips, irises, and carnations are plentiful, and the demand is fairly good.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 | 0 | to | 8 | 0 |
| Arums | per doz. | 1 | 6 | | 2 | 6 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 15 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azaleas | per doz. bun. | 3 | 0 | | 4 | 0 |
| Camellias | per box | 1 | 6 | | 3 | 0 |
| Carnations | per doz. | 1 | 6 | | 2 | 6 |
| ,, | per doz. bun. | 10 | 0 | | 15 | 0 |
| Cattleyas | per doz. | 10 | 0 | | 12 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Eucharis | per doz. | 2 | 6 | | 3 | 6 |
| Forget-me-not | per doz. bun. | 3 | 0 | | 4 | 0 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Gardenias | per doz. | 2 | 0 | | 3 | 0 |
| Hellebores | per doz. | 1 | 6 | | 2 | 0 |
| Iris, Spanish | per doz. bun. | 12 | 0 | | 16 | 0 |
| Lilac | per bunch | 2 | 0 | | 3 | 6 |
| Lilium auratum | per doz. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 3 | 6 |
| ,, longiflorum | per doz. | 2 | 6 | | 4 | 0 |
| Lily of the Valley | per doz. bun. | 8 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 0 | | 2 | 6 |
| Narcissus | per doz. bun. | 1 | 0 | | 3 | 0 |
| Odontoglossums | per doz. blms. | 3 | 0 | | 4 | 6 |
| Pelargoniums | per doz. bun. | 4 | 0 | | 12 | 0 |
| Primroses | per doz. bun. | 0 | 9 | | 1 | 0 |
| Roses | per doz. | 1 | 0 | | 4 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 0 |
| Spiraea | per doz. bun. | 4 | 0 | | 6 | 0 |
| Sweet Peas | per doz. bun. | 1 | 6 | | 2 | 0 |
| Tuberoses | per doz. | 0 | 5 | | 0 | 9 |
| Tulips | per doz. bun. | 5 | 0 | | 9 | 0 |
| ,, Darwin | per bun. | 0 | 9 | | 1 | 0 |
| Wallflowers | per doz. bun. | 1 | 6 | | 2 | 6 |

### Fruits.

Trade is fairly brisk, but supplies fully meet the demand.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, Nova Scotia | per barrel | 10 | 6 | to | 22 | 0 |
| ,, Canadian | per barrel | 12 | 0 | | 22 | 0 |
| ,, American | per barrel | 20 | 0 | | 36 | 0 |
| ,, Californian | per case | 6 | 6 | | 9 | 0 |
| ,, Australian | per box | 7 | 0 | | 12 | 6 |
| ,, Cape | per box | 6 | 0 | | 10 | 0 |
| Bananas | per bun. | 3 | 6 | | 10 | 6 |
| Cranberries | per case | 9 | 0 | | 12 | 0 |
| Grapes, English | per lb. | 1 | 8 | | 3 | 6 |
| ,, Belgian | per lb. | 1 | 3 | | 2 | 6 |
| ,, Almeria | per barrel | 12 | 0 | | 18 | 0 |
| ,, Cape | per case | 3 | 0 | | 8 | 0 |
| Lemons | per case | 8 | 0 | | 30 | 0 |
| Oranges, Denia | per case | 15 | 0 | | 34 | 0 |
| ,, Jamaica | per case | 9 | 0 | | 11 | 0 |
| ,, Californian | per case | 14 | 0 | | 21 | 0 |
| ,, Seville | per box | 15 | 0 | | 18 | 0 |
| ,, Valencia | per case | 10 | 0 | | 18 | 0 |
| Pears, Cape | per box | 3 | 0 | | 6 | 0 |
| ,, Californian | per case | 8 | 6 | | 16 | 0 |
| Pineapples | each | 2 | 6 | | 5 | 6 |
| ,, Cape | per doz. | 4 | 0 | | 15 | 0 |
| Plums, Cape | per case | 5 | 0 | | 8 | 0 |
| Strawberries | per lb. | 1 | 6 | | 5 | 0 |

### Vegetables.

Greenstuffs are rather dear again, but there is a steady demand all round.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 | 0 | to | 4 | 0 |
| ,, Jerusalem | per ½-bush. | 1 | 6 | | 2 | 0 |
| Asparagus | per bun. | 1 | 6 | | 4 | 6 |
| Beans, Guernsey | per lb. | 0 | 6 | | 1 | 0 |
| Beet | per bush. | 2 | 0 | | 3 | 0 |
| Broccoli, Sprouting | per bag | 4 | 0 | | 6 | 0 |
| Cabbage, New French | per doz. | 1 | 3 | | 1 | 6 |
| ,, New Cornish | per doz. | 1 | 3 | | 1 | 6 |
| Carrots | per doz. bun. | 2 | 0 | | 4 | 0 |
| Cauliflowers | per doz. | 2 | 0 | | 4 | 0 |
| ,, Cornish | per crate | 10 | 0 | | 12 | 0 |
| Celery | per doz. bundles | 6 | 0 | | 10 | 0 |
| Chicory | per lb. | 0 | 4 | | 0 | 5 |
| Cucumbers | per doz. | 2 | 0 | | 6 | 0 |
| Endive | per doz. | 2 | 0 | | 2 | 6 |
| Horseradish | per doz. bun. | 10 | 0 | | 16 | 0 |
| Leeks | per doz. | 2 | 0 | | 4 | 0 |
| Lettuce | per doz. | 0 | 9 | | 1 | 3 |
| Mint | per doz. bun. | 2 | 0 | | 3 | 0 |
| Mushrooms | per doz. lb. | 8 | 0 | | 10 | 0 |
| Onions | per case | 8 | 0 | | 9 | 0 |
| Parsley | per ½ sieve | 1 | 6 | | 2 | 6 |
| Parsnips | per bag | 5 | 0 | | 7 | 0 |
| Peas, French | per pad | 4 | 0 | | 5 | 0 |
| ,, Guernsey | per lb. | 0 | 9 | | 1 | 6 |
| Radishes | per doz. bun. | 0 | 9 | | 1 | 0 |
| Rhubarb | per doz. bun. | 0 | 8 | | 2 | 0 |
| Seakale | per bun. | 0 | 8 | | 0 | 10 |
| Spinach | per bush. | 4 | 0 | | 6 | 0 |
| Tomatoes, Canary | per pack. | 10 | 0 | | 16 | 0 |
| Turnips | per doz. bun. | 2 | 6 | | 3 | 0 |
| Turnip Tops | per bag | 2 | 0 | | 2 | 6 |
| Watercress | per doz. bun. | 0 | 4 | | 0 | 6 |

### LONDON POTATO MARKETS.

Business is steady, and prices remain unaltered.

| | | s | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Blackland | per ton | 60 | 0 | to | 65 | 0 |
| British Queen | per ton | 80 | 0 | | 100 | 0 |
| Essex | per ton | 70 | 0 | | 80 | 0 |
| Evergood | per ton | 65 | 0 | | 85 | 0 |
| King Edward | per ton | 75 | 0 | | 80 | 0 |
| Up-to-Date | per ton | 70 | 0 | | 80 | 0 |
| Teneriffe, New | per cwt. | 10 | 0 | | 12 | |
| Algerian, New | per cwt. | 10 | 0 | | 12 | |

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

ADVERTISER, age 18½, seeks SITUATION as Improver in Gentleman's Garden; 4½ years' experience, partly Inside and Out; good reference. J. WILKINS, Abbotsmead, Elstree.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

E. VENTIN, Gardener to A. D. SELKIRK, Esq., can with every confidence recommend Young Man, age 18, as JOURNEYMAN, or IMPROVER in good establishment; disengaged. J. EATON, Government Lodge, Clewer, near Windsor.

ELECTRICIAN wants SITUATION; Gas and Oil Engines; own repairs; married; well recommended; and fill up spare time in Garden. Apply E. COOK, Debden Hall, Loughton, Essex.

FRENCH GARDENING. — Married man requires Situation as FOREMAN (Working); 4 years' practical experience on Intensive system; excellent references from past and present employers. GOODMAN, Winkton, Christchurch.

FOREMAN (Inside), 14 years' experience in Fruit and Plants, Carnations, Chrysanthemums, and Decorating; excellent references; previously at Killruddery, Ireland; Highclere Castle, Chilton Lodge, and The Grange; age 28. F. FISHER, Carnock Gardens, Hamilton, Scotland.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GARDENER (Head of three or more); life experience in all branches Inside and Out; excellent references, age 32. G. GRICE, The Gardens, Combermere Abbey, Whitchurch, Salop.

GARDENER (Head, or good Single-handed), life experience in Vine, Melon, Cu.'s, Tom.'s, Chrys., greenhouse, and general kitchen garden work; married; age 28; good references. H. STONEHAM, 2, Old Lodge Cottage, Purley, Surrey.

GARDENER seeks RE-ENGAGEMENT, Single-handed or otherwise, fully experienced, both Inside and Out; accustomed to both large and small gardens; highly recommended, and good characters; disengaged when suited; single. Apply 2,494, Office of this Journal.

GARDENER (Inside and Outside); age 25; single; 7½ years in present position. Apply A. MERRY, Station Hill, Handborough, near Woodstock, Oxon.

GARDENER (Single-handed or with assistance).—Mr. F. W. HUXLEY, Limpsfield Grange, Limpsfield, Surrey, will be pleased to recommend J. SEARS, who has been with him nearly three years; age 28; married when suited.

GARDENER (Single-handed, or were help is given); life experience in all branches of gardening; references from past employers. A. W. MEECH, Northfleet, Menton Road, Parkstone.

GARDENER. — MR. HIGGIE, Stanwick Park, Darlington, highly recommends E. SMITH, who has been General Foreman 9 years, to any Lady or Gentleman requiring Head; experienced in all branches, Inside and Out; age 33. Address, Stanwick Park, Darlington.

GARDENER seeks RE-ENGAGEMENT, Single-handed or with help; life experience, gained in good places; first-class grower, Inside and Out; hard worker and willing to make himself useful if required; highest refs.; age 26; Single. Full particulars to E. G. BETTON, 3, Orchard Terrace, Nursery Road, Old Southgate, N.

GARDENER (Single-handed, or where two are kept); eight years' experience in Flowers, Vegetables, and Pleasure Grounds; five years' last place; good testimonials; age 22; abstainer.—GEORGE DUFFELL, 2, Orchard Road, Dorking.

GARDENER (Second, or Single-handed), 7½ years' experience in Vines, Cucumbers, Melons, Peaches, Plants, etc.; excellent references; single; age 25; London suburbs preferred. J. STEPTOE, Queen's Road, Marlow, Bucks.

**Read what an Advertiser writes re "Gardeners' Magazine."**

March 31, 1912.

Dear Sirs,—

Will you kindly discontinue my advt. in your "G. M.," as I am suited. I obtained more answers through the medium of your paper than through any other source, and have obtained this position through same. Thank you very much.

Yours, etc.,

E. D.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER, experienced (Single-handed or otherwise); 6 years in present situation; good characters; can be well recommended; age 26 years. MARSHALL, 8, Hellards Road, Stevenage, Herts.

GARDENER (age 30) desires SITUATION; good knowledge Inside and Out; 7 years in present situation. Apply E. COX, Bilton Hill, Rugby.

GARDENER (Single-handed, or with help); thoroughly experienced in Kitchen Garden, Flower Borders, and Glass work; age 26; single; disengaged. DAVIS, Ramsden, near Charlbury, Oxon.

GENTLEMAN wishes to recommend his late GARDENER, with him 4 years as Groom-Gardener, with good refs.; Single; disengaged. Write, stating wages, to T. HARLAND, Black Boys, Sussex.

JOURNEYMAN.—MR. PODMORE, The Manor Gardens, Little Berkhamsted, Hertford, will be pleased to recommend a Man age 22, steady and reliable; near London preferred.

GARDENER (Head); life experience in all branches of the profession; also the Management of Estate, Animals, Woods, etc.; 5½ years in present situation; highly recommended by present and previous employers; age 38; married. W. MOORE, The Gardens, Dornden, Tunbridge Wells.

JOURNEYMAN (Inside and Out) under Foreman; tall and strong; 4 years' experience; good references; age 19½. E. MITCHELL, Powderham Castle Gardens, Kenton, near Exeter.

JOURNEYMAN, Second (Inside, or Inside and Out); age 22; 7 years' general experience; good character; abstainer; leaving, no fault. Stopps, Orsett Hall Gardens, Grays, Essex.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22 as UNDER GARDENER (Inside and Out); was with him 8 years. Address, Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

MR. J. R. SMITH wishes to recommend M. FISHENDEN as Improver; Inside or Inside and Out; age 17; 2 years' good experience; Bothy preferred. Bedgebury Gardens, Goudhurst, Kent.

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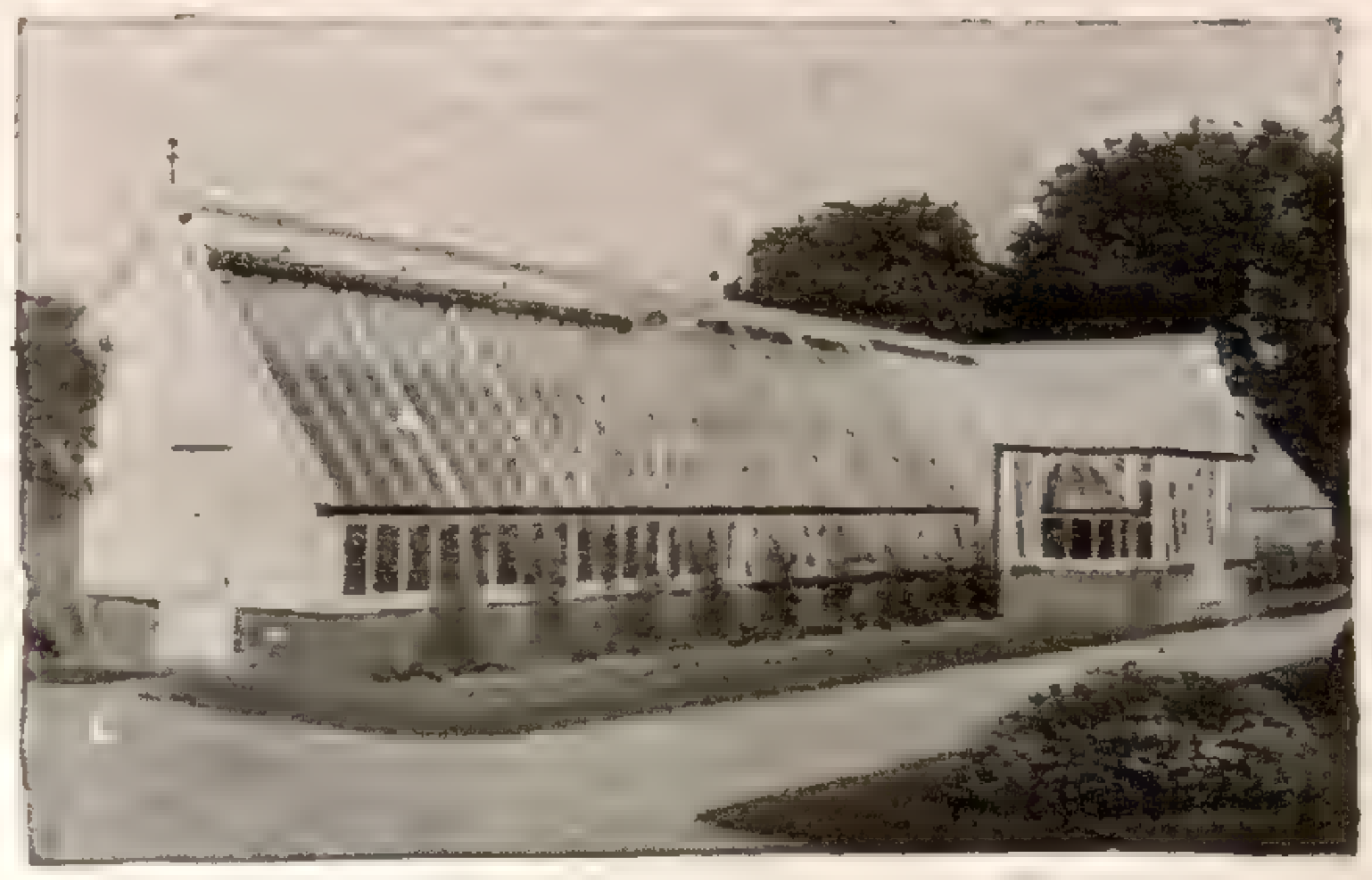

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No. 3,053.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

SATURDAY, MAY 4, 1912.

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VOL. LV.—No. 3,053. SATURDAY, MAY 4, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Cult of the Orchid.

The announcement made by the Council of the Royal Horticultural Society that it is proposed to arrange a conference in conjunction with the exhibition of orchids that will be held at Westminster in November next is a matter of considerable interest, and should give much pleasure to those who are specially concerned with this fascinating class of plants. It is some years since cultivators and raisers have had an opportunity for meeting for the purpose of discussing points of practical importance relating to the cult, and since the last conference was held, much has happened. The cultivation of orchids has greatly extended among those classes of the flower-loving community whose gardens are furnished with the means essential to success in the culture of tender plants, and the activities of raisers have not only had the result of largely increasing the number of hybrid orchids, but of creating by hybridisation new genera, of which that formed by the exquisitely beautiful odontiodas is the most noteworthy. The changes in the world of orchids have within a comparatively recent period been great, and they have followed each other in such rapid succession that it has not been easy to keep pace with them. To those who are unable to give their undivided attention to these "aristocrats of the floral world," it appears but a few years since cultivators had to depend upon importations, that had been collected with an infinity of trouble, and not a little danger, for increasing or replenishing their stocks of the majority of the various kinds. Now a very different state of things obtains. There are importations of orchids as at other periods, but they are fewer, and, speaking generally, they are not regarded with the importance that was assigned them in bygone days. The cause of the decline in the demand for the specific forms and varieties of species is the large and rapid increase in the number of hybrids in cultivation. Since the raising of seedlings on systematic lines was proceeded with by both trade and private growers, immense numbers are annually produced, and as they are, for the most part, the result of hybridisation or cross-fertilisation conducted with a view to obtain improved forms, the average merit is remarkably high. Seedlings of outstanding merit usually command prices that are somewhat high, but after these have been selected, there remains a goodly proportion bearing flowers that are at once distinct and beautiful, and these are disposed of through the usual channels at a relatively small cost. This point is of importance because there are some who hold the opinion that the cult of the orchid is only adapted to the conditions that obtain in the gardens of the wealthy. No greater misapprehension could well exist, for no classes of plants grown under glass can be cultivated at much less expense than orchids thriving in a cool or intermediate house, and the cost of forming a small collection of beautiful hybrids and varieties is really not costly, as evidenced by the thousands of gardens of moderate size in which orchids are grown in sufficient numbers to form a distinct feature. This statement has further proof in the small but interesting collections that may be met with in the gardens of amateurs who are able to make arrangements for heating and ventilating the house or houses when they are away from home during the day. Sometimes comparisons are made between orchids and hardy plants to the disadvantage of the former, but no good service is rendered thereby, because of the great differences between the two classes. Both are wondrously beautiful, require skill to grow them to a high degree of perfection, and both must have frequent attention to maintain them in a condition that justify their being assigned a place in a well-kept garden. Orchids must have the shelter of glass and some amount of artificial heat during the greater part of the year, and in return for this shelter and warmth they yield a wealth of flowers during the autumn and winter months when the beds and borders in the flower garden are practically destitute of floral attractions. There are large numbers of hybrid cypripediums possessing much beauty that attain their highest degree of perfection during the winter months, and these have the additional merit of thriving in suburban gardens, because of their immunity from the deleterious effects of such fogs as reach them. Yet another recommendation is the length of the period over which the flowers retain their freshness and beauty, a point of much importance to owners of small collections. One of the strongest recommendations that could well be given orchids is the great value of the most beautiful of the kinds flowering during the dullest period of the year, and as the Royal Horticultural Society is arranging its forthcoming exhibition for the purpose of bringing into greater prominence the kinds that bloom in autumn and winter, there is justification for the belief that the exhibition will be immensely attractive and of great value from an educational point of view. As the programme has not been arranged, it cannot yet be said whether winter-flowering orchids will be discussed at the conference or not, but a discussion on the merits of the existing kinds and the possibility of an increase in numbers and

MR F. G. DREW,
Chairman of the Reading Gardeners' Association.

usefulness would not be wanting in utility. Doubtless hybridisation in orchids will be given a prominent position among the subjects selected, for while there is no longer a necessity for discussing matters of an elementary character relating thereto, the enormous numbers of hybrids that have been raised and introduced to cultivation should furnish ample material for a free interchange of opinion among these who have had some experience in this interesting phase of orchid culture that should prove useful, and may have a far-reaching effect upon future efforts in the creation of new forms. The splendid results that have been obtained in the raising of hybrid brassocattleyas, cattleyas, cypripediums, dendrobiums, lælio-cattleyas, odontiodas, odontoglossums, and some others represent an immense amount of accumulated knowledge, which, placed at the disposal of those who are now commencing orchid hybridisation, would be of much value to them and also be useful to the advanced workers in suggesting the great advantage they may derive from proceeding on lines they have not yet followed. However that may be, the proposal to hold a conference shows that there is much vitality in the cult of the orchid, and justifies the expectation that it will assist in still further extending the cultivation of the flower in its many forms in British gardens, and thereby greatly enhance the attractions of plant houses, more especially at the season of the year when flowers in the open are few in number, if not non-existent.

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**Mr. F. G. Drew,** whose portrait we have the pleasure of giving herewith, occupies a position in horticultural circles of no small importance; and it must be immensely gratifying to his many friends, and, indeed, to all who appreciate ability and perseverance, to have unquestionable evidence that he discharges the duties of his office with credit to himself, and advantage to all concerned. Mr. Drew is the chief of the horticultural department of the University College, Reading, now one of the leading centres at which practical and scientific gardening is taught, and has proved a worthy successor to the late Mr. Charles Foster, who was in charge of it several years. Mr. Drew is also the chairman of the Reading Gardeners' Association, a point of some importance as showing that the members thereof appreciate the value of the educational work in which he is actively engaged, and his other good qualities. It is not without interest, as a proof of what can be accomplished by well-directed effort, that previous to entering on his present charge Mr. Drew had not done any teaching, or had the opportunity of attending the meetings of gardeners' associations. But he had received a thorough training in the practice of gardening in private gardens and nurseries under some of the leading exponents of the gardening art, and he had concurrently therewith devoted some share of his attention to the scientific aspects of plant culture and garden management. Judging from the results, he may be assumed to have an inquiring turn of mind, and have solved many of the difficulties associated with educational work while wholly engaged in practical work. There is no occasion to enter at length into the details of Mr. Drew's career previous to his appointment to the position he now holds in connection with the University College, Reading, which is doing splendid work in all branches of education that come within the scope of its activities. He was five years in charge of the Wych Cross Gardens, when they were in the making, and as these represent some of Mr. Mawson's best work, the experience has, we have no doubt, proved most helpful in obtaining a full acquaintance with landscape gardening and garden making generally. Mr. Drew was successively foreman at Buxted Park and Longford Castle, under Mr. Prinsep and Mr. Hazelton respectively, and previously he spent several years working among orchids, being first of all in the hybridising department of one of the principal nurseries, in which special attention is given to these plants. We have had the pleasure of visiting the gardens of the University College on several occasions, and have been much impressed with the excellence of the educational work that is being done within their boundaries, and in the interests of horticulture, and of all concerned, we trust it may long continue on the present lines.

**Spring Flowers at Hampton Court.**—As stated in these pages a few weeks since, the spring flowers in the gardens of Hampton Court are this season producing a series of displays of great beauty, and are attracting immense numbers of visitors. On the 26th ult. Queen Mary, accompanied by two of the Royal Princes, visited the Hampton Court gardens for the purpose of seeing the spring flowers, and was conducted round them by Mr. Marlow, the superintendent.

**Great Autumn Exhibition at Bruges.**—The Société Royale d'Horticulture de Bruges are arranging an International Horticultural Exhibition, to be held from the 11th to the 18th of August at the old market place, and in the adjoining Government buildings and Belfry of Bruges. The Government and town are assisting very largely to assure the success of the enterprise. The Royal Horticultural Society of Bruges is the oldest in the world, having been founded February 5, 1651, since which time it has, without intermission, followed and aided by its work and exhibitions the evolution of horticulture until the present day. In August the famous market place in Bruges will be transformed into a flower garden, surrounded by giant bay trees, for which Bruges is so famed, and in the adjacent buildings below the Belfry, immortalised by Longfellow, exhibitors will find spacious halls, where they will be able to group their collections of orchids and palms, new and rare plants, etc., to the best advantage. The ever-increasing number of visitors which arrive yearly in August to see "The Venice of the North," with its museums and art galleries and quaint Flemish architecture, will find another attraction in this horticultural exhibition. Programmes will be supplied, and inquiries answered by Mr. Ch. Steinmetz, Secretary, Bruges, Belgium.

**Another Weather Record.**—Records of all kinds possess some amount of interest, but they are not always desirable, and it may be safely assumed that gardeners, and, indeed, all who are engaged in cultural methods, have had for the present sufficient weather records. We had, last year, a record summer, both as regards heat and drought. During the past winter we had a record rainfall, February was remarkable for its mildness, March for its rainfall, and during the past month the fall of rain was so light that it may be regarded as one of the driest Aprils on record. There was but little rain throughout the month, and in this respect it ranks next to April, 1893, a year remarkable for the spring drought that was so disastrous in its effects upon both garden and farm crops. As in the year last-named, there has been so large an excess in the amount of bright sunshine that it has been considerably above the average. Throughout the month there has not been a day in which bright sunshine has not been recorded in London. The bright sunshine has been accompanied, during the greater part of the month, by cold, drying winds, and a low night temperature, which have been anything but favourable to tender vegetation. There have also been several severe frosts, that have done much damage to cherries, pears, plums, and other hardy fruits, but the extent of the damage cannot well be measured at the time of writing.

**Title of Gardening Journal.**—On April 26, in the High Court of Justice, before Mr. Justice Neville, Messrs. W. H. and L. Collingridge (proprietors of "Amateur Gardening") obtained a perpetual injunction against the Cable Printing and Publishing Company, Lim., and another, restraining the defendants from printing, publishing, selling, or disposing of, and from offering or exposing for sale, any newspaper with the name of "The Amateur Gardener's Weekly," or by any other name so similar to "Amateur Gardening" as to induce the public to believe that the defendants' paper is that of Messrs. W. H. and L. Collingridge, published under the aforesaid title. The defendants were ordered to pay costs.

**A Gardener's Golden Wedding.**—A few days since Mr. and Mrs. Thomas Hughes, of Llandforda Gardens, Oswestry, celebrated their golden wedding, when they entertained their friends, received many congratulations, and were the recipients of numerous presents. Mr. Hughes has been head gardener at Llandforda Hall 39 years, having been appointed by the late Sir Watkin Williams Wynn in 1874. For the greater part of the time Mr. Longueville has been the owner of this fine seat, and it is evident that Mr. Hughes' services are valued, for he was presented with purses of gold from his employer and several members of the family. Mrs. Hughes was presented with a handsome brooch by Miss Longueville. The garden employees also made a presentation to Mr. and Mrs. Hughes, who happily enjoy the best of health, and have our heartiest congratulations.

**Croydon Spring Show.**—The Croydon Gardeners' Society will hold a spring flower show in Horniman Hall, North End, Croydon, on Wednesday, May 8, from 3 to 10 p.m. This exhibition is of great interest, because its object is to encourage a love of horticulture in all sorts and conditions of people, and to attain that end the members of the society contribute of their best without fee or reward of any kind, and the public is admitted to the display free of charge. The committee, however, always welcome exhibits from traders and others who may not be members, but are willing to help in the production of a really first-class display.

**Orchid Exhibition and Conference.**—As already announced in these pages, an exhibition of orchids will be held under the auspices of the Royal Horticultural Society, at their hall in Vincent Square, Westminster, on November 5 and 6. One of the objects of this exhibition will be to demonstrate the increasing importance of orchids as autumn and winter-flowering plants. It has also been arranged to have, in conjunction with the exhibition, a conference on orchids. This will take place on the second of the two days in the lecture room, from 11 a.m. to 1 p.m., and from 2 to 4 p.m. Papers on the cultivation, cross-fertilisation, and hybridisation of orchids will be read.

# ROYAL HORTICULTURAL SOCIETY.

Another meeting, with the Hall in Vincent Square packed with exhibits, and, during a greater part of the day (April 30), crammed with Fellows and visitors. Orchids were not numerous, but tulips were plentiful and gay, and hardy flowers of many kinds filled a large space, while early vegetables were excellent.

## FLORAL COMMITTEE.

Some very fine spikes of the blue-flowered Echium truncatum and of the creamy-yellow Celsia cretica Cliveden var., from W. W. Astor, Esq., Cliveden, Taplow, were capital novelties, and each secured an Award of Merit. Keeley's variety of Cheiranthus mutabilis, shown by Mr. Rickards, Usk Priory, Mon., gained a similar award, and appears to be an excellent plant, dwarf and free-blooming. The pink-flowered and graceful Deutzia longifolia, a Chinese introduction, was brought up by Mr. C. Fielder, V.M.H., gardener to Miss Willmott, V.M.H., Warley Place, Great Warley; it gained an A.M., and was much admired.

DEUTZIA LONGIFOLIA.

A hardy shrub from China with blush-coloured flowers. A.M., R.H.S., April 30. Miss Willmott, V.M.H., Great Warley.

The roses from Messrs. George Mount and Sons, Canterbury, were very lovely, the blooms large and on long stems. Mrs. John Laing, Lady Hillingdon, White Killarney, Mrs. Alfred Tate, the splendid Richmond, Mdme. Abel Chatenay, Mrs. G. Shawyer, Liberty, Ulrich Brunner, and Frau Karl Druschki were largely shown, with Tausendschon overhead. A grand display. Another exhibit of roses was from Messrs. B. R. Cant and Sons, Colchester, who displayed St. Helena, the new cream-pink H.T. variety; Goldfinch, Elizabeth, Claudius, Rose du Barri, Caroline Testout, etc.

Messrs. Frank Cant and Co., Colchester, had a very pretty display of climbing roses in pots, showing Blush Rambler, Minnehaha, White Dorothy, Excelsa, Yellow Banksian, and Dorothy Perkins behind big blooms of popular H.T. and H.P. varieties. Messrs. Wm. Paul and Son, Waltham Cross, filled a corner of the hall with pillar roses, and they showed splendid specimens of Tausendshon, White Dorothy, White Tausendshon (very fine), Rubin, and Kathleen, with the showy hybrid briar variety Juliet in front.

The magnificent Pink Pearl rhododendron was superbly shown and in quantity by Messrs. John Waterer and Sons, Lim., Bagshot, who encircled the group with dark and rich-hued Japanese maples. Hydrangeas were finely shown by Messrs. H. B. May and Sons, Upper Edmonton; H. Moriesi, with huge rosy bracts, H. Mdme. Mouillere, and H. Thos. Hogg were all in first-rate form. Azalea Marwelli, A. ledifolia, and A. amœna Fosteriana were shown by Messrs. R. and G. Cuthbert, Southgate.

Of great interest were the varieties of Araucaria excelsa exhibited by Messrs. T. Rochford and Sons, Broxbourne. A. excelsa Silver Star, with silvery tips to all the branches, was very effective, and scarcely less so was A. c. elegantissima aurea (A.M.), with yellowish-green tips. Pteris Parkeri, very bold, with broad divisions to the fronds, was exhibited by Messrs. J. J. Parker and Co., Whetstone, and promises to be a good useful plant.

Flowering shrubs were capitally staged by Messrs. Wm. Cutbush and Son, Highgate, who had handsome specimens of Wistaria, Cytisus præcox, Azalea mollis, Hydrangea Mouillere, the lovely Daphne cneorum major, and rhododendrons. The carnations from Highgate included excellent flowers of Miss Winnie Hey, Rose Doré, Countess of Lathom, the pretty Goldfinch, Aima Ward, Mrs. Waldorf Astor, and the rich crimson Lord Rothschild, clove-scented. Messrs. W. W. Rogers and Son, Red Lodge Nursery, Southampton, exhibited Spiræa Van Houttei, S. bracteata, double gorse, Pyrus John Downie, Cytisus præcox, and rhododendrons.

Sweet peas were delightfully shown by Messrs. Dobbie and Co., Edinburgh. Very lovely were the bunches of Afterglow, May Campbell, Dobbie's Thos. Stevenson, Dobbie's Cream, Mrs. Cuthbertson, Edrom Beauty, Melba, and Stirling Stent. Some exceptionally fine spikes of antirrhinums were included. In an annexe Mr. C. W. Breadmore, Winchester, put up a lovely lot of sweet peas, the flowers fine, and on long stems. Princess Mary—a bluish Afterglow—Aggie Elder, Mrs. A. Ireland, Maud Holmes, Lavender George Herbert, Lady Curzon, May Campbell, and Marjorie Linzee were all fine among many others.

Splendid carnation blooms from Mr. H. Burnett, Guernsey, included famous examples of Marmion, R. F. Felton, Scarlet Glow, Pluto, White Wonder, Mikado, and Britannia. Messrs. Allwood Bros., Hayward's Heath, presented a small set of carnation blooms set in artistic vases; Lady Alington, Geisha, Empire Day, Scarlet Glow, and La Rayonnante were a few striking varieties. Mr. C. Engelmann, Saffron Walden, exhibited carnations in fine form, putting up large sheaves of Carola, Regina, Rex, Salome, the yellow Sunstar, and Lady Northcliffe.

The greenhouse plants exhibited by Messrs. Stuart Low and Co., Enfield, included Acacia pendula, A. cordata, A. armata, Correa cardinalis, the sweet-scented Boronia heterophylla, etc. The same firm put up a large exhibit of carnations in which My Favourite, Marmion, Fairmount, and Lady Alington were among the best. Sixteen distinct varieties of cinerarias from Messrs. Jas. Veitch and Sons, Chelsea, attracted a great deal of attention by reason of their elegance. The Feltham Beauty set, notably Dark Blue and Pink, were beautiful, while Antique Rose, Matador, and Snowball represented the older florists' forms, and Cineraria hybrida was quite new and distinct. The Pompadour strain gained an A.M.

Brilliant pelargoniums from Mr. H. J. Jones, Ryecroft, Lewisham, again drew attention to themselves, and there were many admirers of Medusæ, A. Lovett, Queenswood, Harry James, R. C. Pulling, Mrs. E. Hathaway, and J. Wisby. The blooms and trusses were of fine size. Messrs. W. Wells and Co., Merstham, had a small group of chrysanthemums, preliminary to the International. It was interesting to notice fair blooms of H. E. Converse, Queen Mary, Wells' White, Henri Yvon, Champ d'Or, Crimson Grunawald, and Francis.

Some new verbenas shown by Mr. W. J. Godfrey, Exmouth, were beautiful; they were of dwarf habit, and very free; the varieties were Triumph, rose-pink; Devonshire Lass, blue with white eye; Violet Girl, deep violet; and Ruby, deep ruby-red with white eye. As pot plants these are perfect, and doubtless quite as useful for bedding. Messrs. H. Cannell and Sons, Swanley, were represented by show and regal pelargoniums in great variety, and by a rich scarlet zonal variety named Maxime Kovalesky.

A very neat and pretty rock garden exhibit from Messrs. Barr and Sons, Covent Garden, was greatly admired. It was well planted with aubrietias, Phlox subulata grandiflora, Lychnis alpina, Myosotis Barr's Alpine Blue (very fine), Iris Susiana, I. Brunette, Primula involucrata, and P. pulverulenta. Messrs. G. and A. Clark, Dover, made a feature of Anchusa italica Opal, trollius in variety, Iris Susiana, Lupinus polyphyllus roseus, and flowering shrubs. Cytisus præcox, Exochorda Alberti, Pyrus Scheideckeri, Cerasus J. H. Veitch, and other fine flowering trees and shrubs were arranged by Messrs. J. Cheal and Sons, Crawley, as a background to Primula japonica, saxifragas in variety, Lithospermum Heavenly Blue, phloxes, and aubrietias.

A pretty rock garden arranged in the annexe by Messrs. Whitelegg and Page, Chislehurst, was freely planted with Lithospermum Heavenly Blue, Primula japonica in variety, Saxifraga rosea superba, S. sanguinea superba, and S. Pencilled Beauty. Mr. G. Reuthe, Keston, Kent, showed a host of primulas, and a selection of tulips, together with heaths, rhododendrons, and azaleas in great variety; the Himalayan rhododendrons and the bright Edwardsia tetraptera and Embotherium coccineum were very handsome.

Remarkably beautiful were the wonderful saxifrages exhibited in lovely condition by Mrs. E. Lloyd Edwards, Bryn Oerog, near Llangollen. Some were set up in round boxes and others in square patches. Chief among the varieties were the white S. granulata Comet (A.M.), S. Edward VII., deep red; S. rosea superba, very bright; S. delicata, whitish; S. sanguinea superba, rich deep red; S. Mrs. J. F. Tottenham, white (A.M.); and S. Rose Beauty; a lovely exhibit. A great group, composed of Anchusa italica Dropmore var., and A. i. Opal, edged with Prunus sinensis fl. pl., and pink astilbes, was a striking feature, the blue of the anchusas attracting as much attention as the stateliness of the plants. St. Brigid anemones, a fine strain, were capitally staged by Messrs. Reamsbottom and Co., Geashill, King's Co., Ireland.

Messrs. J. Peed and Sons, West Norwood, were large exhibitors of gloxinias and caladiums, and put up a display of alpine plants. Mr. Hemsley, Crawley, contributed a rock garden exhibit, and in this we made note of Pentstemon Scholeri, the red P. Roezeli, the neat little Mathiola valesiaca, quite hardy and perennial; and Primula siberica, the latter also rare. A pretty garden was arranged by Messrs. Pipers, Bayswater. A rockwork margin, carrying shrubs and small trees, surrounded a flag-stone terrace, with saxifrages, primulas, violas, etc., in the crevices of the stones, and all kinds of alpines in the rockwork. An old stone seat, a small lily pond, and tubs of hydrangeas added picturesqueness to this quite interesting contribution.

Mr. Maurice Prichard, Christchurch, submitted a rock garden exhibit filled with choice subjects, such as Dianthus Napoleon III., Aubrietia Lavender, Oxalis enneaphylla, Gypsophila cerastioides, Androsace Chumbyi, Phlox Violet Queen, the rare Silene Hookeri, and the rare and interesting Lewisia Howelli (A.M.). The rock garden exhibited from Mr. Clarence Elliott, Stevenage, was gay with large colonies of Saxifraga Stormonth's Seedling, Phlox subulata Vivid, P. s. Nelsoni, double yellow alyssum, Daphne cneorum, Gentiana verna, and Aubrietia Lavender.

Numerous other exhibits of hardy flowers and alpine subjects were on view, notably from the Guildford Hardy Plant Company; Messrs. G. Jackman and Son, Woking; Mr. Russell, Richmond; the Burton Hardy Plant Nurseries, Christchurch; Messrs. W. Fells and Son, Hitchin.

### ORCHID COMMITTEE.

Two First-class Certificates were granted on this date, and these fell respectively to Cattleya Schroderæ var. Glebelands (with the lip almost wholly deep yellow), from J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford; and to Odontoglossum Uro Skinneri Burford var., from Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking. This variety has a very large and beautiful rose-coloured lip.

Messrs. Sander and Sons, St. Alban's, contributed an interesting group of orchids wherein the leading features were Dendrobium albo-sanguineum, Brasso-cattleya Veitchi, the pretty Oncidium pulchellum, Cattleya Schroderæ in fine form, Cymbidium devonianum, and Dendrobium thyrsiflorum. Mr. H. A. Tracey, Amyand Park Road, Twickenham, put up a pretty group of orchids, and here Cattleya Schroderæ was prominent, with various odontiodas, excellent odontoglossums, Lælio-cattleya G. S. Ball, Chysis bractescens, and other beautiful things.

Particularly fine were the two pans of Lælio-cattleya G. S. Ball from Messrs. Charlesworth and Co., Hayward's Heath; near this were fine examples of Odontoglossum Jasper, Brasso-cattleya Digbyano-Mendeli, Miltonia vexillaria Cobbiana, and Lælio-cattleya Dominiana. Mr. Hopkins, gardener to F. Wellesley, Esq., J.P., Westfield, Woking, submitted Cattleya Mossiæ Lady Northcliffe, and the white-petalled C. Mendeli Chief Justice. Mr. F. M. Ogilvie, Oxford, showed Odontoglossum Lambeauianum Valerie, carrying thirteen splendid blooms.

Odontoglossum Cooksonianum figured prominently in the group from Messrs. Hassall and Co., Southgate; O. Jasper, O. eximum, and O. crispum were all well represented, with Cattleya Mossiæ and Miltonia vexillaria Cobbiana. Brasso-cattleyas were much in evidence in the group from Messrs. J. Cypher and Sons, Cheltenham, and the kinds were B.-c. Leeana, B.-c. Maroniæ albens, and B.-c. Maroniæ.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, presented some good varieties of Cattleya Mossiæ and C. Mendeli, associating with these Odontoglossum Thompsoni, Renanthera Inschootiana, Oncidium serratum, and Cattleya intermedia alba. Messrs. J. and A. McBean, Cooksbridge, showed fine forms of Cattleya Mossiæ, with Odontioda Charlesworthi, Odontoglossum ardentissimum, light forms of O. crispum, and Lycaste Denningiana.

### DAFFODIL AND TULIP COMMITTEE.

A large display of tulips from Messrs. Barr and Sons, Covent Garden, proved very attractive, and the range of colouring displayed was particularly large. Velvet Queen (A.M.), a deep blackish Darwin variety, Scarlet Emperor, the rich Inglescombe Pink, Margaret, Louix XIV., Feu Brilliant, Clara Butt, the elongated pale yellow Moonlight, and the brighter, elegant Mrs. Moon were a few fine varieties. Messrs. Cartwright and Goodwin, Kidderminster, displayed a small collection of tulips, and had excellent blooms of Inglescombe Yellow, Mrs. Cleveland, Clara Butt, Mrs. Moon, Julie Vinot (new pink), and Donders. A lovely lot of May-flowering tulips, well grown and well set up, was arranged by Mr. A. E. Usher, gardener to Sir Randolf Baker, Bart., M.P., Ranston, Blandford, Clara Butt, Orange King, Prof. M. Foster, and Pride of Haarlem were particularly good.

Tulips were capitally exhibited by Messrs. Sutton and Sons, Reading, the flowers, clean and bright, being arranged in a sharply sloping bank, in large bunches, with ferns between the vases. Velvet King, Feu Ardent, King Harold, Old Gold, Pride of Haarlem, Angelina, Inglescombe Yellow, and Clara Butt stood out prominently. Phlox Drummondi Sutton's Purity, a white free-flowering variety, was shown in first-rate form in pots, by the Reading firm. Tulips formed the bulk of the display arranged by Messrs. G. Bunyard and Co., Maidstone, but lilacs, Weigela Fleur de Mars, Pyrus Scheideckeri, and Cytisus incarnatus purpurens were charming flowering shrubs associated with them. Messrs. Walter T. Ware, Inglescombe, Bath, presented superb flowers of Inglescombe Yellow, Clara Butt, and Grenadier (A.M.) tulips, the latter orange-scarlet, with yellow base, and of large size.

The tulips from Messrs. R. H. Bath, Lim., Wisbech, were very effective, and well arranged over ferns. A few of the varieties that especially appealed to us were Michlen, Remembrance, King Harold, Clara Butt, La Tulipe Noir, Mr. Farncombe Sanders, Erguste, and Mrs. Moon. Messrs. R. Wallace and Co., Colchester, had fine tulips, and staged these extensively; Mrs. Moon, Mr. Farncombe Sanders, Viola, Clara Butt, Margaret, La Candeur, Pride of Haarlem, Inglescombe Pink, Psyche, and Electra were all in capital condition. The same firm presented a collection of irises, Hecate, Vaga, Leichtlini, Haynei, and Walhalla being the best. Primula Forresti was also well shown.

### VEGETABLE COMMITTEE.

Messrs. Sutton and Sons, Reading, presented a splendid collection of early vegetables and salading, showing first-rate dishes of Satisfaction and Sutton's Market cucumbers, Satisfaction broccoli, Early Giant peas, Masterpiece French beans in pots, early turnips and carrots, mushrooms, potatoes, lettuces, radishes, etc.

Messrs. Jas. Veitch and Sons, Chelsea, put up a neat exhibit of vegetables and salading, showing Ideal cucumbers, Model broccoli, Canadian Wonder French beans, Early Paris lettuces, radishes, mushrooms, spinach, etc.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Cattleya Schroderæ var. Glebelands, from J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford; to Odontoglossum Uro-Skinneri Burford var., from Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

Award of Merit.—To Tulip Velvet Queen, from Messrs. Barr and Sons, Covent Garden; to Tulip Grenadier, from Mr. Walter T. Ware, Inglescombe, Bath; to Cheiranthus mutabilis Keeley's var., from Mr. R. W. Rickards, Usk Priory, Mon.; to Lewisia Howelli, from Mr. W. Prichard, Christchurch; to Echium truncatum, from W. W. Astor, Esq., Cliveden, Taplow; to Celsia cretica Cliveden var., from W. W. Astor, Esq., Cliveden; to Cineraria Pompadour strain, from Messrs. Jas. Veitch and Sons, Chelsea; to Deutzia longifolia, from Miss Willmott, V.M.H. (gardener, Mr. C. Fielder), Great Warley, Essex; to Saxifraga Mrs. J. F. Tottenham and S. Comet, from Mrs. Lloyd Edwards, Llangollen; and to Araucaria excelsa elegantissima aurea, from Messrs. Thos. Rochford and Sons, Broxbourne.

(Continued on page 369.)

## ORNAMENTAL JUNIPERS.

The junipers as a body are less popular for garden planting than several other families of conifers, yet the genus includes a number of decorative species, in addition to several varieties which are distinctly ornamental by reason of their glaucous, silvery or golden foliage. The comparative disfavour in which junipers are held owes its origin, no doubt, to the fact that there are many gardens, even in the country, where they fail to grow satisfactorily, while in the vicinity of towns, more especially smoky towns, they are often a complete failure. On the other hand, there are numerous places where they grow quite well, and create a good impression, but it is always as well to carry out a little experimental planting before launching upon an ambitious scheme.

Junipers may be expected to thrive upon chalky soil, and the common Juniperus communis is to be seen growing freely in a wild state about some parts of the Chiltern Hills. On the other hand, luxuriant growth is made by certain kinds on peaty soil in the neighbourhood of Woking, therefore one particular kind of soil is not an all-important factor; a clear, pure atmosphere is, however, essential to success, and one rarely meets with any but miserable examples where the opposite is the case.

The Chinese Juniper (Juniperus chinensis) is one of the most popular kinds for general planting. The better examples form shapely pyramidal trees, with green or glaucous-green foliage of two kinds. Juvenile branches may bear leaves $\frac{1}{8}$ to $\frac{1}{4}$ inch long, but, on the older shoots they are scale-like, and arranged closely together. Several distinct varieties are known, those with glaucous, gold, or variegated leaves being considered the most valuable. Glauca, Pfitzeriana, and Smithi are conspicuous by reason of glaucous or bluish foliage, aurea (sometimes called J. japonica aurea), on account of its golden leaves, and variegata for its variegated leaves. The latter shrub, however, cannot be considered of such general use as the others, for the variegation is not constant, but occurs as patches of silvery leaves here and there, so giving the plant a diseased appearance. A good avenue of Juniperus chinensis is to be found in Ashridge Gardens in Hertfordshire.

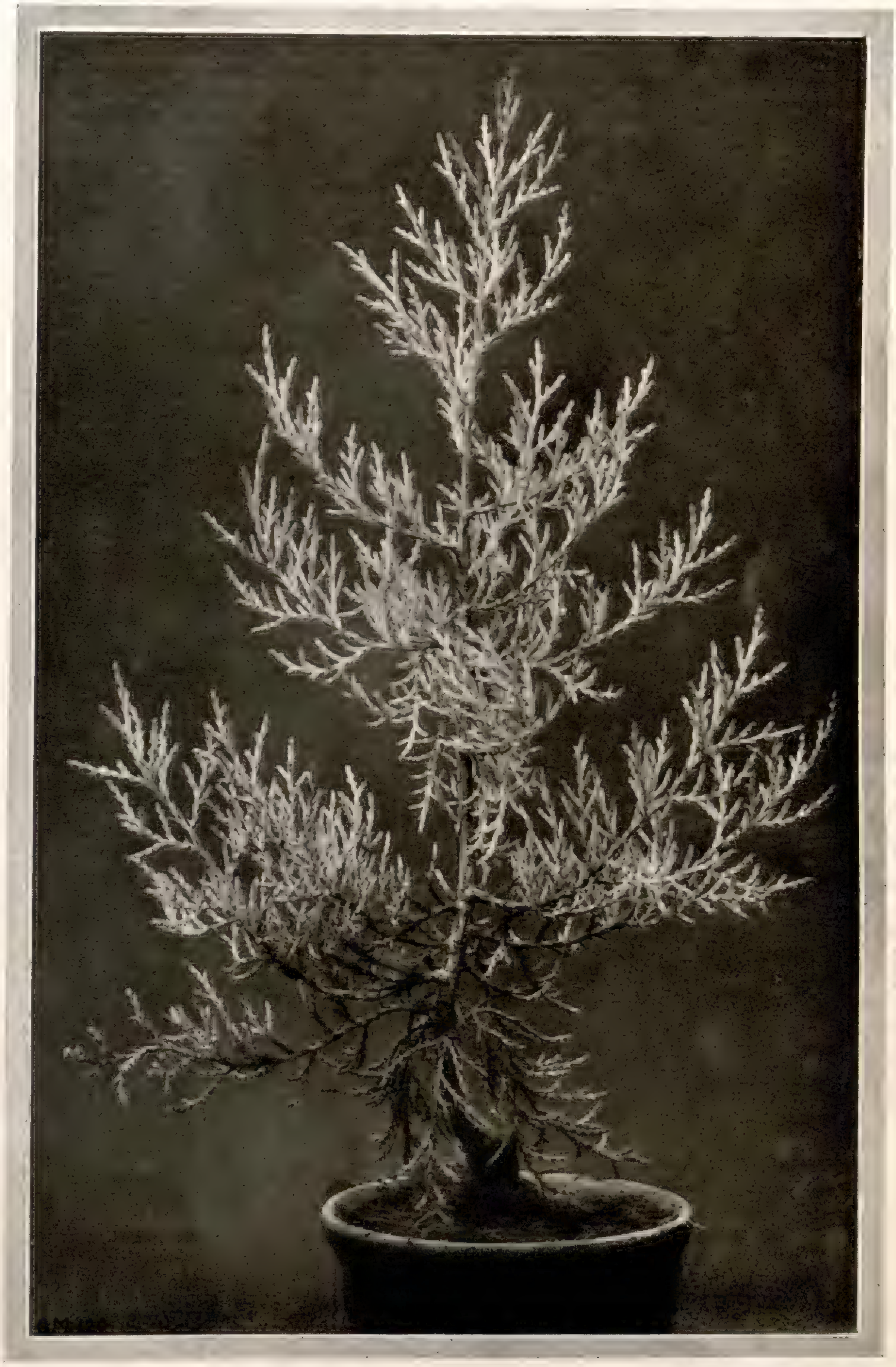
The Greek Juniper (J. excelsa) provides a pretty pyramidal shrub in the variety stricta. It is well worth attention from people who like compact, pillar-like plants.

When seen in good condition, J. pachyphlæa, which grows in a natural state about the shore region of the Mediterranean, forms a small, handsome tree with glaucous foliage. The accompanying illustration directs attention to one of a number of seedlings, which have recently been exhibited by Messrs. G. and A. Clark, Lim., of Dover, which have this desirable leaf colouring developed to a higher degree than the type. The subject of the illustration has been given the varietal name of elegantissima. Another showy variety of the same set is named conspicua. These were introduced from the mountains of Arizona and are quite hardy, and thrive in all soils.

The Common Savin (J. Sabina) is a useful shrub for covering banks in those places where junipers thrive, for its dense habit and green leaves have a good appearance the year round. Some of the varieties are, however, more showy than the type. This is specially so with humilis, procumbens, prostrata, and Knap Hill variety, all of which have more or less glaucous leaves; the variety procumbens is known as the Waukegan Juniper, and it is curious by reason of the foliage turning to a bronzy-purple hue on the approach of winter, reverting to its green or bluish-green colour towards the end of spring. All these kinds grow but a foot or two high.

J. spherica glauca is another kind recognised by its stiff, upright habit and bluish-green foliage.

The Red Cedar or Pencil Cedar (J. virginiana) forms a small tree with small scale-like green leaves pressed closely together as in many of the smaller-leaved junipers. Prolific in varieties, these are usually distinguished by their coloured foliage. Bedfordiana, elegantissima, glauca, Kosteriana, pyramidalis glauca, and Smithi pendula have glaucous leaves, and argentea, aureo-spica, and aureo-variegata have a variegated appearance, silver or gold patches appearing here and there.



JUNIPERUS PACHYPHLÆA ELEGANTISSIMA.
An attractive glaucous-leaved form, suitable for the rock garden, recently exhibited by Messrs. G. and A. Clark, Dover.

The Common Juniper (J. communis) is easily separated from the Savin by its looser habit and longer, sharp-pointed leaves. The type may grow from 4 to 6 feet high, but there are several alpine forms which are quite low-growing shrubs. Alpina aurea and aurea are showy varieties with golden leaves; fastigiata grows into a compact narrow pillar with rather glaucous foliage, and glauca is recognised by its bluish leaves, but has the habit of the type.

A juniper which is sometimes seen in very good condition is often called J. canadensis aurea; this, however, is said to be strictly a low-growing form of the Chinese juniper.

Kew. W. Dallimore.

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**Azalea Hexe.**—During the present season this pretty little azalea has continued to make headway in popular favour, and it is now grown in many trade establishments in immense numbers. It was originally raised by the late Mr. Otto Forster over thirty years ago, by crossing Azalea amœna with one of the large-flowered Indian section.—T.

## SOME EFFECTS OF LAST YEAR'S SUNSHINE.

Now that we have had time to forget all the drawbacks and inconveniences that we suffered in consequence of the long drought of 1911, we have the happy recollection of having enjoyed what we had so long wished for, i.e., a real summer. We have no idea what 1912 may have in store for us, but, as usual, the prophets are at work: one says that we are going to have a second dry season, another foretells a wet one, but we must wait and see, and in the meantime the memory of last year has by no means passed away.

Most gardeners last season grew weary of the slush, slush of the watering-can and the hose-pipe, and more weary still were those who saw their crops languish in front of them in want of the water that they could not give, but amidst it all there was the hope that the drying and the warming of the earth, the like of which few of us had ever seen before, would have its beneficial effects. Though the growing season of 1912 is as yet not very far advanced, we can already see what we take to be evidence of this, and there are features on every side that point to the effects of last year's sunshine.

Take the grass, for instance. It does not seem long since those broiling days of last August when lawns were burnt up as brown as a brick, and in the fields there was not a blade of green grass for the cattle to eat. Indeed, as some gardeners viewed their parched up grass plots, they had fears that the latter would never be green again, so lifeless did they look, and everybody sympathised with the farmers who had to cut their all too small stacks of new hay to provide a bite for the cattle which the latter could not get in the pastures.

But what a contrast to last summertime does this spring present! Never did anyone see the grass so green and plentiful in March as it was this year, and, while this has proved a godsend to the farmers who had little enough left in the way of roots and fodder, it necessitated lawn mowers being set to work weeks before this is necessary in the ordinary way. At the middle of April there was more grass in the meadows than we have seen many a time at the end of May, and there are prospects of farmers obtaining good hay crops to fill up the empty stack yards. The condition of lawns is just the same, all the traces of last year's drought are gone, the brown patches are brightly green again, and there is a look about the herbage that is suggestive of vigour and vitality. There has been nothing about the condition of the winter to account for all this, no more manure than usual has been applied, and we may therefore conclude, without much fear of question that the burning and roasting last season was also a ripening process, a storing up, as it were, of force and vigour, and all that was required was the power of moisture to liberate the vitality, and set it moving. During the past winter we had the moisture, but without last year's sunshine there would never have been the abundance of grass that is a subject for general comment this spring, and people who thought their lawns would never be green again are now secretly pleased that they were so brown and burnt up last year.

At the end of March there began a feast of daffodils, the like of which, perhaps, we have never enjoyed before. These have been marked by two predominating features. First, like the grass, they were early; in fact, too early for some of the bulb shows, and, secondly, they were remarkably fine. Never, I think, have I seen such magnificent specimens of the trumpet daffodils as were in full bloom about Easter, and all sections were noted for their stout stems, leathery foliage, and fine flowers. In Easter week I passed through a district on the borders of Gloucester and Worcester where the wild single daffodil grows in such profusion that it is a veritable weed. The pastures on every side were fields of gold, being yellowed over with the nodding flowers, which people came to see and pick from localities round about. I had a talk with a few of the native folk who have seen the natural daffodil show every spring for many years back, but the general expression of opinion was that there had never been so many daffodils, never had they grown with such long stalks, and never had the individual flowers been so fine. I could believe this, for I picked a bunch of the wildings, and a number of the flowers were as large as some of the garden varieties. And how do we account for daffodils in field and garden being so fine this spring? Can it be anything else than the influence of last year's sunshine, which ripened and matured the bulbs in a way that is anything but usual in this country, and this spring we have enjoyed the result of Nature's process. All the spring bulbs have been equally satisfactory, hyacinths, tulips, and daffodils, in pots, in beds, in borders, in grass, in pleasure gardens, and, lastly, in the fields and woodlands, everywhere and under all conditions have they given evidence of the way the bulbs were ripened up last season.

If I mistake not, there are readers of the GARDENERS' MAGAZINE who have made records this season in respect of the date on which they cut their first dishes of asparagus, for in more places than one cutting began in March, which is unusually early for this vegetable to come in without forcing. In that big asparagus-growing country in and about the Evesham Vale it is customary to bank up the beds in the autumn and cover the crowns with the soil from the alleys between. In the spring this soil is loosened and drawn back to the alleys between the beds, before growth, but in a number of cases this work has had to be omitted because the early growth pushed its way through the covering, days before it was expected. All this means that the harvest of the asparagus beds has begun much earlier than it usually does, and the heads are very fine and strong. How is it accounted for? Surely, it must be another case of last year's sunshine ripening up the crowns and filling them with the vitality that is now responding to the moisture and the genial temperature which prevail.

There are some market gardeners who do very well out of forced mint in the early spring, but in many cases this year there has not been much sale for it, though there is no evidence that less mint than usual has been consumed. The explanation is rather than the herb in beds outdoors was more forward in growth than usual, and there was consequently a shorter and smaller demand for the forced article. I have never seen rhubarb and seakale push up their growths so early, nor yet so vigorously as they have done this spring, and for this one can only give credit to the way the crowns were ripened last season.

Finally, there is a word to be said about the seeds. Many of the vegetables last year were a poor seed crop, and the price lists in catalogues gave evidence of this, particularly in cases of beans, peas, onions, and carrots. With most people, perhaps, dear seeds means economy in the use of them, and through sheer force of circumstances the principles of thin sowing have been adopted in more than one garden this spring. Is there any need to regret it? Not a bit of it, for if seeds were a short crop last season they were good, well-ripened, and full of latent force. Perfect rows of early peas and broad beans point to this, and I see no misses or failures in beds of onions, carrots, and parsnips.

In fact, look where you will, you see evidence of that dry but glorious summer of 1911 in the blossom on the fruit trees (surely pears were never more thickly covered with bloom), the bursting buds on the forest trees, the verdure of the hedgerows, the abundance of flowers in season, and the promise of those that are yet to come. Indeed, everything in Nature seems to be endowed with an unusual amount of strength, vigour, and freshness, and plant life seemed impatient for the winter to pass, so ready was it to burst into growth. H.

## CYCLAMENS.

Among our winter-flowering greenhouse plants there are not many more useful than cyclamens, for not only are their flowers attractive, but the foliage on well-grown plants is also most beautiful, as the markings are very striking. The present is a very important period of growth, for much depends on the next few weeks whether the plants assume the dimensions one desires. The most promising plants should be transferred to 48's pots. The compost should be of a light, rich, sandy nature, and the pots clean and well drained. When potted, place in a pit near the glass; whether a small or large quantity are grown it is always preferable to keep cyclamens by themselves in order that all may receive similar treatment. They should always be shaded from the bright sun, but the atmosphere should be such as to cause a gradual, steady growth, not dry and harsh, otherwise red spider and other pests will soon make their appearance. If the pit faces the east, the plants should be watered as soon as the sun has passed from them, at the same time giving the foliage a slight damping over with the syringe to keep down insects. Ventilate early in the morning, and shade before the sun has too much power.

If the cyclamens receive due attention in the way of watering, shading, and ventilation they will have made sufficient progress to necessitate their being transferred into their flowering pots about the middle of June. This time 32's or 24's may be employed, but unless extra large plants are desired the former size will be found quite large enough, and the most useful, as they will carry plants from fifteen to eighteen inches in diameter. Care must be taken when giving the final shift to avoid injuring the foliage; pot fairly firm, keeping the corms level with the soil.

When the plants have received their final potting, they should be stood a sufficient distance from each other to allow of a free circulation of air among the foliage, so as to keep the same as sturdy as possible.

In all probability a few flowers will commence to show themselves about August, but these should be removed as they appear, otherwise the plants will not make that progress one likes to see. A sharp look-out must be kept for insect pests, and at the first signs of these do not fail to fumigate, for if they once get the upper hand, the foliage never presents the same healthy appearance afterwards.

There are some delightful shades of salmon, salmon-pink, and crimson, which are most attractive among cyclamens. The giant white forms, too, are most useful either as pot plants or for cutting. They form neat specimens for indoor decorations, but they must not long be subjected to the dry atmosphere of a room, or the foliage will turn yellow and fall.

H. C. PRINSEP.

# EARLY-FLOWERING HARDY PRIMULAS.

The dainty blossoms of this beautiful group of hardy plants are always appreciated, especially the first-comers. They are of immense value in the rock garden, where suitable places can be found to cultivate most of them. P. denticulata is usually the first to open its flowers, which are lilac in colour, and form a roundish cluster on a stout stem. It requires a damp position, and when planted in short grass so that the soil does not splash the foliage and flowers, it is very atractive. The white form (alba) is very pretty, having pure white flowers, and Cashmeriana has pale violet flowers with yellow centres.

P. farinosa, the pretty little Bird's-Eye primrose, is a native species, forming close-growing tufts of foliage, the undersides of which are covered with white powder. The numerous lilac blossoms form compact umbels on stems about three inches high. It delights in a moist, yet well-drained soil, in a half-shady position. To prevent the rain from splashing the soil over it, the ground should be carpeted with some close-growing plant, such as Arenaria balearica. In the event of this latter plant being utilised for the purpose of carpeting, it must not be allowed to overgrow the crowns of the primulas. This charming little primula will also thrive well in very short grass, in the shade of a large stone, but when planted in such a place, a guard should be used in the winter to prevent the crowns from being trodden on. The foliage dies down, and only a small crown, covered with white powder, is visible during the winter months. The white form is rather rare at present, and a beautiful variety.

P. frondosa is similar to the preceding, and is very often substituted for it, but the petals are not cut in the centre, as are those of P. farinosa, neither are the flowers stems so mealy as those of the latter species. The same treatment answers for both.

P. marginata is a lovely species from the Alps, with leathery foliage, which is heavily margined with whitish powder. The flowers are of a soft lavender colour, and are produced early in the season. This species must not be confused with Auricula marginata, the latter having yellow blossoms. P. marginata delights in a crevice between the rocks, with a half-shady aspect. A mixture of sandy loam, leaf-soil, and old mortar rubble will be found an excellent medium for the plants to grow in, and the latter should be firmly wedged in position with pieces of stones.

The bright rose-coloured flowers of P. rosea, a lovely Himalayan species, provide an effective bit of colour in the early part of the year. It is one of the most accommodating species of the whole primula family, for it reproduces itself very freely from seeds, and plants appear and thrive in places where one would not think of planting them. Being a moisture-loving subject, it forms an admirable plant for a small bog garden, and when once established may be relied upon to maintain its position. Many of the so-called hardy primulas are very uncertain in their habits, but this is not the case with P. rosea, for it may be depended on to appear even in a season when many species are conspicuous by their absence. Self-sown plants left to look after themselves are always more healthy and vigorous than those which are fostered in pots.

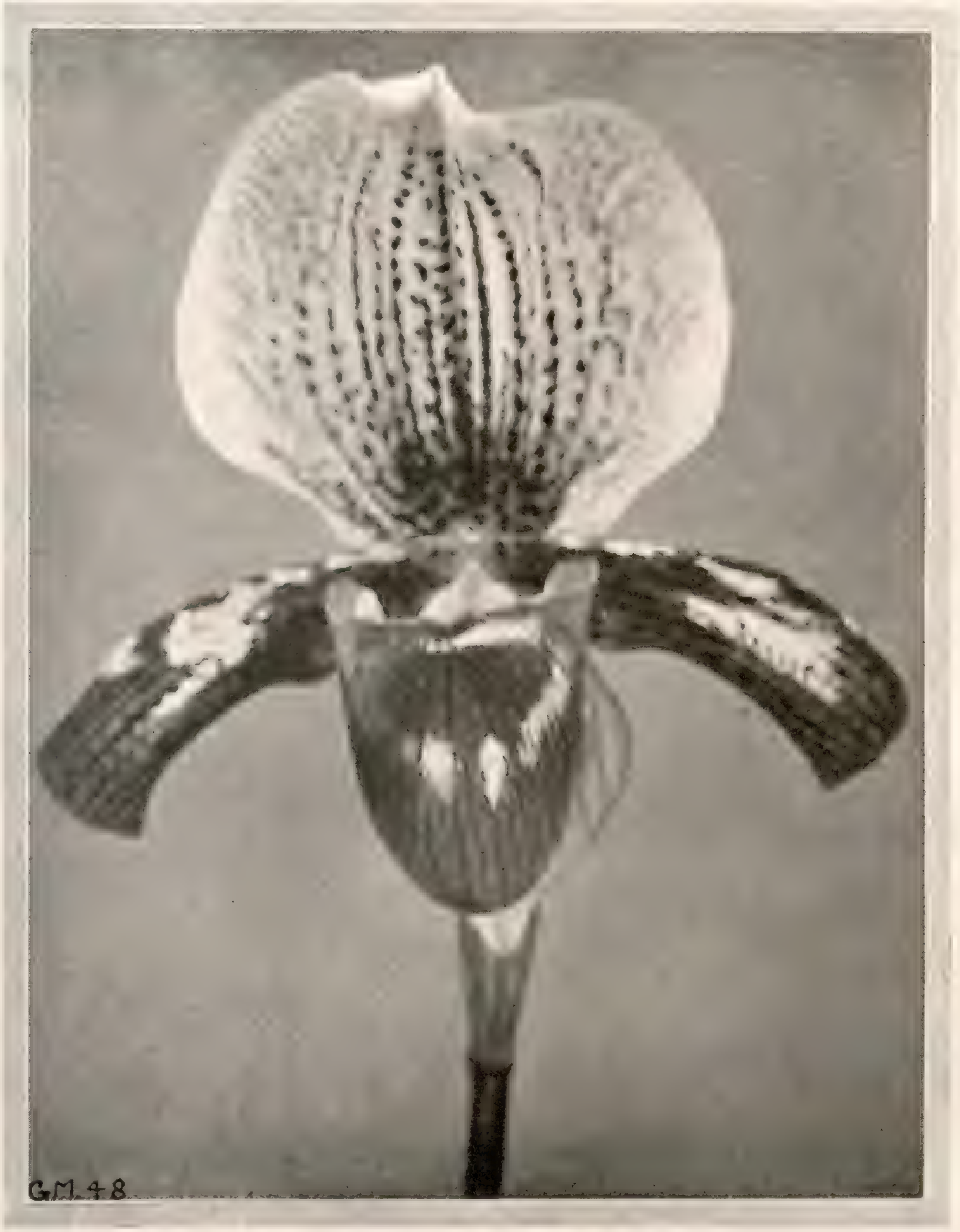
P. scotica is similar to P. farinosa, having purple flowers with yellow eye; it requires the same treatment as the latter species.

P. viscosa delights in half-shady crevices, and should be planted in a mixture of sandy loam and peat in equal parts. The crowns must be firmly wedged in with stones when planting, and occasional top-dressings will be required from time to time to hold the plants in their positions. The leathery foliage is produced in rosette form, and the pale rose blossoms are borne on short sturdy stems, rarely exceeding three inches in length. Mrs. G. F. Wilson is a form of P. viscosa, and a grand acquisition; the flowers are purplish in colour, with cream-coloured eye. It is extremely free in flowering and vigorous in habit. P. nivalis is a white form, of garden origin, apparently belonging to the viscosa section, and very hardy. E. C. Pooley.

Gnaton Gardens.

# CYPRIPEDIUM ROYAL SOVEREIGN.

Just before last Christmas, on the occasion when there was no exhibition at the Royal Horticultural Society's hall, but when the various committees met to consider new plants submitted, there were several remarkably fine cypripediums brought before the Orchid Committee. One of these, C. Royal Sovereign, exhibited by Messrs. Sander and Sons, St. Albans, secured a First Class Certificate. This hybrid is of extremely complex parentage. It was derived from C. Hera robustum, and C. Urania var. Martin Cahuzac. C. Hera is the result of crossing C. Boxalli with C. Leeanum, and every orchid lover knows that C. Leeanum is the result of crossing C. insigne with C. Spicerianum. On the other side, C. Urania was obtained from C. Io crossed with C. Charlesworthi; and C. Io comes from C. Argus and C. Lawrenceanum.



CYPRIPEDIUM ROYAL SOVEREIGN.

Flowers white, brown, and purple. F.C.C., R.H.S., December 19, 1911. Messrs. Sander and Sons, St. Albans.

The dorsal sepal of C. Royal Sovereign is white, faintly blush tinted, and prettily marked with lines of bright purple spots. The base is bright green. The petals are bright burnished brown, with a few dark spots, reminiscent of C. Argus; the lip is burnished brown of a rich shade. The influence of C. Charlesworthi is most noticeable in the form of the petals, and in the pale staminode. C. insigne expresses itself in the lip, and C. Spicerianum is evident in the dorsal sepal.

**Plumbago rosea.**—For usefulness and beauty this rosy-scarlet subject is unsurpassed for winter flowering in the plant stove. To fully realise its extreme beauty a good batch should be grown, and, when in flower, disposed en masse in a prominent position in the show-house. This species requires very similar treatment to the foregoing. Pot up the old plants, and place in heat to provide cuttings; these latter will soon form on the mature wood, and from the base. If a sufficient number of cuttings can be procured from the upper part of the plant the basal growths may be left to form specimens. The best examples we have grown were old stock plants. When plenty of cuttings have been rooted it is a good plan when potting up to place two young plants in each pot, and grow them as a single specimen. Avoid overpotting and overwatering, especially in the early stages.—H. T. Martin.

## AMONG THE ALPINE FLOWERS.

> "Flowers worthy of Paradise, which not nice art
> In beds and curious knots, but Nature boon
> Poured forth profuse on hill, and dale, and plain."
> —JOHN MILTON, in "Paradise Lost."

Worthy indeed of Paradise are the alpine flowers of the time. They are enchanting in their loveliness, some spreading into great sheets of floral beauty, and others smiling modestly up to catch our eyes as we wander among our favourites, looking for aught fresh or new for the season. Old favourites there are among them—flowers which have delighted long-departed generations of flower lovers, and which will, let us hope, give equal pleasure to the generations to come after us. As we look upon these flowers we feel linked with the old gardeners, who had fewer flowers to love than we, but who could hardly admire their plants more than do we of this generation, for whose benefit all corners of the world seem to be ransacked for floral treasures.

It is strange to feel that many of these alpines of ours were cultivated by men of the olden time; and that many of those we love have come from far-off lands, whose wealth of floral beauty was unknown to Parkinson and others whose memory we revere still as true admirers of our flowers. This is not in the way of our notes, but is merely a reflection which presses upon us as we walk among our plants, and enjoy their fascinations in the most brilliant weather.

### Erythronium Johnsoni Pink Beauty.

One who has known and loved this flower for several years cannot refrain from expressing pleasure that it has of late been favourably noticed in the gardening Press when shown in London. It is a beauty indeed, with its exquisitely marbled foliage, which is not only wonderfully beautifully marbled, but is glossy, as if it had been polished to the highest degree. Of beautiful form, tinting, and texture, is this leafage of the lovely Pink Beauty, one of the prettiest of the American erythroniums, to whose charms the writer has long fallen a victim, and which he must bow down and worship for their loveliness. As for the flowers, who can attempt to describe the colour? "Pink Beauty," indeed, is this plant, but the name, as do all names of flowers, with perhaps a few exceptions, fails to convey the impression of the colouring. Looking at these flowers this morning in the bright light of the morn, it seemed as if the delicate pink colouring was slightly veiled by a delicate frosting—a film of some material, which softened, yet did not lower the wonderful colouring of these graceful petals of this lovely flower. It is many years now since the writer first tasted the delights of these American dog's-tooth violets in his garden, and he would be unwilling to be without their beauty now. As for their culture, it seems an anti-climax to discuss such a matter-of-fact theme. Suffice it to say that these American erythroniums do well with the writer in the rock garden and in a border in a light and open soil. They last longer in flower in partial shade, but are lovely anywhere. Pink Beauty is one of the many charmers we cannot do without.

### Trillium erectum.

One may speak of this as representing the lovely Trinity flowers we have available for our rock gardens, and when properly placed, can add so greatly to its many pleasures. The writer well remembers the rock garden of a friend who has long crossed the bourne, and where a noble clump of a splendid variety of Trillium grandiflorum delighted in a shaded part, where it grew partially under trees, and where it had the moisture it loved. To perch the trilliums on a dry rockery, high to the winds that blow, and to be scorched by the sunshine, would only be to court disaster, and a corresponding disappointment. But there are few rock gardens where a group of some of the trilliums cannot be accommodated in congenial quarters, where they would thrive happily and flower bravely year after year. A low corner, well shaded from the sun, and with plenty of moisture for the delectation of the Trinity flowers, but not, it must be enforced, in stagnant wet, would suit them well, and there they would give pictures of beauty in their season. There is hardly a poor trillium, and T. erectum is only selected because the group of this species is the largest of those in the writer's garden. It is looking very attractive as this is written, the white flowers of the prettiest variety being most beautiful.

### Geum montanum.

Bright now is the Mountain Avens (Geum montanum), whose yellow flowers look so well on the attractively formed and coloured foliage. There are good and there are poor forms of this geum, and those who have seen the best varieties, and have obtained the poorer ones when ordering them, may take heart of grace, and try again, so as to obtain a good variety. One has seen some people who had purchased a poor specimen when not in bloom, and who were attributing the small flowers to errors in cultivation. Not, perhaps, so brilliant as its sister, G. reptans, it is a much easier flower to grow, and I have it excellent, both well up on a terrace of the rock garden, and also on a low level part at the base. In both cases the geum thrives, and flowers well in the ordinary soil. Some six inches or more high, this is a long-flowering, satisfactory, kindly plant to the rock gardener.

### Saxifraga Fergusoni.

In our desire to obtain large-flowered, red, mossy saxifrages, we are, I fear, likely to lose sight of some of the smaller ones, which are very bright and beautiful, and I wish to put in a plea on behalf of S. Fergusoni, after the type of Guildford Seedling, but a little earlier. Of close growth, with charming little deep crimson flowers, it is a plant worth cherishing for the cooler slopes of the rock garden.

### Other Flowers.

With a good variety of erythroniums, some fritillarias, scillas, ornithogalums, violas in plenty, arabises, aubrietias, the lovely Cytisus kewensis, and other brooms, and the host of flowers with which the season has dowered us, we are by no means willing to admit that any other season can surpass this in the rock garden. Our treasures are many, and our delights are correspondingly great, as we gaze upon and cherish our flowers. S. ARNOTT.

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**Psychotria jasminiflora.**—The blossoms of this pretty stove shrub may be described as being among the whitest of the whites, for they are absolutely clear in tint, without a tinge of colour. In general appearance the blossoms suggest those of a bouvardia, and like a bouvardia this plant blooms in great profusion. It is of rather upright growth, and somewhat sparingly furnished with oblong-shaped leaves of a palish green hue. This psychotria, which is also know by the generic name of gloneria, flowers principally during the spring and early summer months.—T.

## ROSE ENEMIES.

Already, towards end of April, our roses are badly infested with green-fly, not only in sheltered corners and upon walls, but quite in the open. I do not pretend to account for it, but these pests always seem to come more abundantly during the prevalence of easterly winds, which have been frequent here (Mid-Sussex) of late. There are a large number of reliable insecticides upon the market, and most of these can be purchased in small quantities well suited for growers of only a few roses. All of these are good, and it would scarcely be fair to mention any one specially, and I will therefore give a few that are cheap, and, when properly prepared and applied, are most satisfactory.

Very simple to use is Cyllin soft soap, which is now largely used in Kew and other well-known botanic gardens. A fact that should speak for itself. This can be used at the rate of one pound dissolved in a pint and a-half of hot water. The solution should be further diluted by using three ounces—or about a small teacupful—of it to a gallon of soft water. It may also be used at the rate of one ounce of the soft soap to a gallon of water, without the aid of hot water first, but I find it dissolves better with partial boiling.

One cannot really be too careful in using poisons. Think of the painful cases so often brought out at the coroner's inquest, and make sure that no insecticides or weed-killers are available to thoughtless persons and children. This soft soap also has the advantage of killing mildew. Used at fortnightly intervals, it will keep all clean, and protect the younger growths.

Carbolic soap at the rate of half an ounce to two gallons of water is a very cheap remedy against insects, but more especially against mildew. Mo-Effic can be used as directed upon the packets, and is very effective, without leaving any sediment upon the foliage and flowers. Calvert's carbolic soap makes a cheap wash, and is prepared by boiling one and a-half pounds in six or seven quarts of water, afterwards diluting this at the rate of one in seven.

A very good home-made wash can be made from one pound of quassia chips, one pound of soft soap, and ten gallons of water. Bring to the boil, and let it simmer for about an hour. It may afterwards be used diluted with an equal amount of water. If put into jars this will keep well.

An ounce of sulphide of potassium dissolved in a gallon of hot water, and then diluted by the addition of two gallons of water, may be used when cold, but is more effective at a temperature of 70 to 75 degrees.

Under glass one has the additional help of fumigation, and I have great faith in this when not overdone. There can be little doubt that a good syringing on the morning following fumigation renders the latter more effective. One not only cleanses the foliage of dead insects, but kills those that have not quite succumbed, and would probably revive. If fumigation and syringing are used in connection upon two successive days, the newly-born insects are also exterminated.

The greatest mistake when battling against insects and diseases is made by using remedies at too great a strength. The growth is checked by this error, even to being equally as bad as the fault we wished to remedy.

Much may also be said in favour of early operations, while the constant use of weak solutions from the time growth becomes active, often leads to almost complete freedom from insects and mildew.

ROSARIAN.

## LUPINUS POLYPHYLLUS.

Lupinus polyphyllus is an old-fashioned garden plant of fairest repute. Often grown under adverse conditions—to which the plant is entirely indifferent—it becomes when fairly established, one of the most reliable subjects among herbaceous plants, and is withal a plant of striking effect. Growing to a height of 3ft. or more, the stately spikes of blue flowers tower above the handsome foliage, so that it commands instant attention from June till August. Although a meritorious plant, even for the choicest borders, it is in wild garden planting that Lupinus polyphyllus merits the highest praise, its adaptability to varying conditions, its hardiness, and extreme floriferousness commending it for such positions, while in woodland planting generally and the bolder kinds of water gardens, there are usually positions that invite success with this sterling subject.

It succeeds in most soils, provided the position is well drained, as stagnant water is the chief danger to guard against. Little preparation of the ground is necessary, beyond trenching and manuring; the former should be performed in a thorough manner, bearing in mind, especially in woodland planting, that once the plants are established, they have generally to look after themselves.

The type is the best plant for shrubbery and woodland planting; it varies to some extent from seeds, but the colour is usually some shade of blue or purple-blue. The white perennial Lupinus polyphyllus albus also succeeds under similar conditions, and it is one of the most distinct white-flowered perennials. By using it sparingly with the coloured forms, its own beauty gains in impressiveness, while the contrast obtained accentuates the others. The variety roseus is esteemed for border planting, the colour is rose-pink, passing to a deeper shade. This varies somewhat from seeds, a fact of little moment in wild gardening, as the colour harmony is all one can desire, but for borders it is often desirable that the seedlings should first be flowered in reserve, and the best examples marked for future guidance in permanent planting.

Several of the coloured forms of Lupinus polyphyllus have been selected and given distinctive names by trade growers, an advantage that readily appeals where borders are required to be planted to colour. Of these the most distinct include Dusky Prince, flowers dark purple-blue; Enchantress, grey-blue; Purple Queen, immense spikes of rich purple-blue and white flowers. Lupinus Moerheimi is a striking variety, with spikes of soft rose and white flowers; it is less robust in habit than the others, its distinctive merit being that of a first-class border flower.

Between Lupinus polyphyllus and the shrubby species, L. arboreus, occur several hybrid forms, the flowers in several instances being yellow, a colour absent among the herbaceous forms; in the variety Somerset the flowers are of a clear yellow tint; The Bride is soft primrose with a flush of rose, and Daisy Hill has blue and lilac flowers carried in the greatest profusion. These hybrid forms are of semi-shrubby growth, and are specially adapted for light soils and somewhat arid conditions.

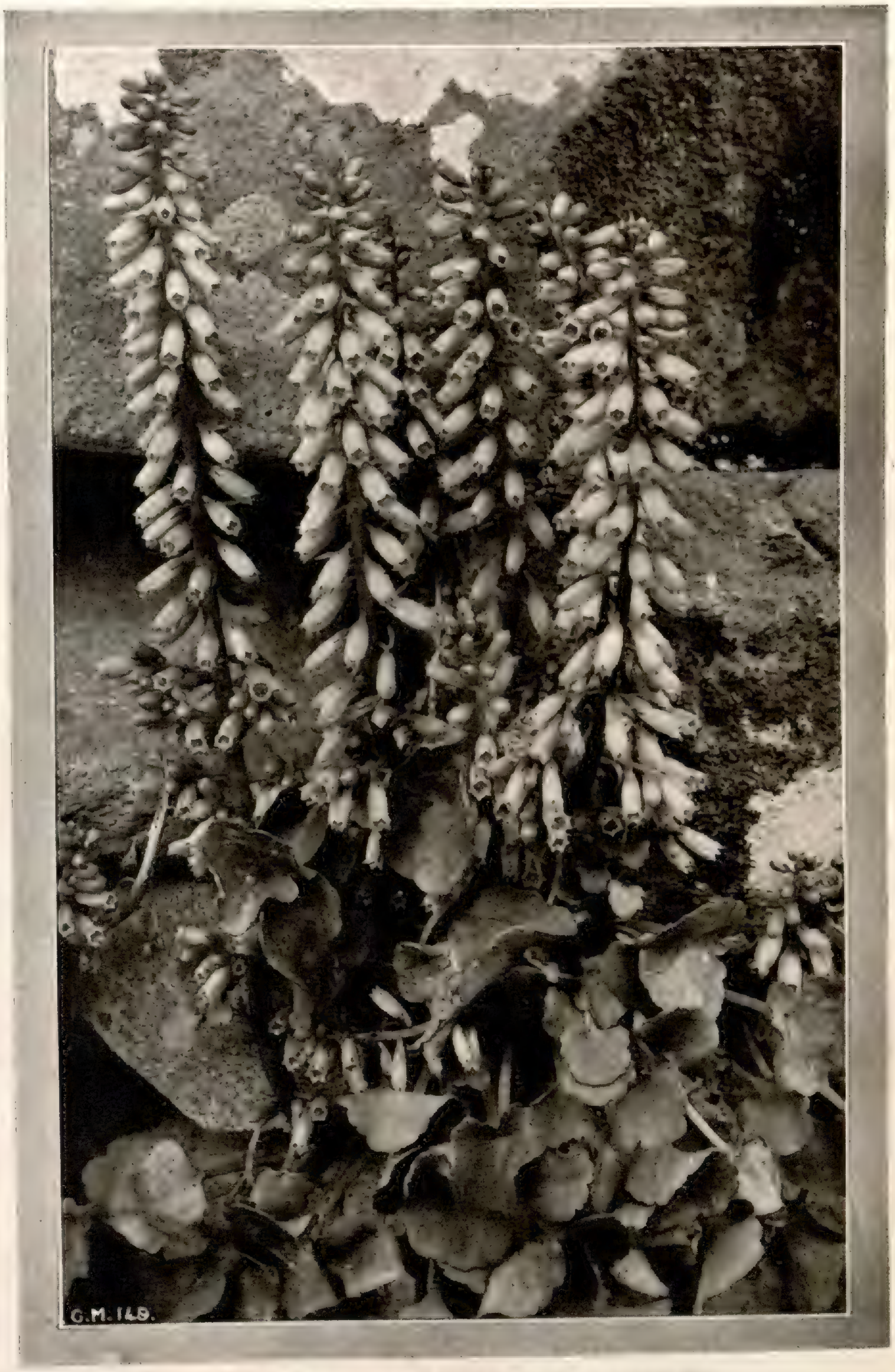
THOMAS SMITH.

Coombe Court Gardens.

**Grape Culture.**—An illustrated guide to the culture and management of vines in greenhouses and in the open air is published at GARDENERS' MAGAZINE Office, 148, Aldersgate Street, London, price 1s. net (by post 1s. 2d.), or bound in cloth 1s. 6d. (by post 1s. 8d.). Full particulars are also given as to renovating old vines, and the best varieties to grow.

## THE PENNYWORT.

What is regarded in many places as a weed becomes a plant of interest, perchance of beauty, in another country, or in another part of the same country. It is strange how, even in our own land, certain native plants are found in profusion in one district, whereas they must be sown, or transplanted, ere they become established in another district. The Pennywort, Cotyledon umbilicus, is a case in point. Speaking broadly, it is a western plant, and is found from Argyll to Cornwall, sometimes ascending to a height of 1,000ft. in Wales, and yet it cannot be found wild in many an eastern county. In some parts of Wales it is quite plentiful, while in South Devon one may often see it. The writer remembers a long lane at Mutley, near Plymouth, where, on a rocky bank, the pennywort has taken possession of every available space, covering soil and rocks with a heavy veil of light green succulent leaves. The drooping, cylindrical flowers are closely set upon the erect spikes, and their colour is yellowish-green.



THE PENNYWORT (COTYLEDON UMBILICUS).

An interesting British plant, bearing erect spikes of greenish-yellow flowers. The specimen illustrated was growing in a wall near Harlech, North Wales.

Now that wall gardening is a feature in many establishments, it is worth while to consider the claims of any native plants that appear to be adapted by Nature for this particular method of cultivation. The popular and beautiful stonecrop receives the consideration it deserves, but the pennywort has hardly received attention yet in this direction, though, as the illustration shows, it is well worthy of such consideration. As the plant has a tuberous root stock, the best method of establishing it would seem to be that of seed sowing on the spot. The rounded, radical leaves, each with a depressed centre, have suggested respectively the popular names of pennywort and navelwort, but not all the leaves are of this shape, as the cauline ones are more or less spathulate.

## PÆONY-FLOWERED DAHLIAS.

As each succeeding year sees the introduction of new varieties of the pæony-flowered dahlias so does their popularity increase for garden decoration. One old florist, famous as a grower of the cactus section, was overheard to remark, when the pæony-flowered dahlias were first introduced from Holland, that they threw seedlings with better flowers on the rubbish heap when he was a boy. There were some growers in this country, however, who saw possibilities in those first flowers exhibited at the Earl's Court Dahlia Show, and several succeeding exhibitions. Until a comparatively recent date the National Dahlia Society have devoted their efforts principally to the encouragement of varieties with exhibition blooms. There are some among the officers and members, however, who realise that if the dahlia is to continue to find favour for garden decoration, varieties which push the blooms well above the foliage on long stiff stalks must be grown.

No section has made more rapid strides than the pæony-flowered dahlia to meet the demand of the gardener, professional and amateur, for free-flowering varieties for garden decoration and cutting. With their long flower stalks and freedom of flowering this type is very effective. The blooms are semi-double, varying in form, some of the varieties having blooms nine inches across. Being vigorous in growth, a few plants may find a place in the herbaceous or mixed borders while they are especially adapted for large beds and borders in the pleasure grounds. Yet another place for these stately dahlias is among shrubs, where they will, as most of the varieties are tall, brighten up the shrubbery borders in autumn.

The following twelve varieties comprise a distinct and varied selection of varieties of proved merit: Baron G. de Grancy, creamy-white; Bertha von Suttner, salmon-pink, shaded yellow; Dr. K. W. van Gorkom, white, shaded rose; Duke Henry, reddish-crimson; Geisha, yellow, suffused with rose; Germania, crimson-scarlet, shaded yellow; Glory of Baarn, soft pink; Hugo de Vries, orange-brown; King Leopold, pale yellow, tall in growth; Merveille, orange-yellow; Queen Wilhelmina, pure white; and Titian, rich rose.

A. Osborne.

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## SMALLER-GROWING CYRTANTHUS.

Some of the species of cyrtanthus, such as C. obliquus, have large bulbs, and, as a rule, they do not flower very freely; but, on the other hand, several kinds are comparatively small growers, and flower with considerable freedom. Among the members of this group are Cyrtanthus angustifolius, C. McKeni, C. Macowani, and C. lutescens. The bulbs of all these are small, and from them are pushed up grass-like leaves a foot or so in length. The erect flower scape, which also reaches a height of about a foot, is terminated by an umbel of tubular-shaped, curved blossoms. In C. angustifolius they are of an orange-scarlet colour, in C. McKeni white, C. Macowani crimson, and in C. lutescens pale yellow. These bulbs require ordinary greenhouse treatment. They should be potted in a soil mainly consisting of loam and sand, as in this they do not need frequent repotting. If kept moderately dry during the winter the plants will in spring, with additional warmth and more moisture, quickly push up their flower spikes, and when in bloom they are exceedingly pretty. More than this, the flowering season is not limited to the spring months, as blossoms are produced at all seasons.

K.

## THE CENTURY PLANT.

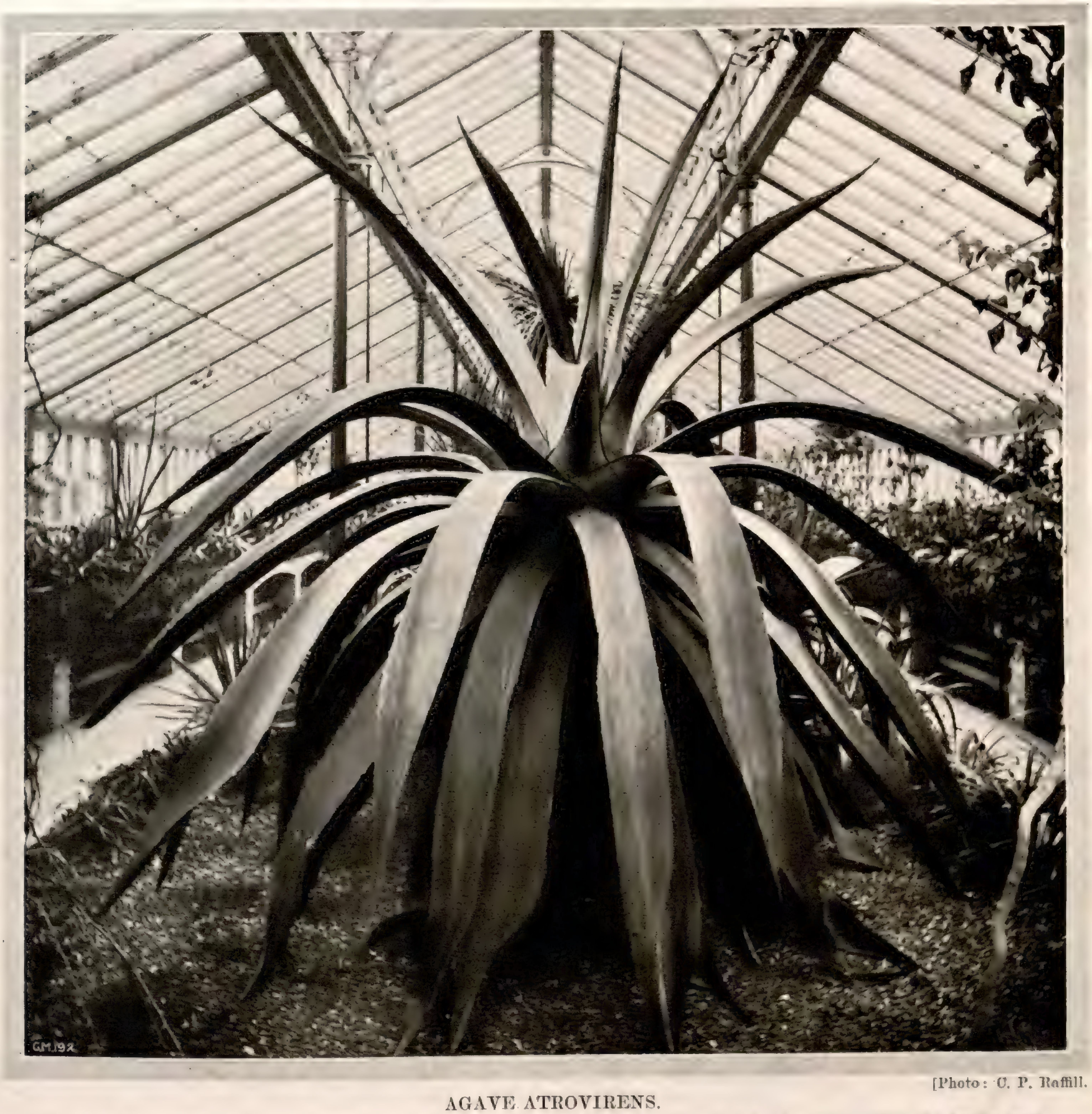
As a consequence of the large specimen of Agave atrovirens in the Kew collection having reached the flowering stage, much has been written during the past few weeks about the so-called Century Plant. Judging from the articles and paragraphs that have come under our notice, the majority of the writers regard themselves as authorities on the subject, although evidently very few are acquainted with the fact that there is more than one agave popularly known under that name.

The species that is generally known is A. americana, which, according to tradition, was introduced to Europe about the middle of the sixteenth century, and first flowered in England at Hampton Court in 1714. Whether the flowering of this specimen created much interest is not at the present time quite clear, but whatever may have been the amount of interest shown in the development of the stately flower stem and the production of the huge panicle of flowers, it must have been more or less local, for there were then no means by which information relating to episodes in plant life could be readily disseminated. That a considerable amount of interest was evinced in this species for many years subsequent to it having become known to science, there can be no doubt, for in Martius' "Flora Brasiliensis" fifty books are mentioned in which reference was made to it between 1554 and 1748. The plant has long been widely distributed in gardens and at one time it enjoyed considerable popularity for placing in prominent positions on terraces during the summer months. The handsome variegated variety known as A. americana variegata has also enjoyed considerable popularity both for the terrace and conservatory.

AN EFFECTIVE ARRANGEMENT OF PÆONY-FLOWERED DAHLIAS AT KEW.

The length of time required by this agave to reach the flowering stage gave rise to the popular name of Century Plant. There is, however, no foundation for the common belief that it blooms once in every hundred years. It blooms once, and once only, for when a plant has flowered it dies. Plants may have reached their hundredth year before completing their life cycle, but no authentic record has yet come under our notice of their having done so. Probably the average life of a plant of A. americana would be nearer fifty years than one hundred, but there is not sufficient evidence available to fix any definite period for the flowering of the agaves popularly known as century plants.

A. atrovirens, which is now coming into bloom at Kew, is not unlike the older species, but it is taller in growth, and has leaves that are of greater length, and somewhat narrower. The Kew specimen has a spread of about fifteen feet, but Karawinski, by whom it was introduced to cultivation, states that leaves of wild plants growing under favourable conditions, attain a length of twelve feet. As will be readily seen from the illustration given herewith of the specimen before it began to produce its flower stem, this species is stately in aspect, and has much to recommend it to those who take in interest in the larger-growing agaves, and have a spacious structure available for its cultivation. Like the other species here referred to, A. atrovirens is a native of Mexico, and was introduced to cultivation in 1860. It first flowered at Kew in the winter of 1887-8, and, as the plant could not be placed in the open at that season of the year, it was removed to the palm house to afford room for the development of its tall flower stem. This latter attains, according to Mr. Baker, a length of between twenty-five and thirty feet, and the flowers are borne in a panicle some seven feet in length, at the top of the stem. The height of the plant with its flower stem is now about twenty feet.



[Photo: C. P. Raffill.

AGAVE ATROVIRENS.

The fine specimen now coming into bloom at Kew, as it appeared previous to the development of the flower stem.

**Cotoneaster horizontalis.**—Of the innumerable cotoneasters that we have received from China this is one of the best and most distinct. Its regular, distichous style of growth forms a very notable feature, and it is especially attractive at different seasons. In the first place, its pretty pinkish flowers are borne in great profusion; next, they are succeeded by berries which, when ripe, are bright scarlet.—K.

## RUNNER BEANS IN FLOWER BORDERS.

In cases where a temporary background is desired for herbaceous borders in the vegetable garden, runner beans may be utilised to form one. The beans may be grown in a continuous row or in clumps at so many feet apart. For many years I grew a row of beans as a background to such a border in one garden that I had charge of. The row was over 300ft. in length, and generally averaged 7ft. in height. The beans flowered from June to October, and proved useful as well as ornamental. Pods were gathered regularly, as many as forty pecks in some months; and, of course, this regular gathering also resulted in continuous flowering.

The plants in the row were grown at a distance of 4ft. from the nearest herbaceous subjects, and I never found that any harm was done to the flowering plants in any way by the beans. This border could be seen from a very long distance, and the herbaceous phloxes, delphiniums, solidagos, spiræas, Michaelmas daisies, and other plants showed to great advantage in front of the wall of bean blossoms. G. B.

## IMPORTANT FACTORS IN ONION CULTURE.

However carefully details are carried out with regard to the cultivation of certain plants, perfection or complete success is not always assured. The onion, like many other culinary vegetables, will fail to make good growth on what is apparently excellent soil for other crops, while in that which may be regarded as anything but ideal ground, the best of results are obtainable with the minimum of expenditure. I have been able to grow Ailsa Craig onions, averaging 2½lbs. each in weight, on land just newly broken up, and where the dressing consisted of nothing more than a substantial amount of farmyard manure. The soil in the district of Basingstoke is undoubtedly naturally adapted to the growth of onions, for when Mr. Bowerman, who is now with Messrs. Sutton and Sons, was at Hackwood Park, he never failed to produce monster onions, averaging three or more pounds in weight. Mr. Kneller also, who for many years was head gardener to Sir Melville Portal, at Malshanger, was an equally successful grower, as also was Mr. Wasley, at Sherfield Manor. At the present day, Mr. Best, of The Vyne, and many other gardeners in this district, achieve the most excellent results in onion culture. The fact that allotment holders can place large bulbs averaging 2lbs. in weight on the exhibition tables of local flower shows throughout the months of July and August, is in itself sufficient proof that soil conditions have much to do with the success attending this culture.

### Deep Trenching.

This is an important factor in the cultivation of onions, either for general use or for exhibition purposes. I have compared autumn trenching with spring trenching after the ground has become well dried, and both systems of preparation have answered well. Perhaps the greatest harm is done when these heavy, retentive soils are dug over in spring, while they are still saturated with moisture, instead of waiting until they have become thoroughly dried so as not to become kneaded under the feet, like so much dough. When it is necessary to make the ground fertile by the application of heavy dressings of farmyard manure or other natural manure of a bulky character, such material must be got under in the autumn, and, if possible, when the ground is sufficiently moist to work well, and admit of ridging up for the winter. The deeper the ground can be trenched without bringing soil of an undesirable character to the surface the better, as the roots of onions are capable of penetrating to a very considerable depth, so lessening any risk of a check to growth likely to be encountered during prolonged drought.

### Manuring.

This must be performed cautiously. If farmyard manure is given, its composition must be such as will improve the mechanical texture of the soil. Well-fermented horse manure is invaluable for opening up, and thereby raising the temperature, of heavy, clayey loams, naturally cold and wet, while a manure largely composed of the excrement of cows and pigs is better adapted for such soils as have a tendency to become hot and dry, and which are not retentive of moisture. Much has been written about light soils for onions, and that these must be well consolidated, but from what I have seen of these consolidated dust-heaps, very few of them are capable of growing large specimen bulbs. Concentrated manures supplying potash, phosphoric acid, and nitrogen, can all prove helpful in the cultivation of onions, provided they are applied with care, and at the proper time.

On heavy, retentive soils, of which the subsoil is clay, a phosphatic manure like basic slag, is to be preferred to an acid manure like superphosphate, especially if the soil is in any way sour. Bone compounds, containing as they do a small percentable of nitrogen in addition to phosphates, are always beneficial to the onion crop, while if nitrate of potash does not prove too expensive to purchase it may take the place of either sulphate of potash or kainit, the latter fertiliser, however, being preferable to any other form of potash on light soils, as the large percentage of salt it contains is useful not only as a plant food, but also in conserving moisture. I have frequently used superphosphate and sulphate of ammonia, mixed together at the time of sowing in the proportion of one part of sulphate of ammonia to three parts of superphosphate, and very excellent results were obtained. In fact, I consider it preferable to apply the active nitrogenous manure in the form of sulphate of ammonia at the time of working the soil, instead of using a more quickly-soluble manure like nitrate of soda or nitrate of lime as a top-dressing after the plants are established.

### The Importance of Hoeing.

The value of deeply stirring the soil throughout the early stages of the plant's growth cannot be over-estimated, and in addition to keeping up a supply of moisture, it will do much to ward off attacks of mildew. In a season of drought like that of the year 1911, I discovered that where the ground around the plants was kept continually hoed, this had a much better effect on the plants than where continuous waterings were given, and the hoe used less frequently. It is nothing unusual to secure regular and well-formed bulbs of 3lbs. weight, but it is exceedingly difficult to put on additional ounces beyond this weight. Overhead waterings with liquid manure must be avoided, as many plants are killed in this way through premature decay of the foliage. When liquid manure is applied, it must be given fairly weak and in sufficiently large quantities to thoroughly saturate the whole of the cultivated soil.

I ought to have mentioned the good effects produced by the application of ground lime on soils containing an excess of organic matter, and on such garden soils as have a tendency to be heavy and unworkable in early spring. The lime must, however, be applied in autumn, and not in spring, as is usually done.

### The Best Plants.

Only the best plants must be transplanted for exhibition purposes, as I have observed that, however good the cultivation, a weakly plant will never gain that vigour of constitution necessary to enable it to develop into a specimen fit for show. Provided the seedlings are well hardened off before planting out, frost, however severe, does not appear to do them any injury, but an attack of mildew at a later stage of growth is a very serious matter. A very careful watch should be kept for signs of mildew during the month of July, and I have usually found that sulphide of potassium, used at the rate of one ounce to each gallon of water, is very effective in preventing the spread of the disease. Light sprinklings of flowers of sulphur between the plants once a fortnight is also recommended. In any case, it is well to take some precautionary measures before the mildew has much of a hold on the plants; otherwise it is difficult to check it.

J. C. Newsham.

## GARDEN SURPRISES.

There are not many gardens of surprises, and yet this expression can sometimes be aptly applied. It need not necessarily be a large garden, for it is not a difficult matter to so arrange a garden when it is first planned to create surprise features. I recently heard a garden of some repute, where choice hardy plants are extensively grown, described as "too much like a nursery." It was planted in a very formal manner, and you could almost see the whole at once. The plants were there, but their arrangement lacked taste and originality. This is a common mistake in many gardens, although most sites are capable of being laid out in a pleasing and artistic manner.

It is by no means necessary to have a great collection of plants, or to grow all the novelties to ensure a pretty garden; the secret lies in how the plants are arranged. In addition to this, trees and shrubs play a most important part in the moulding of a garden, for to create surprises it is necessary to make a free use of trees, as it is only by this means gardens can be intersected so that each portion forms a complete picture.

Besides choice shrubs, a careful use of conifers will be a great help, and the more ornamental of these form especially handsome objects. It should be the aim of the designer to so plant the garden that one section cannot be wholly seen from another. In this way surprises can be created which are often a source of increased attraction, and if the most is made of the various sections, they can be rendered extremely lovely and diverse. A great point is to make each feature quite different from another, both in its formation and in the subjects employed.

These remarks refer, of course, to the pleasure grounds, or to what some may call the semi-wild garden; but the latter is capable of being made most charming, and owing to its diversity, is often the most delightful part of the whole place.

Glades are always a source of beauty when appropriately located towards the outskirts of the garden, so as to reveal a view of the country beyond, or include some adjoining garden feature. When well placed, these glades give an impression of extent, which is often desirable if the grounds are rather small.

Suitable subjects to plant are very numerous, but I know of nothing more effective in the spring than Erica carnea, and a breadth of this, two acres in extent, with which I am acquainted, is a sight not easily to be forgotten. Here and there narcissi can be naturalised among the ericas, and Anemone apennina contrasts beautifully with it. Surprises in the garden can be created in a variety of ways, but their chief attraction lies in locating them where they are least expected, and the approaching features must be so arranged to produce that effect. A garden so designed is infinitely more attractive than one of a more or less stereotyped character, no matter how many gems it may contain.

Batsford Park. J. Gardner.

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**Hollyhocks.**—These handsome plants are useful for planting in the shrubberies, and also at the back of the mixed flower borders; but, owing to the prevalence of disease, it is desirable to raise young plants every year by sowing seeds in heat early in February, and growing them in pots until large enough to plant out. They should be cultivated on deeply-dug and well-manured ground, when they will produce vigorous flower spikes. They will derive much benefit from a good mulching of half-decayed manure.

## CONVOLVULUS MAURITANICUS.

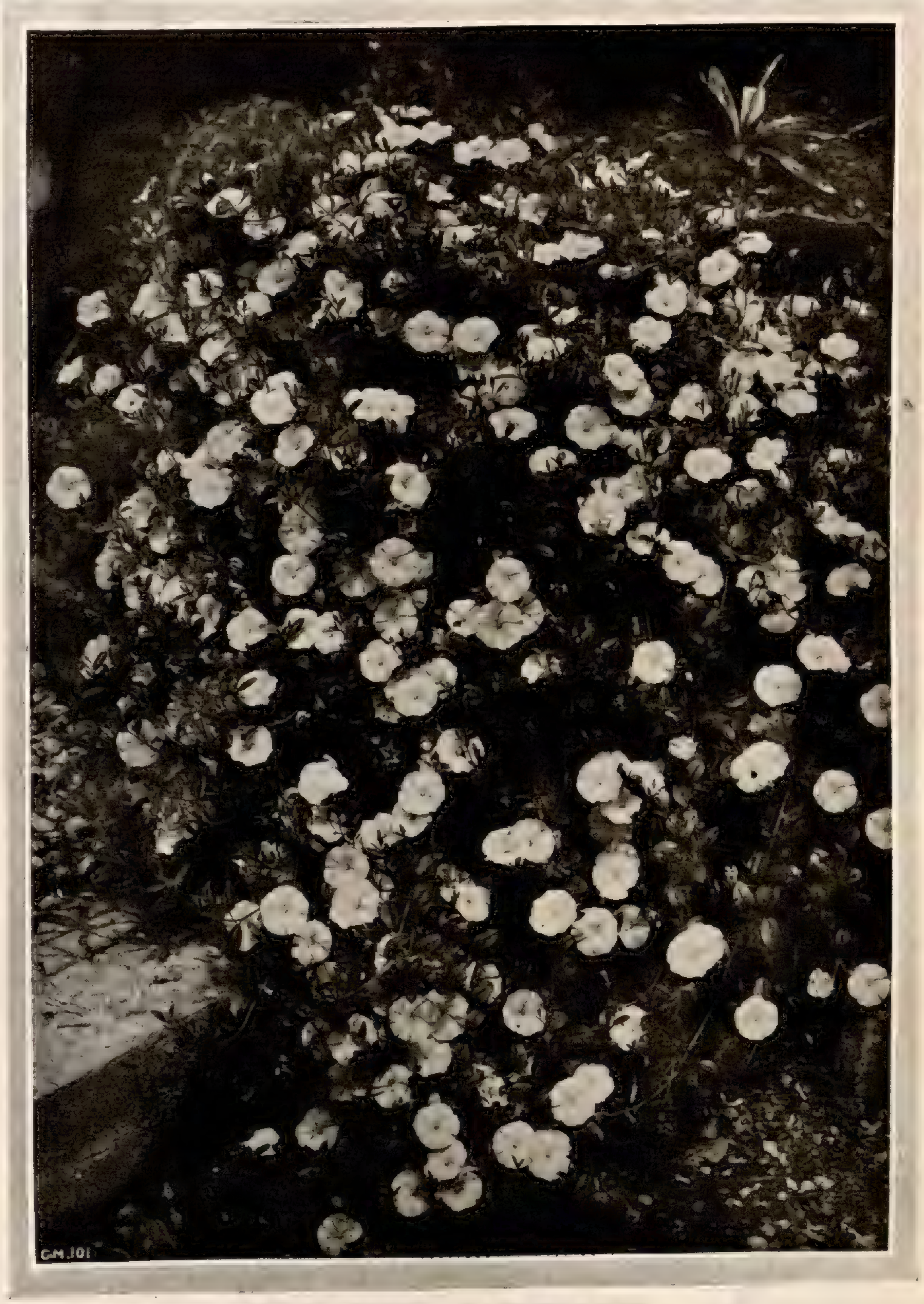
The blue rock Bindweed, as this convolvulus has been called, is one of the most beautiful and graceful of all the members of its family. Entirely free from the ramping, land-grabbing tendencies of so many of its race, C. mauritanicus is remarkable for its persistent flowering and neat, elegant habit. Although a native of Northern Africa, it has proved hardy in most parts of this country, and is one of the best plants for grouping that can be imagined. A dry, almost perpendicular bank entirely covered with this convolvulus, each plant forming a dense veil and throwing up innumerable graceful, drooping shoots, studded along their entire length by soft, lavender-blue flowers about the size of a florin, is one of the most beautiful sights it is possible to conceive. On a ledge of the rock garden, where its blossom-laden, pendant growths can hang freely down, it is seen at its best.

Distinct as it is from any other species in cultivation, it may be used with fine effect in almost any situation in the garden. In the warm, sunny crevices of the rockery, in a border with a southern exposure, or in the summer flower-beds, this charming plant will be found equally at home, while on a raised mound it will have a delightful effect, the long, drooping shoots falling gracefully all round, and laden with their lavender-blue flowers, forming an exquisite picture. It is never seen to better advantage than when creeping over some formal stone edging, which it converts from an eyesore to a thing of beauty. A fine example, such as that shown in the accompanying illustration, which is four feet in length and three feet across, bears myriads of blossoms. Happily, too, it is not a flower of a week. It commences its display early in July, in August is a sheet of lavender-blue, and continues to flower with decreasing freedom through the entire autumn.

The leaves are ovate, abundantly produced, and deep green, harmonising well with the pale blue flowers. To ensure satisfactory growth the soil must be light, warm, and well-drained, and the position sunny. It may also be used with advantage for hanging baskets, treating it in the same way as the Creeping Jenny, that is, allowing the stems to fall down and form a fringe. It should certainly be used more than it is for ornamental vases or baskets, and may be employed with equal advantage in or out of doors. It makes a most charming picture of soft, refined colour, such as no other plants could provide, and should be grown by all.

It usually survives the winter, as its roots are generally safe if growing in a soil from which excess of moisture readily passes away, but in cold districts it may be killed in an exceptionally severe winter. For this reason it is always advisable to insert a batch of cuttings in sand and cover them with a bell-glass in the autumn, as these strike freely, and, planted out in the spring, make good plants, growing and blooming through the late summer and autumn. The variety sabatius is only known to grow on one cape. It differs from C. mauritanicus in its mauve-coloured flowers with yellow centres, solitary or in pairs, and crowded together at the ends of the short branches.

WYNDHAM FITZHERBERT.



CONVOLVULUS MAURITANICUS.
A beautiful trailing plant with lavender-blue flowers.

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## EUPATORIUM PURPUSI MONTICOLA.

Several of the tender kinds of eupatorium are appreciated for the embellishment of the greenhouse during the autumn, winter, and early spring months. Of those that come in with the new year, I like this E. purpusi monticola (syn. E. petiolare) the best, it being exceedingly free flowering, and more refined in appearance than some other members of the genus. The flowers, which are disposed in much-branched panicles, are arranged in small, rounded heads, a good deal suggestive of a daisy. When first expanded they have a pinkish suffusion, but after a time become almost, if not quite, white. They also possess a pleasing fragrance.

Like the rest of its class this eupatorium is of very easy propagation and culture. It may, during the summer, be treated much as a chrysanthemum. Although less in stature than some kinds, it may be grown as good-sized bushy specimens, in pots seven to ten inches in diameter, while neat litle examples in five or six inch pots will also flower well. Fairly long sprays may be cut for indoor decoration, and these last long in water.

Another species—Eupatorium vernale—has come a good deal to the front during late years. It is very pretty for growing into small plants, but for general decorative purposes I prefer that at the head of this note. For autumn, E. riparum and E. odoratum (known also as E. Weinmannianum) are as far as my experience extends, the best. S. W.

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**Large-flowered Fuchsias.**—A great many of the newer fuchsias have large double blossoms, which, though individually showy, have some decided drawbacks. In the first place they are not borne as freely as the medium sized flowers, next, owing to their weight they are very apt to drop prematurely, and the loss of two or three blooms is apt to leave a considerable gap. For such reasons fuchsias of this class are not appreciated by the market grower, as they would not stand the shifting about inseparable from plants that pass through many hands before they are finally disposed of. Much the same objections apply to their use out of doors during the summer, as they are more readily injured by rough winds.—K.

## STREAK DISEASE IN SWEET PEAS.—II.

I have noticed pathologists and expert advisers recommend a change of ground for sweet peas. I think, however, when this cause is adopted, growers should inoculate the fresh ground, the seed, or plants, with the nitrogen-gathering bacteria, by mixing some portion of soil in which sweet peas have been grown with the fresh land to be cropped, small quantities of old soil only being necessary, say, a handful or less to the square yard, as such soil will be full of beneficial bacteria, or, if preferred, a sweet pea plant having nodules containing active bacteria may be selected, and the nodules may be crushed, and mixed with water, and applied with a little soil to the ground. This would be found to be efficacious. The nodules chosen should appear of a pinkish colour when crushed, and a sufficiency of bacteria may be taken from one plant to inoculate a whole garden.

When newly broken-up land, or land upon which sweet peas have not previously been grown, is to be used, inoculation of the soil is most important. The operation is so easy that it should not be neglected.

On the other hand, I find sweet peas succeed remarkably well when grown on the same land year after year, provided the correct system of manuring is adhered to. I have grown sweet peas six years' successively on the same ground without apparent detriment.

So much is heard about manuring of sweet peas that one is apt to attach too much importance to the subject, because, provided the soil contains a sufficiency of mineral manure (potash, phosphates, etc.) it matters not whether these were applied this year, last year, or the year before.

An overabundance will do no harm, a deficiency only of any mineral constituent determines the resulting crop.

I know from practical experience that when sweet peas and other legumes are grown exclusively with the aid of mineral fertilisers the crops are not affected with "streak," or any other diseases; even mildew fungus seldom does harm to plants in soil in which there is ample content of available potash.

Writing in the "Journal" of the Royal Horticultural Society, Mr. F. J. Chittenden says: "He doubts the efficacy of soil sterilisation by heating in connection with sweet peas, as it would prevent the formation of nodules upon their roots, and he, therefore, recommends as an alternative a thorough soaking of the soil with a solution of one part of formalin to two hundred parts of water, to be applied at least three weeks before the plants are put out or sowing of the seeds."

I have had several years' experience of growing sweet pea seedlings in soil partially sterilised by heat, and have always found the nodules form naturally and freely in soil which has been heated to 212F. Dr. E. J. Russell and other scientists have inspected my sweet pea seedlings growing in such heated soil, and have noted the nodule formation.

Theoretically, no doubt, one might expect nitrogen-gathering bacteria to be destroyed by such heating, but apparently they survive, as do spore-producing soil bacteria, or inoculation takes place through the media of water or air.

It is admitted that volatile antiseptics, such as formalin, for partial sterilisation of soil are not so effective as the heating process, as none of these completely destroy the harmful bacteria (protozoa and amoeba), whilst neither the antiseptic or heating process completely destroys the beneficial spore-producing organism. It therefore follows no special advantage is to be expected by using formalin; rather the reverse.

A point worthy of note is that when examining a "streaky plant," if nodules are formed upon roots they contain dead and inactive bacteria, although each nodule may contain countless millions of these bacteria.

I feel inclined to think that three-fourths of the destruction to sweet pea plants during recent years has not been due to streak disease, but has been the effect of over-manuring, or feeding, as it is commonly called.

I am quite prepared to hear some suffering enthusiast say, "I did not feed my plants at all," which means the plants died before the contents of the tub of "old stingo" had been used, or before the concoction to be made from the infallible chemical formula had even been prepared. Quite so! But what about the tremendous amount of animal manure, etc., deposited in the soil months before the peas were planted? Possibly the roots may have come into contact with this, resulting in the usual consequences—retarded growth, puckered leaves, distorted or discoloured flowers, shortened internodes, and destroyed root hairs, ending the probable sickening and death of the whole plant, in a way best known to the grower.

Marshall Ward has said: "The time is rapidly approaching when the farmer, or the gardener, will as little dare to neglect the study of physiology and pathology of plants, as the surgeon dare practise without a knowledge of anatomy, or the sailor hope to become a captain without studying navigation."

I believe the cultivator of the soil will soon recognise the necessity of becoming acquainted with the life history of the tiny organisms which exist therein. The knowledge of the existence of the various groups, and of their mutual relations, will most certainly tend to the more careful and economic use both of the farmyard manure and of artificial fertilisers.

E. W. Duckwall, in "Bacteriological Technique," says: "Peas grow well in chalky and other calcareous soils, but a fine growth depends almost entirely upon the presence of nitrogen-fixing bacteria, and it is possible to prepare the conditions artificially. When peas are planted in a soil containing all the elements for growth excepting nitrogen, they will thrive well if there are any nitrogen-fixing bacteria present, because these little workers will build up the nitrates for the plants, but if none of these are present the growth is poor, . . . the plants will cease growing, the leaves turning yellow, and there is no disposition to bear pods. The plants in this case are suffering from what is termed nitrogen hunger, when, at this stage, if the soil near the roots be moistened with water containing nitrogen-fixing bacteria, wonderful changes will be noticed in a short time. The stem and branches will grow stronger, the leaves will turn green, and the pods will fill with peas rapidly."

In the face of such evidence is it to be wondered if the reversal of such a complicated provision of Nature should be visited with such dire consequences when nitrogen is supplied in alien form.

Robert Holmes.

Tuckswood Farm, Old Lakenham.

For pretty gardens and lovely flowers read The Flower Garden, by T. W. Sanders, F.L.S. An up-to-date work on the formation, planting, and management of the garden, with description and cultivation of flowers and plants adapted for outdoor culture. Price, 7s. 6d. net by post, in box, 8s., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## THE FORESTS OF NORTH AMERICA.

In a lecture delivered recently before the Aberdeen branch of the Royal Scottish Arboricultural Society, Dr. Somerville said: In North America not only was there a variety of climate, but concurrently an enormous variety of vegetation, including trees. From an economic point of view the forests of North America were of the very first importance, and the United States constituted the most important of the timber exporting countries of the world. That country exported annually something like £18,000,000 to £20,000,000 worth of timber. The country the States drew upon most liberally for the ordinary class of timber was Canada. From facts submitted recently to the Canadian Government, the United States at the present time were consuming something like two-fifths of all the pulp-wood for manufacture into paper in United States mills. The Canadian Government was, however, extremely anxious to stop the exportation of raw pulpwood to the United States, and New Brunswick, Quebec, Ontario, and most of the important timber provinces of Canada had been passing Acts to prevent exportation of pulp-wood in the raw condition to the States.

Dr. Somerville proceeded, by means of maps, photographic slides of interesting parts of wooded country, of special forests, and of giant individual trees, to describe his visits to the United States and Canada. He described the great forests of spruce he found in New Brunswick. Exactly how much timber there was in Labrador could not be known, because as yet that province was largely unexplored. It was, however, from Labrador that large quantities of timber came which could be used for pulp for the manufacture of paper. Great hopes had been entertained that when the Canadian Northern Railroad, at present under construction, was opened, that great quantities of timber would be available in vast extents of forests. That hope, however, had not proved to be realised, because the surveyors who had been along the line of route reported that the country there was so poorly wooded that it could do no more than supply the constructional material required for the railway.

West of Lake Superior they got into the prairies, stretching away towards and beyond Winnipeg, where they had only scrub poplar and larch, and Banks's pine. Further west, in the purely prairie country, they found willows and poplars growing alongside the banks of the rivers. When they approached the Rocky Mountains they got a forest country extending south of the Selkirk range, and there they had several of the most magnificent of the American forests. It was in that district that many of the wonderful trees were found indigenous—the Sitka spruce, the Douglas fir, the Grandis pine, the Picea nobilis, and the Lawsoni fir. In the valley of the Mississippi they had many of the hardwood trees—chestnut, birch, cherry, and others at their best in that mountain range. Tennessee, North Carolina, and Virginia were right in the middle of that great hardwood forest area, in which very little cutting had been done. By means of a series of beautiful illustrations, Dr. Somerville gave his hearers a capital idea of all the various features he had referred to.

The lecturer then dealt with the characteristic trees of Eastern Canada, and showed what the Canadian Government were doing on the prairies to afforest the bare lands there and give protection to crofts and homesteads. That Government distributed young plants free of charge to settlers, and the distributions were made from nurseries at Indianhead, Alberta. The work was started in 1905, and by slides the lecturer showed how well the trees grew up in a matter of four years' time on an area that was previously treeless. It was interesting to know that trees doing best in the re-afforestation of the Canadian prairies were the trees commonest in Great Britain.

# PERPETUAL-FLOWERING CARNATIONS

## At the Hatherley Nurseries, Cheltenham.

It is a statement frequently made that the man who is successful is the specialist, and indeed this may be called the age of specialists. Our greatest physicians specialise in the study and treatment of one particular disease. In all branches of science and industry, and even in sports and hobbies we find men who are specialists in one particular line, at which, by reason of the concentration of their energies and interest, they become experts, and consequently achieve success.

In so far-reaching and many-sided a pursuit as horticulture, it is not at all surprising that we find the system of specialising in the cultivation of one class of plants very largely adopted, and certainly abundant evidence is forthcoming that they who follow this course are those who succeed.

Messrs. Young and Co., Hatherley, Cheltenham, may be cited as specialists who have come well to the front in their line, which is the cult of the perpetual-flowering carnation. Of late years their fine stands of well-grown flowers, tastefully arranged, have been much admired at the leading shows all over the kingdom, and it was in full expectation of finding an extensive stock of healthy plants that we visited Hatherley recently.

Carnations are worth seeing anywhere, at any time, but this visit was the more enjoyable by reason of the facts that the day was gloriously fine, and that the nursery is situated in a spot surrounded by scenery that may well claim mention among the most beautiful in England. The town of Cheltenham itself is endowed with beauties equalled by few towns in the country, but getting beyond the streets into the open country where grand views of the Cotswold Hills and well-wooded valleys are obtained, one feels compelled to pay tribute to this delightful bit of old England.

But to the carnations. These occupied ten or a dozen span-roof houses ranging from about 150ft. to 200ft. each in length. This means a considerable area to be occupied by one kind of plant, but every house was filled to its utmost capacity, plants of all sizes, from newly-rooted cuttings in the propagating beds, to fine big plants in full flower, being pictures of vigorous health and skilful culture. We looked carefully for rust, spider, and spot, those torments that are capable of converting the pleasure of carnation growing into an anxiety and thankless task, but by the time we had finished the round ye come to understand why Mr. Taudevin, the genial head of the firm, who every show-goer knows, can always wear a pleasant smile or enjoy a hearty laugh—his brain is not racked with the harassing problem of how to rid his plants of pests; he has learnt the far better plan of keeping the pests at bay. One thing was specially noticeable, i.e., that from the time the cuttings are taken there is no coddling, but a cool, rational treatment is afforded, both in the propagating house and the growing and flowering houses, and the whole system of cultivation is to give careful attention to light and ventilation, and to use brains as well as hands when manipulating the waterpot, while the great importance of cleanliness all round is fully realised.

As to varieties; the main collection, numbering about sixty varieties, embraces the best and most popular of both American and British carnations, the plan here adopted being to discard an old variety as soon as one of its particular shade of colour is obtained that supersedes it, either in form, quality, vigour, or habit. A list of these "superseded" varieties is published in Messrs. Young's latest catalogue, and numbers forty-two names. The firm is naturally proud of the fact that quite a number of really good and distinct varieties have emanated from the Hatherley Nurseries, the dark crimson Duchess of Devonshire holding pride of place as the best of the Hatherley novelties. This lovely flower is now widely known, Messrs. Young and Co. having exhibited it throughout England, Scotland, and Ireland, and the manner in which its finely-formed, richly-coloured flowers are everywhere admired must be very gratifying to the raisers. The fine batches of plants I saw fully demonstrated the free-growing and free-flowering qualities of the variety.

Another of Messrs. Young's varieties attracted attention, being so entirely distinct from anything else seen. Its name is A. S. Montgomery. The flowers are not large, but they are broad, smooth-petalled, and more after the style of a good border variety. The calyx is long and perfect, and the colour is a beautiful shade of musk-rose, or perhaps the catalogue description "lilac-pink," aptly describes the somewhat unusual shade. We have seen and admired blooms of A. S. Montgomery at the shows, but our interest in it was very much increased by the remarkable growth and habit of the plants. These grow over wires right up one side, and under the roof of a fairly lofty house. Nevertheless, the plants are anything but leggy, there being any amount of grass, side shoots, and flower stems right from the pots upwards. It is, in fact, almost worthy of being called a "climbing" carnation.

Lady Henderson, a salmon-pink, something in the way of Mrs. H. Burnett is another of Messrs. Young's introductions, and they were also the raisers of Queen, a pale yellow with slight pink markings; Cheltonia, and the pinky-mauve Mrs. Greswolde Williams.

A carnation that has for two or three years attracted a great deal of attention is the Hon. Lady Audrey Neeld, the variety that produces flowers of the same striking form and colour as Marmion, but which has earned for itself the reputation of being a true perpetual flower. Messrs Young and Co. have all along held a high opinion of this attractive flower, and we were not at all surprised to find a big stock of plants in all sizes. Mrs. C. W. Ward is another variety that is exceptionally well done. Those who saw the splendid flowers of it which Messrs. Young and Co. staged at the last show of the Perpetual-flowering Carnation Society will readily understand that this would be so. We asked what was considered the best white, and the answer came quickly that there was nothing yet to surpass White Enchantress for all-round quality and freedom. There are, however, several other good whites in the nursery, including the large-flowered Wodenethe, White House, and White Wonder.

Of much interest is a batch of plants in the open in perfect health. These perpetuals were planted out of three-inch pots and received no protection whatever. In all about fifty varieties were tested, all of which came through in perfect condition, with the exception of half a dozen plants of Governor Roosevelt. All the others are now making extraordinary growth, and running up to flower stems. Many of this type of plant are at present being planted out for summer flowering.

Capital batches of young seedlings and several unnamed seedlings of promise foretold that from Messrs. Young and Co. carnation lovers will receive in the near future still further novelties calculated to oust old favourites or to introduce acceptable new shades of colours into the comparatively new race that has so quickly and deservedly won the hearts of flower lovers in two continents.

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**Evergreens under Trees.**—The number of evergreens that will hold their own beneath the shade of trees, where as a rule the soil is considerably impoverished, is a very limited one, among the best for the purpose being the aucuba, Berberis aquifolium, Butcher's Broom, some cotoneasters, Daphne pontica, Hypericum calycinum, ivies in great variety, and periwinkles of sorts. Of these last the smaller periwinkle (Vinca minor) will hold its own under more adverse conditions than the larger Vinca major.—S. W.

# WORK FOR THE WEEK.

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### THE ORCHID HOUSES.

TEMPERATURE.—Plants in all departments are now making new growth, and no time should be lost in giving them encouragement. To assist in bringing this about, the summer temperature should be now strictly adhered to. The figures given below should be maintained, as nearly as possible, when the outside conditions are genial and summer-like, but during a spell of cold, inclement weather, a degree or two lower will be better than using an excessive amount of fire-heat to maintain the temperature. Cool house—by day, as low as possible; night, 55 to 60 degrees. Intermediate, cattleya, and Mexican houses—by day, 70 to 80 degrees; night, 65 to 70 degrees. Warm house—by day, 75 to 90 degrees; night, 75 degrees. Cool orchids are soon injured by heat, and must now be kept as cool as possible. With the increased temperature within the houses, and the hotter and drier conditions outside, a greater amount of humidity must be maintained. The ventilation and the shading of the different houses must have every attention.

CŒLOGYNE CRISTATA.—This species, and its varieties, have now commenced to grow, and the supply of moisture to the roots should be gradually increased. Those in need of repotting should have attention, just as the young growths are about to push forth new roots. Those to be repotted should have all the old material shaken from their roots, carefully pulling the mass to pieces and cutting away all dead roots and old pseudo-bulbs, leaving three or four behind each leading growth. These plants grow and thrive for a very considerable time without being repotted, and where a quantity are grown a certain portion should be done annually, and in this way no great loss of flowers is experienced. Pans of suitable sizes are the best receptacles, and these should be well drained, placing over the drainage a good layer of sphagnum moss. The compost should consist of equal parts of peat, polypodium, osmunda fibre, and a good turfy loam (from which all the earthy particles have been taken), and sphagnum moss. In preparing compost, it is well to bear in mind that a moderate depth of material that will last is better than a large amount that will need renewing in a very short time. The specimens should be made up according to the uses the plants are intended for, slightly raised in the centre, making each piece secure with the potting mixture, and using copper wire pegs to hold them firmly in the compost. After repotting, place the plants in a shady position, and spray them overhead frequently to prevent the pseudo-bulbs shrivelling more than is avoidable. The cool end of the intermediate house is the best place for C. cristata, and when well established it does not require an excessive amount of shade. In a summer temperature ranging night and day respectively from 60 to 70 degrees, or even 80 degrees, the plants will grow rapidly.

OTHER SPECIES OF CŒLOGYNE which may also have attention at this season, should they require it, are C. flaccida, C. conferta, C. elata, C. sparsa, and C. speciosa. The whole of these delight in an intermediate house temperature, and when well established, an abundant supply of water at the roots. Cœlogynes, when in full growth, are among the most thirsty plants possible, but should be allowed to get dry before affording water, as if the compost is kept continually saturated the roots will be destroyed.

C. PANDURATA, C. DAYANA, C. ASPERATA, and others which are showing flower, must not be allowed to suffer for lack of water. These species require a plentiful supply of heat, and a shady, moist corner must be found for them in a warm house. Given a suitable position, they are all vigorous growers, pushing out over the sides of their receptacles in a short time. After flowering, should it be a necessity, they must be repotted, and they will succeed in a compost prepared as for C. cristata. Many cœlogynes are particular as regards their surroundings and conditions, and when one sees any particular plant doing well it is wise to take notice of its environment.—J. T. BARKER, The West Hill Gardens.

### CONSERVATORY AND GREENHOUSE.

STREPTOCARPUS.—Plants raised from seeds sown in January should have been pricked out in pans and be now growing freely. The most forward are ready for placing in 3in. pots. The best compost at this stage will be two parts loam, one part peat or leaf-mould, and one part silver sand, passed through a fine sieve. When potted, place the plants in a warm frame, or on an ash base, and keep close for a few days, damping them over with tepid water. Young plants readily respond to this treatment, and quickly become established. Great care must be exercised not to break or damage the leaves, which are very brittle. Streptocarpus should be grown in these pots until they open their first flower. The best varieties should then be selected and the plants potted into 32's, using compost as before, but in a coarser state. They should then be returned to the same position they previously occupied, and, with careful attention, they soon make fine plants. When they commence to flower they are best moved to the conservatory, and if the position is suitable they will last in perfection for several months. Streptocarpus, like many other subjects, are much more effective when in bloom if they can be staged by themselves in groups or in company with maidenhair ferns.

CALCEOLARIAS. — Herbaceous calceolarias are now making a fine show, and are most useful for conservatory decoration. (I hope to deal with seed-sowing and cultivation in a later note.) Calceolaria Clibrani is a new addition, and most useful. The tall, slender spikes of small, delicate, yellow blossoms, lend themselves most admirably to floral display. It is best propagated by cuttings, and any side shoots will root freely. The plants are best grown in batches; some are now opening their flowers, while the next batch, rooted in October, are fast filling their flowering pots with masses of roots; whilst the third batch is rooted and potted off into 60's. The compost best suited for them is good fibrous loam, leaf-mould, old mortar rubble broken finely, a little soot, and coarse sand. The best position to grow them in is on a shelf near the glass, where they get plenty of light; but care must be taken that they do not suffer from want of water. When the pots are full of roots give weak liquid manure.

CYCLAMENS.—These are fast passing out of bloom. All old corms and poor varieties should be thrown away at once. If it is thought advisable to keep a few of the best varieties, these should be placed in a cold frame, and given water sparingly, presently withholding it altogether and encouraging the plants to rest. The leaves will die off completely. Seedlings raised in February are ready for potting directly they have formed two leaves. Pot them into 3in. pots or pans filled to within one inch of the position near the glass, and dew them over frequently.

PRIMULAS.—Seed-sowing time for these has now arrived, and all who wish to have good plants by November must sow at once, as Primula sinensis, P. stellata, P. Kewensis, and P. malacoides are all best sown now. Choose pots or pans filled to within 1in. of the rim with sandy compost, make level and firm, and sow the seeds thinly on the surface and sprinkle with silver sand; cover with a piece of glass, and some paper, to encourage quick germination. The old double white primula and the improved form, Beauty of Exeter, are ready for propagating. Remove decayed leaves from the stems and pack sphagnum moss and silver sand firmly round the stem bases. The stems will emit roots, and when sufficiently rooted the growths may be severed, and each plant potted up separately.—LEWIS SMITH, Shotesham Park Gardens.

### THE KITCHEN GARDEN.

RUNNER BEANS.—After this date it should be quite safe to sow the first row of this favourite vegetable. They are better, more lasting and prolific, if trenches are prepared for their reception, as previously advised for celery. Keep the surface below the general level of the ground, this answering equally for watering, mulching, and keeping cold winds from the young plants when up. As very few vegetables are more tender than beans, every care should be taken to promote a regular growth. Previous to sowing, give the trench a surface dressing of burnt garden refuse, as beans revel in this material. Plant the seeds with a dibber, three inches deep, in double lines. Protecting material will probably be needed after germination has taken place, on cold nights; spruce or yew boughs are very handy and useful for this purpose. Make sowings at intervals of three weeks until the middle of June. Prizewinner, Hackwood Success, and Scarlet Emperor are excellent varieties for both home and exhibition.

FRENCH BEANS. — Good breadths, both of climbing and dwarf kinds, should be sown at intervals to maintain a good supply of young and tender pods. Make still one more sowing in a frame

BRUSSELS SPROUTS.—Those sown in boxes, and ultimately pricked off into skeleton frames, are now quite hardy and large enough for their final quarters. The site should command full sun to encourage a firm and hardy growth to withstand the winter. Providing the plot was early trenched, all it will need is levelling, at the same time harrowing in a good dressing of soot. Stake out the rows at three feet apart, and allow a distance of two and a-half feet from plant to plant. If dry, give a soaking of water immediately after planting. Dwarf Gem and Matchless are perhaps the two most profitable varieties.

BEETROOT.—The main batch should now be sown. Ground previously occupied by celery or leeks answers admirably for this crop, particularly if a good dressing of old rubbish-heap ashes, soot, and lime rubble can be strewn over the site and well worked into the surface soil. Rake and level up, and draw drills a good inch in depth, at fifteen inches apart. Blood Red, Dell's and Cheltenham Greentop are excellent varieties. If birds are troublesome, a few strands of thin twine stretched over the bed three inches above the soil wards them off wonderfully well.

NEW ZEALAND SPINACH.—A useful vegetable for dry seasons. Sow in drills eighteen inches apart on any narrow border in the kitchen garden; thin out to fifteen inches apart.

CELERY.—The first batch, now nicely established in boxes, is ready for planting out in prepared trenches. The trenches for this batch need not be so wide, as for the late and maincrop varieties, these not needing the amount of earthing that is necessary to preserve the later batches from frosts. Plant in single or double lines, one foot from plant to plant. Lift very carefully, and plant firmly, afterwards giving a watering. To prevent attacks of the dreaded celery fly apply a slight dusting of soot over the foliage fortnightly, this acting both as a tonic and insecticide. The maincrop and winter celery trenches should be prepared as soon as the ground becomes vacant, using the ridges for turnips, lettuces, and endive. Ply the hoe through all crops regularly.—GEO. ELLWOOD, Swanmore Park Gardens.

### HARDY FRUITS.

SWEET CHERRIES ON WALLS.—Some varieties of cherries naturally form too many growths on the spurs, and branches need to be freely disbudded to properly mature the wood and produce fruit buds. Where growths are needed to fill up spaces or for extension, the best-placed shoots should be selected and trained in without being stopped; all shoots at the back of the branches should be rubbed off, and those selected to form fruit spurs must be pinched at the third or fourth joint. The foliage of the various cherries differs considerably in size, and due consideration of this fact must be borne in mind when pinching or selecting growths for fruit spurs. Keep a sharp look-out for aphis, and, if noted, spray with quassia extract or some other suitable insecticide, as a preventive; it is good practice to spray the trees immediately after the flowering period.

PLUMS.—The general treatment of plums follows on similar lines to that advised for cherries; here again varieties differ in their habit of growth, and must be treated accordingly. Such varieties as Reine Claude de Bavay, and Transparent Gage (old variety), must not be pinched too closely back; rather more latitude must be allowed, otherwise they fail to produce fruiting spurs. There is every appearance of a heavy crop, and early thinning of fruits should take place when it can be definitely decided which fruits are likely to swell away satisfactorily. The Plum Aphis has already put in an appearance, and unless prompt measures are taken to eradicate the pest by spraying, it will quickly gain a strong foothold, and once the young leaves commence to curl up it is a difficult matter to reach the enemy.

PEARS.—All growths not required for extension should be pinched at the fourth or fifth leaf, and in some cases, to avoid overcrowding of the growths, thinning out is needed. The trees are carrying a wealth of blossom, and, so far as can be at present noted, the sharp snap of frost has not done much damage. If no further setback occurs, a considerable thinning-out of the fruits will be necessary to relieve the strain on the trees, and to eventually produce fine fruit; this operation should be carried out at an early stage of growth. Trees which are troubled by attacks of the Pear Midge should be carefully examined, and the infested fruits removed and burnt. The pest can be distinguished by the abnormal size and shape of the fruits.

MULCHING. — Trees newly planted against walls quickly feel the effects of dry weather, and require early attention in the way of watering and mulching; the mulching material does not require to be of a rich, feeding nature; the principal object is to keep the soil in a moist condition. In the event of mulching material not being available, the surface soil should be kept well stirred with the hoe. Trees recently planted in open quarters should also receive attention, and not be allowed to suffer for lack of moisture.

STRAWBERRIES.—The littering down of the beds should be completed as soon as possible; the surface soil should be well stirred and freed from weeds, and a dusting of soot applied before laying down the litter; strawy litter when used direct from the stables, unless well washed by rains prior to the fruits ripening, is liable to impart an unpleasant taste to the fruits. Means should be taken for protecting the early blossoms from frost and cold winds.—H. MESSENGER, Woolverstone Park Gardens.

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**Prunus Pissardi Moseri flore plena.**—The original Prunus Pissardi rapidly made headway in popular favour owing to the rich purple colour of its foliage, while, regarded from a flowering point of view alone, it is decidedly ornamental, as the whitish blossoms are borne in great profusion. For forcing for early flowers its merits must not be overlooked, but in this respect it is greatly surpassed by this newer form, whose pink blossoms are larger than those of the type, and of a semi-double character. As the foliage is also richly coloured, it will no doubt, from the showy nature of its blossoms, be also in demand for outdoor planting.—T.

# ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.

### Privilege to Official Gardeners' Societies.

The directors have decided to grant a special privilege to members of bonâ fide gardeners' mutual improvement and similar societies. The secretaries of such societies purchasing not fewer than 20 admission tickets for the exhibition will be accorded a discount of 20 per cent. upon 1s. tickets, and 10 per cent. upon all higher-priced tickets. A parcel of 20 tickets and upwards need not be comprised of tickets all of the same value; in fact, it may be made up in any way convenient to the society, so long as not fewer than 20 are purchased at the same time. Societies wishing to avail themselves of these facilities must apply for their tickets on or before May 13, as no discounts can be allowed after that date.

### Exhibition Cups.

Never before has there been anything like such an array of valuable cups for presentation at an exhibition of this nature. Not only are the directors offering a large number themselves, but his Majesty the King, the President (the Duke of Portland), Sir Jeremiah Colman (treasurer), Lady Colman, J. Gurney Fowler, Esq. (chairman), Sir George Holford, C.I.E., K.C.V.O., Baron Bruno Schröder, Monsieur Lambeau (Brussels), and others are all offering cups for various purposes. The Worshipful Company of Gardeners and most of the other horticultural societies, the Veitch Memorial Trustees, and the Horticultural Club offer either cups or gold medals; and most of the larger firms of nurserymen and seedsmen in Britain, as well as several on the Continent, and even in Japan, and the proprietors of the "Gardeners' Chronicle" are contributing cups, and another series of such prizes will be forthcoming from many of the counties. The county cups are likely to have an average value of about £25.

It is felt that the public should have an opportunity of inspecting these numerous cups and plate, and it has therefore been arranged to exhibit them at a meeting of the Royal Horticultural Society, on May 14, in the Society's Hall, Vincent Square, Westminster. They will be on view at the exhibition on May 22, 23, and 24, the first three days of the show.

### Some of the Entries for the Exhibition.

From the entries received all types of carnations will be represented in abundance. The perpetual-flowering section, the Souvenir de la Malmaison type, the border varieties—all will vie with each other in presenting a brilliant show of colour. There are, for instance, four entries in a class for groups of carnations in flower, arranged on spaces of 200 square feet each. The tuberous-rooted begonias, so resplendent at most of the summer shows, will contribute some of the most brilliant colouring ever seen. There are three entries in a class in which each exhibit can claim an area of 200 square feet.

Streptocarpuses—a race of greenhouse plants which has come into special notice during the past ten years—have attracted four entries in a class for exhibits occupying 200 square feet each.

In no division, however, is there more reason for satisfaction than in that for alpine plants and rockeries. Nine entries appear in the class for alpine plants arranged in spaces of 100 square feet, and seven entries in another competition for exhibits occupying 50 square feet. There will be 14 or more great rockeries constructed in the open garden, seven in a class for rockeries of 600 square feet each, and seven in a competition where the space is limited to 400 square feet.

In the cut flower section, sweet peas will figure largely, although most of the flowers will have been grown under glass, in order to be ready for the early date. There are 14 entries in a competition for the "Sherwood" Cup for groups of sweet peas in spaces of 12 feet by 3 feet, and eight competitors for Messrs. Dobbie's cup, in spaces of 6 feet by 3 feet. Four exhibitors will compete in a class for new sweet peas introduced to commerce since September, 1910.

### Boy Scouts and Veteran Soldiers.

Arrangements will be made for employing Boy Scouts as messengers, especially on the first day of the exhibition, May 22, when the finding of the 75 sections of the jury will be communicated to the commissariat immediately each class is adjudicated upon. All members of the jury are asked to be present at the exhibition at 7.30 in the morning, and it is expected that most of the judging will be completed before 11 o'clock a.m. Veteran soldiers in uniform, from the Chelsea Hospital, will be employed as attendants, and ambulance corps will be furnished by the St. John's Ambulance Society. Indeed, all will be done that is possible not only to provide against accidents, but to secure the greatest comfort of the visitors to this great exhibition.

# NOTES OF OBSERVATION.

**Acalypha Sanderiana.**—The required number of plants of this beautiful species may be worked up either by cuttings of the strong young shoots, or by cutting the old stem into lengths of two or three inches, with a plump eye at their apex. Insert singly in thumb pots filled with light, sandy soil, and plunge in a hotbed. When nicely rooted inure to more light and air, and transfer to larger pots. Pot firmly to ensure short-jointed growth and robust leafage. Use a compost consisting of two parts loam, one of flaky leaf-soil, with a good sprinkling of dried cow or sheep manure, sand, and bone-meal. Red spider is very partial to acalyphas, and immediately it puts in an appearance, take prompt action to eradicate it by frequent spongings. The best specimens I have seen had the points pinched out when about nine inches in height, and when new growths were produced three of the strongest were retained.—H. T. Martin.

**Impatiens Holsti.**—This was introduced about ten years ago from German East Africa, by way of the Berlin Botanic Garden, and it quickly became popular. Since then we have had many forms put into commerce, but as an all-round plant the typical Impatiens Holsti remains, I think, unsurpassed. It is of good free growth, and branches so freely as to soon form a well-furnished specimen, while it flowers throughout the greater part of the year. For bedding out during the summer it has proved to be about the best of all these balsams. The colour of the flower is bright vermilion. In Impatiens Herzogi the flowers are larger and with more of a salmon suffusion, but the season of blooming does not seem to extend over as lengthened a period. Not only these two but other tropical kinds have proved themselves decided acquisitions to our indoor flowering plants. They strike readily from cuttings, and seeds are often obtainable.—W.

**Heracleum giganteum.**—This is a noble plant of gigantic proportions, most suitable for grouping beside water, yet succeeding equally well in the bolder parts of the wild garden. So far as the flower heads and individual flowers are concerned, it is surpassed by the Siberian species, H. Mantegazzianum; both succeed in a deep soil that is inclined to heaviness, which should be well broken up before planting, as, once established they call for no further attention. This genus belongs to the natural order Umbelliferæ, and the inflorescence of both species are most suggestive of cart wheels, hence the common name of cart-wheel flower; in like manner, the leaves and roots give rise to the other popular appellative of giant cow parsnip.—T. S.

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# EXHIBITIONS AND MEETINGS.

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### Midland Daffodil Society.

The annual exhibition of this important and flourishing society was opened at the Botanical Gardens, Edgbaston, Birmingham, on Thursday, April 25, and continued on Friday. It had been apparent for some little time past that, in consequence of the earliness of the season the show would be too late for such a large display of daffodils as have generally been seen at Birmingham, and it therefore occasioned no surprise among visitors when they found there was a considerable falling off in the number of entries, and that only the latest types were staged in anything like good form. One cause for general satisfaction, however, was that glorious weather prevailed, whereas in previous years it has often been of a stormy and unpleasant character. Notwithstanding the absence of some few of the leading lights in the daffodil world, there was a good gathering of experts, among whom we met the Rev. G. H. Engleheart, Rev. J. Jacob, Mr. G. H. Van Waveren, Mr. P. R. Barr, Mr. T. Batson, Professor West, Mr. W. T. Ware, Mr. J. D. Pearson, Mr. C. Bourne, and many others whose names figure prominently wherever daffodil growers foregather. Mr. Robert Sydenham was as active and jovial as ever, and Mr. Herbert Smith, the secretary, was, it goes without saying, courtesy and energy personified.

COMPETITIVE CLASSES.

The biggest class was for a collection of fifty varieties representative of the different divisions, three stems of each variety. Of the three entries staged the best collection was adjudged to be that shown by Rev. J. Jacob, Whitchurch. It was a very creditable exhibit, and included a number of good varieties, among which the pheasant-eyes Horace and Cassandra, and a giant gold trumpet variety named The Doctor, stood out boldly. R. Strauss, a big bicolor, and a pretty pure white, small cupped variety named Hoar Frost, were also interesting. The winner was closely followed by Messrs. Cartwright and Goodwin, Kidderminster, who had nice flowers of Hildegarde, Genial Star, Matthew Arnold, Coventry Patmore among the flat cups, together with Marshall Hall, Princess Ena, Cornelia, and Mrs. H. J. Veitch in trumpets. The third prize was awarded Mr. J. Pope, King's Norton, for good flowers. Only two entries were forthcoming in the class for twelve distinct varieties of trumpets, a class that generally brings out a keen contest. Mr. W. A. Milner, Sheffield, scored, showing Agincourt, Copenhagen, Toski, Poitiers, Trafalgar, Grandee, Falkirk, Monarch, Hastings, Waterloo, Omdurman, and Tel-el-Kebir. The second prize was taken by Mr. J. H. Mallender, Bawtry, on whose stand were flowers of Cherub, Mark Twain, Sir Bedivere, and others. Mr. Mallender had matters all his own way in the class for six incomparabilis varieties, distinct, showing Orangeman, Will Scott, Strongbow, Jas Janson, Deep Dale, and Loge Hill. Mr. H. D. Phillips, Olton, had the best of three entries for six Barri varieties, showing Ptarmigan, Persian Orange, Northern Queen, Rosella, Bullfinch, and Tangerine; the other prizes were awarded to Rev. J. Jacob and Mr. W. A. Milner in this order. For three distinct varieties of triandrus hybrids, three blooms of each, Mr. W. A. Watts, St. Asaph, led with White Swallow, Canaes, and Gwyn; Rev. J. Jacob and Mr. W. A. Milner again being second and third. The Rev. Jacob won both for six varieties of Tazetta and Tazetta hybrids, and for nine true poeticus varieties, distinct.

Mr. Mallender had the best single bloom white trumpet, showing Sybil Foster. Rev. J. Jacob's Puritan scored as the best Barri, and Mr. C. Bourne, Bletchley, won the Leedsi award with Moonbeam, and the single bloom of poeticus with Sonata. The names of J. A. Kenrick, Esq., Messrs. Cartwright and Goodwin, Mr. F. H. Chapman, W. A. Watts, and H. D. Phillips, also appeared among winners for single flowers in various divisions, but competition was limited to an entry or two per class.

The Bourne challenge cup for twelve distinct varieties of daffodils that have been raised by the exhibitor went to Mr. Crosfield, Bridgwater, who staged a collection of interesting flowers, conspicuous among them being an unnamed seedling with a very attractive orange-crimson crown; Mr. W. A. Milner was second in this class. The Rev. J. Jacob won in the novice seedling class for six daffodils that have not been in commerce more than four years, and also the Herbert Chapman poeticus trophy for six true poeticus that have not been in commerce more than four years. The Walter Ware challenge cup for eighteen distinct varieties of obvious Triandrus hybrids was won by Mr. W. A. Milner.

### THE NON-COMPETITIVE EXHIBITS

were this year of greater value than ever, making up as they did very materially for the deficiency of flowers in the competitive classes. Messrs. Barr and Sons, Covent Garden, London, occupied the end of the conservatory in front of the bandstand with a capital lot of daffodils, among which Masterpiece, a variety with chaste white perianth and symmetrical crown of brilliant terracotta, was very striking; Red Beacon, Bloodstone, Czarina (a big cream with lemon-yellow edge), and White Lady, were also good. Quite a novelty in narcissi was staged on Messrs. Barr's stand, bearing the name Gardenia, in which the crown had developed a petaloid character, giving the flower an appearance resembling the gardenia. Messrs. Barr and Sons also showed a fine lot of Darwin tulips, Moonlight, a very large clear yellow, being striking.

Messrs. Robert Sydenham, Lim., Tenby Street, Birmingham, exhibited narcissi, chiefly of the pheasant-eye and flat-crowned sections. Millie Price was one of the most attractive pheasant-eyes in the show. Ball of Gold, a big yellow trumpet, was also good. Some choice tulips were staged by the same firm, who also had St. Brigid anemones, Lily of the Valley, Muscari, and other bulbs in fibre.

A splendid exhibit came from Messrs. Sutton and Sons, Reading, comprising cinerarias of both large-flowered and stellata types, beautiful hybrid Primula obconica, large-flowered calceolarias, fragrant stocks, and well-grown mignonette. Mr. H. N. Ellison, West Bromwich, filled a large table with choice ferns representative of the most useful greenhouse species and varieties. Some fine vases of hybrid gerberas added colour to the exhibit.

Messrs. Cartwright and Goodwin, Kidderminster, contributed a collection of narcissi and tulips, the pheasant-eyes Rudyard Kipling and Childe Harold, and the large golden trumpet Mrs. H. J. Veitch, being particularly good. The Rev. G. H. Engleheart, Dinton, Salisbury, as usual, brought a set of unnamed seedling daffodils that proved a great attraction to the growers present. We usually look for something special in trumpets from this expert raiser, but on this occasion the stand was almost monopolised by small-cupped varieties. Mr. R. F. Felton staged, in conjunction with Mr. Engelmann, Saffron Walden, a stand of perpetual-flowering carnations with a few bowls of those beautiful roses Prince de Bulgarie and President Carnot. The carnations, which were tastefully arranged in Japanese vases, included the rich crimson British Triumph, Sunstar, Rex, a very neat salmon-pink variety, and Salome, a flower of lovely mauve tint lit up with rose. Messrs. Hewitt and Co., Solihull, had a bank of carnations, including La Mode, Lady Northcliffe, Empire Day, and others of recent introduction, the whole being set off by a groundwork of ferns and foliage plants. Carnations also came from Mr. S. Mortimer, Farnham, and a big batch of Spanish irises were staged by Mr. R. de Day, Sutton Scotney, whose exhibit would have been more interesting if the flowers had not been quite so crowded.

Messrs. B. R. Cant and Sons, Colchester, brought a delightful exhibit of roses, among which the Austrian briars, Tausendschon, and other decorative varieties served as a background to hybrid teas of excellent quality. Mr. W. A. Watts, St. Asaph, staged daffodils, tulips, and a number of polyanthus in distinct colours; and from Mrs. E. Lloyd Edwards, Bryn Oerog, Llangollen, came hybrid saxifragas and Aubrietia Lloyd Edwards.

A rockery arranged on a stage across one end of the conservatory was exhibited by Messrs. Bakers, Wolverhampton.

### THE DINNER.

On the evening of the first day of the show a large company, comprising the judges, exhibitors, and a number of visitors were entertained at dinner at the Grand Hotel, by Mr. Robert Sydenham, who has always been the life and soul of the Midland Daffodil Society.

## North of England Horticultural Society.

APRIL 24.

On this date the North of England Horticultural Society held an exhibition of spring flowers in the Corn Exchange, Leeds, and we are pleased to record the fact that the display produced was extensive and of high quality, and the attendance very large. The last fact is of special interest, for last year the interest shown by residents of Leeds in the work of the society was disappointing, and we trust this interest may continue. The exhibition was opened by Mrs. G. R. Lane Fox, of Bramham Park, who, in the course of the proceedings, expressed the hope that the society would stimulate a still greater interest in gardening.

One of the chief features was formed by the contributions of orchids, especially noteworthy being those from Mr. J. H. Craven, Keighley; Messrs. A. J. Keeling, of Bradford; and Messrs. Charlesworth and Co., of Hayward's Heath; the collection from the latter being of special interest. Earl Grey sent from Howick Hall a collection of daffodils, in which nearly a hundred varieties were represented. An attractive group of cyclamen was shown by Mrs. Whitehead, Deighton Grove, York; and Mr. W. Sheepshanks, Arthington Hall, arranged a rock garden that evidenced much taste and judgment. Messrs. W. Artindale and Sons, Sheffield, exhibited alpine plants and cut flowers of various kinds, and from Mr. Engelmann, Saffron Walden, came a beautiful collection of carnations.

The following awards were made:

### ORCHIDS.

Large Silver Medal.—Messrs. Charlesworth and Co., Hayward's Heath, and J. H. Craven, Esq., Keighley (head gardener, Mr. F. Corney), for orchids.

Silver Medal.—Messrs. A. G. Keeling and Sons, Bradford, for orchids.

Diplomas (second class).—To Cattleya Mendeli "The Knowle" var., from J. Hartley, Esq., Morley (head gardener, Mr. Wm. Coupe); and to Odontioda Bradshawiæ "Rawdon" var., from Messrs. Mansell and Hatcher, Lim., Rawdon.

### PLANTS AND FLOWERS.

Gold Medal.—The Right Hon. Earl Grey, Howick, Northumberland (head gardener, Mr. W. H. Lambert), for narcissi, etc.

Large Silver-gilt Medal.—Mr. C. Engelmann, Saffron Walden, for carnations.

Silver-gilt Medal.—Mr. Walter Allsop, Leeds, for alpine garden.

Large Silver Medal.—Messrs. Aldis and Rowntree, Leeds, for Narcissus poetaz, etc.; Mrs. Whitehead, Deighton Grove, York (head gardener, Mr. G. W. Richardson), for cyclamen; the Cookridge Nurseries Company, Leeds, for forced shrubs, etc.

Silver Medal. — Messrs. S. Broadhead and Son, Thongsbridge, Huddersfield, for alpines; Messrs. G. Gibson and Co., Leeming Bar, for herbaceous and alpine plants; Messrs. Wm. Artindale and Son, Sheffield, for alpines and cut flowers.

Large Bronze Medal.—Mr. Alva J. Hall, Harrogate, for alpines, ferns, and shrubs; Messrs. Conways, Lim., Halifax, for alpines and forced shrubs; and W. Sheepshanks, Esq., Arthington Hall, Leeds (head gardener, Mr. O. Wilson), for alpines.

Diplomas (First Class).—Carnation Regina, from Mr. C. Engelmann, Saffron Walden; Viola cornuta Craven Gem, from the Craven Nursery, Clapham, Lancaster (manager, Mr. G. Redman).

Diploma (Second Class).—Carnation Sunstar, from Mr. C. Engelmann, Saffron Walden.

### FRUIT AND VEGETABLES.

Silver Medal.—Mr. W. Dixon, Kirkgate, Leeds, for bees and appliances; and the Four Oaks Spraying Company, for spraying machinery.

At the meeting of the Fruit and Vegetable Committee the following officers were elected: Chairman, Mr. W. Hague, Mearwood Tower Gardens, Leeds; vice-chairmen, Mr. J. Hathaway, Baldersby Park Gardens, Thirsk; Mr. W. H. Dobson, Stapleton Park Gardens, Pontefract; Mr. H. J. Clayton, Wharfe Bank, Ulleskelf, York; secretary, Mr. G. Dunsmore, Throstle Nest Gardens, Chellow Dene, Bradford.

In the afternoon a lantern lecture on "Mendelism" was given by Mr. J. M. Hector, of the University of Leeds, and this, like the exhibition, was well attended.

## National Auricula and Primula Society.

(SOUTHERN SECTION.)

The annual exhibition was held at Vincent Square, Westminster, on Tuesday last. The majority of the classes were well filled, and especially in the alpine section, but the fine exhibits of hardy primulas and polyanthuses we have seen in the past were absent this year. On the whole the exhibits were a success, in spite of the untoward spring.

The premier award for twelve show auriculas, distinct, was won by Mr. J. Douglas, Great Bookham, who staged twelve fine specimens. The varieties were Favourite, Able Liszt, Scarlet Seedling, Acme, Shirley Hibberd, Mikado, Eucharis, Prince Charming, Orpheus, Geo. Lightbody, and George Rudd. Mr. J. L. Gibson, Leatherhead, was second with good typical plants of Shirley Hibberd, Harrison Weir, Richard Headley, George Lightbody, and Mrs. Phillips. Messrs. Phillips and Taylor, Bracknell, were third with a rather weaker display. There were six entries.

In the class for six show varieties, Mr. J. Douglas was placed first with a splendid half dozen. The varieties were Harrison Weir, A. Barker, Prince Charming, Victor, Lavina, and Wheatear. Mr. J. L. Gibson was second, his best flowers being Rifleman, Geo. Rudd, and Smiling Beauty. Mr. W. M. Shipman, Altrincham, was third. (Six entries.)

There were but three exhibitors in the class for four varieties, Mr. A. S. Hampton, Reading, winning first prize with Mrs. Henwood, Dinham, Vanity, and Mikado; Mr. F. W. Price, Beckenham, came second with Mrs. Henwood and Shirley Hibberd as the best examples, while Mr. W. G. Langlands, Epsom, was third. Mr. F. W. Price led for two plants with Shirley Hibberd and Mrs. Henwood, followed by Messrs. A. S. Hampton and W. G. Langlands in the order named.

Mr. Jas. Douglas won first prize for the best single plant of a green-edged variety with Prince Charming, and second with Rifleman; Mr. F. W. Price was third; a good competition. For a single grey-edged variety Mr. Jas. Douglas was second with Richard Headley, and Mr. W. H. Payton third with Acme. The first plant had been removed. Mr. Shipman was first for a white-edged variety, staging Acme; he also was placed second. The best self was shown by Mr. J. Douglas, who staged a fine example of the Mikado, and second with Peggy Gibson; Mr. Shipman third with Mrs. Phillips.

In the class for four show varieties Mr. J. L. Gibson was the only exhibitor, and received the first prize with very fair examples for an amateur.

For twenty-four plants in the alpine section, not less than twelve varieties, Mr. Jas. Douglas secured the premier award with fine plants of Roxburgh, Prince of Tyre, Muriel, Prince Arthur, Golden Eagle, Mrs. J. Douglas, Claude Halcroft, Robert Bruce, Duke of York, and Majestic, as the best examples; but as the labels were evidently not in a position for reading readily, some had to be passed because the names could not be seen. Messrs. Phillips and Taylor were second, having excellent examples of Majestic, Her Grace, Mrs. M. R. Smith, The Idol, Argus, and quite a number of seedlings. Mr. W. M. Shipman was third with some fine plants of Commander, Majestic, Exquisite, Duke of York, Dean Hole, and Mars.

Mr. Jas. Douglas was first again for twelve alpine varieties, having splendid examples of Blue Jay, Prince of Tyre, Argus, Roxburgh, Phyllis Douglas, Robert Bruce, and Muriel. Mr. W. M. Shipman followed with Dean Hole, Majestic, Bluebell, Duke of York, Ilene, Sunrise, and some seedlings. Messrs. Phillips and Taylor were third.

In the section for small growers, Mr. F. W. Price won first prize for six plants with a good half dozen, his best being Argus, Muriel, and Phyllis Douglas; Mr. J. G. Baxter, Beckenham, followed with weaker plants. The class for four varieties was well contested, Mr. F. W. Price carrying off the first honours again with good examples of Phyllis Douglas and Argus; Mr. W. G. Langlands was a good second, and Mr. J. Dupuy, Ilford, third.

Mr. Jas. Douglas was placed first for a single plant with gold centre, with a fine specimen of Muriel, amongst twelve competitors. Mr. F. W. Price won the first place with Phyllis Douglas for a white-centred variety; Mr. J. Douglas being second with Prince of Tyre.

Mr. G. E. W. Herbert, Streatham, won the first prize for six varieties in the novices' class, while Mr. J. L. Gibson had the best six plants in this section, having good examples of Flora M'Ivor, Ulleswater, and Duke of York. Mr. J. Dupuy was a capital second.

The premier show auricula was staged by Mr. Jas. Douglas, the variety Victor, a rich crimson. The premier alpine variety was Mars, staged by Messrs. Phillips and Taylor; while the Jas. Douglas memorial cup was awarded Mr. W. M. Shipman.

Messrs. Jas. Veitch and Sons, Chelsea, staged a nice collection of auriculas, which embraced all sections of the flower. The plants were well grown, and the flowers just right for the date of the show. Primula Unique was also in very fine form, and attracted much attention. From Messrs. Phillips and Taylor, Bracknell, came a nice exhibit of auriculas, chiefly of the alpine type, which were in fine condition; also a box of Primula Sieboldi, making a pleasing combination.

## Royal Horticultural Society.

(Continued from page 354.)

MEDALS.

Gold.—To Messrs. Sutton and Sons, Reading, for early vegetables and salading; to Messrs. George Mount and Sons, Canterbury, for roses.

Silver-gilt Flora.—To Messrs. Sutton and Sons, Reading, for tulips; to Sir Randolf Baker, Bart., M.P., Ranston, Blandford (gardener, Mr. A. E. Usher), for tulips.

Silver-gilt Banksian.—To Messrs. Barr and Sons, Covent Garden, for tulips; to Messrs. R. Wallace and Co., Colchester, for tulips; to Messrs. Wm. Cutbush and Son, Highgate, for shrubs and carnations; to Messrs. Pipers, Bayswater, for a walled and paved garden.

Silver Flora.—To Messrs. Dobbie and Co., Edinburgh, for sweet peas; to Messrs. H. B. May and Sons, Edmonton, for hydrangeas; to Messrs. John Waterer and Sons, Bagshot, for Rhododendrons Pink Pearl; to Mrs. Lloyd Edwards, Llangollen, for saxifragas; to Messrs. R. H. Bath, Wisbech, for tulips; to Mr. H. A. Tracey, Twickenham, for orchids.

Silver Banksian.—To Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Messrs. Charlesworth and Co., Hayward's Heath, for orchids; to Messrs. J. and A. McBean, Cooksbridge, for orchids; to Messrs. Cartwright and Goodwin, Kidderminster, for tulips; to Mr. C. W. Breadmore, Winchester, for sweet peas; to Mr. H. Burnett, Guernsey, for carnations; to Messrs. F. Cant and Co., Colchester, for roses; to Mr. C. Elliott, Stevenage, for alpine plants; to

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Bronze Banksian.—To Messrs. Barr and Sons, Covent Garden, for a rock garden; to Messrs. H. Cannell and Sons, Swanley, for pelargoniums; to Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. J. Cheal and Sons, Crawley, for shrubs, etc.; to Messrs. G. and A. Clark, Dover, for hardy flowers; to Mr. M. Prichard, Christchurch, for rock garden; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; and to Messrs. Hassall and Co., Southgate, for orchids.

## GARDENING ENGAGEMENTS.

Mr. John M'Culloch, for ten years gardener to the late Colonel Morison, Mountblairy, has been appointed gardener to Major Lloyd, Leaton, Knowles, Shrewsbury.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. APRIL 21 TO APRIL 27. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Apr. 21—Sunday ...... | 11 6 | 56 | 50 | 70 | 35 |
| ,, 22—Monday ...... | 12 0 | 58 | 52 | 68 | 37 |
| ,, 23—Tuesday...... | 12 30 | 56 | 51 | 66 | 41 |
| ,, 24—Wednesday.. | 11 48 | 55 | 49 | 65 | 39 |
| ,, 25—Thursday.... | 12 24 | 52 | 48 | 61 | 37 |
| ,, 26—Friday........ | 7 0 | 45 | 43 | 62 | 38 |
| ,, 27—Saturday..... | 7 18 | 46 | 44 | 60 | 43 |
| Means | (total) 74 6 | 52 | 48 | 65 | 39 |

| DATE. 1912. APRIL 21 TO APRIL 27. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Apr. 21—Sunday ...... | — | 50 | 49 | 48 | 26 |
| ,, 22—Monday ...... | — | 50 | 50 | 49 | 24 |
| ,, 23—Tuesday...... | — | 51 | 50 | 49 | 26 |
| ,, 24—Wednesday.. | — | 51 | 50 | 49 | 27 |
| ,, 25—Thursday.... | — | 51 | 51 | 49 | 23 |
| ,, 26—Friday........ | — | 52 | 51 | 49 | 26 |
| ,, 27—Saturday .... | — | 52 | 51 | 50 | 34 |
| Means ... | (total) — | 51 | 50 | 49 | 26 |

## FORTHCOMING ENGAGEMENTS.

SATURDAY, May 4.—French Horticultural Society of London.

North of England Horticultural Society; Conference on "Horticulture in Secondary Schools and Farm Institutes," at Newcastle.

TUESDAY, May 7.—Scottish Horticultural Association.

WEDNESDAY, May 8.—East Anglian Horticultural Club.

Royal Society of Arts.

Royal Gardeners' Orphan Fund Festival Dinner at the Hotel Cecil, 7 p.m.; Sir E. Durning Lawrence, Bart., will preside.

MONDAY, May 13.—United Horticultural Benefit and Provident Society.

TUESDAY, May 14.—Royal Horticultural Society; Committees meet at 12 o'clock; Master's Memorial Lecture at 3 p.m. on "Gardening and Drought," by Professor J. Bayley Balfour, F.R.S., V.M.H.; Scientific Committee at 4 o'clock.

National Tulip Society's Exhibition at the Royal Horticultural Hall.

Devon County Show at Plymouth.

WEDNESDAY, May 15.—North of England Horticultural Society, at Leeds.

THURSDAY, May 16.—Manchester and North of England Horticultural Society.

MONDAY, May 20.—National Rose Society, Conference at the Holborn Restaurant at 5 p.m.; dinner to foreign Rosarians at 7 p.m.

## ANSWERS TO CORRESPONDENTS.

HIBISCUS CULTURE.—Sussex: Please tell me whether the hibiscus is a stove or greenhouse plant, and give me a few hints as to its cultivation. I enclose specimen.—We much regret our inability to help you. The little portion of a leaf sent was quite useless for purposes of identification, though it suggests you have an exceedingly high opinion of our powers in this direction. If you will send us a good specimen, properly packed we will do out best to identify it, and then help you in the matter of cultivation, but it is a waste of your time and ours to send totally inadequate specimens.

HARDINESS OF THE WATER HAWTHORN.—R. C. R., Leighton Buzzard: Please tell me whether the water hawthorn would prove to be quite hardy in the Leighton district of Buckinghamshire? I have profited greatly by the excellent articles on rock and water gardening that have appeared in your pages from time to time, and have been led thereby to add some distinct and interesting features to my garden.—The water hawthorn (Aponogeton distachyon) should prove quite hardy in your district; indeed, it is only in exposed positions much farther north, where very severe frosts are experienced, that it fails to survive the winter. Although it will grow in deeper water, it is advisable to plant it where the depth ranges from 1ft. to 3ft. It is a charming aquatic, its white, hawthorn-scented flowers being very pretty and produced over a very long season. You cannot do wrong in adding Aponogeton distachyon to your list of hardy aquatics.

POINSETTIAS.—P. T., Leicester: When is the best time to start poinsettias into growth for the provision of cuttings?—Remove the old plants from their resting quarters at once, see that they are quite clean, and then place them in an intermediate house, where, under the influence of good light and frequent syringings, they will soon commence to grow. When the new shoots are large enough for cuttings, remove them with a little heel of old wood, and immediately put them into a bowl of fine dry sand, to prevent excessive bleeding. Put the cuttings singly in small pots, in sandy soil, and plunge over brisk bottom heat; if shaded and kept evenly moist they will soon root freely.

LIFE—THE GIFT.—M. E., Swanley: You will very greatly oblige several of your lady readers by quoting in your "Answers" column the inscription on the stone seat in the Kew Arboretum. The seat I refer to is one presented to Kew a few years ago by a number of past and present students of the College for Working Women, in memory of the late Miss Cassell, who for twenty years was superintendent of the college.—There is not time to verify the quotation at the moment of going to press, but we believe it reads: "Life—the Gift. Let us take hands and help this day we are alive together. Look up on high and thank the God of all."

BOTTLES FOR FRUIT BOTTLING.—M. J. L., Malling: I propose to bottle a fair stock of fruit for home use this season, and shall be glad if you can give me any information as to the best style of bottle to use.—Wide-mouthed bottles specially made for fruit-bottling may be obtained through almost any hardware dealer at from 3s. to 6s. 6d. per dozen complete, the price varying with the size and quality of the bottles. Many persons have a decided preference for bottles with glass tops instead of metal tops, and some like the "screw" tops; whilst others prefer the bottles whose tops, covers, or discs are held in position by "spring" clips. When counting the cost of the process of bottling it is well to remember that the same bottles, when once obtained, may be used repeatedly until broken; the chief renewals required are rubber rings, which are used with bottles for rendering them airtight. It is absolutely essential that the bottles should be air-tight. An imperfectly-fitting rubber ring or cover may be sufficient to cause failure after perfect sterilisation; the rings and covers must, therefore, fit perfectly. As this cannot always be guaranteed, there will be an occasional bottle which will not be successful. We have a decided preference for bottles that have a glass top which is held in position by metal caps that are screwed down by means of a thread on the neck of the bottle.

CLIMBERS FOR AN INTERMEDIATE HOUSE.—C. T. T., Ludlow: Will you kindly give me the names of a few useful climbers for an intermediate house of large size?—Suitable subjects are Clerodendron Thompsonæ, Allamanda magnifica, Aristolochia elegans, Thunbergia fragrans, Passiflora racemosa, Stigmaphyllon ciliatum, and Hibbertia dentata.

RHODODENDRON LUSCOMBEI.—S. C. H., Swanage: Is Rhododendron Luscombei a species or a hybrid? It is now in full bloom, but not flowering quite so well as usual. A friend tells me it is a hybrid; I have always considered it an introduced species.—Rhododendron Luscombei is a hybrid raised by Mr. Luscombe about 1880, and the parents are R. Fortunei and R. Thompsoni.

"COUCH" OR "TWITCH."—R. S., Bedford.—A weedy persistent grass, with whitish runners, is rarely absent from one part of my garden. It is, alas, all too common in many gardens and farms, and very well known as "couch" or "twitch." Please tell me the name of it and the best means of extermination.—The terms "couch," "twitch," "scutch," "squitch, "whickens," and "quack grass" are often applied by farmers in a general sense to several perennial weed grasses which creep on or below the surface of the soil. Three species of grass are commonly known by the name "couch": (1) True "couch" or "twitch" (Agropyrum repens, Beauv.; Triticum repens, L.). (2) Black "twitch" or common bent grass (Agrostis vulgaris, With.). (3) Onion "couch" (Arrhenatherum avenaceum, Beauv. var. bulbosum, Lindl.). These are amongst

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VERY LATEST
AND BEST IN
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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

COWMAN, life experience with Jerseys and Shorthorns; good clean milker; excellent references; highly recommended by bailiff; four years past, one present place; willing to be useful; help in garden; abstainer; wife could assist in house or attend to Bothy; no family; age 40. J. POTTER, Home Farm, Ripple Hall, Tewkesbury.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

E. VENTIN, Gardener to A. D. SELKIRK, Esq., can with every confidence recommend Young Man, age 18, as JOURNEYMAN, or IMPROVER in good establishment; disengaged. J. EATON, Government Lodge, Clewer, near Windsor.

ELECTRICIAN wants SITUATION; Gas and Oil Engines; own repairs; married; well recommended; and fill up spare time in Garden. Apply E. COOK, Debden Hall, Loughton, Essex.

FOREMAN (Inside), 14 years' experience in Fruit and Plants, Carnations, Chrysanthemums, and Decorating; excellent references; previously at Kilruddery, Ireland; Highclere Castle, Chilton Lodge, and The Grange; age 28. F. FISHER, Earnock Gardens, Hamilton, Scotland.

GARDENER (Head of three or more); life experience in all branches Inside and Out; excellent references; age 32. G. GRICE, The Gardens, Combermere Abbey, Whitchurch, Salop.

GARDENER (Head, or good Single-handed), life experience in Vine, Melon, Cu.'s, Tom.'s, Chrys., greenhouse, and general kitchen garden work; married; age 28; good references. H. STONEHAM, 2, Old Lodge Cottage, Purley, Surrey.

GARDENER seeks RE-ENGAGEMENT, Single-handed or otherwise, fully experienced, both Inside and Out; accustomed to both large and small gardens; highly recommended, and good characters; disengaged when suited; single. Apply 2,494, Office of this Journal.

GARDENER (age 30) desires SITUATION; good knowledge Inside and Out; 7 years in present situation. Apply E. COX, Bilton Hill, Rugby.

GARDENER (Single-handed, or were help is given); life experience in all branches of gardening; references from past employers. A. W. MEECH, Northfleet, Menton Road, Parkstone.

GARDENER (Head Working, where three or more are kept). Highly recommended by last employer. Life experience in all branches. LEWIS, Salle, Norwich.

GARDENER. — MR. HIGGIE, Stanwick Park, Darlington, highly recommends E. SMITH, who has been General Foreman 9 years, to any Lady or Gentleman requiring Head; experienced in all branches, Inside and Out; age 33. Address, Stanwick Park, Darlington.

GARDENER seeks RE-ENGAGEMENT, Single-handed or with help; life experience, gained in good places; first-class grower, Inside and Out; hard worker and willing to make himself useful if required; highest refs.; age 26; Single. Full particulars to E. G. BETTON, 3, Orchard Terrace, Nursery Road, Old Southgate, N.

GARDENER (Single-handed, or where two are kept); eight years' experience in Flowers, Vegetables, and Pleasure Grounds; five years' last place; good testimonials; age 22; abstainer.—GEORGE DUFFELL, 2, Orchard Road, Dorking.

GARDENER (Second, or Single-handed), 7½ years' experience in Vines, Cucumbers, Melons, Peaches, Plants, etc.; excellent references; single; age 25; London suburbs preferred. J. STEPTOE, Queen's Road, Marlow, Bucks.

GARDENER (Head); life experience in all branches of the profession; also the Management of Estate, Animals, Woods, etc.; 5½ years in present situation; highly recommended by present and previous employers; age 38; married. W. MOORE, The Gardens, Dornden, Tunbridge Wells.

GARDENER (Single-handed or with assistance).—Mr. F. W. HUXLEY, Limpsfield Grange, Limpsfield, Surrey, will be pleased to recommend J. SEARS, who has been with him nearly three years; age 28; married when suited.

GENTLEMAN wishes to recommend his late GARDENER, with him 4 years as Groom-Gardener, with good refs.; Single; disengaged. Write, stating wages, to T. HARLAND, Black Boys, Sussex.

JOURNEYMAN.—MR. PODMORE, The Manor Gardens, Little Berkhamsted, Hertford, will be pleased to recommend a Man age 22, steady and reliable; near London preferred.

JOURNEYMAN, Second (Inside, or Inside and Out); age 22; 7 years' general experience; good character; abstainer; leaving, no fault. Stopps, Orsett Hall Gardens, Grays, Essex.

MR. HANCOCK, Head Gardener to the late Miss Campbell, wishes to recommend J. FLACK (16) as Under Gardener; strong, willing, and anxious to learn. Leaving through the death of employer. Wimbledon district preferred. Address, J. FLACK, Coombe Nevile Gardens, Kingston-on-Thames.

MR. R. LEWIS would be pleased to recommend J. SYMONS as Second (Inside and Out); three years present place; age 28; single. The Gardens, Bystock, Exmouth.

MR. APLIN, late of Hasfield Court Gardens, highly recommends A. STRAWFORD, age 22, as UNDER GARDENER (Inside and Out); was with him 8 years. Address, Mr. APLIN, Haw Farm, Apperley, Tewkesbury.

MR. J. R. SMITH wishes to recommend M. FISHENDEN as Improver; Inside or Inside and Out; age 17; 2 years' good experience; Bothy preferred. Bedgebury Gardens, Goudhurst, Kent.

MR. PODMORE, The Manor Gardens, Little Berkhamsted, Hertford, wishes to recommend a strong healthy Youth, age 20, as Improver; Bothy preferred; abstainer.

SIR CHARLES ROSE, Bart., M.P., wishes to highly recommend F. ELKINS as Gardener (Head Working or good Second); age 28; married. Hardwick House, Pangbourne.

SITUATION WANTED for general garden work; 2 years' experience; age 19; good reference. G. WILLIS, Great Burstead, near Billericay, Essex.

SITUATION required as JOURNEYMAN (Inside); 3½ years' experience; good references. Apply, OWEN PRITCHARD, Bryn Hyfryd, Criccieth.

THE RIGHT HON. LADY BROUGHAM and VAUX and her Head Gardener, Mr. AUTON, can with confidence recommend their Foreman, F. MUTIMER, to any lady or gentleman wanting a thoroughly competent man as GARDENER (Head Working); 14 years' experience gained in good places; 2½ years here where Orchids and Malmaisons are specialities; age 28; married when suited. MUTIMER, Brougham Gardens, Penrith.

W. MORRIS, Esq., The Dingle, Sydenham Hill, S.E., highly recommends his Gardener as good Single-handed; life experience Inside and Out; age 24; excellent references; married when suited; country preferred; distance no object. CULVER, 17, Peak Hill Gardens, Sydenham, London.

## Situations Vacant.

WANTED, as Head Working GARDENER, unmarried Man, keenly interested in his profession, especially outdoor work, shrubs, perennials, alpines; one with an eye for decorative effect preferred; good vegetable cropper, able supply continuous succession well-grown plants for house from two small glasshouses; two other men kept for lawns and vegetable garden. Address, with full particulars, age, and work in present and previous places, and wages received, to Box 309, c/o R. F. White and Son, 33, Fleet Street, E.C.

WANTED, strong healthy MAN, not under 5ft. 10in., age about 25, able to lift invalid lady; abstainer, with good character essential; write particulars to MR. PODMORE, Manor Gardens, Little Berkhamsted, Hertford.

## SITUATION COUPON

*To the Advertisement Manager of* "The Gardeners' Magazine,"
*148 & 149, Aldersgate Street, London, E.C.*

**For MAY 11, 1912.**

**Please Repeat my Advertisement.**

Name..............................................

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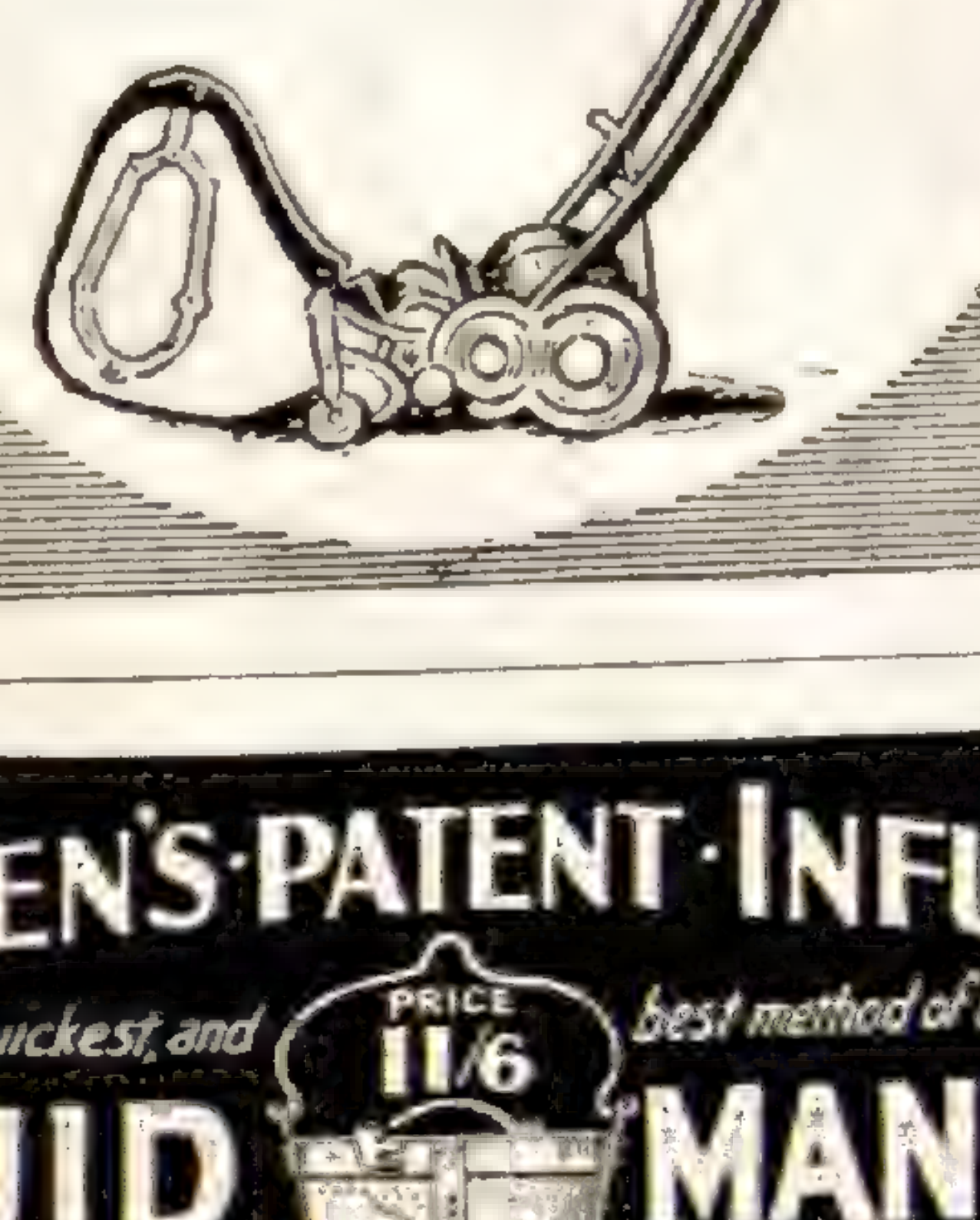

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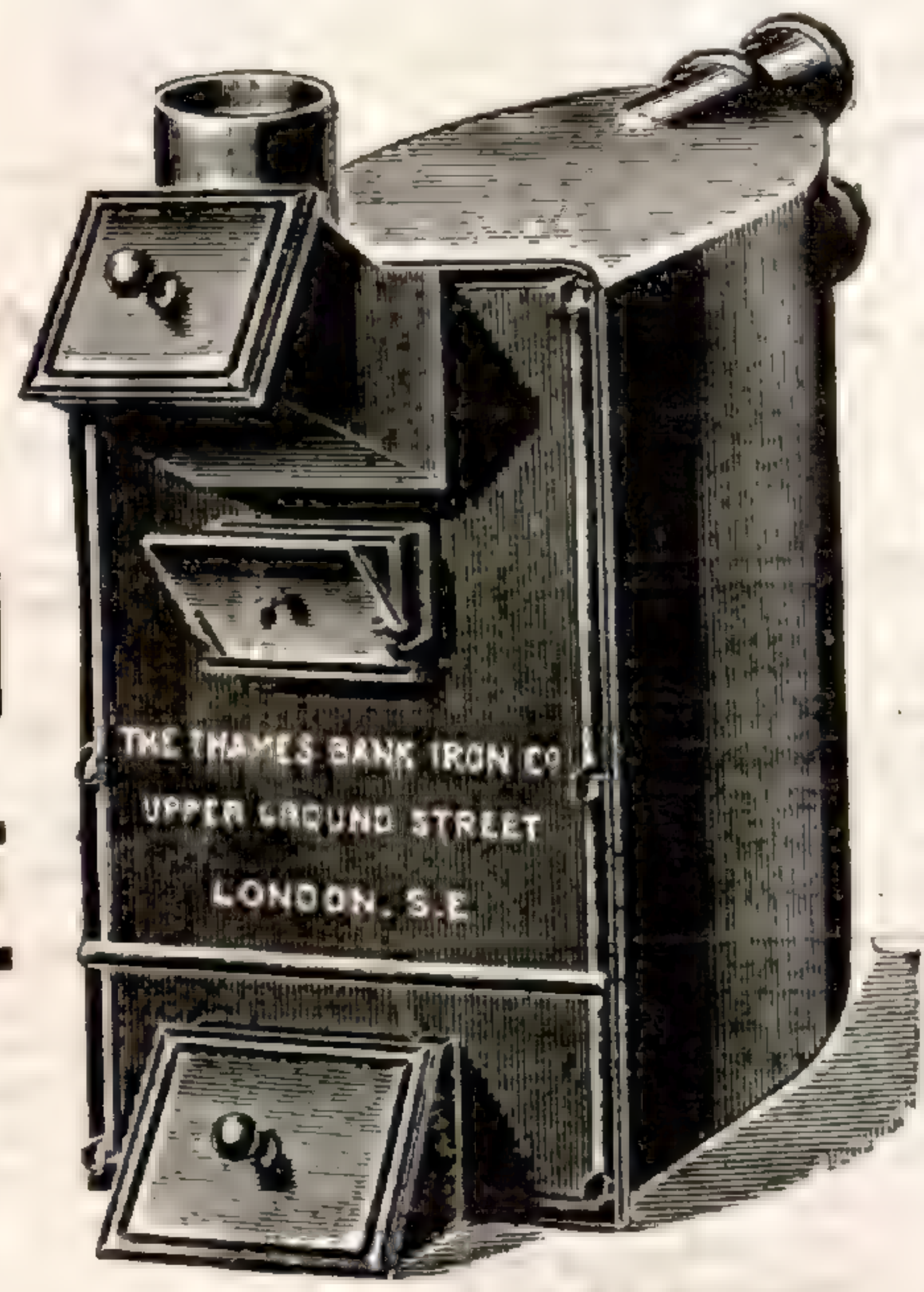

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**Heating Powers, 80 to 250 ft. of 4 in. pipe.**

**Write for Particulars.**

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**STOCK SIZES IN INCHES.**

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**GLASS CLOCHES FOR INTENSIVE CULTIVATION**
DELIVERED FREE AND SOUND.

**Manufacturers of PAINT, PUTTY, &c.**
Complete Price List on application.

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**ONCE USED. ALWAYS USED.** **The 'PATTISSON' LAWN BOOTS**

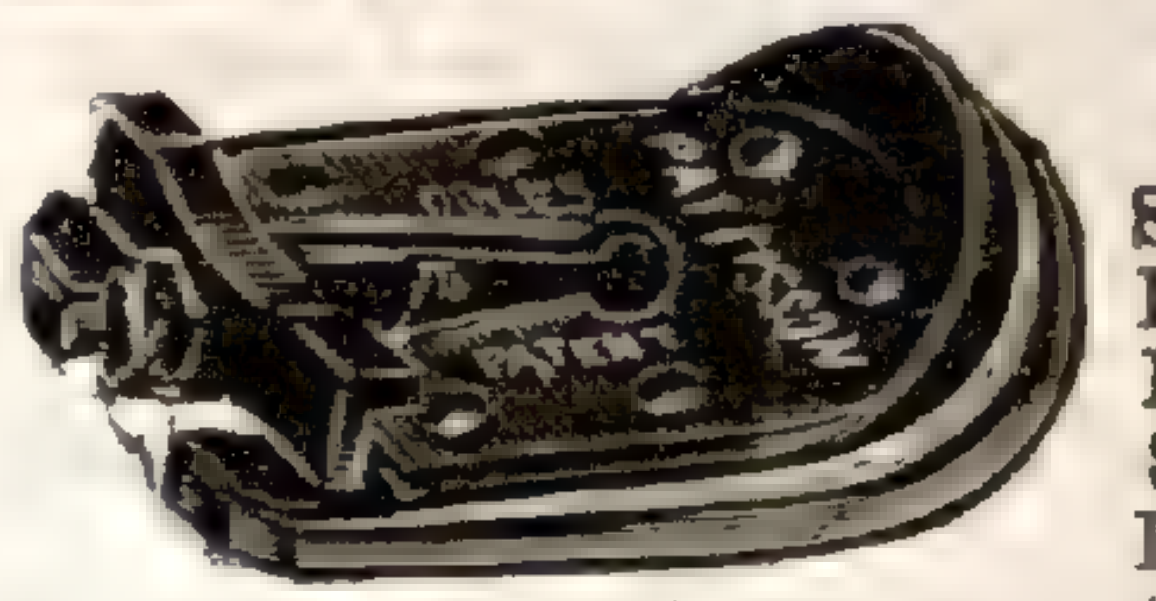

FIG. 1.

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Soles of Best English Sole Leather (Waterproofed) with Motor Tyre Rubber Studs or Solid Rubber. Fig. 1 can be REFITTED repeatedly, equal to New Boots. Rubber Soles strongly recommended.

**Used in the ROYAL and in thousands of the PRINCIPAL GARDENS**

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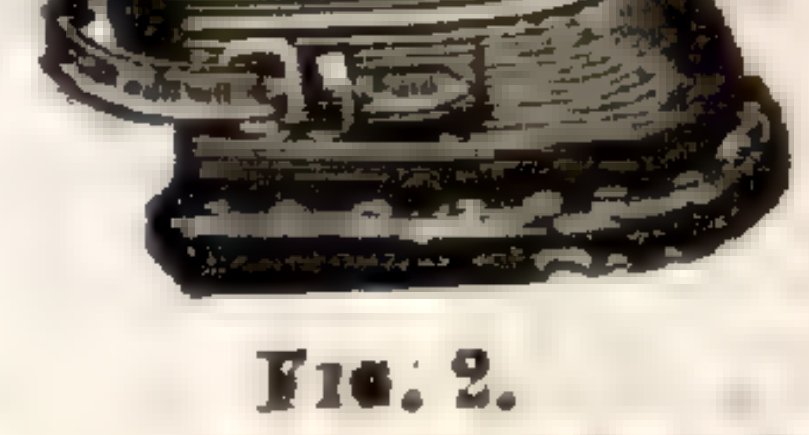

FIG. 2.

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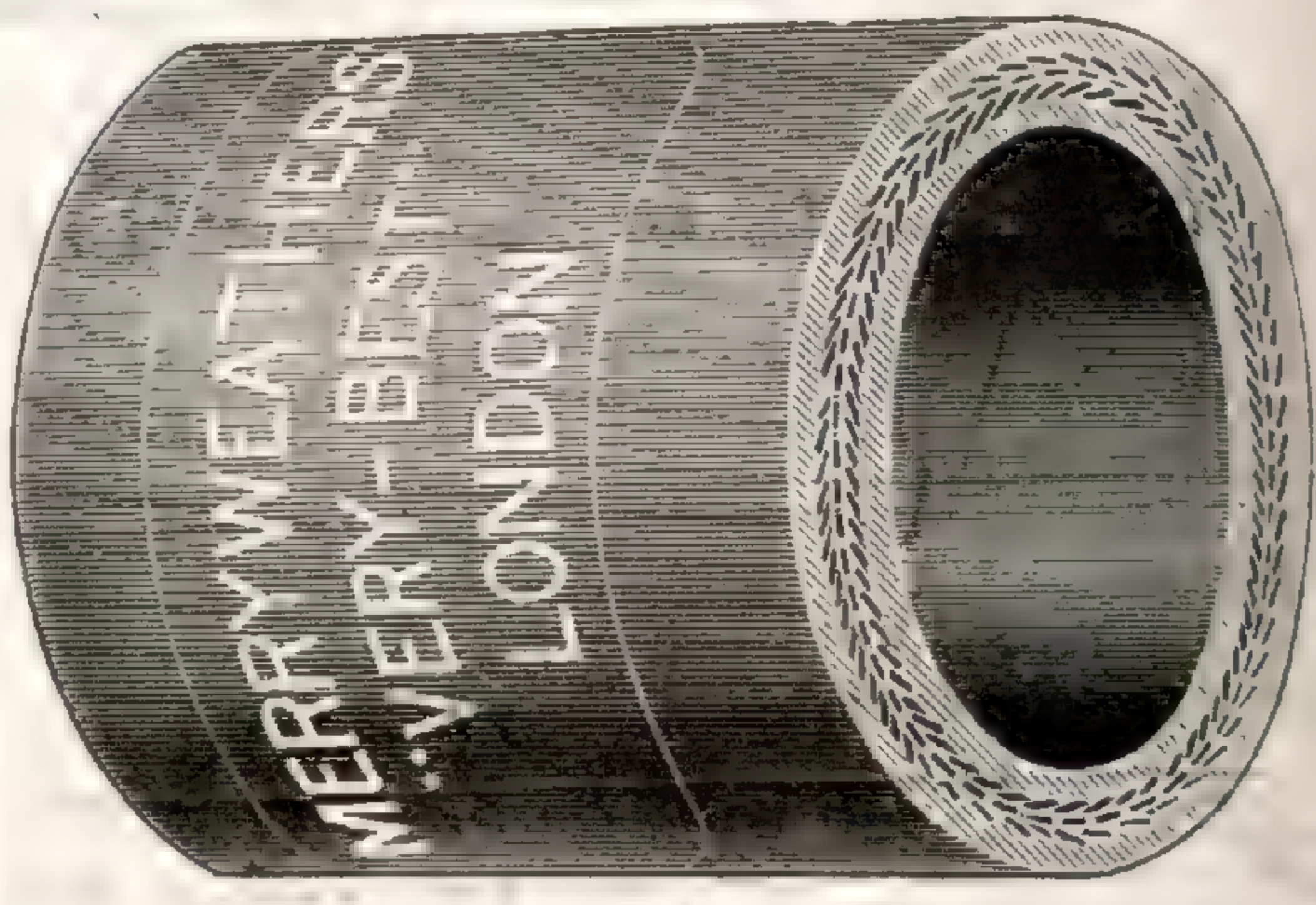
**"VERY BEST"** REGD.

## Watering Hose

FOR GARDENS, LAWNS, &c.



Made on the lines of Fire Engine hose, therefore good for hard wear and long life. Customers find it good after 10 years' use.

*Beware of cheap and flimsy imitations.*

Write Merryweathers', 63, Long Acre, London, W.C.

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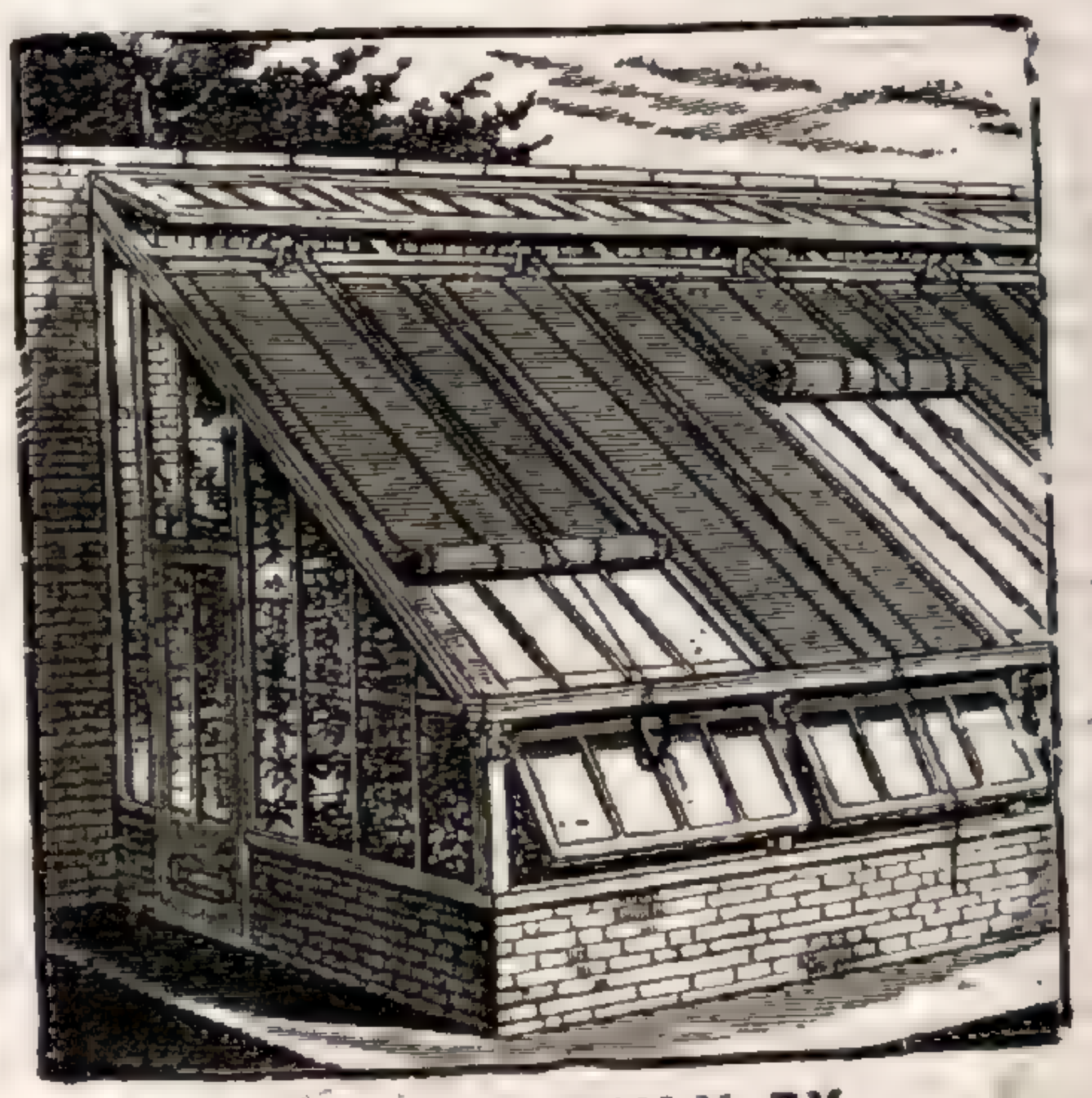
MOST DURABLE OUTSIDE SHADING.



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# THE GARDENERS' MAGAZINE.

No. 3.054. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.) SATURDAY, MAY 11. 1912. (10/6 per Ann. Post Free. To Foreign Countries, 15/-.) **Twopence.**

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JAMES GRAY, LTD., HORTICULTURAL BUILDER, CHELSEA, S.W., is arranging this spring for a large selection of BLINDS for Conservatories, Greenhouses, Private Houses, Verandahs, etc., and will be happy to send samples, prints, and prices on receipt of postcard. Telephone call (201 Western), letter or wire, "Gray, Chelsea, London."

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CONSIGNMENTS ARRIVE FORTNIGHTLY.
2s. 6d. per bushel; per bag, 8s. 6d.
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WEBBS' Canary Bird (golden-yellow).
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For Present Planting.

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CLAY'S MANURES, CRUSHED BONES
(See page iv.)

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CACTI.—CATALOGUE OF CACTI, and CARNIVOROUS PLANTS, 47 pages, 159 Illustrations, post free, 6d., which is allowed off first order. List of Gold Medal Collection of Ferns free. Five Gold Medals awarded 1911. ELLISON, 57, West Bromwich.

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THOMSON'S CELEBRATED MANURES.
(For full particulars see page v.)

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PERPETUAL CARNATIONS.
Our 1912 Illustrated Catalogue free.
Read our "Cultural Treatise," 1s.
YOUNG and CO., Carnation Specialists,
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SELECT YOUR ALPINES IN FLOWER.
A large collection in pots, also Aquatics, for present planting.
Visitors cordially welcomed.

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SUTTON'S FIRE KING.
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CLOTH OF GOLD.
per packet, 6d. and 1s.

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SUTTON'S GIANT DOUBLE DAISY.
Giant White, Giant Pink, and Giant Mixed. each per packet, 1s. 6d.

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"Your plants have all done so wonderfully well in my small and smutty garden that I am anxious for your advice as to which of the following climbers will be suitable for the front wall of my house."

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NOW IS THE TIME TO PLANT KELWAY'S NEWEST GLADIOLI.—These new Gladioli are a revelation. They should be planted by all who want glowing effect of colour in their beds and borders, and flowers for the house in July, August, and September. We recommend trial of a selection of our "Cream of the World" Collection of named varieties, flowering bulbs, for instance, one dozen for 9s.; per 100 £3 10s. Other choice collections, 30s. and 45s. per 100. Full descriptive list on application. Postage free for remittance with order.
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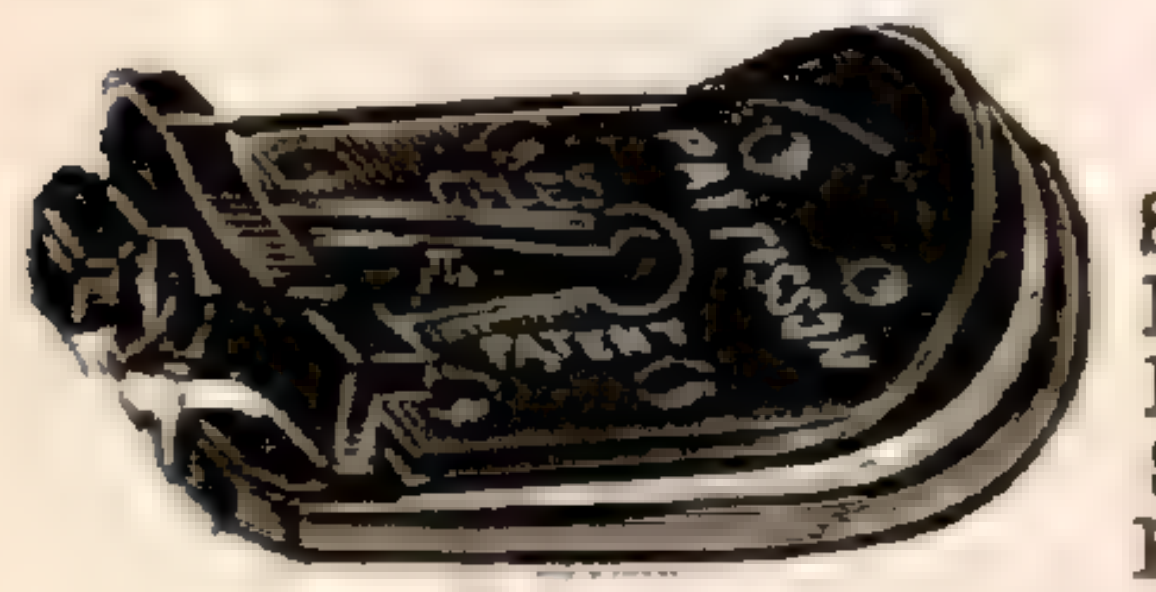
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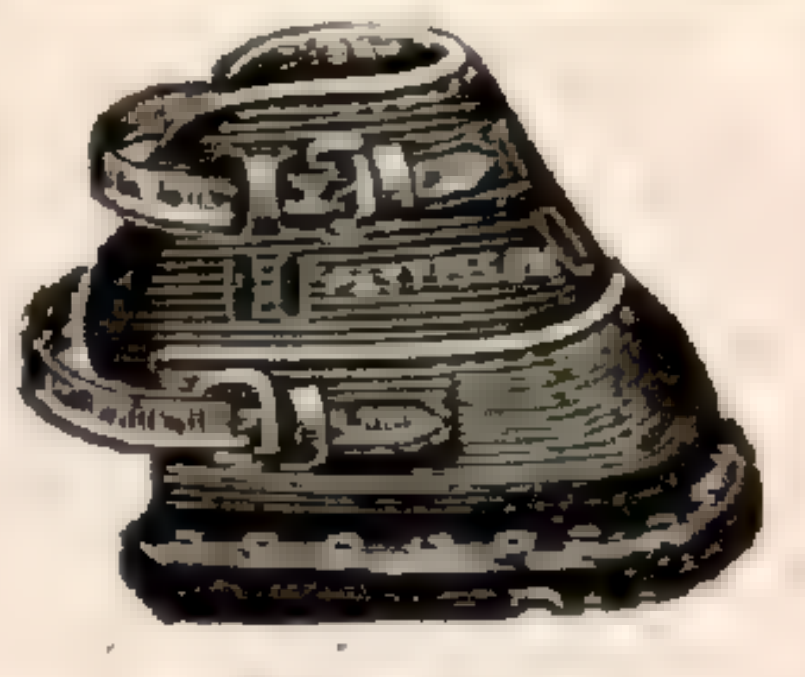
Fig. 2.

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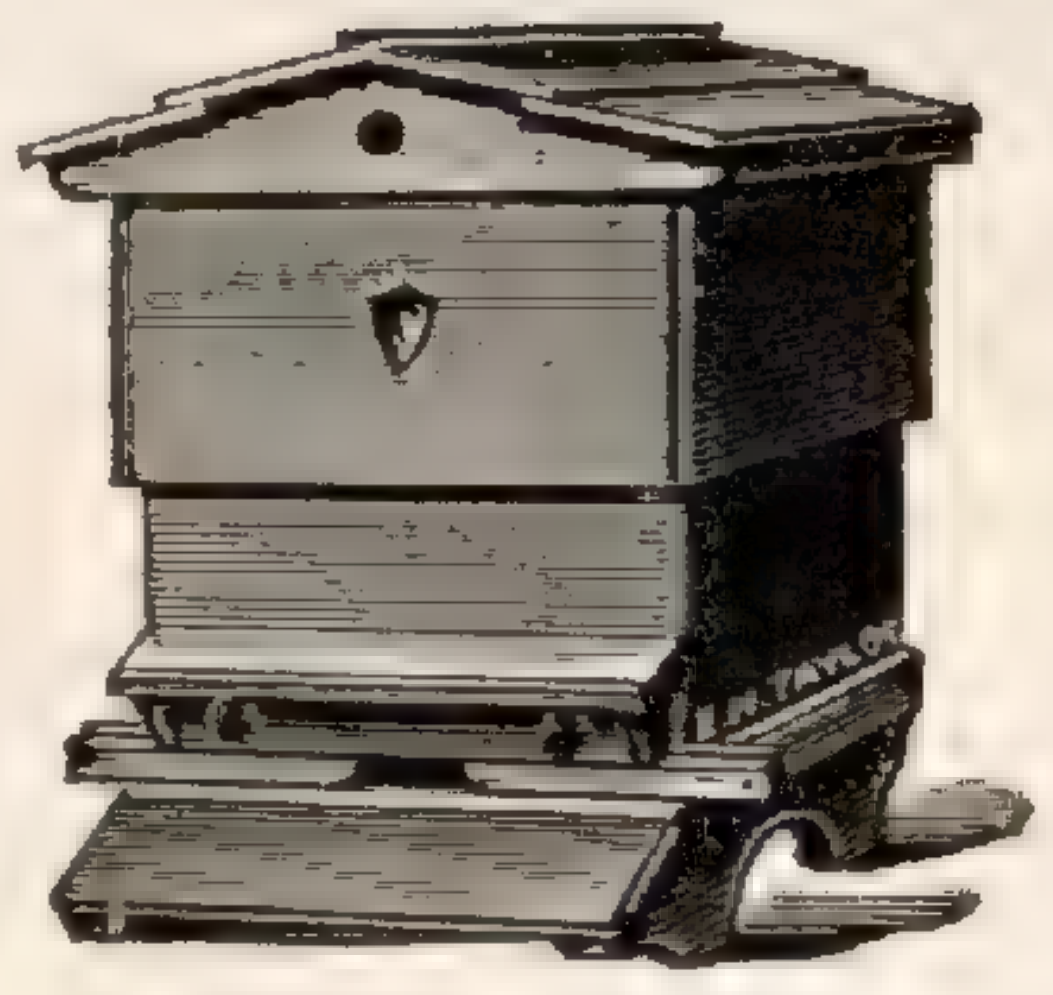

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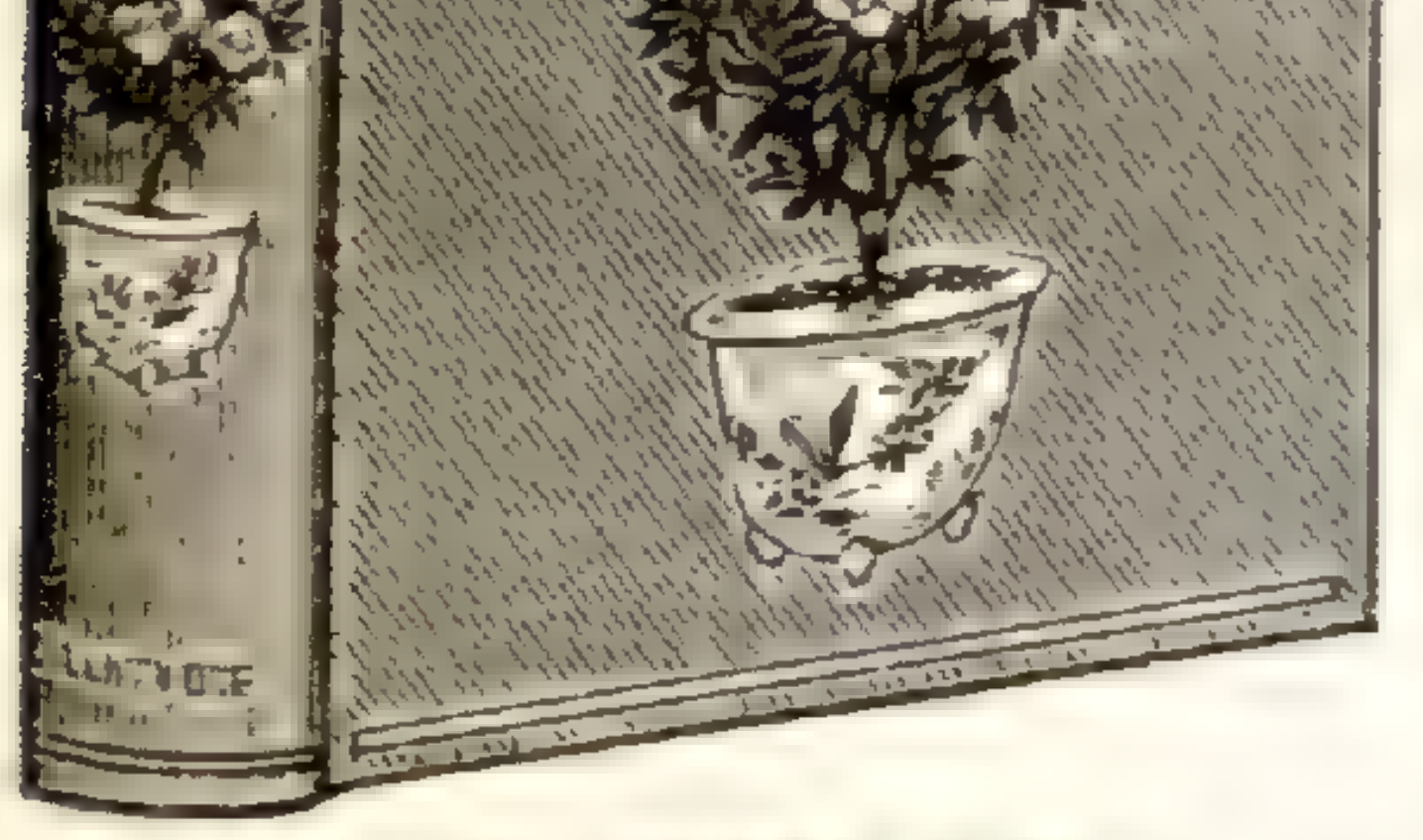

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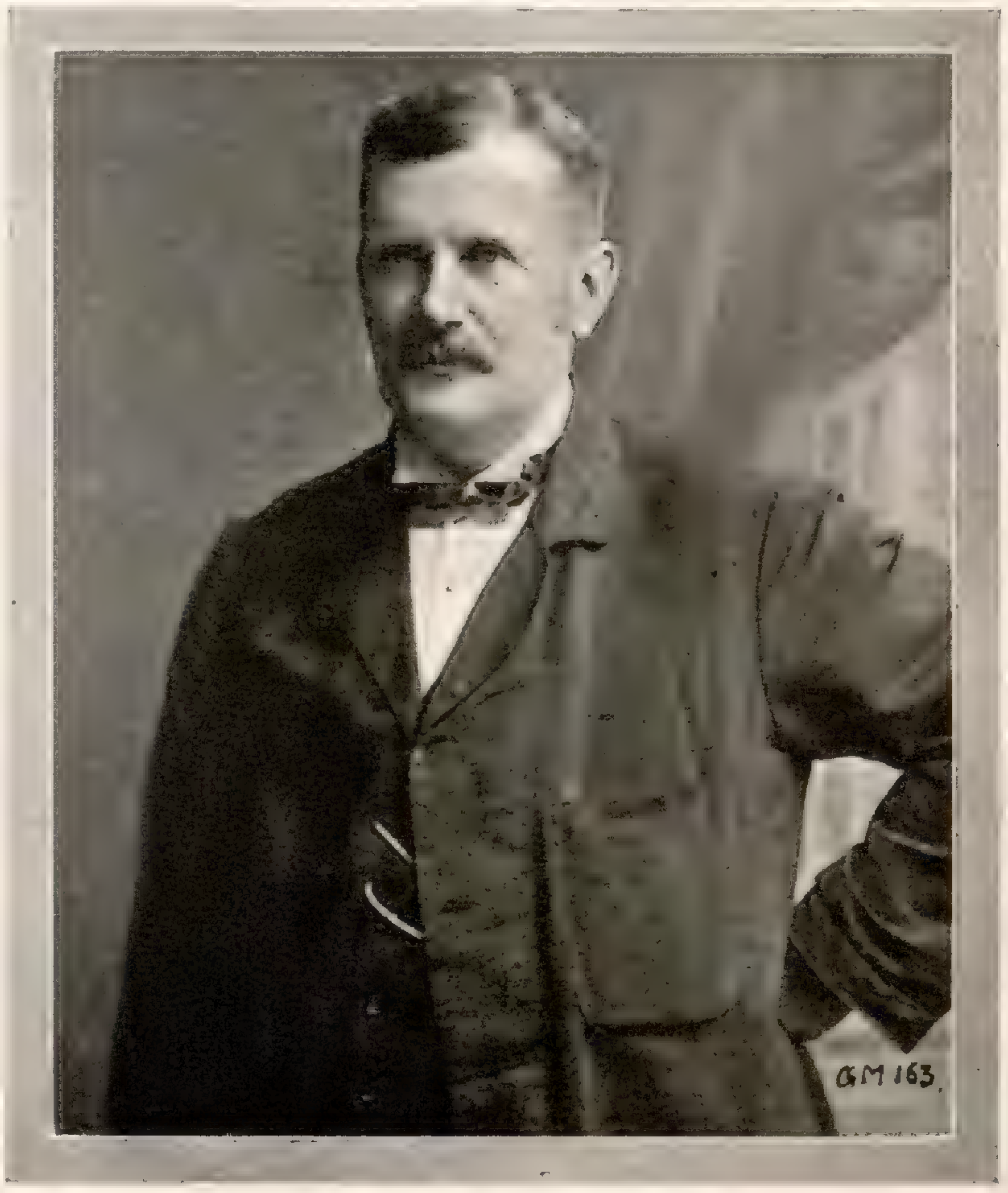
VOL. LV.—No. 3,054. SATURDAY, MAY 11, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Fern Spore.

When we consider the wonderful diversity of form, and especially of size, exhibited by the existing ferns of the world, ranging as they do from minute grass-like tufts to noble growths, scores of feet in height, borne on substantial trunks and crowned by wide-spreading plumes which rival the boldest palms with their spreading verdure, it is curious to consider that one and all can be engendered from a spore of such minute dimensions as to be individually all but invisible to the unaided eye. In flowering plants we find great diversity in the size of the seed, ranging from very tiny seeds to huge specimens as large or larger than a man's head, such as we see in the immense nut of the Seychelles cocoa palm, but in the fern tribe the spore is always minute, and its size is quite independent of that of the parent fern, the spore, for instance, of our comparatively small Polypodium vulgare being several times as large as that of an Alsophila Canthia Dicksonia, or other tree or trunk-forming fern capable of assuming imposing dimensions. Naturally, however, this difference in size between, say, the huge cocoa nuts and the minute fern spore, involves a great handicap to the latter in the initial stages of existence. The nut, in addition to the fertilised germ it contains, holds also such an immense store of nourishment within its adamantine shell, that its first product is a vigorous root, and this is followed by a huge pinnate primary leaf some feet in length and expanse; in fact, a very robust plant, capable of holding its own from the outset. With the spore, however, it is quite otherwise. Its first growth is all but as microscopic as itself, the eye can only perceive a minute green speck, which is at the mercy of every shower or other disturbing or destroying factor, and obviously must in a million, or rather many millions, of cases to one, fall a prey to some catastrophe, since otherwise the world would be overrun with ferns, and ferns alone. This tiny speck, if it survives to do so, is capable of expanding into a larger growth, little larger, however, than a herring scale, and this in time will bear upon its under side the equivalents of flowers and seed, and through these will reproduce the parental form. Minuteness, however, still prevails, the fern fronds are, perhaps, but half an inch high, the next an inch, and so on in slow progression, so that, as a rule, a robust, thoroughly established plant of full size, even minus a trunk, which is a growth of many years, requires a year or two at least for its development, usually several. During this period, it has, of course, to carry on the struggle for existence in competition with its fellows and with all the other vegetation which invades its habitat, so that even when the risks of the first infantine stage are survived, it is by no means assured of reaching the full specific size. Under natural conditions, millions, as we have said, come to grief for every one which survives, and this leads us to the question of the fertility in spore production which compensates for this waste. The number of spores produced by a large tree fern absolutely defies computation. On smaller ferns, such as a Lady fern, the annual crop has been reliably computed as over a thousand millions upon one plant, and anyone who has had the opportunity of examining the backs of the fronds of a tree fern with an immense crown of a score or more of fronds, ten to twelve feet long, and some feet wide, and has found the backs to be completely covered with tiny spore heaps, each heap representing, say, forty or fifty capsules, each containing as many spores, will speedily recognise the hopelessness of forming any definite idea of the multitude of spores which must be present. From a single such heap, carefully sown in sterilised soil, many scores of plants can be readily raised, a proof that, despite their numbers and profuseness, every spore is gifted with reproductive powers, and contains that precious nucleus enshrined within its tiny embryo cell, which, given the chance, can reproduce the parental form with all its character and peculiarities complete. We have used the word "waste" in this connection, but there is no true waste in Nature, for the vast majority of spores, to be devoid of perfection as regards the reproductive power, would be waste indeed, since when they fell on fertile ground, a chance would be lost, which now is eagerly seized upon, however vain in its ultimate result, owing to external handicaps. When we consider, too, that some of our finest coal consists mainly of the spores and spore cases shed from the ferns and fern allies of the carboniferous age, we obtain another glimpse of the non-existence of "waste" in Nature, as we warm ourselves in the genial glow of their combustion, and by that combustion restore once again to aerial circulation the carbonic acid which has been so long locked up and banked, as it were, for our benefit, and is now available for a fresh lease of vegetative life.



MR. G. CASELTON.

**Mr. G. Caselton** has for so long a period occupied a prominent position among the horticulturists whose activities are more or less closely associated with the Metropolis, that in presenting our readers with his portrait there is no occasion to refer otherwise than briefly to the work he has accomplished. As the superintendent of the horticultural department of the Crystal Palace, at Sydenham, he has contributed in a marked degree to the attractions of this well-known place of public resort, and as the manager of the flower shows he has, by his judgment, tact, and courtesy, added in no small degree to their success. It is now many years since Mr. Caselton succeeded the late Mr. W. Head in the position he now holds, and throughout the period he has annually been successful in providing displays of summer flowers that have given great pleasure to visitors, and reflected much credit upon himself. Recognising the trend of public taste in relation to the garden, Mr. Caselton adopted a much bolder style of arrangement than had previously predominated in the embellishment of the terraces and the more highly-dressed parts of the grounds, and the bold groups of dahlias, fuchsias, roses, phloxes, fine foliage plants, etc., are certainly better adapted to large areas than the style of bedding that was previously in vogue. Mr. Caselton is a member of the committee of the Royal Gardeners' Orphan Fund, and in the discharge of the duties in connection therewith, as in the other movements with which he is associated he evinces the same zeal and judgment as that displayed in his ordinary avocations.

**Certificates at the Royal International Horticultural Exhibition.**—Certificates and awards of merit will be awarded at the International horticultural exhibition, just as they usually are at the shows of the Royal Horticultural Society. An arrangement has been entered into between the Directors of the International and the Council of the Royal Horticultural Society, by which the latter society agrees to regard such awards granted at the International exhibition as the same as R.H.S. awards. Anyone showing plants for certificate must send their entries to Mr. A. J. Gaskell, R.H.S. Hall, Vincent Square, at least two days before the opening of the exhibition.

**Kew Guild Dinner.** The annual dinner of the Kew Guild will be held at the Holborn Restaurant in the Venetian Chamber, on Tuesday, May 28, at 7.30 p.m. The dinner will be preceded by the annual general meeting at 6.45 p.m. Lieut.-Colonel D. Prain, C.M.G., Director of the Royal Gardens, Kew, has kindly consented to preside at the dinner, and, as many Kewites from home and abroad will then be in London for the International Exhibition, there is every reason to anticipate a good gathering. Members who intend being present are asked to notify the Secretary, Mr. Herbert Cowley, South Side, Kew Green, as early as possible.

**R.H.S.'s New Inspector of Fellows' Gardens.**—The work of inspecting the gardens of Fellows of the Royal Horticultural Society, and advising thereon has increased so much of recent years, and has necessitated Mr. S. T. Wright's absence from the Wisley Garden so often, that the Council of the R.H.S. have long felt the desirability of appointing an inspector, who should be entirely independent of the Wisley staff, thus leaving Mr. Wright free to devote his whole time to the society's garden and shows. The very great difficulty of finding an inspector who should not only be as efficient and capable as Mr. Wright, and one who is also in constant touch with a fine garden and all the newest additions to horticulture has at last been overcome by the kindness of Miss Willmott, of Warley, who has consented to her head gardener, Mr. C. R. Fielder, V.M.H., being appointed inspector to the society, and at the same time allowing him to remain in constant daily touch with her celebrated garden at Warley Place. From May 1, Mr. C. R. Fielder, V.M.H., so well and honourably known in gardening circles, has been the Royal Horticultural Society's inspector to visit Fellows' gardens, and to advise thereupon. All requests for the inspector's services should be made to the secretary, R.H.S. Office, Vincent Square, Westminster, S.W.

**Blue Bells at Kew.**—Just now Kew may be said to have an embarrassment of riches, for attractive features reveal themselves on all hands. The gorgeous display of tulips in front of the Palm House, and the equally showy masses of flower in the greenhouse arrest attention by reason of their brilliant and varied colours, but for quiet beauty the blue bells in the woods, especially in the Queen's Cottage grounds, will fully hold their own. In many places they form wide, spreading stretches of blue, which, under the varying degrees of light that filter through the overhanging trees, appear to be of many shades, from a light cœrulean blue to a depth almost approaching purple. This effect is, of course, considerably heightened when the sun shines, as some blue bells are then in full sunshine and others densely shaded. Such an attractive feature well serves to show that from even common British plants as charming an effect can be obtained as when exotic subjects are employed. The conditions at Kew are most favourable to the increase and development of the blue bell, the quiet beauty of which now accounts for the constant stream of visitors to the more remote parts of the gardens.

**The Driest April on Record.**—In an interesting communication to the "Times" of the 2nd inst., Dr. R. H. Mill, the Director of the British Rainfall Organisation, states: "There is no doubt that April, 1912, with .04in. of rain, is the driest April on record at Camden Square, where observations began in 1858, and it is very nearly the driest month, less rain having fallen only in February, 1891, when the amount was .01in. In the whole period there were only five months with less than a quarter of an inch of rain, all of them in the spring, viz., February, 1891, with .01in.; February, 1895, with .12in.; April, 1893, with .24in.; May, 1896, with .14in.; and April, 1912, with .04in. Last month there was an absolute drought of 18 days at Camden Square, commencing on the 10th; though at Mill Hill, and probably at other stations nearer London, the drought commencing on the 10th still continues. While a rigid comparison can only be made with records at the same station, it is interesting to glance at the records of London rainfall before 1858 back to the earliest which have been preserved. The earliest commenced in 1729, and, except for the years 1736-73 and 1780, there had been at least one rainfall record in London ever since. These are sometimes of dubious value, because of unsatisfactory instruments and bad exposure, very often on roofs, as in the case of the Royal Society's record, and in every instance they probably tend to read too low. No April in the whole series appears to have had so little rain as that of 1912, and only 19 individual months are known to have had less than one-tenth of an inch of rain. The . . . only months drier than April, 1912, are August, 1730, December, 1788, July, 1800, September, 1804 (possibly), and February, 1857. Considering the patterns of rain gauge in use a hundred years ago, I think that it would scarcely be prudent to assert the absolute rainlessness of December, 1788, or July, 1800. The absence of rain in September, 1804, and February, 1857, depends on unsatisfactory records, and is contradicted by others on which more reliance can be placed." In a table given in his communication, Dr. Mill states that in April, 1817, the rainfall registered at Greenwich was .06in., and in April, 1840, the rainfall at Chiswick was .06in.

**Canadian Alpine Flora.**—On Tuesday evening next, following the special house dinner of the Horticultural Club, at the Hotel Windsor, Mrs. Henshaw, hon. secretary of the Alpine Club of Canada, will give a lecture to the club members, entitled, "Trails in the Canadian Rockies." The lecture will be illustrated by coloured lantern slides, representing some of the more interesting features of the Canadian Alpine flora. Sir Frank Crisp will preside.

**Gardening and Drought.**—This subject cannot fail to be of the greatest possible interest to all who are engaged in horticultural pursuits for pleasure or for profit, consequently there should be a large attendance at the Royal Horticultural Hall on Tuesday, May 14, when Professor J. B. Balfour, F.R.S., V.M.H., Keeper of the Royal Botanic Gardens, Edinburgh, will deliver the seventh Masters' Memorial Lecture, his subject being "Gardening and Drought."

**Spring Flowers at Madresfield Court.**—Earl Beauchamp very kindly allowed the beautiful gardens and pleasure grounds of Madresfield Court to be thrown open to the public on Thursday for the benefit of the Gardeners' Royal Benevolent Institution. Owing to rain in the early morning fewer visitors than usual took advantage of this opportunity for inspecting the splendidly-kept gardens and the wonderful spring display so skilfully provided by Mr. W. Crump, V.M.H. Tulips, primulas, gorse, flowering shrubs, alpines were very much in evidence; while, under glass, the schizanthuses, carnations, eucharis, peaches, strawberries, melons, and early grapes proved immensely attractive. Earl Beauchamp and Mr. Crump are to be congratulated upon the fine appearance of Madresfield Gardens, and their interest in the Gardeners' Benevolent Institution, while a word of praise is due to the many members of the Worcester Auxiliary, who acted as stewards during the time the gardens were open to the public.

**Flowering of Amherstia nobilis.**—The amherstia has long enjoyed the reputation of being one of the most gorgeous of all tropical trees, and this is fully borne out by a large specimen which is in full flower in house No. 1, close to the main entrance gates at Kew. The tree in question (for tree it is) is planted out in a prepared bed, and so thoroughly has it made itself at home there that it reaches almost to the roof. It has already flowered several times at Kew, yet it is so rarely seen in gardens, and has been at different times so much talked of, that it always attracts a considerable share of attention. One reason that we do not see it more frequently is that it requires a large structure for its development, and that, too, in which a stove temperature is maintained. The long, pinnate leaves, which, just as they are unfolding, droop in a peculiar manner, suggestive of the browneas, are decidedly handsome, but the flowers form the centre of attraction. In colour they are a bright vermilion blotched with gold, and are borne in wide, spreading pendulous racemes from the ends of the branches. One feature which from an ornamental standpoint is not a desirable one, is that the blossoms quickly drop. Amherstia nobilis, a native of Burma, was named in honour of Countess Amherst, and was first introduced in 1837 by the late Mr. John Gibson, who was sent out to India by the Duke of Devonshire. This specimen flowered at Chatsworth some years later, but the first one to bloom in this country is reported to have been a plant in the gardens of Mrs. Lawrence, of Ealing Park. From an inspection of the flowering specimen at Kew one can readily understand the adjectives that have been showered upon the amherstia by travellers, for under the influence of the tropical sunshine the blossoms must be dazzling.

**International Exhibition Cups.**—We have the pleasure of giving on another page of this issue illustrations of two of the many handsome cups that are offered for competition at the Royal International Horticultural Exhibition at Chelsea. The cups illustrated are two that have been presented by the counties of York and Lancaster, and are in every way worthy of the occasion, and the influential committees responsible for the selection of the respective designs. In our issue of the 18th inst., we shall give illustrations of a large number of the other cups that have been presented to the Directors of the International by County Committees and other donors.

**Mr. Wm. Hales,** superintendent of the Chelsea Physic Garden, was elected an Associate of the Linnean Society on Thursday last. We congratulate Mr. Hales on the well-deserved honour.

**Prospects of the Fruit Harvest.**—The prospects of the fruit harvest are at the present time far less satisfactory than could be wished. The serious injury done by the sharp frosts that were experienced on April 10 and 11, and the cold easterly winds that prevailed during the greater part of the month, are now apparent. Much damage was done to plums in Cambridgeshire, Kent, Middlesex, and Worcestershire, and cherries suffered considerably, although to a less extent. Much damage was done to apples, but possibly it may not prove so great as at present is assumed to be the case. Gooseberry bushes have had their prospective crop greatly reduced, but currants appear to have escaped any considerable damage.

**Flower Day in Vienna.**—The Vienna correspondent of the "Standard" writes as follows with reference to the "Blumentag," or Flower Day, which has just been held in the city, followed by a Flower Day in the Prater and some of the suburbs: "For forty-eight hours every one has been 'seeing yellow,' at all events when he looked at a human being. For the flower this year is a yellow narcissus, with pheasant's eye centre, artificial, and, perhaps, not very true to life, but very effective. Flower Day is the equivalent of Hospital Saturday and Sunday in London, only here the pretty girls with the collecting boxes give a quid pro quo in the shape of a flower for every penny, and sometimes for twopence and a frankly admiring look will put it into one's buttonhole themselves. Several thousands of women in their best frocks waylaid all pedestrians, entered cafés, restaurants, banks, and public offices; two young girls even braved the terrors of the 'Gray House,' the Old Bailey of Vienna, and by the evening two million flowers had been sold, and about £10,000 collected in small change, which was carried in a hundred sacks to the bank. Towards evening the difficulty was to find anyone who was not already decorated with the symbol of the day. Cabmen wore it in their hats, carters on their whips, and labourers in the tops of their high boots."

**Open Spaces in London.**—At the monthly meeting of the Metropolitan Public Gardens Association, it was agreed to grant £100 towards the purchase of a site for recreation at Wimbledon on the bank of the Wandle, adjacent to a poor and low-lying district. A scheme for enlarging and rendering more efficient a much-needed playground in Kensal New Town was discussed, and it was agreed that every effort should be made to raise the £3,000 required. It was stated that the laying out of St. Mary's Churchyard, Bow Road; Southwark Cathedral Yard, and the Hospital Garden, Putney, were finished, and that the disused burial ground in Philpot Street, Stepney, would be taken in hand so soon as an agreement had been arrived at for its maintenance.

**Allotments for Prisoners.**—A Parliamentary paper has been issued containing rules made by the Secretary for Scotland for persons undergoing preventive detention in Scotland. The rules provide that persons undergoing such detention shall be divided into three grades—ordinary, special, and disciplinary, and that those in the special grade may have garden allotments assigned to them, which they may cultivate at such times as may be prescribed. The produce of these allotments may be purchased for use in prisons at market rates, and the proceeds credited to the prisoner, or they may be used by the prisoner under regulations approved by the Commissioners.

**Shrewsbury Flower Show Receipts.**—The executive of the Shropshire Horticultural Society had a new experience last year, inasmuch as their efforts resulted in a loss of £540, instead of a substantial profit, as in previous years. This change was not brought about by any lack of energy on the part of the committee and its officers, or a decline in the popularity of the Shrewsbury shows, but was wholly due to the railway strike.

**Presentation to Mr. Wm. Tough.**—A number of friends met Mr. William Tough, head gardener, Arndilly, Craigellachie, N.B., the other day, and presented him with a purse of sovereigns on the occasion of his leaving for America. Mr. Peter Mackay, head forester, in a neat and eulogistic speech, made the presentation, and Mr. Tough feelingly replied. Thereafter a very happy evening was spent in song and story.

**April in the North.**—The month just closed, writes our Aberdeen correspondent, has been the driest April experienced in the north for twenty-four years. The total fall was 0.52in., compared with 0.66 in 1893, and 0.63 in 1891. There were seven days with rain, while in April 1893, there were twelve, and in April, 1891, fifteen. Of sunshine we had a total of 194.3 hours, fairly evenly distributed. The bright, sunny weather during the last week of the month had the effect of transforming parks and gardens from their winter aspect to that of summer. At the end of the first week exceedingly boisterous weather prevailed, accompanied with showers of sleet, snow, hail, and rain. The force of the wind—estimated in some districts as having a velocity of 74 miles per hour—was such that much damage was done to agricultural land, and the snow covered the ground to a depth of several inches, and whitening the trees with the silvery mantle of belated winter.

## BEAUTIFUL BEDDING-OUT.

Soon the summer sunshine will be basking over garden scenes where

> "'Broidered beds of countless hues
> Tempt bee and butterfly."

The pageant of the floral year will be offered, never to be repeated with precisely similar effect, dependent for its success or failure upon the verdict, then the memories, of those who see. Unless new beauties are shown, the record of past summers broken, the gardener will have missed his opportunity.

In a sense, the very flowers are dependent upon the men and women who use them in bedding out; for, unless they are skilfully blended or kept separate, they will live and die unappreciated. The most gorgeous scarlet zonal pelargonium must create a trial for the artistic eye, instead of a beauty, if it is set next to a rosy-magenta petunia. This is an extreme example of inharmonious colour-association, yet not an unknown one; while the habitual planting of red-white-and-blue beds, either with or without a golden edge as frame, in close company with standards and bushes of carmine roses, is another instance of cruel conduct towards blossoms of individual loveliness.

Tender colours are so plentiful that it is surprising why crude ones are not avoided in situations that they do not suit; while a gay white house, whose walls gleam yellow in sunshine, may be surrounded by vermilion and blue, ruddy-bronze and amber, with a Mediterranean-shore-suggesting splendour that warms the heart, the old weather-beaten, red-brick manor house should never be given an entourage of gaudy colours. Its hue is softened by the storms and suns of centuries; its beds and borders should be similarly soft; and, since blossoms are children of a fleeting life, not able to grow mellow, only the more refined should be allowed near the ancestral home. The red of the dwarf calliopsis is suitable; the apricot-salmon or brick-red tints of Nemesia strumosa Suttoni and dwarf nasturtiums, the copper-crimsons of many bedding pansies, the dull orange of begonias, will infallibly please.

Light lavender-blue can be cordially recommended near old red houses, since it supplies a welcome coolness, besides intensifying the richness of the building material. The aster and viola offer the shade; while tall plants of Plumbago capensis may be put out and lightly trained to the walls, either right against them or upon the background of the Virginian creeper, that will blush brightly before the tender greenhouse plant has to be removed. For a subdued mass of this hue the ageratum can be recommended. Varieties of various heights can be built up into a slanting bank against the house, with specimen coleuses or groups of Perilla nankinensis and beet to give relief of dark foliage.

If a house is too dull in appearance, lemon-yellow flowers are best of all to cluster about it; white will not be pleasing except during strong sunshine, which really turns it into cream. Generally the yellow can be well combined either with blue-violet or royal and indigo-blue; but it also may merely deepen into orange, and then pass on into the darkest shade of orange, which is scarlet. Some silver foliage can be advised to give relief in this case; it is a mistake to so concentrate any colour that the spectator from a few hundred yards sees the bed or border only as a brilliant splash. The elegance of a plant cannot be appreciated when it lives as a member of a pressing crowd. The perfection of a flower-hue cannot be loved as it should unless it can be seen with the complement of leaf and stem tints that were its birthright.

To return to the consideration of tender colours, we recognise at once that they are yielded by the mauvy, rose, purple-crimson nicotianas; by cream, peach-blossom, mauve, and dull rose stocks. The scabious is obtainable in shades of crushed-strawberry. The salpiglossis shows a glorious ruby-red, as well as a purplish-blue that is a vastly superior shade to the gentian or cornflower, from an artist's point of view.

Maroon or claret flowers or foliage banked up against the crudest of red villas will subdue the garish appearance; while, if silver-green foliage is present also, a softer effect will be enjoyed. A plea should also be put in for the grouping of different colours in house-front borders, instead of the stiff ugliness of the straight rows of various heights, ending in the unbroken edging, usually of lobelia or miniature sweet alyssum. Why should our edging be continuous in colour, when lengths of rose, pale blue, cream, carmine, deep blue, lemon, pale pink, and mauve can succeed one another, affording the charm of a rainbow harmony, and permitting a collection of different plants to be exhibited.

Then what a satisfaction it is to come upon a lawn, the beds of which are filled so as to supply a selection of heights among themselves, not just a selection of heights in each bed. The stately Nicotiana macrophylla gigantea, with its noble leaves and purple blooms, may fill a large round or square; while some of the oblongs, stars, crescents, or diamonds can be made beautiful without the employment of any plant taller than a viola. Variety in habit of growth should also be aimed at. One cause of the stiffness or the monotony of bedded-out gardens is the use of too many stubby plants, such as the zonal pelargonium, calceolaria, and fuchsia. There should be the stateliness of the Lilium auratum, canna, or gladiolus; the waving light-stemmed grace of poppies; the branching luxuriance of gazanias, verbenas, ivy-leaved pelargoniums, and lesser favourites such as eschscholtzias and mignonette. For, only by taking all the qualities of our bedding plants into consideration, and combining them so as to mitigate their demerits, can we gardeners claim to have made the best use of our tools. M. H.

## BOUVARDIAS.

Strictly speaking, bouvardias are greenhouse plants, but to obtain good results they must be started in heat, and remain in a genial temperature for several weeks, in order to build up strong plants before transfer to frames or cold pits for the summer. The stock plants should be turned out, and a good portion of the exhausted soil be removed. Shorten the strongest roots, and place in pots of as small a size as will hold the plants. A compost I find suits them well consists of two parts loam, one each of leaf-soil, and decayed manure, and sand. Place in a temperature of 65 or 70 degrees, and keep well syringed.

When the young shoots are two or three inches long, pinch out the points. To increase the stock some of these young shoots may be taken off with a heel and inserted in small pots. Another method that answers well is to cut the strongest roots into inch lengths, and lay them in a pan of sandy soil, slightly covering them.

H. T. MARTIN.

Warren Wood Gardens.

## HELIOTROPIUMS.

These sweet-scented flowers are always appreciated, whether grown in the flower beds during the summer or in pots, either in the greenhouse, conservatory, or dwelling house. As summer bedding plants they are much in evidence, as no garden seems complete without them.

It is not, however, as bedding plants that they are most appreciated, but as decorative subjects for autumn and winter flowering. Most people have seen how well heliotropes will grow when planted out in a light rich soil, and how profusely they bloom during the autumn previous to being cut down by the frost, yet but few can realise the wealth of bloom they will give during the dull months of winter. True, the plants require rather more heat than they usually receive during the cold weather to flower them to perfection, but when well grown they repay for this extra care. If the plants are healthy, and covered with their trusses of sweet-scented blossom, they are sure to be prized. But to be useful, the plants must be vigorous, otherwise the flowers will be poor. In order to have a wealth of bloom through the winter months it is necessary to have some large and well-established plants. If such can be grown up pillars, along rafters, or against a wall, where the young growths are allowed to extend themselves at will, fine trusses on long growths may be gathered therefrom. But to produce plants of this class takes time, so that propagation should be commenced at once where this has not already taken place.

The young growths will root readily enough if inserted in a light sandy compost, and placed in brisk heat. When rooted they should be potted singly, and grown in a temperature of from 60 to 65 degrees. At this stage the shape the plants are to assume must be decided. If for planting out they should not be pinched until they are from six inches to a foot high, according to the position they are intended to occupy, as it is seldom a quantity of shoots are required near the ground; on the other hand, if required for decorative purposes in pots, the nearer the plants are to the soil the better. Should they be intended for standards they must be kept to a single stem until the desired height is attained, when growth must be stopped to induce a bushy head.

As the pots become filled with roots the plants should be transferred to others, a couple of sizes larger, using a light rich compost, and not potting too firmly. As plants of this class make rapid growth they require ample root room if they are to give satisfaction. Potting heliotropes is quite different to potting hard-wooded plants. If they have grown satisfactorily they should be large enough to occupy their flowering pots by August, after which they should not be stopped. During the summer months stand them on a bed of ashes in a sunny position, but sheltered from rough winds. See that they never suffer for want of water, and as the roots fill the pots give weak liquid manure two or three times a week. About the middle of September they should be housed, but it is not well to grow them in too high a temperature; therefore if the weather is hot, as sometimes is the case, keep the ventilators open as wide as possible in order to keep the plants sturdy, but as the nights get colder it will be necessary to apply a little fire heat to keep up the requisite temperature, or the flowers will not expand freely, neither will they be of that fresh appearance that is so desirable.

As winter approaches a temperature of from 50 to 55 degrees should be maintained, with a rather dry atmosphere, in order to prevent the flowers from damping, and to keep the growth as sturdy as possible.

Heliotropes that are planted out should not be tied in closely, as this would cause them to lose their leaves, and prevent them flowering as profusely as one would wish. After flowering, both standards and those planted out, should be allowed a rest, as they will grow more vigorously again when the days are longer. Standards should be cut back a bit, repotted, and placed in a warm house to induce them to make young growths. If such plants are too large for indoor use the pots may be plunged in the flower beds during the summer, when they will make a fine display. Those growing close to the roof or on walls should have their shoots shortened, and be thinned so as to make room for the young growths, which should be encouraged as much as possible by the aid of liquid manure during the growing season. P. G.

## SOYA BEAN CULTIVATION IN SCOTLAND.

Colonel Johnston of Lesmurdie, Elginshire, ably seconded by his head gardener, Mr. Smart, was successful last season in producing a number of plants of a very fair size, and in reaping a crop of the soya bean (Glycine hispida). This is not by any means the first occasion on which Colonel Johnston has been successful in experimenting on tender plants, his interest in plant life being very keen and extensive. This season the Colonel is sowing alongside a plot of imported seed, the seed he himself produced last year, in order to ascertain if any degree of acclimatisation has been acquired by association with the conditions attached to his district. Of course, it has to be remembered that last season was an exceptionally favourable one, and one which is not likely to occur again soon, but it is hoped the partial acclimatisation may have imparted a degree of hardiness to the seed produced at Lesmurdie last year, which may enable them to withstand less favourable conditions. As is well known, this bean requires warm weather for its development, otherwise it makes but slow progress, and may not mature even in the space of five months. This fact was illustrated in the experiments carried out in Nairnshire in 1910 with the soya bean by the North of Scotland College of Agriculture.

That season was wet, cold, and unsettled, yet the plants developed a good display of foliage, and attained the flowering stage, but they failed in producing pods. This was simply brought about by the season, owing to the lower temperature, being rather short to permit of ripening, or it lacked sufficient or continuous warmth for the sufficiently vigorous growth of the plant. Hence last summer, being warm and forcing, the Lesmurdie experiment proved most successful.

The bean can be cultivated on a wide range of soils, but it is somewhat fastidious about climate, and is sensitive to cold and frost. In the North of Scotland the climate is too uncertain and generally too cold and dull for its liking. This, however, is not to deter Colonel Johnston from following up his last season's success, and his efforts will certainly be watched with much interest. W. K.

**Veronica diosmæfolia.**—Of the different shrubby veronicas now in our gardens this stands out markedly from the numerous forms of Veronica speciosa, inasmuch as the flowers are borne during the spring and early summer months. Grown in a five-inch pot, it forms a neat little bush, with branches which are somewhat horizontally disposed, clothed with small pointed leaves, and plentifully sprinkled with spikes of lilac-coloured flowers.—W. T.

## STIMULANTS FOR FERNS AND FOLIAGE PLANTS.

It is frequently found difficult to secure well-grown plants to fit small vases. The soil in the pots becomes a mat of fibrous roots, and, when a larger pot cannot be employed, feeding with some kind of liquid manure is imperative, if vigorous growth is to be maintained. For this purpose liquid manure from the farmyard is sometimes used, but in a very weak condition. Unfortunately, its odour is objectionable in a dwelling room, and besides it contains too much potash for many subjects. Peruvian guano is also a ready fertiliser for feeding ferns and foliage plants, and, although it may be used with advantage for plants in a greenhouse, its odour is equally unpleasant in the house.

Where leaf production is the aim of the cultivator, I know nothing better than sulphate of ammonia and nitrate of soda. For plants that like a percentage of lime in the soil, sulphate of ammonia will give the best results, as the lime present will convert the ammonia sulphate into nitrate of lime—an excellent nitrogenous plant-food. By far the largest number of green foliaged plants, however, do not like lime, and for these the best stimulant is nitrate of soda. Palms, asparagus, azalias, cypress, aspidistras, isolepis, smilax, selaginellas, and most ferns quickly respond to its application. Being readily soluble, and immediately available, it usually makes its influence apparent in a brief space of time, especially if the plants have been starving for want of food. Asparagus is a seaside plant, and likes plenty of sodium; and I have had good results by supplying carbonate of soda (washing-soda) to large specimens.

In all cases it is advisable to exercise great care in the use of liquid manures of a concentrated nature, like sulphate of ammonia and nitrate of soda, as the application of a strong solution may prove more inimical than beneficial to the subject treated. The "feast and then a fast" system of feeding is also a little crude, as the plant has more than it can manage at one time, and is starving for food the next. When help is necessary, it is better to start with a very weak liquid manure, use it every time the plant needs water, and increase its strength with time and the plant's requirements.

For ferns and selaginellas the strongest solutions of nitrate of soda and sulphate of ammonia should never exceed ½oz. to the gallon of water. About half that amount will be safer, and generally ample for all plants of this class. Farmyard liquid manures and guanos, too, are often very caustic in character, and, unless very much diluted when applied, may do more harm than good to the growths they are employed to assist. The root hairs are the feeding organs of plants in the soil, and are exceptionally sensitive to anything of a burning nature. A too-strong dose of a caustic solution of manures will destroy the root hairs, and the plant will have to wait the development of others before it can obtain its necessary supply of food. It is more often in connection with the use of farmyard manure and guano that mishaps occur than with chemical fertilisers, as the former vary so much in the percentage of the plant food constituents they contain that it is difficult to gauge their strength.

Another item in connection with these organic manures to be remembered is that, if used for a certain period on the same soils, they will produce organic acids. To neutralise these, lime will have to be employed, and, as this would kill most ferns, it is safer to stick to nitrate of soda instead. With its known strength, cleanliness of handling, freedom from unpleasant smell, and its stimulating properties, nitrate of soda has no equal as a food for ferns and plants grown for their green foliage. It can be used either in the dry state or in solution; but the latter is decidedly the better method, as it reaches all the roots in the strength at which it is applied. When sprinkled on the surface of the soil in a pot in a dry state, the roots near the top are apt to get more than is good for them, and those below go hungry. **Hibernia.**

THE LANCASHIRE CUP.
Offered for competition at the Royal International Horticultural Exhibition by the County of Lancaster.

THE YORKSHIRE CUP.
Offered for competition at the Royal International Horticultural Exhibition by the County of York.

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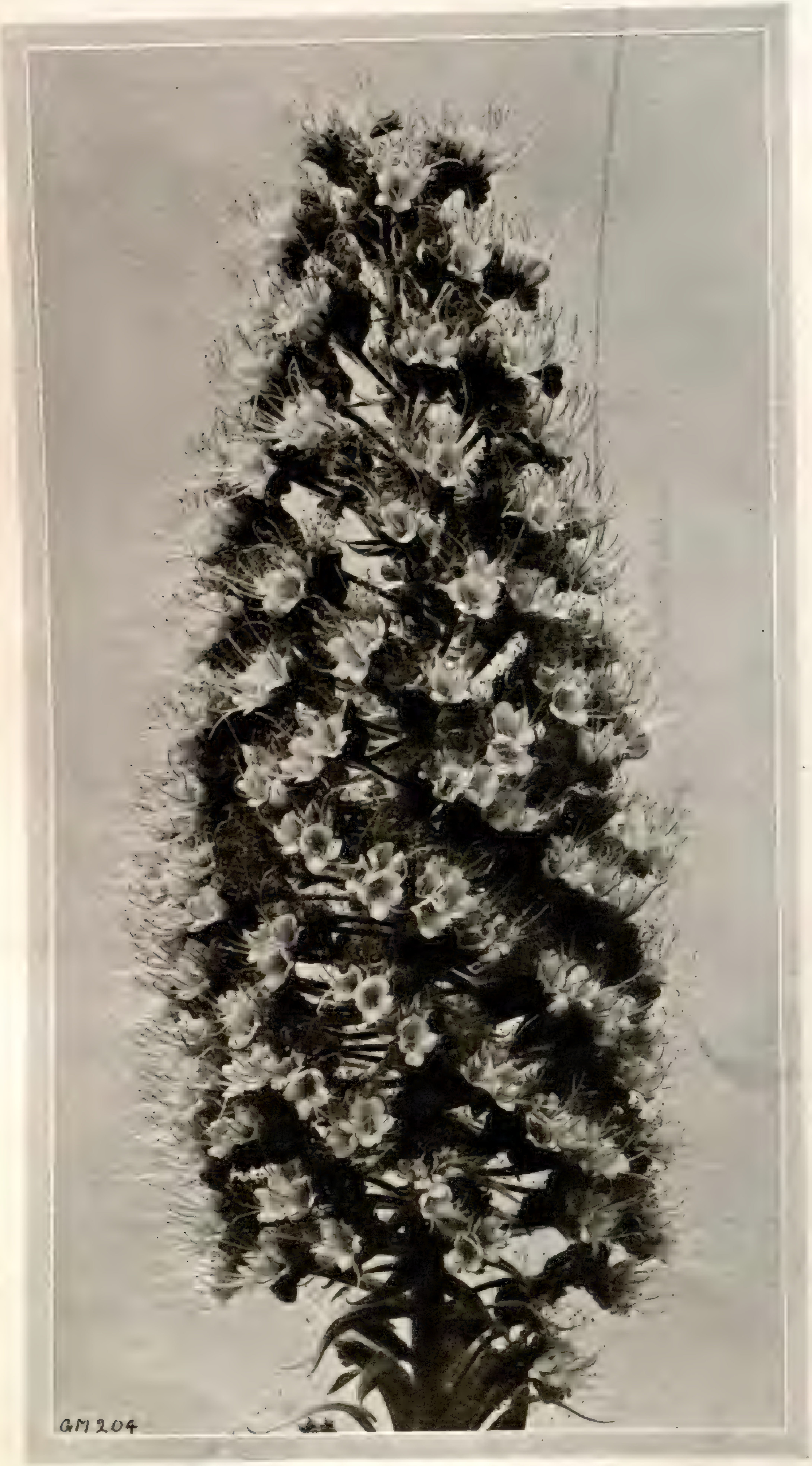
**Thunias** will now be starting freely into growth, and will succeed under the same conditions, and in the same kind of compost as calanthes, with the exception that thunias like a sunny position in the warmest house. They may be grown singly in pots, or made up into specimens, placing five or more bulbs in a seven or eight-inch pot. Their requirements in respect to drainage are similar to calanthes, and water must be given with the greatest caution until the flower spike appears at the apex of the newly-made stems. Thunias often fail to flower satisfactorily, and the reason in many cases is an overabundant supply of water in the earlier stages of growth; after the flower buds are formed in the new growth, an abundant supply is necessary, and the plants then may be watered alternately with clear water and weak liquid manure. On hot days the plants may be syringed overhead with advantage, as they are subject to attacks of red spider, especially if kept in a rather dry atmosphere.—J. T. Barker, The West Hill Gardens.

## NEW PLANTS, ETC.

### ECHIUM TRUNCATUM.

This handsome echium bears splendid spikes of deep blue flowers, and if it can be easily managed it should prove a popular greenhouse plant. The first spikes shown were two feet long, thickly studded with blue flowers, so as to form a dense brush-like inflorescence. A.M., R.H.S. W. W. Astor, Esq., Cliveden, Taplow.



ECHIUM TRUNCATUM.
A fine greenhouse plant, bearing tall, dense spikes of rich blue flowers. A.M., R.H.S., April 30. W. W. Astor, Esq., Cliveden, Taplow.

### ARAUCARIA EXCELSA ELEGANTISSIMA AUREA.

A very elegant form of the Norfolk Island Pine, with a yellowish tint added to its light green colouring, the yellow shade being most emphasised in the young growing tips of the branches and branchlets. A.M., R.H.S., April 30. Messrs. Thos. Rochford and Sons, Broxbourne.

### LEWISIA HOWELLI.

An uncommon plant with a low rosette of soft green leaves, from which rise little inflorescences suggestive of a statice, but bearing rounded flowers of greenish-yellow hue, marked with brownish purple. A.M., R.H.S., April 30. Mr. Maurice Prichard, Christchurch.

### TULIPS.

Grenadier.—A magnificent tulip of large size, broad-petalled, long-stemmed, and of rich orange-scarlet colouring, with a broad yellow base. A.M., R.H.S., April 30. Messrs. Walter T. Ware, Lim., Inglescombe, Bath.

Velvet King.—A stately Darwin tulip of perfect shape, and with broad, rounded petals of a dark, blackish maroon-purple shade. It may well be included among the "black" tulips, as it is intensely dark, and of smooth velvety appearance. A.M., R.H.S., April 30. Messrs. Barr and Sons, Covent Garden.

### CATTLEYA SCHRODERÆ GLEBLAND.

A beautiful variety of an old favourite and fragrant cattleya. It was like a first-rate form of the type, with the yellow throat deepened and expanded into a disc of deep orange-yellow, that left only a fringed border of soft rose-pink round the lip. F.C.C., R.H.S., April 30. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

### ODONTOGLOSSUM URO-SKINNERI BURFORD VAR.

A large-flowered and effective variety of a species not often found in cultivation nowadays. The lip is the dominant feature, and this is bright rose colour with mottling of a paler, almost white, shade. F.C.C., R.H.S., April 30. Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

### CHEIRANTHUS MUTABILIS KEELEY'S VAR.

A sturdy, good-habited wallflower with narrow leaves, and closely-set spikes of flowers, that have rose and purple colouring, but vary a good deal in shade. The colour will not appeal to everyone, but the plant is sure to find lovers among rock garden enthusiasts. A.M., R.H.S., April 30. Mr. R. W. Rickards, Usk Priory, Mon.

### CINERARIA POMPADOUR.

The title of Pompadour has been given to a strain of cinerarias belonging to the large-flowered florists' type, in various distinct shades of colour with another colour added, in the shape of longitudinal and regular stripes down each ray-floret. The strain has attracted a great deal of attention wherever exhibited. A.M., R.H.S., April 30. Messrs. Jas. Veitch and Sons, Chelsea.

### DEUTZIA LONGIFOLIA.

This is a very pretty, graceful, and free-flowering shrub, one of Mr. E. H. Wilson's finds in China. The neat flowers are of a soft pink or deep blush hue, borne in little dense spikes along the sides of the branches after the fashion of D. gracilis, but the clusters are not so lax as in the old species. A.M., R.H.S., April 30. Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Great Warley, Essex. (See illustration, p. 353, in our issue of May 4.)

### CELSIA CRETICA CLIVEDEN VAR.

In some measure this is even more beautiful than the type, which, by the way, is a charming greenhouse plant. The newcomer has unusually tall spikes, suggesting a fine verbascum, but with large, well-expanded light yellow flowers. A fine addition. A.M., R.H.S., April 30. W. W. Astor, Esq., Cliveden, Taplow.

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**Tritonia Prince of Orange.**—This pretty little South African bulbous plant forms a delightful feature in the greenhouse, the rich orange-coloured flowers being borne in great profusion. Perhaps some day these smaller bulbs, such as the tritonias, ixias, sparaxis, babianas, and others of this class, may be grown more than they are now. —S. W.

## GARDENS OF ANNUALS.

Grow hardy annuals as well as they can be grown, and no flowers outrival them. It is because we are all used to seeing overcrowded "patches" of godetias, salpiglossis, calendulas, clarkias, Shirley poppies, and candytufts, that we have come to look upon them with slight favour. Take Godetia The Bride as an example; the plants will be more than 2ft. tall, of shrubby branching habit, the long leaves fine, the white, crimson-blotched flowers enormous, of silken texture, if the seedlings have been pinched out once, and each plant has 18in. of space in which to develop.

A splendid garden may be created without a perennial, shrub, or rose tree in it; giant sunflowers, hybrid mulleins, and Verbascum phœniceum will supply the shrubberies, and an undergrowth can be provided by the lesser sunflowers and the feathery green Artemesia annua, which becomes covered with a golden florescence. For other tall masses there are the giant double poppies, so beautiful in their shades of blush, cerise, and mauve, in addition to more ordinary tints. Annual lupins, blue, white, or rose, can be had 2½ft. high, carpeted around by the little perfumed blue and white Lupinus nanus.

Some gardeners are of opinion that lawn beds require sub-tropical plants in order that they may produce a handsome effect, but the idea is erroneous. The varieties of maize or zea, offer just as fine displays as can be gained, from delicate subjects, which cold winds often shrivel, and rain followed by hot sunshine, often scorch. Begonias are succesfully rivalled by a new variety of dianthus, named Lucifer. The fringed flowers of this hardy annual are an extraordinarily bright orange-scarlet, measuring 2in. individually from tip to tip. To secure a unique bed it should be alternated with Omphalodes linifolia, a silver-leaved white-blooming annual of wonderful charm.

Other lawn beds may glow orange with the new Eschscholtzia gorgeous, though the crimson-and-gold Mandarin is hard to beat. While a vestige of summer lasts the plants, with their fernlike gray foliage, will produce fields of flowers, indifferent to scorching drought, undeterred by seasons of flood. To see the full elegance of the eschscholtzia, seedlings should be thinned out till they stand a foot apart, then the leaves will spread gracefully over the soil uncrushed by any neighbour.

Rosy larkspurs, in a lawn bed, offer a colour that is only approached by cerise salpiglossis or some dahlias. The yield of bloom, too, is enormous, and there will not be any cessation if seed-forming is prevented.

Pillars of climbing nasturtiums should be included in the garden of annuals. The rougher the wood the better, as the tendrils cling readily to excrescences of bark. Silver birch trunks, with the bark left on, have the loveliest effect of all. It should be recollected that climbing nasturtiums need not be of mixed colours, though the variegated-leaved strain should be employed for some trellises or fences; scarlet, crimson, yellow, black-maroon, and cream can be obtained separately, or the attractively spotted kinds. Climbing convolvuluses or ipomæas may be employed in the same style, though, on account of their dense foliage, they are supremely useful for training up strings to hide unsightly walls or fences. These may be sown in rose, carmine, blue, striped, crimson, lilac, or white. Then the value of the dwarf Convolvulus minor should not be overlooked. For a bed the variety Rose Queen has a perfect appearance, or a beautiful show may be gained from the white form alternated with Calendula Prince of Orange.

Shade in the annual garden is not difficult to cater for. The red-rose or the white Centranthus macrosiphon will be found as willing to thrive as the taller pink or white Lavatera trimestris, and both plants possess those vivid grass-green leaves that do so much to brighten shadowed stretches of ground. A bed of either of these can be given a seed-scattered carpet of the tiny lilac annual Ionopsidium acaule, which will not thrive in hot sunshine. Silene pendula compacta, rose, crimson, or white, calendulas, common white candytuft, tall blue, pink, white, or maroon cornflowers may also be safely used.

Especially showy annuals, owing to their colours, are the carmine candytuft, the terra-cotta-crimson Calliopsis bicolor nigra, or the dwarf Crimson King, Clarkia elegans Purple King, Godetia Lady Satin Rose, and the dazzling scarlet Tulip Poppy. One great merit of the annual garden is that it can be entirely cleared each autumn, bulbs be used for the spring display, and these removed in time for another season's exhibition of what the hardy annual can achieve when reverently cultivated and carefully chosen.

M. H.

TULIP GRENADIER.

This splendid May-flowering tulip is rich orange-scarlet, with yellow base. Flowers much below natural size. A.M., R.H.S., April 30. Messrs. Walter T. Ware, Lim., Inglescombe, Bath.

## PRUNUS PERSICA VAR. MAGNIFICA.

The various double-flowered forms of the peach (Prunus persica) are well worth attention when selecting dwarf trees for gardens situated in the Midlands and Southern Counties, for they are very showy, and last in flower for a long while. Pink, white, and red-flowered varieties are to be had, but the red ones are perhaps the most ornamental, while they have the advantage of adding a rich touch of colouring to the garden, and affording a beautiful contrast to the groundwork of yellow and white narcissi, which blossom at the same time. Two red-flowered forms are in advance of others; they are P. persica fl. rubro pl., and P. persica var. magnifica, the latter, perhaps, being the more showy of the two. Anyone who possesses a few plum stocks may raise a stock of this and other varieties by budding them in the ordinary way in July. Three years after budding, really good, well-flowered trees may be obtained, which will be found useful for garden planting or for placing in pots to use for greenhouse decoration during the months of January, February, and March.

D.

## THE WESTFIELD ORCHIDS.

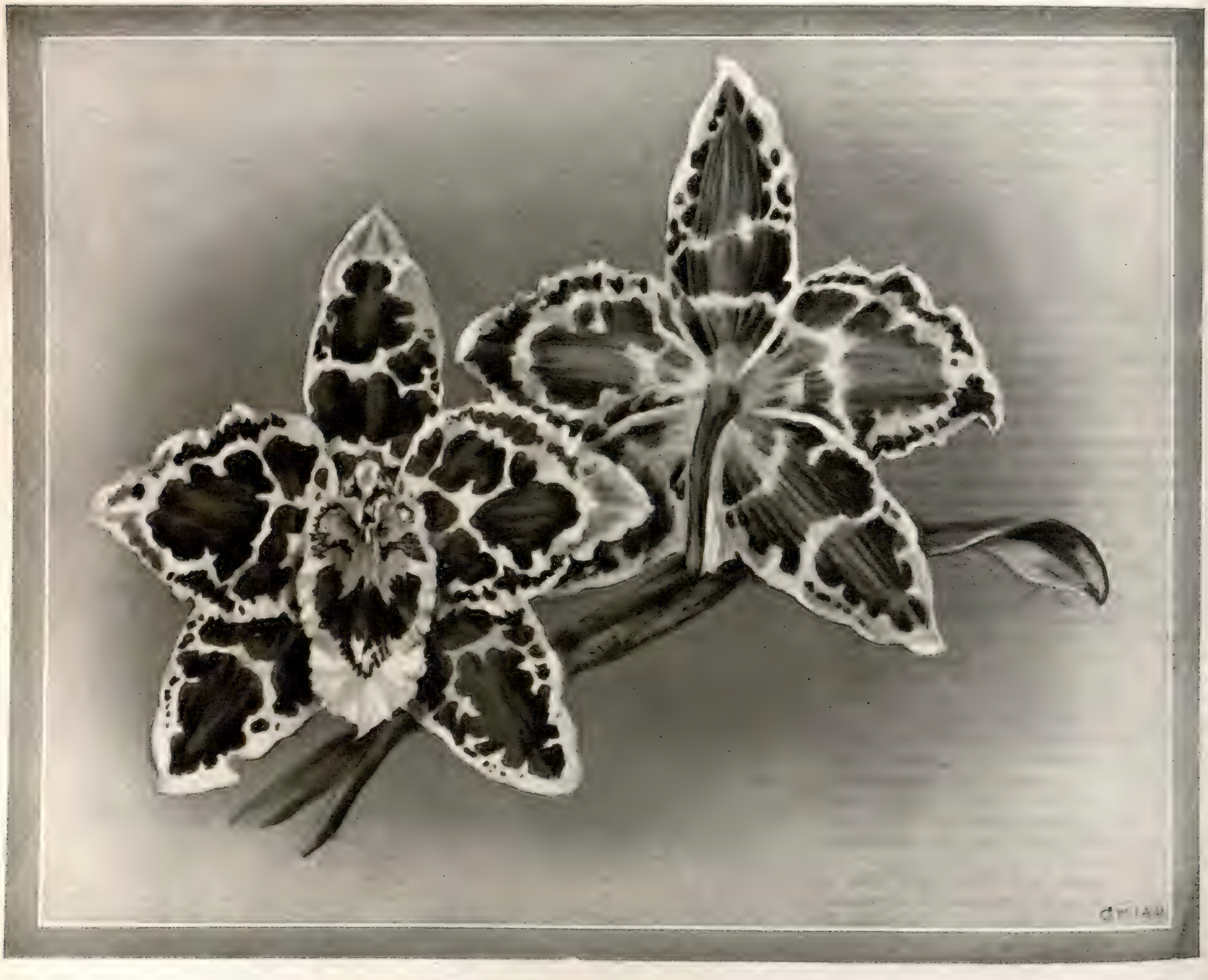
Many years ago Mr. Francis Wellesley, J.P., of Westfield, Woking, had a very interesting collection of orchids, and this collection included a large number of rare and beautiful hybrids and varieties. About the same time Mr. Wellesley had one of the finest collections of show carnations and picotees to be found in the country, and his wonderful successes on the show table with these flowers is well remembered. Then came a time when the owner of Westfield, acting on medical advice, entered his orchid houses but rarely, and, as it is difficult to maintain enthusiasm over things one cannot see or enjoy, the fine collection was disposed of.

Fortunately, after a few years, the medical taboo was removed, and Mr. Wellesley immediately entered once more into the cultivation of orchids, and gradually formed a new collection of these most interesting plants. Mr. Wellesey's enthusiasm for orchids has steadily increased, but it is tempered with excellent judgment and a keenness of discrimination that have made the present collection more valuable, interesting, and beautiful than the previous one.

Cypripediums are especially fine at Westfield, and one has to come here to see many of the finest that have yet been raised in this popular genus. C. insigne Francis Wellesley is a famous variety well represented, and the remarkable C. Royal George is growing finely. This latter gained a First-class Certificate from the Royal Horticultural Society on October 10, 1911, just before it passed into the Westfield collection from Messrs. Armstrong and Brown's establishment at Tunbridge Wells. It is a marvellously fine hybrid, as the accompanying illustration indicates. Shape, size, pose, and colouring all go to make this one of the very finest of cypripediums. The white dorsal sepal is rather over three inches broad, beautifully tinted with rose and veined with purple, while the broad petals are greenish-yellow and purple-brown. C. Harrisianum superbum and C. Minos Youngi were the parents of this wonderful hybrid.

Of C. Thalia, Mr. Wellesley has some splendid varieties, notably the handsome C. T. Mrs. Francis Wellesley and C. T. The Baron; indeed, of high-class hybrids with C. Fairrieanum parentage there are many fine plants at Westfield. C. Baron Schroder is in capital condition, and C. Elatior, a cross between C. Baron Schroder and C. Leeanum, produces fine flowers. C. Waterloo, one of the largest of cypripediums, is thriving at Westfield, and when in flower its big white, purple-based dorsal sepal is most effective. The beautiful C. Octæus Langleyensis is growing apace, and the very fine C. San-Actæus Westfield variety flowered splendidly this last season, and promises well for the future. Smaller, but of exquisite shapeliness and colouring, is C. Little Gem; this and C. Wellesleyæ are great favourites with Mr. Wellesley. The last-named is the result of crossing C. Venus with C. insigne King Edward, and, as may be imagined, it is a very refined and chaste flower. C. Duke of Argyll is a bold and striking hybrid from C. Leeanum giganteum and C. Druryi, and one that ranks with the best. C. Lady Northcliffe, from C. Hera Burford var. and C. Ville de Paris, should become famous, as it is a very distinct hybrid. It would be an easy matter to give a catalogue of notable cypripediums to be found at Westfield, all in capital condition, under the care of Mr. W. Hopkins, the skilful head gardener, but these must suffice for the time being. There is one plant, however, that beats Mr. Hopkins, and it is a tiny seedling of C. Fairrieanum parentage. It is about ten years old, has three wee leaves and one growth, and has been in much the same condition as at present for many years. It seems to resent special care and attention, threatening to die if disturbed, but when left severely alone it just keeps alive, and so, because of its extraordinary behaviour, it is allowed to live.

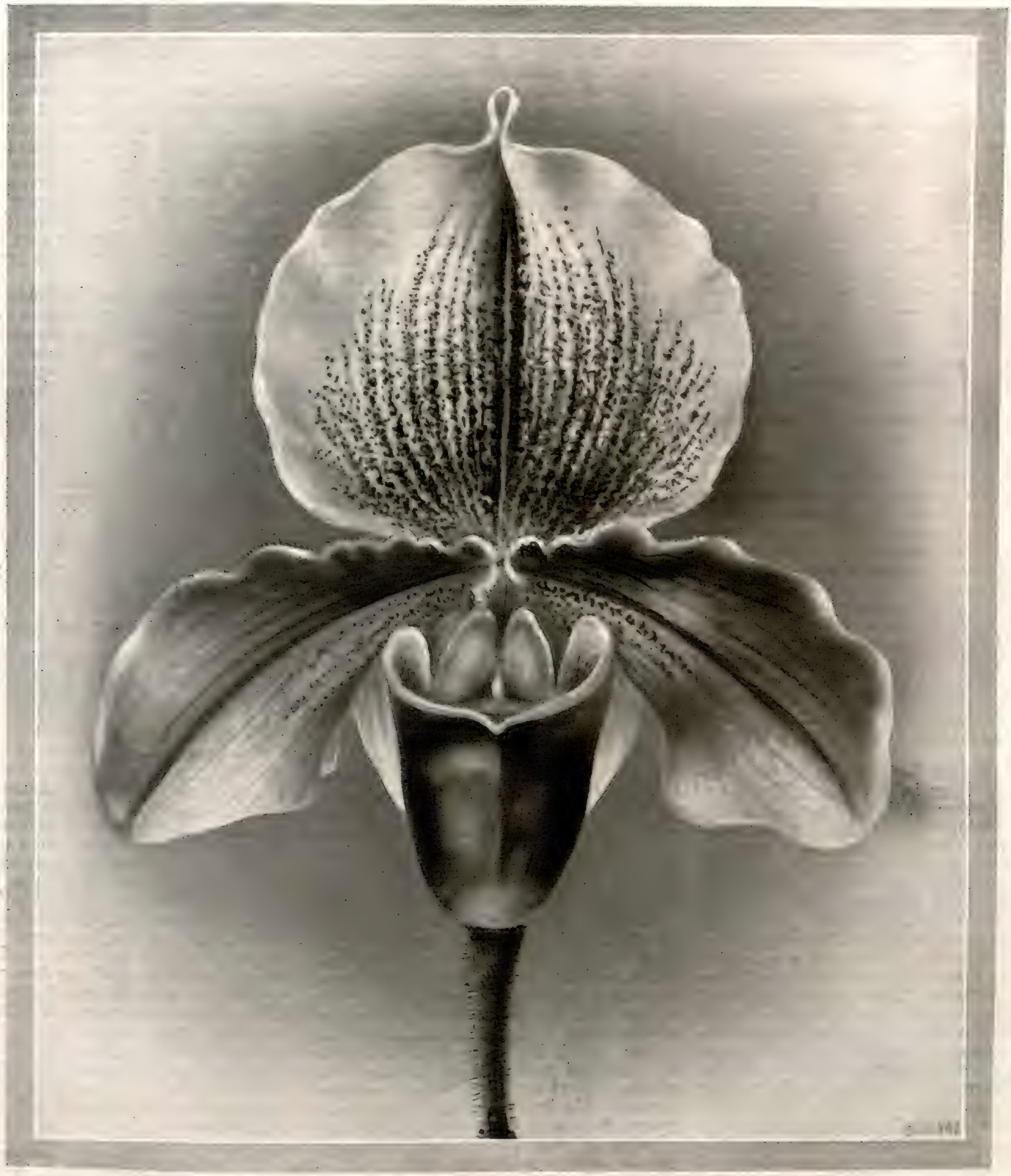
Besides cypripediums the cattleyas are a goodly set at Westfield, the varieties of C. Mendeli being superb. C. M. His Majesty is one of the finest, and one part of the original plant was presented to



ODONTOGLOSSUM ARMSTRONGÆ.
A unique odontoglossum with bluish-purple markings. It is of unknown parentage; in the Westfield collection.

Queen Alexandra by Mr. Wellesley a few years ago. C. Trianæ Purity is a lovely cattleya. C. Freya Mrs. Sassoon carries the hallmark of the R.H.S., as also does Lælio-cattleya Morningtoniæ, a glorious and first-class white and purple hybrid. Brasso-cattleya Wellesleyæ, a lovely white hybrid between Brassovola glauca and Cattleya Mossiæ Wagneri, may lack size as compared with hybrids from Brassavola Digbyana, but it is of exquisite beauty nevertheless. There are many other rare and beautiful lælio-cattleyas and brasso-cattleyas in the collection, and there are a few odontoglossums, these latter including O. Armstrongæ, which Mr. Wellesley purchased in 1909 for a very large sum. It is a unique plant, bearing very large grandly-marked flowers, the purple colouring quite approaching the "blue" shade for which many hybridists have been endeavouring to obtain.

Westfield is finely situated as regards light and air, and is a charming little estate set in a ring fence in the middle of a broad Surrey common. The garden is famous for sweet peas as well as for orchids, and it contains a fine set of climbing roses, some pretty rock gardening, and some rare old hollies, while, inside the comfortable old house, Mr. Wellesley has the finest collection of silhouettes in the kingdom, and a remarkably fine collection of miniature paintings as well.



CYPRIPEDIUM ROYAL GEORGE.

A remarkably fine hybrid in the Westfield collection. The colouring is white, purple, brown, and greenish-yellow.

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DAHLIAS TO PERFECTION.—A thorough guide to the successful culture of these popular flowers is "Dahlias and their Cultivation," by J. B. Wroe, price 1s. net, by post 1s. 2d., bound in cloth 1s. 6d., by post, 1s. 8d., from W. H. and L. Collingridge, 148, Aldersgate Street, London.

## LOOSESTRIFES.

The name of "loosestrife" will recall memory pictures of those two sterling groups of plants, Lythrums and Lysimachias, and certainly they are well worthy of being bracketed together under the popular old-world name, seeing that they are so often utilised together in garden scenery.

One favours the inclusion of the better species and varieties of both groups for planting watersides, and their natural love for moist places, together with their showy appearance when in blossom, should recommend them to the planter who is in search of varied subjects for the waterside margins, the bog garden, and the cool spots of the wild garden. Even in the herbaceous borders the best forms are not out of place, and, provided that the planting site is comparatively moist, they will compare favourably with other border perennials.

Of the Lythrums I would especially advocate the use of the fine forms of L. salicaria, the well-known native plant which creates such glowing beauty masses throughout late summer. The type, as may be generally noted, possesses blossoms of a reddish-purple colouring, but decidedly better effects can be obtained by the use of roseum, a bright rosy variety, and superbum, which is very near to it. Both make grand bushy subjects which are invaluable in the water and bog garden, especially as the summer flowers are decidedly on the wane when they are in their beauty.

L. Græfferi, with its dwarf, floriferous habit and bright rosy-pink blossoms, is adapted for positions requiring dwarfer subjects than L. salicaria; while the pretty L. alatium, with its bushy growth, short dark green leafage, and rich purple colouring, seems to be more at home in dryish places than its companion species. It even does well in the rock garden provided it can have sufficient soil for root development. The rosy-purple L. virgatum, with its branched habit of growth, and its medium height, is also worthy of note, and, like its kindred, is very effective. Certainly there is a need for the brightness of the Lythrums.

Of the Lysimachias a few notes must suffice, but from the bright golden vigorous L. vulgaris, with its tall strong spikes of blossom, to the lowly creeping L. Nummularia, which is largely used in many gardens, especially old-fashioned ones, they are diverse in form and habit, and certainly not devoid of interest. L. clethroides, with its graceful spikes of milk-white blossoms, is eminently serviceable, but a trifle neglected. Another good white is L. ephemerum, with its erect, leafy stems and terminal heads of dark-centred white blossoms. The two white-flowered Chinese species, L. Fortunei and L. barystachys (the latter a dwarf species with dense racemes) are both decidedly worthy of note, and add to the interest of the moist spots of the garden.

Good yellow Lysimachias include the native L. vulgaris, a useful wild garden moisture lover; L. thyrsiflora, another fine native, with grand panicles of golden blossom (a fine waterside plant); L. v. verticillata (or punctata, as it is sometimes called), a glowing bright yellow; L. v. quadrifolia, with its showy blossoms, and leaves in whorls of four; L. v. japonica, a notable Japanese species with grand blossom spikes, and L. davurica, a Siberian gem, which seems to have much in common with our own L. vulgaris. These gleaming gold and yellow Lysimachias give a bright glint of colour to the waterside and bog garden during late summer, and they are also serviceable for border planting, giving a display when many other subjects have finished their reign.

The dark purple L. atropurpurea gives a welcome change of colour to the preceding species. It is an elegant plant and deserving of notice among garden lovers. As for the creeping L. Nummularia, and its variety aurea, they are splendid for carpeting low, moist banks in the wild garden.

P. S. Hayward.

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**Rhodanthe Manglesi.**—This used to be regarded as rather a difficult subject to grow, but any obstacles in this respect seem now to have been overcome, as charming pots of both the pink and white forms may be seen in the summer hawked in the streets of London. By some market growers they are cultivated in immense quantities.—T.

## FLORAL MONSTROSITIES.

It would be an interesting study, not without educational value horticulturally, to look through a florist's catalogue of ten or twenty years ago, and see how many of the new introductions and varieties therein described are still given a place in the nurserymen's lists of to-day. Many do not realise how largely commercialism enters into the matter, for florists must have novelties to offer, if they are to be in the forefront of their profession, and when a new plant has been brought out it must be boomed to get a sale for it. It is similar also, in some respects, to the fashions in dress—new designs are brought out so that people must get them if they are to be in the fashion, and new varieties of flowers, fruits, and vegetables are constantly being introduced and made well known, with the result that gardeners are persuaded to try them in order to be up-to-date, or a little ahead of their neighbours. Anyone visiting a Temple Flower Show must have been struck by the number of flowers of little merit, but often labelled as new. To pursue the above simile a little further, as pictures of the fashions of twenty or thirty years ago do not always call forth admiration to-day, let us, when ordering plants, try and detach ourselves from the present, and look at the specimens from a disinterested standpoint, and try to assess their value. Unfortunately,

### The Fascination of Novelties

is so great for many of us that it often blinds our judgment as to what is really most beautiful. It would be a good thing if we could form a calm unbiassed judgment in regard to modern popular flowers, with a view to deciding which really do deserve to be grown for their own sake, apart from fashion, and which ought to be relegated to oblivion. If the succeeding generation should turn out to be characterised by a more intense love of natural beauty than the present possesses in the mass, what will they think of pictures of begonia blossoms nearly as large and round as tennis balls, snapdragons with stunted little pyramids of blossom, wallflowers little better, and plants of various sorts with all their energy devoted to the production of one or two big blossoms where there should be a dozen or more?

One often regrets that the florists' art should be misdirected to the spoiling of good flowers. Surely the glory of the wallflower, which is hardly second to its scent, consists in its crimson, brown, and golden colours, and yet we have been given shades of dingy purple, magenta, and washed-out yellow, and it is scarcely possible to raise a packet of seed without finding some plants tainted by these, to me, wretched strains. We have none too many easily-grown flowers in the garden of a warm glowing crimson, free from magenta and purple tints, but the gaillardia is one of them, and yet florists have raised varieties in which the principal colour is a pale yellow, with a faded band round the disc, as well as double forms of nondescript character. Of clear blue flowers we have still fewer, and yet the delphinium has been so much crossed with varieties having mauve and purple in their composition that, in raising a batch of seedlings now from the best mixed seed, it is almost the exception to get a variety of a pure blue.

The mistakes which florists make with regard to many flowers seems to be owing to a want of

### A Sense of Proportion

in assessing the relative value of a plant, and the blossoms it produces. The plant should be beautiful, as a whole, the form of the plant, as well as its foliage, acting as a foil to show off the beauty of the flowers. Instead of this, the plant has been regarded as of quite subsidiary importance, and simply as a flower-producing organism. When flowers are considerably increased in size and quality, while the height or vigour of the plant remains unaltered, the balance of Nature is often destroyed, while, when the natural growth of the plant is at the same time diminished to a dwarf and compact form, the result is sometimes little short of a deformity. The double zinnia is an instance of the first, especially when the plants are of a "fine dwarf habit," and when to this is added that type of the double flower in which some of the petals stand up above the others, we have a plant which in its total effect comes about as near to ugliness as man has yet succeeded in producing in this line.

Of the second class the four or five-inch snapdragons may be taken as an extreme instance. The beauty of the snapdragon is its stately spikes of finely-formed flowers, not too tightly pressed together up the stem, but in the stunted form all this is gone. The dahlia is an instance of the development of a flower with the exhibition table as the main object in view, the result being now that many of the finest varieties we see at a show are almost useless for the garden, the stems either being too short to hold the blossom above the foliage, or too weak to support the weight of the flower.

Some of the worst results of the florists' art are to be seen in

### The Doubling of Flowers.

Some go to the extreme of objecting to all double flowers, but this position cannot be defended, for many flowers are obviously improved by it, the single type often being insignificant or lacking in effect, and having no great beauty of form to recommend it, as is the case with stocks and carnations, where few will be found to admit that the single forms are better worth growing. But when it comes to single flowers of perfect form, then doubling is the florists' method of marring Nature's perfect work. Think of the beauty of form of the Madonna lily, the Tiger lily, the Canterbury bell, the peach-leaved bellflower, the day lily, and even the violet, nasturtium, and primrose, and the idea of spoiling the form of the flower by inserting one or more deformed corollas within their perfect shapes seems little short of sacrilege. The double tulip, too, when compared with the graceful outline of the closed, or partly opened, bud of the old-fashioned Golden Crown, is found sadly wanting, and when used for bedding is little more effective than balls of coloured paper.

We are even threatened with double sweet peas, but it is to be hoped that public taste will give no encouragement to the experts in this respect, and it is to public taste than we must look, as the nurseryman is dependent upon it for his custom. There is undoubtedly a set to-day against double flowers, as evidenced by the ever-increasing numbers of single decorative roses and chrysanthemums, and if buyers will subject all novelties to the test of beauty, rather than fashion, the number of undesirable novelties in every catalogue will be considerably reduced, and doubtless the nurserymen will be as glad as their customers.

Alger Petts.

## HARDENING OFF.

There is always at this season of the year much overcrowding in the houses where a quantity of summer bedding plants have to be raised, and even in well-appointed establishments where there is not this extra demand on the space under glass, the houses are usually fully occupied, as the weather is too treacherous to expose plants suddenly to the external temperature of our climate. Therefore it becomes necessary to make some preparations for "hardening off," as it is termed. There are many contrivances, and much labour is expended to overcome the difficulty, and often after every precaution has been adopted that one can think of, much damage is sometimes done through the carelessness of someone. Hardening off must be done gradually if it is to be successful. I have seen plants that were the picture of health ruined through a too sudden exposure to a lower temperature, or by being transferred from a shady place to an exposed position in the full sunlight.

When it becomes necessary to harden off the plants, a suitable place must be provided for them, and this very often entails an amount of labour that none but those who are thoroughly acquainted with the conditions of the place can understand; very often plants have to be moved two or three times before they finally become sufficiently hardened to withstand the outside conditions. For example, a batch of plants may be in a late vinery where the temperature is gradually being raised, and the foliage begins to overshadow the occupants beneath. To remove such plants to an exposed place would give them a serious check; but often, in order to provide a suitable place for them, another batch has to be shifted, and those from the said vinery put in their place, and these again, in time, have to give place to others that are more tender. By this it will be seen that hardening off a large number of plants is no light task, even in gardens fairly well provided with suitable accommodation; while where this is not forthcoming the difficulties are manifold.

In some gardens suitable temporary frames may be made, while in others hedges are so arranged that after the plants have been somewhat accustomed to the lower temperature and the full sunlight, they may be transferred to their shelter until they are finally planted. There are many plants that flourish in the shade; in fact, they do much better in such positions than in the full sunlight, and these when taken from under glass should be stood in the shade of trees or similar places, and be protected from winds by suitable screens. At one time many plants that needed stove temperature in winter were employed to decorate our gardens during the summer months; but most of these have now fallen into disuse, as it was not safe to expose them until June, and to prevent their being injured by the cold winds in the autumn they were housed again quite early. But there are still many tender plants employed which necessitate the process of hardening before transfer to summer quarters, and these should be gradually accustomed to a lower temperature than that in which they have been grown, either by admitting more air and light to them in their present positions, or by shifting them to other quarters where this can be afforded. H. C. P.

PROFITABLE FRUIT GROWING for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, writen for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## PRIMULA PALINURI.

In observing this primula, a point of interest to the botanist is the thickness of its underground stem or rhizome, which is elongated to a considerable length, so as to spread itself over an extensive area. The rhizome is of a woody nature. To bring it to the highest point of development, the species should be grown as a pot plant under glass, where it flourishes and flowers well; but if this is impossible and it has to be grown in the open air, a warm nook in the rockery facing west should be chosen.

The leaves are of large size, being both long and broad. They are light green, but of an intense shade. They are fleshy, pliable, serrated at the margin, and quite devoid of farina. In shape they are obovate or oblong, tapering off gradually to a peticle which varies considerably in length, sometimes being very long. The scape is erect, and towers well above the enormous leaves, bearing at its summit an umbel of flowers which vary in number considerably, reaching in some cases a maximum of forty. The flowers are borne on pedicals, the surface of which is thickly covered with a white mealy powder. The bracts offer the same characteristic, and the outer ones are leafy and rather large, the inner ones, however, being much smaller.

PRIMULA PALINURI.
An interesting species with yellow flowers.

The flowers are all produced on one side of the scape, and present a drooping appearance. The calyx is covered with the same mealy powder, and is cleft to almost half its depth. It is bell-shaped, and the lobes have sharp points. The corolla stands out well beyond the calyx, as the illustration shows, and is of an intense golden-yellow colour. Primula Palinuri does not bloom until it has attained a good size, but the flowers when produced are fairly abundant.

In the cultivation of this plant one must bear in mind that it thrives best in a loamy soil, to which some peat and sand have been added. Those who wish to be successful with it in cold districts should keep it under glass during the winter months, in an airy situation, with plenty of light. P. Palinuri emits a strong cowslip odour. It flowers in April, and its home is Southern Italy, in the province of Salerno. The illustration represents a plant from my cold frame which was flowering in the early half of April.

Morelands, Duns. John Macwatt.

## SCARLET RUNNER BEANS.

The popular runner beans can be grown successfully in any good garden soil, but if they are given liberal treatment, and three small sowings are made at intervals, instead of one large one, an abundant supply of fine tender pods will be available until frost arrests growth. Of late years, several improved varieties have been introduced to the public, especially as regards those belonging to the dwarf-growing section, and those intermediate between the dwarf and the runner varieties. Long, shapely, and small-seeded pods are now obtainable, and these are finely-flavoured; also, they are in most cases more prolific than the older kinds. A very early and improved form of runner bean is Hackwood Park Success, which was raised by Mr. Bowerman. The pods are produced in clusters on this variety, most of them being 9 or even 10in. long, and perfectly straight and handsome in appearance. The Emperor is another improved variety of scarlet runner, producing 12 to 15in. pods, fine and straight, and of a fine green colour. For exhibition purposes, this kind is difficult to surpass, while Jubilee Runner produces even larger pods than the Emperor. Prizewinner and Best-of-All are two other fine runner beans, suitable alike for exhibition, or for ordinary table purposes.

### Soil Conditions.

Whenever possible, the ground for runner beans should be prepared in the autumn by bastard trenching and heavy manuring, being left in ridges during the winter. A rich rooting medium is essential for beans, as also is an abundant supply of water during the time the plants are in full bearing. Beans are sometimes grown successfully in trenches on heavy clayey soil, but generally they do best in a well-drained, deeply-worked, light, and rich loamy soil. Poor and shallow soils are unsuitable for runner beans, the best land being that which has been highly cultivated for a preceding crop.

A gross feeder and a quick grower, the scarlet runner needs an abundant supply of nutriment, and therefore careful attention must be given to the manuring and watering of the ground. It is, moreover, a somewhat tender subject, and quickly injured by the least frost, for which reason, many exhibition growers prefer to raise the plants under glass, either singly in small pots or in boxes. Plants so grown must be thoroughly hardened off before planting out, the latter work being commenced about the end of April or the beginning of May. By keeping the plants close to the glass, a sturdy, vigorous growth can be easily encouraged, and the slight check caused by transplanting will make them bear much earlier than those plants sown in the open ground. Further, there need be no fear of slugs, which sometimes work havoc with sowings in the open.

### Sowing.

Too early sowings of runner beans are not recommended, since the plants, being tender, are very easily injured by cold or excessive moisture. A very good plan is to prepare trenches in the same manner as for celery, taking out, say, from 1 to 2ft. of earth and 2ft. in width, forking over the bottom very thoroughly as the work proceeds. Then, the trench should be filled in with well-decomposed farmyard manure to a like depth, and left in this condition for about a week before planting, the best soil obtainable being placed on the manure to a depth of 4 or 5in. Then, if the plants have been raised under glass, two lines should be set out in each trench at 12 or 15in. apart, each plant being planted very firmly and well watered in. In ordinary bean culture, where it is not deemed advisable to give liberal treatment, the sowings may be made during the first week in May, other sowings for later use being made from the end of May up to the third week in June. Single or double rows in drills may be sown, but clumps and circles are favoured by some growers. The drills should be about 4in. deep, and for a double row the seeds placed 7in. apart.

At Hackwood Park, I have seen the plants 1ft. apart in single rows, growing with the vigour of hops, and considerably higher than the latter. Market gardeners sow the dwarfer beans in rows from 3 to 3½ft. apart, and from one to three bushels of seeds are usually required to the acre. Towards the end of April, they roll and harrow the area, and if staked or climbing beans are to be raised, rows are marked out 5ft. apart; dwarf plants require lines only 3½ft. apart.

### Staking and After-Culture.

As soon as the plants are through the soil, the hoe should be set to work, and the seedlings thinned out to the required distances apart, all weeds being kept under as far as possible. Down the centres between the rows, the ground should be well stirred whilst the plants are young, and a slight earthing-up may be given early in the season, so as to afford them some amount of protection. Hazel sticks, about 10ft. long, and placed about 15in. apart, with a horizontal stake fixed about 6 or 7ft. from the ground, midway between the two rows, will be required for the runners. The staking must be done at an early stage, or the runners will become entangled, and will not then attach themselves to the stakes.

Many growers fail to give a sufficient length of support to runner beans, usually contenting themselves with the long brush sticks that are used for staking peas. These are not long enough, however, and it will generally be observed that the plants double over at the top and so exclude air and sunlight from the middle, which affects the bearing of the plants considerably. It is not too much to allow a height of from 10 to 15ft.

Runner beans will need plenty of water during the cropping season, and considerable benefit will be derived from repeated applications of weak manure water. Soot water is an excellent fertilising medium for this crop, especially in dry weather, and a small quantity of bonemeal mixed with farmyard manure, and used as a mulching between the plants as soon as they commence to crop, will be useful in stimulating the plants to fresh energies.

J. C. NEWSHAM.

## NOTES FROM KEW.

### Greenhouse Flowers.

There is at the present time an exceptionally fine display of flowers in the greenhouse at Kew, for not only are the usual occupants of that structure in good condition, but there is quite a host of other subjects less generally met with.

Begonias, cinerarias, schizanthus, carnations, cytisus, primulas, cannas, mignonette, stocks, hippeastrums, etc., one looks for as a matter of course, but beside those, out of a vast number of different flowering plants, the following are especially noteworthy: Coreopsis Granti, a beautiful Composite, introduced about ten years ago from Central Africa. It forms a bushy plant from fifteen inches to eighteen inches in height, and has golden-yellow flowers a couple of inches or so in diameter. Dimorphotheca Ecklonis, another Composite, of loose growth, with large daisy-like flowers borne on long stems, the ray florets pure white, with a beautiful purplish-blue disc. The Bottle Brush flower, Metrosideros floribunda, or Callistemon salignus, which seems to increase in popularity year by year. Impatiens Oliveri, of which a huge specimen is always in bloom. Strelitzia Reginæ (Bird's Tongue Flower), whose striking inflorescences are borne at nearly all seasons. Rondeletia cordata, a pretty evergreen shrub, with heads of laurestinus-like pink blossoms. Lilium candidum, which, since the retarding of Lilium longiflorum has become so universal is now seldom seen forced into bloom. Dwarf polyantha roses, Calceolaria violacea, with small, curious, helmet-like flowers, white, dotted with purple. The bold-growing Celsia cretica, and the smaller-growing Celsia arcturus, both with yellow flowers. Crinum Powelli album, which is anticipating its usual season of blooming by some time; and Arctotis aspera and A. aureola, two South African Composites, with marigold-like flowers, in aspera straw colour, and in aureola rich orange-yellow.

Climbers include among their number the singular Abutilon insigne, its crimson flowers are veined with black; and the bright yellow-flowered Golden Fleece, the best of that colour. Another climber worthy of special mention is the South American Lathyrus pubescens, with lilac-coloured flowers, which, a failure in many gardens, flowers remarkably well at Kew. As a basket plant Oxalis floribunda is just now very beautiful, its rich rose-coloured flowers being borne in great profusion.

### Azalea Vuylstekeana.

This is very effective grown as small bushy plants, on their own roots, in the same way that we have been accustomed for the last few years to see Azalea Hexe treated. In A. Vuylstekeana the flowers, which are of a medium size, are of an intense bright crimson colour. Unlike A. Hexe, which is also well represented at Kew, the flowers of A. Vuylstekeana are single. Both, however, are of a dwarf free-flowering habit.

### Rehmannia kewensis.

Of this hybrid rehmannia, which was raised at Kew, there is a group of several plants, and, pretty as they are in themselves, they also suggest various possibilities by crossing with the other kinds that we have now in our gardens. A hybrid between Rehmannia angulata and R. Henryi is known as R. Briscoei. As a garden plant, however, it is not the equal of R. kewensis, whose parents are R. Henryi and R. chinensis. In R. kewensis the growth is free, several flower stems being thrown up from the base, which is well furnished with foliage. The flowers are yellowish, with a dark crimson blotch on the interior of the upper segments. There appears, however, to be a certain amount of individual variation in the tone of the flower, but in all of them the crimson blotch forms a very notable feature. The most vigorous specimens are about three feet in height.

### Echium Wildpreti.

Considering what a striking feature this forms annually in the greenhouse at Kew it is a matter for surprise that it is not more generally grown in gardens. While some of the echiums are of a shrubby character, this is of biennial duration, forming, in the first year, a dense rosette of long narrow silky leaves. From the centre of these a spike is pushed up in the second season to the height of a yard, or thereabouts. This is for the greater part of its length closely packed with blossoms, which are of a peculiar shade of reddish-pink, suffused with blue. A shrubby member of the same family, namely, Echium fastuosum, with blue flowers, attracted a good deal of attention at the meeting of the Royal Horticultural Society on April 16.

### Scutellaria Mociniana and S. violacea.

These two species of scutellaria are very noticeable among the many beautiful flowering plants in the intermediate portion of the T range. The best known of the two—S. Mociniana—is an upright-growing plant, with crowded heads of tubular-shaped flowers, in colour scarlet and yellow; while S. violacea has numerous weaker branches, and the spikes of deep violet-purple flowers are very freely borne.

### Clerodendron myrmecophilum.

It is now just eight years since this clerodendron was given a First-class Certificate by the Royal Horticultural Society, but it had flowered at Kew a year or two previously to that date. In the intermediate portion of the T range it is just now in good condition, and at once attracts attention, not only by the arrangement of the flowers, but by their uncommon colour. Unlike those members of the genus that are quite vigorous-growing climbers, this species is of quite erect growth, and flowers well when from eighteen inches to two feet in height. The leaves are long and lanceolate in shape, while the upright flower panicle forms nearly one-half of the upper part of the plant. The blooms are disposed in regular whorls. They are about one and a-half inches across, and of a bright orange-amber colour. The stamens, which are long, and red in colour, form a striking feature of the flower. This clerodendron is a native of Singapore, and for its successful culture it needs ordinary stove treatment. Though some years since its introduction, it is not very generally grown in gardens and nurseries.

### Ornithogalum arabicum.

One sometimes hears complaints that this ornithogalum refuses to flower in a satisfactory manner, but at Kew it does not seem to present any difficulty in this respect, as is shown by the numerous examples now in bloom in the cool portion of the T range. The tall spikes of large white, wax-like flowers, each with a dark centre, are very striking, and extremely valuable for various decorative purposes

K.

## HIPPEASTRUMS.

The gorgeous flowers of the hippeastrums are well known to many outside the circle of those engaged or interested in horticulture, as very creditable displays are to be seen in the winter gardens and other glass structures connected with some of the public parks and gardens throughout the country, thus giving thousands of people the opportunity of enjoying their brilliance.

Many of us have the opportunity each season of seeing fine examples of the cultivation of these plants at shows, or at establishments where a collection of hippeastrums is a special and valuable feature. In many such places specially-constructed houses are devoted entirely to hippeastrums, and these offer every facility for ventilation, bottom heat, plunging, etc. But every grower is not in the enviable position of having these facilities, and has to make the best use of less convenient arrangements.

It is most gratifying to notice what good results are often attained without special advantages, though, on the other hand, some very indifferent results are sometimes met with, usually through sheer neglect. In some instances, once the plants are out of flower they are stood in any out-of-the-way corner, and left to take care of themselves, consequently they become dried off at a season when they ought to be in full growth, and when they should be undergoing a resting period it is not infrequent to find them quite producing premature flowers.

The cultivation of hippeastrums is comparatively easy, but a few important points in connection with it have to be borne in mind, and, providing these receive due attention, the result will be that a very small percentage of bulbs, once they reach the flowering stage, will fail to produce their flowers annually, and continue to do so for several years. It is very essential that the bulbs shall receive good treatment during their growing season, and every encouragement should be given them at that period to make vigorous leaves, which, when completed, must be gradually and thoroughly ripened off. To accomplish this the plants, when out of flower, require a position near the glass in a house where a moist atmosphere is maintained, with a night temperature of 60 deg. to 65 deg., air being admitted on all favourable occasions through the day. Close the house in the afternoon before the sun is entirely gone, thoroughly damping it down and spraying the foliage at the same time. The increased temperature, with plenty of moisture resulting from this practice, is very beneficial to the plants.

These conditions will prevail in a vinery in which the vines have passed out of flower, and if the structure be a three-quarter span, with the vine rods not extending beyond the ridge of the roof, and provided with a shelf fixed to the back wall, about 2ft. 6in. from the glass, this latter will be found an ideal position for the hippeastrums, as they will revel in the moist atmosphere maintained for the welfare of the vines. Usually such houses face southwards, and when this is the case no shading need be provided for the plants, as they will be on the north side of the house, and the foliage of the vines will break the sun's rays through the hottest part of the day. Once growth is active, and providing the bulbs are not overpotted, they will require watering frequently, with occasional applications of soot water and liquid manure; if carefully used blood manure forms a good fertiliser. By the time the atmosphere of the vinery has to be kept drier on account of the fruit showing signs of ripening, the hippeastrums will be well advanced in growth, and the change in the atmosphere will be in no way detrimental to them, but will assist in hardening the foliage; feeding can still be continued for some little time; indeed, until about the middle of August, when they will begin to show signs of ripening. When this change comes about, gradually reduce the water supply. The vinery at this season will be kept dry, and freely ventilated during all fine weather, a condition very essential to the hippeastrums at this period to ensure the bulbs becoming thoroughly ripened.

If such a position as the one described cannot be provided, a warm greenhouse or palm house will be suitable through the growing season, provided the plants are kept near the glass, and not in a too shady position. Under these circumstances they will require a more airy and drier house for ripening, as a close moist atmosphere, even when water is withheld from the roots, excites growth. When the ripening process is completed, and the foliage has died down, the pots containing the bulbs can be stored in any cool, dry place, where they may remain until early in January; it will be then necessary that the bulbs should be turned out of the pots, and the soil shaken away from the roots, which should be quite inactive at that time of the year. If any offsets have formed, these should be pulled away from the parent bulb, if far enough advanced to support themselves, and then all dead or decaying roots must be cut away. For potting, use a compost consisting of three parts good fibrous loam and one part leaf-soil, with a plentiful addition of grit or coarse silver sand; if only very heavy loam is available, add one part of peat to the compost. Put the bulbs singly in well-drained pots, press the soil firmly round them, but only the lower half should be covered with compost. Overpotting must be strictly guarded against; a 6in. pot usually suffices for the largest bulbs, while a 5in. pot will be found quite large enough to accommodate bulbs of average size. The offsets can be potted singly into 60-size pots.

When potting has been completed, stand the pots containing the bulbs in a cool, dry house until they are required for starting; then they can be taken into a moderately warm house with a moist atmosphere, and here they will require but little water at the roots until they have pushed up their flower scapes a few inches in height, and then only sparingly until root action is quite brisk. A careful watch must be kept for any trace of slugs at this stage, as they are very partial to the young foliage, and if allowed to continue their depredations for only a short time they will cause much disfigurement to the leaves and flower scapes.

When in flower hippeastrums are excellent subjects for the conservatory and for indoor decoration, and if, while being used for these purposes, they are not carelessly watered or subjected to cold draughts, they will not derive any injury whatever.

Hippeastrums are liable to attacks of red-spider and thrips during hot dry weather, but if the foliage is kept well syringed, such pests will be held in check, otherwise sponging with some insecticide must be resorted to. Mealy bug at times becomes troublesome, and is difficult to eradicate when once established, as the scaly coverings of the bulbs offer a harbour for it; affected bulbs should be thoroughly looked over and cleansed of this pest while in a dormant state. Basal rot and bulb mite sometimes appear, and are usually the result of over-watering and bad management. T. B. Field.

Wych Cross Place Gardens.

## JAPANESE OR TREE PÆONIES.

The land of the Mikado is responsible for a host of exceedingly beautiful subjects which adorn our gardens, including the Japanese pæonies. As distinguished from the herbaceous section, they assume a shrubby or tree-like habit, the wood being of a fairly hard texture, and, further, it is idle to expect these plants to flourish unless they are given sheltered spots, secure from cold and biting winds. In the North of England, and bleak districts generally, it is found necessary to protect the plants with straw, reed mats, etc., during severe winters, and to prevent damage to the young growths from spring frosts.

The Japanese or Tree Pæonies are by no means fastidious as to soil, and I have failed to note any appreciable difference in their behavious when cultivated in light and porous or heavy and tenacious ground. They do, however, demand manurial assistance on a liberal scale, including a mulch of manure in early summer. It may be said that their value as decorative material for the conservatory in early spring is fully recognised by professional gardeners, and, as a matter of course, they are cultivated in pots for this purpose. The chief points in their management in pots are to afford sufficient pot-room to allow for unrestrained development, to employ turfy maiden loam, enriched with manure, and rendered porous by the addition of sand, and to pot them in early autumn if intended for flowering the following spring. They do not lend themselves to being forced into bloom in winter, but they may be brought along gradually in a cool house so as to be available in early spring. It will occur to the cultivator to syringe the plants overhead twice daily, dating from the time they are brought inside, and until the flowers appear, and it is hardly necessary to point out that after flowering they must be allowed to remain in a cold pit until danger from frost is past, when they should be plunged in coal ashes or fibre in an open position in the resêrve plot.

Propagation is easily effected by grafting, the operation being carried out in summer. A non-flowering shoot is grafted upon a strong root of the herbaceous species. After the operation has been completed the soil must be brought above the union when potting, and if placed in a propagating case a union is readily formed. Layering is a simple method, and if a pot plant is slightly tilted when plunged, a number of fine growths can be layered and converted into independent plants. Something must be said as to varieties. The type of Pæony montana is rosy-lilac in colour, and semi-double, and amongst the numerous varieties the following are of merit: Margaret Gerard, flesh colour; Snowflake, of great beauty; General Baden Powell, brilliant scarlet; The Sultan, crimson; Yokohama Beauty, white outer petals and a primrose centre; Edward VII., a combination of purple and crimson; Triomphe de Malines, violet; Ne Plus Ultra, lilac and white; M. Kleyer, rosy-salmon; Captain Champion, white; and Hessiana, white, with crimson stripes, form a selection of exquisite colouring and beauty. Walter H. Aggett.

**Cineraria Feltham Beauty, Dark Blue.**—This is a particularly striking form of cineraria, which gained many admirers at one of the April meetings of the Royal Horticultural Society. The Feltham Beauty strain, while it is of neat, compact habit, is less formal than the florists' varieties. In this form the flowers are of a rich deep blue, a tone of colour which is always much appreciated.—K.

# WORK FOR THE WEEK.

### STOVE PLANTS.

CALATHEA.—This genus contains many handsome ornamental-foliaged plants well worth growing in a general collection of stove plants. If not already divided, and repotted, the work should now be done. Given liberal cultivation they increase rapidly, and it is advisable to divide the crowns at least once in two years. A suitable compost consists of three parts fibrous loam, to one each of peat and leaf-soil, adding sufficient sand and small pieces of charcoal or broken pots to ensure a sweet and open medium. Ample and well-placed drainage must be provided, and clean pots be used. For the first few days after potting but little water will be required, as frequent syringings will suffice. As new growth is made, copious supplies of water combined with a humid atmosphere will be necessary. The plants revel in a rather dense shade, therefore they may be grown beneath climbers. Clear rain-water should always be used for overhead syringing as the leaves will be stained and disfigured by spraying with pump water.

ALOCASIAS.—These somewhat resemble the above, and require much the same kind of treatment, with, perhaps one or two exceptions, viz., the compost should consist mainly of peat used lumpy, and plenty of chopped sphagnum and pieces of charcoal. If one has really good fibrous loam, a small quantity incorporated with the other materials is advised. The receptacles should be nearly half-filled with clean crocks, and the plants set well up, so that the crowns are a few inches above the rim.

BEGONIA GLOIRE DE SCEAUX.—Cuttings of this handsome winter-flowering begonia should be struck as soon as they can be obtained from the base or stems of the old plants. If a heel of the old wood can be taken with them so much the better. Insert singly in thumb pots filled with light sandy soil, and plunge in a half-spent hotbed until rooted. The next shift may be into large 60's or 54's, and finally into large 32's. This begonia is a gross feeder, and when well-established requires frequent applications of liquid manure. Keep the young plants growing freely, yet sturdily, by ventilating the house or pit on fine days. Watch closely for the rust that sometimes attacks the plants. An occasional mild fumigation with a vaporising compound will generally ward off this if taken in hand at once.—H. T. Martin, Warren Wood Gardens.

### THE ORCHID HOUSES.

CYMBIDIUMS.—Such species as Cymbidium eburneum, C. Lowianum, C. Hookerianum (grandiflorum), C. Traceyanum, C. insigne, and others, as well as the hybrids raised from them, are all excellent orchids, which thrive well in a cool part of the intermediate house; if shaded from strong sunshine. Any which have become root-bound may be repotted soon after they have passed out of bloom, but unless this appears really necessary, they may be left undisturbed for several years. The receptacles should be about one-third filled with clean crocks for drainage. For compost I use equal portions of good turfy loam, peat, osmunda fibre, and sphagnum moss, and remove all the fine particles. The compost should be used in a fairly rough condition, and be pressed down among the roots with moderate firmness. Sufficient space should be left below the rim to allow of thorough watering, as well-established plants require copious supplies. After repotting, the greatest care and attention must be paid to the application of water, and none must be given unless it is necessary to prevent the bulbs shrivelling. Should the compost become very wet before the plant is re-established, much harm will accrue. C. devonianum is quite distinct in its habit and mode of flowering, producing its flower spikes like a Stanhopea, therefore it is best grown in shallow teak-wood baskets, suspended from the roof. The dwarf-growing C. tigrinum is best grown in shallow pans, and may also be suspended from the roof. During the summer months cymbidiums appreciate a moderately cool, moist atmosphere, therefore it is necessary to damp well between the pots once or twice a day, and when the weather is bright and warm, a light spraying overhead occasionally during the daytime will assist in keeping them clean and healthy. Heavy sprayings or syringings are detrimental. Give shade from strong sunshine, and keep watch for red spider.

MEXICAN ODONTOGLOSSUMS. — O. Rossi is only one of many interesting subjects from Mexico; there are O. nebulosum, O. Cervantesi, O. cordatum, O. Humeanum, O. Insleayi, O. maculatum, O. Reichenheimi, O. madrensis, and the beautiful O. citrosmum. To be successful with these a slightly higher temperature is necessary than that provided for O. crispum. During the winter months they must be rested and kept drier than is advisable for O. crispum. The temperature should not fall much below 55 degrees, and watering must be done with care, giving only sufficient to keep the pseudo-bulbs plump and the plants healthy. The compost advised for O. crispum will answer. The larger growers are best grown in ordinary flower pots, but the smaller growers succeed best in shallow pans suspended from the roof. The odontoglossums from Costa Rica and Guatemala embrace O. grande, O. Schlieperianum, O. pulchellum, O. bictoniense, and O. Œrstedi. The former is one of the most gorgeous of odontoglossums, and enjoys an average temperature of 60 degrees, but when in flower a drier atmosphere should prevail, thus prolonging the life of the blooms. This and the Mexican species should all be repotted when the new growth is three to four inches in height and about to push forth new roots. With the exception of O. grande all may be accommodated at the warm end of the cool house, but the latter species is best grown at the cool end of the intermediate house. They must not be densely shaded, but the other extreme must be carefully avoided.—J. T. Barker, The West Hill Gardens.

### FRUITS UNDER GLASS.

LATE VINES.—The growths of late vines have developed very rapidly, chiefly owing to the continuous sunshine which we have experienced for some weeks past; artificial heat should be dispensed with during bright sunny days, but it will be required moderately at night to maintain the proper temperature. Pay particular attention to pollination of the bunches when in flower, especially such varieties as Mrs. Pince, Lady Downes, and all the Muscats. Watering the borders is necessary, damp down the house frequently, and stop and tie in the laterals, as recommended for earlier houses.

FRUITING POT VINES.—The fruits will be ripe, and ready to send to the table for dessert, so admit plenty of air, both at the top and side ventilators, and maintain a dry atmosphere in the house at all times. The vines will require to be watered with tepid water several times a day. Any leaves affected by red spider should be immediately sponged with soapy water. Endeavour to keep the foliage clean. Shade the glass lightly by syringing over it a thin solution of whitening and linseed oil.

YOUNG POT VINES.—The plants should be shifted into their final pots without delay; use 11in. or 12in. pots for this purpose, which must be clean and well drained. Cut off three or four of the lower leaves, to allow the top of the root mass to be several inches below the finished surface after the final potting has been accomplished. Stake and tie the plants, and follow the cultural details given in a previous calendar.

CUCUMBERS.—These have been in full bearing for some time, and repeated top-dressings, with good rich loam and decayed manure, will be essential to maintain them in a good healthy, fruitful condition. Carefully attend to the thinning and regulating the young growths, to avoid overcrowding. Remove all leaves that show signs of decay, and frequently syringe the plants. Make a sowing of seeds towards the latter end of this month, to provide plants for fruiting in the late summer and autumn months.

TOMATOES.—The plants are carrying heavy crops of fruit, so do not, on any account, allow the roots to suffer for want of water, but at the same time avoid using much stimulating manure as this induces a thick soft unfruitful growth. Gather fruits when ripe and continue to pollinate the flowers daily.—Henry R. Farmer, Cardiff Castle Gardens.

### THE FLOWER GARDEN.

BORDER CHRYSANTHEMUMS.—Those that were rooted from cuttings early in the year have now become sturdy plants in small pots, and can be planted out if sufficiently hardened. When whole borders are devoted to them they make a showy display in the late summer and autumn, and large groups in the mixed borders are especially effective. These subjects are very useful to follow Sweet Williams, and when required for such a purpose, they must be grown in larger pots until required.

PENTSTEMONS.—No time should be lost in planting these in their permanent quarters, as they are now sturdy plants, while those raised from seeds this year are growing rapidly, and can be planted out a little later. Pentstemons well repay liberal treatment, and when planted on rich ground, produce very fine flower spikes. Allow 18 inches each way between the plants, and guard against slugs; an effective method is to place finely-sifted coal ashes around them. Besides occasional thorough waterings, pentstemons, in common with other flowering plants, derive much benefit by being sprayed over regularly in the evenings of hot sunny days.

ROSES.—Owing to the very bright weather experienced some roses, and especially those growing on walls, are likely to bloom early this year. As greenfly will probably be troublesome, it is advisable to spray with quassia during the evening, in order to eradicate the pest, or it may cripple the young growths and spoil the buds. After using quassia it is desirable to use clear water the following morning. Do not allow any of the plants to suffer for lack of moisture at the roots, and occasional applications of liquid manure can be given with beneficial results, while, in some instances it will be an advantage to apply a mulch of short manure. Remove any briars that appear, and keep the surface soil of rose-beds regularly stirred with the hoe.

SEASONABLE WORK. — All bedding plants must be placed in cold frames to harden off, where they can be freely ventilated, while some of the more hardy ones can be stood in the open, provided that protection can be given from frost. Dahlia tubers may be planted out where they are to bloom if desired, but we prefer to start them in gentle warmth and plant out in June. Antirrhinums should be planted in their permanent quarters as soon as possible. Sweet peas must be staked, and for a late supply seeds should be sown at the present time in the open. Thin out annuals as they become large enough, and keep the seedlings free from weeds. Newly-planted shrubs and plants require frequent waterings at the root as a result of the dry weather, while in many cases a suitable mulch will help to retain moisture about their roots.—J. Gardner, Batsford Park Gardens.

**Spiræa arguta.** — The shrubby spiræas are such a numerous class, that in most gardens selections rather than collections are aimed at. This early flowering form is entitled to a place among the very best. It reaches a height of 4 to 5 feet, has slender arching branches, and bears in April a great profusion of pure white flowers.—T.

## TULIPS AT TAPLOW.

The progress shown in the raising, selection, and cultivation of late-flowering tulips during the past few years is only a few degrees below that indicated by the daffodils, but it is probable that the cultivation of these glorious flowers is spreading faster in private gardens than is that of daffodils. On every hand one hears of extensive orders for bulbs of May-flowering and Darwin varieties, and the very keen interest in these groups is evidenced at every meeting of the Royal Horticultural Society from late April to the end of May. Further, at every nursery where bulb growing is a special feature, the area devoted to tulips increases each succeeding year. Small wonder that it is so, for, following the daffodils and Dutch tulips, and coming into bloom before the herbaceous borders are gay, late tulips fill a place that would otherwise be vacant.

These tall tulips have a stately grace peculiarly their own; they are fine for beds or borders, and valuable for indoor decorations. They are of easy culture, and their large substantial blooms last quite a good time in full beauty. And when one comes to the subject of colour, words fail to convey either the delicacy of tint or the barbarian gorgeousness to be found in a moderate selection, while a large collection of varieties planted in good blocks provides a feast of brilliant beauty that is perfectly dazzling. Such a feast may now be enjoyed at Taplow, where Messrs. Barr and Sons have established themselves in a new home. The main line of the Great Western Railway passes by the side of the nursery, and passengers thereby have grown enthusiastic over the wonderful picture spread out before them by the Messrs Barr.

A few minutes' walk from Taplow Station and one is in the midst of splendid blocks of such beautiful tulips as the pink Clara Butt, Inglescombe Yellow, the bright Inglescombe Pink, the blue-tinted Rev. W. Ewbank, and the masterful red Pride of Haarlem. Sunlight is a trifle small as compared with the great goblet-shaped Mr. Farncombe Sanders, but its scarlet hue is most effective, while those who love the softer tints will find the elongated, egg-shaped Moonlight a delightfully soft pale yellow. Sunlight was collected at the same time as retroflexa major, the latter a light yellow with reflexing pointed petals—a distinctly artistic tulip.

Don Pedro is a rich bronze and brown variety that, like others of somewhat similar colour, such as Louis XIV., is magnificent in association with the rich salmon hues of mollis azaleas. The darker sorts, like Sultan, are also capital for similar planting. Shahzada gives a most distinct mahogany-red tint, and is rather dwarf. Mrs. Moon is still one of the most graceful of yellow tulips, while Black Chief forms a striking contrast with it. White Swan is probably the finest of late white tulips, and a mass of it is perfectly dazzling in the spring sunshine. Orange Beauty, old gold and rose, is a rich warm tone, and Panorama, bronze and gold, is a gay giant. Caledonia and Scarlet Glow and Inglescombe Scarlet are very brilliant, the two latter especially so. Cassandra provides a rich cerise hue, while Picotee, with its rosy edge pointed petals of creamy-white, is already a great favourite. Margaret is perfectly lovely, and Mrs. Krelage gives light blue tinting that makes it a charming tulip for massing or for showing up the deep pink and other rich hues. Jaune d'Oeuf, Baron de la Tonnay, Salmon King, Queen of Roses, the dusky Sultan, and even more intense Velvet King, all have attractions that cannot be overlooked when selections are being made, nor may one forget Scarlet Emperor, or the delicate beauty of Norah Ware and Loveliness; but where all are so beautiful each has a claim upon some taste, or a value for some purpose. We are thankful to those who have created so many wonderful flowers, and grateful to Messrs. Barr for growing and displaying them so grandly at their new place at Taplow.

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## EXHIBITIONS AND MEETINGS.

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### Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—APRIL 30.

Present: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the chair); Messrs. J. T. Bennett-Poë, W. Hales, A. Worsley, J. Fraser, J. O'Brien, J. W. Odell, G. Wilson, C. E. Shea, E. M. Holmes, and F. J. Chittenden (hon. secretary).

HYBRID SAXIFRAGES.—Mr. J. Fraser reported on the saxifrages from Dr. Blaxall, of Edgware, shown at the last meeting, as follows: The two saxifrages were hybrids between S. granulata and either one of the group of S. muscoides Rhei or S. decipiens. All the characters of the hybrids were different from those of either parent. No. 1 had the stamens more or less imperfect, the petals shortened, the flower flattened, and the disc greatly enlarged. The stem was shortened, forming a compound corymbose cyme. The leaves were deeply lobed on the tripartite plan, much divided and with more acute lobes, not rounded as in granulata. The basal leaves formed a rosette, with short, broad, flattened petioles, these characters being derived from the dactyloid parent. The bulbils at the root and in the axils of the basal leaves were in a more or less leafy condition, and some of them had developed into leafy branches, especially in No. 2. The styles of both were divaricate, as in the dactyloid parent, not erect-patent as in S. granulata.

ALBINO FORM OF ORCHIS MASCULA.—Mr. Gurney Wilson showed an albino form of Orchis mascula collected by him in a field in mid-Sussex.

JACK FRUIT.—Mr. O'Brien showed on behalf of J. S. Bergheim, Esq., of Belsize Court, Hampstead, a Jack fruit (Artocarpus) brought by him from Brazil.

ARSENIC IN DRAINAGE WATER.—Dr. Voelcker remarked on some water, he had recently received for analysis, which had come from a stable and had been reputed to injure plants. He had found it to contain an appreciable quantity of arsenic, which was, no doubt, the cause of the injury. He had found that many plants would absorb a certain amount of arsenic from the soil without any appreciable injury, but in this case the quantity had been too great. Mr. O'Brien made the following remarks, which suggest a probable source of the arsenic: "I remember to have often heard of those in charge of horses giving them small doses of arsenic to improve their condition, and many a good horse has died suddenly from 'heart trouble' in consequence. Of course, it is done secretly. But if done at all it would account for the presence of arsenic in the stable. If pure arsenic cannot be had, on account of the restrictions, might not the knowledge that it is present in weed-killer cause small doses of that to be mixed with the food, and the surplus thrown on the floor? The arsenic must have got in somehow, and this is as likely a way as any. But to kill plants it must have been strong."

ORANGE WITH YELLOW STRIPE.—Mr. Holmes reported that he had examined the orange shown at the last meeting, which had a narrow yellow stripe down one side passing from base to apex, and could find nothing inside the fruit in connection with it. He suggested that it was probably a hybrid between the orange and the grape fruit.

SCILLA HISPANICA WITH LONG BRACTS.—Mr. Worsley showed from his garden an inflorescence of Scilla hispanica analagous to the variety bractiata of Scilla nutans. The bracts were many times longer than the pedicels.

TULIP WITH DISPLACED PERIANTH PIECE.—Mr. Shea showed a tulip with a displaced perianth lobe a few inches below the flower, which had but five perianth pieces.

PARROT TULIP.—Messrs. Barr, of Taplow, showed a new break, Sensation, the colour in the specimen not yet fully developed; with age the white becomes very solid and pure. As far as he had been able to discover from investigations made in Holland, this break suddenly appeared in a bed of the Dutch Breeder Tulip known as Reine d'Espagne (of which a specimen flower was here exhibited) in the nursery of a small Dutch grower. It is, of course, much dwarfer than its Breeder parent, and also propagates more slowly. A Botanical Certificate was recommended on the suggestion of the Narcissus Committee to this plant, which had none of the horn-like excrescences usual in parrot tulips, and had a stem like that of the Darwin tulips.

DOUBLE PRIMROSE.—A double primrose found growing wild was exhibited from an unknown source.

IRISES.—Mr. W. Rickatson Dykes, of Farncombe, sent irises, with notes as follow, making clear the origin of I. florentina and I. albicans: I. germanica "L. var."—This variety is one that is largely grown for producing orris root in the neighbourhood of Florence. Its stem is more slender than that of the varieties usually grown in England. It is probably the form of which I. florentina is the albino. I. florentina.—This is an albino form of a variety of I. germanica. Compare the spathes and the inflorescence. I. Madonna, Sprenger.—A comparatively recent introduction from Arabia. Compare its flowers, spathes, and inflorescences with those of I. albicans. There can be little doubt that it is the purple form of which I albicans is the albino. I. albicans, Lange. — Contrast the flower, spathes, and inflorescence with those of I. florentina, and compare them with those of I. Madonna, of which it is the albino form. I. albicans and I. Madonna both come from the Yemen in Arabia, and the former, used as a graveyard ornament, has spread wherever the Mahommedans have penetrated. I. Reichenbachi, Heuffel. — This iris, of which both purple and yellow-flowered forms can be raised from the same capsule of seed, is the common dwarf iris of the Balkans, corresponding to I. chamæiris in Southern France and Northern Italy. N.B. —The sharply-keeled spathes, as contrasted with those of I. chamæiris, I. balkana (Jka), I. serbica (Pane), I. bosniaca (Beck), I. Skorpilli (Velen), are some of the many synonyms of this iris. I. chamæiris, Bertolini.—This is the common dwarf iris of the South of France and of Northern Italy. It is easily distinguished from I. pumila by its visible stem and short tube, and from I. Reichenbachi by the spathes, which are not acutely keeled. The flowers are very variable in colour, and this variability has given rise to numerous synonyms, e.g., I. italica (Parl.), I. lutescens (Lom.), I. olbiensis (Hénon), I. virescens (Delarb).

## National Auricula Society.

### MIDLAND SECTION.

The thirteenth exhibition of auriculas and primulas was held at the Botanical Gardens, Edgbaston, on Wednesday and Thursday, May 1 and 2. There was a very fair attendance on the opening day, when, in fine weather, Mr. and Mrs. Neville Chamberlain opened the show. Mrs. Neville Chamberlain was presented with a bouquet of carnations (by Miss Stevens, the daughter of the late secretary), and was afterwards shown the principal flowers by the secretary and chairman of the society.

There were a goodly number of exhibits, though the quality was not up to the average; the early season was the means of bringing the best flowers out a fortnight before their proper time.

There were some excellent honorary exhibits, one from Messrs. Young and Co., of Cheltenham, called for special praise, the carnation blooms being very fine and well arranged; a silver-gilt medal was awarded. An award of a silver-gilt medal fell to Messrs. A. R. Brown, Lim., King's Norton, for a nicely-grown collection of pot roses. Mr. H. N. Ellison, West Bromwich, was awarded a silver-gilt medal for a very fine collection of ferns and gerberas. W. Byng Kendrick, Esq., Edgbaston (gardener, Mr. J. Webb), was awarded a silver-gilt medal for a very fine exhibit of calceolarias, the beautiful plants receiving a large share of attention from the visitors. Mr. Arthur Edwards, of Nottingham, was awarded a silver medal for table decorations, and C. Winn, Esq., Selly Hill (gardener, Mr. T. T. Sheppard), gained a silver medal for a group of schizanthuses.

A First-class Certificate was awarded to Mr. R. Holding for a gold-centred alpine auricula named Mrs. Neville Chamberlain.

The Botanical Society's medals for the highest number of points gained in open classes were won as follows: Silver medal, Mr. W. M. Shipman; bronze medal, Mr. C. Winn; the Auricula Society's silver medal, Mr. C. Winn; and the Brooks' silver medal, Mr. T. M. Eglington.

### SHOW AURICULAS.

For eight show auriculas, Mr. W. M. Shipman, Altrincham, was first, with Rev. F. D. Horner, Orient, Seedling, Acme, Henry Wilson, Molly Shipman, Geo. Lightbody, and Harrison Weir; Mr. Chas. Winn, Selly Hill, second, with Henry Wilson, Rifleman, Richard Headley, Gerald, Shirley Hibberd, Mrs. Henwood, Marmion, Olympus; Mr. W. H. Parton, Moseley, third. For six show auriculas, Mr. W. H. Shipman led with A. Barker, Letetia, Miss Willmott, Ruby, Shirley Hibberd, and Acme; Mr. Charles Winn came second, and Mr. W. H. Parton third.

First prize for four show varieties fell to Mr. G. J. Savory, Rotton Park, Birmingham, for Mrs. Henwood, Richard Headley, Henry Wilson, and Shirley Hibberd; Mr. J. D. Williams, Smethwick, second; and Mr. C. Reeves, Handsworth, third. For two show auriculas, Mr. R. Holding, Bournville, led with Harrison Weir and Richard Headley; Mr. G. J. Savory second, with Shirley Hibberd and Geo. Lightbody; Mr. H. W. Miller, Handsworth, third.

In the single plant classes, Mr. E. Danks, Handsworth, led for a green-edge with Henry Wilson. For a grey edge, Mr. W. M. Shipman scored with Geo. Lightbody. The best white edge was Acme, from Mr. W. M. Shipman. Mr. G. J. Savory showed the best self, Mikado; while for a yellow or buff self Mr. F. Grazebrook scored with Daffodil.

The class for two show auriculas (maiden growers) found Mr. J. D. Williams first, with Mrs. Henwood and Shirley Hibberd; Mr. T. Hughes, Handsworth, second, and Mr. F. Willis, Balsall Heath, third. For three show auriculas, dissimilar (local growers), Mr. G. J. Savory led with Mrs. Henwood, Shirley Hibberd, and Olympus; Mr. H. J. Spencer second, and Mr. J. Freeman third. Mr. J. D. Williams led for three show auriculas (young amateur growers) with Mrs. Henwood, Shirley Hibberd, and Harrison Weir; Mr. G. S. Yeomans, Hollywood, second, and Mr. F. J. Twist, Handsworth, third.

The premier show auricula was Shirley Hibberd, shown by Mr. W. H. Parton.

### ALPINE AURICULAS.

For eight alpine auriculas Mr. W. M. Shipman was first with Argus, Charmer, Commander, Ilene, Majestic, Lucrece, Sunrise, and Janet; Mr. C. Winn second, and Mr. T. M. Eglinton, Birchfields, third. For six alpine auriculas, Mr. W. M. Shipman led with Majestic, R. C. Cartwright, Mars, Seedling, Exquisite, and Phyllis Douglas; Mr. T. M. Eglinton second, and Mr. R. Holding third.

Mr. C. Reeves was first for four alpine auriculas with J. F. Kew, Miss Baker, Exquisite, and Majestic; Mr. H. W. Miller came second, and Mr. G. J. Savory third. For two alpine auriculas Mr. H. W. Miller scored with Majestic and Unexpected; Mr. E. Danks second, and Mr. A. Lawton third.

In the single plant classes Mr. T. M. Eglington scored for a gold centre with Duke of York. For a light centre Mr. W. M. Shipman led with Phyllis Douglas; and for a single laced variety, Mr. T. M. Eglington came first with Seedling.

For two alpines, maiden growers, Mr. J. D. Williams won with Majestic and Winifred; Mr. F. Willis second, and Mr. G. S. Yeomans third. For three alpines, local growers, Mr. T. M. Eglington led with Argus, J. F. Kew, and Golden Acme; Mr. W. H. Parton second, and Mr. H. W. Miller third. For three alpines, young amateur growers, Mr. J. D. Williams was first with Mabel, J. F. Kew, and Duke of York; Mr. T. J. Twist second, and Mr. F. Willis third.

The premier alpine auricula was Charmer, shown by Mr. W. M. Shipman.

### SEEDLINGS.

In this division Mr. E. Danks led for two show varieties, with Raven's Plume and Mrs. Edwards. Mr. W. M. Shipman had the best green edge, named Cleveley Gem. Mr. E. Danks won for a grey edge, with Mrs. A. W. Johnson. Mr. H. W. Miller had the best white edge, Queen of the Snows, and the best seedling self was Raven's Plume, shown by Mr. E. Danks. The premier show auricula seedling was Cleveley Gem from Mr. W. M. Shipman.

In the alpine section Mr. Danks had the best four seedlings, and Mr. N. Robinson the best pair. For a gold-centred seedling Mr. R. Holding scored with Mrs. Neville Chamberlain, and for a light-centred seedling Mr. E. Danks scored with Saturn. The premier seedling alpine auricula was Mrs. Neville Chamberlain, shown by Mr. R. Holding.

## Southampton Gardeners' Society.

The monthly meeting of the above society was held in the Highfield Institute on Thursday, 25th ult., when there was an excellent attendance. The Hon. Secretary called the attention of members to the facilities for reduced tickets of admission to the International Horticultural Exhibition in London from May 22 to 30. It was also stated that the committee had decided to devote a short period at the close of the ordinary business at the monthly meetings to the discussion of subjects of general interest. Four new members were elected.

Mr. W. F. Copeland then gave an interesting and instructive lecture on the hybridisation of daffodils, tracing the history of species, explaining the methods of cross-fertilisation, and concluding with some hints of practical utility. The paper was listened to with great interest, and a discussion followed in which Messrs. Molyneux, Cleverly, Andrews, Silcock, Verdon, and the Chairman (Mr. Greenaway) took part.

Mr. Copeland having answered several questions, a most hearty vote of thanks was accorded to him on the proposition of Mr. Molyneux, seconded by Mr. S. G. Kimber. Thanks were also given to those who had brought exhibits.

## Sparkhill Horticultural Society.

The annual narcissi and auricula exhibition of the above Society was held in the Large Hall of St. John's Schools, Birmingham, on Saturday, April 27.

Owing to the early season the majority of the daffodils in the Midlands were over, and the competition in these classes was poor. Auriculas, however, were shown in fine form, especially in the alpine classes, and, as the competition was extremely keen, many meritorious exhibits which would usually have held their own in a strong class, failed to obtain a place.

In the class for eight bunches of narcissi, six distinct, not more than five blooms in a bunch, Mr. E. J. Keeling, Small Heath, was first with a good collection; the most tasteful arrangement of narcissi to occupy a space not exceeding 4ft. by 2ft. 6in., also obtained for Mr. E. J. Keeling the first place. He had a very light and pretty arrangement, principally of poeticus varieties. Mr. F. Anderson, Moseley, was second, with a collection in which the trumpet varieties appeared rather too heavy. For six bunches of narcissi, Mr. Keeling was again first; and in the class for three bunches of narcissi he once more won easily, with Mr. Anderson second.

For three show auriculas, distinct, Mr. H. J. Spencer, Four Oaks, Sutton Coldfield, was first with Acme, Olympus, and Shirley Hibberd; Mr. H. W. Miller, Handsworth, second with Harrison Weir, Shirley Hibberd, and Ruby; Mr. E. Saunders, Sparkhill, third. For three alpine auriculas, Mr. Miller obtained premier honours with fine plants of Majestic, Unexpected, and Thetis. The second prize entry comprised Thetis, J. F. Kew, and a well-grown Argus. Mr. J. Freeman, Sparkhill, was third. The premier award for three seedling alpine auriculas was made in favour of Mr. Miller, who had Richard Holding, which received a F.C.C. at the Midland Auricula Show last year; Annie Crisp, a fine light centre; and Golden Rain. Mr. J. Freeman, Sparkhill, second. For one seedling show auricula Mr. A. Gilbert, Handsworth, was first, with Mi- Barnsley, a smooth, well-formed self; Mr. H. W. Miller second.

The above classes were restricted to members of the Sparkhill Society; but, in addition to this, the National Auricula Society (Midland Section) offered prizes in a class for three show auriculas, and one for three alpine auriculas. In the first of the two classes, Mr. G. J. Savory, Rotton Park, Birmingham, was first with Mrs. Henwood, Richard Headley, and George Lightbody; Mr. J. Freeman second, and Mr. T. M. Eglington, Handsworth, third. The competition in the second class was exceptionally strong, and the first prize was awarded to Mr. J. Freeman for splendid plants of Phyllis Douglas, Unexpected, and Thetis; Mr. H. W. Miller was second; and Mr. G. J. Savory was third. The premier auricula in the open classes was Richard Headley, shown by Mr. G. J. Savory; and the premier in the members' classes was Majestic, exhibited by Mr. H. W. Miller. The society's medal for the member obtaining most points in the daffodil classes was awarded to Mr. E. J. Keeling; and the medal for the most points in the auricula classes to Mr. H. W. Miller.

At a meeting held after the show the Chairman announced that over 150 new members had joined the Society during April, a good augury for the future of this flourishing society.

## General Bulb Growers' Society of Haarlem.

The following awards were made at the recent meetings of the Narcissus and Floral Committees of this society:

### FIRST-CLASS CERTIFICATES.

Narcissus Vulcano. — Double flowers, sulphur-yellow, in the centre orange-red, a cross of Poeticus ornatus and Double van Sion.

N. South Pole.—Perianth white, very large; trumpet clear sulphur-yellow and white, finely recurved at the mouth, raised from seed.

N. Bedouin.—Perianth cream-white, cup yellow, with an orange-red border.

N. Campernel rugulosus maximus.—Perianth and trumpet pure golden-yellow.

N. Sunrise.—Perianth white, cup golden-yellow, margined orange-red.

N. Great Warley.—Perianth white, trumpet of a clear citron-yellow; flowers of large size.

### AWARDS OF MERIT.

N. Solo.—Perianth and trumpet pure yellow; raised from seed of Golden Spur.

N. Thackeray.—Flower very large, perianth and trumpet golden-yellow, trumpet long, finely recurved; raised from seed.

N. March Glory.—Flower very large, clear yellow, perianth flat, trumpet finely recurved; raised from seed.

N. Plenipo.—Double, flower sulphur-yellow, a cross between Poeticus ornatus and Double van Sion; raised from seed by Rev. G. H. Engleheart.

N. Isis. — Type Englehearti, perianth creamy-white, cup broad and flat, citron-yellow, margined orange-red; raised from seed.

N. Holbein.—Perianth creamy-white, cup citron-yellow; raised from seed.

N. Colossus.—Perianth clear yellow, trumpet dark yellow; raised from King Alfred.

N. poetaz Laurens Koster.—Perianth white, cup yellow; obtained from seed of N. poeticus.

N. fl. pl. Glacier.—Double, citron-yellow, with a small clear yellow margin at perianth and trumpet.

N. St. Bavo. — Double, creamy-yellow; raised from Golden Spur.

N. Tresserve.—Perianth creamy-yellow, trumpet pure yellow; a hybrid of Emperor and Golden Spur.

N. Golden Lion.—Perianth and trumpet golden-yellow, perianth very regular, trumpet short, finely recurved; raised from seed, in form identical with Glory of Haarlem.

N. poetaz Albert Vis. — Perianth white, cup orange; raised from one of the polyanthus varieties; from a cross between the variety of Poeticus known as King Edward and Staten General; good for forcing.

N. Mount Erebus.—Type Leedsi; perianth pure white, cup light citron-yellow, changing to ivory-white.

N. polyanthus No. 67.—Perianth clear yellow, cup orange; raised from seed.

Freesia Tubergeni Robinetta.—Flowers dark carmine, spotted yellow; raised from seed.

F. Tubergeni Gem.—Flowers lavender-blue, changing to white, spotted yellow; raised from seed.

# THE USE OF LIME.

At the recent meeting of the Midland Farmers' Association, Mr. Walter E. Collinge gave an instructive lecture on the use of lime in the cultivation of farm and garden crops, of which the following is a summary.

Lime is a necessary constituent of plant food, but the greatest service it renders from a manurial standpoint is that it unlocks the insoluble reserves of nitrogenous and potassic material in the soil, and renders them available as plant food. In liming experiments made at Rothamsted, where potash had been previously applied, a great increase was brought about in the proportion of leguminous plants. A dressing of lime was found to be necessary for grass land on most soils in order to neutralise the acidity produced by decaying vegetation, and to enable the manures to exert their full effect.

## Changes Caused by Lime.

Lime changes many poisonous compounds which are present in the soil and renders them practically harmless to plant life. It is now generally recognised that a fertile soil must contain a rich, fresh humus; but if carbonate of lime and magnesia are deficient, the humus becomes sour, and the soil unfertile, and in a condition favourable to the production of disease. The physical or mechanical effects of lime on certain soils is most marked, thus stiff soils, after being limed, permit of a quick passage of water. Such soils, unlimed, become waterlogged, excluding the air, which is necessary for the proper and healthy development of plant roots, whilst in times of drought they readily cake, increasing the difficulties of tillage, and are ill-adapted to plant growth. It may be taken as generally conclusive that where the following features obtain, liming may be followed with advantage; (1) On soils relatively rich in iron, and requiring phosphatic manures; (2) where soils are acid; (3) in soils deficient of lime or magnesia; (4) where clover fails; (5) where "finger-and-toe" disease is present; and (6) when clayey soils become too adhesive.

## When and How Often to Apply Lime.

The frequency with which liming should be practised depends upon a variety of conditions—e.g., the amount applied; whether slaked or unslaked; the nature of the soil; the crops grown, etc. Dr. Fream, an eminent authority, has pointed out that for light lands very light dressings, made more frequently, give the best results, but that the dressing should be increased, the deeper the surface soil. He further points out that for correcting plasticity of a heavy clay, or acidity of a soil, or in preparing new land, rich in humus, the first dressing need not exceed 100 bushels per acre, although as much as 500 bushels are often used. As to the proper season, this must depend to a large extent upon the crop. For "finger-and-toe" disease the application is best made in the winter or spring, twelve months before the sowing of the crop.

## Biology of the Soil.

Slowly, but surely, we are beginning to realise in this country that the biological study of soils and soil organisms is a most important one. We know that complicated chemical process known as nitrification is aided by the presence of lime in the soil; that the decomposition of organic matter, and the production of carbonic acid, are also greatly accelerated by the same material.

The utilisation of atmospheric nitrogen by certain plants is greatly facilitated, particularly upon sour soils, and in the case of clovers. In the past we have spoken of the soil as a chemical laboratory, but it is something more—it is a medium teeming with bacteria, fungi, and minute animal life, the inter-relations of which we, as yet, only very imperfectly understand.

## The Influence of Lime on Certain Plant Diseases.

In the application of chemical manures, and other so-called artificial dressings, far too little attention has been given to the action these substances have on plant diseases, and the same remarks are equally true when applied to lime, for, on the one hand, the presence of lime tends to favour the production of disease, and on the other it is capable of materially lessening, if not preventing, disease.

It has long been recognised that the fungus disease known as potato scab is favoured by the presence of carbonate of lime in the soil. The explanation that has been offered is that the decomposed lime makes the soil alkaline, or to some influence which it, with the compound, carbonic acid, exerts upon the development of the fungus. On the other hand, it is equally generally recognised that the disease known as "Finger-and-toe," "Club-root," "Anbury," etc., is lessened by the use of lime. Mr. Collinge then gave an account of potato scab, "finger-and-toe," and other diseases, and a review of the deservedly well-known Cockle Park experiments.

## A Hint.

In 1909, Mr. Collinge pointed out that a combination of lime followed by a dressing of sulphur, might possibly give much better results than had hitherto been obtained. Experiments he made showed that the action of dressings of slaked lime only tended to correct the acidity of the soil and improve the physical condition, thus removing some of the conditions favourable to the reproduction and spread of the fungus.

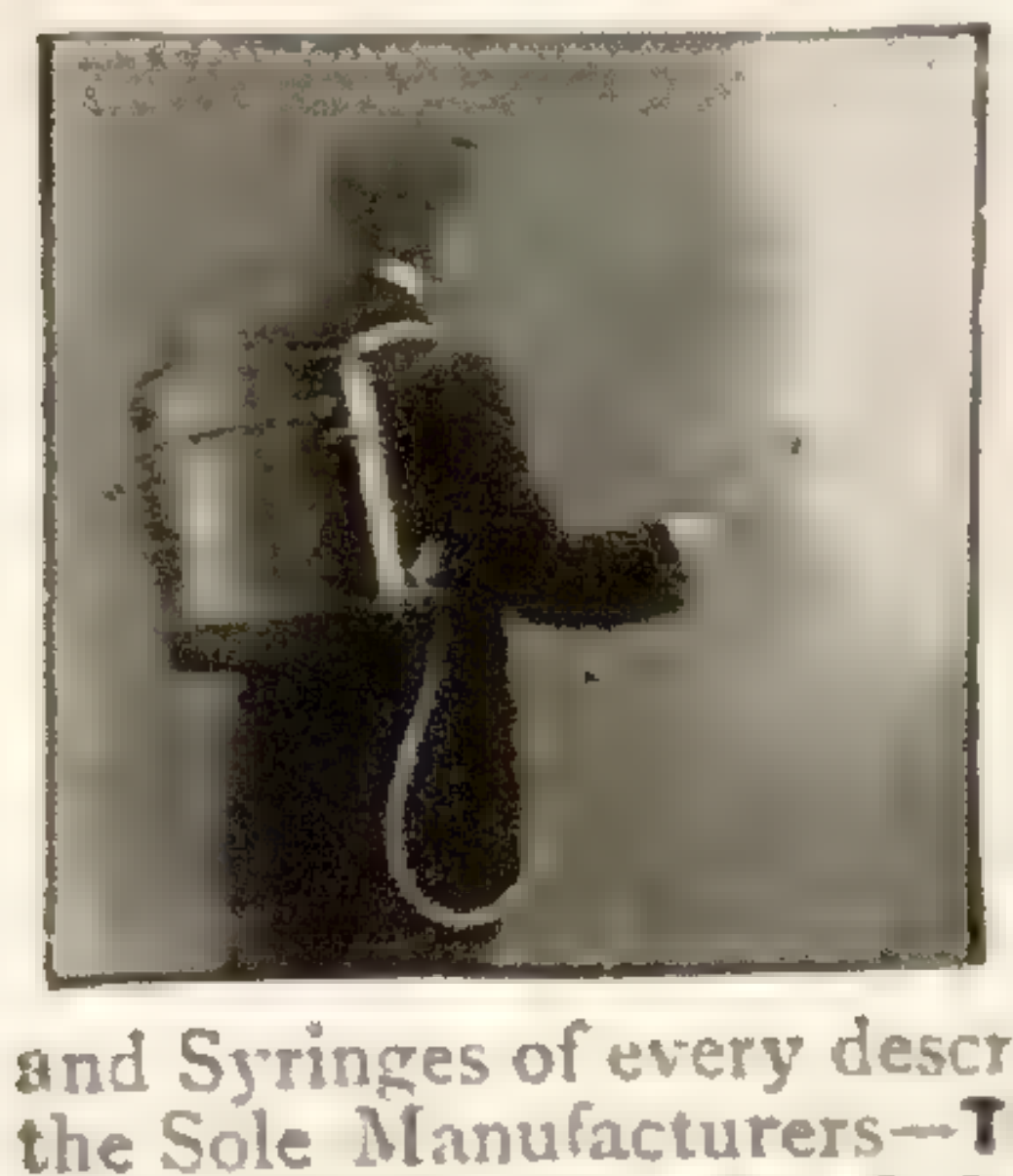
In the autumn of 1909, ground was treated with a dressing of 15 cwt. of ground, unslaked lime. It was put on with a manure-distributor, and ploughed in. In the spring the same land was given a dressing of flowers of sulphur, 5 cwt. to the acre. An excellent crop of swedes was lifted the following autumn, and the roots were practically free from disease, as in only one corner of the field was any disease noticeable, and this very small.

On this small patch there was a considerable amount of heavy clay, which was in a very wet and sticky condition, and, quite apart from the fungus disease, badly required liming. A part of this, about one-sixth of an acre in extent, was again treated with ground, unslaked lime at the rate of 12 cwt. to the acre in the autumn, followed in the spring with sulphur as previously. When the swedes were lifted in the autumn of 1910 no trace of the disease could be found, and the physical condition of the soil had wonderfully improved.

**Spraying**

The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested

**"FOUR OAKS"**



which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-**. No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 C, SUTTON COLDFIELD.**

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

PHOTOGRAPHS OF POWIS CASTLE GARDENS.—J. M., Durham.—Would you be kind enough to inform me where I can obtain photographs of Powis Castle Gardens? Several views in these famous gardens have appeared in the GARDENERS' MAGAZINE, and as I was employed at Powis, I should very much like to obtain photographs to keep as a matter of personal interest.—Mr. H. N. King, 4, Avenue Road, Goldhawk Road, London, W., has a series of photographs of Powis Castle and gardens, and no doubt you could obtain copies.

EFFECT OF RECENT WEATHER ON TULIPS.—A. A., Romford: My Darwin and May-flowering tulips are in full bloom, and about a fortnight before their usual time. The stems are not so tall as usual, the flowers are scarcely so large as in previous years, and the leaves, as you will see by the enclosed specimen, seem to have been slightly bleached. Will the variable weather of this spring have any ill-effect upon the bulbs?—In most gardens the Darwin and May-flowering tulips have been forced into bloom early by the brilliant sunshine of April, consequently they are not so fine or long-stemmed as usual; the absence of warm rains also militated against full size and height. The bleaching of the leaves is due to frost and cold winds, and is likely to prevent the formation of full size and otherwise well-developed bulbs. Hoe among the plants, give a watering if necessary, and a light mulching of manure, so that the leaves and stems may be kept green and useful to the bulbs as long as possible.

TRANSPLANTING BAMBOOS.—N. T. W., Chipping Norton.—What is the best time to transplant bamboos, and to divide them if necessary?—May is by far the best time of the year for bamboo planting, and the earlier in the month the work can be performed the better. The sites should be well prepared and manured previously, and some short manure should be ready to hand for mulching directly after planting. Unless the soil is moist, as after showery weather, it is very desirable to give the clumps a good soaking the evening previous to lifting. Lift carefully, divide by means of a strong knife, and replant without allowing the roots to become dry from exposure. Water in and syringe overhead frequently if the weather remains dry and bright.

GHOST MOTH CATERPILLAR.—E. B. C., Farnham.—I enclose a pinkish caterpillar, with a red-brown head and some blackish dots on the upper part of its body. It seems to work underground, and do harm to roots. Kindly tell me what moth it belongs to, and how to get rid of it.—The specimen is a caterpillar of the Ghost Moth; the male moth silvery-white and grey; the female yellow, with brownish markings, and grey hind wings. The moths fly in June and July. The courtship of this species has been described by Chapman. The moths fly in the gloaming. The male, ghost-like and conspicuous by the silvery-white colour in spite of the dusk, chooses a place and hovers for a short time backwards and forwards, "swaying like a pendulum over a surface of about a yard" (Barrett) in order to attract the female. Sometimes the male is alone, sometimes there are several males in company. The female, non-fertilised, flies towards a male and intentionally touches or knocks up against the male, which at once ceases its swaying and drops to the ground, where pairing takes place. The fertilised female flies about over the grass, discharging her eggs as she flies. From the egg hatches the caterpillar, which feeds from July till the next April or May at least, when pupation takes place. As with the last species, the pupa leaves the cocoon just before the emergence of the moth, and by means of its spines wriggles to the surface. The Board of Agriculture points out that Vaporite has been used with some success against swift caterpillars, while in a confined area where the caterpillars are at work the use of bisulphide of carbon injected into the soil would destroy them. Pieces of potato tuber placed here and there some inches below the surface of the soil, in marked places, will serve as traps. The working of the soil where the crop allows, and the turning up of the caterpillars (or in spring of the chrysalids) to the birds is a useful measure, or the caterpillars can be collected. In some cases, e.g., with daffodils, should the pest be abundant, the bulbs should be lifted and replanted. Birds and moles devour the caterpillars, which are also destroyed by two species of parasitic fungi, viz., Cordyceps militaris and C. entomorrhiza.

### NAMES OF PLANTS.

W. P. C., Rochdale.—1, Cymbidium eburneum; 2, Lælio-cattleya elegans.

M. E. F., Dartford.—1, Echeveria secunda glauca; 2, Asparagus Sprengeri.

C. C., Matlock.—1, Saxifraga hypnoides; 2, S. decipiens; 3, Iberis sempervirens; 4, Berberis Darwini.

E. S., Beckenham.—Not good specimens; probably Dendrobium densiflorum. How are the flowers produced?

H. S. D., Monmouth.—1, Pyrus Ringo; 2, Erysimum Perofskyanum; 3, Cytisus præcox; 4, Orobus vernus; 5, Tulipa primulina.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. APRIL 28 TO MAY 4. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Apr. 28—Sunday …… | 10 12 | 48 | 43 | 57 | 40 |
| ,, 29—Monday ….. | 2 54 | 46 | 42 | 52 | 36 |
| ,, 30—Tuesday….. | 12 30 | 49 | 44 | 57 | 31 |
| May 1—Wednesday.. | 7 48 | 53 | 47 | 64 | 36 |
| ,, 2—Thursday…. | 4 42 | 57 | 53 | 68 | 50 |
| ,, 3—Friday…….. | 3 24 | 57 | 53 | 61 | 44 |
| ,, 4—Saturday….. | — | 51 | 50 | 53 | 50 |
| Means .. | (total) 41 30 | 51 | 47 | 59 | 41 |

| DATE. 1912. APRIL 28 TO MAY 4. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Apr. 28—Sunday …… | — | 51 | 51 | 50 | 31 |
| ,, 29—Monday…… | — | 52 | 51 | 50 | 20 |
| ,, 30 - Tuesday…… | — | 50 | 51 | 50 | 17 |
| May 1—Wednesday.. | — | 51 | 51 | 50 | 22 |
| ,, 2—Thursday…. | — | 54 | 51 | 50 | 37 |
| ,, 3—Friday…….. | — | 54 | 52 | 50 | 33 |
| ,, 4 - Saturday …. | 0·08 | 54 | 52 | 50 | 45 |
| Means … | (total) 0·08 | 52 | 51 | 50 | 29 |

### CATALOGUES RECEIVED.

DICKSONS, CHESTER.—A useful, well-arranged list of bedding plants, annuals, dahlias, etc.

BEES, LIM., LIVERPOOL.—A comprehensive catalogue for the time of year, ranging from bedding plants, dahlias, and chrysanthemums, to tools, fertilisers, and garden clogs and gloves.

Robinsons' Guaranteed Gardenalities

Always pay their way, and make up their cost, time and time over again. What they claim to do is always achieved—hence they are used by experts everywhere. Try them this year, and note results. You will be delighted, for they never fail to do good work.

"CARMONA" FERTILIZERS ARE INDISPENSABLE.

Here you have the finest fertilizer which science can offer. It imparts full vitality to your plants and trees. Makes them strong and vigorous, gives them productive power, and this is what you want.

Robinson's cater for all fertilization needs, and make up many varieties. Whatever you want in this direction they can supply.

Sweet Pea Culture is so popular that they draw special attention to their **"Carmona" Sweet Pea Fertilizer.** This should be used by all growers and exhibitors.

**"Carmona" Fertilizers** are sold in all quantities. Note bulks and prices:—
1cwt., **20/-**; ½cwt., **12/6**; 28lb., **7/6**; 14lb., **4/6**; 7lb., **2/6**; **1/-** and **6d. Tins.**

*Of all Seedsmen and Agents, or write direct.*

THE SHOW OF THE YEAR. £350 IN CASH PRIZES.

Robinson's are holding a grand show on August 28th and 29th, this year, at the **Botanical Gardens, Edgbaston, Birmingham,** and all purchasers of **"Carmona" Fertilizers** are offered free entry, for each packet contains an entry "fee" coupon. **£350** will be given away in cash prizes, and also many Championship Medals will be awarded. This Show is open to you. The Show Schedules are now ready, and will be sent free on application.

INSECT ABOMINATIONS.

These are detested by every gardener, for they ruin one's best efforts. Half-hearted measures are no good. Don't play with insects, but **get rid** of them. You can exterminate them all, if you are wise enough to use the finest Insecticide on the market, **CLIFT'S FLUID INSECTICIDE.** Give your plants freedom from insects, it makes for success. Bulks and prices as follows:—

40 galls., **4/6** per gall.; 20 galls., **5/-** per gall.; 10 galls., **5/3** per gall.; 5 galls., **5/6** per gall.; 1 gall., **6/-**; ½ gall., **3/6**; 1 pint, **1/-**.

*Of all Seedsmen and Agents, or write direct.*

OTHER USEFUL GARDENALITIES.

Note these, for you may want them. **"Eradiweed"** guaranteed cent. per cent. **Weed Killer.** Sure and certain. **"Velvas" Lawn Sand**—just the sand needed. Robinson's send on all details, lists, etc., free of charge, and also include as a gift two valuable gardening books, which you will appreciate. (1) Robinson's "Guaranteed Gardenalities Booklet," and (2) Robinson's "Garden Enemies" Booklet. These are brimming over with serviceable gardening hints and advice. Address your p.c. or letter to:—

ROBINSON BROS., LTD., WEST BROMWICH, STAFFS.

Guaranteed Gardenalities

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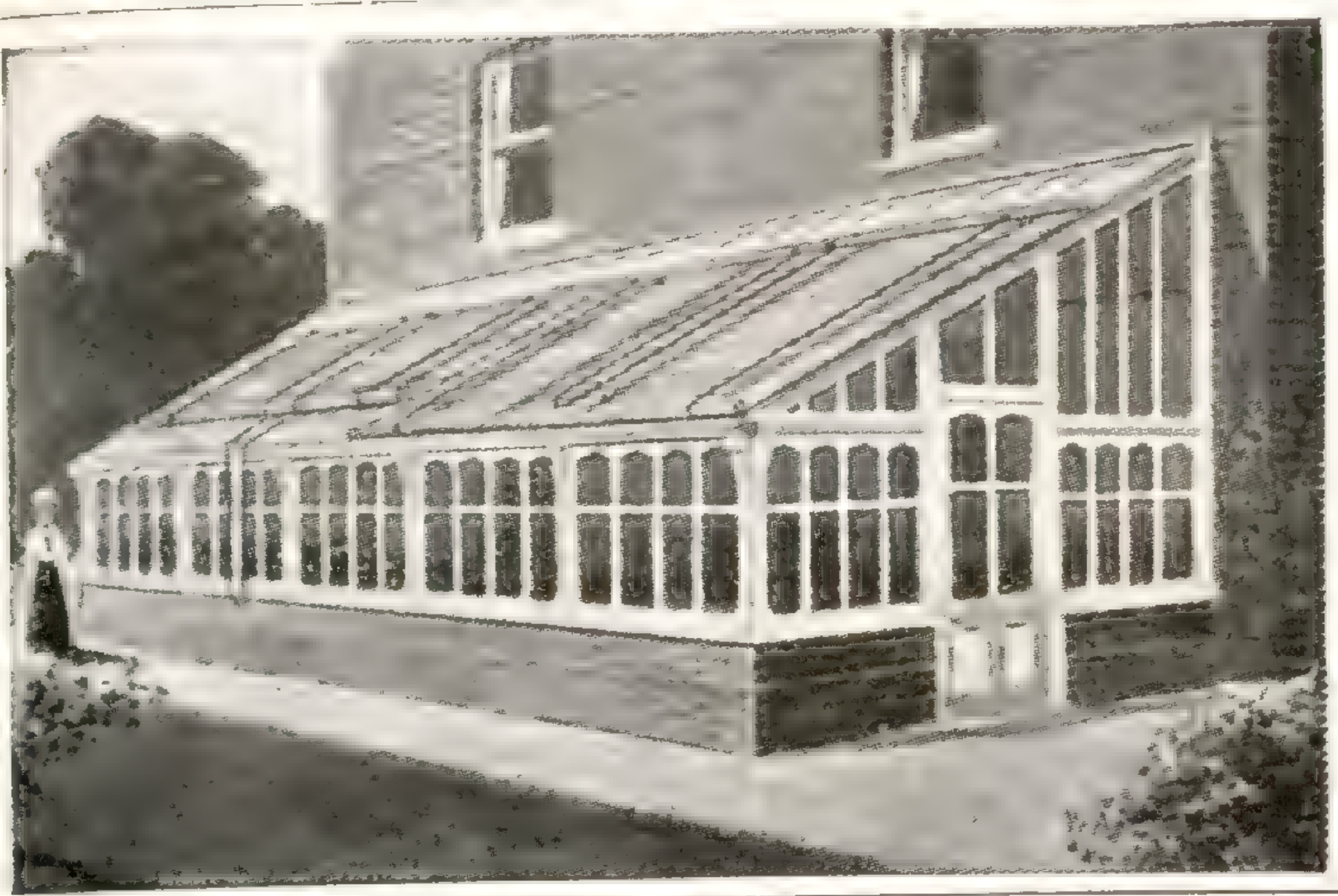
**BOULTON & PAUL, LTD., HORTICULTURAL BUILDERS, Norwich.**



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IN EVERY VARIETY
For Shading CONSERVATORIES, GREENHOUSES, &c.
Illustrated Price List sent free on application.
*Our Shadings are recommended by Horticultural Authorities.*

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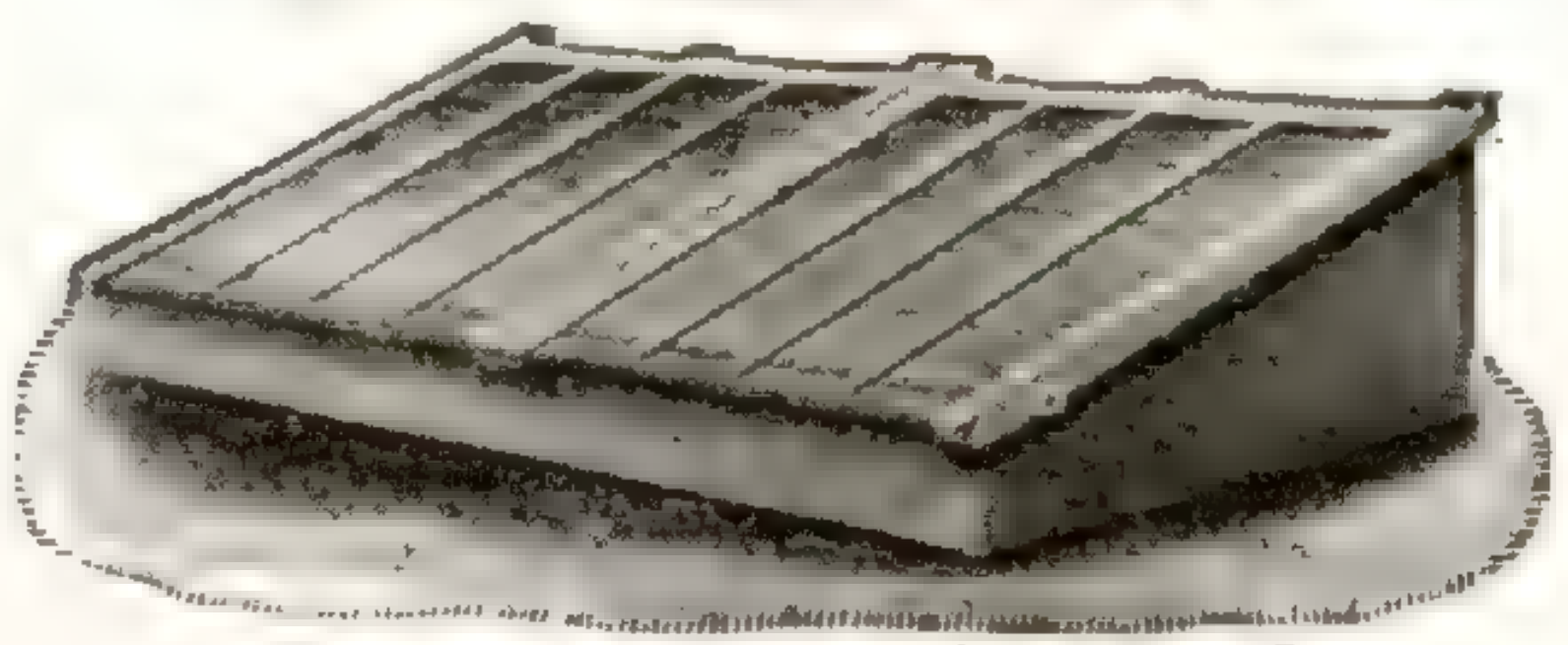
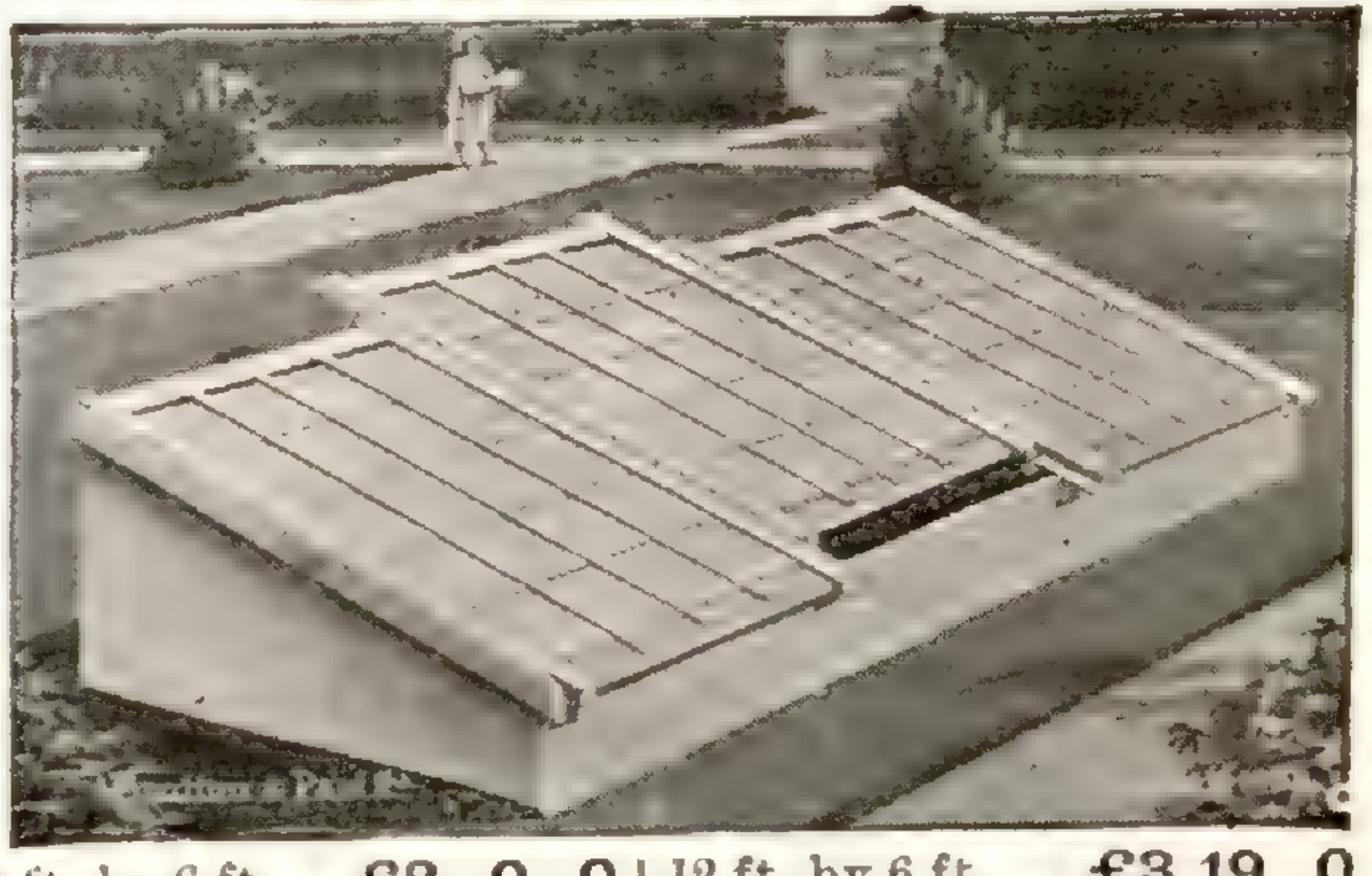


6ft. by 4 ft. ... £1 15 0

No. 75. **MELON AND CUCUMBER FRAME.**
Send for Illustrated Price List.



| | | | |
|---|---|---|---|
| 4 ft. by 6 ft. | ...£2 0 0 | 12 ft. by 6 ft. | £3 19 0 |
| 8 ft. by 6 ft. | ...£3 0 0 | 16 ft. by 6 ft. ... | £4 18 0 |

Painted three coats, Glazed 21oz. Glass.

**PIT LIGHTS** (6 ft. by 4 ft.)
Painted and glazed ... ... ... 14s. each
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**Double Glazed Lights**
4 ft. 7 in. by 4 ft. 3 in. Painted and Glazed
15s. 6d. each.

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Carriage Paid on one dozen and over.

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**GREEN'S "SILENS MESSOR" LAWN MOWERS.**

May be had from any Ironmonger or Seedsman in the United Kingdom.

**PONY AND HORSE MOWER. "Silens Messor"**
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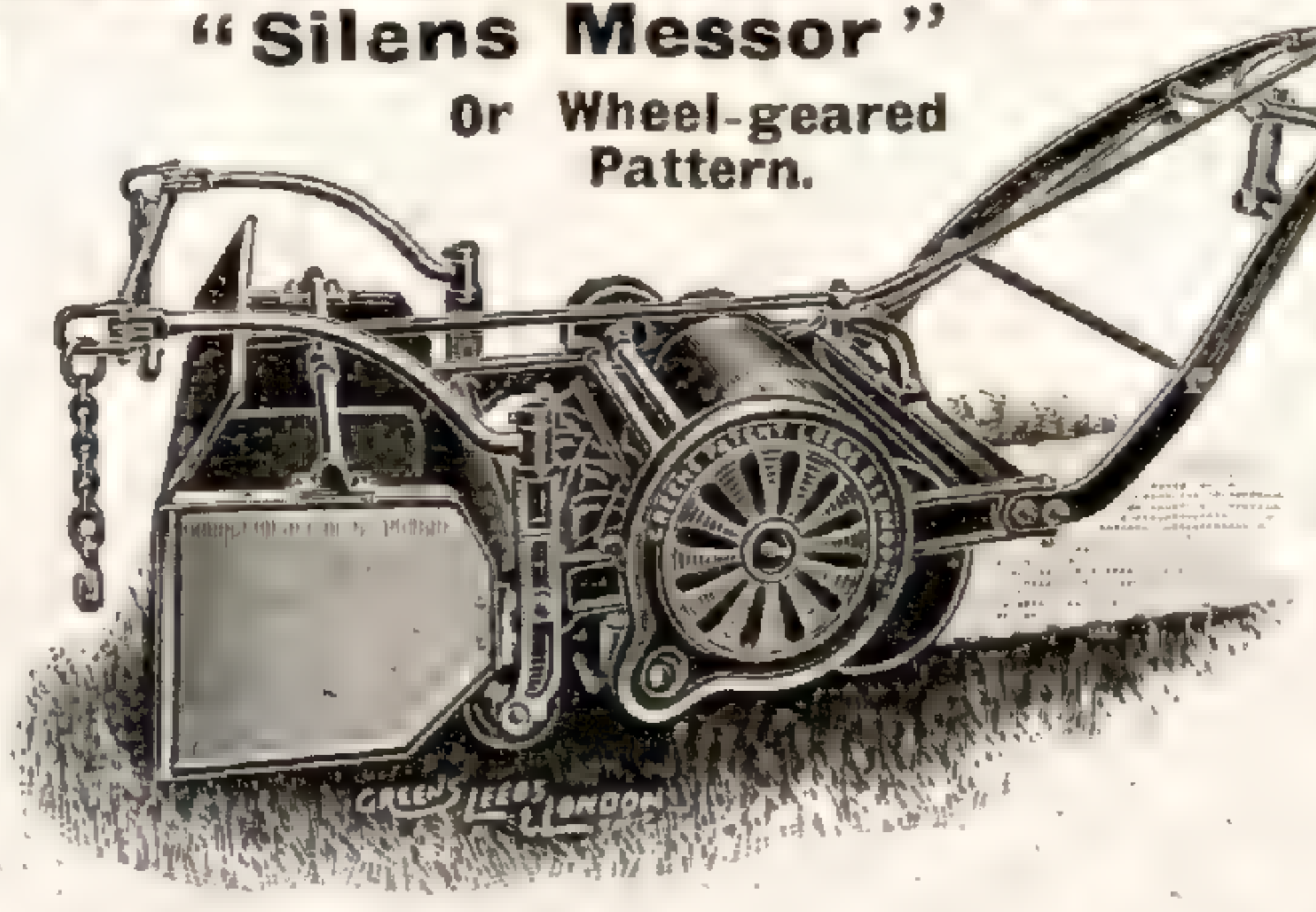

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Please write for Illustrated Price List No. 1. Free.

**THOMAS GREEN & SON, Ltd., Smithfield Ironworks, Leeds, and New Surrey Works, Southwark St., London, S.E.**

"KATAKILLA"
WASH
PATENT
NON-POISONOUS.
FREE FROM
NICOTINE,
ARSENIC, COPPER,
OR OTHER DANGEROUS POISON.
Measure for "KATAKILLA" WASH

**NON-POISONOUS.**

FOR CATERPILLARS OF ALL KINDS, GREEN AND BLACK FLY, PSYLLA, RED SPIDER, and practically all Garden Insect Pests attacking Fruit Trees, Vegetables, Roses, &c., &c.

In Tins 1/3, 2/6, & 5/6 each.

*From all Seedsmen, Nurserymen, & Florists.*

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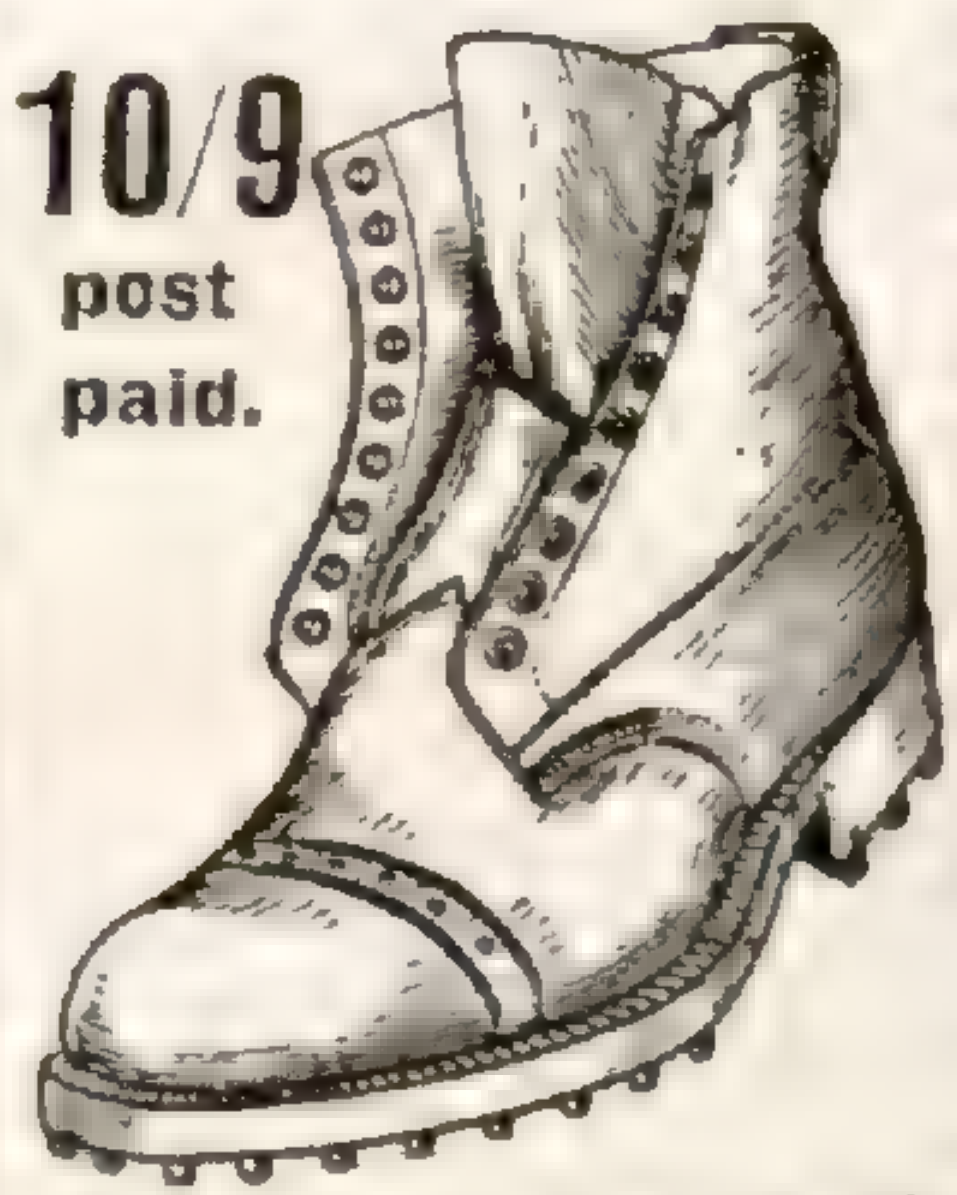
**Norwell's 'Perth' Boots**



**10/9 post paid.**

GARDENERS must be snugly shod during the bad weather. Our special gardener boots are the result of many years' experience—we know exactly the boot for you. The men who make these boots are specially trained to make boots for outdoor service. This garden boot of ours has many good points. The uppers of home-tanned, hand-dressed curried hide, wear like pinwire, and being bark-tanned, "not cured," keep the feet warm, dry, comfy

**Try a pair to-day at 10/9, post free.**

*Also send for Catalogue No. 2 and Self-measurement forms.*

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**PROTECT YOUR GARDENS** —I DO NOT REQUIRE PAYMENT UNTIL YOU HAVE SEEN AND APPROVED OF THE NETTING.—Netting, good strong, stout, small mesh, will not rot, THE VERY BEST, as supplied to the ROYAL GARDENS by ME, 25yds. by 1yd., 1s.; by 2yds., 2s.; by 3yds., 3s., and so on; any length or width supplied. Orders over 5s. car. paid. List and samples free. Commoner and tender netting, as sold by others, 60 sq. yds. for 1s. — H. J. GASSON, Net Works, Rye. Est. 126 years.

PEA TRAINERS, The "Paragon" and "Peafold" (patent), made 4ft., 5ft., and 6ft. high, and any length. Prices from 8s. 6d. per set, carriage paid. Write for leaflet. THE PEA TRAINER CO., Bridge Street, Banbridge.

GARDEN NETTING (best tanned only).—25 yds. x 8 yds., 50 x 4 yds., 100 x 2 yds. 8s each; 25 x 4 yds., 50 x 2 yds., 100 x 1 yd., 4s. each. All other sizes made at ½d. square yard. EVANS. 14, Beresford Road, Lowestoft.

BIRDS SCARED.—Rotless, Tanned Netting. Small mesh, very superior. As supplied by us to the Royal Gardens. SATISFACTION GUARANTEED, or cash refunded. 100 by 1yd., 3s. 9d.; 2yd., 7s. 6d.; 3yd., 11s. 3d.; 4yd., 15s.; 50 by 6yds., 11s. 3d.; 25 by 8yds., 7s 6d.; carriage paid. Any length and width supplied. Cheaper quality. 50yds., 1s. POTTER BROS., Dep. M, Frankwell Works, Shrewsbury. Estd. 57 years.

**When answering Advertisements please mention "Gardener's Magazine."**

# OBITUARY.

### MR. WILLIAM MORRISON.

We regret to announce the death of Mr. William Morrison, retired gardener, at his home in Park Street, Huntly, Aberdeenshire. A native of Old Deer, Aberdeenshire, Mr. Morrison went as gardener in 1876 to the late Duke of Richmond and Gordon, at Huntly Lodge, Huntly, one of the ducal seats. There for over thirty years, he was honoured and respected, and enjoyed the absolute confidence of his noble employer. In the horticultural world Mr. Morrison was recognised as an authority of no mean order, and his services were much in request as a judge at flower shows, where his decisions invariably gave the greatest satisfaction. After a long and healthy life of 78 years, with hardly any illness, the end came suddenly. He was at church on Sunday, and on the following Wednesday he passed away. Never, surely, was the silver cord so tenderly loosed. A deeply religious man, Mr. Morrison took a warm interest in all matters connected with the Strathbogie United Free Church, where for a long time he was senior office-bearer. The funeral took place on Saturday at Allenvale Cemetery, Aberdeen, and was attended by a large number of the general public. The chief mourners were his two surviving sons, Mr. William Morrison, Wishaw; and the Rev. James H. Morrison, pastor of the United Free Church, Falkland; and his son-in-law, Mr. Esplin, Leysmill, Arbroath.

### MR. ALEXANDER M'LEAN.

A general feeling of regret will be felt by all who knew Mr. Alexander M'Lean, nursery manager, Dumfries, at the announcement of his death, which took place on May 2. Mr. M'Lean was in the employment of Messrs. Imrie and Sons, Ayr, for a considerable time, and leaving them was engaged to take charge of the department for forest trees in the nurseries of Messrs. Dicksons, Lim., Chester, a post he held for some time with much ability, until he resigned to take up that of nursery manager to the important firm of Messrs. Kennedy and Co., Dumfries, which he held at the time of his death. He was an able craftsman, and had a wide knowledge of the nursery trade and its requirements. Much sympathy will be felt for his family in their bereavement.

### MR. JAMES BOX, F.R.H.S.

It is with much regret that we have to record the death of Mr. J. Box, F.R.H.S., the proprietor of the Lindfield Nurseries, which recently occurred at his residence, Broomfields, Lindfield, in his 72nd year. Mr. Box specially distinguished himself as a cultivator and exhibitor of hardy flowers and sweet peas, and had received many awards for his exhibits at the meetings of the Royal Horticultural Society and the principal exhibitions in the South of England. Mr. J. Box has suffered from ill-health for a considerable period, and was usually represented at the exhibitions by his son, Mr. Gibbs Box.

**Aubrietias from Midlothian.**—Mr. F. Baillie, of Stenhouse, Liberton, Midlothian, sends us specimens of his excellent strain of aubrietias. The several varieties have large, well-formed flowers, and the colours include rich blue, mauve, rose-fawn, and lavender.

**Tropæolum tricolorum.**—It is a matter for surprise that this good old tuberous-rooted tropæolum is not more grown, for a greenhouse temperature is all that it requires. The profusion with which the blossoms are borne, and their strange combination of orange-scarlet and black, or nearly so, are sure to arrest attention. It should be potted early in September, and great care must be taken that the young shoots are not injured in any way.—T. W.

# MARKETS.

## COVENT GARDEN.

### Flowers.

Tulips, roses, and carnations are plentiful, and there is a good demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Anemones | per doz. bun. | 2 0 | | 2 6 |
| Arums | per doz. | 1 6 | | 2 6 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azaleas | per doz. bun. | 3 0 | | 4 0 |
| Camellias | per box | 1 6 | | 3 0 |
| Carnations | per doz. | 1 6 | | 2 6 |
| ,, | per doz. bun. | 10 0 | | 15 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| Forget-me-not | per doz. bun. | 3 0 | | 4 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Iris, Spanish | per doz. bun. | 8 0 | | 12 0 |
| Lilac | per bunch | 2 0 | | 3 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 3 6 |
| ,, longiflorum | per doz. | 2 0 | | 3 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 2 0 | | 2 6 |
| Narcissus | per doz. bun. | 1 0 | | 2 6 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Primroses | per doz. bun. | 0 9 | | 1 0 |
| Roses | per doz. | 1 0 | | 4 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 5 0 |
| Sweet Peas | per doz. bun. | 1 6 | | 2 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips | per doz. bun. | 5 0 | | 9 0 |
| ,, Darwin | per bun. | 0 9 | | 1 0 |
| Wallflowers | per doz. bun. | 1 6 | | 2 6 |

### Fruits.

Excellent supplies are forthcoming, and there is a brisk demand for grapes, oranges, and apples.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Nova Scotia | per barrel | 10 6 | to | 20 0 |
| ,, Canadian | per barrel | 12 0 | | 22 0 |
| ,, American | per barrel | 20 0 | | 36 0 |
| ,, Californian | per case | 6 0 | | 7 0 |
| ,, Australian | per box | 7 0 | | 11 6 |
| ,, Cape | per box | 6 0 | | 10 0 |
| Bananas | per bun. | 3 6 | | 10 6 |
| Figs | per doz. | 6 0 | | 10 0 |
| Grapes, English | per lb. | 2 0 | | 4 6 |
| ,, Belgian | per lb. | 1 3 | | 2 6 |
| ,, Almeria | per barrel | 12 0 | | 18 0 |
| Cape | per case | 4 0 | | 9 0 |
| Lemons | per case | 8 0 | | 30 0 |
| Oranges, Denia | per case | 15 0 | | 34 0 |
| ,, Jamaica | per case | 9 0 | | 11 0 |
| ,, Californian | per case | 14 0 | | 21 0 |
| ,, Seville | per box | 15 0 | | 18 0 |
| ,, Valencia | per case | 10 0 | | 18 0 |
| Peaches | per doz. | 24 0 | | 48 0 |
| Pears, Cape | per box | 3 0 | | 6 0 |
| ,, Californian | per case | 8 6 | | 16 0 |
| Pineapples | each | 2 6 | | 5 6 |
| ,, Cape | per doz. | 4 0 | | 15 0 |
| Strawberries | per lb. | 1 0 | | 4 0 |

### Vegetables.

Asparagus is plentiful and fairly cheap; cauliflowers and cabbages are scarce and in great demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 3 0 | to | 4 0 |
| ,, Jerusalem | per ½-bush. | 1 0 | | 2 0 |
| Asparagus | per bun. | 1 0 | | 4 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 2 0 | | 3 0 |
| Broccoli, Sprouting | per bag | 4 0 | | 6 0 |
| Cabbage, New French | per doz. | 1 6 | | 2 6 |
| ,, New Cornish | per doz. | 1 3 | | 2 0 |
| Carrots | per doz. bun. | 2 0 | | 4 0 |
| Cauliflowers | per doz. | 4 0 | | 8 0 |
| ,, Cornish | per crate | 10 0 | | 15 0 |
| Cucumbers | per doz. | 2 0 | | 3 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 16 0 |
| Leeks | per doz. | 2 0 | | 4 0 |
| Lettuce | per doz. | 1 0 | | 1 6 |
| Mint | per doz. bun. | 2 0 | | 3 0 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Onions | per case | 6 0 | | 11 0 |
| Parsley | per ½-sieve | 2 0 | | 3 0 |
| Parsnips | per bag | 5 0 | | 7 0 |
| Peas, French | per pad | 4 0 | | 6 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 0 |
| Radishes | per doz. bun. | 0 4 | | 1 0 |
| Rhubarb | per doz. bun. | 0 6 | | 2 0 |
| Seakale | per bun. | 0 8 | | 0 10 |
| Spinach | per bush. | 5 0 | | 7 0 |
| Tomatoes, Canary | per pack. | 10 0 | | 16 0 |
| Turnips | per doz. bun. | 2 6 | | 5 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

Prices show a downward tendency, and business is moderately good.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Blackland | per ton | 60 0 | to | 65 0 |
| British Queen | per ton | 80 0 | | 100 0 |
| Essex | per ton | 70 0 | | 80 0 |
| Evergood | per ton | 65 0 | | 80 0 |
| King Edward | per ton | 75 0 | | 85 0 |
| Up-to-Date | per ton | 70 0 | | 80 0 |
| Teneriffe, New | per cwt. | 10 0 | | 14 0 |
| Algerian, New | per cwt. | 10 0 | | 14 0 |

# FORTHCOMING ENGAGEMENTS.

MONDAY, May 13.—United Horticultural Benefit and Provident Society.

TUESDAY, May 14.—Royal Horticultural Society; Committees meet at 12 o'clock; Master's Memorial Lecture at 3 p.m. on "Gardening and Drought," by Professor J. Bayley Balfour, F.R.S., V.M.H.; Scientific Committee at 4 o'clock.

Horticultural Club House Dinner; Lecture by Mrs. Henshaw on "Trails in the Canadian Rockies," Hotel Windsor; 6 p.m.

National Tulip Society's Exhibition at the Royal Horticultural Hall.

Devon County Show at Plymouth.

WEDNESDAY, May 15.—North of England Horticultural Society, at Leeds.

THURSDAY, May 16.—Manchester and North of England Horticultural Society.

MONDAY, May 20.—National Rose Society, Conference at the Holborn Restaurant at 5 p.m.; dinner to foreign Rosarians, at 7 p.m.

WEDNESDAY, May 22.—Royal International Horticultural Exhibition, in the grounds of the Royal Hospital, Chelsea. To be opened by H.M. the King at 12 noon. Exhibition remains open until May 30.

Bath and West and Southern Counties Show.

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ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION,
*May 22nd to May 30th, 1912.*
"THE GARDENERS' MAGAZINE" will be represented at
STANDS Nos. 220-221 (SUNDRIES SECTION),
and at the SPECIAL KIOSK in the CENTRAL AVENUE.
W. H. & L. COLLINGRIDGE, 148 & 149, ALDERSGATE STREET, LONDON

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

## Situations Wanted.

COWMAN, life experience with Jerseys and Shorthorns; good clean milker; excellent references; highly recommended by bailiff; four years past, one present place; willing to be useful; help in garden; abstainer; wife could assist in house or attend to Bothy; no family; age 40. J. POTTER, Home Farm, Ripple Hall, Tewkesbury.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

E. VENTIN, Gardener to A. D. SELKIRK, Esq., can with every confidence recommend Young Man, age 18, as JOURNEYMAN, or IMPROVER in good establishment; disengaged. J. EATON, Government Lodge, Clewer, near Windsor.

ELECTRICIAN wants SITUATION; Gas and Oil Engines; own repairs; married; well recommended; and fill up spare time in Garden. Apply E. COOK, Debden Hall, Loughton, Essex.

FOREMAN (Inside), or good Second; 11 years good experience; 3 as Foreman; all Fruit, Plant, and Carnation Houses, also Begonias, Chrysanthemums, and Decorating; excellent references; age 25; married when suited. J. M., Penzance Lodge, Arthur's Hill, Shanklin.

GARDENER (Head, or good Single-handed), life experience in Vine, Melon, Cu.'s, Tom.'s, Chrys., greenhouse, and general kitchen garden work; married; age 28; good references. H. STONEHAM, 2, Old Lodge Cottage, Purley, Surrey.

GARDENER, good all-round, single-handed, or with help; married; no encumbrances; 8 years good personal character; wife assist occasionally if required.—G. WRIGHT, 29, North Road, Highgate, N.

GARDENER seeks RE-ENGAGEMENT, Single-handed or otherwise. fully experienced, both Inside and Out; accustomed to both large and small gardens; highly recommended, and good characters; disengaged when suited; single. Apply 2,494, Office of this Journal.

GARDENER (age 30) desires SITUATION; good knowledge Inside and Out; 7 years in present situation. Apply E. COX, Bilton Hill, Rugby.

GARDENER (Single-handed, or were help is given); life experience in all branches of gardening; references from past employers. A. W. MEECH, Northfleet, Menton Road) Parkstone.

GARDENER, practical, wants SITUATION; married, no children; 6 and 8 years' refs.; Inside and Out. C. J. CRAKER, 40, Watcombe Road, South Norwood.

GARDENER. — MR. HIGGIE, Stanwick Park, Darlington, highly recommends E. SMITH, who has been General Foreman 9 years, to any Lady or Gentleman requiring Head; experienced in all branches, Inside and Out; age 33. Address, Stanwick Park, Darlington.

GARDENER seeks RE-ENGAGEMENT, Single-handed or with help; life experience, gained in good places; first-class grower, Inside and Out; hard worker and willing to make himself useful if required; highest refs.; age 26; Single. Full particulars to E. G. BETTON, 3, Orchard Terrace, Nursery Road, Old Southgate, N.

GARDENER (Single-handed, or where two are kept); eight years' experience in Flowers, Vegetables, and Pleasure Grounds; five years' last place; good testimonials; age 22; abstainer.—GEORGE DUFFELL, 2, Orchard Road, Dorking.

**Read what an Advertiser writes re "Gardeners' Magazine."**

**March 31, 1912.**

**Dear Sirs,—**

**Will you kindly discontinue my advt. in your "G. M.," as I am suited. I obtained more answers through the medium of your paper than through any other source, and have obtained this position through same. Thank you very much.**

**Yours, etc.,**

**E. D.**

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Single-handed or with assistance).—Mr. F. W. HUXLEY, Limpsfield Grange, Limpsfield, Surrey, will be pleased to recommend J. SEARS, who has been with him nearly three years; age 28; married when suited.

GENTLEMAN wishes to recommend his late GARDENER, with him 4 years as Groom-Gardener, with good refs.; Single; disengaged. Write, stating wages, to T. HARLAND, Black Boys, Sussex.

GRANVILLE FARQUHAR, Esq., Batsford Park, highly recommends his Foreman as Gardener (Head Working, where three or more are kept); experienced in all branches; excellent references; age 30; married when suited. H. CRISP, Batsford Park Gardens, Moreton-in-Marsh.

GARDENER (Single-handed, or with help), life experience in vines, peaches, melons, tomatoes, stove, greenhouse, and all outside work, orchids included; three years present place as General Foreman; well recommended; single; age 30. Good references; disengaged when suited; near Liverpool preferred. Address, W. C. Wicks, Leigh Cottage, Roby Road, Roby, near Liverpool.

JOURNEYMAN.—MR. PODMORE, The Manor Gardens, Little Berkhamsted, Hertford, will be pleased to recommend a Man age 22, steady and reliable; near London preferred.

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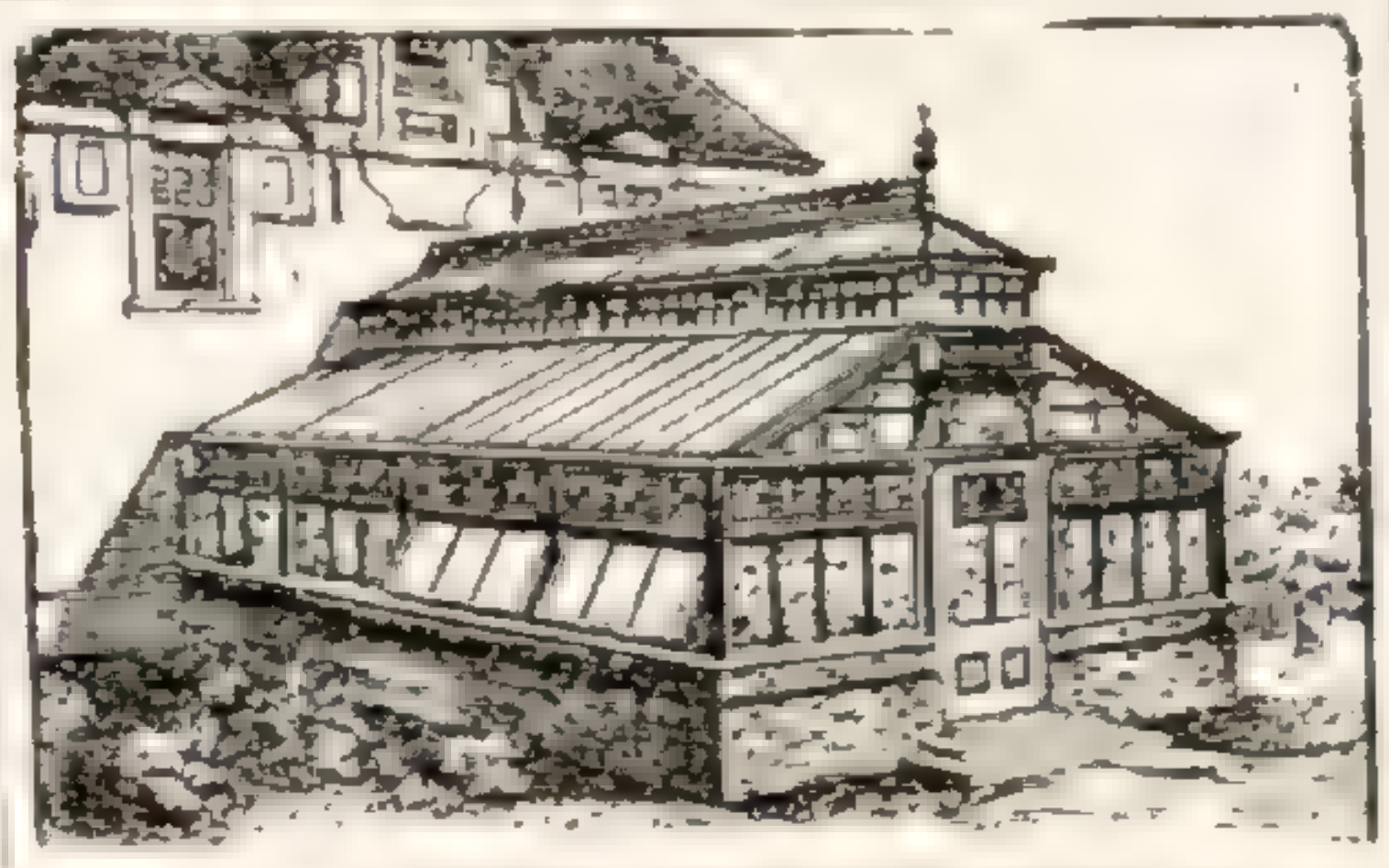

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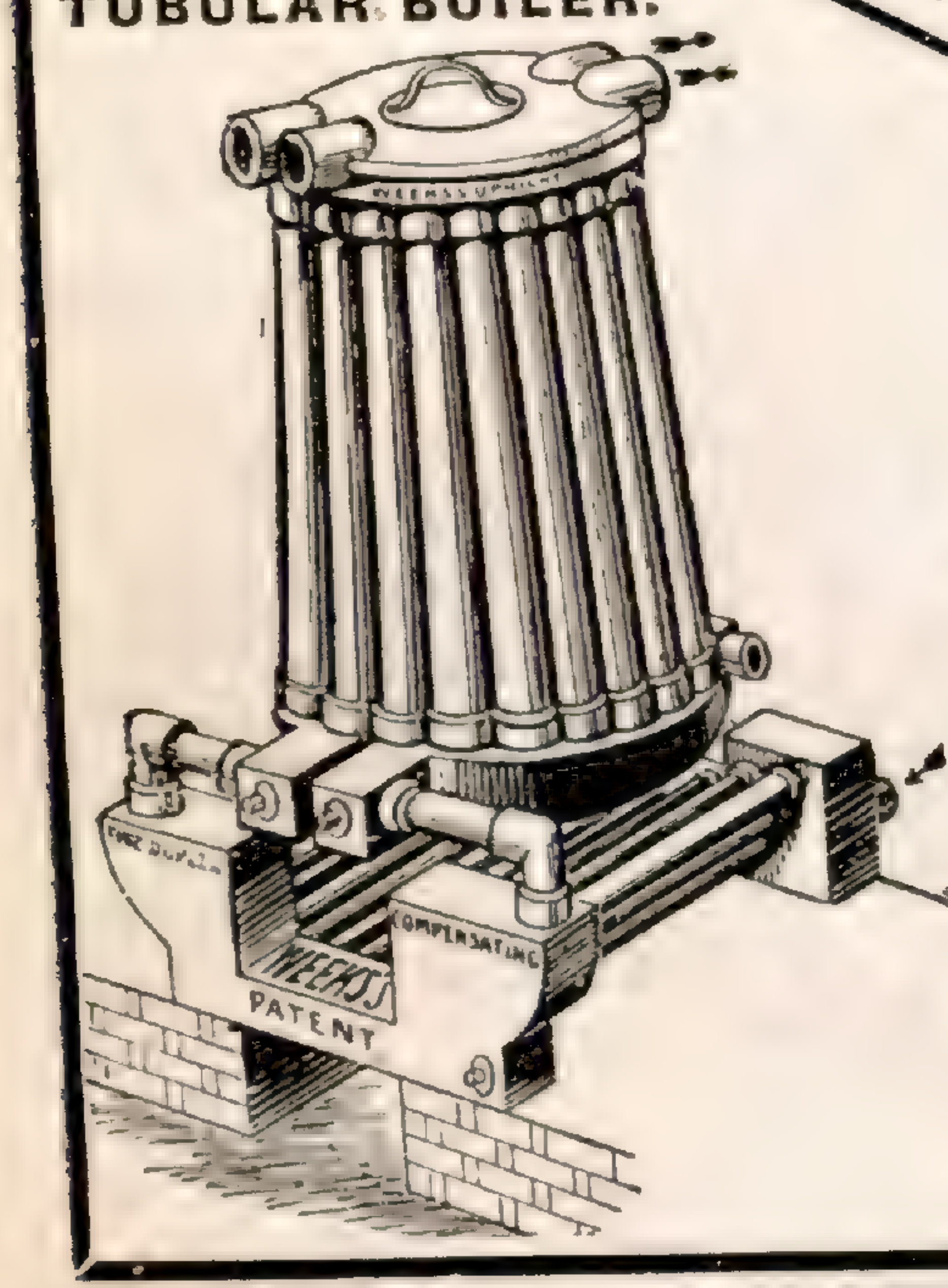

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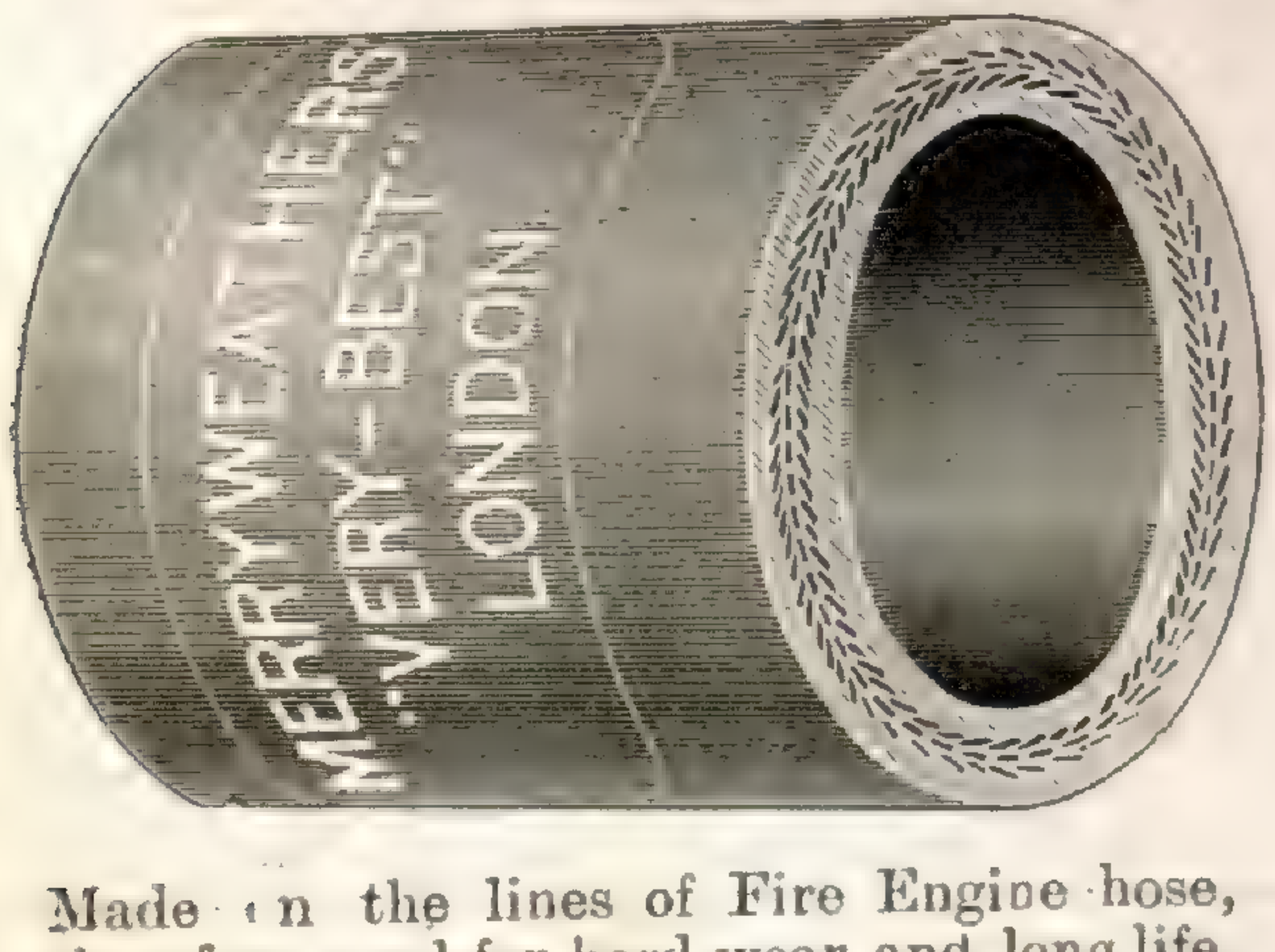

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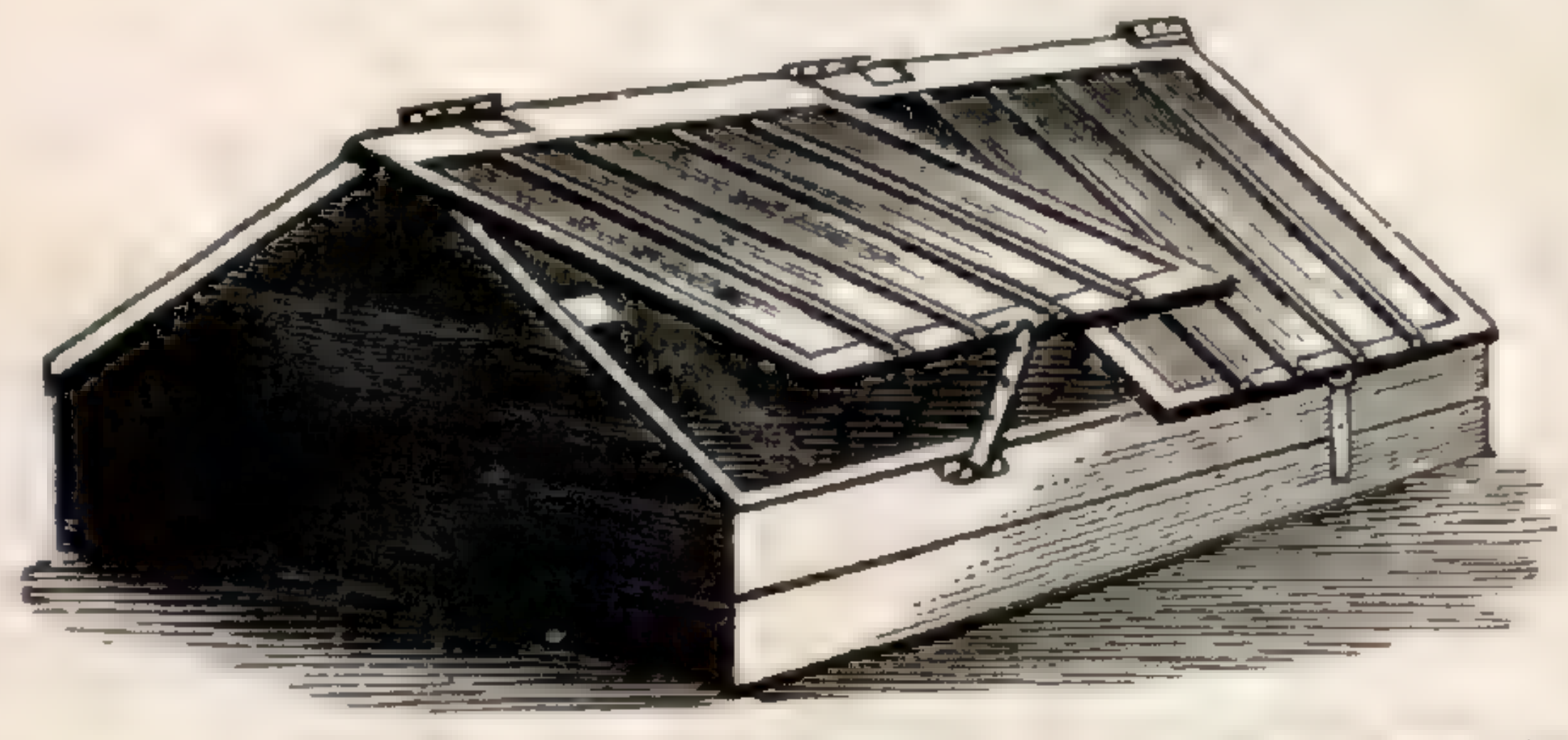

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VOL. LV.—No. 3,055. SATURDAY, MAY 18, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Utility of International Exhibitions.

We are now within some four or five days of the opening of the great horticultural exhibition at Chelsea, which will unquestionably surpass in comprehensiveness and magnitude the most noteworthy of the shows of a similar character that have been held, not only in this country, but in any part of the world. As we wait with pleasurable anticipations the unlocking of the gates by which access is obtained to the Royal Hospital grounds, and the enjoyment to be derived from the many, varied, and wondrously beautiful objects that will represent the gardening art at its best, it may be of some advantage to consider whether exhibitions of an international character possess a sufficient degree of utility to justify the expenditure of time, energy, and money involved in bringing them to a successful conclusion. There has long been some difference in the views that obtain with regard to the utility of such exhibitions, and this divergence may be expected to continue, in a lessened degree, for some considerable time hence. This difference in the views held with regard to the question is by no means confined to those who are concerned with exhibitions devoted to the products of private gardens and commercial horticulture, but is found in a somewhat more pronounced form among those who are connected with the various manufactures that contribute so materially to the prosperity of the great centres of commercial activity in this country. Many we know consider international exhibitions of the highest importance to the industries with which they are specially associated, while others are not fully persuaded that they are a decided benefit; or, it may be, hold the view that they are more or less hurtful. There is, of course, no great difficulty in understanding that an international exhibition, which brings prominently before the community of a country in which it is held the manufactures and products of other nations, may not bring about results that are beneficial to a goodly number of individuals. But in considering a question of this kind it is necessary to take into account the community rather than the individual, and determine whether the advantage to the former is sufficient to counterbalance any disadvantage at which individuals may be placed in the course of their ordinary avocations. It is not, in this connection, difficult to imagine a case where an international exhibition will bring into prominence some product or appliance that is so far superior to the one previously in demand as to quickly supersede it. In such cases the home producer has to make such changes in his method of procedure as will enable him to meet the competition to which he is thus subjected, or submit to a reduction in his business, in either case suffering some pecuniary loss. Although not specially associated with international exhibitions, the early importations of American apples may be referred to as affording an excellent illustration of the manner in which the producer and the community may be affected in different ways by the introduction of something of a superior character from a quite different part of the world. Until some thirty years ago the English markets were almost wholly dependent for their supplies of apples upon the produce of farm orchards, and of miserably poor quality was the greater proportion of the fruit. Nothing was done by the owners to bring about an improvement in the quality of the supplies; and when the large, highly-coloured apples of American orchards were exhibited in the markets and shops all over the country, they at once superseded the fruit that had previously been considered good enough by the growers. A considerable

CYMBIDIUM WOODHAMENSIS FOWLER'S VARIETY.

Flowers bright yellow, tinted green. F.C.C., R.H.S., May 14. J. Gurney Fowler, Esq. (gardener, Mr. Davies), Glebelands, South Woodford.

loss was inflicted upon the owners of worn-out orchards, for the result was a revolution in apple culture, which greatly improved the quality, and enormously increased the quantity, to the gain of the community. So far, the general aspect of international exhibitions has had reference made to it, and it has been briefly shown that while they may have a disturbing effect upon some industries and individuals, their influence in relation to the community at large is highly beneficial. If this be true of international exhibitions of a general character, and we have no doubt upon the point, it is doubly so in the case of those wholly devoted to the products of the garden, orchard, nursery, and market establishment. International horticultural exhibitions have but little disturbing influence, directly or indirectly, upon the industries immediately associated with horticulture, but they have a highly stimulative effect upon horticulturists in their desire to become fully acquainted with all that is best in the art in which they are engaged. They also enforce the great lesson with singular power that the gardening community does not belong to any nation or people, but forms a great brotherhood undivided by any boundary of sea or land, and imbued with one desire, and that to increase the beauty and the productiveness of the world at large. In visiting an exhibition that is international in its scope and purpose, we meet men from countries different to our own, but possessing precisely the same sympathies as ourselves, taking much the same interest in the various classes of plants as we do, and equally ready to give, and obtain, information on the questions that are continually arising, and perplexing even those with long experience. These exhibitions possess a high degree of utility, from an educational standpoint, and every gardener, whatever may be his present position, should take advantage of the opportunities he may have for visiting them, and certainly those who are engaged in commercial horticulture should not fail to visit such exhibitions, and learn some at least of the many object-lessons that are so attractively presented to the notice of visitors. The ordinary flower show must be of a very commonplace character if it does not afford some lesson worth learning, but a great international gathering such as that at Chelsea, will afford a splendid opportunity for becoming acquainted with all the most recent introductions of special merit, and of seeing them at their best; and also of obtaining information of value relating to cultural practice, and the best methods of presenting plants, fruits, flowers, and vegetables to public notice. At Chelsea there will also be an excellent opportunity for the study of design in rock and water gardens, for the work now in progress suggests that these will be of quite exceptional excellence, if not surpassing all previous efforts at public exhibitions. But one international horticulticultural exhibition has been held in this country, and that nearly half a century ago, therefore it is not easy to give proofs of the value of exhibitons at which the competition is open to the whole world, that have been obtained from experience gained at home. Proofs, however, are not wholly wanting, for it not only had an enormous influence for good upon horticulture generally, but it stimulated in a remarkable degree the formation of societies in the provinces for the encouragement of the gardening art. In 1866, the year of the exhibition, there were comparatively few provincial societies of any considerable importance, and during the next twenty years many hundreds were formed, that did, and a large proportion are still doing, excellent work. On the Continent, where many international gatherings have taken place during the past thirty or more years, their utility is fully acknowledged. It would be of interest to give the views that have been expressed by some of the leading authorities on the Continent on this point, but it must for the present suffice to say that they are in full accord with our own.

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**Directors of the Royal International Horticultural Exhibition.**—In the present issue we have the pleasure of giving a page illustration containing the portraits of the directors of the Royal International Horticultural Exhibition. We regret that the whole of the members of the executive were unable to be present when we had the photograph taken, and we have, as far as practicable, given separate portraits of those members who were unavoidably absent. The majority of the directors are so well known to our readers that there is no occasion to make special reference to them or their work in the several departments of horticulture in which they are engaged.

**High Temperature on May 11.**—The temperature in the Metropolis on Saturday, the 11th inst., was 16 degrees above the average, the reading at South Kensington being 79 degrees, but an equally high temperature has been registered at the London stations during May in several recent years. At Margate, Nottingham, and Oxford the maximum temperature was 77 degrees, and at Yarmouth the thermometer in the shade rose to 81 degrees. The latter was the highest temperature in May that has been registered the past forty years. On the following day some high temperatures were recorded in the South of Europe, the thermometer reading 95 degrees at two or three stations.

**Royal International Horticultural Exhibition Conferences.**—Two important conference will be held during the International Exhibition at Chelsea on subjects connected with horticulture. Both will be presided over by the Rt. Hon. A. H. Dyke-Acland, chairman of the Science and Education Committee, and will be held in the Recreation Hall of the Chelsea Royal Hospital. Admission is free, and all interested in the subjects are cordially invited to attend. Those attending the exhibition may enter the conference hall from the exhibition grounds (gaining re-admittance to the exhibition by the same means). Those not attending the exhibition may enter the conference room from the Royal Hospital entrance. The first conference will be on Thursday, the 23rd inst., at 2 p.m., the subject being "Horticultural Education," speakers: Prof. L. H. Bailey, Cornell University, U.S.A., on "Horticultural Education in America"; Herr K. Weinhausen, of Berlin, on "Horticultural Education in Germany"; W. Hales, Esq., of Chelsea Physic Garden, on "The Education of a Gardener"; and Prof. A. Buyssens, of the School of Horticulture, Vilvorde, Belgium, on "Horticultural Education in Belgium." The second conference is arranged for Friday, the 24th inst., at 9.30 a.m., on "Legislation in Connection with Plant Diseases and Pests." The speakers include Prof. Ritzema Bos, of Holland, on "The Value of Importation Regulations as a Means of Preventing the Introduction of Plant Pests from Abroad"; A. G. L. Rogers, Esq., of the Board of Agriculture, on "The Aim of Legislation in Great Britain"; H. Maxwell Lefroy, Esq., M.A., F.Z.S., F.E.S., Imperial Entomologist for India, on "Legislation in Connection with Insect Pests" Mr. H. J. Güssow, F.R.M.S., Botanist to the Canadian Government, on "Legislation in Connection with Fungoid Diseases"; and A. W. Sutton, Esq., V.M.H., of Reading, on "Import Dues and Regulations." Reports are being prepared by the Science and Education Committee on the present condition of both horticultural education and legislation against plant pests, and will be printed with the papers and discussion.

**Chestnut Sunday at Hampton Court.**—For a very long number of years it has been the custom for the residents in and around London to visit Bushey Park, which forms so important a part of the Hampton Court domain for the purpose of enjoying the charm of the famous avenue of chestnuts when the trees are in bloom. By large numbers the visit is made on a Sunday, and by common consent the third Sunday in May is regarded as "Chestnut Sunday," for in the majority of seasons the trees are then at their best. This year, owing to the mild weather that has been experienced since early in the year, the trees are about ten days earlier in flowering than usual, and accordingly the second, instead of the third, Sunday was adopted as Chestnut Sunday. The trees are blooming with exceptional profusion this year, and, notwithstanding the drought, the flower spikes have attained to a high state of development. The people, both on the Saturday and Sunday, went to Bushey Park, in tens of thousands, by train, electric trams, motors, motor-omnibuses, taxi-cabs, and other conveyances. It is conjectured that both on Saturday and Sunday there were thousands of conveyances at Hampton Court, and as a large proportion of the visitors, after enjoying the great beauty of the avenue, strolled through the Palace gardens, the glorious display of Darwin and other May-flowering tulips were not wanting admirers. The avenue was planned by Sir Christopher Wren for William III. in the summer of 1699, and planted late in the following autumn, and consists of one row of chestnuts and four rows of limes on either side. The length of the avenue is a few yards over one mile.

**Horticultural Education.** The conference on horticultural education that was held the other day under the auspices of the North of England Horticultural Society, at the Armstrong College, Newcastle-on-Tyne, was of much interest, but the discussion on this all-important subject did not succeed in carrying it much further. The subject for discussion as set forth in the programme was "Horticulture in Secondary Schools and New Farm Institutes." Mr. C. W. Harker, as representing the Board of Agriculture, referred to the work that had been accomplished by the Board, and the great need for further education. What, in his opinion, was specially needed were central colleges and trained horticulturists to instruct gardeners in the way of combating disease. Mr. F. B. Stead suggested that it was not the business of elementary or secondary schools to turn out professional gardeners, but they should give a course illustrative of the general principles required in the practice of horticulture. The Rev. J. B. Hall expressed the opinion that there ought to be centres all over the country where people should be able to go and see things. Mr. Gillander advocated training gardeners in microscopic research. Professor Seton said he thought the point was rather missed with regard to horticulture. Gardeners did not want to be bothered with microscopes, but to be so equipped as to be able to make the gardens under their charge remarkable both for their beauty and productiveness. Professor Gilchrist, in bringing the discussion to a close, said that in his connection with agriculture he had become convinced that farmers could not be turned out by agricultural colleges, but must be trained on a commercial and not a college farm; and he believed the gardener must be trained in private nurseries and commercial establishments.

**Carnation Wodenethe.**—From Messrs. W. Wells and Co., of Merstham, we have had the pleasure of receiving a gathering of blooms of this remarkably fine pure white perpetual carnation, which the firm has so well shown at the recent meetings held by the Royal Horticultural Society. The blooms are equally remarkable for their large size, superb form, purity, and their rich clove-like perfume. As in the case of other of the perpetual-flowering carnations the petals are elegantly fringed. The blooms are borne on stiff stems, and the calyxes are wholly free from the defect of splitting.

**Carnation Lady Northcliffe.**—The Floral Committee of the Perpetual-flowering Carnation Society recently visited the nurseries of Mr. C. Engelmann at Saffron Walden, and awarded a First-class Certificate to this variety. In accordance with a new regulation, which came into force at the beginning of this year, varieties must be seen growing before F.C.C.'s are given; and Lady Northcliffe is the first variety to receive this high award under the new conditions.

**Lectures on Botany in Glasgow.**—A course of fourten popular lectures on botany, by Mr. David Ellis, D.Sc., Ph.D., has been commenced in the Royal Technical College, Glasgow. The introductory lecture was devoted to the evolution and function of flowers, and in his opening remarks Mr. Ellis contrasted the poet's and the scientist's point of view with regard to them, and said that while in both there was a good deal of imagination, the scientist had a considerable amount of drudgery and hard work to get through before he reached the imaginative stage. With the aid of lantern and slides Mr. Ellis dealt with the structure of flowers, the functions of the different parts, the arrangements for insect visitors, and the arrangements for wind fertilisation. He explained how flowers had obtained their present form by evolution, and pointed out that some were highly developed and others were of a lower type, and showed how that was brought about.

**British Gardeners' Association.**—The Committee of this Association have taken offices at 92, Pimlico Road (corner of Lower Sloane Street), near the east entrance to the Royal Hospital grounds, Chelsea. These will be open to gardeners during the show, and Mr. Cyril Harding, who has recently been elected general secretary, will be in attendance to answer enquiries relating to the work of the Association.

**Perpetual-flowering Carnation Society.**—Mr. J. S. Brunton will preside at the banquet in honour of the foreign visitors attending the Royal International Horticultural Exhibition, to be held at the Holborn Restaurant on Thursday, May 23, 1912, at 6.45 p.m. Those desirous of being present may obtain tickets from the hon. secretary, Mr. E. F. Hawes, Ulysses, Fortune Green, N.W.

## AMONG THE ALPINE PLANTS.

"     .   .   .   .   Each step
Shall wake fresh beauties; each short point present
A different picture, new, and yet the same."

These words of Mason describe the rock garden of the bright time of May, when all Nature seems joyous and when the garden is bright with the fresh greenery and the glowing blossoms of the time. As we wander among our flowers we see many "different pictures," indeed, and hardly one but what is of the greatest beauty in very truth. It is difficult to cull from among the flowers only a few to adorn our posy when so many present themselves to us for admiration and for enjoyment. Yet we must choose, and as we walk along this narrow path we catch sight of

### Androsace foliosa.

One of a series of gems of the rock garden, the leafy androsace does not meet with the general appreciation it would otherwise do had it not so many exquisite sister flowers, all of which are gems of rare worth and beauty. Has it not been written down by an authority in words which would be scathing were they not well understood as flamboyant, that this and another androsace are "a little large and coarse, . . . leafy and big, with heads of dullish lilac flowers"? But it must be remembered that this is only speaking in comparison with some of the more minute gems of the androsaces, and that nobody can well call this leafy one "large and coarse," save in accordance with a standard of refinement reserved only for the tiniest of alpines. A plant from three to five inches high, and with leaves only two to three inches long, can hardly be banned as "large and coarse" without a big reservation, and as we see this androsace open to the May sunshine on a dry rockery among the limestone it loves, we must challenge and deny any expressions of depreciation which might seem unfair to a beautiful flower. The "lilac" of the one authority is not quite so descriptive as the "pale flesh" of another and greater judge, and this leafy androsace is sufficiently beautiful to justify our admiration. I am growing it in full sun on a dry rockery well supplied with calcareous material, and there it is charming with its free and beautiful little flowers.

### Phlox stellaria.

The manifold beauties of the alpine phloxes, or moss pinks, of the setacea or subulata class should not blind us to those of their sister flowers of the rockery, and the delightful Phlox stellaria, the "starry moss pink," or, as our American cousins call it at home, the "chickweed phlox." The latter popular name has with it a sound of irreverence, for who could liken this trailing plant, with its soft green, prettily-tinged foliage, and its starry pale lilac, almost white flowers, to the chickweed, which is such a trouble to the gardener, though an object of pleasure to the domestic canary? It is only the lover of flowers who can appreciate to the full the charms of this trailing phlox, which looks so pretty as it hangs over the stones, veiling them with beauty and attracting everybody. Without the mass of flowers shown by, say, P. subulata or Setacea lilacina, or allied plants, it has yet about it a beauty we can comprehend and enjoy.

### Euphorbia capitata.

Under this name there is frequently to be seen a most effective spurge, or milkwort, in good alpine gardens, where it looks well on the rougher parts of the rockeries, although too large for the company of the choicer flowers. In speaking of it I am using the generally accepted name of capitata, which is probably correct, though the euphorbias as a whole have received so little attention from authorities that one cannot be too sure, especially as the Kew "Hand-list" refers E. capitata to E. pilulifera. It matters but little, however, as the plant in question is sold in nurseries by the name which heads this note. It is a highly effective May-flowering plant, growing some nine to twelve inches high, and giving handsome heads of yellow inflorescence, brighter in colour than that of many other spurges, and by no means to be despised in the rock garden. It apparently likes a dryish soil, and is one of the decidedly "easy" subjects for the rock garden.

### Dodecatheon Meadia.

Failing to retain for long the difficult, but beautiful Dodecatheon integrifolium, that fickle beauty among the American shooting stars, we may well remember that D. Meadia and its varieties, bigger and coarser though they may look, give us in May a class of flowers we cannot well reject. With all their failings—and these they have, we must admit—they are very pleasant garden flowers, with their largish leaves, and their stems, sturdy and enduring, carrying a cluster of pretty reflexed flowers with golden pointlets. They are the "hardy cyclamens" of May, and very attractive are they, appealing to us with their quaint flowers, of varying shades. Like so many other plants, they have been seized upon by the Messrs. Lemoine as fit subjects to hybridise, and from these and other species some charming flowers have been raised by the famous Nancy firm. But even D. Meadia in its several shades is quite a worthy flower for the base of the rock garden, where, in cool, damp, yet well-drained soil it will thrive for long, and send up its tall stems of jaunty flowers. One thing should be said, and that is that, though a lover of moisture, the place must be thoroughly drained. Another is that it is easily lost in winter, as not only does it go down to a small crown, easily overlooked, but these crowns are apt to be lifted by frost, and wasted thereby. Some stones about it helps to keep the frost from injuring it in this way.

### Other Flowers.

From mound, over stone, in nook and corner, and on terrace show many plants, such as phloxes, cytisuses, alyssums, ericas, arabises, aubrietias, glorious in colour; saxifrages, truly in glorious abundance; waldsteinias, geums, potentillas, violas and violets, anemones, fritillarias, alliums, primulas, muscaris—not yet over; androsaces, cheiranthuses, and a veritable array of other beauties of the time. In their respective places they uphold the banner of the rock garden and proclaim that in their eyes May is indeed "the fairest maid on ground," a challenge which will soon be countered by the beauties of their successors of the later time now coming into the field.

S. Arnott.

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**Exacum affine.**—Within the last few years the large-flowered Exacum macranthum, with its rich bluish-purple coloured blossoms, has made great headway in popular favour. The species under notice, which, by the way, was discovered on the island of Socotra at the same time as Begonia socotrana (whose introduction has had such far-reaching results) is a neat compact-growing plant, little more than a foot in height, but so floriferous that the entire plant is quite a mass of its pretty little bluish-lilac flowers. —W.

## EXOCHORDA ALBERTI, VAR. MACRANTHA.

This is by far the best of the several kinds of Exochorda which may be grown in the shrubberies of the British Isles, for, in addition to being more floriferous than others, the individual blossoms are larger. Whether it is strictly a variety of E. Alberti, a species from Turkestan, is very doubtful; and it is more than likely that it is the hybrid which was raised by M. Lemoine, of Nancy, between E. Alberti and the Chinese E. grandiflora, and named E. macrantha by Francisque Morel. A reference to this plant is made in "Fruticetum Vilmorinianum," p. 76.

Of vigorous habit, its foliage more closely resembles that of E. Alberti than the Chinese species, but there are characters about the flower which are suggestive of the influence of both species. In each case the stamens are arranged in bundles of five; but, whereas in E. grandiflora three stamens only are found in each bundle, in E. Alberti each bundle consists of five stamens. In the plant under notice some bundles are made up of five, some of three, whilst occasionally four may be noted.

Of vigorous habit, it will doubtless attain a similar height to the other kinds—8 to 12ft.—while it spreads over a wide area. The white flowers appear in racemes, 4 to 5in. long, each flower being upwards of an inch across. Propagated from cuttings of semi-ripe shoots in July and August, it may be expected to form serviceable plants in two years' time. Similar treatment to that afforded shrubby spiræas is quite suitable. W. D.

## CYTISUS PURPUREUS.

When seen at its best, this is one of the most striking of the many dwarf kinds of broom, for it flowers very freely, and its flowers are distinct in colour from those of other kinds. A native of Eastern Europe, it has long been in cultivation, although it cannot be said to be common. Growing 12 to 18in. high, it forms long, slender, semi-pendant branches bearing the usual three-parted leaves peculiar to the genus. The purple or rose-purple flowers are borne from the leaf-axils along the greater part of the previous year's shoots, the flowering time being early May. It differs from most other kinds of broom insomuch that the best results are obtained by cutting away the old-flowering wood as soon as the flowers are over, and relying on annual shoots each year for blossoming. These young branches are produced freely from the bases of old shoots, from the root-stock, and also from underground stems.

A rather stronger plant than the type, also with purplish flowers, is found in C. versicolor, a hybrid between C. purpureus and C. hirsutus. Its habit is similar, and it is quite as floriferous. Both plants are sometimes grafted on stems to form weeping standards, but as a rule they prove most satisfactory when grown on their own roots. C. purpureus may be increased most expeditiously from seeds, whilst the hybrid may be rooted from cuttings. The pruning previously mentioned is applicable to both plants. L. P.

**Leptospermum scoparium.**—This member of the myrtle family cannot be regarded as showy, yet it is a very neat growing shrub, the little white flowers being borne in great profusion on the slender shoots. Being almost, if not quite, hardy in some parts of England, it is well suited for glass structures, where the heating accommodation is limited. In Australia, its native country, it is exceedingly plentiful.—K.

## NOTES FROM KEW.

### Cereus flagelliformis.

This, known as the Rat's Tail Cactus, used at one time to be a favourite window plant with cottagers in the West Country. It appears to be less grown now than formerly, though it is an exceedingly pretty member of the cactus family, and a flowering specimen suspended from the roof in the cool portion of the T range has gained many admirers. The long pendulous shoots hang down for a considerable distance, and the flowers are of a delightful shade of deep pink. It must be one of the oldest of its race, as the "Dictionary of Gardening" gives it as a native of Peru, and the date of its introduction as 1690.

### Himalayan Rhododendrons.

While the various Himalayan rhododendrons and their hybrids will flourish out of doors in the extreme west of these islands, and in other favoured spots, most of them are at Kew seen at their best under glass. In the northern portion of the Temperate House numerous species and varieties are planted out in the beds there. Among the species may be mentioned the somewhat straggling growing R. Nuttalli, whose young leaves are exceedingly pretty. The flowers, which are but few in number, disposed in a loose cluster, are large, somewhat bell-shaped, and pale yellow in colour. Rhododendron Falconeri eximeum is a form of R. Falconeri, with rounder leaves and more tomentum on their undersides. The flowers, which are borne in closely-packed roundish heads, are smaller than those of many others, their colour being a pale whitish-yellow, with a dark stain at the base of the interior. Rhododendron neilgherricum, apparently a form of R. arboreum, with rose-coloured blossoms; Rhododendron campylocarpum, with loose clusters of pleasing yellow flowers; and R. formosum, or Gibsoni, a pretty white-flowered species.

### Hybrid Rhododendrons.

A particularly striking form is R. Gill's Triumph, raised at Tremongh, near Falmouth. The parents were R. Griffithianum and R. Thomsoni, and the result a large flower much resembling R. Griffithianum, but of a rich carmine colour. Another from the same source is R. Glory of Penjerrick, with flowers paler than those of the preceding. There is also a good example of one of the earliest Griffithianum hybrids, namely R. Manglesi, raised by the Messrs. Veitch, between the just-named species and a garden variety, album elegans. When expanded, the flowers of R. Manglesi are white, with reddish dots on the upper segments. R. Beauty of Littleworth is another charming flower, white, with a few very distinct dots in the interior. Some Griffithianum crosses raised at Kew are also very attractive, particularly two in which the parents were R. Grand Arab and R. Ascot Brilliant respectively. R. Pink Pearl, of course, is also represented. A beautiful pure white flower is R. Kew Pearl, while a variety remarkable for its deep crimson colour is R. Nero, whose parentage is not recorded, but it would appear to have obtained some of its colour from R. Thomsoni. Other hybrids are the white-flowered R. Dennisoni, and R. Forsterianum, a cross between R. Edgeworthi and R. Veitchianum, one of the finest of its class, the flowers being very large, white, except a yellowish stain on the upper segment, and very sweetly scented. Another a good deal in the same way, but not quite so large, is the popular R. Lady Alice Fitzwilliam. Beside these are some small-growing azaleas, which are now classed as rhododendrons by the botanist. Some of these are Japanese varieties. K.

## NEWLY-PLANTED TREES AND SHRUBS.

Trees and shrubs planted in autumn and winter require careful attention until they become thoroughly established. During recent years we have experienced very dry weather during the late spring and early summer months; but this year we were favoured with heavy rains during the month of March. This may not be an unmixed blessing if there is any truth in the old adage, "A peck of March dust is worth a king's ransom." With the exception of a few local showers April was a dry and cold month, and never before do I remember having seen the grass assume a brown and parched appearance so early in the year.

Many trees and shrubs either perish or are rendered useless through neglect and inattention to mulching and watering, for it must be remembered that in many instances the young roots have made but little progress, and in consequence are incapable of searching very far afield for sustenance, as is the case with established specimens. It is true that work presses on every hand at this season, but it is equally true that it is idle to plant these subjects if time cannot be found to give the necessary attention subsequently, in order that they may have a fair chance to succeed. If the soil is loosened to a depth of six inches, and a thick mulch of manure is applied immediately afterwards, it will effectually prevent the ground becoming "caked"; and, further, the labour entailed in watering will be reduced to a minimum.

Large numbers of evergreens are planted during April and May, and in this case root-watering should be supplemented by overhead moisture, applied preferably with a hose. Speaking generally, professional gardeners recognise the importance of staking trees and shrubs that require it at the time of planting, but this does not apply to amateurs. One often sees specimens in small gardens quite innocent of any support, being blown hither and thither by the wind. This treatment spells disaster. It is equally important that when staked the trees should be examined from time to time, and afforded room for expansion at the point where they are attached to the stakes.

Walter H. Aggett.

**Single-flowered Camellias.**—Evidences that the taste for single flowers is on the increase may be seen in the case of the camellia, for the varieties with single or semi-double blossoms are appreciated by many. They have been extensively shown during the present year, and the old-fashioned flowers of a hard and formal outline are now, in the majority of cases, passed over in their favour. At one time these single flowers were regarded as only fit for stocks on which to graft the double kinds, but now all this is altered. Apart from the more light and elegant nature of the single blooms their central tuft of stamens forms a very noticeable feature. Several cultivators, but especially Messrs. William Paul and Sons, of Waltham Cross, have taken these single-flowered camellias in hand. Many varieties have been raised by them, and selections therefrom have been freely exhibited at the Horticultural Hall during the present season.—S. W.

## BOCCONIA CORDATA.

The genus Bocconia, although consisting at the present day of five species, is only represented in our gardens by two, namely, Bocconia cordata, a very old plant, introduced into this country in 1795, and Bocconia microcarpa, of quite recent introduction. The genus is founded on B. frutescens, of Mexican origin, known since 1739, but no longer grown.

Bocconia cordata is a striking object in the border. Individually the blossoms are small. On the other hand, however, where many of its large, terminal inflorescences are seen together the effect is excellent. The foliage alone is handsome, and when the groups are placed in a sloping, grassy bank in proximity to the rock garden, the plant will hold its own against many far more costly things by reason of its beautiful foliage. It is always seen to the best advantage when planted in a group on the grass.

Aptly named the Plume Poppy, Bocconia cordata is of exceptional value in the garden from a decorative point of view. In deep, rich soil it will exceed a height of 9ft., while even in the poorest staple it develops no mean stature. Growing at the back of herbaceous borders its effect is very picturesque and distinct when associated with such things as Spiræa ariæfolia, Spiræa Lindleyana, Arundo conspicua, and A. Donax, hollyhocks, or other tall-growing subjects, while, if favoured by a background of evergreens, its lofty spikes of bloom, often nearly 3ft. in length, are shown off to the best advantage. The great panicles of blossom shaded from reddish-brown, or what might be more aptly described as burnt almond colour, to creamy-white, are unique, both in tint and form, while the dark green of the upper surface of the lobed leaves contrasts well with the silvery white of their woolly reverse gleaming as their edges lift under the breath of the breeze.

In the wild garden the bocconia is a fine feature, as, when once well-established, it will hold its own with the native vegetation. In the herbaceous border, however, it must be kept within bounds, as it is a veritable land-grabber, and, if unrestricted, its suckers will encroach on the surrounding ground, greatly to the disadvantage of its neighbours.

No garden should be without this excellent plant, which is at once bold, handsome, and picturesque. It is especially suited for massing, when a noble picture is secured, or for planting in isolated positions on the lawn, in the front of shrubberies, or any position where abundant room can be given it for future development. Two or three spikes of bloom give but little idea of the broad effect produced by half a hundred flower-heads towering from a forest of blue-green foliage. The nut-brown stems of the withered blossoms should never be cut away, but allowed to remain, when they will provide an autumn picture as pleasing as the gradations of tones one obtains earlier in the flowers.

It may be easily raised by root-cuttings two inches in length, placed in porous soil in pans, and kept moderately moist under glass. It was at one time known as Macleaya yedoënsis.

Wyndham Fitzherbert.

BOCCONIA CORDATA.
A handsome hardy herbaceous plant with whitish inflorescens.

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**Vitis heterophylla variegata.**—This forms an exceedingly pretty object in the greenhouse just as the leaves are expanded, for, apart from their clearly-marked variegation, all the young shoots and leaves are heavily suffused with red. It is well worth extended recognition.—W.

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## MELON CULTURE IN POTS.

It is not customary to grow melons in pots; nevertheless, they can be so cultivated with complete success, as I have proved during the past two seasons, and the fruits obtained have been equal in size and quality to those grown in borders by the ordinary method.

The young plants are raised in small pots in the usual manner, and transferred to 6in. pots. For this potting, good turfy loam is used, with sufficient crushed charcoal to keep it sweet. The soil is made quite firm, and the plants grown near the glass in a house where a temperature of 70 deg. is maintained, and at no period of growth must the heat be allowed to fall below this figure. Careful attention is paid to damping down and syringing, always using tepid water for the purpose. When the roots reach the sides of the pots the final potting is given, and a similar compost is used, with a little bone-meal added.

I strongly object to the use of organic manure in melon soil, as this has a tendency to create over-rank growth, which probably has more to do with causing canker than other supposed causes. Strong plants, with sturdy, short-jointed growths, are rarely attacked by disease, and invariably produce good fruit. For the last shift, 12in. pots are used, and sufficient space is left at the top of the pots to allow for a top-dressing when the fruit has set. Our plants are not plunged in a hot-bed, but we stand them on boards on the stages of a house that has been filled with carnations during the winter. The subsequent treatment as regards stopping the laterals, training, and setting the fruit is identical with that followed with plants growing in borders. The laterals are pinched at the first leaf beyond the fruit, and two fruits are allowed to each plant.

At no time are the plants allowed to suffer for want of water at the roots. We do not object to wetting the stems of the plants near the soil, and no harm ever comes from this practice. When it becomes necessary to apply a top-dressing, some fertiliser can be mixed with the loam, and for subsequent feeding diluted liquid pigeon manure is excellent. Carelessness in ventilation will cause mildew. We shut the house early, to allow the temperature to rise up to 90 deg. by the sun's heat. As the fruits commence to ripen, less moisture is allowed in the atmosphere and at the roots, and a little more air is admitted.

The varieties that succeed in pots are Superlative, Blenheim Orange, and The Peer. J. Gardner.

Batsford Park Gardens.

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**Berberis stenophylla.**—Although a great number of hybrid shrubs have been raised within recent years, this, which is of accidental origin and far removed from a novelty, still holds its own as one of the most beautiful of them all; indeed, I have heard it described as the most beautiful hardy shrub in cultivation.—K.

# AN ECHO FROM THE WEST.

## Tasting Day at the National Fruit and Cider Institute.

Mention has been made from time to time in these pages of the National Fruit and Cider Institute, at Long Ashton, near Bristol, but, except in the West of England, it is doubtful whether many people know much about it, for the simple reason that the institute is mostly engaged in the culture of apples suitable for cider making, and in investigating a hundred and one things that are of interest to the people who make and drink the popular wholesome beverage of the West Country. For nearly ten years the institute has pursued its modest way, supported by the Board of Agriculture, the Bath and West of England Agricultural Society, and the County Councils of Devon, Gloucester, Hereford, Monmouth, Somerset, and Worcester. Quietly it has proceeded in its work during this period, and amongst the records it has to show there is many a problem connected with cider making that Mr. T. B. P. Barker, M.A., the able and genial director, has solved for the benefit of the industry on behalf of which he works.

The position of the institute is unique. In the first place, it fills the office of a teacher and advisor, and any farmer or cider maker in the West Country who is in difficulty about his cider may go to the director of the institute with the assurance of receiving courteous attention and assistance. Secondly, its business is to investigate and to learn. In short, the institute is an experimental station, and the need of such a place is realised by those who are practical cider makers, and know how much is yet to be found out about the work. The present-day cider maker is a bit of a philosopher in his way. He does the best he can, according to his experience and his lights, but there is always the possibility that the cider may not come up to the the standard expected, or it may go wrong, and become undrinkable, through some unknown cause, and when this happens the farmer puts it down to a slice of bad luck, just as he would if he lost a sheep or a calf, and hopes for better things next time.

Aided by science, it is the business of the institute to investigate these troubles in cider making, with the object of ascertaining causes, and suggesting remedies, and it may lay claim to a fair measure of success. But while it teaches the institute is also learning, which, by the way, is a point that is often overlooked by persons who are unacquainted with such establishments. In the little laboratory, with its test tubes and apparatus, there is a good deal of useful research work going on, and probably Mr. Barker knows more about cider making, from a scientific standpoint, than any other man in the West Country.

Thirdly, the institute is a nursery for the propagation and distribution of cider apples, and in this department some of its most useful work is recorded. Though the history of cider making is ancient, and many of the orchards which now provide the fruit also fed the cider mills of a past generation of farmers, the planting of cider apples in recent years has been sadly neglected. The demand for table apples was largely responsible for this, and because they gave a quicker, and possibly, a more remunerative return, farmers selected them for planting new orchards and filling up old ones, in preference to vintage varieties. It must also be said that some of them were persuaded that they could sell the best of the fruit for table purposes and grind the remainder up for cider, but anybody who is acquainted with cider making knows what a fallacy this is. Drinkable and saleable cider must be made from apples suited to the purpose. What has the institute done in this direction? It has scoured the counties which contribute to its support; it has discovered local varieties, which are well known in districts where they originated, but nowhere else; it has brought them together at Long Ashton, propagated them, and sent them out as orchard trees, and it is questionable whether there is such a complete collection of cider apples to be found at any other station in England. By this branch of its work the institute has probably prevented some splendid old cider apples from dropping out of cultivation; it has been the means of distributing varieties over a wide area, and since the distribution began it is safe to say that more cider orchards pure and simple have been planted in the West of England than for many, many years past.

The first of these orchards, planted three or four years ago, are now coming to a bearing stage, and when fruiting becomes general a new era of interest will be opened in the cider-making counties. What is more, this work is acting as a stimulant to cider apple planting. There is not the anxiety to plant table fruit that there was; in fact, the scarcity of cider apples is beginning to be felt; the experience of the last few years has shown that good cider fruit will pay; people are realising what they owe to their forbears for the orchards that the latter planted, and with it comes the sense of duty as to what they owe to those who will follow them. In fact, orcharding teaches its lesson of unselfishness. If former generations had not propagated and planted there would be no need for a National Fruit and Cider Institute, and there would be no juice to fill the hogsheads. In the same way, if this generation does not propagate and plant, where is the cider to come from in the years to come?

Lastly, cider is made at the institute. It has a mill and plant of its own, apples are obtained from an area which ranges from Devonshire to Worcester, and the cider is made, not in the haphazard fashion seen on so many farms, but on proper and systematic lines, and the different results of making the beverage from single varieties, and also from blending the juices of different types of apples, are shown.

The institute has one great field day each year, but it is called "Tasting Day," for the simple reason that interested persons from the contributing counties are invited to come and taste the different ciders made at the institute, and obtain any information they may desire about them. Tasting Day took place this year on May 2, and in point of interest and attendance was the best yet arranged at the institute. Nearly two hundred persons were present, and they came from many parts. Devonshire sent some, there were farmers and cider makers from "Zummerzet," two big parties of farmers from Gloucestershire, as well as a sprinkling of commercial cider makers, another party from Hereford, a few from Worcester, and Monmouth was represented by that man of so many parts, Mr. W. J. Grant, who is honorary secretary of the institute.

Tasting was no small business. First there were fifteen lots made from sharp apples to be sampled, and of these Porter's Perfection, Yellow Styre, and Cap of Liberty were generally agreed to be the best. Next came half a dozen samples of cider made from sweet apples, and here preference seemed to be given to Sweet Alford and Slack-ma-girdle. Fourteen lots of bitter-sweets were rather too much for some of the visitors, who selected Frequin Audievre (evidently of French origin), Medaille d'Or, and Yarlington Mill, and were content. Each visitor was presented with a printed list giving particulars as to the time of making, the percentages of malic acid and tannin in each cider, as well as the specific gravity and rate of fermentation, and one could learn from the sweetness, the bitter-sweetness, or the sharpness of the different single variety ciders the necessity of judicious blending in order to obtain a palatable beverage. There were also ciders to be tried which were the result of different interesting experiments, and this tasting day proved once more that if cider is to be made out of one apple alone there is no variety equal to Kingston Black.

At the suggestion of Mr. Granville E. Lloyd Baker, a little impromptu conference was got up, Mr. Barker having something to say about the cider making, while Mr. J. Ettle, the well-known horticultural instructor in Somerset, who is superintendent of the Fruit Department at the institute, dealt with this branch, and Mr. G. H. Hollingsworth, of Gloucester, described the progress of the experimental orchards in the latter county.

In addition to the tasting, the visitors had an opportunity of inspecting the young cider orchard at the institute, in which a number of varieties are represented, and on these a host of experiments are conducted. There is also an old orchard which is typical of a hundred others like it in the West, and by contrast with the young one it looks particularly antiquated. Further on is the nursery and the plantation, for it must not be thought that the institute is confined to cider and cider apples. It also takes commercial fruit culture under its wing, and a plantation laid out on market lines is under the charge of Mr. J. Ettle. In fact, there was a lot to see, and to describe it all would take more space than is available here, but as the visitors mounted the motor charabancs that were to carry them back to Bristol town they felt that they had spent a pleasant and instructive day.

This, then, is a brief description of the work of the National Fruit and Cider Institute up to now. What it will do in the future remains to be seen, but it has possibilities stretched before it, for the Development Commissioners have cast a favourable eye upon it, the large sums of money that it was necessary to raise locally has mostly been promised, and there is a probability in the near future that the modest little group of buildings at Long Ashton will grow, and with them the facilities of the establishments, and the scope of its usefulness. In short, we hope to write of this place one day as the recognised State-supported Fruit Station in the West of England, doing more and more work in the interests of the fruit-growing and cider-making industries in the West Country.

H.

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**Eucharis amazonica.**—In many gardens this plant has fallen out of cultivation, and where a few years since it was grown in quantity, it is now rarely seen. This may be due to change of fashion in gardening, but in some cases, perhaps, due to attacks of the "mite." It is therefore pleasant to occasionally come across this one-time favourite in good condition. I recently saw some well-flowered plants in the gardens at Ragworth Hall; there were about a dozen plants carrying strong spikes and large blooms. Their condition reflected credit on the gardener, Mr. Hall; they had no special treatment afforded them, and the prevailing conditions in the district are not of the best for the cultivation of plants, whether indoors or outside.—PAUL T. MORE.

*Supplement to THE GARDENERS' MAGAZINE, May 18, 1912.*

# *The* ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION

A·D 1912

**In the GROUNDS of the ROYAL HOSPITAL, CHELSEA, *May 22nd to May 30th, 1912.***

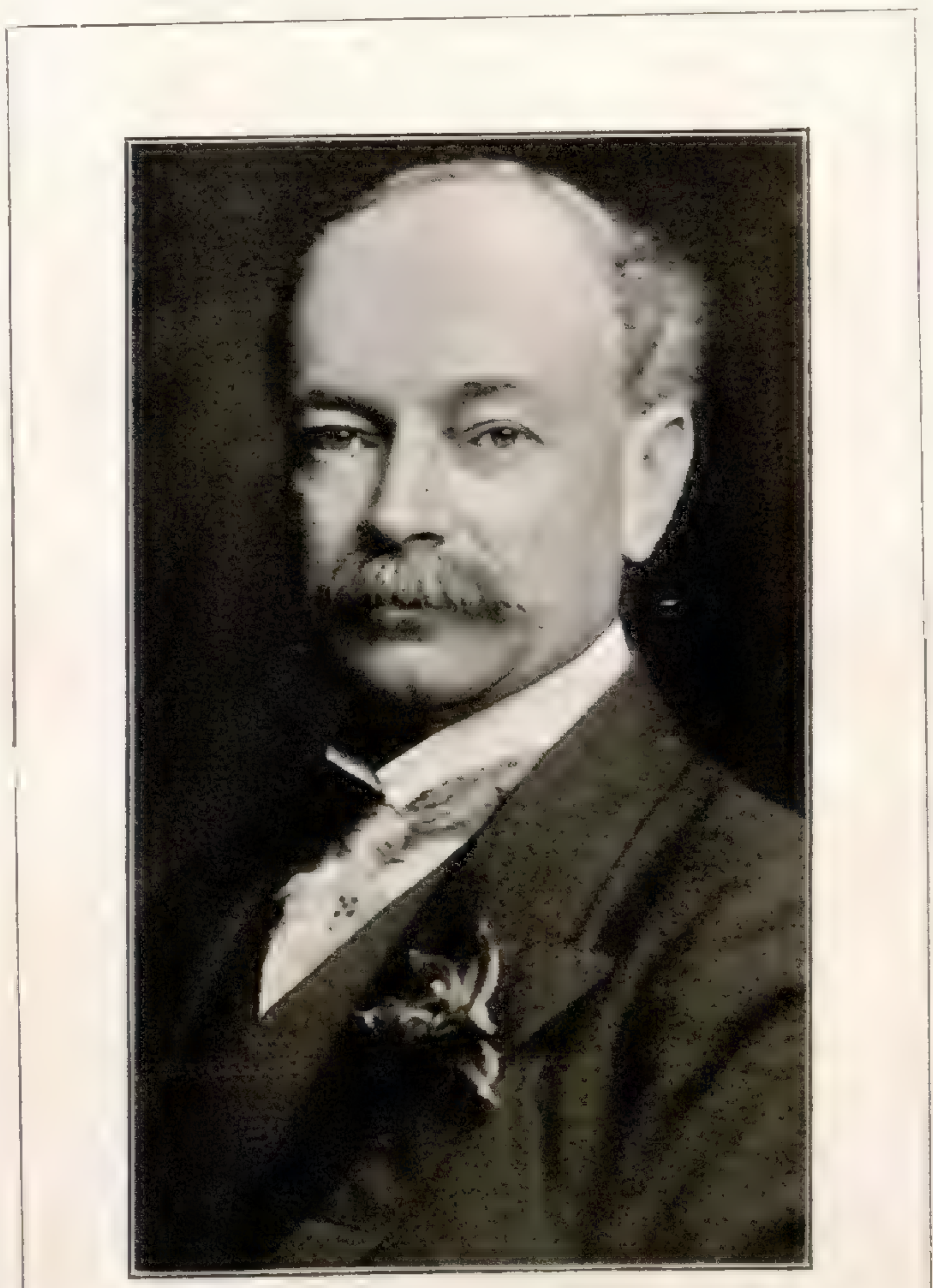
## PLAN AND SCOPE OF THE EXHIBITION.

The plan of the great exhibition to be opened at Chelsea on Wednesday, May 22, by His Majesty the King, is given in the present issue, and the scope of the exhibition is to demonstrate the high position horticulture has attained, display the finest products of the gardening art from many countries, and to indicate what enormous advances have been made since the International Horticultural Exhibition held at South Kensington in 1866.

A glance at the ground plan will show that one huge erection of wood, steel, and canvas will cover an area of 3½ acres, or, in other words, it will cover a space about twice as big as the Olympia at Addison Road. It is 660ft. long and 45ft. high, arranged in five spans and well ventilated. In 1866 the exhibition was contained in a wood and canvas erection, with seven spans, covering an area of nearly 3¾ acres; the exact measurements appear to have been 563ft. by 300ft. This year the great building is much larger on one side than the other, the shorter side being about 450ft. long and the extreme breadth a little under 300ft. So far as the main building is concerned, therefore, we show little, if any, advance on 1866, save that the structure is higher and composed of fewer spans.

But this is only part of the exhibition. Three tents, each 140ft. by 85ft., are set apart for exhibits from Belgium, Holland, and France. The cut flower tent is 600ft. long by 40ft. wide, and another marquee attached to the big tent measures 470ft. by 40ft. Orchids will occupy a specially heated tent, 250ft. by 70ft., while fruits and vegetables will be housed in a tent 140ft. by 70ft. The reception pavilion near the Chelsea Embankment entrance, the staff offices, and the two big refreshment tents take up a large amount of room, and in addition to the covered space a considerable area will be devoted to trees and shrubs. And all this is in the park-like expanse between the Hospital buildings and Old Father Thames. We give herewith two illustrations of the big tent, and one of the tents of the 1866 exhibition. The latter has been reproduced from the GARDENERS' MAGAZINE of that year.

The lime avenue is turned to account, and here will be kiosks for horticultural publications, and groups of choice hardy trees and shrubs. In the Ranelagh Gardens the exhibits for the Science and Education Section will be housed in a large tent, and one very long tent along the northern end of the gardens is devoted to horticultural sundries, while sundries of a less perishable nature will be arranged all along the length of the gardens next to the Chelsea Bridge Road. Further, in various parts of the gardens the leading exhibitors will tastefully dispose hardy trees and shrubs, herbaceous plants, etc. If the weather be fine the lower part of the Ranelagh Gardens will prove to be one of the most attractive parts of the exhibition. Here some wonderful rock, water, and Japanese gardens have been designed, some of them on a large and life-size scale, by such experts as Messrs. James Carter and Co., Messrs. Pulham and Son, and Messrs. R. Wallace and Co., among others. Large sums of money have been spent on these displays, and it is probable that the honours of the exhibition, so far as public appreciation goes, will be divided pretty equally between this section and the orchid tent, where Lieut.-Colonel Sir George Holford, Sir Jeremiah Colman, Messrs. Charlesworth, Sander, S. Low, J. Cypher, Armstrong and Brown, Hassall, and many others will provide a display of exquisitely graceful and gorgeously beautiful flowers, such as has never before been brought together. It may be noted that there are 30 classes for orchids out of a total of 428, so that orchids have not been unduly favoured. We feel sure that hybrid orchids, and what may be called the rock and water garden section will serve more than anything else to make the exhibition of 1912 quite distinct from that of 1866.



SIR JEREMIAH COLMAN, Bart., V.M.H.
Treasurer of the Royal International Horticultural Exhibition.

The schedule is divided into 13 sections, as follows: Stove and greenhouse plants, groups and specimens, 53 classes; palms and cycads, 11 classes; orchids, 30 classes; ferns and selaginellas, 24 classes; greenhouse plants—azaleas, begonias, pelargoniums, etc., 73 classes; roses, 26 classes; carnations and pinks, 15 classes; hardy plants, including rock and alpine gardens, 104 classes; new plants, 16 classes; fruits, 45 classes; vegetables, 35 classes; and a miscellaneous section for non-competitive displays.

We shall see any quantity of finely-grown pot plants next week, but there will be nothing like the number of giant specimens that were on view in 1866, when enormous specimen stove plants, huge heaths, azaleas, and roses; and big pelargoniums were present in quantity, and large specimen orchids, such as are rarely seen to-day, were then displayed by Mr. Robert Warner, Mr. Wm. Marshall, V.M.H. (whom we all hope to see recovered sufficiently from his recent illness to be present next week), Mr. John Peed, Mr. Penny, Mr. B. S. Williams, Mr. A. Turner, and Mr. Wm. Bull. The orchids shown then were all introduced species or varieties of species, a few hybrids had been raised, but probably not more than a dozen had flowered.

Cattleya Mossiæ, vandas, oncidiums, and Dendrobium nobile were represented by magnificent examples, some of Mr. Warner's cattleyas carrying 40 flowers. Forty-six years ago the new plants exhibited were chiefly tropical exotics; this year we anticipate they will be chiefly hardy exotics, florists' flowers, and hybrid orchids. Horticultural implements and sundries will show a revolution in number, variety, and design, as compared with 1866, for in syringes, spraying machinery, fumigating materials, and manures, enormous advances have been made during recent years.

BIG EXHIBITION TENT AT CHELSEA,
As seen from the leads of the Royal Hospital.

A Botanical Congress, presided over by Mons. de Candolle, was held in connection with the exhibition of 1866, and the pages of the GARDENERS' MAGAZINE of that year show that it was a very successful affair. This year there is a Science and Education Section, presided over by the Right Hon. A. H. Dyke-Acland, and with Mr. F. J. Chittenden as secretary. The programme is limited to the consideration of two very important subject: "Legislation at Home and Abroad for the Prevention and Suppression of Plant Pests" and "Horticultural Education." There will be social functions, as is only right and proper on these occasions, as they provide opportunities for showing hospitality to the stranger within our gates, but they seem scarcely numerous or extensive enough for such an important event.

How many judges there were in 1866 we do not know, but surely never before were nearly 400 eminent horticulturists brought together from almost all the ends of the earth to adjudicate upon an exhibition! We understand these will be divided up into 75 groups, and they have to be in attendance at 7.30 a.m. prompt on Wednesday next. Good fortune attend them.

A 300 h.p. engine has been installed to provide the electricity which, by means of arc-lamps, will brilliantly illuminate the tents and ground each night. A minor part of the preparatory work has been the installation of a complete drainage system for the show, while the provision of water and necessary hydrants throughout has been another item of importance. The design of the exhibition is by Mr Edward White, and Mr. S. T. Wright, of the R.H.S. Gardens, Wisley, is acting as show superintendent and doubtless his urbanity and wide knowledge of exhibitors will materially help to make matters move smoothly during the bustle and excitement of this week and the early days of next week. Messrs. Piggott Brothers and Co., Bishopsgate, London, have the erection of all the show buildings in hand, and their work has been very heavy considering the time allowed. In some of the larger rock and water garden designs electric motors have been cunningly installed for the purpose of pumping up water from the lower pools to an elevation from whence it descends again in falls and cascades.

Turning back again to the year 1866, one finds it of great interest to notice how, alas! not a few nurserymen then prominent have passed away, and in some instances the very name is now unrepresented in the trade, but it is also pleasant to find that then, as now, such firms as Messrs. Jas. Veitch and Sons, Chelsea; Wm. Paul and Son, Waltham Cross; C. Turner, Slough; William Bull, Chelsea; Backhouse and Son, York; Jackman and Son, Woking; Saltmarsh and Son, Chelmsford; Fisher, Holmes, and Co., Sheffield (now Fisher, Son, and Sibray); Jas. Carter and Co., High Holborn; Paul and Son, Cheshunt; Barr and Sugden, Covent Garden (now Barr and Sons); Wm. Cutbush and Son, Highgate; Lane and Son, Berkhampstead; H. Cannell, Woolwich (now H. Cannell and Sons, Swanley), were exhibitors. Mr. Harry J. Veitch is the only director who was also on the governing body in 1866; Mr. William Marshall is probably the only amateur living who was a foremost competitor in 1866; and Mr. Henry Cannell is the only one remaining who was the head of an exhibiting firm in that year.

So much for the plan and scope of the great exhibition, with a few comparisons added. But there is at least one other matter requiring notice, and it is that the financial success of 1866 was due to an extension of the period, during which it was originally intended the exhibition should remain open, and to the fact that the popular shilling admission was charged during the extension. The resulting profit enabled the authorities to hand over £1,000 to the Gardeners' Royal Benevolent Institution, and purchase the Lindley Library that is now housed at the Royal Horticultural Hall. If the great show of 1912 is to be a financial success there must be a very large attendance. Every garden-lover in the kingdom with a sense of his or her indebtedness to horticulture must come to Chelsea, and every gardener, whether engaged in private, public, or commercial practice should attend, even at the sacrifice of some time and money. Financial failure would be an everlasting disgrace to British horticulture.

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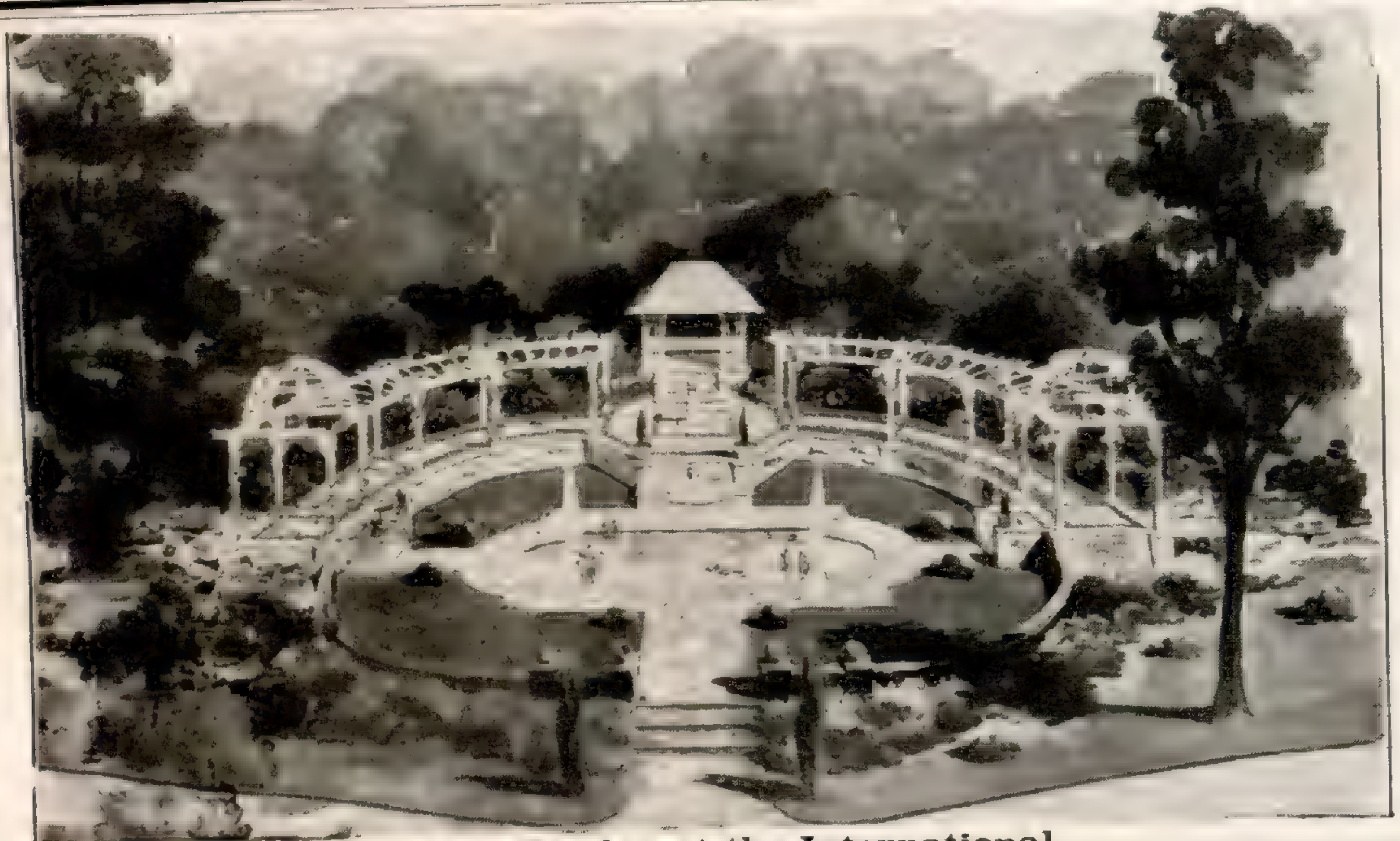

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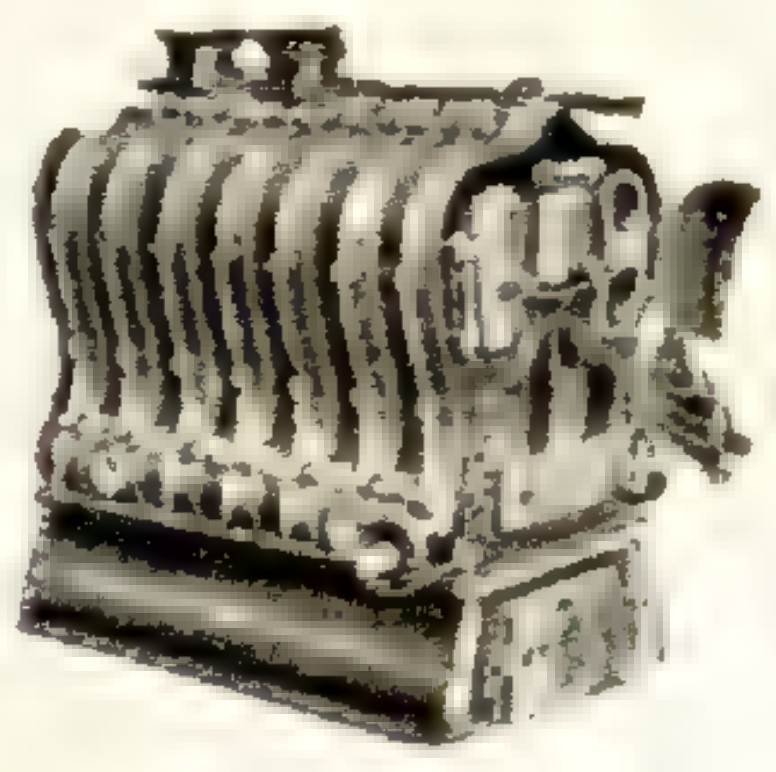

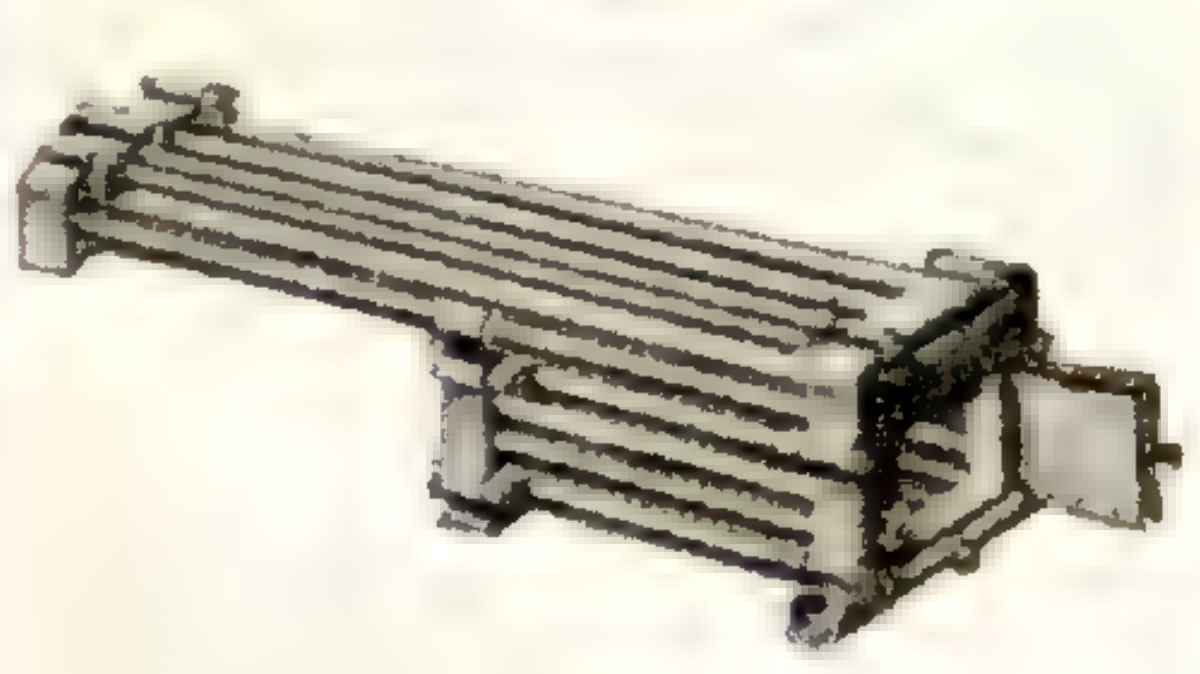

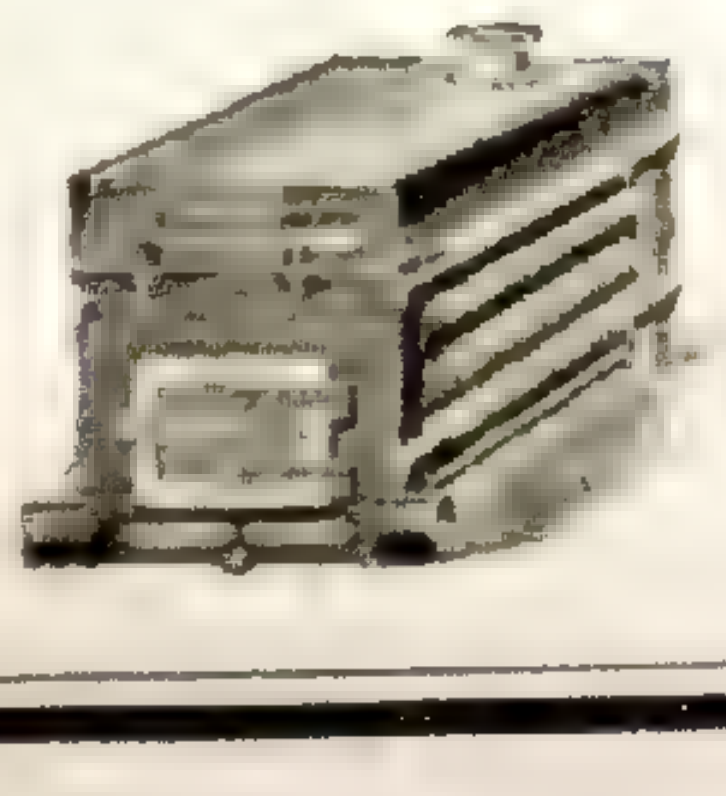

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## CHELSEA HOSPITAL GARDENS.

The minds of horticulturists the world over are turning towards Chelsea, and are full of wonderment as to the success of the great Royal International Horticultural Exhibition to be held there next week. Garden workers and garden lovers are coming from the "bounds of Empire" and from friendly neighbouring countries, as well as from lands far off, to see the most extensive and magnificent display of horticultural productions ever brought together. In 1866 the last International Horticultural Exhibition was held at South Kensington, and the site is now built over. One great difficulty that presented itself to the promoters of the present exhibition was that of site, because extent, ease of access, and a large amount of freedom for constructional purposes, were matters of great moment. How many sites were examined we do not know, but those who know London well were convinced that, failing the loan of a part of one of London's parks, there was no place so generally suitable as the gardens and grounds attached to the Royal Hospital, Chelsea, with the addition of the Ranelagh Gardens. And this was the site finally selected.

VIEW IN THE RANELAGH GARDENS, ROYAL HOSPITAL, CHELSEA.

Although the story has been told previously in these columns, a brief history of the famous hospital cannot be out of place when so much of interest to horticulturists centres in and around it. It is said that the hospital owes its institution to the pleading of Nell Gwynne, whose heart was touched with sympathy for the soldiers of her time who were "broken in our wars." Be that as it may, we know that the hospital, as well as the whole system of army pensions, came into being at the instance of Charles II., whose statue, in Roman style, stands in front of the hospital, and is annually crowned and fêted on Oak-apple Day. In those far-off days the army was a small one, and it was hoped that the hospital buildings would be large enough to accommodate all army pensioners. Sir Stephen Fox, the Paymaster-General of that time, gave £1,500 towards the funds necessary to commence proceedings, and by devious means, including the deduction of one day's pay per year from the army, he raised a goodly sum; £7,000 was added from the Secret Service Fund, and £20,000 was raised voluntarily.

The hospital lands cover about sixty acres, and as a large portion of this area is open to the public for the greater part of each day, London in general, and Chelsea in particular, have cause to bless the memory of the second Charles, and now, we, as horticulturists, may also be thankful that such a site was available for the great exhibition. The gardens and park-like grounds were not all acquired at once. The hospital building occupies the site of a Divinity College built by James I., but which was a failure, and was pulled down. The land, about twenty-seven acres, was granted to the Royal Society, but as this body could put it to no good use the property was "gladly" sold to those who were engaged in the hospital scheme, for £1,300! Just imagine, £48 an acre for land in Chelsea. Times have changed since then.

From Lord Cheyne twenty-one acres were purchased, and other parcels of land acquired brought up the total to 99½ acres. The King strained a point in favour of the Earl of Ranelagh, and granted him twenty-seven acres, but in 1742 and 1826 portions were repurchased, and these constitute the attractive and well-designed Ranelagh Gardens, where, if the weather be fine, visitors to the great exhibition will thoroughly enjoy themselves, for here, in the open, with ample space and a fine setting of trees and shrubs, the last word in design will find expression in rock gardens, water gardens, Japanese gardens, etc. No more suitable place for garden exhibits of this kind could be found in London. Noble elms and horse chestnuts, towering poplars and ailanthuses, spreading planes, and ancient thorns, as well as rhododendrons, lilacs, hollies, and other shrubs and trees, pleasingly grouped in irregular belts and masses, with wide areas of grass, an undulating surface, and winding paths, together form a garden of admirable design and no mean beauty. The summer-house or tea-house on rising ground marks the site of the old Rotunda, a building very famous in the days when the Ranelagh Gardens formed the pleasure resort of fashionable London.

The extensive buildings of the hospital were built to the designs of Sir Christopher Wren, and it is estimated that from 1681 to 1701 not less than £157,000 were expended on building, lands, and furnishing. The whole establishment forms a little township, with a population of nearly 700 people. A great deal of the work of maintenance is done by the more able-bodied pensioners, who are paid for work so done. The management is on military lines, under the governorship of Sir George White, of Ladysmith fame. The Great Hall is the centre of the

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social life of the place, and here, amid an array of old armour and weapons, fine old paintings, and flags and banners carried though many a well-fought fight, the pensioners meet for various amusements and entertainments. In this Great Hall the four hundred members of the jury will meet at 7.30 a.m. on Wednesday, May 22, to be divided into seventy-five sets, prior to their task of judging the greatest flower show ever seen. Some visitors may have an opportunity of inspecting the beautiful Chapel, famous for its windows, its gold plate, and exquisite carvings by Grinling Gibbons.

To the north of the Ranelagh Gardens is a piece of land divided into one hundred and seventy plots, each plot a little garden with which a pensioner, who has a liking for gardening, may do what he pleases. These plots are of great interest, and exceedingly ingenious are the methods followed by some of the old gardeners. In many cases the cultivator has in view a modest addition to his pocket money, and as visitors seem ever ready to purchase flowers and plants from these plots, there is no difficulty in disposing of the results of one's labours. I have told before how one old pensioner gardener raised a batch of sturdy seedlings of Impatiens Roylei in an improvised frame, and sold them speedily as "new fuchsias."

To the south of the hospital buildings, and stretching to the Embankment, is the tree-skirted park and cricket ground, and it is here that the enormous tents and other buildings have been erected for the more tender subjects that will be brought for exhibition. The tall Chilianwallah monument, with its flanking guns, is covered in, and will doubtless form a rendezvous for friends who may desire to meet each other, for it will be a quite easy matter to search in vain for a friend in this huge exhibition unless a time and place are appointed. But you cannot miss the Chilianwallah monument.

Between the park and the Ranelagh Gardens runs an avenue of lime trees, and this is remarkable from the fact that the trees were pollarded long years ago, with the result that, from a point about eight feet from the ground they produce from four to eight limbs, which bend outwards, and then ascend to a considerable height. In all the freshness of their delicate greenery these old lime trees will provide grateful shade next week, if the weather is bright, and between their stems there will be groups of ornamental trees and shrubs, and a series of kiosks for horticultural publications and in one of these kiosks the GARDENERS' MAGAZINE, and its sister paper, "Amateur Gardening," will be represented. There will be on view a volume of the GARDENERS' MAGAZINE for 1866, containing a report of the International Exhibition of that year, a full-page plan of that show, and also an illustration showing the tents and buildings occupied by the exhibition, for then, as now, the "G.M." was easily ahead of its contemporaries for illustrated reports.

The present superintendent of the gardens and grounds attached to Chelsea Hospital is Mr. T. W. Turner, formerly general foreman at the Royal Horticultural Society's gardens at Chiswick. Mr. Turner succeeded Mr. Graham. Some previous occupants of the post rest in the little cemetery that Mr. Turner has beautified with breadths of daffodils and other spring flowers, and the records tell of Henry Story, gardener twenty years (1713); Mr. James Allen, gardener (1817); and "Mr. J. Bruce, Mastr. Gardnr." (1838). Mr. Turner's house is close to the pensioners' gardens. The management of Burton Court, the Guards' sports ground, also falls to Mr. Turner, who, on the terraces in front of the hospital, annually provides a bright display of summer bedding from plants grown on the place—no mean feat for Chelsea.

C. H. CURTIS.

AVENUE OF POLLARD LIMES, ROYAL HOSPITAL GROUNDS, CHELSEA.

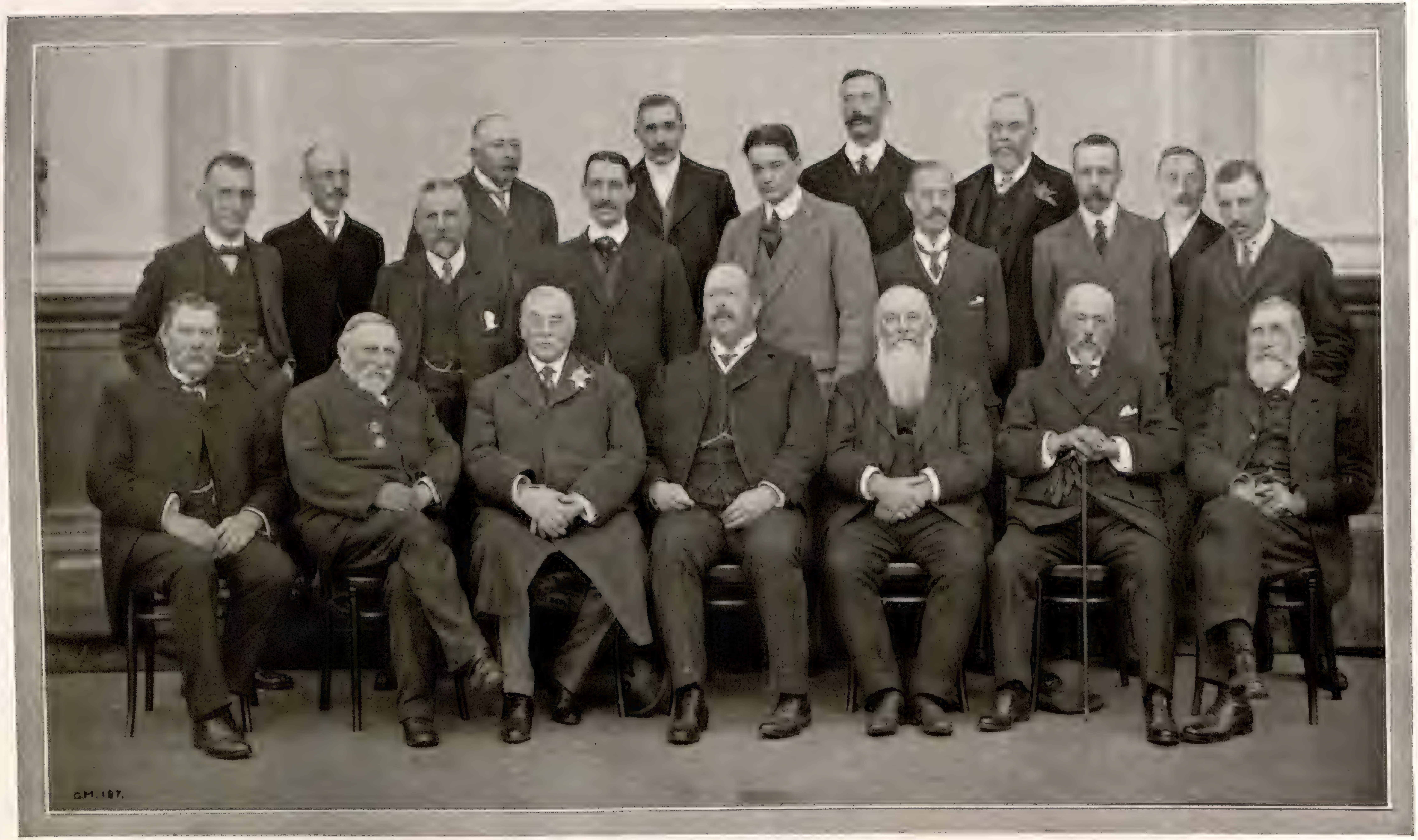
## HOW TO REACH THE EXHIBITION.

The Royal Hospital, Chelsea, with its historic associations and extensive grounds, is generally regarded as one of the most interesting features of the Metropolis; but of those who are not well acquainted with the topography of London, few are able to state offhand its exact whereabouts and the best means of reaching it. This is in a measure due to the fact that it is somewhat off the beaten track, and, so far as horticulturists are concerned, there has been no event in the neighbourhood of special interest to them, with the exception of the summer exhibition held by the Royal Horticultural Society in the grounds a few years since.

By some of our friends in the provinces whose visits to the Metropolis are of short duration, Chelsea Hospital is regarded as situate in a somewhat remote part of London, and not particularly convenient of access. This is not, however, the case, for the site is as convenient of access as any position well could be. It is less than two miles from Charing Cross, and within five minutes' walk of a station of the Metropolitan Railway, which is more or less directly connected with all the railway termini in London with the exception of London Bridge (London, Brighton, and South Coast) and Waterloo (London and South Western), and there is no difficulty in reaching the exhibition grounds from these two termini.

Chelsea Hospital occupies a prominent position on the Chelsea Embankment, and the principal entrance therefrom leads direct into the exhibition with the great tent on the right, and the marquees provided for the display of the products from foreign countries on the left. This will be the most convenient entrance for those who arrive by motor, carriage, or taxi-cab. Those who travel by railway should alight at Sloane Square Station on the Metropolitan District Railway, which is about five minutes' walk from the entrance on the north-west side of the Hospital grounds.

Visitors travelling to London by the Great Northern and the Midland Railways should, on reaching King's Cross and St. Pancras respectively, proceed to the King's Cross Station of the Metropolitan Railway, and book to Sloane Square. Those travelling by the London and North Western Railway should, on reaching Euston, proceed to Euston Square, also on the Metropolitan



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(The names in each row are to be read from left to right.)

Railway, and about five minutes' walk, and book as before.

Those reaching London by the Great Central Railway should, where practicable, travel to Baker Street instead of to the main-line station at Marylebone, as the former is in direct connection with the Baker Street Station of the Metropolitan Railway, whereas Marylebone Station is six or seven minutes' walk therefrom. As before, tickets must be taken to Sloane Square.

Passengers via the Great Western Railway should, on reaching Paddington, proceed to Praed Street Station on the Metropolitan Railway, which is in direct connection, and book to Sloane Square.

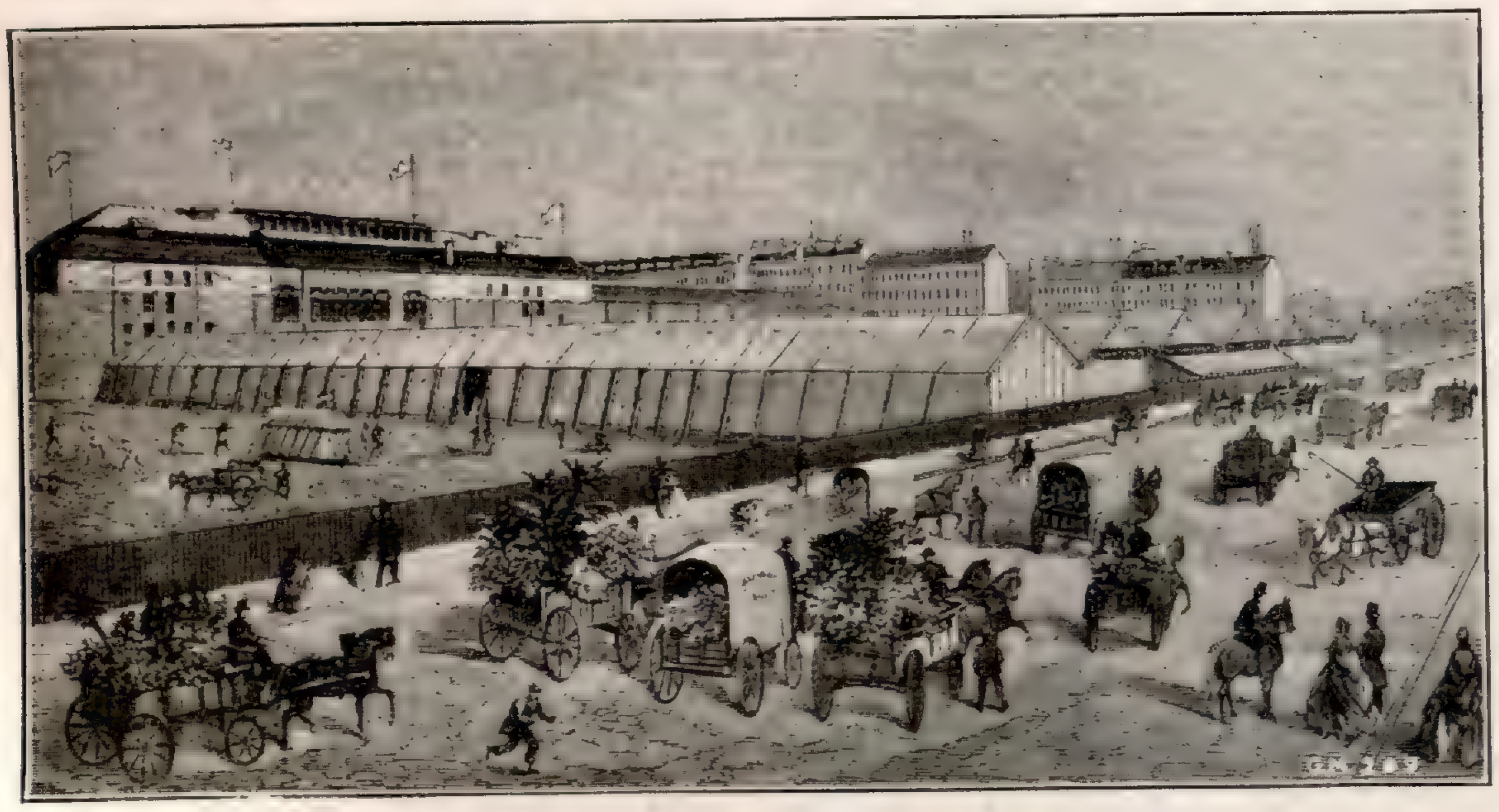
Visitors to the exhibition from the southern parts of England via the London and Brighton, South Eastern, or London, Chatham and Dover Railways, should in each case book to the Victoria terminus, which is only a short distance from the exhibition. On reaching Victoria they can travel to the exhibition by motor-bus (Service No. 11), which will be found at the western entrance to the station yard, or they can proceed through the subway to the Victoria Station of the Metropolitan District Railway and journey to Sloane Square. The motor-bus is preferable, as it puts its passengers down almost close to the entrance gates to the exhibition grounds.

On reaching Waterloo, the best course is to book from there by the Bakerloo Railway to Sloane Square, and change at Charing Cross (Embankment) Station for that station. Those visitors who travel by the South Eastern and London, Chatham, and Dover Railways to Cannon Street will proceed from the station of the same name on the Metropolitan District Railway and book for Sloane Square.

Visitors reaching London via the Tilbury and Southend Railway should, on reaching the Fenchurch Street terminus, proceed to Mark Lane Station of the Metropolitan District Railway, and, as before, book to Sloane Square.

Visitors travelling to the Liverpool Street Station of the Great Eastern Railway should, on arrival, proceed to Liverpool Street Station of the Metropolitan Railway, which is reached by a subway, and thence travel to Sloane Square.

Excepting at Mark Lane and Cannon Street, passengers must be careful to travel by an Inner Circle train, but at the two stations mentioned they may take any train.



TENTS OF THE 1866 INTERNATIONAL EXHIBITION.

As seen from Cromwell Road, South Kensington. Reproduced from the GARDENERS' MAGAZINE, 1866.

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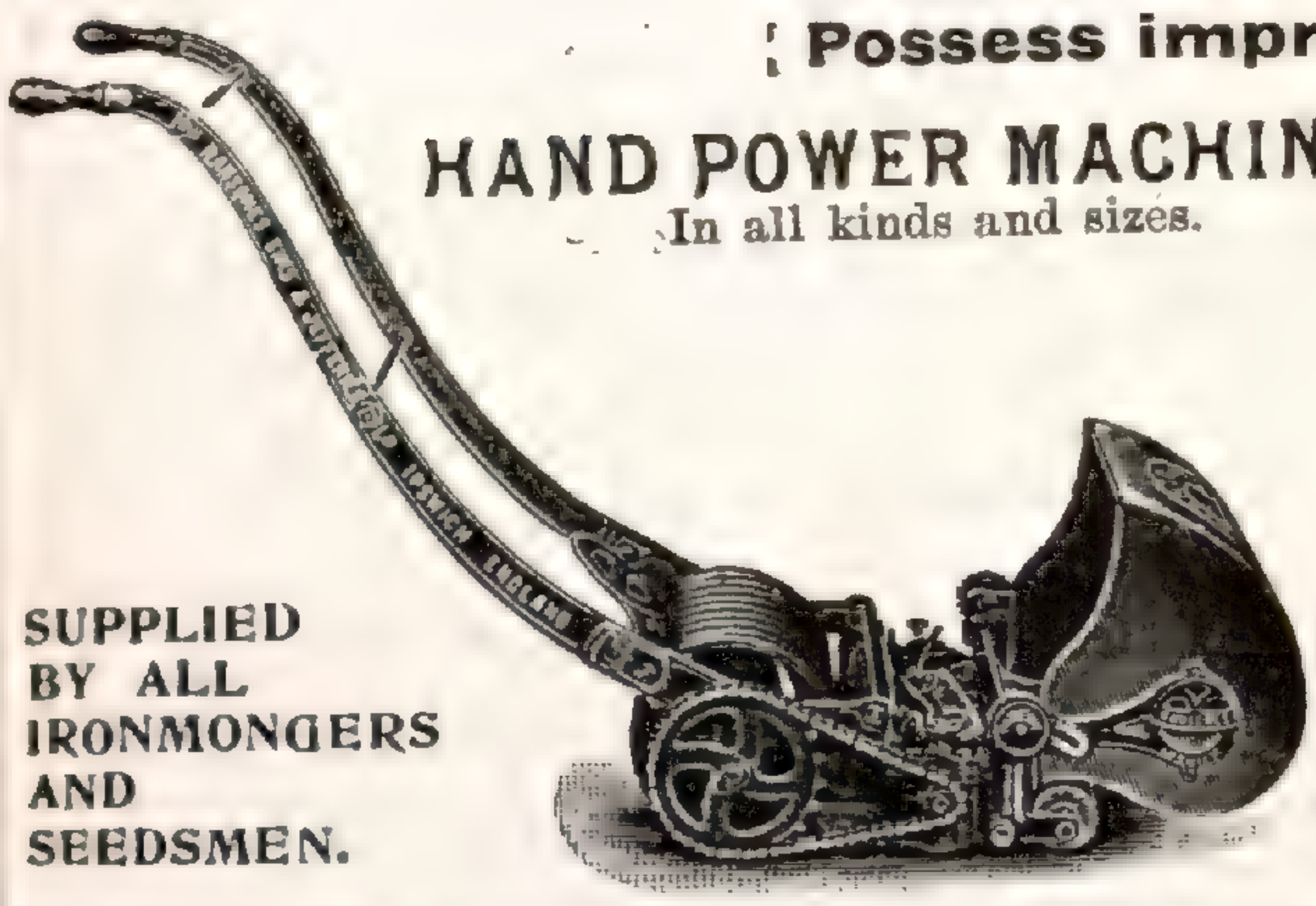

HAND POWER MACHINES
In all kinds and sizes.

MOTOR LAWN MOWERS
Hundreds in successful use.

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The best large machines.

RECENT AWARDS.

**3 Gold Medals,**
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Illustrated Catalogues free on application to—

**RANSOMES, SIMS & JEFFERIES, Ltd**
The Orwell Works, IPSWICH.
**The Oldest and most Experienced Manufacturers in the Trade**
**Established 1789.**

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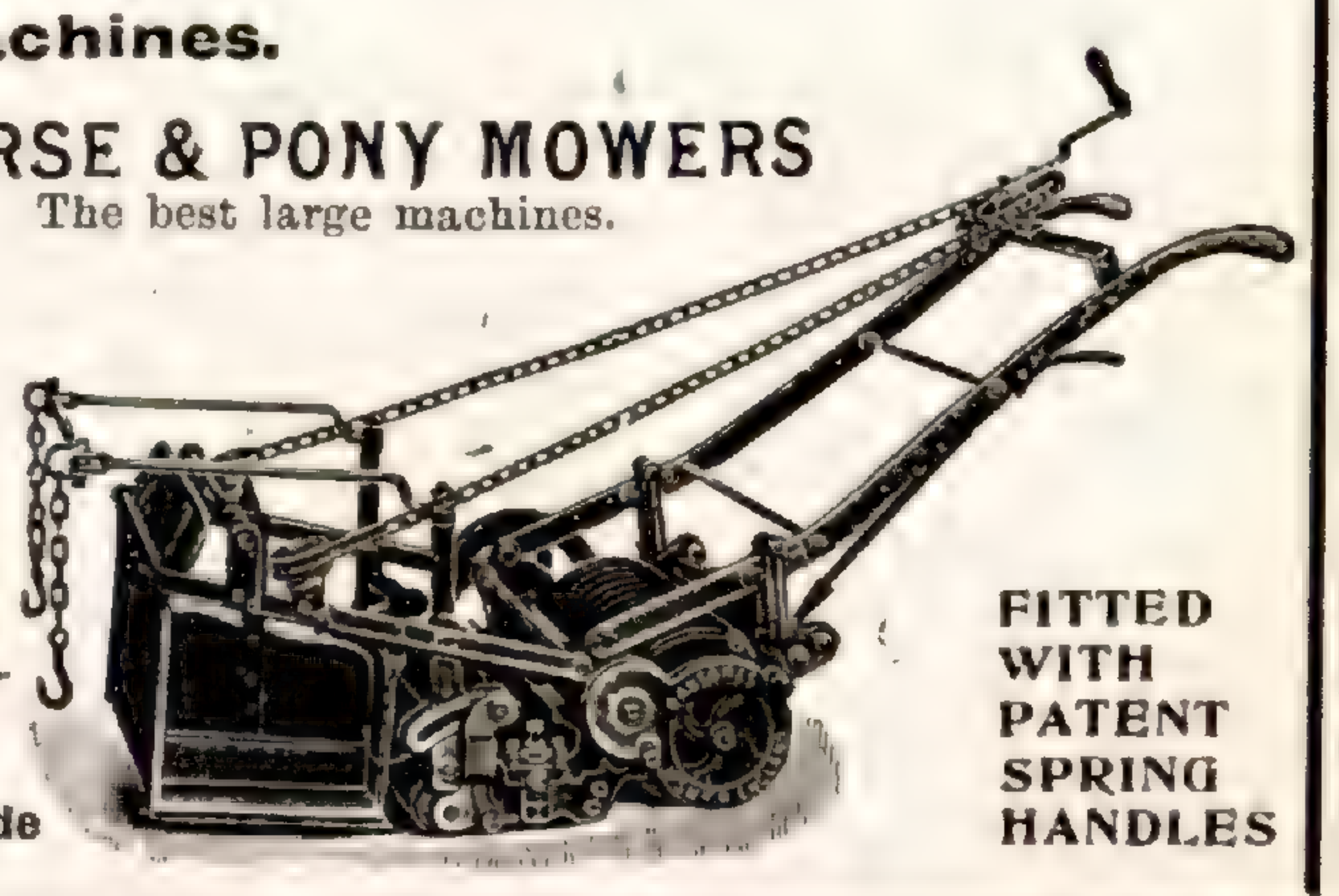

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SUMMER CLOUD.
ELLIOTT'S New Shading for Glass Houses.

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**GLASS STRUCTURES**

THAT REQUIRE

**OUTSIDE SHADING.**

*Of a Light Green Tint.*

The only Genuine, Original, and Improved Article. It has been in general use for

**OVER 35 YEARS.**

Be sure to ask for

**SUMMER CLOUD**

AND SEE THAT YOU GET IT!

Sold by all Dealers in Horticultural Sundries throughout the Kingdom,
in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6; and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

**CORRY & CO., Ltd.,**
13 & 15, FINSBURY ST., LONDON, E.C.

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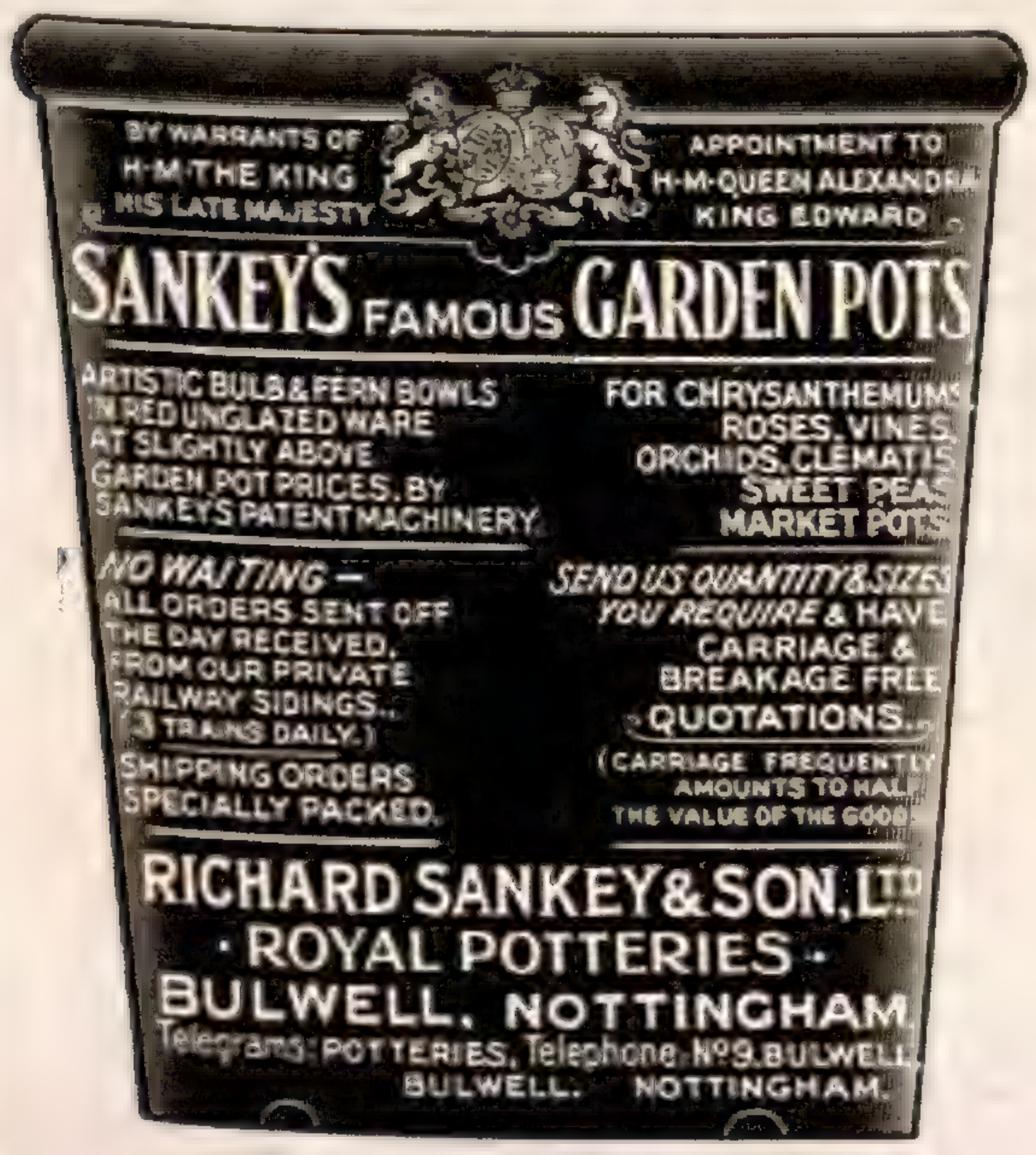

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**SANKEY'S FAMOUS GARDEN POTS**

ARTISTIC BULB & FERN BOWLS IN RED UNGLAZED WARE AT SLIGHTLY ABOVE GARDEN POT PRICES, BY SANKEY'S PATENT MACHINERY.

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*NO WAITING —*
ALL ORDERS SENT OFF THE DAY RECEIVED, FROM OUR PRIVATE RAILWAY SIDINGS.. (3 TRAINS DAILY.)
SHIPPING ORDERS SPECIALLY PACKED.

*SEND US QUANTITY & SIZES YOU REQUIRE* & HAVE CARRIAGE & BREAKAGE FREE QUOTATIONS.
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## "MUSHROOMS, and How to Grow Them."

By JOHN F. BARTER.
Price 1s. Post free 1s. 2d.

Use "BARTER'S" SPAWN
For price write
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## BEGONIA PHOSPHORESCENS.

Fine bedding scarlet. Semi-double. Strong plants in large 60's. Ready end of May. 3/6 doz.; 25/- 100.

Can be sent in paper pots to save carriage.

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BOBY'S HANDY

**SEED DRILL**

Sows all kinds of small seeds including Turnip and Mangold.
THOUSANDS IN USE.
Carriage paid for P.O. **12s. 6d.**
Send for List of other sizes for Peas, Beans, etc.

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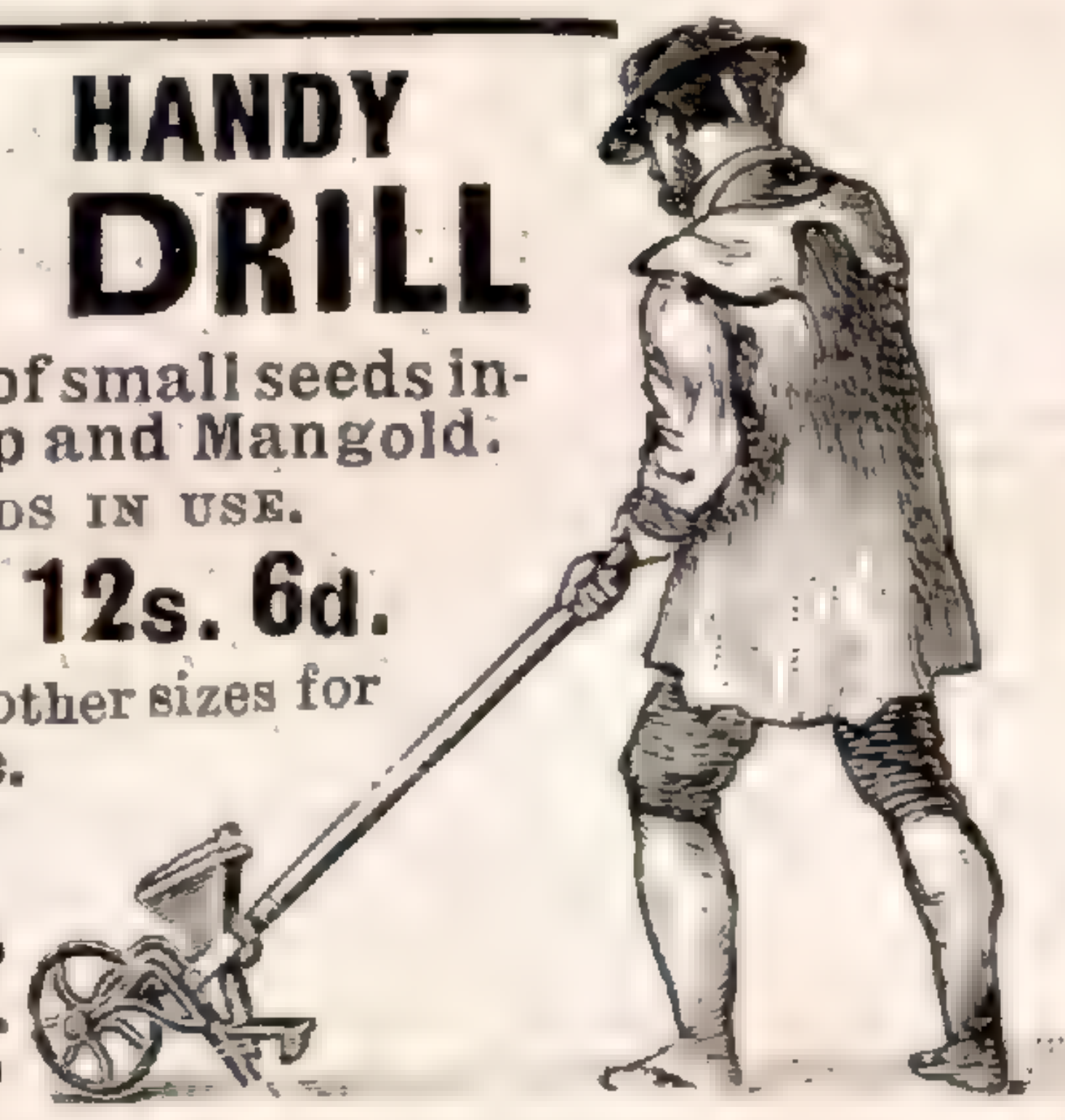

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**WEEDLESS LAWNS** are obtained by the use of

**WATSON'S LAWN SAND**

which Destroys Weeds on Lawns, afterwards acting as a valuable Fertilizer to the Grass, 34/- per cwt.; 56 lbs., 18/-; 28 lbs., 9/6; Canisters, 5/-. 2/6 and 1/.

**WATSON'S WEED KILLER**

Kills all Weeds and Grass on Garden Paths, Drives, Stable Yards etc. No. 1, Tin 1/-; No. 2, 1/9; No. 3, 3/-.

Sold by Seedsmen & Nurserymen,

A. J. Barbour & Co., 3, Upper Fountaine St., Leeds.

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MANY YEARS REPUTATION.

**EUREKA WEED KILLER**

LASTING RESULTS – NO NEW EXPERIMENT.

1/9 TIN FOR 25 GALLONS | 6/- TIN FOR 100 GALLONS | LARGER SIZES AT LOWER RATES

SOLD BY AGENTS. MANUFACTURERS: TOMLINSON & HAYWARD LTD LINCOLN.
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**MARK SMITH, Ltd.,**
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"PERFECT"
**WEED KILLER**
STRONGEST, CHEAPEST & BEST.

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# MERRYWEATHERS'

*"VERY BEST"*

**Watering Hose**

FOR GARDENS, LAWNS, &c.

MERRYWEATHERS "VERY-BEST" LONDON

Made on the lines of Fire Engine hose, therefore good for hard wear and long life. Customers find it good after 10 years' use.

*Beware of cheap and flimsy imitations.*

Write Merryweathers', 63, Long Acre, London, W.C.

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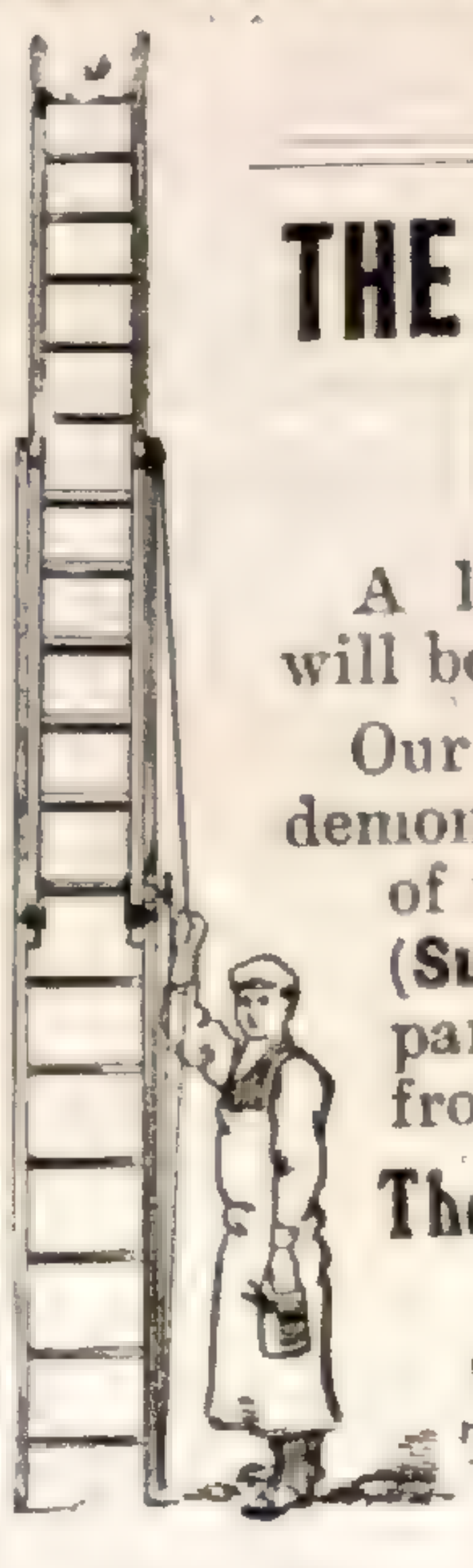
THE ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.



**THE PATENT SAFETY EXTENSION LADDER.**

A large assortment of the above will be on show at this Exhibition.

Our Representatives will gladly demonstrate the utility and lightness of these Ladders at **STAND No. 61 (Sundries Section)**, where full particulars may be obtained, or from—

**The PATENT SAFETY LADDER CO.,**
PETERBOROUGH.
Telegrams: "Cooke, Peterborough."
Telephone: No. 51.

**"ACME" WEED KILLER**

**FOR DESTROYING WEEDS, MOSS, &c., ON CARRIAGE DRIVES, GARDEN WALKS, &c.**

**POWDER WEED KILLER**

**Dissolves Quickly in Cold Water.**

SIZE OF TINS.

| | | | | |
|---|---|---|---|---|
| No. x, | sufficient to make | 12½ galls., | **1/-**, | postage **3d.** |
| ,, 1, | ,, ,, | 25 ,, | **1/9**, | ,, **3d.** |
| ,, 2, | ,, ,, | 50 ,, | **3/3**, | ,, **4d.** |
| ,, 3, | ,, ,, | 100 ,, | **6/-**, | post free. |

**LIQUID WEED KILLERS**

**One gallon to be mixed with 25 gallons of water.**

PRICES: 1 gallon, **2/3** (tin free); 5 gallons, **7/6** (drum, **2/6**); 10 gallons, **13/4**; 16 gallons, **21/4**; 20 gallons, **25/-**; 40 gallons, **48/-**.

Carriage paid on 5 galls. Drums or Casks of 10 galls. and over, charged 5/- each, allowed when returned.

**Strength, 1 in 50. Prices on application.**

**LAWN SAND.**—Kills Daisies, etc., and fertilises the grass. 7lb., **1/9**; 56lb., **10/-**, carriage paid.

**ARSENATE OF LEAD** (Paste) for destroying all leaf-eating insects. **8d.** per lb.; postage 3d. 1lb. sufficient for 25 galls. of water.

**"FUMERITE"** for destroying all ground vermin, Slugs, etc. (To be dug into the soil.) 1lb., **9d.**; 7lb., **3/-**; carriage paid.

**EXTRACT OF QUASSIA INSECTICIDE,** Pint, **1/-**; 1 gall., **3/-**.

**COMPOUND EXTRACT OF QUASSIA TOBACCO INSECTICIDE,** Pint, **1/3**; qt., **2/-**, post paid.

**SUMMER SHADING, &c., &c.**

Prices and particulars on application.

**THE ACME CHEMICAL CO., LTD.,**
TONBRIDGE, KENT,
And River Street, Bolton, Lancs.

**When answering Advertisements please mention "Gardeners' Magazine."**

**ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION**

*MAY 22nd to 30th, 1912.*

**ROYAL HOSPITAL GARDENS, Chelsea**
**(NEAR SLOANE SQUARE STATION).**

Patrons:—
H.M. the KING, H.M. the QUEEN, H.M. QUEEN ALEXANDRA.

President:—
The DUKE OF PORTLAND, K.G.

**To be opened by their Majesties the KING and QUEEN.**

***On Wednesday, May 22nd, at 12 o'clock.***

The most wonderful Exhibition in the history of Horticulture. Exhibits from all Nations.

Gates open after the first day from 9.0 a.m. to 10,0 p.m.

**GROUNDS ILLUMINATED.** **MILITARY BANDS.**

Refreshments and Lunches at reasonable prices.

Full particulars may be obtained from the Organising Secretary, 7, Victoria Street, S.W. Telephone No.: 257 Victoria.

**Royal International Horticultural Exhibition,**
ROYAL HOSPITAL GARDENS, CHELSEA.

**"THE GARDENERS' MAGAZINE"**

*will be represented in the*

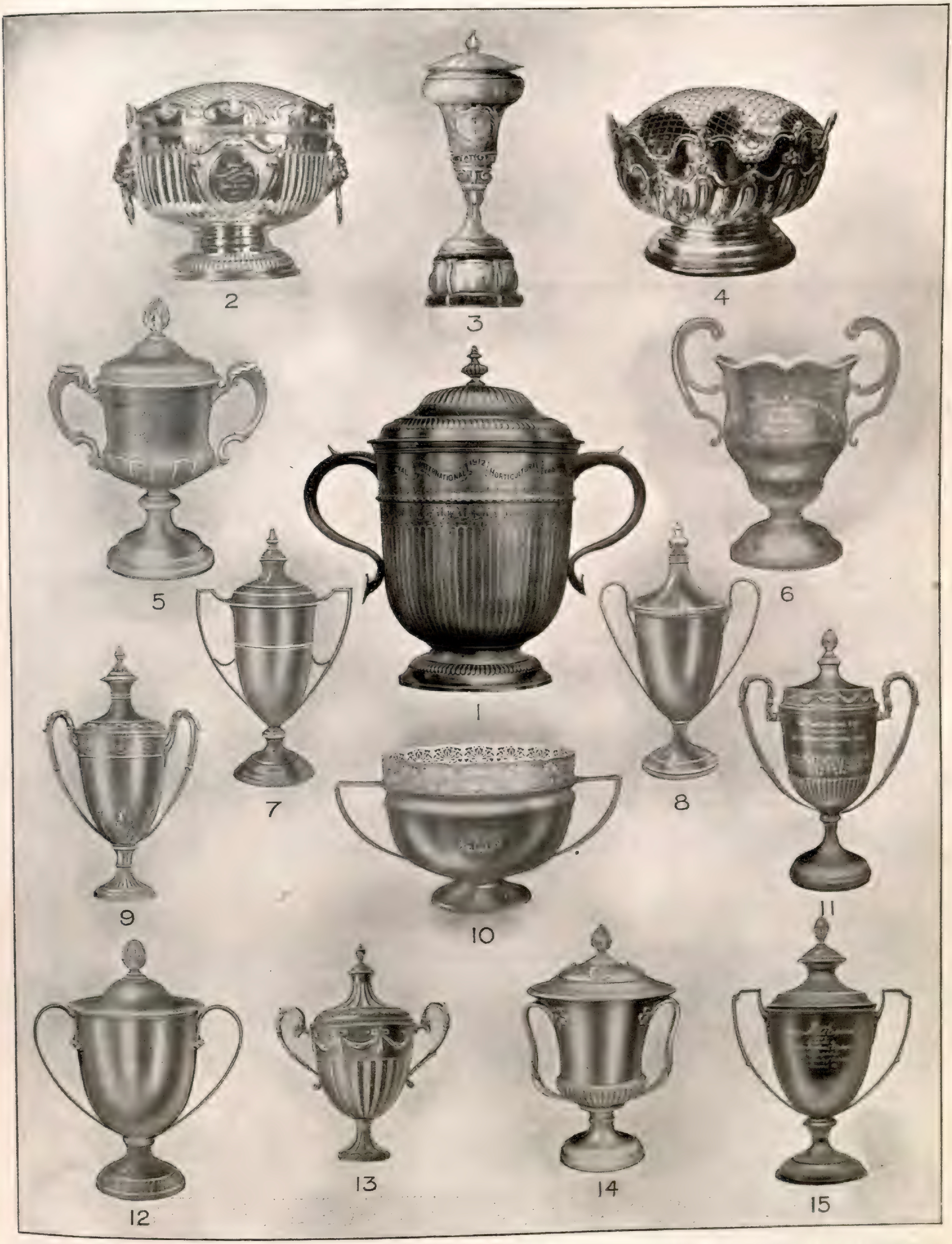
SUNDRIES SECTION = STANDS Nos. 220-221
*where our Publisher will display our*
HORTICULTURAL PERIODICALS and BOOKS

*Also our Representatives will be pleased to meet Advertisers and Readers*

**AT OUR KIOSK**

BENEATH the LIMES in the CENTRAL AVENUE.

W. H. & L. Collingridge, 148 & 149, Aldersgate Street, London, E.C.



SOME OF THE CUPS PRESENTED FOR COMPETITION AT THE ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.

The cups are as follows: 1, Royal Horticultural Society; 2, Somerset; 3, Fruiterers' Company; 4, Leicester and Rutland; 5, West Sussex; 6, Irish; 7, Dorset; 8, Cheshire and North Wales; 9, Messrs. J. Veitch and Sons; 10, Lancashire; 11, Shropshire; 12, Norfolk; 13, Herts; 14, Hereford and Monmouth; 15, Earl of Mount Edgcumbe and county of Cornwall.

## EXHIBITION PROGRAMME.

### MONDAY, MAY 20.

National Rose Society's Conference at the Holborn Restaurant, at 5 p.m., when the President, Rev. J. H. Pemberton, will deliver an address on "The Modern Development of the Rose." A Dinner will be offered to foreign rosarians, 7 p.m.

### TUESDAY, MAY 21.

Reception at No. 3, Grosvenor Square, by the Duke and Duchess of Portland (by invitation), at ——

### WEDNESDAY, MAY 22.

Jury meets in the Great Hall, Royal Hospital, Chelsea, at 7.30 a.m., and judging will commence at 8 a.m. prompt.

His Majesty the King, accompanied by Her Majesty the Queen, will open the exhibition at 12 noon.

At about 1.30 p.m. a Luncheon to the jurors will be offered in a large marquee in the show grounds.

The European Nursery Federation will meet at the Hotel Windsor, Victoria Street, Westminster, to discuss matters affecting international trade. There will be delegates from France, Germany, Belgium, Holland, Switzerland, and Luxemburg, and these will be entertained at dinner by the Horticultural Trades Association, at 8 p.m., at the Hotel Windsor.

### THURSDAY, MAY 23.

Exhibition opens at 9 a.m.

Conference on Horticultural Education, in the Recreation Hall, Chelsea Hospital, at 2 p.m. The Right Hon. A. H. Dyke-Acland will preside, and the speakers will be: Prof. L. H. Bailey, Cornell University, U.S.A., "Horticultural Education in America"; Herr. K. Weinhausen, Berlin, "Horticultural Education in Germany"; Mr. W. Hales, A.L.S., Chelsea Physic Garden, "The Education of a Gardener"; and Prof. A. Buyssens, School of Horticulture, Vilvorde, "Horticultural Education in Belgium."

Dinner offered by the Perpetual Flowering Carnation Society to foreign carnation growers, at the Holborn Restaurant; Mr. J. S. Brunton will preside, 6.45 p.m.

### FRIDAY, MAY 24.

Exhibition opens at 9 a.m.

Conference on Legislation in connection with Plant Diseases and Pests, at 9.30 a.m., in the Recreation Hall, Chelsea Hospital. The Right Hon. A. H. Dyke-Acland will preside, and the speakers will be: Prof. Ritzema Bos, of the Phytopathological Institute, Holland, "The Value of Importation Regulations as a Means of Preventing the Introduction of Plant Pests from Abroad"; Mr. A. G. L. Rogers, of the Board of Agriculture, "The Aim of Legislation in Great Britain"; Mr. H. Maxwell Leroy, M.A., F.Z.S., "Legislation in Connection with Insect Pests"; Mr. H. J. Güssow, F.R.M.S., "Legislation in Connection with Fungus Diseases" and Mr. A. W. Sutton, V.M.H., "Import Dues and Regulations."

Visit to the Royal Gardens, Windsor. Special train from Paddington at 11 a.m. Lunch at White Hart Hotel, 1.30 p.m.

Banquet offered by the Royal Horticultural Society at the Royal Horticultural Hall; 6.30 p.m. for 7 o'clock. By invitation.

### SATURDAY, MAY 25.

Exhibition opens at 9 a.m.

Dejeuner à la fourchette and Garden Party at Burford Lodge, Dorking, offered by Sir Trevor Lawrence, Bart. By invitation.

Perpetual-flowering Carnation Society's visit to Mr. W. E. Wallace's nursery, Eaton Bray; and to Ascott Gardens, Leighton Buzzard.

### SUNDAY, MAY 26.

Reception at Friar Park, Henley, by Sir Frank Crisp, President of the Horticultural Club. By invitation.

### WHIT-MONDAY, MAY 27.

Exhibition opens at 9 a.m.

Perpetual-flowering Carnation Society's visit to Mr. C. Engelmann's nursery at Saffron Walden.

### TUESDAY, MAY 28.

Exhibition open at 9 a.m.

Visit to the Royal Gardens, Kew.

Perpetual-flowering Carnation Society's visit to Mr. Robert Page's nursery at Hampton; to Windsor; Mr. A. F. Dutton's nursery at Iver; and Messrs. Lowe and Shawyer's nursery at Uxbridge.

Kew Guild annual dinner at the Holborn Restaurant at 7 o'clock; specially arranged for this date because so many old Kewites are expected to be in London for the great show. Lt.-Col. Prain, Director of the Royal Gardens, Kew, will preside.

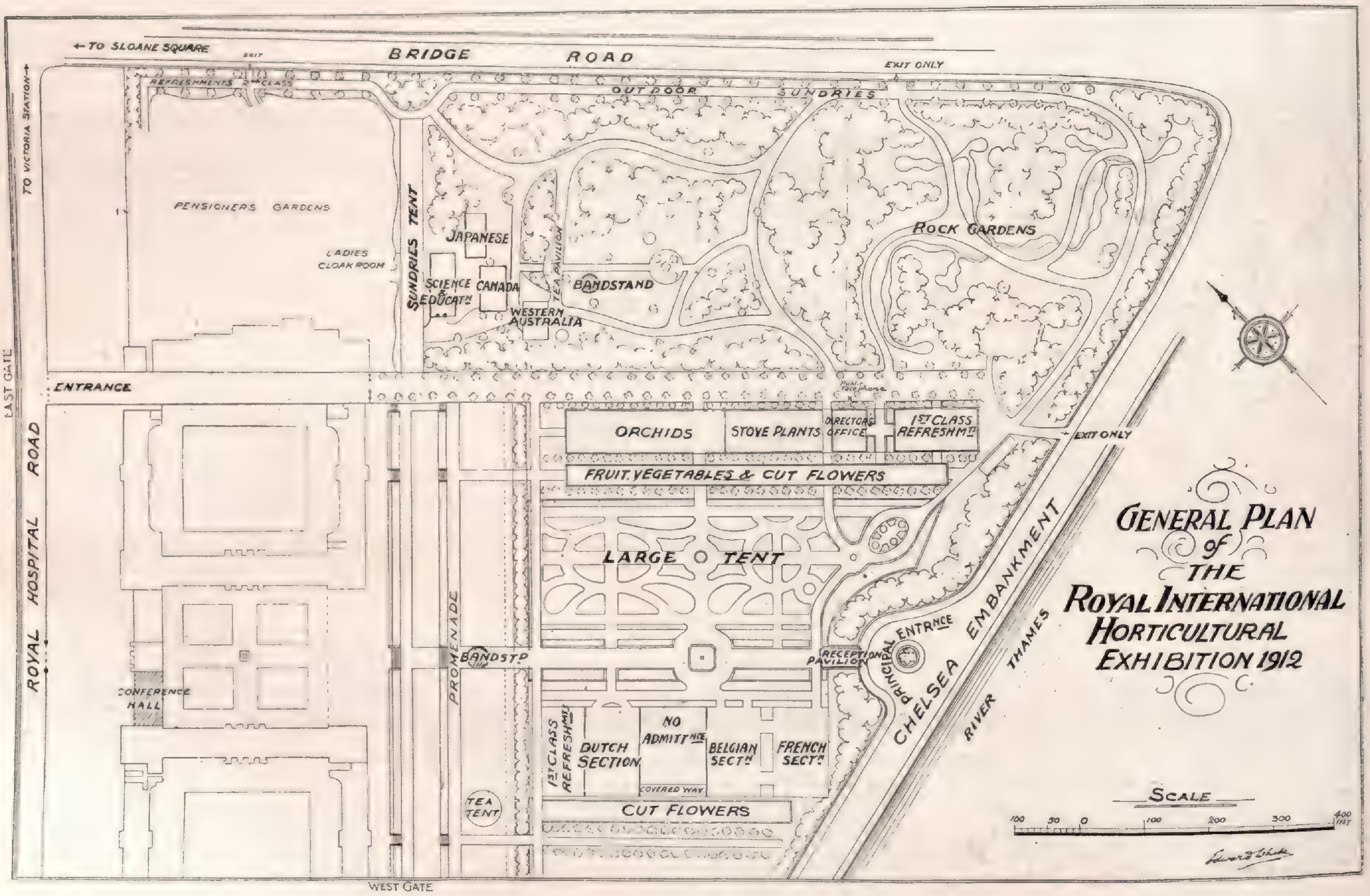
### WEDNESDAY, MAY 29.

Exhibition opens at 9 a.m.

Perpetual-flowering Carnation Society's visit to Messrs. Stuart Low and Co.'s nursery, Bush Hill Park; Mr. Stevens' nursery, Cheshunt; and Messrs. Thos. Rochford's nursery at Broxbourne. Train from Liverpool St. to Enfield, thence by motor-car.

### THURSDAY, MAY 30.

Closing day of exhibition. Opens 9 a.m., and closes 10 p.m.



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REFRESHMENTS 2ND CLASS
OUT DOOR SUNDRIES
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FRUIT, VEGETABLES & CUT FLOWERS
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"KATAKILLA"
WASH
PATENT
NON-POISONOUS.
FREE FROM
NICOTINE,
ARSENIC, COPPER,
OR OTHER DANGEROUS POISON.
Measure for "KATAKILLA" WASH

NON-POISONOUS.

FOR CATERPILLARS OF ALL KINDS,
GREEN AND BLACK FLY,
PSYLLA, RED SPIDER,
and practically all Garden
Insect Pests attacking Fruit
Trees, Vegetables, Roses, &c., &c.

In Tins 1/3, 2/6, & 5/6 each.

*From all Seedsmen, Nurserymen, & Florists.*

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## POTASH MANURES.

### Potash Manures,

In conjunction with Nitrogenous and Phosphatic Manures, are

**ESSENTIAL for all GARDEN CROPS.**

POTASH MANURES may be obtained from ALL Manure Merchants, as

SULPHATE OF POTASH,
MURIATE OF POTASH,
OR
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FOR SPRING APPLICATION, SULPHATE of POTASH or MURIATE of POTASH is Recommended.

Leaflets and Pamphlets, and advice on the Manuring of Crops, may be had free on application to the

**AGRICULTURAL OFFICES of the POTASH SYNDICATE,**
117, Victoria Street, Westminster,
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## SHANKS'S LAWN MOWERS

Have held the premier place for over 70 years. The favourites of all gardeners—amateur and professional. Used on the best golf courses in the world. Of all ironmongers and seedsmen.

**A. SHANKS & SON, Ld.**
ARBROATH,
and Bush Lane, London.

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HORTICULTURAL SHEET GLASS

STOCK SIZES IN INCHES.

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|---|---|---|---|---|---|---|---|
| 12x10 | 14x12 | 18x12 | 16x14 | 20x14 | 20x16 | 24x16 | 22x18 |
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**21 oz. FOREIGN, of above sizes in 200ft. Boxes, 3rds and 4ths qualities.**

*Stock Lists and Prices on application.*

**21 oz. ENGLISH GLASS, cut to Buyer's sizes at lowest prices delivered free and sound in the country in quantity.**

**GLASS CLOCHES FOR INTENSIVE CULTIVATION**
DELIVERED FREE AND SOUND.

Manufacturers of PAINT, PUTTY, &c.
Complete Price List on application.

**READY-MIXED PAINTS**

**GEORGE FARMILOE & SONS, LTD.,**
34, St. John St., West Smithfield, London, E.C.
And Blackfriars Wharf, Upper Ground Street, S.E.

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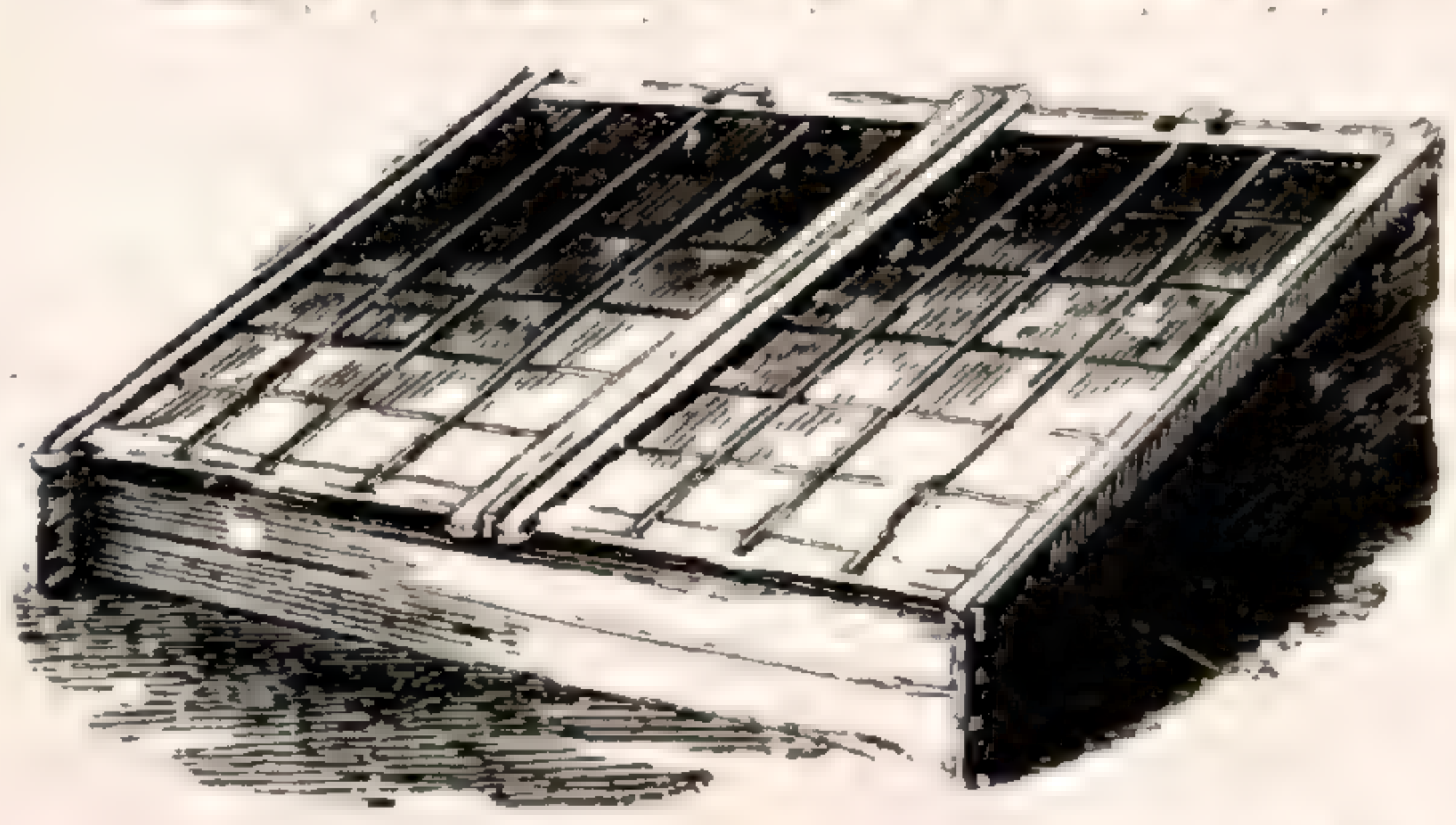
PORTABLE

## CUCUMBER FRAMES.

OUR WELL-KNOWN MAKE.



*These Frames are made of the best materials, and can be put together and taken apart in a few minutes by anyone.*

| Sizes and Prices, Glazed and Painted. | | £ | s. | d |
|---|---|---|---|---|
| 1-light 4 ft. by 6 ft. | *CASH PRICES.* | 2 | 0 | 0 |
| 2-light 8 ft. by 6 ft. | | 3 | 0 | 0 |
| 3-light 12 ft. by 6 ft. | | 4 | 2 | 6 |
| 4-light 16 ft. by 6 ft. | *CARRIAGE PAID.* | 5 | 5 | 0 |
| 5-light 20 ft. by 6 ft. | | 6 | 7 | 6 |
| 6-light 24 ft. by 6 ft. | | 7 | 10 | 0 |

*Larger sizes at proportionate prices.*

**R. HALLIDAY & CO.,**
Royal Horticultural Works,
**MIDDLETON, MANCHESTER.**

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## EPPS'S SELECTED PEAT

For Choice Plants, Ferns, Rhododendrons, &c., &c.

**SPECIAL ORCHID PEAT.**

Loam, Leaf-mould, Sand, C.N. Fibre, Sphagnum, Charcoal, and all kinds of Garden Sundries.

Prices on application to

**EPPS & CO., Ringwood, HANTS.**

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## BOTTLING FRUIT

Patent Apparatus. Complete

Simple. Perfect Results. From 6/6

**WICKHAM & CO.,** Dept. G, **WARE, HERTS.**

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LAWN BOWLS.—£2 2s. Tournament Set, noted maker, eight selected polished Lignum Bowls, full-size, medium bias, complete, in strong case, with two jacks, never used, price 27s. 6d. Approval. Box 619, GILYARD'S LIBRARY, Bradford.

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RAFFIATAPE.—To pass off green corrugated tape (that rots and fades) for this is to sell old seed as new. Raffiatape is bound with strong unfadeable cotton, which gives it great strength, durability, and, being two colours, it is never unsightly. Plants are as quickly tied as parcels, as it expands with growth. 1d. coils (ties up 150 plants); 6d., 1s., and 1s. 6d. reels. Samples and catalogue of all garden sundries.—C. E. WEST, Higham Hill, London, N.E. Please ask your seeds man for West's Patent Garden Sundries.

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## NATIVE GUANO

**BEST and CHEAPEST MANURE for VEGETABLES, FRUITS and FLOWERS.**

Price **£3 10s.** per ton in bags at works. Lots under 10 cwt. **4s.** per cwt. at works; or **5s.** per cwt., carriage paid to any station in England.

Extracts from 35th annual collection of reports:—

NATIVE GUANO for POTATOES, VEGETABLES, etc.

A. J. BEARD, Erdington: "Potatoes, splendid, free from disease. Best I ever had." —H. CHESTER, Nantwich: "Best onion manure I ever used. Grand for onion fly."

NATIVE GUANO for FRUIT, ROSES, TOMATOES, etc.

J. CANT, Ipswich: "Tomatoes excellent. Roses grand. Cheapest manure in market."—W. FRAMPTON, Titchfield: "Strawberries, splendid crop."

Orders to the **NATIVE GUANO CO., LIMITED,** 29, New Bridge Street, London, E.C., where 35th year's testimonials, etc., may be obtained. Agents Wanted.

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## Barr's Lawn Phytobroma

The best Manure for all Lawns.

The most economical of all artificial manures, 2 oz. to the square yard only being required.

Per cwt., **21/-**; ½-cwt., **12/6**; 28lb., **7/6**; 14lb., **4/6**; 7lb., **2/6**; sample tins, **1/-**.

Prepaid Orders for 28lbs. and upwards, carriage paid.
*Circular with full particulars, on Application.*

**BARR & SONS,**
11, 12, & 13, KING STREET, COVENT GARDEN, LONDON.

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## GARDEN DESIGNS

Tastefully executed by experienced draughtsmen.

CHARGES MODERATE. CORRESPONDENCE INVITED.

**C. ENGELMANN,** SAFFRON WALDEN.

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## SLUGS! SLUGS! SLUGS!

**"SANITAS POWDER"**

Will rid your garden of SLUGS. Write for pamphlet and free sample with full instructions.

**6d.** and **1/-** tins, and **12/6** per cwt., on sale at all Chemists Stores, Nurserymen, or direct from

**THE "SANITAS" CO., Ltd.,**
LIMEHOUSE, LONDON, E.

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BIRDS SCARED.—Rotless, Tanned Netting. Small mesh, very superior. As supplied by us to the Royal Gardens. SATISFACTION GUARANTEED, or cash refunded. 100 by 1yd., 3s. 9d.; 2yd., 7s. 6d.; 3yd., 11s. 3d.; 4yd., 15s.; 50 by 6yds., 11s. 3d.; 25 by 8yds., 7s 6d.; carriage paid. Any length and width supplied. Cheaper quality, 50yds., 1s. POTTER BROS., Dep. M, Frankwell Works, Shrewsbury. Estd. 57 years.

## PERPETUAL FLOWERING CARNATIONS.

My Novelties for 1912 are Lady Northcliffe, Triumph, Rosa, Elektra, Salome, and Sunstar. Also 80 other varieties grown. My stock is the largest in Europe. Inspection invited.

CATALOGUE FREE.

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## ORCHIDS. ORCHIDS.

Clean, healthy, well-grown Plants at reasonable prices.

**Many large Specimens and Rare Varieties.**

## Stove and Greenhouse Plants

OF ALL KINDS.

PLEASE WRITE FOR LIST.

**JAMES CYPHER & SONS,**
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10 Gold Medals 1911 **ROSES**
500,000 Rose Trees.
Choicest Novelties.
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## NEW CARNATIONS.

**BARONESS DE BRIENEN** the largest variety of the true Perpetual class, colour bright flesh pink, marvellously free habit. 2/6, 3/6 each.

**CINNABAR,** the new colour, 6/- each, 6 for 30/-.

**LADY ALINGTON,** the most free and continuous blooming variety of the deep salmon-pinks, a splendid grower 1/6 each; 12/- dozen.

**PERPETUALS for BEDDING**

Specially prepared in 5in. pots for blooming throughout the summer. 1/- per dozen.

**EXTRA STRONG ROSES**
FOR
**Arches and Pergolas.**

Pot grown, 8 to 14 ft. long, all the best sorts, including CRIMSON RED DOROTHY, MARECHAL NIELS, 2/6, 3/6, and 5/- each.

**Stuart Low & Co.,**
*BUSH HILL PARK, MIDDX.*
And at Crowborough, Sussex.

BY APPOINTMENT.

## ROSES IN POTS.

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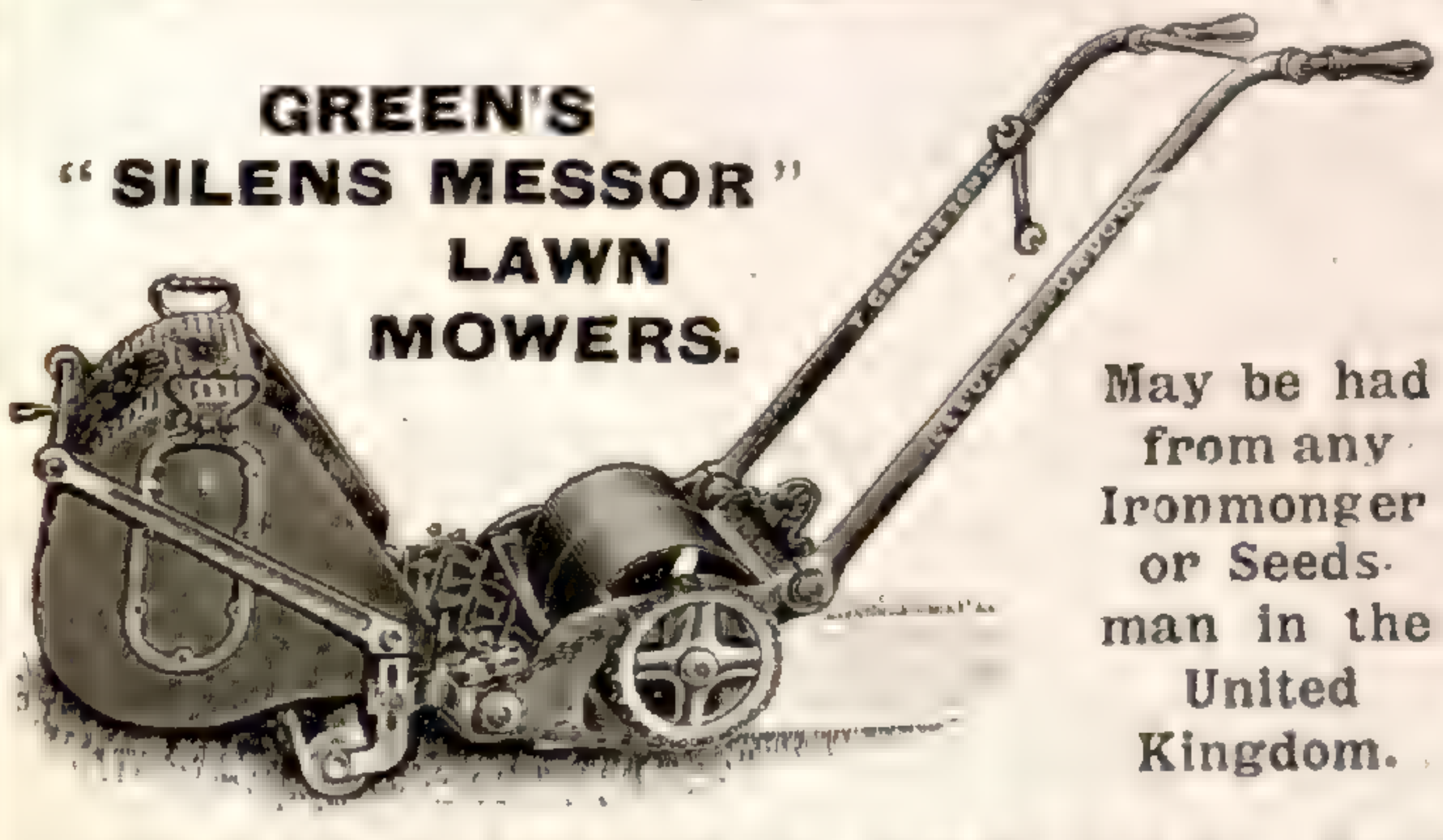

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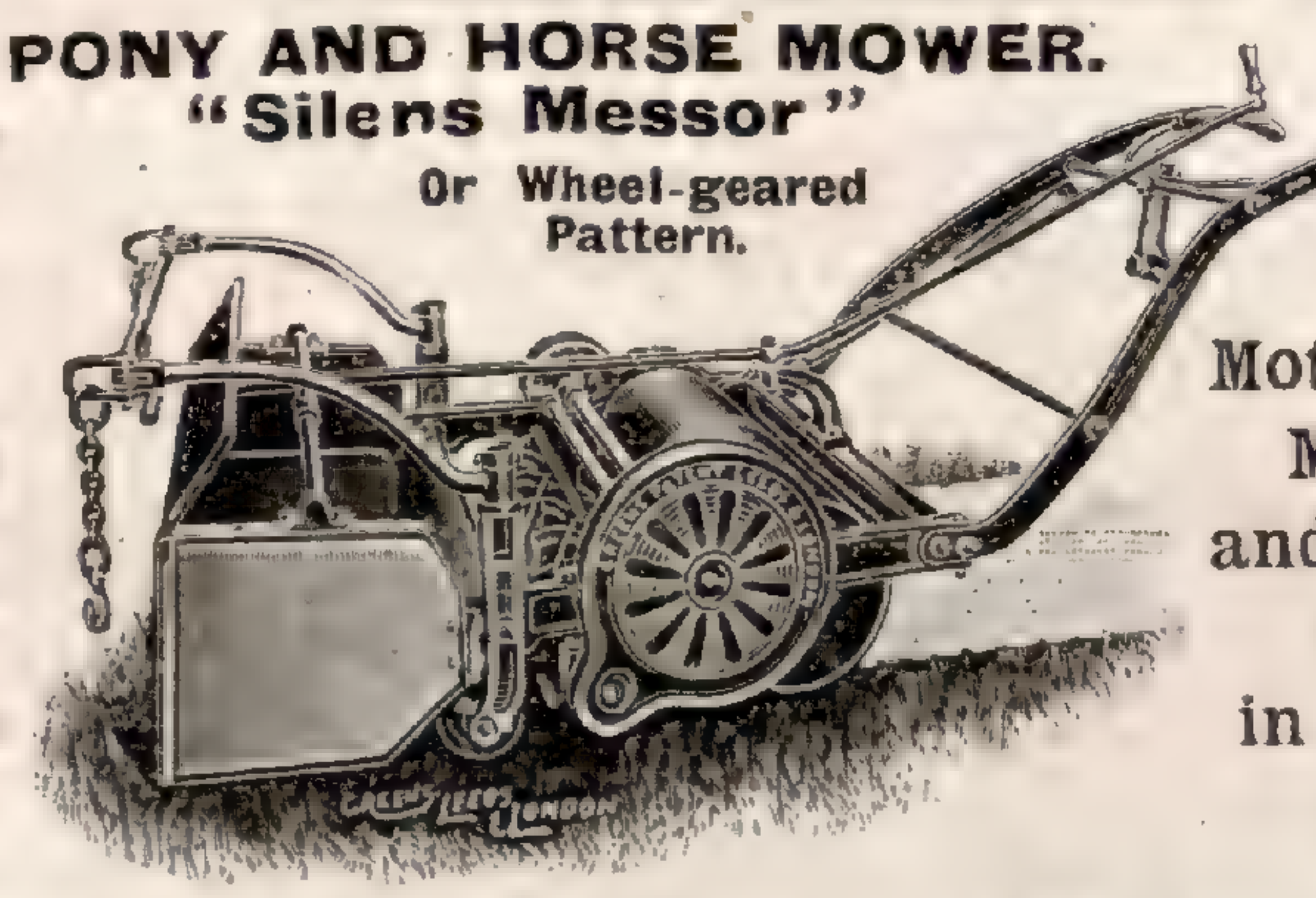

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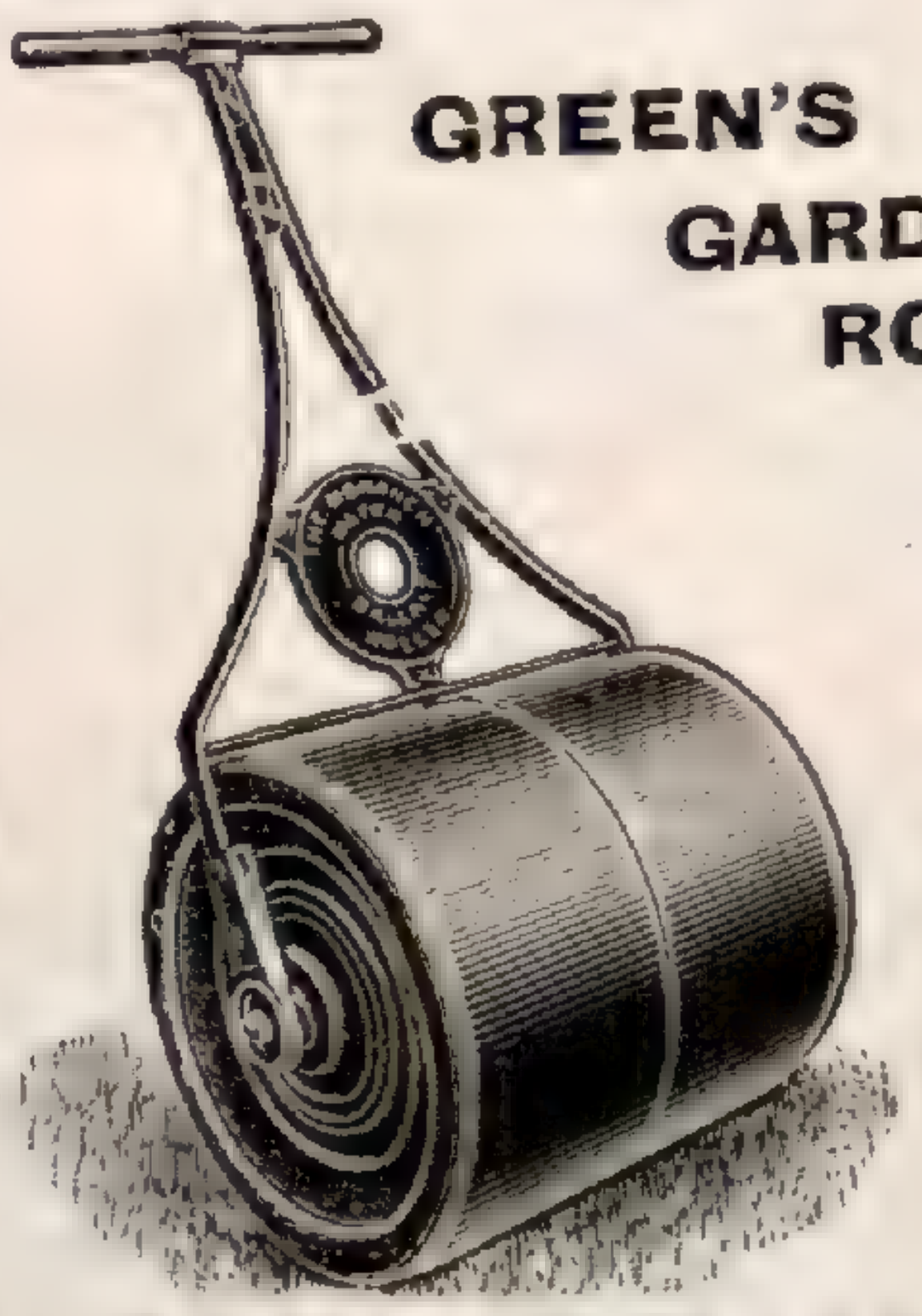

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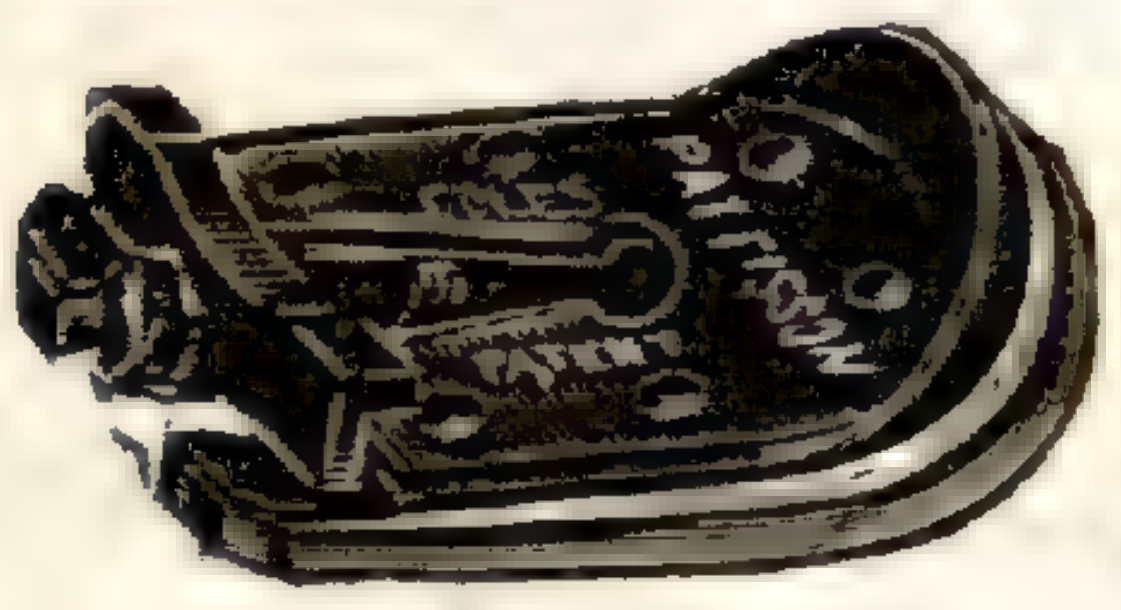

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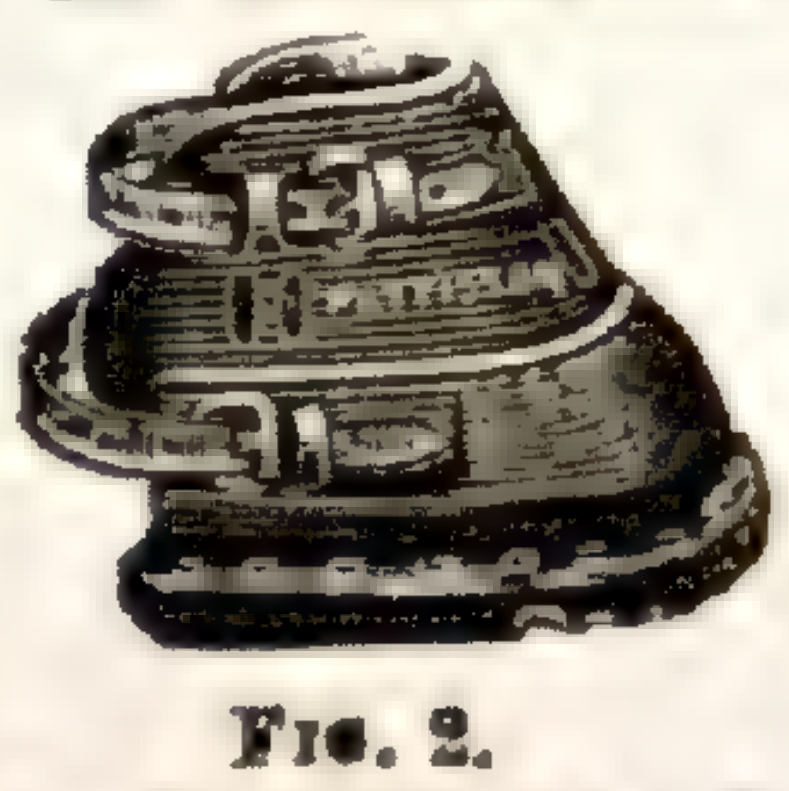

FIG. 2.

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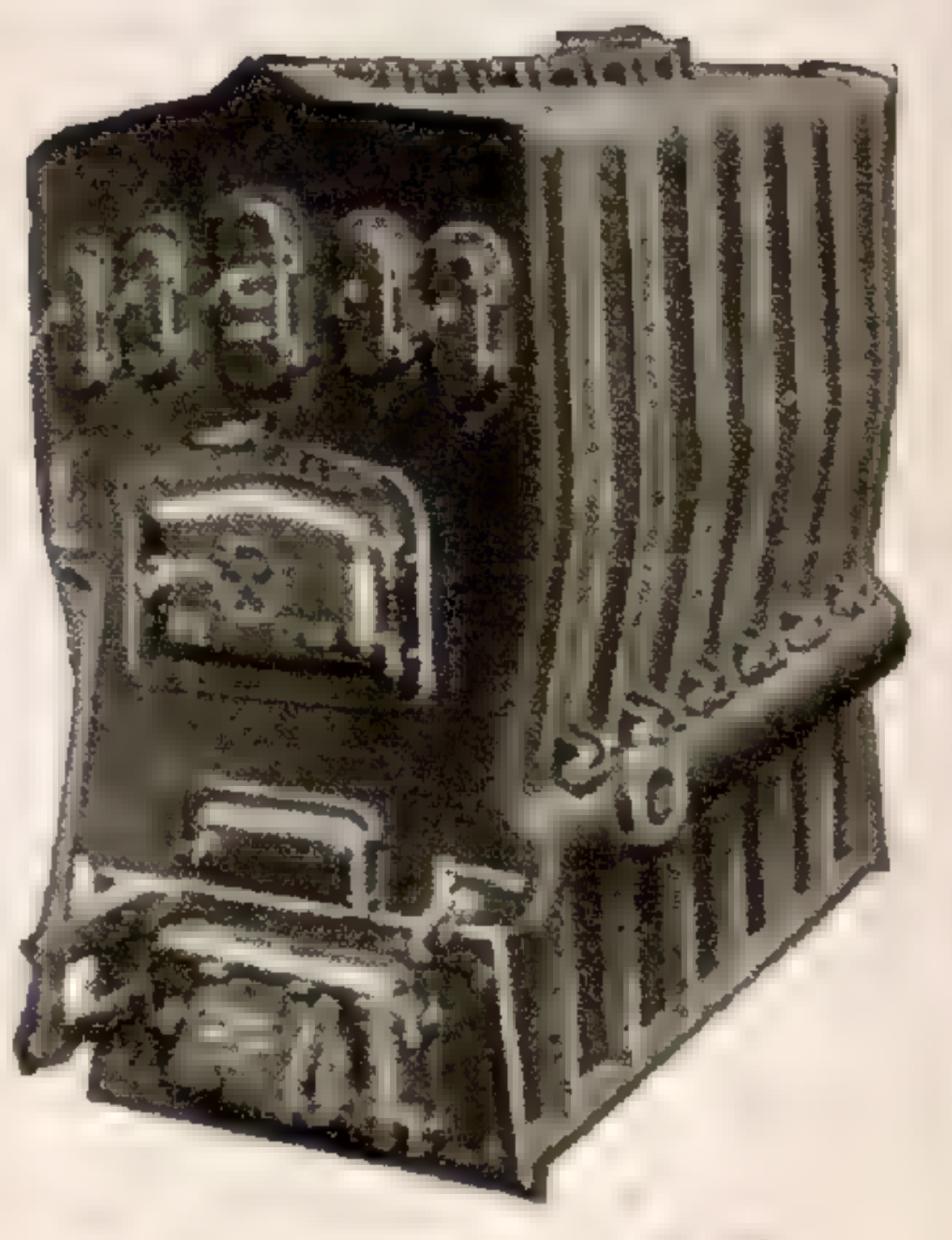

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# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CALANTHES.—In the warmest house the deciduous calanthes are in various stages of growth. Those unfolding their leaves are rooting freely towards the sides of the pots, and may now be given more water, the quantity being gradually increased as the plants make further progress, but allowing them to become dry between each application. Those that are more backward should be set by themselves, as great care must still be exercised in watering. Until the plants are thoroughly established it is advisable during bright weather to give them extra shade, in addition to that provided by the ordinary lath blinds; this is easily provided by laying strips of tiffany or thin canvas between the glass and the blinds during the hottest part of the day.

EVERGREEN CALANTHES.—Such species as C. vetratrifolia and C. masuca are not very often seen, but should now be opening their flowers, and well-grown specimens of either are an ornament to any collection. If they are taken from the warm house when about to open their flowers, and placed in a cool, shady position in the intermediate house, they will remain in full beauty for a considerable time. While in bloom the plants do not require as much water as when they are in full growth. An excessive amount of water at this stage will cause the flowers to become spotted and fall away prematurely. The proper time to repot is when the new growths are nicely advanced, which occurs about a month or so after flowering. Being strong, free-rooting subjects, they require rather large pots, which must be well drained. A compost as for the deciduous section will answer their requirements, and they may be potted moderately firm, space being allowed on the surface for sufficient water to thoroughly soak the whole compost.

THUNIAS, which have grown strong and are well rooted and about to produce their flowering racemes at the apex of the new growths, must have copious waterings at the root, and weak liquid manure about twice a week will be beneficial until the flowers expand. When in bloom the flowers will last longer if the plants are arranged in the cooler atmosphere of the cattleya or intermediate house.

CHYSIS.—Such plants as C. bractescens, C. aurea, and the hybrid C. Chelsoni, are now in full growth, and should any require repotting this must be done at once. These plants succeed in a compost like that provided for cattleyas, and should be potted moderately firm, and suspended in the lightest position in the house. Many grow the chysis in the cattleya house, but I have had the best results when growing them in the warm house with dendrobiums, and resting them much in the same way. C. bractescens and C. aurea are easy species to succeed with when newly imported. They will do well treated as intermediate orchids, but better still if treated like dendrobiums. All through the growing season chysis are subject to attacks of small yellow thrips, and when these minute insects get a footing low down in the peculiar funnel-shaped growths it is difficult to dislodge them. A good plan is to periodically dip the plants in some safe insecticide, afterwards rinsing them in clean soft water, laying the plants on their sides until the water has drained away.—J. T. Barker, West Hill Gardens.

## CONSERVATORY AND GREEN-HOUSE.

VALLOTA PURPUREA.—This, one of our most popular of greenhouse plants, will now need attention. The bulbs flower best if restricted at the roots, yet they must not be starved. One often hears it said, "Vallotas always flower better in cottage windows than they do in private gardens," and I admit this is often the case, yet it is not to be wondered at. Often in these columns I have spoken strongly against "coddling." All plants need rest, and the resting period generally follows the flowering season. But all plants do not rest in winter and grow in summer, neither can any line be drawn as to the nature of the plants which need rest at any given time. Thus the Nerine rests in summer, and the vallota grows in summer. Moisture is the principal agent which stimulates activity. Therefore to encourage growth we give moisture, and to allow the plant to rest we withhold it. Fresh air is life to all plants, and it works wonders when properly regulated. We sometimes see the vallota grown in a stove or vinery in a temperature of 80 degrees, coddled and forced to death, and people wonder why the bulbs deteriorate and fail to bloom. The cottage window provides a slight protection from frost, and in winter most housewives give their window plants little water until the spring, and active growth returns. They then water whenever the plants need it, and the result is a perfect rest in winter, a quick growth in summer, and a forest of spikes in August and September. We grow our vallotas here in slightly heated pits on an ash base, and after flowering they are not given water, but the cool base prevents them becoming dust-dry. When active growth sets in, as at present, the plants are examined. Bulbs that require a shift are potted, while others not requiring more root room are cleaned and top-dressed. They will need a quantity of water with liquid manure twice weekly until the flowers are over. The flower spikes will appear at the beginning of August, and the plants should then be moved to the conservatory to open their flowers. We grow them three and four bulbs in an 8-inch pot; large bulbs will easily produce two spikes each.

MALMAISON CARNATIONS.—These are by now at their best, and the quality of the blooms is very good owing to the light and sunny spring, when the buds were developing. It is most essential to propagate as soon as possible directly the flowers are over or cut. The plants should not be allowed to suffer from want of water, or red spider will make its appearance at once. Choose a cold frame, place therein a bed of soil, composed of loam, leaf-soil, and sand. Select some plants of each variety, choosing those with the least number of growths (the best plants should be selected for growing on), the growths to count as plants that will be required. Turn them out of the pots with the roots intact, and plant in the prepared beds. Trim the bottom leaves from each growth, and cut with a sharp knife below a joint well down the stem, and draw the knife towards you and upwards for about an inch to the next joint; bend the growth inwards and downwards so that the heel thus made stands out; peg each growth firmly in the bed with short wire pegs, and cover the centre of the old stool and stems with a sandy compost. The border varieties Cecilia and King Arthur are also best layered in this way. Keep the frames close and shaded for a few weeks, damp over frequently, and the layers will root in about six weeks. The best plants kept for specimens should be shifted into 10-inch pots and stood outside for a time.—Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

GOOSEBERRY CATERPILLAR.—This pest has already made its appearance on the gooseberry bushes, and, unless active measures are promptly taken to suppress it, the bushes will soon be stripped of every particle of foliage. Where gooseberries are more or less isolated, hand-picking is the most effectual remedy, but where a number of bushes are grouped together, and the attack is general, spraying with Hellebore powder, soft soap, and water, or dusting over the bushes (when damp) with Hellebore powder, are the best remedies. Another method I have practised with success is to knock off the caterpillars with a strong force of water, either by means of a hose-pipe or garden engine, and as each bush is cleared, a man follows with freshly slaked lime, and dusts the stem of the bush and the ground underneath. The lime kills the caterpillars and acts beneficially on the soil at the same time; it is necessary to apply the lime immediately the pest is removed. Red spider, one of the worst enemies to contend with, is early becoming troublesome; sulphide of potassium at the rate of one and a-half ounces to a gallon of water, with sufficient soft soap to make the mixture adhere to the foliage, will be found an effectual remedy for this pest; only with gooseberries is it advisable to spray with so strong a solution of sulphide of potassium.

GOOSEBERRY MILDEW.—It is at this season that the American gooseberry mildew can be recognised in its first stages by the white powdery appearance at the tips of the young growths, spraying the affected bushes and their immediate neighbours with the sulphide of potassium wash will check the spread of this disease, and should the weather be showery a second or third application may be necessary to effectually check further damage. If an attack is discovered it must be notified to the Board of Agriculture.

GOOSEBERRIES GROWN AS CORDONS should have all side growths pinched back to three or four leaves, only extension growths being left intact. An occasional syringing with clear water will prove beneficial and probably ward off an attack of red spider, and a good mulching will preserve moisture in the soil and assist the swelling fruits.

LOGANBERRY AND WINEBERRY.—The first-named usually throws up a number of young growths, and from four to six (according to space at command) of the strongest should be selected and tied in, the remainder being cut out. The wineberry is not so prolific in growth, but it may be necessary to thin out some of the weaker growths, retaining three or four of the best placed. Established plants require high feeding, and a rich mulch should be applied, while liquid manure, soot water, and guano are good stimulants, and if the mulching material is lacking, watering with either of these will materially assist the plants to carry a heavy crop of fruits.

WINTER MOTH AND OTHER LEAF-EATING CATERPILLARS.—When the apple blossom has fallen the trees should be sprayed; lead arsenate is the best poison for the pests, and 3lb. of lead arsenate to 100 gallons of water will be a safe quantity. Lead arsenate paste can be obtained, and is a useful form to use, as it is reliable in quality. If aphis are troublesome the lead arsenate may be used in conjunction with quassia extract or a similar preparation, and should the weather be showery a second spraying will be necessary.

PROTECTING MATERIAL FOR WALL TREES may now be removed. The borders should be kept moist and well mulched. Peaches and nectarines should be syringed freely during dry weather, and all insect pests must be kept under by frequent sprayings.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

THINNING THE CROPS.—Insufficient thinning is often a frequent mistake made in connection with vegetable crops. In a season so dry as the present a certain amount of care must be exercised, and thinning be done at two periods. At the time of writing we have had six weeks' drought. When thinning parsnips finally, leave them nine inches apart, carrots four to six inches apart, and onions the same, as many of these will be required in the young state. If dry weather prevails at the time of thinning, endeavour to water each line immediately, and ply the hoe through the crops afterwards. Peas and beans should be thinned where thick, using those that are pulled for filling up any gap that may occur; give a watering, and lightly dust with soot. Lettuce should be thinned as early as possible, the distance being governed by the variety; they should be frequently sown after this date, as planted-out specimens come thin, and are inclined to run to seed prematurely. Very little trouble is experienced in securing good germination of all small seeds during very dry weather, if deeper drills are drawn than usual, and these are watered, placing old potting soil along the drill, then sowing the seeds, and finally covering with the good soil before raking the beds level. Turnips will be difficult to obtain under ordinary treatment, so make frequent sowings on a northern border, and dust the seedlings with equal parts of sulphur, lime, and wood-ashes to ward off attacks of turnip fly. Make another sowing of savoys, cauliflowers, and late broccoli.

POTATOES.—Where these are well forward and now earthed up, protecting material must be kept in readiness, as sudden frost may come yet. Watch for the main crop varieties, and when these peep through draw the soil over them, and when the whole crop is three inches high, well hoe the plot and mould up. If any weakness in the growth appears give a sprinkling of sulphate of ammonia before hoeing, or use soot and burnt garden refuse.

CAPSICUMS will now need a final potting. Use a compost of loam with a little mushroom bed manure, sand, and mortar rubble added. Place near the glass in a pit, and maintain a moist atmosphere.

MUSHROOMS.—After this date the best mushrooms are obtained from outside beds placed behind north walls. Provided the horse droppings have been properly prepared and well sweetened, with the temperature receding, place the manure on a hard surface. Make the bed three feet six inches wide at the base, with the material made firm, and sloping towards the wall, the top reaching about three feet high. When completed, insert stakes to ascertain the temperature, and when the latter stands from 75 to 80 degrees, spawn the bed without delay. Insert the pieces of spawn eight inches apart, and three inches deep, covering them firmly. A little later cover the bed with two inches of finely-sifted loam, beating this with a shovel, and then give a good covering of long stable manure, so as to retain a steady temperature and natural moisture. Future attention will be governed by the weather as regards watering and damping. When beds show signs of exhaustion give a soaking of warm diluted liquid manure.—Geo. Ellwood, Swanmore Park Gardens.

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**Blandfordias.**—The members of this Australian genus of liliaceous plants are not often met with in gardens, and they are not readily obtainable from nurseries. Unlike many of their immediate relatives, the Blandfordias do not form a tuber or even a pronounced root stock. They push up a number of grass-like leaves from a somewhat thickened base, and the flower stem, which reaches a height of 18in. to 2ft., bears on its upper part a number of drooping bell-shaped flowers of a thick wax-like texture. They are in most cases scarlet, tipped with yellow. The freest growing and the one that can be most readily increased by division, is B. nobilis (or grandiflora, as it is sometimes called). The name of grandiflora appears to be somewhat of a misnomer, as others, particularly B. Cunninghami and B. princeps, have larger blossoms. The entire genus appears, however, to be in such a confused state, that one is never sure of the correct nomenclature. One thing is certain, and that is they are all well worth growing. As might be expected of natives of Australia, a greenhouse temperature just meets their requirements. As far as my experience goes, they succeed best in a mixture of equal parts of turfy loam and peat, with a liberal admixture of rough silver sand. They need to be effectually drained, and at no time must the soil be allowed to get too dry, as these Blandfordias are all evergreen in character. —K.

## SPRING BEDDING PLANTS FROM SEEDS.

When the spring flower beds are at the height of their beauty, it is usual to take a survey of the general effect, and decide what alterations are to be made for the following scheme of arrangement. This being carefully thought out, the work of raising sufficient plants is a fairly simple matter. In many cases bulbs are utilised for spring bedding, crocuses, daffodils, hyacinths, tulips, etc., being relied on to provide the display, which is rather a costly proceeding. Although magnificent effects are to be obtained from a free use of bulbs, yet their flowering season is short, compared to that of the wallflowers, pansies, etc. It is wonderful what a profusion of blossoms can be obtained from the produce of a few packets of seeds. Raising the plants is comparatively easy, a cold frame being all that is required, and some subjects may be sown outside. The plants included in the following list will all be found most useful for spring flowering.

Alyssum saxatile compactum and A. citrinum are two extremely showy varieties, the former being a bright yellow colour, and the latter a beautiful lemon shade. These will be found valuable for edging purposes, and provide a beautiful finish to a bed of Blood Red wallflowers. The seeds are best sown in pots or boxes, in May, and placed in a cold frame to germinate. When the seedlings are large enough to handle they should be transplanted into other boxes, and placed in the frame until established, when they must be gradually hardened off. The same methods of cultivation applies to arabis and aubrietias. Of the former, we have Arabis albida compacta (white) and A. rosea (rose). Aubrietia græca (soft lavender), A. Hendersoni (purple), and Leichtlini (rose) are useful for edging purposes, and when bulbs are used they form excellent carpeting plants. Apart from these three mentioned, seeds can be obtained of named varieties, but it is advisable to propagate the latter by cuttings when the true colours are desired.

The giant forms of the double Daisy (Bellis perennis) produce an abundance of large blossoms, on stiff stems. The seeds should be sown early in June, in pots or boxes, and placed in a cold frame to germinate. Transplant the seedlings when large enough to handle into boxes, and allow them to remain in frames until established, when they should be gradually hardened off, and eventually planted out into nursery beds, until required. The erysimums are similar to the wallflowers, both in habit and growth. For dry sunny spots they prove a valuable addition to the list of spring bedders. The variety Golden Gem is the best to grow, and the seeds should be sown in June, and the plants afforded the same treatment as wallflowers. E. Arkansanum and E. Perofskianum should be sown in the early autumn for the spring display. Myosotis (forget-me-nots) are indispensable plants, and easily raised from seeds. The various forms of M. dissitiflora are the most suitable, but there are also some very fine forms of alpestris. Sow the seeds in boxes, and give cold frame treatment until the young plants are large enough to transplant into nursery beds. Seeds sown in the latter part of May produce fine material for autumn planting. The seeds may also be sown outside, in shallow drills, on a shady border during May with good results.

Although it is usual to raise violas from cuttings, there are many beautiful varieties which come true to colour from seeds if a good strain is obtained. These, with the pansies, prove of great value for the spring beds. The seeds should be sown in June to obtain good-sized plants by the autumn. Pans or boxes, filled with light soil, will be found most useful for sowing the seeds in, and cold frame treatment should be afforded until the plants are large enough to plant out into nursery beds. Among the pansies we have Emperor William, a large-flowered blue variety, and one of the most valuable for bedding purposes. Lord Beaconsfield is of a purple-violet colour, shading off in the top petals to pale lavender. The Peacock and Victoria strains are excellent, as are also the English, or Show varieties. The flowers of the frilled forms contain a wonderful combination of colours and the French and German strains are good. The dainty flowers of Viola cornuta and its varieties are highly appreciated, and are borne in such profusion as to literally hide the foliage; alba, lutea, Perfection, and Papilio are splendid examples of this miniature form. V. floriarensis is a very pretty variety, sent out by M. Correvon, of Geneva. This comes true from seeds, and is highly effective when massed.

During late years the polyanthus and primroses have been greatly improved, and there are now some fine forms obtainable. Apart from the usefulness of these plants for bedding purposes, magnificent results are to be had by liberally planting them in woodland glades and shady walks. The seeds must be sown early to secure a stock of good plants for planting out in the following autumn. In common with many of the members of the primula family, the seeds of polyanthuses and primroses are slow and irregular in germinating, hence the necessity of allowing them a good season to grow. The seeds are best sown in pans or boxes, and placed in a cold frame. Great care must be exercised with the seeds until they have germinated, and the plants have become a fair size. The soil should not at any time be allowed to become dry, or the seeds will fail to germinate. To prevent a too rapid evaporation, a sheet of glass should be placed over the seed box, and shaded with paper. When the seedlings have made two fair-sized leaves, they should be transplanted into boxes, and still afforded cold frame treatment. Here they should be shaded until established, and then be gradually exposed to open-air treatment. When the seedlings attain a good size in the boxes transplant them to shady and cool nursery beds. Polyanthuses and primroses delight in a rich moist soil, and when preparing the nursery beds it is advisable to incorporate a liberal quantity of well-decayed manure with the staple.

The pendula varieties of the silenes provide a useful class of plants for edging beds. The colours are of varying shades of rose, but there is a white form, called Snow King. The seeds are best sown in August, either in boxes or in the open border. Transplant the seedlings when they are of sufficient size to handle.

Wallflowers may be reckoned amongst the very best of all spring bedding plants. The numbers of plants which can be raised with a very small outlay is really wonderful, and such masses of colour obtained at such little cost. There is an opinion abroad than because a wallflower may thrive on the top of an old wall, that it is quite the thing to afford it poor soil, and little attention. This treatment results in poor plants, which often succumb to the first sharp frost. Early sowing, and a liberal treatment of culture all through the growing season, is the surest way to obtain good plants.

The most suitable season for sowing wallflowers is May. A good border or nursery bed should be chosen for the seed bed, shallow drills being drawn about nine inches apart for the reception of the seeds; should dry weather set in after sowing, occasional waterings should be afforded to assist germination. Transplant the seedlings, when large enough to handle, into nursery beds, allowing six inches from plant to plant. If possible, wet or dull weather should be chosen for this work. When the plants have filled the space allowed them, they should be again transplanted into a well-prepared piece of ground in the open garden. The object of twice transplanting is to obtain as many fibrous roots as possible, these being of great importance when the plants are put out into their flowering quarters. Regarding varieties, the following will be found to be useful amongst the older kinds: Vulcan has a good branching habit of growth, rather dwarf, and has crimson flowers; Harbinger, early flowering, brown; Belvoir Castle, dwarf, yellow; Primrose Dame, primrose; and Blood Red, a fine, dark-flowered variety. Among those of more recent introduction, Fire King stands foremost as being the most brilliant of all the wallflowers, and a mass of this variety creates a magnificent effect. Ivory White is a pleasing contrast to the dark varieties. The improved Cloth of Gold has large flowers of a good yellow colour, and should be extensively grown. Purple Queen, ruby; Eastern Queen, apricot, shading to pink; and Ellen Willmott, ruby, are all useful for those who appreciate their various shades of colour.

Gnaton Gardens. E. C. Pooley.

## BORAGE AND SAGE IN THE FLOWER BORDER.

Some readers of the Gardeners' Magazine may be amused at the idea of growing these two kinds of plants in a border for the sake of their flowers only. But I can assure all such that in certain circumstances they are very beautiful and effective when so grown. I once had a bed of young sage plants growing in a high, dry border, and one of borage in another. Both kinds were grown for herbal purposes, but the striking effect of the flowers in masses did not escape me, and I at once saw how beautiful they would be in a large herbaceous border which was nearly always very dry and hot in summer-time, and it required much careful treatment to maintain the plants in a satisfactory condition. Now, I am sure that there are many readers who possess very dry borders, and if they will put in fairly large clumps, plants of borage and sage (not too closely together), they will be quite satisfied with the results. The first-named flowers for the longest period, but both continue to do so for a fairly long time. When once established water is never needed. The sage plants must be young ones; old plants are useless. My young plants had flower-spikes more than one foot long. G. B.

**Oxalis floribunda.**—The question of furnishing hanging baskets for the greenhouse frequently crops up, and for the purpose early in the year lachenalias are often advantageously employed. To follow these and to come in before the bulk of summer-flowering subjects are at their best, this oxalis can be recommended, its trifoliate leaves, borne on long stems, are very pretty, while the loosely disposed clusters of charming pink flowers dispose themselves in a pleasing and informal manner. There is a white variety alba—which is also very attractive.—W. T.

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## EXHIBITIONS AND MEETINGS.

◆

### Royal Horticultural Society.

The hall at Vincent Square was well filled with exhibits on May 14, but not packed to the doors as of late. Tulips were much in evidence.

The cups and trophies to be awarded at the International Horticultural Exhibition were on view, and made a rare show, and attracted a vast amount of attention. There were no fewer than ninety-two items, and the centre of attraction was the massive King's Cup, while other fine trophies were those from Queen Mary, Duke of Portland, Sir J. Colman, Bart., Sir Trevor Lawrence, Bart., Baron Schroder, Messrs. Clay and Son, Messrs. Sutton and Sons, Messrs. J. Veitch and Sons, Messrs. Charlesworth and Co., Messrs. R. Wallace and Co., Wiltshire County, West of Scotland, Warwick, Ireland, Lancaster, York, and Veitch Memorial Trustees.

FLORAL COMMITTEE.

Tropæolum albiflorum (A.M.), from Mr. C. Fielder (gardener to Miss Willmott, V.M.H., Warley Place, Essex, is a pretty slender climber with pinky-white flower, coloured yellow at the base of the segments. The five-parted leaves, quite small and greyish, add not a little to its interest and beauty. Mr. A. Worsley, Isleworth, gained an A.M. for Phyllocactus Coopermanni, with vivid scarlet flowers, and for Cereus amecamensis with lovely large white blooms.

Very charming were the lovely sweet peas shown by Messrs. Dobbie and Co., Edinburgh. Here were beautiful vases of May Campbell, Inspector (a double standard Earl Spencer), Marks Tey, Chas. Foster, Dobbie's Scarlet, Afterglow, Melba, Mrs. Cuthbertson, and Dobbie's Cream. Mr. C. W. Breadmore, Winchester, presented a sweet and bright exhibit of sweet peas, and put up rare stands of May Campbell, Lavender George Herbert, the bright Aggie Elder, Princess Mary, intense blue, Melba, Mrs. R. Hallam, and Aurora Spencer.

Mr. Amos Perry, Enfield, showed tulips in good form, and also displayed a selection of bearded irises, I. Susiana, I. sibirica, and oriental poppies. A small rock garden was arranged by Messrs. Thompson and Charman, Bushey; and Mr. G. Reuthe, Keston, showed some fine Himalayan and other rhododendrons, choice alpines, etc. Trollius Orange Globe and a selection of aubrietias, auriculas, and phloxes came from Messrs. Phillips and Taylor, Bracknell. Messrs. J. Peed and Son, Norwood, submitted a small collection of alpines.

Irises from Messrs. R. Wallace and Co., Colchester, included many grand varieties, from among which we selected Pallida dalmatica, Miss Willmott, Isoline, Oriflamme, Bosniamac, Mist, Brionense, and Italia as of special worth. Anemones from Messrs. Reamsbottom and Co., Geashill, King's Co., Ireland, and early dahlias from Messrs. Carter, Page, and Co., London Wall, were interesting exhibits.

Messrs. J. Cheal and Sons, Crawley, submitted a little rock garden filled with Japanese maples, azaleas, aubrietias, phloxes, Primula japonica, and violas. From Mr. Maurice Prichard, Christchurch, came stately spikes of Eremurus Elwesi, E. himalaicus, pyrethrums, kniphofias, Cheiranthus Allioni, a wide colour range of varieties of Scilla campanulata, and bearded irises. Mr. G. W. Miller, Wisbech, submitted the pretty pink pyrethrum Queen Mary and other good things. A bright exhibit from Messrs. G. and A. Clark, Dover, contained Anchusa italica Dropmore var., Geum Mrs. J. Bradshaw, and a selection of pyrethrums and irises. Spanish irises were splendidly shown by Mr. R. d'E. Day, Sutton Scotney; Belle Chonoise, Excelsior, King of Blues, and Blanche Fleur were all very fine. Mr. L. R. Russell, Richmond, put up a famous lot of fine varieties of both single and double pyrethrums. Mr. Jas. Box, Lindfield, confined his attention chiefly to fine ranunculuses and poppies.

A corner of the hall filled with lilacs by Messrs. Paul and Son, Cheshunt, was a great attraction, and the fragrance of the flowers was very grateful; Viviand Morel, Souv. de Louis Spathe, Miss Ellen Willmott, Congo, Mdme. Legrange, Pres. Carnot, Mdme. Lemoine, and Mdme. Casimer Perier were all varieties worthy of special note. Messrs. W. Cutbush and Son, Highgate, were represented by a big group of flowering shrubs, in which Rhododendron Pink Pearl, Hydrangea Mdme. Mouillere, azaleas, wistarias, cytisus, laburnums, and roses were pleasingly associated. Mr. Chas. Turner, Slough, showed some fine sprays of lilacs, making up a fragrant display of Mdme. F. Morel, Charles X., Belle de Nancy, Mdme. Lemoine, Michael Buchner, and Chas. Joly.

Roses were superbly shown by Messrs. George Mount and Sons, Canterbury, the large, clean, fragrant flowers on long stems making up a glorious exhibit. Mrs. J. Laing, White Killarney, Ulrich Brunner, Frau Karl Druschki, Lady Pirrie, and Capt. Hayward were the leading varieties. Roses in great variety, from Messrs. B. R. Cant and Co., Colchester, included William Allen Richardson, and such fine climbers as White Dorothy Perkins, Hiawatha, and Minnehaha.

Messrs. W. and J. Brown, Peterborough, submitted heliotropes and other greenhouse flowers, and gained an A.M. for Petunia Brown's Purple, a big single variety of deep violet-purple shade. A bright exhibit of calceolarias from the St. George's Nursery Company, Harlington, made a brave display of brilliant colouring. Mdme. Andre, Lord Roberts, and Argus are fine heliotropes, as shown by Messrs. H. B. May and Son, Edmonton, who also submitted good hydrangeas, swainsonias, and a capital selection of named varieties of lobelias. Mr. Vincent Slade, Taunton, showed a bank of zonal pelargoniums that seemed almost too bright for so hot a day. Pelargoniums were also excellently well shown by Mr. P. Ladds, Swanley Junction, who also contributed fragrant East Lothian stocks.

Carnations were again well shown by Mr. H. Burnett, Guernsey, whose chief varieties on this occasion were Mikado, R. F. Felton, Marmion, Orpheus, and Mrs. C. F. Raphael. Messrs. Young and Co., Hatherley, showed such carnations as Cecilia, Marmion, Duchess of Devonshire, Robert Craig, and Cheltonia, finely. Messrs. Wm. Cutbush and Son, Highgate, submitted carnations, and presented Countess of Lathom, Mikado, White Enchantress, R. F. Felton, and Lady Elphinstone in fine condition.

The carnations from Messrs. S. Low and Co., Enfield, were well set up, and included Cinnator, Empire Day, Lady Alington, Mrs. C. W. Ward, and Beacon, as well as the new pinks Progress and Gloriosa. The same firm exhibited boronias, including the rare B. polygalifolia, hydrangeas, and metrosideros. The carnations from Messrs. Allwood Bros., Haywards Heath, included fine examples of La Rayonnante (the big yellow variety), Mikado, Marmion, and fire Glow.

### ORCHIDS.

Messrs. J. and A. McBean, Cooksbridge, submitted some lovely forms of Odontoglossum crispum, Odontioda Charlesworthi, and Cattleya Mossiæ. The fine Cymbidium Woodhamensis Fowler's var. (C. Lowianum × C. eburner O-Lowianum )was well shown by Mr. Davis (gardener to J. Gurney Fowler, Esq.), Glebelands, South Woodford, and gained a F.C.C.; the bright yellowish green flowers, marked on the tip with deep red-brown, were very attractive.

Lælio-cattleya Apollo (A.M.), with salmon-buff sepals and petals, and pink, yellow-throated-lip, was shown by Mr. Duncan (gardener to C. J. Lucas, Esq.), Warnham Court, Horsham. Mr. Chapman (gardener to Mrs. Cookson), Oakwood, Wylam-on-Tyne, showed fine forms of Odontoglossum crispum and O. Solon.

Mr. H. A. Tracy, Twickenham, presented a quite good group, wherein were various odontoglossums, varieties of Cattleya Mossiæ and Lælia purpurata. Messrs. Hassall and Co., Southgate, exhibited deep-hued forms of Cattleya Mossiæ, Odontioda Chelsensis, Lælio-cattleya Fascinator, Maxillaria Sanderiana, and the pretty Oncidium pulchellum.

Mr. R. G. Thwaites, Streatham, exhibited both light and blotched forms of Odontoglossum crispum, various odontiodas, etc. Mr. Stables (gardener to De Barri Crawshay, Esq.), Sevenoaks, submitted Odontioda Rosefieldiensis, O. Honolulu, and the very attractive Odontoglossum volatella. Mr. R. T. Pitt, Rosslyn, Stamford Hill, put up a group of choice orchids, and made a brave show with Miltonia vexillaria, Angulosa Clowesi, Cattleya Mossiæ, Brassia Lawrenceana, Cœlogyne purpurata, etc.

### TULIP COMMITTEE.

A beautiful display of Darwin and May-flowering tulips from Messrs. Barr and Sons, Covent Garden, provided a dazzling display of colour, and served once more to demonstrate the usefulness of these gorgeous flowers. These were splendid bunches of Goldfinder, Mr. Farncombe Sanders, Rev. H. H. D'Ombrain, La Tulipe Noir, Nora Ware, Cordelia, Clara Butt, Inglescombe Yellow, Louis XIV., Salmon King, Don Pedro, Suzon, Inglescombe Scarlet, Fairie Queen, and Viola. Messrs. Jas. Veitch and Sons, Chelsea, made up a good group of late tulips, their Gala Beauty, Mrs. Moon, Lucifer, Mr. Farncombe Sanders, Blue Fly, Inglescombe Yellow, and Baronne de la Tonnaye, being especially good.

Messrs. Alex. Dickson and Sons, Newtownards, set up a large and interesting collection of tulip, Darwin and May-flowering varieties. These were arranged in vases and in bamboo stands, and the latter rather spoiled the general effect. Rev. Harpur Crewe, Bartigon, Grand Master, Sensation, Inglescombe Yellow, Flora's Ornament, Monument, Bonfire, and Moonlight were varieties that took our fancy. Mr. Butler, gardener to Walter Winans, Esq., Surrenden Park, Pluckley, showed a fine Darwin tulip named Walter Winans, but this the committee considered identical with Mr. Farncombe Sanders.

Messrs. Hogg and Robertson, Dublin, put up a bold and beautiful group of late tulips, the blooms of large size and rare colour; Caledonia, Berthold Schwartz, Arizona, Millet, Loveliness, Mrs. Moon, and Daybreak were a few very striking varieties. Messrs. J. Jefferies and Son, Cirencester, also contributed a goodly collection of Darwin and May-flowering tulips, putting up a fine selection of varieties. Messrs. R. H. Bath, Lim., Wisbech, displayed tulips in fine form and colour, some of their best varieties being The Fawn, Inglescombe Yellow, Picotee, Parisiana, Erguste, Isis, and Mrs. Moon.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Cymbidium Woodhamensis Fowler's var., from J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

Award of Merit.—To Tropæolum albiflorum, from Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Great Warley; to Petunia Brown's Purple, from Messrs. W. and J. Brown, Peterborough; to Phyllocactus Coopermanni, and to Cereus amecamensis, from A. Worsley, Esq., Isleworth; and to Lælio-cattleya Apollo, from C. J. Lucas, Esq., Warnham Court, Horsham.

### MEDALS.

Silver-gilt Flora.—Messrs. Barr and Sons, Covent Garden, for tulips; to Messrs. Dobbie and Co., Edinburgh, for sweet peas; to Messrs. George Mount and Sons, Canterbury, for roses.

Silver-gilt Banksian.—To Messrs. Hogg and Robertson, Dublin, for tulips; to Messrs. R. H. Bath, Lim., Wisbech, for tulips.

Silver Flora.—Messrs. Alex. Dickson and Sons, Newtownards, for tulips; to Mr. H. T. Pitt, Rosslyn, Stamford Hill, for orchids; to Mr. H. A. Tracy, Twickenham, for orchids; Mr. C. W. Breadmore, Winchester, for sweet peas; to Messrs. Wm. Cutbush and Son, Highgate, for flowering shrubs and carnations; to Messrs. Stuart Low and Co., Enfield, for carnations, etc.; to Messrs. H. B. May and Sons, Edmonton, for flowering plants; and to Mr. Chas. Turner, Slough, for lilacs and maples.

Silver Banksian.—To Messrs. Jas. Veitch and Sons, Chelsea, for tulips; to Mr. H. Burnett, Guernsey, for carnations; to Messrs. Paul and Son, Cheshunt, for lilacs; to Messrs. Hassall and Co., Southgate, for orchids; to Messrs. J .and A. McBean, Cooksbridge, for orchids; to Mr. R. G. Thwaites, Streatham, for orchids; and to Mr. Stables (gardener to De Barri Crawshay, Esq.), for orchids.

Bronze Flora.—To Mr. Day, Sutton Scotney, for irises; to St. George's Nursery Company, Harlington, for calceolarias; to Messrs. Wallace and Co., Colchester, for irises.

Bronze Banksian.—To Messrs. Allwood Brothers, Haywards Heath, for carnations; to Messrs. F. Cant and Co., Colchester, for roses; to Mr. P. Ladds, Swanley, for pelargoniums; to Messrs. Carter Page and Co., London Wall, for dahlias; to Mr. A. Perry, Enfield, for irises, etc.; to Mr. M. Prichard, Christchurch, for hardy plants; to Messrs. Reamsbottom and Co., Geashill, for anemones; and to Messrs. Young and Co., Hatherley, for carnations.

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## National Auricula Society.

### NORTHERN SECTION.

It has been a trying season for auricula growers. The dry, sunny days of April, and the late frosts, formed a combination of unfavourable conditions that has been difficult to resist. Selfs and polyanthuses were mostly over. There were good alpines, considering the season, and in the edged flowers the green edges, once so scarce a class, were very well represented; but whites and greys were much below the average. There were not many novelties of note amongst the show varieties, but new and good alpines were very numerous.

Messrs. Sutton, of Reading, had a charming exhibit of Darwin and May-flowering tulips.

Auricula novelties were not numerous; the best were three seedlings from Mr. Simonite, a green-edge called Cyril Simonite, a grey called Majestic, and a white called Mollie Shipman. In alpines there were many promising varieties, among which may be mentioned Majestic, Vestal, Blue Bell, Evelyn, Miss Molly, Marjorie, Horace Grindrod, Exquisite, and Mildred Jay.

### AURICULAS (ALPINES EXCLUDED).

For Six Dissimilar Varieties.—First, Mr. F. Simonite, with Fanny Mearbeck, Olympus, Rachel, Majestic, H. Wilson, and Ruby; second, Mr. W. M. Shipman, with Ruby, A. Barker, Molly S., Hy. Wilson, Acme, and G. Lightbody; third, Mr. F. J. Dickens, with Seedling, R. Headley, Ruby, Mrs. Potts, Dr. Hardy, and A. Barker; fourth, Mr. J. W. Bentley, with Mrs. Phillips, Beauty, Orpheus, Orient, Lancashire Hero, and Mrs. Potts; fifth, Mr. Alfred Yates; sixth, the Rev. C. E. Bell. For Four Dissimilar Varieties.—First, Mr. W. M. Shipman, with Acme, Richard Headley, Ruby, and A. Barker; second, Mr. F. Simonite, with Molly Shipman, Fanny Marbeck, Majestic, and Ossian; third, Mr. Ken. Thompson; fourth, the Rev. C. E. Bell; fifth, Mr. F. J. Dickens; sixth, Mr. J. W. Bentley. For Three Dissimilar Varieties.—First, Mr. F. Simonite, with A. Barker, Fanny Mearbeck, and Rachel; second, Mr. Wm. Barker, with Heather Bell, Mrs. Henwood, and Ruby; third, Mr. Geo. Lord, with Gerald, R. Headley, and Orient; and fourth, Mr. J. Stelfox, with G. Chadwick, Ruby, and Dido. Two Dissimilar Varieties.—First, Mr. W. M. Hyslop, with Rev. F. D. Horner and Shirley Hibberd.

For Pairs.—First, Mr. Geo. Lord, with Geo. Lightbody and A. Barker; second, Mr. Wm. Yates, jun., with Ruby and A. Barker; third, Mr. Wm. Barker, with Rev. F. D. Horner and Seedling; fourth, Mr. W. M. Hyslop; fifth, Mr. A. Preston; sixth, Mr. C. F. Faulkner; and seventh, Mr. G. D. A. Hall. For Pair for Maiden Growers.—First, Mr. W. M. Hyslop, with Richard Headley and H. Wilson.

For Single, Green-edge.—First and second, Mr. Alf. Yates, with Shirley Hibberd; third, Mr. W. M. Shipman, with Abbe Liszt; fourth, Mr. Wm. Grindrod, with Shirley Hibberd; fifth, Mr. Wm. Yates, jun., with A. Barker; sixth, Mr. F. Simonite; seventh, Mr. W. M. Shipman; eighth, Mr. F. J. Dickens. Single, Grey-edge.—First, Mr. F. J. Dickens; second, the Rev. C. E. Bell; and third, Mr. W. M. Shipman, with Geo. Lightbody; fourth, Mr. F. Simonite, with Marmion; fifth, Mr. Wm. Grindrod; sixth, the Rev. C. E. Bell; seventh, Mr. W. M. Shipman; eighth, Mr. Geo. Lord. Single, White-edge.—First, Mr. F. Simonite, with Rachel; second, Mr. W. M. Shipman, with Acme; third, Mr. Alf. Yates, with Rachel; fourth, Mr. Geo. Lord. Single Selfs.—First, Mr. J. Stelfox; second, Mr. F. J. Dickens, with Mrs. Potts; third, Mr. Stelfox; and fourth, Mr. Dickens, with Ruby; fifth, Mr. Bentley; sixth, Mr. Barker; seventh, Mr. A. Yates.

For One Seedling.—First and second, Mr. F. Simonite, with Sedling and Cyril Simonite; third, Mr. W. M. Shipman.

Premier show auricula, Mr. W. M. Shipman, with A. Barker. Challenge cup winner, Mr. W. M. Shipman, Altrincham.

### ALPINES—SHADED.

Six Dissimilar Varieties.—First, Mr. W. M. Shipman, with Majestic, Clio, Janet, Dr. Harris, Exquisite, and J. F. Kew; second, Mr. G. A. Wright, Majestic, Lady Jeune, Dreadnought, Minnie, Duke of York, and Argus; third, Mr. F. J. Dickens, with Mis Baker, Thetis, Perfection, Duke of York, and Blue Zingari; fourth, Mr. John Tonge, with Blue Peter, Lady Jeune, Patience, J. F. Kew, Seedling, and W. A. Albright; fifth, Mr. Ken. Thompson, with Mrs. Lord, Ullswater, Mrs. R. C. Cartwright, Thetis, Prime Minister, and J. F. Kew; sixth, Mr. J. W. Bentley, with Mrs. Lord, Genevieve, Audrey Grace, Cynthia, Vestal, and Aurora. For Dissimilar Varieties.—First, Mr. Ken. Thompson, with Phyllis Douglas, Rookwood, Ullswater, and J. F. Kew; second, Mr. W. M. Shipman, with Seedling, Majestic, Exquisite, and Dr. Harris; third, Rev. C. E. Bell, with Rosy Morn, Ganymede, Mr. Markland, and Argus; fourth, Mr. J. Edwards; fifth, Mr. G. A. Wright; and sixth, Mr. Jas. Calder.

For Pair Dissimilar Varieties.—First, Mr. Wm. Stringer, with J. F. Kew and Evelyn; second, Mr. C. F. Faulkner, with Majestic and

Mrs. J. Douglas; third, Mr. J. Edwards; fourth, Mr. Wm. Barker; fifth, Mr. T. Sharpe; sixth, Mr. J. W. Bentley. Pair for Maiden Growers.—First, Mr. Thos. Sharpe, with Dean Hole and Attraction; second, Mr. N. Brownhill, with Pluto and Clio; third, Mr. Wm. Hyslop, with Blue Bell and Uranie.

One Yellow Variety.—First, Mr. W. M. Shipman, with Exquisite; second, Mr. G. D. Hall; third, Mr. W. M. Hyslop; fourth, Mr. G. A. Wright; fifth, Mr. G. D. A. Hall; and sixth, Mr. John Tonge. One Light Variety. —First, Mr. John Tonge, with Lucreece; second, Mr. W. M. Shipman, with Argus; third, Mr. C. F. Faulkner, with Mildred Jay; fourth, Mr. G. Geggie; fifth, Mr. John Stelfox; and sixth, Mr. G. D. A. Hall.

Three Dissimilar.—First, Mr. John Stelfox, with Miss Baker, Rosy Morn, and Argus; second, Mr. John Tonge; third, Mr. David Johnson; and fourth, Mr. G. Geggie. Seedling.—First, Mr. W. M. Shipman, with Miss Molly; and second, with Marjorie; third, Mr. John Tonge, with Horace Grindrod.

The premier alpine in the show was Vestal, shown by Mr. J. W. Bentley. Challenge cup winner for alpines, Mr. W. M. Shipman, Altrincham. Certificates for seedlings were granted to the Rev. C. E. Bell for Xenophon; to W. M. Shipman for Miss Molly and Marjorie; and to Mr. John Tonge for Horace Grindrod.

### LACED POLYANTHUSES.

For Three Dissimilar, Black Ground, Polyanthuses.—First, Mr. J. W. Bentley, with Exile, Tiny, and Mrs. Holden; second, Mr. David Johnson, with N. Brownhill, Mrs. Brownhill, and Coronation; third, Mr. N. Brownhill. Three Dissimilar, Red Ground, Polyanthuses.—First, Mr. David Johnson, with Master Fred, Nellie, and King Alfonso; second, Mr. Norman Brownhill, with Red King and two seedlings; third, Mr. J. W. Bentley, with King, Middleton Favourite, and George IV.; fourth, Mr. Wm. Grindrod. Single, Black Ground, Polyanthuses.—First, Mr. Wm. Grindrod; second, Mr. Geo. Lord; third, Mr. Wm. Grindrod; and fourth, Mr. D. Johnson, with Mrs. Brownhill; fifth, Mr. Wm. Stringer, with Mrs. Holden; sixth, Mr. J. W. Bentley with Tiny. Single, Red Ground, Polyanthuses.—First and second, Mr. J. W. Bentley, with George IV.; third, Mr. Wm. Grindrod, with Mrs. Holden; fourth, Mr. David Johnson, with Nellie; fifth Mr. Norman Brownhill.

Premier polyanthus in the exhibition, Mrs. Brownhill, shown by Mr. W. Grindrod. Challenge cup winner, Mr. James W. Bentley, Stakehill.

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## National Tulip Society.

The annual exhibition of this society was held under the auspices of the R.H.S. at Vincent Square, on May 14. The show could not be deemed a large one, but the competitors, though few in number, could not be accused of lack of interest, for they had entered freely. The quality of the flowers was decidedly good, though the comments of a fashionable crowd could not be taken into account, or one might be led to think otherwise.

The premier class for twelve dissimilar rectified tulips: there were four exhibitors, the first prize falling to Mr. A. D. Hall, Harpenden, who staged fine examples of George Hayward, Annie McGregor, Bob Morley, Samuel Barlow, Mrs. Collier, Sir Jos. Paxton, Mabel, Talisman, Mrs. Maurice Tweedie, Modesty, Elizabeth Pegg, and Jas. Mackintosh. The premier feathered flower was George Hayward in this stand. Mr. C. W. Needham, Hale, was second, having good examples of Sir J. Paxton, Duchess of Sutherland, Samuel Barlow, and Mrs. Sharp as his best examples, while Mr. J. W. Bentley, Castleton, was third with nice neat flowers. Mr. W. Dunn, Cambridge, was fourth, having the premier flamed flower with a fine example of Samuel Barlow.

In the sixes there were but three exhibitors, Mr. C. W. Needham leading off with Stockport, Sir J. Paxton, Annie McGregor, Talisman, Masterpiece, and Mrs. Collier. Mr. A. D. Hall followed with good examples of Talisman, Samuel Barlow, and Mabel. Mr. J. W. Bentley was third.

For three feathered varieties we had three exhibitors, Mr. A. D. Hall winning well; Garibaldi, Elizabeth Pegg, and Mrs. Collier; while Mr. C. W. Needham followed with Wm. Wilson, Adonis, and Mrs. Collier, and Mr. J. W. Bentley was a good third. The class for three flamed varieties appeared to be better supported, Mr. W. Dunn being well ahead with fine blooms of Samuel Barlow, Annie McGregor, and Duchess of Sutherland, Mr. W. Peters was second, and Mr. C. W. Needham third. The management do not consider it necessary to give the exhibitors' addresses. For two varieties, one feathered, one flamed, for the Samuel Barlow prizes, Mr. W. Dunn was placed first with Sir J. Paxton and Lord Lilford. Mr. J. W. Bentley was second, and Mr. A. D. Hall third.

The breeder class was most interesting, and there were four entries. Mr. C. W. Needham won first with good, solid flowers of Goldfinder. Beauty of Litchurch, Loveliness, Alfred Lloyd, Glory of Sparkhill, and Annie McGregor. Mr. A. D. Hall was second with larger flowers, in which were Mrs. M. Tweedie, Alcestis, Sigurd, Tuleiki, and two seedlings. He also won the premier prize for the best breeder with Sigurd. Mr. W. Dunn was a capital third.

For three breeders Mr. C. W. Needham was first, Mr. A. D. Hall second, and Mr. W. Dunn third. The classes open to growers of less than four hundred flowering bulbs secured four entries, Mr. W. L. T. Loat, Paignton, being first for six varieties, staging Sir J. Paxton, Annie McGregor, and Jane in good form. Mr. A. E. Chater was second, and Mr. R. W. Hall, Cambridge, third.

Mr. H. C. Bartlett was first for three breeders, followed by Mr. W. L. S. Loat. Mr. A. D. Hall was first with Mabel, in the flamed rose flowers, also first in the feathered rose, with Mrs. Collier. Mr. C. W. Needham was first with a flamed byblœmen, with Chancellor; while Mr. C. W. Needham was first for a single bloom of feathered byblœmen with Stockport; while Mr. W. Dunn won first for a feathered bizarre with a fine flower of Lord Lilford. Mr. C. W. Needham won first for the rose breeders with Annie McGregor, also first with the best byblœmen breeder, staging Talisman, and first with Dr. Hardy as a bizarre breeder. The Rev. J. Jacob, Whitchurch, was the only exhibitor of six vases of garden tulips, and was deservedly awarded the first prize. The varieties staged were Innocence, Hammer Hales, Yellow Spencer, Glare of the Garden, Toison d'Or, and Soloman.

The same exhibitor was also first and only exhibitor for six vases of Darwin tulips.

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## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 7th inst., when, under the title of "Some Impressions of America and its Horticulture," Mr. James Whytock, Dalkeith House Gardens, gave an account, with lantern illustrations, of a tour he made last summer through parts of Ontario and New York State, but more especially of the fruit-growing districts of the former. Mr. Massie, the president, was in the chair, and there was an attendance of 110 members.

Fruit-growing is one of the most important rural industries in Ontario, and on the borders of Lake Ontario is one of the most productive fruit-growing tracts on the American continent; in fact, between Toronto and Hamilton one may travel continuously through orchard lands for 80 miles. The chief fruits grown are apples and peaches, and the latter find a ready market in the large cities. Several large commercial horticultural establishments were visited. In one of these, the Dale Estate, at Brampton, there were 22 acres under glass, each of the houses, which were span-roofed, and heated by steam, being 800 feet long by 25 feet wide, and in these roses, carnations, chrysanthemums, etc., were grown by hundreds of thousands, all planted out on benches running the full length of the house. Large private horticultural establishments, which are such a familiar feature here, are practically non-existent in Canada. Much attention is given to decorative gardening, and to street trees in the large cities. The public parks of Toronto, including ornamental water, cover over 1,600 acres, and £64,000 is spent annually upon these and the street trees. The public parks and gardens of New York extend to 7,223 acres, and the annual cost of upkeep is £166,000, and, in addition to this, £8,000 is spent annually on the street trees.

On the motion of Mr. McHattie, Mr. Whytock received a very cordial vote of thanks.

The exhibits were: Fifteen vases of the newest varieties of sweet peas, including Lavender George Herbert (fixed), Lady Miller, Dobbie's Scarlet, and Mrs. Cuthbertson, from Messrs. Dobbie and Co., Edinburgh (awarded a silver-gilt medal); eighty vases of Darwin and late-flowering tulips, from Mr. D. W. Thomson, Edinburgh (awarded a silver-gilt medal); fourteen vases of tulips (various), from Messrs. James Grieve and Sons, Edinburgh (very highly commended); Rose Prince of Bulgaria, from Messrs. Todd and Co., Edinburgh; hardy rhododendrons, from Mr. A. Johnstone, Hay Lodge, Edinburgh; Echium sp., from Mr. Thos. Nicholson, Joppa; auriculas, from Miss Burton, Polton; aquilegias (seedling) from Mr. J. Thomson, Craigiehall, Cramond Bridge; myosotis and varieties of daisies, from Mr. C. Comfort, Broomfield, Davidson's Mains.

The meeting on June 4 will be devoted to the reading of short papers by junior members.

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## Bournemouth Gardeners.

At a recent meeting of members, a paper on "Strawberries," by Miss C. Agnes Rooper, was read. This lady is a great lover of gardening in all its branches, and takes a great interest in the Bournemouth Gardeners' Association.

The lecturer said she supposed there was no fruit more generally liked than the strawberry, nor one more useful from the housewife's point of view. The first attempt to cultivate the strawberry was in England, and this fruit was mentioned in the year 1440 in an old song by one Master Jan Gardener, and in the time of Richard III. strawberries were hawked about the street. The first horticultural variety, of which there is any account, is "The Fressant," which dates from the year 1660. The lecturer said that the cultivated strawberry was probably from our own wild variety, and the same wild variety was found in France, too, but England led the way in its cultivation. Two hundred years ago there appeared in both England and France a new variety named the Pine Apple strawberry which made a great sensation at the time, and it became the parent of all our large-fruited varieties. It was named Pine Apple because of the distinctive flavour of its fruit, but no one ever knew from whence it came. The first best

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The Gardeners' Ideal Syringe is No. 1 Four Oaks Undentable, 1½ × 20in. 21/-; or with Angle Joint 27/- For Spraying.—No 9 Undentable Syringe, 1½ × 20 in. 12/6 or with Angle Joint, 18/-

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Complete Catalogues of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers:— The FOUR OAKS SPRAYING MACHINE Co., No. 3C, Sutton Coldfield.

known variety produced from it was Keen's Seedling. The lecturer referred to all the best varieties to date and their cultivation; also to packing and market matters.

A good discussion followed, and one member said he lost thirty thousand plants in 6in. pots once through eelworm; the soil had been taken from old, well-worn ground. The only way to free the soil was to sterilise it before putting any plants in it. Members who had lived in different parts of Great Britain gave their experiences as to the effect various soils had on the flavour of the fruits.

Some very fine cut blooms were staged in the competition classes. Mr. Heath had grand lily of the valley, zonal pelargonium Ian McLaren, and schizanthuses; Mr. Pearce very fine tulips, Picotee, Gesneriana, and Loveliness; Mr. Pavey contributed show pelargoniums, stephanotis, and schizanthuses; and Mr. Evans, Bougainvillea glabra, sweet peas, and zonal pelargoniums. Mr. C. Pearce presided, and hearty votes of thanks were accorded the lecturer and chairman.

[Assuming our reporter is correct on this occasion, and we have no reason to assume otherwise, we should be glad to learn on what authority or authorities Miss Rooper based the foregoing remarkable statements concerning the history of cultivated strawberries. If our reporter was under a misapprehension with regard to these statements we have to have an opportunity of saying so. —Ed., "G.M."]

## Royal Gardeners' Orphan Fund.

About a hundred and twenty friends of this charity dined together at the Hotel Cecil on Wednesday, May 8, under the presidency of Sir Edwin Durning Lawrence, Bart. The occasion was the annual festival of the charity, when, under the influence of good things, pleasant company, and sweet music, hearts are warmed and pockets are opened so that a large sum is raised to carry on the work during another year.

After the usual loyal toasts had been duly honoured, the Chairman proposed "The Royal Gardeners' Orphan Fund," and in so doing referred to the excellent institution of getting folks to dine together. He instanced the Master Skinners' and the Merchant Taylors' Companies, which were always fighting each other until some sensible person persuaded them to dine together annually instead of fighting, the one company to take precedence on the toast list in the even years, and the other in the odd years; the result being that for two or three hundred years there had been a peaceful rivalry. He expressed his pleasure that the Orphan Fund had no large institution or high-salaried officials to maintain. The orphans were brought up in homes by friends and relatives, an allowance of 5s. per week being allowed for their maintenance, whereas every workhouse child cost at least 7s. 6d. per week. The home training was excellent, and the child was a human being, a girl was "Mary Jane" perhaps, but not "No. 242." At present 130 orphans were being maintained, and fourteen waiting for election were being assisted. The production of beautiful flowers and luscious plants, especially the exotics, was hard and exacting work, and lives were risked and sometimes lost in it. Therefore it seemed only right that all who enjoyed gardens and flowers, and were all the better for the refining influence of those things, should assist as far as possible to maintain the orphans of gardeners. He referred to the tragic disaster of the "Titanic," and pointed out that possibly it might be made an excuse for smaller contributions to the Orphan Fund; but he suggested that those who usually made excuses of this kind were not seldom endeavouring to hide their own meanness. He urged a larger increase of annual subscriptions, and pleaded for generous gifts so that the work carried on by the committee might not be curtailed.

Mr. Edward Sherwood, the treasurer, when responding, reminded those present that the Fund had been established twenty-five years, and that £25,634 had been expended during that period on the maintenance of orphans. They had £12,533 invested, and the income from this went to pay management and special expenses, so that the Festival was the great source of income for carrying on the work of caring for the children. He thanked the chairman for his presence and support, and very strongly urged gardeners generally to regularly subscribe to the charity.

Mr. N. N. Sherwood, V.M.H., proposed "The Visitors" in his usual hearty fashion, and to this toast Lieut.-Colonel the Right Hon. Mark Lockwood, M.P., responded in a humorous speech, while paying tribute to the beauty of the floral decorations in the room, and the very excellent work of the Fund.

Mr. H. B. May, V.M.H., chairman of Committee, proposed "The Chairman," to which Sir Edwin Durning Lawrence made a suitable reply.

The subscription list amounted to £1,056, and included: 100 guineas from the chairman, £100 from Mr. Sherwood and his sons, £50 from Messrs. Sutton and Sons, and £10 from Mr. Leonard Sutton; £59 19s. from Mr. G. Cuthbert; Mr. Reynolds, £36; Mr. J. F. McLeod, £40; Mr. Anthony Waterer, £35; Messrs. Rothschild, 25 guineas; Sir Edward Stern, 21 guineas; Sir W. Lever, 21 guineas; Mr. D. W. Thomson, £21 7s.; Mr. R. W. Leech, £19 19s.; Mr. W. Nutting, £16 5s.; Mr. R. H. Pearson, £16; Messrs. Barr and Sons, 10 guineas; Mr. J. C. Eno, 10 guineas; Mr. T. W. Sanders, £10; Messrs. J. Carter and Co., £10; Messrs. J. Veitch and Sons, £10; Mr. Howe, 8 guineas; Mr. H. B. May, 7 guineas; Mr. A. Watkins, 10 guineas; Mr. W. P. Thompson, £10; Messrs. Wm. Cutbush and Sons, 5 guineas, etc., etc.; and £184 from Covent Garden friends, collected by Messrs. W. Ingamells, F. Wright and W. Poupart.

The toasts were only three in number beyond the loyal ones, and the speeches were brief and good. Floral decorations were delightful, and excellent music was provided under the able direction of Mr. Turle Lee.

## East Anglian Horticultural Club.

At the recent meeting of this club, held at Norwich, there was a very large assembly, and a most practical and interesting discourse was given by Mr. W. Smith, gardener to Sir Forrest Fulton, K.C., Sheringham, upon "Asparagus." To evidence his success with this vegetable, Mr. Smith brought up some wonderful sticks, the largest 18 inches long and 4½ inches in circumference, and practically the whole of it edible. Situate as the garden is, in close proximity to the sea, no doubt the saline mists have something to do with the success, and he also stated that a heavy dressing of seaweed is put upon the beds at the fall of the year. Crude salt, Mr. Smith said, did not have the beneficial effects upon asparagus that was generally supposed; he thought it was better far to apply some potash salts. Construction of beds upon various soils, and planting, were points ably dealt with. A good discussion followed by Messrs. Lewis Smith, J. Powley, F. Williams, H. Perry, F. Graveling, and D. Howlett.

The exhibits, as usual, were of a varied and bright array. Mr. Frank Neave, Lingwood, brought up a beautiful collection of brooms, including a new pink variety, and some fine May-flowering tulips. The charms of Fortune's Yellow rose were ably depicted by a large bunch, brought up by Mr. J. W. Chapman, Ashwelthorpe Hall Gardens.

A great boon was bestowed upon the district by the special prize offered by Mr. J. Forder for the most queen wasps. A total of 1,074, and two queen hornets, were brought up. One gardener brought up 336, all caught during the past few weeks in a garden of seven acres.

## GARDENING ENGAGEMENT.

Mr. G. A. Bruton, of Horley, Surrey, has been appointed head gardener to T. B. Forwood, Esq., Frimhurst, Frimley Green, Farnborough, Hants.

## ANSWERS TO CORRESPONDENTS.

CULTURE OF WATER MELONS.—C. C. W., Clapham Park: Kindly give me any information you can with reference to the cultivation of water melons. The seeds I have came from Japan. Where ought the plants to be grown?—The water melon (Citrullus vulgaris) is a native of Africa, and, as in the case of the melons in general cultivation, is of climbing habit, and is well suited to the conditions that obtain in warm climates where the insipid pulp is regarded as refreshing, and appreciated accordingly. This melon is not grown to any considerable extent in Europe, except on the shores of the Mediterranean, and in the southern parts of Russia. In this country it requires glass culture, and the aid of artificial heat, as in the case of the melons generally grown in this country. Practically speaking, the only detail in which the culture of water melons differs from that of the other kinds is the vines are not stopped, but allowed to grow unchecked. In America, where the summers are much hotter than ours, water melons are largely grown in the open, and the fruits much appreciated; but, according to experience and observation, they are not worth growing in this country. If you decide to grow them, devote a spacious pit to their culture, and proceed as you would in growing the melons with which you are familiar, except that the growths be not stopped.

HOW TO REACH THE ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION.—M. T., Bude: Some of your readers are coming, I expect, like myself, from the provinces to see the great show at Chelsea. We are not well acquainted with the geography of London, therefore if you could give a few brief suggestions for reaching the exhibition quickly and cheaply, from the principal termini, some of us would be very grateful.—We had already arranged to give the information here asked for, and particulars will be found set forth in the present issue.

WORKMAN'S COMPENSATION.—S. E. G., Warwick: Will you kindly tell me the general lines on which to proceed in the case of a claim for compensation for injury received during employment?—An injured workman desiring to obtain compensation must give formal notice of the accident to his employer, and make a claim on the employer for compensation. The notice must be sent to the employer in writing as soon as practicable after the accident happens, and before the workman has voluntarily left the employment; it should give the name and address of the workman, and should state in ordinary language, the cause of the injury and the date on which the accident occurred. The claim for compensation must be made within six months from the date of the accident, or, in case of death, within six months from the time of death. After notice of an accident has been given, the workman must, if so required by the employer, submit himself for examination by a doctor provided and paid by the employer. If he refuses, his rights under the Act are to be suspended till the examination has taken place. All claims for compensation may be settled by agreement between employer and workman and, excepting in cases of death the compensation may be paid by the employer direct to the workman. If the claim is settled by agreement, a memorandum of the terms of the agreement is to be sent to the Registrar of the county court for registration. When registered, the agreement becomes enforceable as a county court judgment. In cases where an agreement is made, either in the first instance or subsequently, for payment of a lump sum down instead of weekly payments, the agreement will not relieve the employer of his liabilities to make weekly payments, unless it has been registered. To prevent agreements being made for lump sums, which are unfair to the workman, the Court is now given power, if it thinks that an agreement ought not to be registered by reason of the inadequacy of the sum, or by reason of its having been obtained by fraud or undue influence or other improper means, to cancel the agreement, or make such other order as it thinks just. In default of agreement, a claim for compensation can be settled in one of the following ways: (1) by proceedings in the county court; or (2) by arbitration before a private arbitrator, agreed to and appointed by the parties; or (3) if a committee, representative of the employer and his workmen, exists with power to settle matters under the Act, by arbitration before such committee.

ORANGE-COLOURED CYDONIA.—N. C., Lowestoft: We have a very beautiful cydonia growing against the house-wall. The plant is not very large, but its bright orange and orange-scarlet flowers are very attractive. It is not the common C. japonica, but we hope you will be able to tell us the name from this poor description; the leaves and stems seem to be darker than the common form. We would have sent specimens, but have been so long getting our garden into shape since we took possession.—The cydonia is probably C. japonica Sargenti, a beautiful plant for a wall or a rock garden. Send us a specimen next spring if the flowers are now all over.

MARGUERITE MRS. F. SANDER.—J. J. W., Liverpool: Can you tell me whether the beautiful double or anemone-centred Marguerite Mrs. F. Sander has ever gained honours from the Royal Horticultural Society, and if so, when?—This fine marguerite was exhibited by Messrs. Sander and Sons, St. Albans, at the Temple Show of 1910, and gained an Award of Merit. It was figured in our issue of June 4, 1910, p. 429.

SWEET WILLIAMS.—L. W. P., Peterborough: We do not succeed with sweet williams, and now that these old-fashioned flowers have been so greatly improved, we are anxious to try again. Our soil is heavy, and remains rather damp during winter, and this doubtless has something to do with our comparative failure. Any suggestions will be welcomed.—Secure the best possible strain of sweet williams, as poor strains give poor results, no matter how good the site and cultivation. Sow the seeds at once, thinly in a little bed in the kitchen garden, and add some crushed mortar rubbish and old potting soil to the heavy staple. If the soil is dry give it a thorough watering a few hours before drawing shallow drills to receive the seeds. Prick out the seedlings six inches apart each way as soon as they are large enough, and place the plants in their flowering quarters in early autumn. Sweet williams love a warm, rich soil, containing plenty of lime.

COTONEASTERS FOR THE ROCK GARDEN.—M. M., Batheaston: Your help in deciding which are the best cotoneasters for planting in a rock garden will be greatly appreciated.—In a rock garden where there are some very large boulders Cotoneaster horizontalis would be suitable; but if the garden is small and the stones of quite moderate size, the best kinds to plant would be C. adpressa, which produces a fine effect in autumn; C. microphylla glacialis (C. congesta), one of the finest of rock garden shrubs; and C. rupestre, which produces clusters of small hawthorn-like flowers at this season of the year.

## NAMES OF PLANTS.

W. C. S., Rottingdean.—Tilia platyphillus laciniata.

J. T. T., Stowmarket.—1, Kerria japonica; 2, Spiræa confusa.

E. S. G., Derby.—A form of Prunus padus, the Bird Cherry, a native plant.

P. T., Cambridge.—1, Cytisus albus; 2, Diervilla amabilis; 3, Cytisus biflorus.

M. E. A., Wallingford.—1, Clematis montana; 2, Anagallis fruticosa; 3, Hippophæ rhamoides; 4, Pinguicula vulgaris.

E. G., Weymouth.—1, Celsia arcturus; 2, Odontoglossum ardentissimum; 3. O. crispum, a very poor form; 4, Cattleya Mossiæ; 5, Cotyledon umbilicus.

# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Flowers are plentiful, and a good demand continues.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Anemones | per doz. bun. | 2 0 | | 2 6 |
| Arums | per doz. | 1 6 | | 2 6 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azaleas | per doz. bun. | 3 0 | | 4 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Camellias | per box | 1 6 | | 3 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 15 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Cornflowers | per doz. bun. | 2 0 | | 3 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| Forget-me-not | per doz. bun. | 3 0 | | 4 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz | 1 6 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 9 0 | | 15 0 |
| Gypsophila | per doz. bun. | 3 0 | | 4 0 |
| Iris, Spanish | per doz. bun. | 8 0 | | 10 0 |
| Lilac | per bunch | 2 0 | | 3 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 3 6 |
| ,, longiflorum | per doz. | 2 0 | | 3 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 6 | | 2 0 |
| Narcissus | per doz. bun. | 1 0 | | 3 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Poppies | per doz. bun. | 3 0 | | 6 0 |
| Primroses | per doz. bun. | 0 9 | | 1 0 |
| Roses | per doz. | 1 0 | | 3 6 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 5 0 |
| Sweet Peas | per doz. bun. | 3 0 | | 6 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Tulips, Darwin | per bun. | 0 9 | | 1 0 |
| Violets | per doz. bun. | 2 0 | | 4 0 |
| Wallflowers | per doz. bun. | 1 6 | | 2 6 |

### Fruits.

Gooseberries are good, and sell well, and there is a capital demand for new grapes, oranges, strawberries, and Australian apples.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Nova Scotia | per barrel | 10 6 | to | 22 0 |
| ,, Canadian | per barrel | 12 0 | | 22 0 |
| ,, American | per barrel | 20 0 | | 32 0 |
| ,, Californian | per case | 4 0 | | 7 0 |
| ,, Australian | per box | 7 0 | | 14 0 |
| Apricots, French | per box | 1 3 | | 1 6 |
| Bananas | per bun. | 3 6 | | 10 6 |
| Figs | per doz. | 6 0 | | 10 0 |
| Gooseberries | per ½ bush. | 5 0 | | 7 6 |
| Grapes, English | per lb. | 2 0 | | 5 0 |
| ,, Belgian | per lb. | 1 3 | | 2 6 |
| ,, Almeria | per barrel | 16 0 | | 21 0 |
| ,, Cape | per case | 4 0 | | 10 0 |
| Lemons | per case | 8 0 | | 30 0 |
| Melons | | 1 3 | | 1 6 |
| Oranges Denia | per case | 15 0 | | 32 0 |
| ,, Seville | per box | 15 0 | | 18 0 |
| ,, Valencia | per case | 10 0 | | 18 0 |
| Peaches | per doz. | 6 0 | | 24 0 |
| Pears, Cape | per box | 3 0 | | 6 0 |
| ,, Australian | per case | 6 0 | | 10 0 |
| Pineapples | each | 2 6 | | 5 6 |
| Strawberries | per lb. | 1 0 | | 3 0 |

### Vegetables.

Outdoor vegetables remain dear, and forced produce is now becoming scarcer. Asparagus sells well, and is very good.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| ,, Jerusalem | per ½-bush. | 1 0 | | 2 0 |
| Asparagus | per bun. | 1 0 | | 6 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 2 0 | | 3 0 |
| Broccoli, Sprouting | per bag | 4 0 | | 6 0 |
| Cabbage, New French | per doz. | 1 3 | | 2 0 |
| ,, New Cornish | per doz. | 0 9 | | 1 6 |
| Carrots | per doz. bun. | 4 0 | | 10 0 |
| Cauliflowers | per doz. | 4 0 | | 6 0 |
| ,, Cornish | per crate | 12 0 | | 20 0 |
| Cucumbers | per doz. | 2 0 | | 3 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 16 0 |
| Leeks | per doz. | 2 0 | | 4 0 |
| Lettuce | per doz. | 1 0 | | 3 0 |
| Mint | per doz. bun. | 2 0 | | 3 0 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Onions | per case | 6 0 | | 11 0 |
| Parsley | per ½-sieve | 2 0 | | 3 0 |
| Parsnips | per bag | 5 0 | | 7 0 |
| Peas, French | per pad | 4 0 | | 6 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 0 |
| Radishes | per doz. bun. | 0 4 | | 1 0 |
| Rhubarb | per doz. bun. | 0 6 | | 2 0 |
| Seakale | per bun. | 0 8 | | 0 10 |

## LONDON POTATO MARKETS.

Business is slow, and prices show a further reduction for old stocks.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Blackland | per ton | 55 0 | to | 65 0 |
| British Queen | per ton | 80 0 | | 100 0 |
| Evergood | per ton | 60 0 | | 80 0 |
| King Edward | per ton | 75 0 | | 85 0 |
| Up-to-Date | per ton | 70 0 | | 90 0 |
| Teneriffe, New | per cwt. | 10 0 | | 14 0 |
| Algerian, New | per cwt. | 10 0 | | 14 0 |
| Jersey, New | per cwt. | 15 0 | | 17 0 |
| St. Malo, New | per cwt. | 15 0 | | 16 0 |

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## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. MAY 5 TO MAY 11. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| May 5—Sunday ...... | 0 36 | 52 | 51 | 62 | 47 |
| ,, 6—Monday ...... | 2 18 | 55 | 54 | 63 | 47 |
| ,, 7—Tuesday...... | — | 56 | 55 | 61 | 51 |
| ,, 8—Wednesday.. | 2 0 | 61 | 59 | 69 | 56 |
| ,, 9—Thursday.... | 5 0 | 64 | 60 | 73 | 53 |
| ,, 10—Friday........ | 5 24 | 65 | 57 | 71 | 53 |
| ,, 11—Saturday..... | 9 12 | 68 | 62 | 77 | 50 |
| Means | (total) 24 30 | 60 | 57 | 68 | 51 |

| DATE. 1912. MAY 5 TO MAY 11. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| May 5—Sunday ...... | trace | 53 | 52 | 51 | 46 |
| ,, 6—Monday ...... | 0·01 | 54 | 52 | 51 | 38 |
| ,, 7—Tuesday...... | 0·09 | 55 | 52 | 51 | 47 |
| ,, 8—Wednesday.. | — | 56 | 53 | 51 | 52 |
| ,, 9—Thursday.... | — | 57 | 53 | 51 | 47 |
| ,, 10—Friday........ | — | 58 | 55 | 52 | 42 |
| ,, 11—Saturday .... | — | 58 | 55 | 52 | 44 |
| Means | (total) 0·10 | 56 | 53 | 51 | 45 |

## CATALOGUES RECEIVED.

JAS. VEITCH AND SONS, CHELSEA.—A catalogue of dahlias. Great care has been exercised in the selection of varieties listed. Colour descriptions are given in every case.

GEORGE BUNYARD AND CO., LIM., MAIDSTONE.—Hardy herbaceous plants, aquatics, alpine, and rock-garden plants form the subject matter of the catalogue before us. A list of popular names of the plants included is of special interest.

## FORTHCOMING ENGAGEMENTS.

MONDAY, MAY 20.—National Rose Society: Conference at the Holborn Restaurant, 5 p.m.; dinner to foreign rosarians, 7 p.m.

WEDNESDAY, MAY 22.—Royal International Horticultural Exhibition: Assembly of Jury, 7.30 a.m., judging commences 8 a.m. prompt. Opening by H.M. the King, 12 noon. Luncheon to Jury, 1.30 p.m.

Bath and West and Southern Counties Show.

THURSDAY, MAY 23.—Conference on Horticultural Education in the Recreation Hall, Royal Hospital, Chelsea, 2 p.m.

Perpetual Flowering Carnation Society: Dinner to foreign carnation growers at the Holborn Restaurant, 6.45 p.m.

FRIDAY, MAY 24.—Conference on Legislation in connection with Plant Diseases and Pests, Recreation Hall, Royal Hospital, Chelsea, 9.30 a.m.

The dates and times of the several social functions associated with the Royal International Horticultural Exhibition that require a special invitation are not included in the foregoing list, but will be found in the full programme that is given on page 14 of Supplement.

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Portraits of Sir Jeremiah Colman, Bart., V.M.H.; Sir Albert Rollit, LL.D.; Mr. N. F. Barnes; Mr. F. J. Chittenden, F.L.S.; Mr. William Cuthbertson; Mr. J. Hudson, V.M.H.; Portrait Group of the Directors of the Royal International Horticultural Exhibition.

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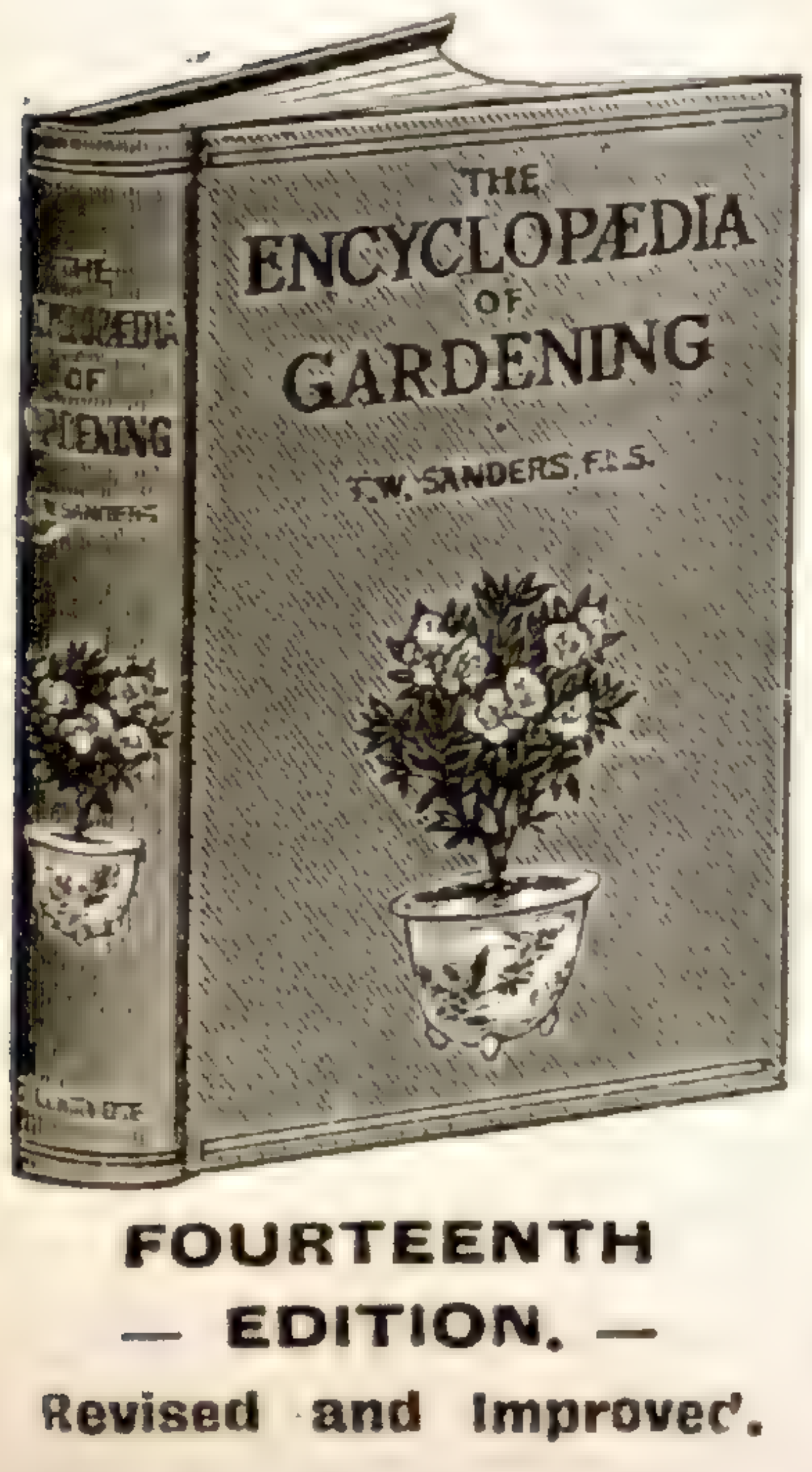

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# Employment THE GARDENERS' MAGAZINE Register.

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FREDK. RYALL,
Town Clerk.

Town Hall, Spa Road,
11th May, 1912.

**SITUATION COUPON**

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**For MAY 25, 1912.**

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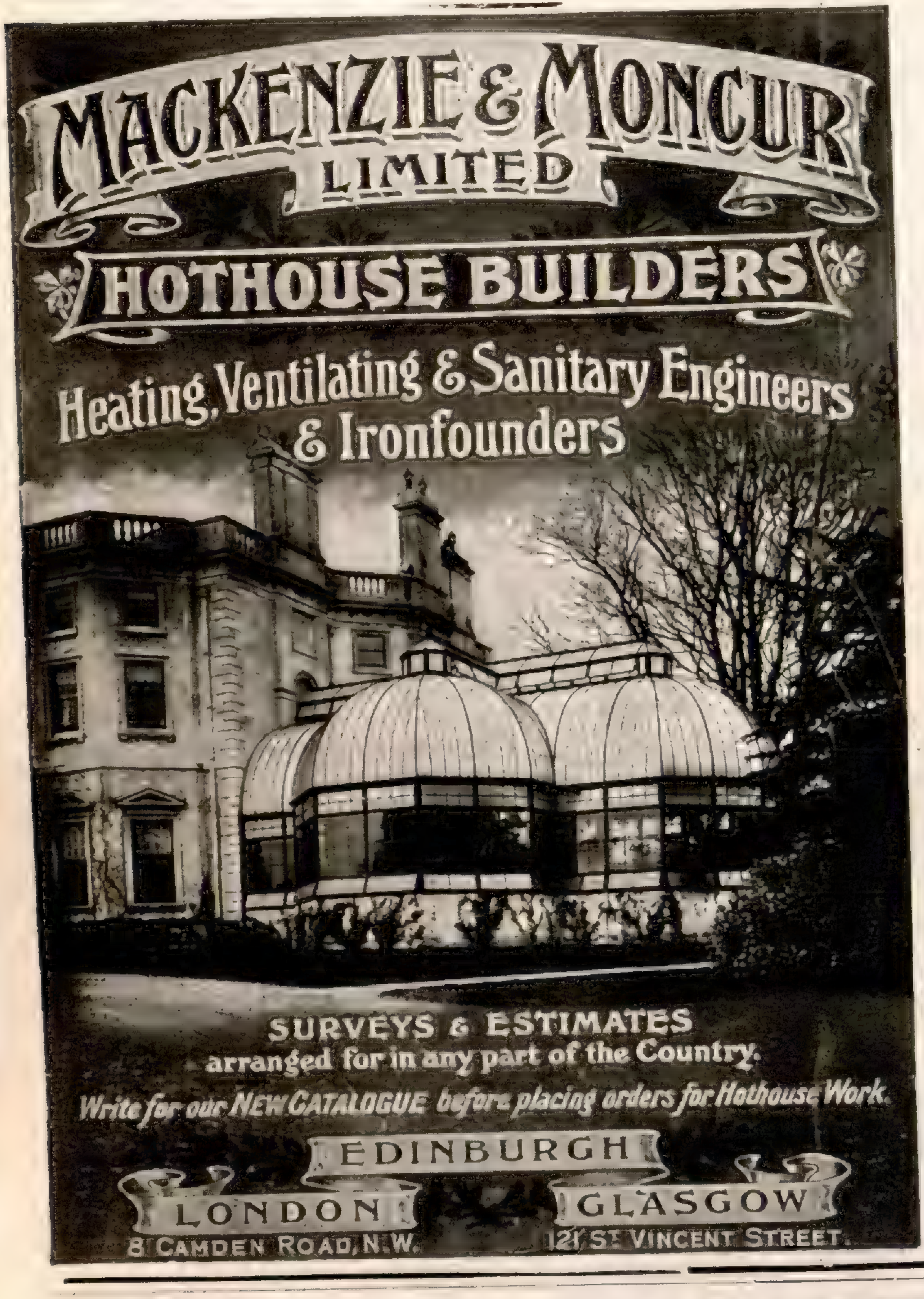

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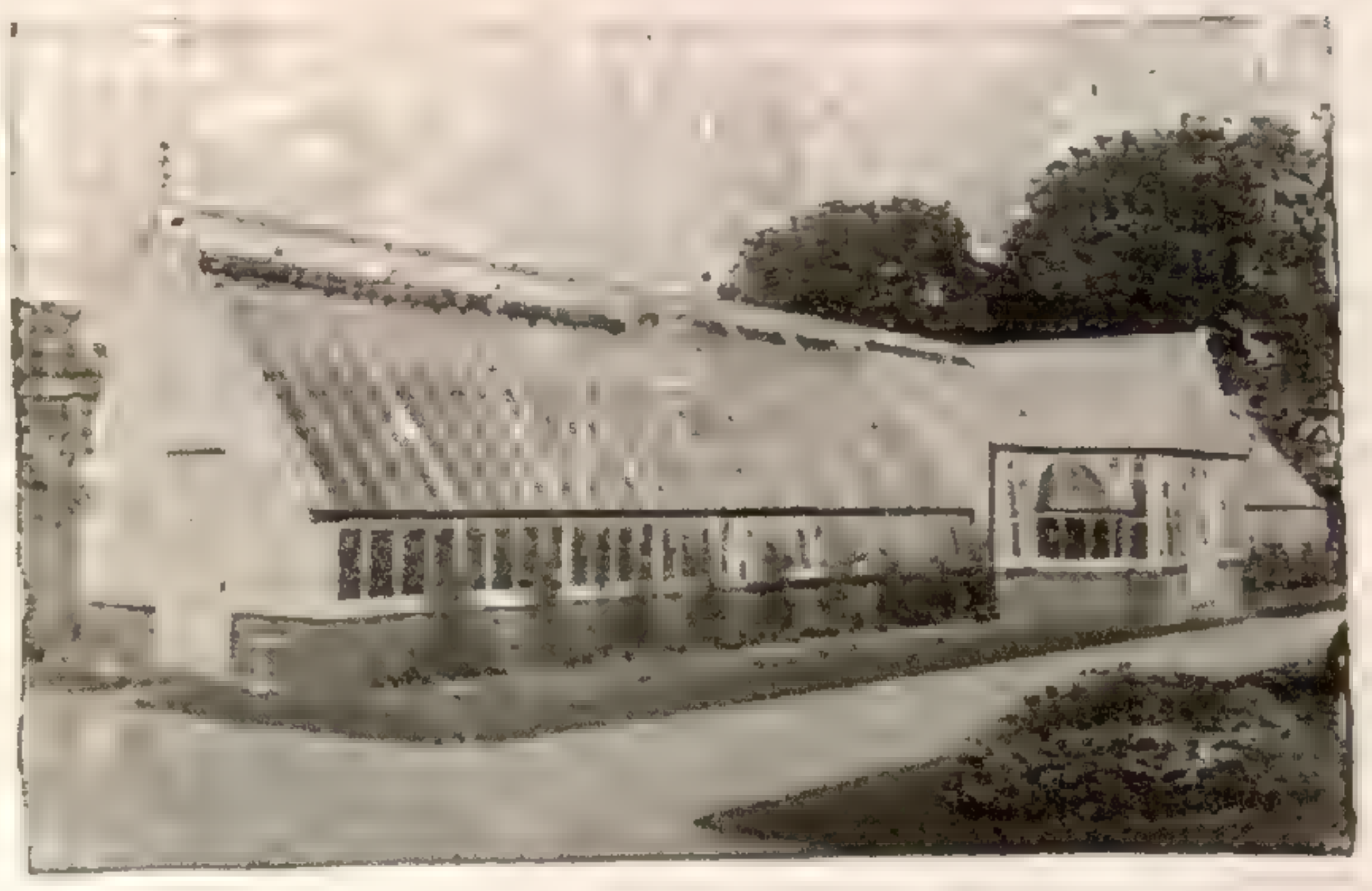

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# THE GARDENERS' MAGAZINE.

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VOL. LV.—No. 3,056. SATURDAY, MAY 25, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Progress 1866-1912.

The great international exhibition that is now being held in the extensive grounds of the Royal Hospital, Chelsea, is not only a splendid demonstration of British horticulture, but is so great a success horticulturally as to far surpass in magnitude and interest the most successful gathering associated with gardening that has been held within the boundaries of the United Kingdom. It is of special interest to those who take a broad view of the various aspects of the practice and science of horticulture to have evidence in a walk through the show, that, while our own countrymen have made strenuous endeavour to maintain the high reputation this country has so long enjoyed for its devotion to the pursuit of gardening, our foreign friends have not been sparing in their efforts to contribute of their best to the exhibition, and thereby render it truly international in character, as well as in name. To ourselves it has been a great pleasure to meet under the wide-spreading tents that shelter the marvellous displays of plants, flowers, fruits, and vegetables, or in the leafy and delightful Ranelagh Gardens, friends from distant parts of our own country, and also to renew the friendships that have been made at the international gatherings that have been held at Ghent, Antwerp, Haarlem, Hamburg, Paris, and some other centres of horticultural activity across the seas. It has also been of intense interest to find, in walking through the exhibition and bestowing something more than a superficial glance on the various objects, proofs well-nigh innumerable of the great progress that has been made in the improvement of the products of the garden and in methods of procedure since the 1866 exhibition. Numerous classes of plants, fruits, and vegetables have been improved by selective culture, and several quite new races have been obtained as the result of the activities of the hybridist. One of the most remarkable examples of the success that has been achieved in the creation of new races of plants by the art of hybridisation is afforded by the tuberous begonias, which have for many years contributed to the attractions of both flower garden and plant house. The great diversity in the growth, in the size and form of the flowers, and in the colours is well known, and to be in a position to appreciate the splendid work accomplished by those who have been engaged in bringing about such magnificent results, it is only necessary to remember that they have been derived from six comparatively insignificant species. These were Begonia boliviensis, B. rosæflora, B. Pearcei, B. Davisi, and B. Clarkei, all of which are natives of South America, and were mostly introduced to this country in 1895 and the two following years. Thus the race of tuberous begonias obtained from the hybridisation of the six species mentioned has been created since 1866. The new race of streptocarpus, now so popular for conservatory decoration, have also been raised since the year last-named, and afford another proof of the possibilities of creating new groups of plants by hybridisation when skilfully conducted along well-defined lines. A further proof of the marvellous results that may be obtained by the blending of the distinctive characteristics of closely allied species, otherwise hybridisation, and also of the progress that has been made in the development of orchids, is found in the numerous collections of these exquisitely beautiful plants that form so important and attractive a feature of the exhibition. Forty-six years ago not more than half a dozen hybrids had flowered, and, so far as we know, none were shown at the international exhibition which was then held, but now there are many hundreds of hybrids possessing merit of the highest order, and a very large proportion of these are represented in competitive and non-competitive collections. The hybrid cypripediums, odontoglossums, odontiodas, lælio-cattleyas, brasso-cattleyas, sophro-cattleyas, and dendrobiums provide us with almost a new race of orchids, and we owe them all to the activities of raisers at home and across the seas. Not less noteworthy in their way are the hybrid nymphæas, which have been raised in the interval of time between the two international exhibitions, and constitute a quite new class of much importance. The lover of hardy water lilies had for some time after 1866 to be satisfied with the white species that is unquestionably one of the most beautiful members of our native flora, but now he has at his command varieties

THE DUKE OF PORTLAND, K.G., G.C.V.O.
President of the Royal International Horticultural Exhibition.

bearing flowers from the purest white to glowing crimson, and differing sufficiently in growth to enable cultivators to select plants that are specially adapted to the pool or lake in which they are to be grown. If we turn from the plants that we owe to the hybridist's art to those whose development has been effected by selective culture for further proof of progress we have not far to seek. As a notable example of evolution by selection and cross-fertilisation the Chinese primula may well be mentioned. In 1866 the varieties of this highly appreciated plant were few, the flowers of medium size, and the range of colours limited, but now there is a wide range of colours in both single and semi-double forms and flowers of immense size and superb form. In addition there are the star primulas in various hues. Not less remarkable is Primula obconica, which, as in the case of the Chinese primrose, has had its flowers increased in size and improved in form, and the range of its colours greatly extended without having been influenced in the process of development by the pollen of other species. Some cultivators have during the past fifteen years claimed to have effected crosses between P. obconica and P. sinensis, and they have been supported in their views by several scientists of repute; but, failing to find the slightest proof of hybridisation between P. obconica and P. sinensis, or indeed, any other primula, we have throughout contended that its improvement is wholly due to selection, and our view is now accepted as the correct one. We find another remarkable example of the possibilities of selective culture in plant improvement in the sweet peas which are so strongly represented at Chelsea. At the time of the 1866 exhibition they were practically non-existent for competitive purposes, and certainly none were then shown. Now they not only form a delightful feature of the present exhibition, but have several societies wholly devoted to them, and are contributed with the utmost liberality to all the summer and autumn exhibitions. If the development of the dahlia during the period under review has not been equal to that of the sweet pea, it is sufficiently noteworthy to justify some reference to the flower. The only sections that obtained attention in 1866 were the show, fancy, and pompon varieties, and not one of these had a place in the international exhibition of that year; but now we have, in addition to the older sections, the cactus, collarette, pæony-flowered and singles; and dahlias have a place in the present exhibition. Great as the progress has been in various directions, it is especially marked by the perpetual-flowering carnations, and their creation may well be regarded as one of the most important events in the progress of floriculture during the past fifty years. Their value for the production of delightful colour effects at exhibitions is proved to demonstration at Chelsea, their value for beautifying the cool plant house throughout the year and the flower garden during the summer is generally acknowledged, and the utility of thei flowers for floral arrangements is indicated by the important industry that has arisen for the purpose of supplying the markets with them. The progress that has been made with hardy flowers of all kinds has been so great during the past half-century as to revolutionise the methods of beautifying the flower garden. In 1866 tender bedding plants were in the ascendant, and occupied so much space in beds and borders that there was very little room for hardy perennials, and, as a matter of fact, few were the gardens in which there was a really good border of them. Now there is hardly a garden in the United Kingdom in which they are not more or less satisfactorily represented. To indicate the remarkable extension in their cultivation, it will suffice to say that at the 1866 exhibition there were two classes for hardy plants, with one entry in each, and that the present exhibition there are 104 classes, with 169 entries. While these flowers have been increasing in popularity, rapid progress has been made in their improvement, as evidenced by the many fine varieties of delphiniums, early-flowering chrysanthemums, irises, Michaelmas daisies, narcissi, pæonies, pentstemons, phloxes, pyrethrums, late-flowering tulips, to mention but a few that have been introduced and placed at the disposal of cultivators. As the result in a large measure of the immense increase in the number of beautiful hardy plants thriving under the most divergent conditions, rock and water gardening has undergone a marvellous development, and in popularity is probably unsurpassed by any other feature of the flower garden. The high degree of perfection to which these two forms of garden adornment has attained, and the great diversity and beauty of the plants available for growing on the ledges and slopes of the rock garden, or luxuriating in the moisture of the bog garden, or converting silent pool or running stream into a garden of great beauty is admirably represented in the exhibition. As with hardy plant culture, so with rose growing, the progress has proceeded with leaps and bounds, and the eighty collections of plants and flowers included in the present exhibition present a striking contrast to the few groups of giant specimens that were shown forty-six years ago. There is not only a difference in the character of the plants shown, but also in the types of flowers, for during the period several classes that are wholly new have been introduced, notably the hybrid teas, the Penzance briars, and the Wichuraiana roses, which are of special interest, as showing that the raisers have constantly kept in view the importance of a vigorous habit and abundant flower production. Much progress has been made with trees and shrubs, more particularly with those grown for the beauty of their flowers. Many of great value have been introduced from China and other parts of the world, while considerable numbers are, as in the case of the rhododendrons, lilacs, and philadelphus, the products of hybridisation and cross-fertilisation. Not less remarkable has been the progress with fruits and vegetables. As evidence of the improvement that has been effected in fruits, it will not be necessary to do more than to direct attention to large numbers of peaches, nectarines, plums, and pears, with which the lists of fruits have been enriched during the past fifty years. The development of fruit culture, both in private gardens and commercial establishments and improvements of methods of procedure have been great, an outstanding feature being the development of commercial establishments for the supply of the markets. Vegetables have shared to the full in the improvement in the garden. All classes have been immensely improved, as the result chiefly of the enterprise of the leading seed firms, and the methods of cultivation and of presenting them to public notice have undergone a marked change for the better. From forty to fifty years ago vegetables were so indifferently shown as to contribute but little to the attractions of an exhibition, but now, as so well exemplified at Chelsea, they are staged in a manner that obtains for them a full share of attention. It has not been possible to do more than briefly refer to a few of the more prominent occupants of the garden as evidence of progress, but sufficient has been said to show that during the past forty-six years there have been immense advances in all branches of horticulture—advances that have greatly added to the charm, interest, and usefulness of the garden, which now forms so essential a part of the life of this country.

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**The Duke of Portland, K.G., G.C.V.O.,** whose portrait we have the pleasure of giving herewith, is so generous a supporter of movements that have for their object the advancement of horticulture, and, moreover, takes so keen an interest in all that relates to the garden, that it is only fitting he should be the president of the Royal International Horticultural Exhibition that is now being held at Chelsea. We have ample proof of the great interest which the Duke of Portland takes in horticulture in the immense improvements that have been effected in the gardens of Welbeck Abbey, since he succeeded to the title and estates. The glass structures have been remodelled to bring them in line with modern ideas and requirements, and the extensive pleasure grounds which have long been regarded as an important part of the environment of the famous abbey, have had their interest and attractions increased at least a hundredfold. Roses in their various classes and methods of training contribute their full share to the beauty of the grounds, and the magnificent borders of herbaceous plants have no equals in this country. These were illustrated and described in the GARDENERS' MAGAZINE of June 11, 1910, and it was therein mentioned that the Duchess of Portland, who possesses a wide knowledge of hardy flowers and taste of the highest order, had taken a leading part in the designing and arrangement of these wonderful borders. That a nobleman who fully appreciates the responsibility of his high position should take an active part in the promotion of horticulture, in the district of which Welbeck Abbey is the centre, goes without saying, but it should be mentioned that when the National Vegetable Society was formed, the Duke of Portland accepted the position of president, and thereby, conjointly with generous financial support, has contributed in no small degree to the success which that useful organisation has achieved.

**Hybridisation of Œnotheras.**—In commencing his second course of lectures on "Genetics" at the Royal Institution, Mr. W. Bateson, F.R.S., dealt with the results of recent investigations in the hybridisation of plants, more particularly with those obtained by De Vries, in the course of his experiments with evening primroses. Mr. Bateson said that the common Evening Primrose (Œ. Lamarckiana), with its bewildering varieties, many of which have all the outward appearance of true species, is probably a hybrid between some species not yet ascertained. It is not found in a wild state anywhere, and its introduction to Europe is unknown. He stated the theory held by De Vries that the difference between species is not a mere difference between aggregations of units, but that, beyond the qualities of the component units, there is a distinctive character attaching to them in combination; and he explained the discovery of the same investigator that though varieties, when crossed, produce segregation, the crossing of species results in a definite form, which form subsequently breeds true. De Vries also found a constant influence of sex characters in cross-breeding. Thus, taking the two species of Œnothera—namely, Œ. muricata (M) and Œ. biennis (B), he said that if the female M be fertilised by the male B, the result is a form (MB) which is clearly distinguishable from the form (BM) produced by crossing the female B with the male M. If these be crossed again, the female MB with the male BM, the result is all M (or muricata) again. If, on the other hand, the male MB be crossed with the female BM, the result is pure B (or biennis). A few years ago, Mr. Bateson observed, this would have seemed to us pure mystery, but we now know that the male and female germ-cells contain different factors. Not only is this the case where the male and female are separate organisms, but we can see in hermaphrodite plants that the male and female cells carry different characters. The lecturer explained this by the examples of petunias and stocks, and showed why the latter bred only from single plants, while in the former the double plants also made pollen, which was employed in fertilisation to produce double plants in the next generation. He considered this an extremely important field of investigation.

**Proposed Honour to a Great Gardener.**—A committee has been formed in France for the purpose of erecting a statue to Le Nôtre, who obtained much fame as the designer of the Versailles gardens. Le Nôtre's father and grandfather were both gardeners of distinction, but he was trained to be a painter, and only took up the profession of his ancestors when convinced by a philosophic friend that Nature's irregularities were to be overcome. On taking up his father's position in 1637 as gardener at the Tuileries, Le Nôtre stated that his choice was due to the fact "that gardening gives exactly the same opportunities as painting." He made rapid progress in his new profession, and at the age of twenty-seven received the appointment of Designer-in-Chief of gardens to the King. He designed many great gardens in France, but his greatest achievement was the creation of the gardens at Versailles. In perpetuating the memory of Le Nôtre, the horticulturists of France are doing honour to a great gardener and evincing judgment of a high order.

**Distribution of Oxydases in Primulas.**—In a paper contributed by Dr. F. Keeble and Dr. E. F. Armstrong to a recent meeting of the Royal Society on the distribution of oxydases in the plant and their rôle in the formation of pigment, it was suggested that the methods of investigation in general use do not admit of the determination in detail of the distribution of oxydases in the tissues of plants and animals. Hence the hypothesis that pigments are produced by the action of oxydases in colourless chromogens, though rendered probable by recent researches, cannot, in the opinion of the authors, be regarded as established. Methods are now described which allow of the macroscopic and microscopic recognition of plant oxydases. By the application of these methods it is shown that in the Chinese primrose (Primula sinensis) the distribution of oxydases in the tissues coincides with that of the pigments of the flower and other parts of the plant. Thus, the hypothesis with respect to the rôle of oxydases in pigment-formation receives confirmation. It is proved that P. sinensis contains two peroxydases, which differ from one another in their chemical reactions and in their localisation. It is proved definitely that dominant white flowers contain a substance which inhibits, but does not destroy, peroxydase. Experiments with recessive white flowers, the genetical behaviour of which indicates that they lack either peroxydase or chromogen, show that they contain peroxydase. Inasmuch as recessive whites contain no inhibitor of oxydase, failure to form pigment is to be attributed to lack of chromogen. The distribution of peroxydases in P. sinensis is to be regarded as typical of that in flowering plants generally, and the method appears to be capable of wide application in the study of the distribution of oxydases.

**Gardening in the Seventeenth Century.**—A northern contemporary reminds us that La Quintinie, the celebrated gardener to Louis XIV., "did all that is accomplished to-day. During the month of December, 1669, he produced asparagus for the table of the King. In the following January, he had raised red radishes and lettuce, in March cauliflowers, peas in May, and melons by the end of June, so the table of the French King nearly two centuries and a-half ago could compare favourably with the Royal tables of to-day." Yes; but what about our forced strawberries, roses, and carnations at Christmas, peas in April, and French beans still earlier. There are other things, also, to prove that gardening has advanced materially since 1669, but they are so obvious to those with open eyes and a knowledge of the past, that there is no need to particularise.

**Australian Fruit Export Trade.**—The export of fruit from the Australian Colonies continues to increase, but there have been so many complaints with regard to the financial results that the Commonwealth Government have appointed a Royal Commission to enquire into the present position, and the prospects of the export trade in fruit. The Commission consists of seven members, and the Federal Minister for Customs has very plainly stated that there is to be no trip to this country in connection with the investigations, and that the evidence to be taken here will be on commission. There is no difficulty in understanding the disappointment of the growers when they send consignments to this country, and receive returns showing a loss on the transaction, and the cause of the loss is readily understood by those who are acquainted with market conditions. On more than one occasion the supplies have been in excess of market requirements, and a considerable quantity of fruit has come to hand in a rather poor condition. For apples of high quality there is invariably a good demand, especially during the London season, and Western Australian growers who have been careful to market suitable fruit in the best possible condition have obtained satisfactory returns.

**Dwarf Forest of Southern California.**—Among the sclerophyllous woodlands recognised by Dr. Schimper as a feature of those regions situated in the warm temperate zone where the rainfall coincides with winter is the chaparral, or dwarf forest of southern California. An account of this formation by Mr. F. G. Plummer, indicates, we learn from "Nature," that it is a truly natural type, occurring between the altitudes of sea-level and 8,000 feet, and confined to the littoral district from Monterey to San Diego. True chaparral consists primarily of dwarf trees—not shrubs—stunted by reason of an insufficient rainfall. It is economically important as a ground cover for the watershed whence the water supply is obtained for irrigation and municipal purposes. About forty different species of trees are combined in the formation; the most desirable are those which produce good shade, are not inflammable and make vigorous growth, such as Rhus laurina, Prunus ilicifolia, Heteromeles arbutifolia, and species of Quercus; less desirable, but dominant are species of Adenosteoma and Ceanothus.

## ATTRACTIVE FLOWER BEDS.

In some gardens the same kinds of plants are put out in the same positions year after year, and with good effect, too. For a period of more than ten years I had to bed out about thirty thousand plants every year, a large percentage of them occupying the same positions year after year, as it was my employer's wish. But I was free to fill many beds as I thought best, and in their case fresh arrangements were made every year.

For the benefit of those readers who are inexperienced in the filling of flower beds, I will give a few hints on the subject.

Sweet-scented beds are generally much appreciated in a garden, and more so when plants with fragrant foliage are associated with sweet-scented flowers. For a large bed the following are suitable, namely: Jasmine officinale, scented-leaved geraniums, Eucalyptus globulus, heliotrope, Nicotiana affinis, scented-leaved verbenas (Lippia citriodora), liliums, and clove carnations. The plants should be of various sizes, some 3ft. high, and not be overcrowded. A distinct bordering is not needed, the carnations should be planted in groups nearest the edge of the bed, and a few seeds of mignonette be also sown there. Such a bed will be a great source of pleasure throughout the season. Small plants of the scented verbena put in rather close together, and the shoots pegged down so as to form a dense carpet six inches high, or at most eight inches high, with dot plants of heliotropium 3ft. apart all over the bed, will prove very attractive. The verbena may be cut back several times during the summer, when its young shoots will be very pleasing to the eye. The heliotrope plants should be about 2ft. in height, and those in the centre of the bed a few inches higher. Another effective bed is one planted with Lilium melpomene, rubrum, and album; Nicotiana affinis, Zea japonica, the caster-oil plant, Eucalyptus globulus, and Plumbago capensis. If the bed be a large one, a bordering of Perilla nankinensis would look well. Celosias and Lilium album and L. melpomene form a beautiful combination.

Fuchsia President Grevy, with a groundwork of blue violas, produces a charming effect. The fuchsias should be half-standards or neat pyramids. Viola Blue Bell as a groundwork, with ivy-leaved pelargonium Madame Crousse is very pleasing, as also is a combination of Fuchsia Mrs. Marshall and Madame de Bussey heliotropium. Fuchsia fulgens on a groundwork of Coleus Verschaffelti. These three combinations, respectively, are highly effective

A pleasing effect in a border may be obtained by filling it with Zonal pelargonium King of Denmark, give plants a distance of 2ft. apart, with mignonette, and just a few plants of the night-scented stock (Mathiola bicornis) to fill up. The seeds of the mignonette and stock should be sown on the surface of the soil, and then lightly raked in, after the pelargoniums are planted.

In some gardens there are large imitation baskets, about 9ft. long and 3ft. wide, with handles of ivy four feet high. The ivy is trained over an iron rod. If the ivy is well established it must be cut before any plants are put in. The bed should be raised 2ft. high, with three bands of stones to retain the soil in position. The centre may be planted with Zonal pelargonium Henry Jacoby, then comes a band of Centaurea candidissima, and an outer one of gazanias. I feel sure that those who have once tried this combination of plants will wish to have it many years in succession. G. B.

## ARUNDO CONSPICUA.

The New Zealand Reed (Arundo conspicua) is one of the most graceful of all the grasses, bearing slender, arching, plume-tipped shafts ten or twelve feet in length when planted in deep soil. By those whose knowledge of gardening lore is limited, it is usually styled Pampas Grass, but the true Pampas Grass (Cortaderia argentea) bears erect and not arching shafts, and lacks the delicate grace of Arundo conspicua, whose bending plumes spread outward far beyond the furthest limits of its narrow, drooping leafage. The New Zealand Reed attains its fullest beauty about the close of July, whereas the Pampas Grass is not at its best until October and November, so that in northern gardens its beauty is often destroyed by wintry storms almost before it flowers.

ARUNDO CONSPICUA.
A handsome species, with large feathery plumes.

Arundo conspicua is not so hardy as the Pampas Grass, and in very cold districts may be killed in the winter, but a clump has withstood 20 degrees of frost uninjured, though growing in deep, retentive loam of a clayey nature, and in close proximity to water, which has, on one occasion, during a prolonged autumnal downpour, covered its roots to a depth of two feet. This grass suits any position where the Pampas is admissable, and in selecting a place for it, it should be remembered that it is quite as stately in character as the Pampas Grass. It should not be crowded. The best place for it is an isolated position on the grass, where it will at all times present a handsome appearance. For planting in masses, in open spaces, on the margins of woods or drives, especially when viewed at some distance, this fine plant is very effective, and it is equally eligible for planting by the margins of streams, to which it would give character.

We are rather neglectful of really good and distinct ornamental grasses. Even those most graceful of all grassy shrubs, the bamboos, are not planted so largely as they should be. So it is with the eulalias or miscanthus, graceful Japanese grasses, of which there are green, barred and striped forms, all hardy, all graceful, all beautiful. The Siberian Melic Grass, again, is a noble plant, stately and fine in colour during the late autumn months, but as yet rarely seen in the best of gardens. The same may be said of the Pheasant's-tail Grass (Apera arundinacea), one of the best of all grasses for cutting, but it requires a warm, sandy border, or a sheltered position. Arundo conspicua is slow in making growth, and when small plants are put in they take six or seven years to form specimens in the proper sense of the word, and plants some years in age should be obtained. In cold districts it is a valuable plant for growing in boxes or tubs, so that the specimens can be sheltered in the winter. It was introduced into this country in 1843.

Wyndham Fitzherbert.

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**Kennedya coccinea.**—This is a pretty leguminous climbing plant of a woody character, native of Australia. Compared with such species as Kennedya Marryattæ, K. rubicunda, or K. nigricans, it is of slender growth. The flowers, which are borne in compact rounded heads, are coloured scarlet, with a magenta suffusion in the centre. It blooms usually during late spring and summer. As a rafter plant for a small structure or twining around a few sticks, it is very pleasing.—T.

## PRUNUS SUB-HIRTELLA.

One of the finest species amongst small-flowering trees that bloom early in spring at Kew, is this Japanese cherry. Examples are to be seen in several parts of the gardens, but the largest and best-flowered specimen stands on the Pagoda Vista between the Palm House and Temperate House. It is there represented by a tree 15ft. or so in height, with a large rounded head, every branch of which is clothed with white rose-tinted flowers, each one being about three-quarters of an inch across. P. sub-hirtella is a comparatively new tree in this country, for it is less than twenty years ago that its cultivation was commenced, although it had been known before from descriptions and herbarium specimens. One glance at the specimen referred to is sufficient to reveal its value as an ornamental tree, and it might well be allowed to take the place of Prunus cerasifera var. atropurpurea (P. Pissardi), which is becoming too common in some places, more particularly in small suburban gardens. As is the case with other single-flowered kinds, the flowering season is rather restricted, for the flowers are rarely in good condition for more than a fortnight. Cuttings root more easily than those of many species of prunus, therefore it is an easy tree to increase.

W. D.

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## VALUE OF SHADE.

The month of April was particularly sunny for the time of year, and unless precautions were taken to have plants under glass shaded from its direct rays, much harm was probably done. Small, tender seedlings specially needed shade after the sunless March we experienced, as their foliage was very soft. Often, however, shading unless done with care, is harmful, for, if overdone, it causes the plants to be drawn up weakly, and when this happens it is seldom they give satisfaction afterwards. The time for shading must depend on the position of the glass structures and the kind of plants grown in them.

Fruit houses, as a rule, do not need shading, though sometimes in the case where the trees were recently planted a little shade from the direct sun in the middle of the day would do no harm. It is, however, the more tender subjects that need care. More especially those that had been recently pricked out or potted, as such are more liable to suffer than those that are well established. Shade is beneficial in several ways, for it not only prevents evaporation, and thus saves a great amount of watering, but it prevents a too great range of temperature; for, no matter how much ventilation is given when the sun is bright, even if the atmosphere is saturated with moisture the temperature rises abnormally.

The density of shade should be in accordance with the class of plants under cultivation. Fixed shading is often very injurious, for when we get a spell of wet, sunless weather, the temperature sometimes falls too low, and unless fire-heat be applied to expel the damp the plants suffer accordingly. In most cases it is not advisable to shade unless the sun is shining brightly, but where a permanent shade is employed this cannot be regulated, and, in my opinion, should not be used unless in places where it is difficult to shade otherwise, or on houses whose occupants require to be always shaded, such as some palms and ferns.

Many plants when in bloom will retain their freshness much longer if kept shaded from the sun, but are liable to damp off when this is carried to an excess. H. C. P.

# *The* ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION

A·D 1912

**In the GROUNDS of the ROYAL HOSPITAL, CHELSEA, *May 22nd to May 30th, 1912.***

## AN ILLUSTRATED AND DESCRIPTIVE ACCOUNT.

The great exhibition to which we have all been looking forward for so many years, an exhibition to demonstrate our high position in the realm of horticulture and to mark our progress in the art, science, and practice of the most ancient of professions, has at last come into being. The first questions asked are, "Is it a success?" "Does it demonstrate all we desire it to?" "Are we satisfied with the whole affair?" To the first question the answer is an emphatic yes, judged purely from an horticultural standpoint; the financial question must remain unanswered for a few days. To the second and third questions the affirmative answer is not so emphatic, for, after all, there is nothing with which we can compare this monster display, and any disappointments felt serve the useful purpose of subduing our insular pride and pointing to the possibility of higher achievements. Some of the exhibits were quite commonplace, but the great majority gave ample evidence of months, and even years, of forethought. To all who have done anything towards the success of this great undertaking we tender our heartiest congratulations; mistakes almost always occur when great things are attempted, and in this instance they have been chiefly those that result from lack of experience and a want of a full appreciation of the greatness of the undertaking. In other words, we must not wait for fifty years ere we hold another giant horticultural exhibition.

The immensity of the exhibition is the one thing that quickly forced itself upon the mind and body of every spectator during the opening days of the show. We have a show that is great in more senses than one. Even our Continental neighbours, used to big horticultural events, have lavished unstinted praise upon the array of rock and water gardens, the wonderful development among greenhouse flowers, the size and variety of our carnations and sweet peas, the skilful cultivation of our roses and stove foliage plants, the gracefulness of our ferns, and the gorgeousness of our orchids. We have enjoyed their praise, and in our heart of hearts felt it was well deserved.

THE KING'S CUP

For the most meritorious contribution to the Exhibition.

Won by Sir GEORGE HOLFORD, K.C.V.O., C.I.E.

Entering from the main gates on the Embankment at Chelsea, the immediate effect was not so fine as it might have been. To the left a delightful garden of gay annuals, backed by graceful treillage, in the centre, round the Chilianwallah Monument, a glorious hill of colour, created by cinerarias, begonias, etc.; and in the distance a long array of brilliant groups of annuals and the brightest of greenhouse plants, marked where Messrs. Carter, Sutton, and Webb had respectively staked out their claims. Immediately to the left the end of a wonderful bank of ferns came into view, and then the eye travelled along the rather sombre greenery of huge specimens of scented pelargoniums from Gunnersbury House, above which one caught glimpses of oranges and peaches, ripe and glowing on the trees. Turning to the left the wonderful pergola of fruiting vines, with flanking orchards of peaches, nectarines, figs, cherries, and other luscious fruits, from Mr. Leopold de Rothschild's Gunnersbury House Garden, arrested attention. Passing on through this, high banks of graceful ferns came into view, with Laxton's strawberry garden hard by, and tempting one to stay. We see roses in exquisite grace and beauty father afield, but we pass onwards to where the Messrs. Veitch, of Chelsea, have set out an array of plants newly introduced from China; but even this does not arrest attention like the magnificent 2,000ft. group of superbly-grown ornamental stove plants set out in bold and striking fashion by the same Chelsea firm. Leaving this wonderful array of form and colour in leafage, we proceed at once to the mollis and Ghent azaleas, a riot of oriental colouring, arranged by the Messrs. Cuthbert, of Southgate, and then turn to the softer hues of the huge rhododendron garden, in the making of which many firms have contributed of their best. More roses appear, with here and there a little garden of well-cropped fruit trees, that bring us to the end of the great tent.

Now we turn about, but first we notice Messrs. Barr's long herbaceous border along the northern end, this joining on to the roses from Messrs. Frank Cant and Co. Now we traverse the longest side of the great tent, passing between large banks of roses and carnations from the Messrs. Cutbush, passing a wealth of clematis from Woking, and a brilliant bed of crotons from Sheffield. Away to the left banks of zonal pelargoniums from Lewisham, etc., blaze out quite fiercely, and it eases one's eyes to turn from their brilliance to the central fountain where the falling water produces a delightfully cooling effect.

Onward again, and we are in a great garden of roses, where the Paul's and the Cant's and Hobbies and others have surpassed themselves and provided a scene of sweet beauty and fragrance. Around the roses, carnations have been grouped by noted growers. Then we come to the splendid statuary group that personifies the beauty and lavishness of Gardening—and all the figures are of feminine beauty, and the grace of childhood—the artist had evidently cast out the gardener Adam from his conception of an horticultural paradise. A fine setting for this notable group was found by the belt of choice trees and shrubs, along the end of the tent arranged by Messrs. Fisher, Son and Sibray, and by the finest group of ferns that ever Messrs. H. B. May and Sons have set up.

Now we hark back across the road by the main entrance to where a long tent of enormous dimensions houses a bewildering array of hardy flowers, chiefly cut blooms. The colouring is dazzling, but the fragrance of the carnations and the scent of glorious sweet peas, set up by such leading lights as Messrs. Dobbie, Breadmore, Sydenham, E. W. King, etc., is delightful. From this tent lovers of hardy plants have some difficulty in tearing themselves from the triumphs its contains.

Turn we now aside, and peep in to the Dutch section, where the Netherlands Horticultural Federation has brought together a beautiful display of azaleas, great sheaves of lilac, and regiments of eremuri, and broad breadths of astilbes. Hard by is the Belgian section, where early fruits and vegetables have been set out, but somehow or other our Belgian friends have not scored such a triumph as their neighbours of Holland, or of France. The latter happy country has a gay section, where we would fain linger to inspect the mounds of annual flowers, the gerberas, the beds of new roses from Pernet-Ducher and other celebrities, and the wonderful flower paintings by Marguerite Fruchart. Behind the foreign sections yet another big tent, filled to overflowing with hardy flowers in competitive classes—a tent that many will miss altogether if they are not careful. Down this we pass, and out into the open, and then turn along the north end of the great tent until we reach the entrance to a big marquee where Messrs. Langdon and Blackmore and the Messrs. Ware have some glorious begonias on view, and where the choicest vegetables from Welbeck and Aldenham and Chelsea—to mention but three of the exhibitors—vie in effectiveness with the choicest of fruits spread out, in all too tempting a fashion, by the cleverest of cultivators. Back again a little, and crossing over we come to a broad and shorter tent, where Sir Eric Hambro and others have staged the choicest of alpines, and where new pæonies and azaleas hob-nob with the newest of carnations from the leading growers.

Passing out of and round this tent, we enter another of large size where have been gathered together an unsurpassed collection of orchids that would not be dear at £250,000. Was there ever such a gorgeous and beautiful scene? Never. Sir George Holford, Sir Jeremiah Colman, Mr. Leopold de Rothschild, Mr. F. W. Moore, and the Messrs. Charlesworth and Co., Sander and Son, S. Low and Co., Mansell and Hatcher, Armstrong and Brown, J. Cypher and Sons, and many others whose names are found in our notes on this section, have contributed lavishly of their best to the show. Orchids and amaryllis alone filled this great tent with a grace of form and richness of colouring that will remain long in the memory of all privileged to see it, but which beggars description.

By the time one has finished an inspection of the orchids, a fair idea of the extent, value, and importance of this International Show will have been obtained. Already we have seen more than a Temple Show, a Shrewsbury Fête, and a Ghent Quinquennial rolled into one, and yet only about half of the undertaking, the larger half, certainly, has come under notice. It is a serious business, this great show. And now, passing down the lime avenue, with its kiosks, and its array of garden furniture, we come to the Tudor garden so ably and finely designed and constructed by Messrs. J. Cheal and Son, and pass on to inspect rock gardens carried into effect by Messrs. T. S. Ware, Messrs. Baker's, Messrs. Kent and Brydon, and Messrs. Jackman and Co., and then pass into the wonderful Japanese garden, which rumour says has cost Messrs. Carter and Co. nearly £2,000 to bring into being during the last four or five weeks. In this lower end of the Ranelagh grounds the designers of rock and alpine gardens have surpassed themselves, and have taken full advantage of the splendid opportunities the sites have afforded. We need not particularise here, because the visitor cannot miss and will not want to hastily pass over the effective and beautiful gardens so splendidly arranged by Messrs. Pulham and Son, Whitelegg and Page, A. Hemsley, M. Prichard, Wm. Cutbush and Son, Backhouse and Son etc., while by general consent the palm for rock and water gardening in these acres of gardens is accorded to the finely conceived and admirably executed design by Messrs. R. Wallace and Co. Unquestionably the rock and water gardens make this great show altogether distinct from any other horticultural function hitherto held—the section is a great triumph for our nurserymen.

What else? Topiary work, in abundance, from Cutbush and Piper, gardens of trained fruit trees from J. Veitch and Sons and the Laxton Brothers, giant bays, Canada's contribution of fruits, Japan's exhibit, a whole host of horticultural tools, furniture, and other things comprehensively called "sundries," these forming a ring of exhibits, right round the Ranelagh grounds, and lastly, but not least, the exhibits of great value and interest brought together by the Science and Education Committee, arranged near the East Gate, through which we

A CHARMING ROCK AND WATER GARDEN.
Arranged by Messrs. T. S. Ware, Lim., Feltham.

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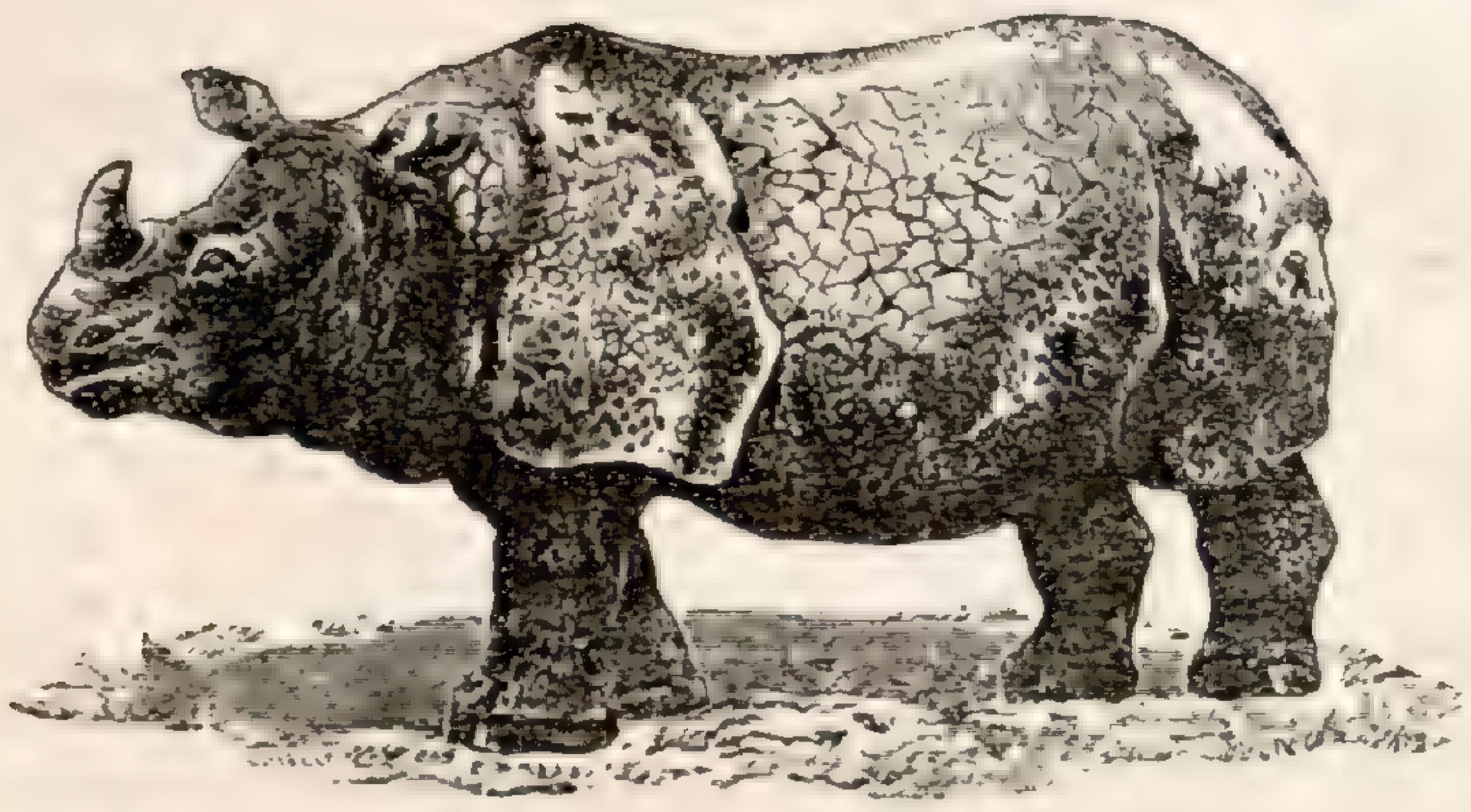

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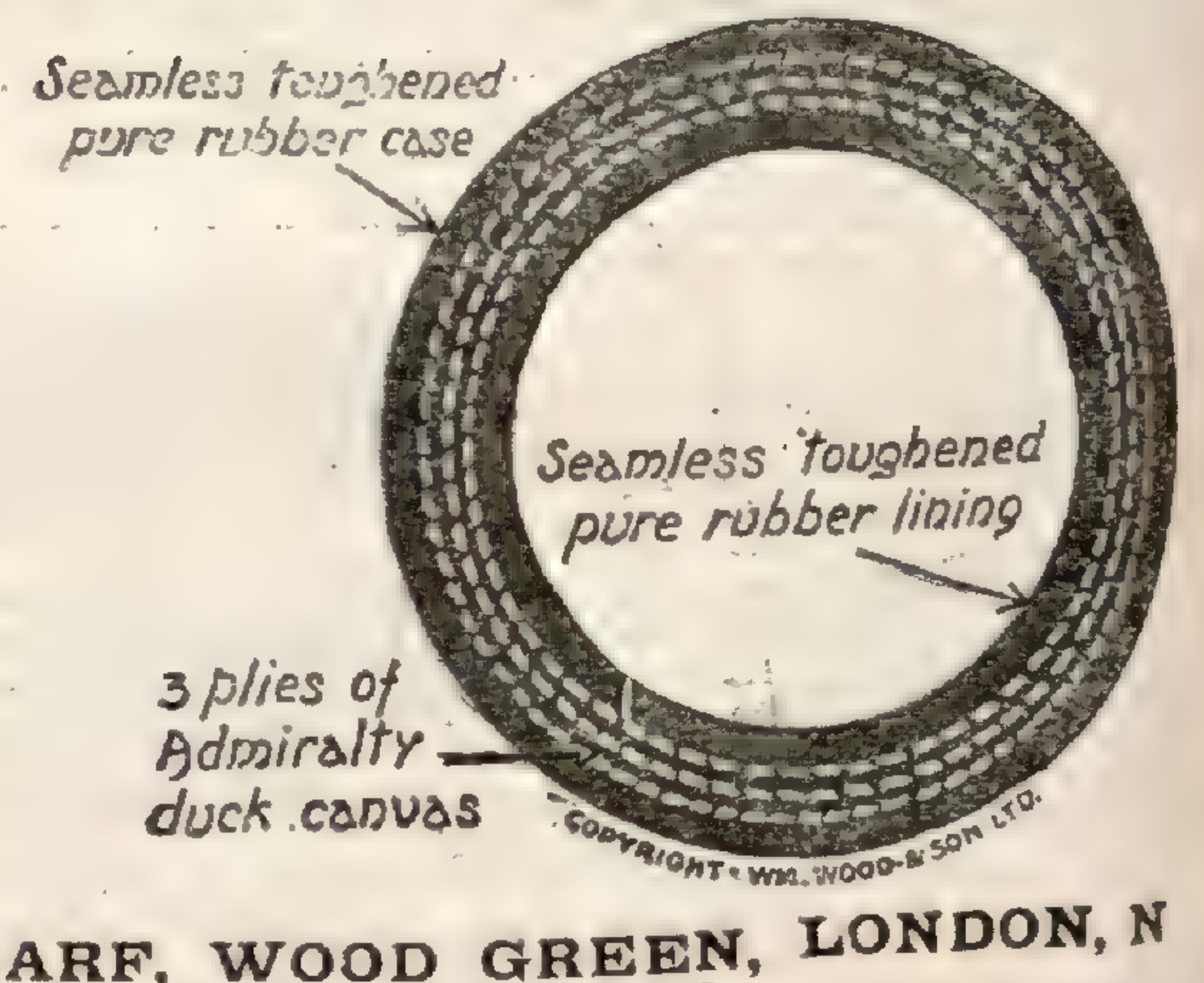
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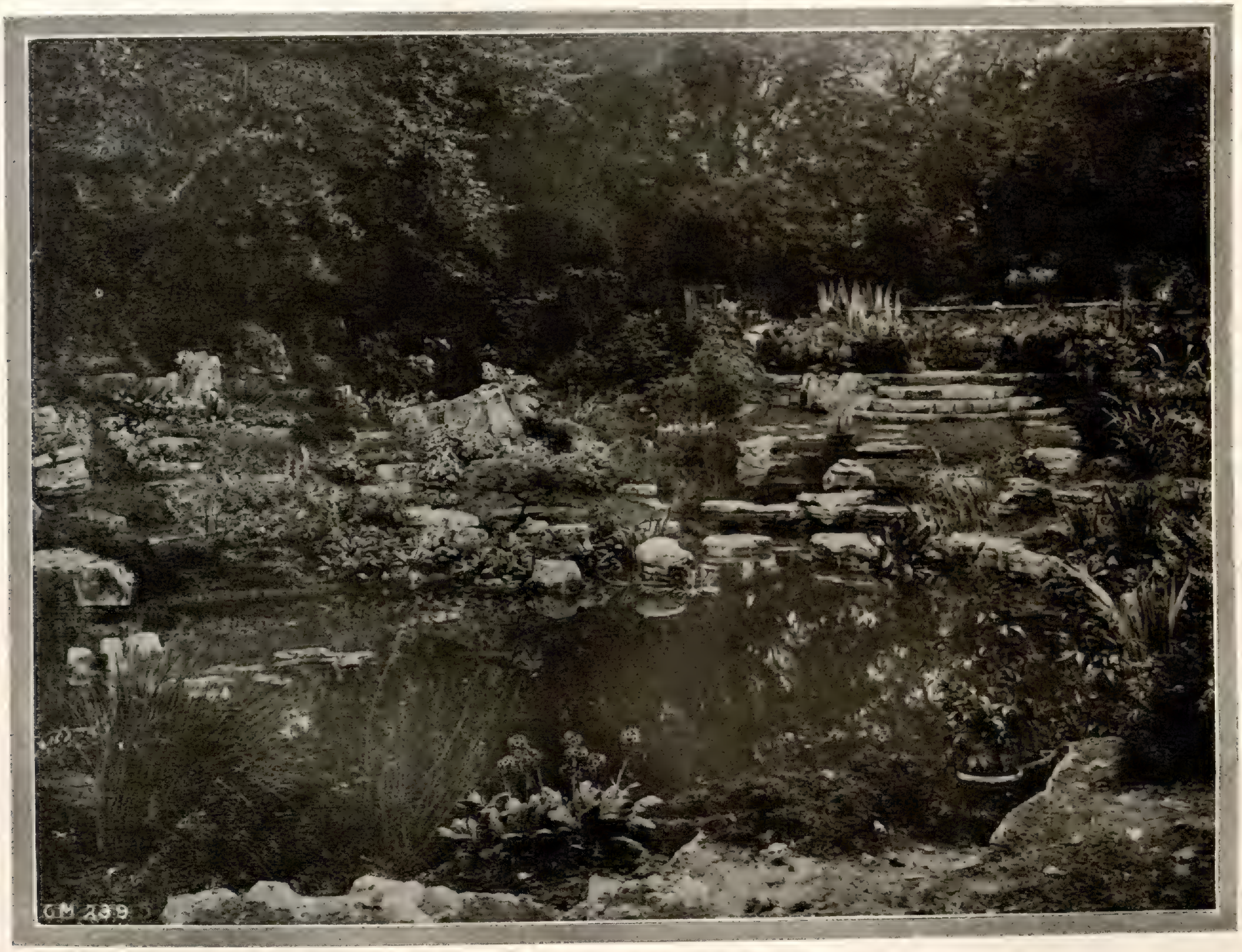
presently pass, fully convinced that if we are a nation of shopkeepers, we are also a great nation of garden lovers, and we can stand comparison with any of our neighbours on the broad matter of horticulture.

Such is a brief and very imperfect, general impression of the show. Below we deal with the various sections, and in our next issue we propose to discuss the novelties and sundries. We ask for the kindly consideration of our friends, because in such a gigantic exhibition it is quite impossible to mention every exhibit or every exhibitor, and quite possible to inadvertently omit reference to some good friend or fine exhibit. Anyhow, we have done our best.

The King and Queen visited the exhibition between eleven and twelve o'clock in the forenoon of the opening day. They were accompanied by a considerable party, including their Royal Highnesses Princess Christian, Princess Mary Louise, Princess Victoria of Schleswig-Holstein, and the Duke and Duchess of Somerset and the Right Hon. Walter Runciman. Their Majesties were received by the Duke of Portland, president; the Board of Directors, Sir T. Lawrence, Bart., Lieut.-Col. Sir G. Holford, and at once proceeded to make a tour through the exhibition. They, with the Royal party, spent a considerable time in the exhibition in examining the many objects of interest, and on leaving His Majesty expressed his satisfaction with the scope and excellence of the exhibition.



A BEAUTIFUL ROCK AND WATER GARDEN.
Arranged by Messrs. R. Wallace and Co., Colchester.

### ROCK AND WATER GARDENS.

Probably in no part of the great show at Chelsea is the difference between 1866 and 1912 more marked than in the Ranelagh Gardens, where rock and water gardens are constructed on a scale that would be in keeping with a ducal estate, on the one hand, or a modest private garden on the other. These particular styles of gardening had not achieved the popularity that now attends them when the previous international show was held. It is not too much to say that, as a section of the show, this was the most popular of all, chiefly because of the variety of design, utter lack of sameness, excellence of construction, and the wondrous grace, beauty, and brightness of the plants utilised. A natural or tasteful combination of rock and water is always attractive, and when myriads of plants add their charm to the scene, then "the art that doth mend nature" is seen at its best.

Turning away from the south end of the shady avenue of pollard limes, one saw a stream of water tumbling down a cascade into a miniature pool below in which were aquatic plants of different kinds, looking as natural as if they had been growing there for years. This was the rock garden arranged by Messrs. T. S. Ware, Lim., of Feltham, and the effort was in every way creditable to the firm. Though the chief feature was the waterfall, the arrangement of stone steps, and winding paved ways was a happy one, and the various plants of the alpine section looked quite at home in the temporary crevices prepared for them.

The rock garden arranged by Messrs. Baker's, of Wolverhampton, can best be described as bold. Large rugged stones were used to form the background, and the ferns growing by the water that trickled down a channel prepared for it, presented a cool and extremely natural appearance. Round the edges of an ornamental pool were growing clumps of irises, primulas, and other plants, while the patches of alpine phloxes, iberises, brooms, etc., arranged amongst the stones helped to complete what was an artistic idea very well carried out.

There was an old and weathered look about the stones that were used in the formation of the rock garden arranged by Messrs. Kent and Brydon, Darlington. This rather added to the effect of the scheme, and gave the rockery an extremely natural look. Dwarf shrubs were dotted about along with acers, and the visitors were able to closely inspect the alpines growing in the crevices from the winding paths that ran in and out amongst the stones. This garden was in no way overdone, and not the least pleasing bit of it was a quaint little crevice filled with hardy ferns.

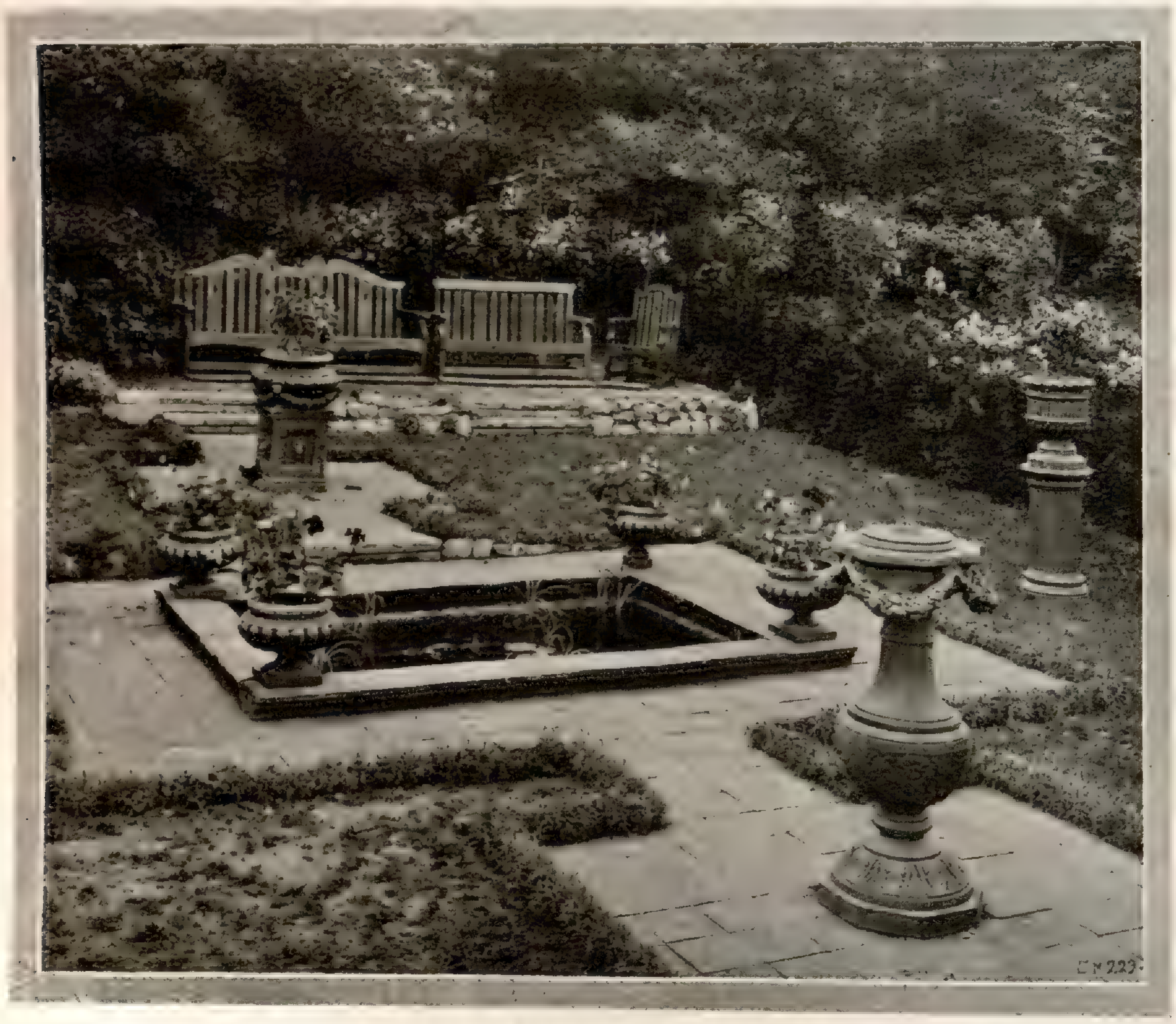
There was something distinctly unique about the formal garden arranged by Mr. A. Hemsley, of Crawley. At the back was a low terrace wall with teakwood seats behind, and from this terrace two steps led down to a plot of grass, in the centre of which was a square water basin, furnished with aquatics, and a tiled pathway all round. Pedestals with vases on the top added to the ornamentation, and the sundial was just in the position where one would expect to find it in such a garden. Near at hand the same exhibitor had an arrangement of rockwork and water that was effective in point of design, but the new stone used looked somewhat glaring, and, if anything, there was rather too much of it. Many interesting rock plants filled the crevices, the bright colours of which were much admired.

A quaint looking cavern, built with immense stones, in the crevices of which grew ferns and echeverias, was the central feature in a rockery arrangement set up by Messrs. Piper, Bayswater. Under the roof of the cavern, and in front of it was a rock surrounded and very natural-looking pool, the bottom of which was a bed of water-washed pebbles. A beautiful white wistaria drooped over the water and in between the stones were golden-yellow lilies, sky-blue aquilegias, and Azalea rosæflora. A bold promontory above the cavern was charmingly furnished, and the stone steps ascending this added much to the effectiveness.

Acers and evergreen shrubs were freely used in the rockery arranged by the Guildford

Hardy Plant Company, but there was no want of colour, and many gems of the rock plant family were seen nestling in the crevices between the stones, which were not employed extravagantly. There were shallow pools of water, winding stone-paved pathways, and a pretty little cavern, the inside of which was furnished with fresh-looking ferns.

Graceful bamboos clothed the grass banks which formed a pleasing continuation of the rock and water garden, arranged by Mr. M. Prichard, Christchurch, Hants. A big bed of the beautiful blue Anchusa Opal was a feature in itself, and arranged on the sloping bank it looked very effective. As for the rock garden proper this was a pleasing arrangement of miniature pools, paved pathways, and rough stone steps ascending grassy banks. The pretty alpines and other plants arranged mostly in groups set themselves off to advantage, and we were much impressed by the deep crimson colour of a dianthus called Napoleon III., the blue of Iris orientalis sanguinea, and the white, upstanding spikes of Saxifraga pyramidalis. Not the least pretty feature of this exhibit was a miniature rock-surrounded pool furnished with water lilies in flower, and sedges.



A TYPICAL FORMAL GARDEN.
Tastefully arranged by Mr. A. H. Hemsley, Crawley.

Messrs. Pulham, Newman Street, W., followed out their well-known style in their arrangement of rock, water, and turf. The garden makers took advantage of the position accorded to them, and the big pieces of reddish-brown stone, from close to Sandringham, that the firm uses so largely, were so arranged as to give the impression that they were protruding here and there in a perfectly natural manner out of the ground. There were ingeniously arranged caverns, furnished with hardy ferns, and flowers and foliage plants were very judiciously blended. On the right of the rock garden there was another very distinct feature in the shape of a very substantial-looking stone and timber-built summer-house on a terrace of stone pavement. Steps led down from the front of the summer-house with a continuation of paved walk into the road. As one looked at this fine display of garden art one could not help thinking that this rockery might be left as a permanent feature. Nearly 100 tons of stone were used, and the water was used again and again during the exhibition by means of a petrol pumping engine.

In the arrangement of rock and alpines set up by Mr. C. Elliott, of Stevenage, one was reminded of the Temple Show, as the rockery was accommodated on tabling and cocoa-fibre was freely employed. The masses of pretty alpines in between the stones, however, showed themselves up very conspicuously.

In one secluded corner, there was a rockery arrangement set out by Messrs. Thompson and Charman, Bushey, Herts. A little pool in the centre with a paved walk round it, was ingeniously devised, but the whole effect of the garden would have been more pleasing if the background had been raised rather more.

There is no doubt that one of the finest efforts in the whole of this magnificent exhibition was that made by Messrs. Wallace and Co., Colchester. The position was unique, and the firm is to be commended for taking every advantage of it. As one stood and looked at this beautiful arrangement of water, rock, and flowers, it was difficult to believe that the whole thing was the growth of but a week or two, so natural and permanent did it look. Standing at the edge of a pool in front one looked on another pool just above, beyond that a flight of circular stone steps, leading to a formal garden, backed by a low terrace wall. The beauty of the whole idea seemed to be that there was a variety of perfectly distinct features, and each one of them was ingeniously hidden until you came almost unexpectedly upon it. From the entrance of the garden at the front one passed round the pools by a paved pathway and admired, as one went, clumps of bright-looking primulas growing by the water and the graceful flowers of white and violet wistarias, hanging over the same. Looking across the second of the pools one peeped into a perfectly natural-looking cavern, from the roof of which there dripped water into the basin underneath, and the ferns growing in between the stones had a delightfully fresh appearance. Passing on up the circular flight of steps into the paved garden with its green grass plot, its box hedge on the top of the terrace wall, and its fountain and basin in the centre, one observed a great array of German irises in bewildering variety, furnishing the surrounding borders, with lines of sweet-smelling cat mint and a host of other flowers. Past a group of Japanese maples and shrubs at the base of the circular steps a cunningly-devised walk led round the above garden, and this seemed to lose itself in the shrubbery beyond, as it would have done had the garden been permanent. Mounting the steps from the formal garden one passed at the back of the upper terrace wall along another paved walk flanked with German irises, to a rustic summer-house, half hidden away amongst the trees. Behind this building one came across a unique bit of woodland garden with lilies and bamboos, and then followed a winding woodland path, flanked with mollis azaleas, tree lupins, rhododendrons, etc., until one again came to the winding steps leading by the cavern into the rock garden. Most conspicuous amongst the flowers employed were Aster alpinus, Double Welsh poppy, Cypripedium spectabile, Primula pulverulenta and Forresti, trolliuses, Saxifraga pyramidalis, and Chelone barbata, phloxes and violas. Speaking as a whole, the idea was not only ingenious, but cleverly carried out, and it is quite safe to say that the equal of this particular type of exhibit has never been seen before in Great Britain.

Mr. G. Reuthe, Keston, filled a fair space of ground with rocky mounds furnished with alpines, grass in between, and a small but rather artificial-looking pool in the centre, which was somewhat overcrowded with aquatic plants. One of the prettiest things on the mounds was Aster alpinus himalaicus, and several clumps of scarlet anemones were striking.

Messrs. Whitelegg and Page, Chislehurst, constructed a neat and pretty little rock garden dell, with a little central pool into which the water came tumbling down over the rocks above. Rocks were freely used, and the whole dell was closely and brightly planted. Colonies that especially impressed us were those of Geum Mrs. Bradshaw, selections of Primula japonica, the brilliant P. Lissadel hybrid, P. sikkimensis, P. Cockburniana, P. Bulleyana, Ajuga repens purpurea, Viola gracilis, Dianthus zonatus, Lithospermum Heavenly Blue, and the lovely Aquilegia cærulea Mrs. M. Nicholls, this latter a very beautiful and useful plant, free flowering, free growing, and effective.

Messrs. Barr and Sons, Covent Garden, built a rock garden on a rather sharp slope, and arranged a seat on top to overlook the whole. It was a simple design, and the grey, weathered Yorkshire stone served well to show off the colonies of late aubrietias, helianthemums, cerastiums, Oxalis enneaphylla (very fine), Lithospermum Heavenly Blue, Phlox pilosa, Onosma taurica, Genista hispanica rara (a cloud of gold), Cytisus scoparius Daisy Hill (deep cream and salmon), Primula japonica in a wide range of colours, erigerons, Oxalis violacea, Viola pedata bicolor (a choice plant), lupins, and the blue-flowered Cynoglossum vernosum.

Mr. J. Wood, Boston Spa, contributed a very effective rock garden exhibit, in which the grey weathered stone was a subdued and excellent feature. Water was freely and pleasingly introduced in this garden, and so moisture loving plants were very prominent, notably the selections of Primula japonica, P. sikkimensis, Trillium grandiflorum, choice hardy ferns, hemerocallis, funkias, and irises in great variety.

A delightful little rocky dell, contributed by Messrs. W. Fells and Son, Hitchin, was especially notable for the rivulets of flowering plants charmingly disposed. Aster alpinus began with a colony on a little plateau and trickled down to the ground. Iberis sempervirens Snow Flake formed a little central cascade, and Aster alpinus albus gave a snowy effect on a high corner. Veronica alpestris, Phlox canadensis Perry's var., Saxifraga lantoscana superba, Viola gracilis, were all similarly disposed. Convolvulus cneorum, an œnothera-like shrub with whitish flowers, the blue Ceanothus Veitchi, Helianthemum venustum plenum and neat little conifers provided the necessary shrubs; while maples and cypresses formed a suitable background. A little

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Jonkheer J. L. Mock (H.T. 1910).
Juliet (Hy. Briar 1910).
King George V. (H.T. 1912).
Lady Greenall (H.T. 1911).
*Lady Hillingdon (T. 1910).
*Lady Pirrie (H.T. 1910).
Lady Reay (H.T. 1911).
*Leslie Holland (H.T. 1911).
Lieutenant Chaure (H.T. 1910).
Mary, Countess of Ilchester (H.T. 1909).
Mrs. Alfred Tate (H.T. 1909).
*Mrs. Cornwallis West (H.T. 1911).
*Mrs. Foley Hobbs (T. 1910).
Mrs. Fred Straker (H.T. 1910).
Mrs. Geo. Shawyer (H.T. 1911).
Mrs. P. le Cornu (H.T. 1911).
*Mrs. Sam Ross (H.T. 1912).
Mrs. W. Easlea (H.T. 1910).
Mrs. Wilfred Lloyd (H.T. 1910).
Miss A. de Rothschild (T. 1910).
Pink Liberty (H.T. 1911).
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colony of edelweiss was also a pleasing feature.

Messrs. G. Bunyard and Co., Maidstone, converted a high bank into a simple rock garden, and planted it freely with flowering shrubs and alpines. Saxifrages were a very prominent feature, and were very graceful. At the foot of the rock garden a little bridge-spanned pool served to show off aquatics, while the water margin was freely planted with choice hardy ferns, Iris Kaempferi, I. sibirica, astilbes (pink and white), trolliuses, liliums, funkias, and bamboos.

In the competition section Mr. R. Tucker, of Oxford, contributed a pleasing rock garden with a winding path ascending from the lowest level on either side of a bold central portion. A wide range of subjects was introduced, and a few especially bright ones were Rrododendron Ping Pearl, Phlox Laphami, Primula japonica, Onosma taurica, asphodels, and camassias, saxifragas, helianthemums, and Aster alpinus.

A large corner site was occupied by Messrs. Wm. Cutbush and Son, Highgate, with a rock and water garden exhibit of considerable extent. Bold planting was the order, and among the subjects that made a brave show on the rocky banks there were Edraianthus serpyllifolius, Saxifraga pyramidalis, S. calabrica (very fine and graceful), Conandron ramondioides, Anemone sulphurea, Dianthus Napoleon III., Ononis rotundifolia, and the golden low-growing Œnothera ovata. Liliums were represented by L. Grayi, the rare L. Kellogi, L. Humboldi magnificum, L. Browni, L. Parryi with yellow blooms, L. martimum, L. giganteum, L. Martagon album, L. Marhan Miss Willmott, and with these were associated a fine lot of Watsonia Ardernei and eremurusis. Around the water pool were colonies of Primula sikkimensis, P. Cockburniana, pink astilbes, Meconopsis sinuata, gunneras, bamboos, sarracenias, a fine batch of Cypripedium spectabile, funkias, and hardy ferns, the latter dipping their fronds in the nymphæa-studded water.

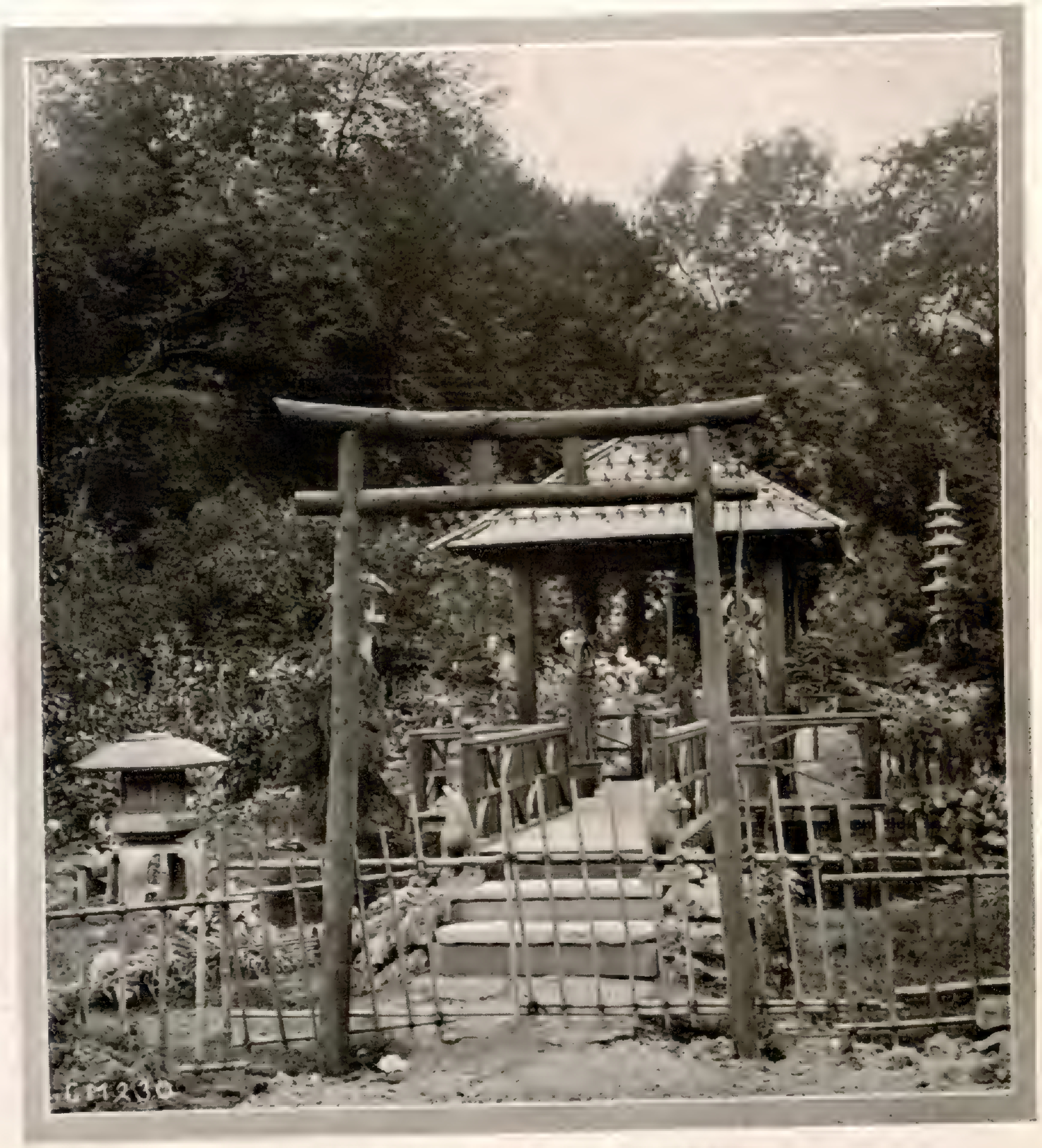
The Misses Hopkins, Shepperton, presented a neat little rock garden at a point where some old box trees gave them a good background. Little alpine pathways were constructed up the slope, and a lower pathway gave visitors a fine opportunity of inspecting the bold plantings of such charming plants as Phlox canadensis, Ajuga Brockbanki, Incarvillea Delavayi, Lithospermum Heavenly Blue, Viola gracilis, golden helianthemums, Welsh poppies, Aster alpinus, Meconopsis Wallichi, various saxifragas, and edelweiss.

An extensive low rock garden, constructed and planted by Messrs. G. Jackman and Son, Woking, served very well to show that an exceptionally elaborate arrangement is by no means necessary. Dwarf alpine shrubs were utilised to great advantage, while helianthemums, cytisus, saxifragas, veronicas, and lithospermums were freely planted in colonies. Viburnums and the graceful Buddleia variabilis Veitchi were capital in the background.

So many of the positions in the Ranelagh Gardens seemed especially designed for the accommodation of rock gardens. One of these "eligible sites" was occupied by Messrs. J. Backhouse and Son of York, a firm long famous for its alpine gardens. In a capital setting of trees they filled the end of a valley with a rock garden, that had the special merit of being designed so that every part of it could be comfortably inspected. The pathways were not obtrusive, but they were amply sufficient for their purpose. Glorious rhododendrons and glowing azaleas, Japanese maples and conifers were planted on the banks, while through the middle of the site was the rock garden proper, ending in a bold design at the end, well filled with ramondias, phloxes, saxifragas, Japanese azaleas,, and hardy ferns in the shady corner. In the moist spots, primulas were splendidly congregated, and a fair batch of Cypripedium spectabile was a prominent feature. In the immediate foreground the firm had a bog and water garden, and here the elegant spiræas, trolliuses, funkias, and bamboos were freely and skilfully planted, the bamboos and Japanese maples serving to mask a bold piece of terraced rock gardening where saxifragas and sedums in endless variety, combined with Viola gracilis of deepest purple, alpine phloxes, gay double Welsh poppies, incarvilleas, and a whole host of dainty and rare alpines, the names of which would easily fill a column of print.

## JAPANESE AND TUDOR GARDENS.

A prominent and attractive exhibit in the Ranelagh grounds was the very extensive Japanese garden laid out in the lower end of the Ranelagh Gardens by Messrs. Jas. Carter and Co., Raynes Park. Surrounded by a bamboo fence, backed by the tall trees already in position, and with a very undulating site, an elaborate design was carried out. The several entrance gates had thatched porch-like coverings with handsome bronze or stone lanterns guarding the way. Devious pathways and little rough stone tracks led over pretty pools or up the low pine-clad hill sides. Over the streams depended weeping cherries and birches, with a setting of bamboos and elegant Japanese maples. Rhododendrons were grouped along the banks and around fine examples of Sciadopytis verticillata and of weeping deodars, while here and there wonderfully carved bronze eagles and giant bowls of rare workmanship, held dwarfed trees and cycads. By the water margins, hydrangeas, various irises, Lilium auratum, L. longiflorum, and L. speciosum were tastefully grouped with dwarf bamboos and more maples. From a rocky eminence water poured down, forming a pretty cascade; falling into a pool below it passed under several quaint little bridges to the large lower pool, over which a Japanese teahouse was pleasantly and coolly situated. In the background a tea-house of bamboo-work lent realism to the scene, while around it were rhododendrons, viburnums, and a cool bank of hardy ferns. At special points of vantage there were some rare old examples of wistarias in Japanese vases. Small low rock gardens, with a full complement of flowering plants occupied special and suitable positions while weeping willows, standard prunuses, and viburnums relieved the whole from the least suggestion of flatness, and gave the garden the effect of some age. A complete Japanese garden about 4ft. by 3ft., in the tea-house over the little lake, provided one of those curious scenes for which the Japanese are famous. Much money, time, labour, and skill went to the making of this remarkable exhibit, which Her Majesty Queen Alexandra so greatly admired during her private view of the exhibition on the Monday afternoon prior to the opening of the show.



VIEW IN JAPANESE GARDEN.
Designed and formed by Messrs. James Carter and Co.

As one stood in front of the exhibit sent by Messrs. J. Cheal and Sons, Crawley, it was difficult to realise that it was but an exhibit and temporary, as it all looked so natural, real, and permanent. It is doubtful whether anyone has ever presented a Tudor garden at an horticultural exhibition before, and though Messrs. Cheal were ambitious to attempt it, there is no question about their succeeding, and no feature in the whole show elicited more expressions of approbation than this. Leaving the lime avenue, on the opposite side of which were the tents, you passed up a few stone steps, which had an ornamental peacock in cut yew on either side, into a paved courtyard, with grass and more cut yews. Two fountains threw up jets of water, which returned to an ornamental pool in the centre, and at the back another stream of water burst out from a lion's mouth, set in the stone terrace wall, into a basin prepared for its reception. The terrace walls and steps looked as if they had been there for years, dainty plants grew in the crevices between the stones, and even the freshly-laid turf looked almost as if it had grown there. Looking over the terrace wall from the fountain basin, the eye rested on an ornamental summer-house at the back with pyramid bays on either side of the door, and a very permanent looking pergola leading away to the right and the left. The latter, of course, was furnished in keeping with the idea and the period, and through the pergola one looked on a bank furnished with beautiful specimens of acers, rhododendrons, etc. Having taken in the details of this charming old-world sort of garden scene, you passed out of the courtyard on the left and down some rough-cut steps through a bit of bold rockery-work that looked almost as if it had been cut out of solid stone. Little alpines grew in the pockets, presenting bright splashes of colour, and at the bottom of the steps you looked into a little pool of water, round the sides of which grew spiræas, irises, primulas, and other things. This pool was fed by a trickling stream out of the stone, and advantage was taken of this happy position for planting a few hart's tongue and other ferns. The steps on the right side of the courtyard led along a paved path to a point at which another scheme of rock gardening was displayed. There was no water here, but an open-fronted bower, set back in the bushes, approached by rough stone steps, and flanked on one side with Japanese maples, and on the other with flowering shrubs. From this bower one looked out over a pretty scene of rock and flowers that were delightfully in keeping with the surroundings, and no matter where you looked you saw a happy mixture of flower and foliage, and a nice blending of colour. It was not surprising that this really cleverly-designed garden was one of the chief centres of attraction in the show.

DWARF JAPANESE TREES,
Exhibited by Messrs. Barr and Sons.

## ORNAMENTAL TREES AND SHRUBS.

Forming a good break in amongst a maze of rock gardens was a big group of evergreen shrubs, exhibited by Messrs. Paul and Sons, Cheshunt. At the back was a belt of large green and variegated hollies with yews of different types in front. The whole of the shrubs were planted out, and they looked as if they were part of the garden, rather than brought there for exhibition.

On the side of one of the main walks in the Ranelagh grounds a fine collection of hardy trees, mostly evergreen, in tubs, was exhibited by Messrs. Jackman, of Woking. Amongst the specimens were some finely-grown pines and cedars, as well as hollies and yews, and at one end there was a group of yews and box cut in the orthodox shapes, i.e., pyramids, peacocks, globes, pillars, and so forth.

There was something very unique about the collection of cut yews and box exhibited by Messrs. Piper, Bayswater, near the rock and water gardens, largely because the fence which enclosed the specimens was made of closely-cut living box. The big specimen trees in tubs within the enclosure were comprised of box and yews cut into various fantastic shapes. Originality in the shape of cut trees was introduced by Messrs. Wm. Cutbush and Son, Highgate, who showed a fully-rigged ship in box, a very good representation of a stag at rest, a sitting squirrel, hen and chickens, and a few other novelties, including, of course, the inevitable peacock. These were in box, but big specimens of yews at the back of the group were fine illustrations of topiary work.

Quite unique in its way, and interesting in its variety, was a group of ivies in pots sent by Mr. L. Russell, Richmond. The silver variegated forms as low standards were very pleasing, as also was a row of dwarf plants in front, with bushy specimens of a green-leaved variety behind. The same firm also set up a large collection of mixed flowering and foliage trees and shrubs, and a very fine lot of graceful bamboos, the latter being in competition. Altogether this was a highly interesting and educational exhibit.

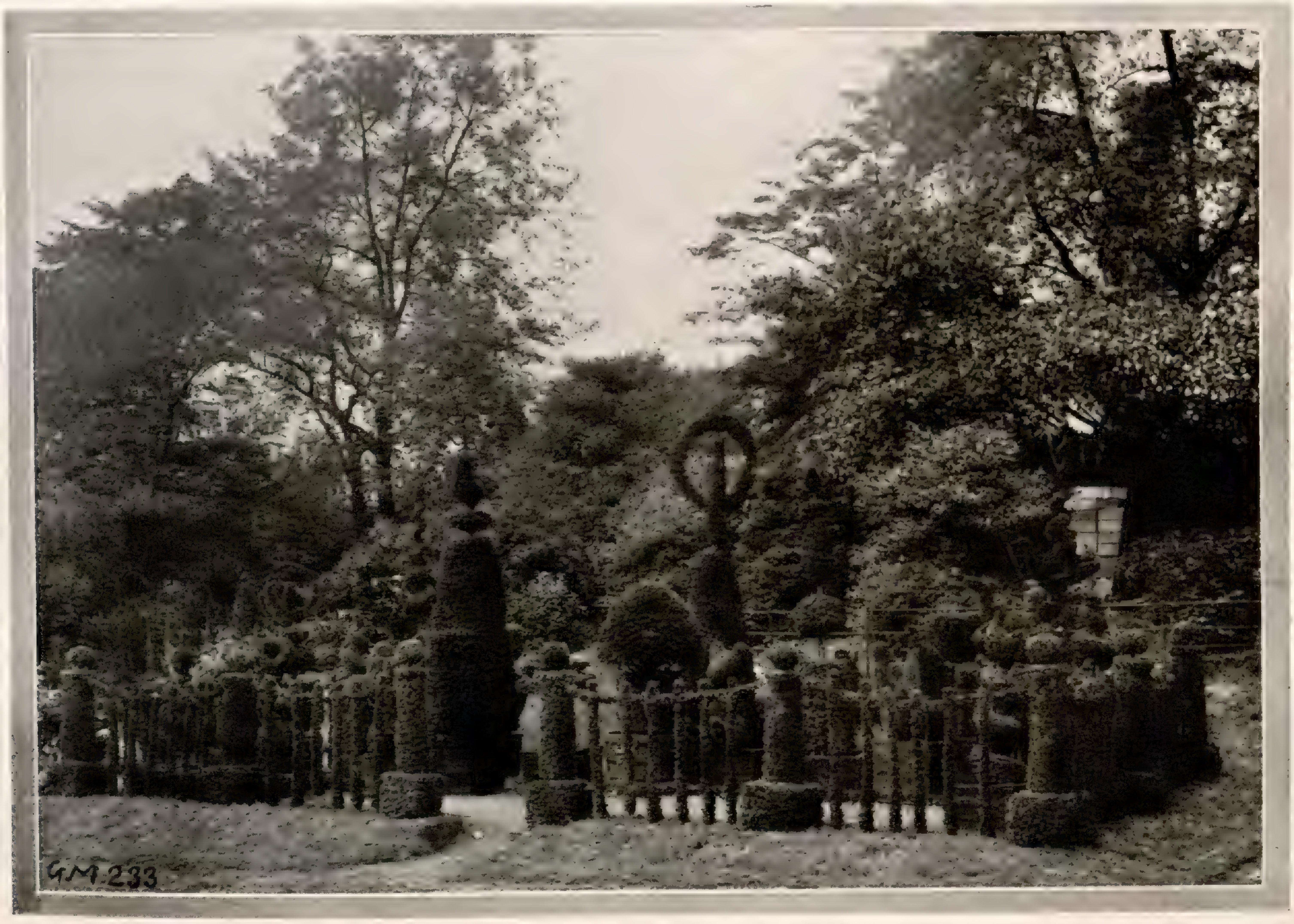
A large semi-circular belt of the choicest trees and shrubs was arranged by Messrs. John Waterer and Sons, Bagshot, and fixed as they seemed to be in a setting of the surrounding rock gardens, they gave an element of variety that was particularly pleasing. Japanese maples were remarkably fine, as were hollies and yews, and flower was provided by Kalmia latifolia, Viburnum plicatum, and mollis and Ghent azaleas. The stamp of quality, characteristic of this well-known firm, was apparent on every specimen in the group. A magnificent group of bay trees in tubs was shown by Messrs. Jas. Veitch and Sons, Chelsea, in the Ranelagh grounds, and they fully demonstrated the value of these trees for decorative purposes. Amongst the specimens were some very fine tall pyramids clothed from top to bottom with healthy green foliage, and others of standard form with mop-like heads presented a strikingly massive appearance.

In a sheltered spot in the Ranelagh Gardens, Messrs. Barr and Sons, Covent Garden, set out several hundred quaint dwarfed Japanese trees, these ranging in size from tiny grizzled plants in fancy jars, and that would easily go into one's pocket, up to ancient specimens a yard or so high. Not only were larches and Cupressus obtusa represented, but there were wistarias, cherries, oaks, retinosporas, pines, hollies, and myrtles. Some of the pines were specimens of old trees that might have braved the storms of hundreds of years on some wind-swept hill. Some of the larches were trained to form huts and porches, others to represent birds and beasts, the whole collection forming an unique and interesting exhibit. Twenty-six footballs, two dogs, a dozen peacocks, a dozen or more chanticlers on spire tops, half a dozen corkscrews, a few umbrellas, some pillars, three or four baskets, one dancing bear, some sitting hens, and table tops, about sums up the extraordinary collection of clipped trees, wholly in evergreen box, exhibited by Messrs. Carlton-White, New Bond Street, W.

## ORCHIDS.

The most wonderful collection of orchids ever put up by an amateur filled the end of the big orchid tent and was, as a glance at the fine cultivation showed, contributed by Lieut.-Colonel Sir G. Holford, whose clever grower, Mr. H. Alexander, surpassed himself on this occasion with a glorious and gorgeous exhibit that covered 1,100 square feet. Splendid palms formed a grand background, and right up under the palms were magnificent dendrobiums, associated with fine arching spikes of many oncidiums that threw their golden flowers well out. The whole of the great central feature was filled with magnificent specimens of Lælio-cattleya Bedouin, L.-c. Canhamiana with lovely flowers, L.-c. Aphrodite, the splendid L.-c. Britannia, L.-c. Dr. R. Schiffman, and a L.-c. Canhamiana with about fifty grand flowers. Among the several dozen superb specimens of these large-flowering orchids appeared graceful odontoglosums and the bright L.-c. Golden Glory, with giant spikes of Phalænopsis rising above the whole. Around the front Odontioda Bradshawiæ, O. Lambeauianum, O. Bradshawiæ, Holford's var., almost scarlet, a noble Odontoglossum illustrissimum, and some splendid miltonias were added. To the left appeared a forest of odontoglossums, oncidiums, Renanthera Imschootiana, Cymbidium Lowianum, with extraordinary specimens of L.-c. Aphrodite, Dendrobium Dalhousianum, and Brasso-cattleya Digbyano-Mossiæ, Westonbirt var., with a dozen glorious flowers, standing clear of the rest. To the right a somewhat similar scene was presented, and notable specimen plants were Cattleya Skinneri alba, C. Dusseldorfei, Undine, a grand L.-c. Britannia, and a superb backing of lovely dendrobium. Odontoglossum crispum Solum, Sophro-lælio-cattleya Marathon Vesuvius, the white O. crispum xanthotes Charlesworthi, and O.-c. Bumble Bee were a few other rare beauties among a host of fine things. Altogether it was a marvellous display, and, as a single group, was unsurpassed in the whole exhibition. Wondering crowds stood before it every day. To Sir George and his able grower we beg to extend our hearty congratulations upon their achievement, which was worthy of the great occasion.

We have seen most of the great exhibitions at home and on the continent during the last quarter of a century, and have reviewed most of the glorious displays made at the leading horticultural events of that period, but we do not remember in that time to have seen so superbly wonderful a group for colour as the one put up on this occasion by Messrs. Charlesworth and Co., Haywards Heath. It occupied half one side of the centre of the great orchid tent. Such a galaxy of rare and beautiful plants, such a blaze of colouring, and such a fine effect of clever massing and arrangement it is difficult to describe. Bedded in ferns and backed by graceful palms, over a thousand plants were set out in bold bays. In the centre Phalænopsis Rimestadiana threw its graceful spikes of big white blooms over a base of scarlet and crimson Odontioda Charlesworthi, O. Bradshawiæ. O. Cooksoni, and others, the spikes of bright colour predominating at the base of the pyramid. To the right and left of this came Lælio-cattleyas Aphrodite, Canhamiana, Canhamiana alba, and other large-flowered hybrids, and then, working outwards, came pyramidal mounds of Miltonia vexillaria, M. Bleniana, and M. B. nobilior, huge assemblies of thousands of blooms. In the flanking groupings we noted glorious Brasso-cattleya Princess Elizabeth, B.-c. Digbyano-Schröderæ, B.-c. Digbyano-Mossiæ, and wonderful odontoglossums, such as O. Lambeauianum, O. ardentissimum, the new and fine O. Her Majesty, one of the gems of the group, O. Maria, O. Dora gigantea, O. Hamelini, of grand purple colour, and O. illustrissimum, gorgeous in purple, and the yellow O. luteo-purpurea Vuylstekeanum. Other excellent things were Eulophiella Hamelini, Cattleya Lawrenceanum Mary Regina (a feature of the Temple Show of 1910), Dendrobium acuminatum, in grand form, the wonderful Odontoglossum crispum Solum with its blackish lip; Odontioda Queen Mary, glorious crimson and purple, and one of the finest secondary hybrids yet raised; Odontioda Edna, Brasso-cattleya Vilmoriana, and Odontoglossum eximium Princess Mary.



EXAMPLES OF THE TOPIARY ART.
Exhibited by Messrs. Piper, Bayswater.

A sweetly pretty exhibit of Vanda teres and light forms of Odontoglossum crispum was set up by Mr. G. Reynolds, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Acton. Probably no one grows the graceful Vanda teres better than Mr. Reynolds. They are grown in large boxes, and there were seventeen, besides these, some pot plants, and in the whole set there were no fewer than 640 spikes of mauve and white and purple flowers. This exhibit was one of the masterpieces of orchid culture, as Vanda teres is not an easy orchid to flower year after year as Mr. Reynolds manages it.

M. Chas. Dietrich, Anderghen, had some lovely odontiodas, odontoglossums, and miltonias, and so had M. Firmen Lambeau, whose Odontioda Ajax, O. Chanticler, and the superb O. Coronation were the pick of many grand orchids. M. Jules Hye brought some splendid odontiodas and miltonias, not labelled. Mons. Vuylsteke, Loochristy, Ghent, showed the splendid Odontioda Queen Mary, Odontoglossum illustre, O. L'Aiglon, and the purple O. azureum Enchantress—very distinct.

Messrs. Stuart Low and Co., Enfield, secured a first prize with a grand group of orchids, which had Phalænopsis Rimestadiana as a central feature; this was flanked by groups of Oncidium Marshallianum, the brilliant Renanthera Imschootiana, masses of Cattleya Mossiæ, and such good things as C. O'Brienianum alba and C. Skinneri alba. Messrs. J. Cypher and Co. came second, and they had Cattleya Mossiæ in fine form, and Vanda teres, with miltonias, Cattleya Skinneri, and Lælia purpurata associated with cymbidiums, yellow oncidiums, Cœlogyne purpurata, and Phalænopsis Rimestadiana. This firm was also successful in another class, and here they had a grand lot of hybrid odontoglossums, Lælio-cattleya Wellsiana, L.-c. Fascinator, L.c. Aphrodite, and many other lovely things.

A premier award fell to Messrs. Armstrong and Brown, who filled two bays with Lælio-cattleyas Aphrodite and Fascinator, and had a glorious lot of beautiful unnamed odontoglossums of hybrid origin in the centre overhung with oncidiums and cymbidiums. Along the front odontiodas were a great feature, their glowing colours and graceful spikes arresting attention. Another premier award fell to the same firm for a bank of orchids that was very graceful by reason of the splendid spikes of Cymbidium Lowianum and Phalænopsis Rimestadiana. Odontoglossum crispum Solum, with its very dark lip, was prominent, and so were Cattleya Skinneri alba, Cœlogyne pandurata and Miltonia vexellaria Leopoldi, with its butterfly lip.

Messrs. Sander and Sons, St. Alban's, filled a huge space with a glorious contribution of orchids, and filled it gorgeously and elegantly. At either end they massed the finest of cattleyas and lælio-cattleyas; in the centre, miltonias led up to sheaves of Phalænopsis Rimestadiana, while intervening bold masses were composed of this fine white phalænopsis and the bright Renanthera Imschootiana. Two big bays were filled with the choicest of choice things, each plant set out alone. Here we noted the wonderful Odontoglossum crispum Solum, O. amabile Princess Mary, O. eximium, the splendid O. Jasper Superb, the dark O. eximium King George V., and such glorious odontiodas as O. Cooksoniæ, O. c. magnificum, and O. ornata—very lovely. Overhead along the back the firm had Cymbidiums Lowianum and insigne, oncidiums galore, and Lælio purpurata.

Mr. Collier, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, won a second prize with a famous exhibit of odontiodas and odontoglossums, very prettily disposed. Odontoglossums were a great feature, and Lælio-cattleya Phœbe, fine forms of Cattleya Mossiæ, and brasso-cattleyas were included, but the mound of odontiodas and white odontoglossums was the great feature. Mr. F. Menteith Ogilvie (gardener, Mr. Balmforth), The Shrubbery, Oxford, beat Sir Jeremiah Colman, and with a splendid exhibit, in which Cattleya Mossiæ, Lælio-cattleya Aphrodite, L.c. Fascinator, L.c. Dominiana, L.c. Wellesleyana, and many white cattleyas were boldly massed. Odontoglossums were finely represented, and included O. Harwoodi, O. Ossulstoni, and O. ardentissimum Carmen. Cypripedium callosum Sanderæ, L.c. Golden Glory, Odontioda Charlesworthi, O. Keighleyensis, O. Bradshawiæ, and the lovely large-flowered Odontioda Mrs. F. M. Ogilvie were just a few other splendid things noted.

An elegant and glowing display of orchids from Messrs. Mansell and Hatcher, Rawdon, Yorks, was very greatly admired. Here there were an abundance of fine specimens of Lælio-cattleya Fascinator, L.-c. Aphrodite, L.-c. Canhamiana alba, L.-c. Dominiana, all massed towards the centre. In the bays were Phalænopsis Rimestadiana and Renanthera Imschootiana, with dendrobiums, Cattleya Skinneri alba, and cypripediums;

while at either end were grouped beautiful odontoglossums, odontiodas, Miltonias, Vanda teres, the wonderful Cypripedium Edithæ, Anguloa uniflora, and heaps of other lovely orchids.

Mr. J. Macartney, Hey House, Bolton; Mr. W. A. Manda, New Jersey, U.S.A.; Mr. F. Wellesley, Woking, also showed orchids. Mr. H. A. Tracy, Twickenham, put up a good bank of odontoglossums and odontiodas, and Mr. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, staged some fine odontoglossums among specimen selaginellas. The best plant was Odontoglossum illustre Europa, dark purple, and very showy.

### ROSES.

By way of a moss-covered path under a pergola leading up to a bower in the centre, one entered the veritable garden of roses exhibited by Messrs. Hobbies, of Dereham. The pillars of the pergola on either side were clothed with beautiful roses of the Dorothy Perkins family, and the weeping standards of this section were a charm in themselves. From another side of this group one looked through another pergola which ran at right angles to the first-named, and a neat little green fence which enclosed the whole group gave it a neat and finished appearance.

A MAGNIFICENT COLLECTION OF ORCHIDS.

Exhibited by Lieut.-Col. Sir G. Holford, Westonbirt (Mr. H. G. Alexander, grower). This was awarded the King's Cup for the finest exhibit in the show.

A blaze of beautiful rose colour best describes the superb group set up by Mr. George Mount, of Canterbury. There were great masses of Dorothy Perkins, Lady Gay, Excelsa, and White Dorothy towering up in rank profusion, and in between you saw huge bunches of perfect flowers of Mrs. Sharman Crawford, Frau Karl Druschki, and many another. There was Mrs. John Laing with stems a yard long, and Ulrich Brunner simply beautiful. Rarely indeed has the British public been given an opportunity of looking upon such a feast of the queen of flowers.

Standing a few yards away from the group of roses exhibited by Messrs. Paul and Son, of Cheshunt, we almost lost ourselves in admiration, for the beautiful weeping roses which formed the feature of the group. Long drooping clusters of flower nearly reached down to meet the beautiful blooms on the pot bush roses that formed a groundwork beneath; and amongst the colours, pinks and whites and crimsons stood out conspicuously. The front view of the group was delightfully effective, and nothing took our fancy more than a mixture on the same weeping standard of Excelsa, White Dorothy, Lady Godiva, and Dorothy Perkins.

Leaving the above group one turned round and faced a remarkably fine collection of roses set up by Messrs. W. Paul and Son, of Waltham Cross. Weeping standards were not so numerous here, but they were very beautiful, especially Paradise and Tausendschon. Hiawatha furnished two pillars of the great tent, and underneath the tall weeping standards were roses of many shades of colour, all fresh, mostly sweet, and the plants were as healthy as plants could be. It was a fine effort, and the longer you looked at it the better you liked it.

In its own particular way, there was not a group of roses in the whole show more effective than that exhibited by Messrs. Wm. Cutbush and Sons, Highgate. The ground of the triangle on which the roses stood was a carpet of such gems as White Pet, Mrs. W. H. Cutbush, Baby Tausendschon (a sweet little pink rose), Jessie, and others. Standing above the groundwork were great bushes of Mrs. W. W. Flight, Hiawatha, American Pillar, and Dorothy Perkins.

A circular group of roses with a big palm towering above the centre was set up by Mr. Charles Turner, of Slough, but it struck us as being rather too crowded. Weeping standards were also the feature here, but had they been used a little less freely in a group of this kind they would have shown themselves off to better advantage.

At one point there was a group of roses apparently made up by a number of exhibitors. On a collection of nine pot roses we saw the name of Messrs. Paul and Son, Cheshunt, Herts. This firm sent nine weeping standards, the best of which was Lady Gay, and these seemed to be something out of the common in seeing the group of thirty-six standard roses, in which, in accordance with the schedule, there were no weeping varieties. Messrs. Paul and Son was the exhibitor here. The bare ground in this space looked rather unsightly, except just one corner that was furnished with a collection of 100 polyantha dwarf roses, shown by the last-named firm; Mrs. Cutbush, Maman Levavasseur, and Jeanne D'Arc were the most predominating varieties here.

Five exhibits appeared in the class for a group of pot roses and cut flowers, and each one was distinctively good in its own way. Messrs. Frank Cant and Co., of Colchester, made the most of their space with beautiful ramblers at the back, and equally beautiful cut flowers of numerous varieties in the front, amongst which Lady Roberts was a predominating feature. There was no need to ask who the next group belonged to, for there was George Mount, of Canterbury, written all over it in the glory of the Frau Karl Druschki, Mrs. John Laing, and Ulrich Brunner. We cannot praise this collection in higher terms than this.

Quite of a different type, but very beautiful nevertheless, were the roses staged by Messrs. Hugh Dickson, Belfast. Here we feasted our eyes on pillars of Blush Rambler, Lady Gay, and others in weeping form, and cut flowers of Lady Hillingdon and others. Mr. G. Prince, Oxford, had a thick background of rambling roses with cut blooms in between, but we thought the exhibit was rather overcrowded. Messrs. W. and J. Brown, of Peterborough, had masses of cut flowers built up in bamboo stands.

A hundred polyantha roses intermixed with maidenhairs, which did not seem to be quite the most suitable material for the purpose, were shown by Mr. J. Pegg, Royston, and near at hand were a few odds and ends of roses, evidently put there to fill a vacant space that would have been very much better on the outside of an International tent. Some good specimens of rambling roses made a suitable background to a collection of mixed plants put up by Messrs. Dickson, Lim., Chester.

There was a good deal of the country village flower show aspect about a number of competitive classes of roses that were accommodated under the centre of one of the arches of the big tent, and in the general arrangement of the plants one expected something better at an international show. We noticed that Mr. G. A. Hammond, of Burgess Hill, won a silver cup for ten roses with excellent plants, and the same exhibitor had a second prize for twenty distinct roses, which, to say the best of them, were commonplace. Mr. James Brown, Manchester, won in this class with fairly good plants. The last-named exhibitor had really good plants, which won for him first prize in the class for six pillar roses, and he also won the King's Acre Nursery Cup with a nicely-arranged group of roses. In the class for ten pot roses, distinct, Mr. Charles Turner won first prize, and we were rather struck with a group of single-flowering roses shown by Messrs. Frank Cant and Co. For twelve roses, sent out since January, 1909, Messrs. Frank Cant and Co. won, and the same firm showed a nice group of 100 polyantha roses, in which class also Mr. Charles Turner exhibited a nice collection. A gold medal was won by Mr. Charles Turner in the class for thirty-six distinct standards, weeping varieties included, and the specimens were very well grown and flowered.

AN EXTENSIVE AND BEAUTIFUL COLLECTION OF ORCHIDS.
Exhibited by Messrs. Charlesworth and Co., Hayward's Heath.

We have nothing but praise to give for a group of rambler and polyantha roses, with which Messrs. Stuart Low and Co., Bush Hill Park, furnished a corner of their miscellaneous group. In the arrangement there was a cunningly devised pathway, flanked on this side and that with some of the finest specimens of pillar and weeping roses we saw in the show, standing up above a groundwork of dwarf polyantha varieties.

The boxes of cut roses in competition reminded one of the rose season rather than May, but we must give them a brief word. Mr. Geo. Mount got first for thirty-six blooms, followed by Messrs. F. Cant and Co. The Canterbury grower was also to the front with eighteen blooms, followed by Messrs. G. and W. H. Burch; and for eighteen, G. A. Hammond, Esq., was first.

Inside a neat yew hedge, Mr. R. C. Notcutt, Woodbridge, arranged a formal rose garden, with a rough flagged pathway running down the centre and across the middle, an old sundial marking the intersecting point. On either side of the path weeping standards of Dorothy Perkins, White Dorothy, Hiawatha, and other roses were gay with flowers, and in the four large sunken beds tea and hybrid tea roses, dwarfs, and standards gave of their fragrance and beauty over a groundwork of violas.

Messrs. F. Cant and Co. won a cup with a group of cut roses that stood conspicuously alone on the table, but on the other side was a fine bank of ramblers, and others from Messrs. B. R. Cant and Sons, Colchester. The last-named firm had first for the best six blooms of any rose not in commerce, and for a climbing rose not in commerce Mr. Charles Turner won with a seedling called Ophelia.

Messrs. G. Mount and Sons showed some very fine specimens of roses in the class for bunches. Conspicuous amongst them were Frau Karl Druschki, Liberty, White Killarney, and Mrs. John Laing. The second award was won by Messrs. A. Dickson and Sons, Newtownards, whose Alexander Hill Gray and Carine were extremely fine flowers. Messrs. Mount won a first prize with a magnificent collection of cut roses.

Mr. H. R. Darlington, Potter's Bar, was a successful amateur exhibitor of roses, and Messrs. A. Dickson and Sons secured a premier award for beautiful flowers of Alexander Hill Gray.

In between two large exhibits of hardy flowers, Messrs. D. Prior and Son, of Colchester, set up a fine group of roses, the most conspicuous features in the collection being fine specimens of rambling varieties. Messrs. R. J. Barnes and Son, Malvern, set up a compact little bank of roses, which was composed of nicely-flowered plants.

## HIPPEASTRUMS.

Hippeastrums in the orchid tent were splendid, but the most gorgeous lot was staged by Mr. Chapman, gardener to Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester. Here the culture and the colouring were superb; every flower was of the highest excellence, and the soft rosy forms, like Lady Howick, Castor, Cassandra, Cardinal Wolseley, and Pinkie were charming among the scarlet, orange, crimson, and white forms. Among the latter White Wings stood out conspicuously good. It was a great exhibit, and deserved its premier award. Messrs. Wm. Bull and Sons, Chelsea; Mr. A. H. Kenrick, Berrow Court Gardens, Birmingham; and Messrs. R. Ker and Sons, Liverpool, each showed a fine group, the latter firm coming a good second in the competition, and in their set were lovely new shades seen in Cherry Plum, Magenta Queen, Rose Perfection, King George, and Ruby King. The Messrs. Ker presented a splendid set.

## STOVE PLANTS.

In various parts of the great exhibition splendidly-grown stove plants, elegant in habit, and many of brilliant colouring, were set up, but by far the most prominent contribution in this department was one from Messrs. Jas. Veitch and Sons, Chelsea. This huge contribution occupied a fairly central position in the big tent, and it was a superb display of fine plants, finely grown, and admirably disposed in the form of an ellipse. The central features were tall palms, and tree ferns, Medinella magnifica, giant crotons, pandanuses, heliconias, and aralias. Around these were grouped a magnificent set of about seventy-five varieties of caladiums resplendent in green and gold, crimson and silver; a few of the finest of these were Louis van Houtte, Mdme. J. Box, Pantra Ralli, Mrs. Harry Veitch, Mrs. McLeod, Leonard Bause, Oriflamme, Raymond Lemoinier, King Edward VII., and Lady Wigan. Tall single-stemmed crotons, finely furnished from base to summit with leaves of gold and brown and green, rose here and there well above the general surroundings, and especially fine were the examples of Baron Alphonse de Rothschild, Johannis, Thomsoni, Warreni, Reidi, Golden Ring, Golden Chain, and Dayspray. Nepenthes Burkei, N. Curtisi, N. Sir Thisleton Dyer, and others swung their quaint pitchers above glowing groups of anthuriums or Flamingo flowers, these carrying big spathes of cream, red, scarlet, or crimson. A few especially remarkably fine subjects included were the exquisite bertolonias, Leea amabilis, Aglaonema picturata, Rex begonias, the excellent Dracæna Bruanti variegata, Tillandsia tessellata with its vivid scarlet-bracted spikes, T. zebrina major, Cyanophyllum magnificum, and showy-leaved marantas. Groups of Kalanchoe flammea, of Clianthus Dampieri with glowing scarlet and black flowers, of gorgeous cannas, added further colour and brilliance to an already grand display that covered an area of 2,100 square feet.

Mr. Manda, New Jersey, U.S.A., brought over about a dozen and a-half stately palms, all grand specimens, of kentias, cocos, and phœnix, from twelve to twenty feet high, and every one a perfect example of that grace which only palms can give.

In an oval group Messrs. Fisher, Son, and Sibray, Handsworth, Sheffield, disposed a beautiful lot of medium sized crotons, splendidly coloured and perfect from pot to top. Golden Ring, Warreni, Thomsoni, Duke of Portland, Countess Donoughmore (quite new), and Mrs. Joe Grace (another graceful new seedling, with golden-centred leaves). Behind the crotons some splendid anthuriums were staged, and, besides the Scherzerianum forms, we noted Fisher's variety of A. Andreanum with gorgeous spathes about nine inches across; A. Andreanum Handsworthensis, pink; and A. A. Lord Fitzwilliam, with salmon-red spathes. There were many other things, but with a mention of Musa sapientum rubrum, with purplish leaves, we must pass on.

Messrs. J. Cypher and Sons, Cheltenham, were the only exhibitors of twelve specimen stove and greenhouse flowering plants, and their huge specimens of Clerodendron Thomsoni, Statice profusa, ixoras, ericas, and Indian azaleas were reminiscent of old times; some of them measured nearly six feet across, and were smothered with flowers. Backing on to the specimen was one of the tasteful groups of orchids, excluded, for which they are famous; here crotons, caladiums, kalanchoes, liliums, crotons, alocasias, yellow arums, and palms were associated delightfully so as to form a bright, elegant, and pleasing scene.

A FINELY-FLOWERED COLLECTION OF TWELVE STOVE AND GREENHOUSE PLANTS.
Exhibited by Messrs. J. Cypher and Sons, Cheltenham.

Messrs. J. Peed and Sons, Norwood, put up a group of caladiums that attracted a good deal of attention, as it included handsome specimens of the new pink and green King George, the scarlet Rufus, a superb Silver Queen, and equally good Golden King, with the giant crimson John Peed behind in company with Adolphe de Rothschild, and the lovely pink J. Pierpont Morgan.

From the School of Pomology and Horticulture of Firenze, Italy, came a wonderful collection of new hybrid anthuriums of the Andreanum section, some of huge size and fine colour. Mr. L. R. Russell, Richmond, won the coveted award for alocasias, and a premier for the lovely-leaved bertolonias.

## FERNS.

It was quite relieving in the great marquee to turn the eye from the maze of brilliant flowers to the soft green of the great banks of ferns, which were amongst the distinctive features of the exhibition. For a long time now those great fern specialists, Messrs. H. B. May and Sons, Edmonton, have been waiting for an opportunity to show what they can do in the way of putting up a group of ferns, and when it came, at the International, they certainly took every advantage of it. To say that the exhibitors surpassed all their former efforts by no means does them justice, and one could have spent a long time inspecting the many beautiful gems contained in the group. We use this word in description, but there was nothing bank-like or solid about the exhibit, for, on the other hand, the ferns were ingeniously arranged, and there were winding paths in amongst the plants just as there might be in a tropical forest. We cannot pretend to describe one-half of the types represented. They were so very numerous, but big tree ferns stood up in relief above the mass of other forms. A considerable amount of taste was displayed in the arrangement, and very charming were the masses of Nephrolepis Marshalli compacta, and the specimen plants of Nephrolepis Duffi, Nephrolepis elegantissima cristata, and Nephrolepis exaltata multiceps. Little gems of the fern family were exhibited under glass domes, and at one end were some forms of Osmundas regalis and spectabilis, along with other ferns, suitable for cool culture. It is quite fair to say that such a group of ferns has never been seen before under canvas in this, or probably any other, country.

Tastefully arranged on a bank of fibre was a collection of hardy ferns, sent by Mr. Amos Perry, of Enfield, Middlesex, and amongst them we noticed lovely forms, such as Athyrium plumosum elegans, Athyrium purpureum, Scolopendrum vulgare crispum Grayi, Osmunda japonica, Adiantum pedatum, and Onoclea sensibilis, the latter being a very graceful plant.

Mr. W. A. Manda, New Jersey, U.S.A., brought from across the Atlantic a number of magnificent specimen ferns. Very fine indeed were the examples of Davallia epiphylla, Dicksonia Baronetz, Polypodium Knightæ, Davallia fijiensis robusta, and Polypodium quercifolium. The same exhibitor also set up another effective group of ferns, and in this collection the most attractive feature was a new bold fern called Polypodium Mandaianum. A very compact group of ferns was exhibited by Messrs. J. Hill and Son, Lower Edmonton, and in it was a large number of interesting forms, amongst which we noticed Cibotium Scheidei, Gleichenia dicarpa longipinata, Platycerium Veitchi, Lygodium scandens, Blechnum brasiliense, Polypodium linqua corymbiformus, and a number of others.

A BEAUTIFUL GROUP OF RAMBLING AND OTHER ROSES.
Exhibited by Messrs. W. Paul and Son, Waltham Cross.

The competitive fern classes were nicely set out, and amongst the prize-winners was Mr. W. B. Cranfield, of Enfield Chase, who had the best twelve hardy ferns, and the same exhibitor also won with twelve British ferns and twelve British scolopendriums. He was again to the front with twenty-four British ferns, showing fine specimens in this class. Magnificent, indeed, were the twelve stove and greenhouse ferns that won a silver cup for Messrs. J. Hill and Sons, Edmonton, and Mr. W. A. Manda showed some very fine specimens in this class. By no means few were the favourable comments passed on the group of stove and greenhouse ferns in the amateur section with which Mr. W. Howe, Streatham Common, won a silver cup. They were a good lot, and nicely arranged. On a space occupying 200 sq. ft., Messrs. Artindale and Sons, Sheffield, showed a nice lot of hardy ferns that were tastefully arranged. In the amateurs' class for a group of stove and greenhouse ferns Miss C. M. McIntosh, of Havering Park, put up a nice collection, which deservedly won first prize.

## SWEET PEAS.

A glorious lot of sweet peas from Messrs. Dobbie and Co., Edinburgh, provided a striking exhibition of the progress made in late years with these fragrant, elegant, and lovely flowers. The Edinburgh firm had a background of single-stemmed plants, 9ft. high, carrying a glorious lot of flowers; Brunette, Inspector, Dobbie's Thos. Stevenson, Lady Miller, Dobbie's Lavender, Decorator, Marks Tey (a nice purple and bronze), Mrs. Cuthbertson, Melba in glorious colour, and May Campbell were all splendidly shown, while the plants represented Inspector, Elfrida Pearson, Lavender George Herbert, Lady Miller, Thos. Stevenson, Dobbie's Lavender, Dobbie's Scarlet, and Dobbie's Cream—all splendidly clean and abundantly bloomed. Mrs. Cuthbertson had plenty of "fives."

Mr. Stevenson, Poole, was an extensive exhibitor of sweet peas, and put up a display of rather small flowers of up-to-date varieties, such as Flora Norton Spencer, Clara Curtis, Punch, Anglian Blue, America Spencer, Etta Dyke, and a number of promising seedlings. Mr. Robert Sydenham, Birmingham, contributed a pretty collection of sweet peas, and disposed the flowers pleasingly; chief among the varieties were Barbara, Lilian, Chas. Foster, Scarlet Emperor, Thos. Stevenson, Iris (in glorious colour), Maud Holmes, and the striking finely-waved Helen Pierce Spencer.

Messrs. E. W. King and Co., Coggeshall, displayed sweet peas elegantly, and put up Anglian Pink, Anglian Blue, and many other fine varieties in capital style. Messrs. G. Stark and Son, Great Ryburgh, showed some fine sweet peas, staging their George Stark, Florence Wright, Hercules, and other specialities in good form.

Mr. C. W. Breadmore, Winchester, had sweet peas on view, as might have been expected, and in his stand he set up lovely bunches of Aggie Elder, Princess Mary, King Alfred, an improved Helen Lewis, Lord Curzon, Helen Lewis, a fine strain of Countess Spencer, Elsie, Clara Curtis, Flossie Jeffery, Maud Holmes, and Mrs. C. W. Breadmore, all the flowers being of lovely substance and colour.

The Sherwood Cup for sweet peas was finely won by Mr. C. W. Breadmore, whose exhibit contained grand bunches of Countess Spencer, Nettie Jenkins, Aggie Elder, Lavender George Herbert, Helen Lewis, May Campbell, Melba, and Dazzler. Mr. W. E. Alsen, Waterlooville, came second, and Messrs. W. Lumley and Co., Hayling Island, were third. Sir Randolph Baker, Bart., Ranston, and Mr. L. H. Hatting, Hornchurch, were also prize-winners in sweet pea classes.

## CARNATIONS.

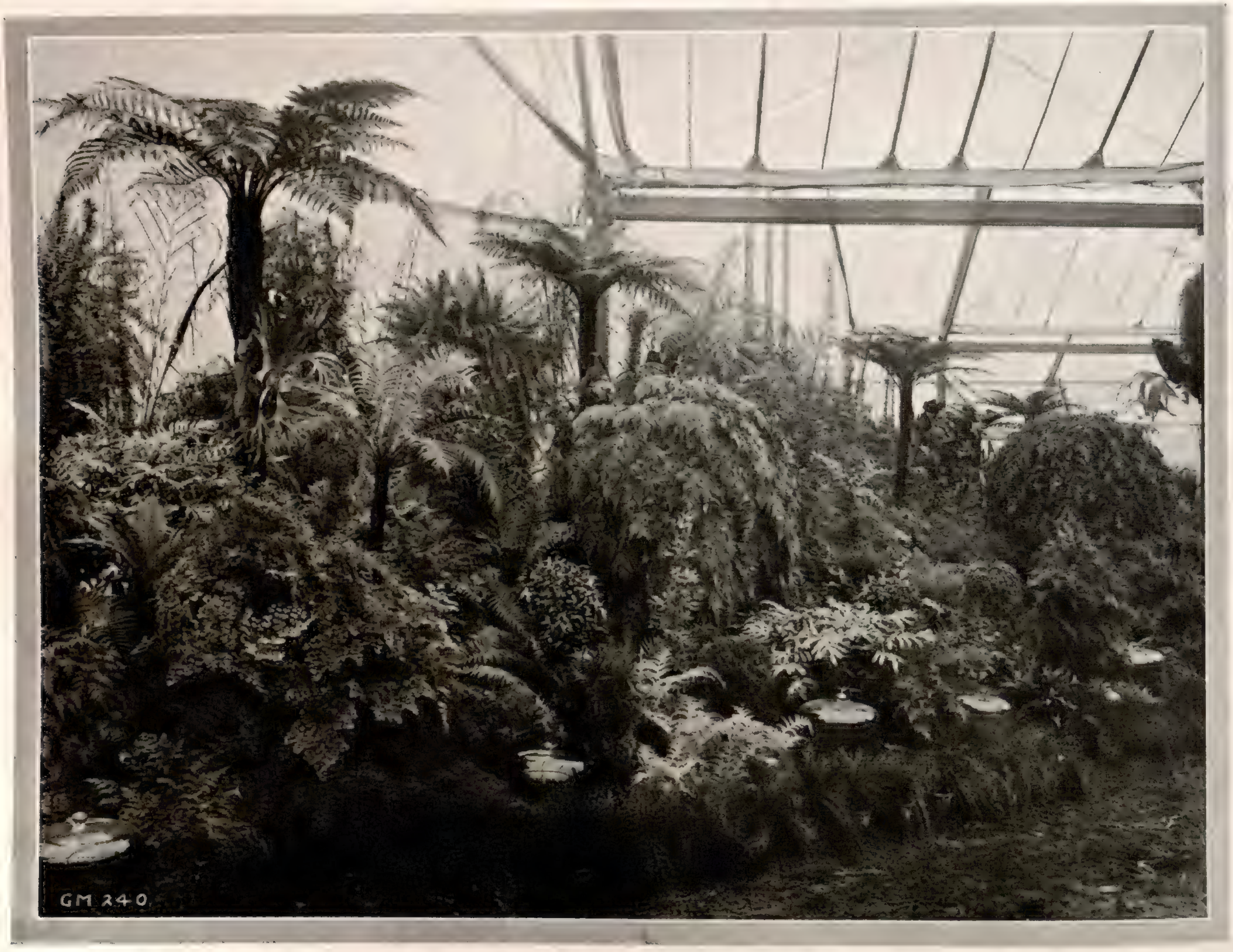
It is not sufficient to say that carnations were well shown, and that all the best varieties were represented, for it behoves us to put on record that there were staged the finest lot of these flowers we have ever seen, embracing American and British perpetuals, malmaisons, and borders, despite the early date for the last-named section. Scarcely a name that is known among the specialists was absent from the list of exhibitors, and, as might be expected, everybody had brought of their very best.

Mr. R. F. Felton, Hanover Square, London, had a very imposing group, arranged in bold but tasteful style. Massive vases and large baskets were filled with such varieties as R. F. Felton, Elektra, Sunstar, and Lady Northcliffe, the colours of the flowers being well set off by a groundwork of ferns and foliage plants. Mr. Grubb, gardener to C. F. Raphael, Esq., Porter's Park, showed very effectively. He had plants of the good old blush malmaison, and also Lady Coventry, Duchess of Westminster, and other of the most popular perpetuals.

Another good exhibit was that from Mr. A. E. Usher, gardener to Sir Randolph Baker, Randstone, Blandford, who had well-grown plants of the leading perpetuals, arranged in effective mounds over a carpet of small ferns. In the extensive group put up by Messrs. Stuart Low and Co., Bush Hill Park, there were Baroness de Brienen, Lady Alington, Cinnabar, and a number of other good things. Mr. Chas. Turner, Slough, showed borders, among which Queen Mary, Ruby, Lady Desborough, and The Pearl may be mentioned as being among the most pleasing. Messrs. Young and Co., Hatherley, Cheltenham, showed, as usual, in splendid style, their flowers of Cecilia, The Hon. Lady Audley Neeld, Duchess of Devonshire, and other varieties being especially good. The pretty mauve flowers of Greswolde Williams, and Golden Glory were other distinct sorts shown by this firm.

Mr. Chas. Blick, The Warren Nurseries, Hayes, Kent, showed both perpetual and border varieties, his flowers bearing witness to splendid cultivation. King George, a lovely pure white border, and Lady Hermoine, a clear rose pink, were specially good. Mr. G. Lange, Hampton, had a very nice exhibit, and Mr. Burnett, of Guernsey, brought over a capital lot, including the remarkably fine Wodenethe, Mrs. C. W. Ward, Rex, and Alma Ward.

Mr. J. Douglas, Edenside, Great Bookham, had a lovely lot of new and very beautiful border varieties, among which Virginia, Mrs. Henwood, Jean Douglas, and Hercules were, if not the best, exceedingly good.



A COMPREHENSIVE AND REMARKABLY FINE COLLECTION OF EXOTIC FERNS.
Exhibited by Messrs. H. B. May and Sons, Edmonton.

The laced pinks class was won by Mr. C. H. Herbert, Acocks Green, who showed Ida, Iona, Fair Maiden, and Princess Mary. His competitor was Mr. J. Douglas.

Messrs. G. Mount and Sons, Canterbury, proved that they can grow and show other things well besides roses, for they exhibited a grand lot of carnations in one of the tents where the competitive classes were accommodated. Another nice lot of flowers came from the nursery of Messrs. G. and W. H. Burch, Peterborough, and we were very much impressed by the carnations shown by Sir Randolph Baker. Mr. G. F. Waters, Balcombe, made a fine effect with carnations, and another good collection was set up by the Clurry Nursery Company, Berks. Some beautiful flowers were seen amongst the carnations staged by Mr. A. F. Dutton, Iver, Bucks, and charming also were the flowers sent from Locksheath Nursery, Southampton. Effective in every respect were the carnations from Mr. G. Engelmann, Saffron Walden, and Mr. B. E. Bull,

### FRUIT TREES.

Messrs. Laxton Brothers, of Bedford, filled a corner of the grounds with a collection of trained fruit trees in pots and tubs. On the fence at the back were trained peaches and nectarines, carrying good crops of fruit, and in front of these were good specimens of espalier apples and pears, cordons, and peaches and nectarines in pots. All the trees were well grown and healthy in appearance. Messrs. Stuart Low and Co., Enfield, also sent a small collection of trained trees, but several of the specimens betrayed signs by the flagging of the foliage, that they had not appreciated being lifted.

It is questionable whether a finer specimen of a complete fruit garden at an horticultural show has ever been seen than that exhibited by Messrs. J. Veitch and Sons. It was conveniently placed in a sheltered corner, and loganberries in flower, climbing over arches, were the first indication of its presence. A line of fan-trained pears, cherries, peaches, nectarines, and plums ran round the back, interspersed with single cordons, to convey the idea of furnishing an outside garden wall, and next to this was a broad path encircling the group. Through the centre of the latter ran a path with vertical cordons on either side, and some capital specimens of what may be described as one-sided espaliers, suitable for planting at the ends of walls that are furnished with vertical cordons. That the trees came from Veitch's means to say that they were well-grown and trained, in the pink of condition as regards health, and, in addition to leathery foliage, the majority of the trees were furnished with good crops of fruit. In between the standards, bushes and pyramid apples, pears, plums, etc., were gooseberries and currants, figs and nuts in the course of training, and in front was a line of cordon gooseberries thickly studded with berries. All the trees were in pots and tubs sunk into the ground, and the carpet of green turf with which the soil between the trees was covered gave this unique fruit garden a most natural appearance. Apart from being interesting, this exhibit, as a demonstration of fruit culture, pruning, and training, was distinctly educational. Two standard apples in front, having luxuriant bunches of mistletoe growing in their heads, attracted much attention, but it is hardly necessary to say that the people who appreciated these specimens were not gardeners.

Inside the large marquee Messrs. Veitch and Sons were once more represented, but this time with a magnificent circular group of fruit trees in pots. Peaches and nectarines were the conspicuous feature, and most of the specimens were well covered with fruit. A treble cordon plum in a tub simply laden with fruit was much admired, and golden-yellow against a setting of green leaves, were the little oranges shown in baskets. Standard figs were a feature, and the specimens of standard and fan-trained peaches and nectarines in the group were remarkably well cropped. Altogether this was a very fine exhibit, and worthy of the reputation of the Chelsea firm. It may be added that this fine group was margined by a collection of finely-grown strawberries in pots.

Mr. Jas. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury, struck a new line in the idea of arrangement respecting his display of fruit. There were vines in the exhibit, trained over a series of bamboo arches, which formed a kind of pergola, and the bunches of black and white grapes hanging from the horizontal cross-pieces reminded one somewhat of an Italian scene. At the base of the pergola pillars hung melons which were shown in a growing state in pots, and fruiting vines in pots, as well as specimens of those peaches and nectarines in pots which Mr. Hudson grows so well, were also represented. Fruiting specimens of the famous Gunnersbury figs in pots were also included, and very tempting in appearance were the dark-red cherries, which hung from the branches of what looked like miniature orchard standard trees in pots. There were golden-yellow plums of the gage type nearly ripe, and altogether this was a fine collection of fruit trees to come from a private garden; and lastly there was hardly less credit due to the exhibitor for the picturesque method of arrangement as for the excellence of the material.

AN EFFECTIVE GROUP OF STELLATE CINERARIAS, CALCEOLARIAS, SCHIZANTHUS, ETC.
Exhibited by Messrs. Sutton and Sons, Reading.

Messrs. Laxton Brothers, of Bedford, had a very interesting circular exhibit of growing fruit inside the large tent. There were loganberries growing over arches, and underneath them fine fruiting specimens of the new Laxton berry, which, as it was exhibited, is a very promising-looking fruit. Variety was added by a mixture of peaches and nectarines, standard gooseberries, and currants in pots, all bearing good crops. There were strawberries, of course, and choice and tempting did the finely-coloured fruits appear. The chief varieties exhibited by the firm on this occasion were King George, which Laxton's claim to be an improvement on Royal Sovereign, and Maincrop, a very large, wedge-shaped fruit. A very striking novelty in the exhibit was a variety called the Earl, which produces deep and very striking-looking fruits. A very fine exhibit of much educational value are words that justly describe the group.

Messrs. Thos. Rivers, of Sawbridgeworth, were, of course, represented by those magnificient fruit trees in pots with which visitors to the Temple Show are familiar, but for this occasion notable additions were made. Peaches were very fine, particularly the Duke of York and Kestrel, and brightly red were the cheeks of the Cardinal nectarines, which peeped out from amongst the healthiest of green leaves. In addition to the above, there were some very fine fruiting trees of Lady Sudeley apple, Pitmaston Duchess pears, and Early Rivers plums, just changing colour. An old gnarled tree of the cherry Guigne Annonay, which stood in the centre in a pot, and well furnished with fruit, suggested the question as to whether Messrs. Rivers are attempting the art of growing dwarf orchard trees in pots after the manner of the Japanese pigmy conifers. Novel and extremely effective was the collection of oranges and lemons in pots, exhibited by this firm. There were massive citrons, almost as big as melons, white lemons, Maltese blood oranges, variegated oranges, egg oranges, all more or less large, and tiny little baby oranges. In fact, this exhibit was quite a demonstration of the material there is contained in the orange and lemon family.

All the way from Hereford came a very interesting collection of growing fruits set up by the King's Acre Nursery Company. We noticed pyramid and cordon gooseberries bearing good crops, and Comet red currants growing in the same form, simply roped with bunches of fruit. Peaches looked healthy, but the fruits were not yet ripe; and figs in pots were quite a good feature. Apples of James Grieve and other varieties in pots were very well cropped, as also were specimens of Pitmaston Duchess pear, and Jefferson plum. There was something novel about the umbrella-shaped peaches in pots, and the trained gooseberries and currants were much admired.

Messrs. Storrie and Storrie, of Glencarse, mixed fruiting trees in pots with flowers and foliage plants and ferns, but we cannot commend this as being the best way of exhibiting fruit trees to advantage. There were some shapely and well-fruited gooseberry bushes in pots, also currants, some fair cherries, and good specimens of peaches, pears, and plums.

Messrs. T. Rivers and Son easily won first prize with half a dozen cherries in pots, and Baron E. O. von Ernsthauson, Ditton Hill, was given a second for twelve peaches and nectarines. The Marquis of Salisbury had the best twenty strawberry plants, and the King's Acre Nursery Company won with six plums in pots, Messrs. T. Rivers and Son being second. The last-named firm had the best figs, and they also showed four fruiting vines in pots. Messrs. W. Seabrook and Son, Chelmsford, sent a few plum trees in pots, and a few specimen apples.

### FRUITS.

It was quite a relief to turn from the flowers and plants to the fruit section, and here we found Mr. N. F. Barnes, of Eaton, winning for the Duke of Westminster first prize for a collection of twelve dishes of fruit. Black Hamburgh and Madresfield Court grapes were very good, but it seemed a pity that the Muscats should have been cut at the unfinished stage they were in. Peaches were fine, also nectarines, there was a good dish of Lady Sudeley apple, and one of Transparent plum. The Marquis of Salisbury was second in this class with a collection in which grapes were weak, but strawberries and peaches were very fine.

In the class for a collection of nine dishes, his Majesty the King, Windsor, came in first. In this exhibit there were some good pieces of Black Hamburgh and Foster's Seedling grapes, as well as good nectarines and peaches. The second prize was awarded to the Duke of Portland, Welbeck, and the third prize was given to Mr. F. B. J. Wingfield Digby, Sherborne Castle, Dorset, for a collection which did not compare with the one mentioned above.

The best of the fruit classes was that in which prizes were given for a collection of fruit decorated with plants and flowers, and at the moment we were reporting the King and Queen came to inspect the exhibit from the Royal Gardens at Windsor that won the first prize. Conspicuous in the collection were fine Black Hamburgh and Madresfield Court grapes, Duke of York peaches, nectarines, and figs. Odontoglossums made up the floral decorations, with trailing smilax between the dishes. The Duke of Westminster had the second award, and here we thought the floral decoration was better, but the fruit, particularly the grapes, was not up to the standard of that which came from Windsor, though peaches, nectarines, and figs were very good. The Marquis of Salisbury was third, and here carnations provided the decorative material.

Lady Wantage, Lockinge Park, appeared to be the only exhibitor in the class for twelve bunches of grapes, and the first prize was richly deserved, as the Hamburghs, Foster's Seedling, and Madresfield Court were very good, and the bunches were set out in a highly decorative manner. The Trustees of the Duke of St. Albans, Bestwood Lodge, had the best dish of nectarines, showing Early Rivers, while the Duke of Portland won with a dish of peaches, and the trustees of the Duke of St. Albans for a collection of three dishes of peaches and three of nectarines.

Melons were sparsely scattered over a long length of tabling. The Horticultural College had the best pair, and they also won with a scarlet-fleshed specimen, and a green-fleshed melon. A. J. Thornhill, Esq., Huntingdon, had the best white-fleshed melon, and the Marquis of Salisbury won with a dish of figs.

For two bunches of black and two of white grapes, the Marquis of Salisbury won with very moderate samples, and all the exhibits in this class were second rate. The Trustees of the Duke of St. Albans had the best pair of Black Hamburghs, but the colour was deficient, and for Foster's Seedling Sir W. Greenwell won with bunches that were by no means finished. The Duke of Portland was the only exhibitor in the class for a pair of Buckland Sweetwater bunches, and won first prize. The name of the Duke of Portland appeared over a collection of several fine dishes of peaches and nectarines, and in the strawberry classes the Earl of Lytton had the best dish of twenty; while the Marquis of Salisbury won with a collection of nine varieties. The Duke of Westminster was the only exhibitor of plums, and won first prize with two good dishes of Golden Gage.

A GROUP OF PYRAMIDAL AND STANDARD BAYS.

Exhibited by Messrs. J. Veitch and Sons, Chelsea.

In further reference to melons, the Horticultural College at Swanley set up a nice collection of fruits, but the first prize in this class, which was for twenty-four fruits, was easily won by Mr. C. H. Beckett, Chilton Gardens, Hungerford, who displayed some magnificent fruits. The Duke of Westminster was a capital second in this class, and Mr. C. F. Raphael, Shenley, third, with quite a creditable lot. The Duke of Portland was the only exhibitor in the class for two dishes of cherries, and was awarded first prize.

It seemed more like September than May when one looked on the collection of apples shown by Messrs. G. Bunyard, of Maidstone, but everybody remarked how well the fruits had been kept, particularly the dishes of Smart's Prince Arthur, Sandringham, Alfriston, Northern Greening, Blue Pearmain, Sturmer, Wellington, and Newton Wonder.

### BEGONIAS.

Double tuberous begonias, more like giant dahlias in point of size, were shown by Messrs. Blackmore and Langdon, Bath, and the collection deservedly won the first prize. The colours were excellent, the flowers simply magnificent, especially Princess Victoria Louise, salmon-pink, and Mrs. Peter Blair, white. For the time of the year this was a really wonderful display. Messrs. T. Ware, Feltham, set up a very fine lot of double tuberous begonias, for which they were awarded second prize. Some of the flowers here were remarkably fine, and the colours rich and striking. Messrs. Blackmore and Langdon won the silver cup for a collection of single tuberous begonias with a group of fine plants, some of the fringed flowers being remarkably good; and the firm had the same honour in the class for fifty double tuberous begonias. In this collection the varieties Duchess of Cornwall, Winsome Partner, and Mrs. J. Booth were very good. Mr. W. S. Edwardson, of Sidcup, set up an interesting collection of tuberous begonias, which won first prize in their class; and Mr. F. Davis, of Pershore, set up a group that was quite creditable.

### CHINESE, JAPANESE, AND OTHER RARE PLANTS.

An immense collection of trees and shrubs, all raised by Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, from seeds collected in Western China by Mr. E. H. Wilson, attracted the careful attention of all lovers of new, rare, and choice hardy plants. A very large number of kinds represented the genera rubus and vitis, but there were a few conifers, and a whole host of other things, and a few of outstanding merit were Salix magnifica, which has leaves eight inches by six inches; Juglans cattleayensis, Deutzia Veitchi, Deutzia longifolia, Cotoneaster divaricata, Potentilla fruticosa, Ailanthus Vilmoriniana, the graceful Cotoneaster Zabeli, Spiræa Wilsoni, Lonicera Maacki, the interesting Hydrangea Sargenti, the fine Cotoneaster salicifolia rugosa, with graceful pendulous branches, and Stranvaesia Davidiana undulata. This also was a wonderful collection, and one more evidence of the enterprise and potriotism of the private patrons of horticulture.

Messrs. W. Fromow and Sons, Chiswick, put up a goodly set of Japanese maples, but crowded these graceful plants rather much. The finely cut-leaved Acer japonicum laciniatum, A. palmatum linarifolium, A. p. roseum marginatum, and A. dissectum purpureum were a few of special merit in a fine set.

Messrs. J. Veitch and Sons, Chelsea, submitted a large group of no fewer than two hundred and forty species of Chinese plants, all introduced by them through their collector, Mr. E. H. Wilson, V.M.H. Climbing vitis and rubus were plentiful, while berberis, ilex, aralias, viburnums, osmanthus, and spiræas were quite numerous, many of them as yet unnamed. Here was material from which to add in future years to the attractions of our gardens. A few of the plants were in flower, and of these we made note of the pink Rosa Willmottiæ; Styrax Hemsleyanum, with drooping white flowers; Cotoneaster Harrowiana, Dipella ventricosa, with its green seed pods, Buddleia variabilis Veitchiana, Celastrus latifolius, the lovely pink large-flowered Deutzia Veitchi, and Hydrangea Sargenti and Stranvaesia undulata.

Messrs. Fisher, Son, and Sibray, Handsworth Sheffield, made several fine exhibits in the great tent, displaying the choicest of ornamental trees and shrubs, chiefly those with coloured foliage and elegant leafage. One of their groups was of Japanese maples, and it was a capital effort.

Mr. Fielder, gardener to Miss Willmott, V.M.H., exhibited a number of new shrubs, chiefly of Chinese origin. Rhododendron microphyllum, Berberis Gagnepaini, Deutzia longifolia, and Hydrangea Bretschneideri were the best of the flowering subjects.

The Rev. A. T. Boscawen, Ludgvan, Cornwall, staged a very pretty set of varieties of Leptospermum scoparis; the crimson-flowered L. s. Nicholi (F.C.C.) was especially fine, the whole plant thickly studded with its small red flowers; and L. s. Boscaweni is white (A.M.) Both these should prove very acceptable to lovers of such plants.

SOME OF THE FINELY-FRUITED ORCHARD HOUSE TREES
Exhibited by Messrs. T. Rivers and Son, Sawbridgeworth.

Messrs. F. Sander and Sons' new plants included the very graceful Adiantum Siebertianum, Mussænda Sanderi, with large white bracts; Alocasia Micholitziana, the variegated Eriobotraya japonica variegata, and Trevesia Sanderi of aralia-like habit; this set secured a first prize.

Roscœa cautilioides, a yellowish flower, was one of the prettiest of new flowers, and it was shown by Messrs. Bees, Lim.

### VEGETABLES AND SALADS.

One hundred square feet of tabling is a good deal of space to fill with vegetables, but this was well done by the Mempes Fruit Farming Company, Purley, and they well deserved the gold medal they won. We do not particularly favour cucumbers and tomatoes exhibited in boxes, but the produce was very fine, and along the front were dishes of the whitest of cauliflowers and the greenest of peas, crisp-looking lettuces, young carrots, and clean potatoes. The French beans in this exhibit were also very good.

There was a fair amount of taste in the arrangement of the collection of vegetables which won first prize for the Thatcham Fruit and Flower Farm, Newbury, and, except for the very small potatoes, the quality was of a good standard. Cauliflowers were quite a good feature, and growing peas, festooned in the background, looked very effective. The tomatoes, though small, looked very fresh, and the same may justly be said of all the dishes which lay on a bed of parsley on the stage.

We expected something good from that king of vegetable growers, Mr. E. Beckett, of Aldenham, at an International Show, but the collection set up exceeded our expectations. To say that the vegetables came from Aldenham House Gardens is equal to the expression that the arrangement was tasteful, and every dish on the table bore the stamp of good quality. The Duke of York, May Queen, and King Edward VII. potatoes, for the time of the year, were superb, and the clusters of peas carried the deepest of bloom. On a green board at the back were pearly-white cauliflowers, red and white celery, beet, cabbage lettuce, and marrows, and on raised stands in front one could not fail to admire the fresh, green cucumbers, the giant asparagus, fruits of the long purple egg plant, turnips, tomatoes, and butter beans. Carrots were as fresh as paint; turnips as white as snow, with butter beans of a lemon-coloured tint. It was a fine exhibit, and worthy of the man who grew and staged the produce.

Mr. C. F. Raphael won a first prize in a space of 50 feet with a collection of vegetables that was highly creditable. The best dishes were Sutton's Silver beet, potatoes in variety, early giant peas, cauliflowers, and marrows, and most of the dishes were displayed on wooden stands elevated above a white groundwork on the table. The second prize here was won by Mr. A. B. H. Goldschmidt, Mildenhall, and the exhibit was arranged somewhat similar to the above, but the third prize display, sent from the St. Vincent's Industrial School, Dartford, was only third-rate by comparison, and there was far too much greenery used in setting up the dishes.

The Duke of Portland won in the class for twenty-five dishes of vegetables with specimens that bore the Gibson stamp of quality. Fine indeed were the conical mounds of cauliflowers, lettuces, and marrows, and in front, raised above a groundwork of purple velvet folds, were grand dishes of green peas, broad beans, potatoes, cucumbers, the finest of marrows, and the freshest-looking of spring cabbage. A fine exhibit without a doubt.

In our opinion there was a little too much parsley used in the collection of vegetables which won first prize for W. H. Myers, Esq., Swanmore Park, but we have nothing but praise to give to the fine dishes of Centenary peas, Ideal potatoes, Red Milan turnips, and Perfection tomatoes. Late Queen broccoli, too, was very good, and Flower of Spring cabbage was nicely hearted. The Marquis of Northampton was a very good second, and T. H. Tatham, Esq., Kendall Hall, Elstree, third; but all through this class parsley was employed with a liberality that bordered on extravagance.

We liked the collection of vegetables that won the premier award for E. Biggs, Esq., Fleet House, Weymouth, the Early Gem carrots being especially good, and the arrangement tasty; but in describing the collection from W. B. M. Bird, Esq., Eastham House, Chichester, which was placed second, we again use the expression, too much parsley in the garnishing. J. A. Bigge, Esq., Frome, Dorchester, had the best six dishes, cauliflowers being the best feature; but Mr. H. Bradshaw's exhibit from The Grange, Steeple Aston, was not set out to the best advantage, though the vegetables were good.

Mr. S. Mortimer, of Farnham, won a first prize with the cucumbers for which he is famous; Mr. W. E. Alsen, Hants, second; and the Duke of Portland third. A. J. Thornhill, Esq., Huntingdon, also won a prize with six cucumbers; and Baron E. O. von Ernsthausen, Ditton Hill, was to the front with three.

A FINE COLLECTION OF STRAWBERRIES, CHIEFLY NEW VARIETIES, AND OTHER FRUITS.
Exhibited by Messrs. Laxton Brothers, Bedford.

Potatoes were not a great show, as might have been expected, but Mrs. Dennison, Berkhamstead, showed six nice dishes, which won a first prize; and for three varieties W. H. Myers, Esq., Swanmore, exhibited some very nice examples. We have not for a long time seen a prettier arrangement of salads than that which was set up by Mr. E. Beckett, and won first prize; W. H. Myers, Esq., was second, but this exhibit would have looked better without the wood-wool between the dishes. Tomatoes were both numerous and good, the Duke of Portland being a splendid first with six dishes; and the specimens shown from Swanmore in the three-dish class were equally good. Giant asparagus was shown by Mr. A. J. Harwood, Colchester; and Mr. J. Garland, Exeter, also showed some good heads.

In point of numbers, French beans were rather weak, and H. W. Myers, Esq., won with very tender pods. A few dishes of broad beans appeared, and here Mr. W. B. M. Bird took the chief honours. In the beet section, Mr. E. Biggs was to the front, and the Duke of Portland had by far the best cauliflowers. In the carrot class the Duke of Portland was the leading prize winner, and Messrs. Tigwell and Sons, Greenford, had the best exhibit in the mushroom class. Green and well-filled were the pods of green peas with which Mr. W. H. Myers was first, and for a single dish of potatoes the Duke of Norfolk won with Sutton's Balmoral Castle, the same exhibitor also being on the top with a dish of a variety not in commerce, showing a potato called Sutton's New White. There were a few lots of radishes, in this class Mr. W. H. Myers being the winner; and in the rhubarb class Mr. E. J. Preston showed sticks of enormous dimensions. White, fresh-looking turnips won a prize for Mr. W. H. Myers; and the Duke of Portland was the only exhibitor of three pairs of marrows. The Halliford French Garden, Shepperton, sent a lot of vegetables and salads from their establishment, and conspicuous amongst them were carrots, lettuces, cauliflowers, turnips, and radishes.

Quite a big expanse of tabling was filled with vegetables from Messrs. Carter's, Raynes Park. Everything staged was fresh and good, and conspicuous in the multitude were cauliflowers, cabbage, tomatoes, and new potatoes. The length of tabling filled with vegetables from Messrs. Veitch's, of Chelsea, was loaded with fine, clean specimens. Growing peas in pots made a suitable centrepiece, and other conspicuous features were some grand cauliflowers, mushrooms, tomatoes, cabbage, turnips, and lettuces; the vegetables were tastefully displayed in neat wicker baskets. Gigantic stalks of rhubarb were staged by Mr. T. E. Dawes, Norfolk. Very effective banks of spring cabbage, and a beautiful lot of lettuces were shown by Mr. E. Beckett, from the Aldenham Gardens.

## HARDY RHODODENDRONS AND AZALEAS.

These two important classes of hardy shrubs were contributed in large numbers, and arranged in bold groups in the various parts of the large tent they produced a rich and tasteful display of colour. Prominent among the several exhibitors were Messrs. J. Waterer and Son, of Bagshot, who had a tastefully arranged group, remarkable alike for the splendid development of the plants and the high quality. The colection consisted of finely-flowered bush specimens interspersed with equally well-bloomed standards. The exquisitely beautiful Pink Pearl was prominent, as also was the equally beautiful pink Mrs. Sterling, which also is one of the fine varieties distributed by the firm. Especially noteworthy among the bush specimens were the glowing carmine Dorothy Fortescue, the lovely lavender-pink Lady Hillingdon, the brilliant red Marquis of Waterford, the rose-tinted white Mrs. John Clutton, the rich scarlet Prometheus, the deep scarlet Michael Waterer, the white Duchess of Connaught, the purple-blotched Sappho, the deep pink Stutagart, the bright carmine Cynthia, the deep pink Kate Waterer, the bright orange red Mrs. Holford, and the blush Miss Clementine Walsh. Very fine in the group were the standards of Pink Pearl, Marquis of Waterford, and Gower Waterer. Messrs. J. Waterer and Son also had a huge group, in which big bushes and standards of Pink Pearl were predominant, and produced a delightful effect. In this group were also fine examples of the pure white Mrs. Tom Agnew Everstianum, one of the oldest of the rhododendrons, and one of the best in its colour, which is an exquisite shade of lavender-rose; and Charles Bagley, an effective variety, bearing large trusses of deep rose-coloured flowers. A glorious display of colour was produced by the great group

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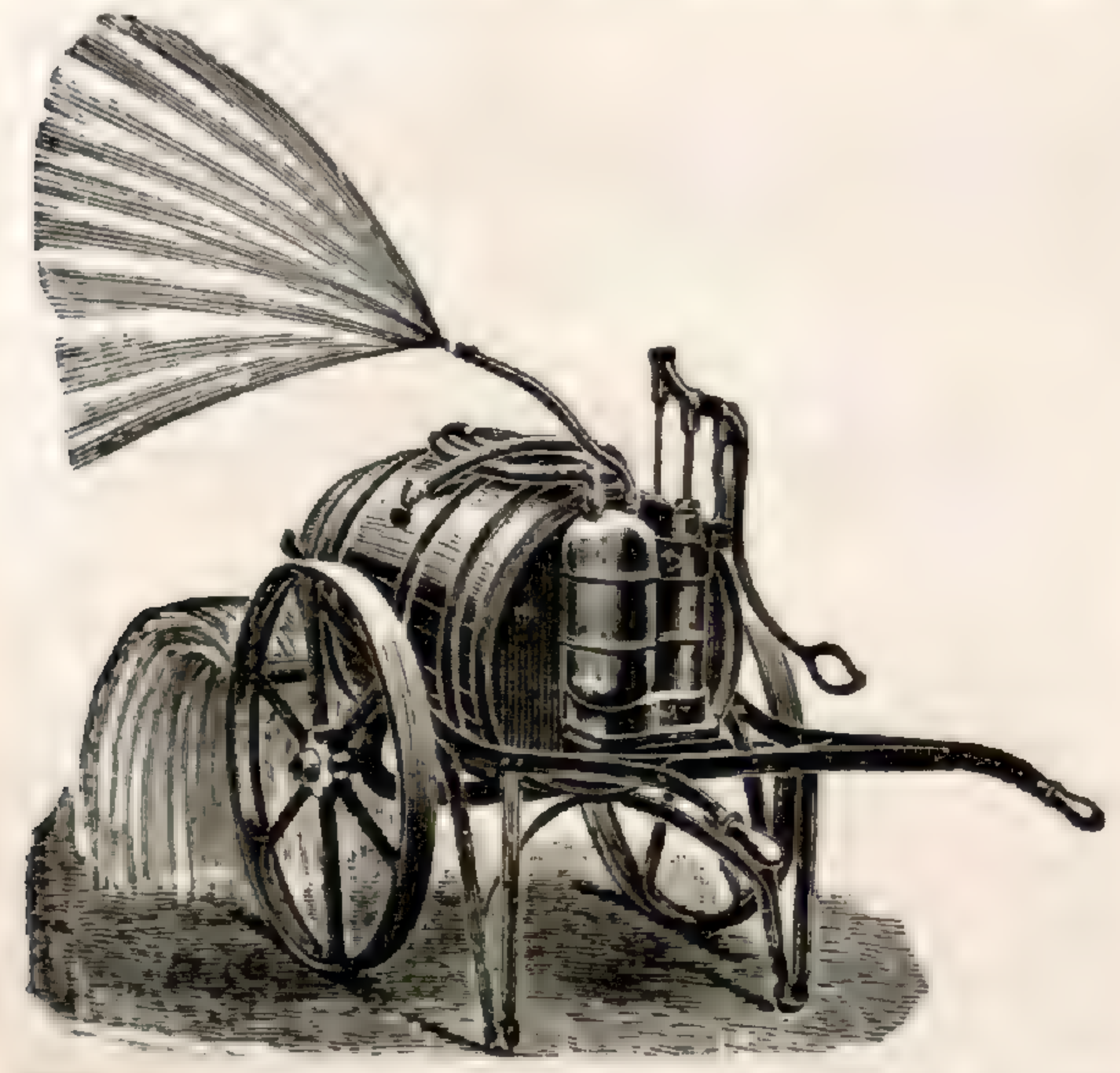

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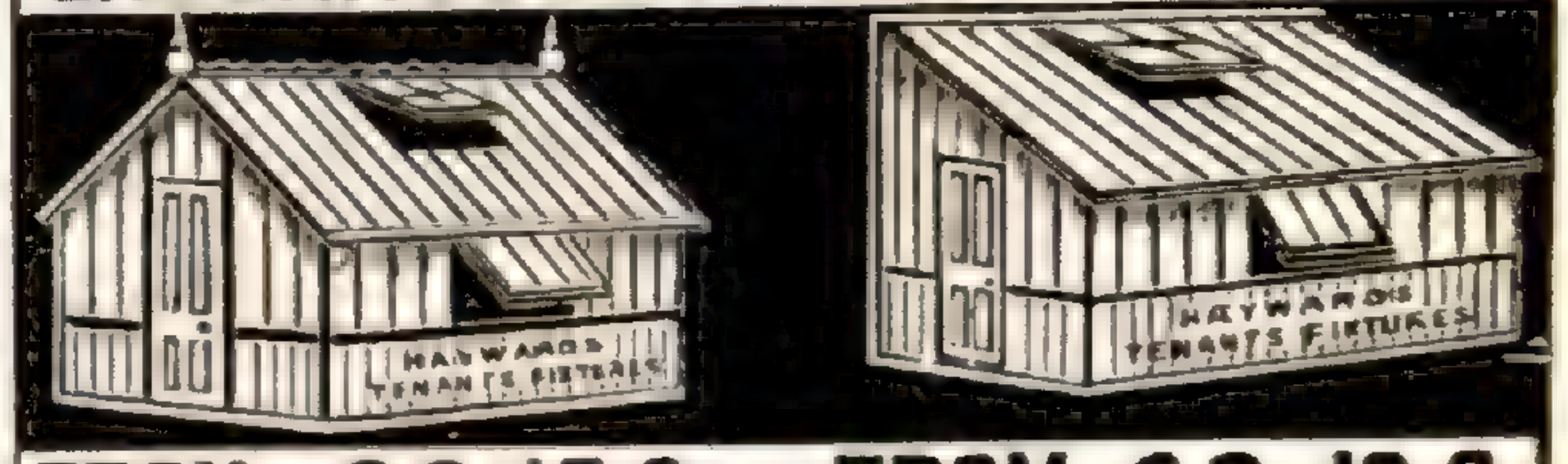

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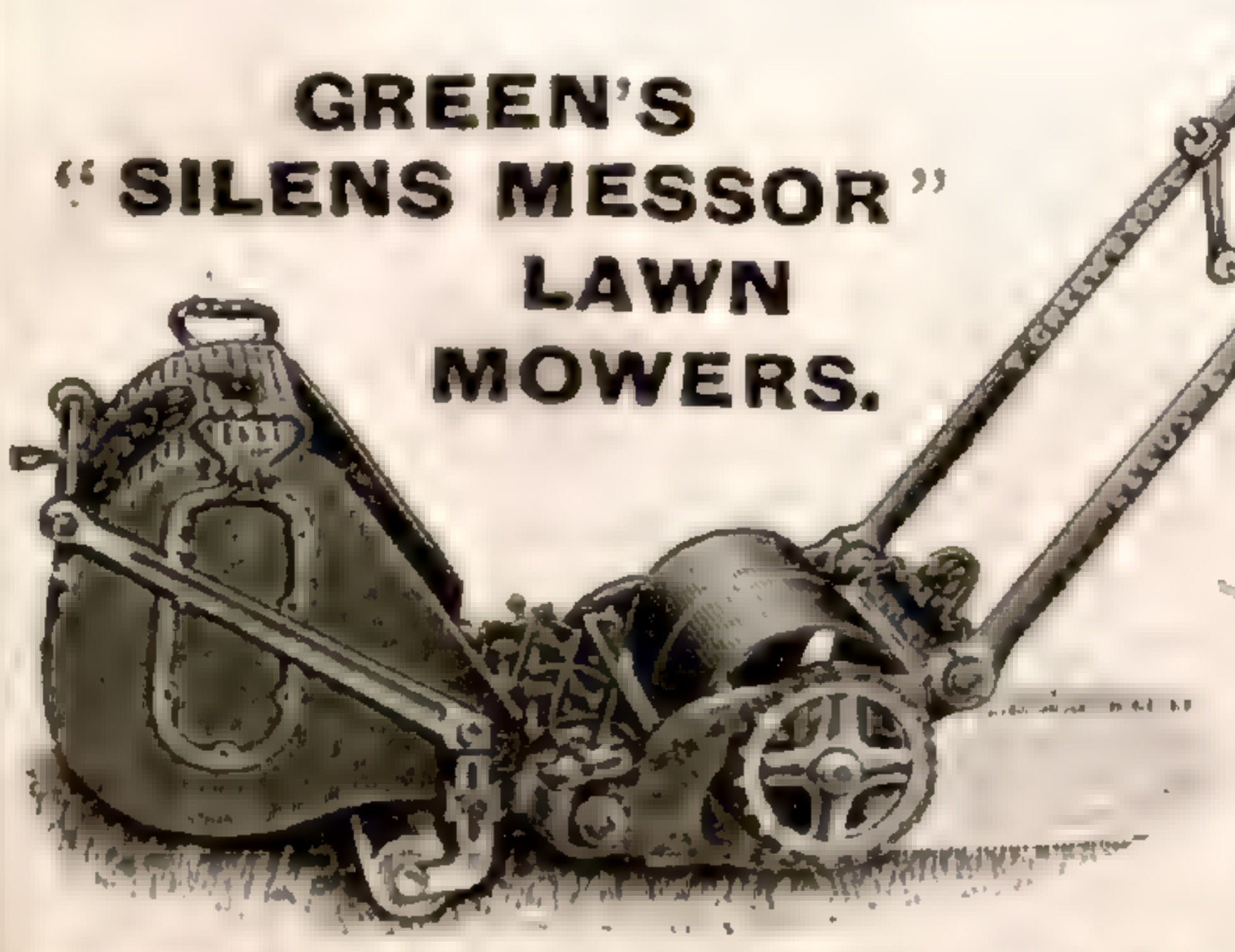

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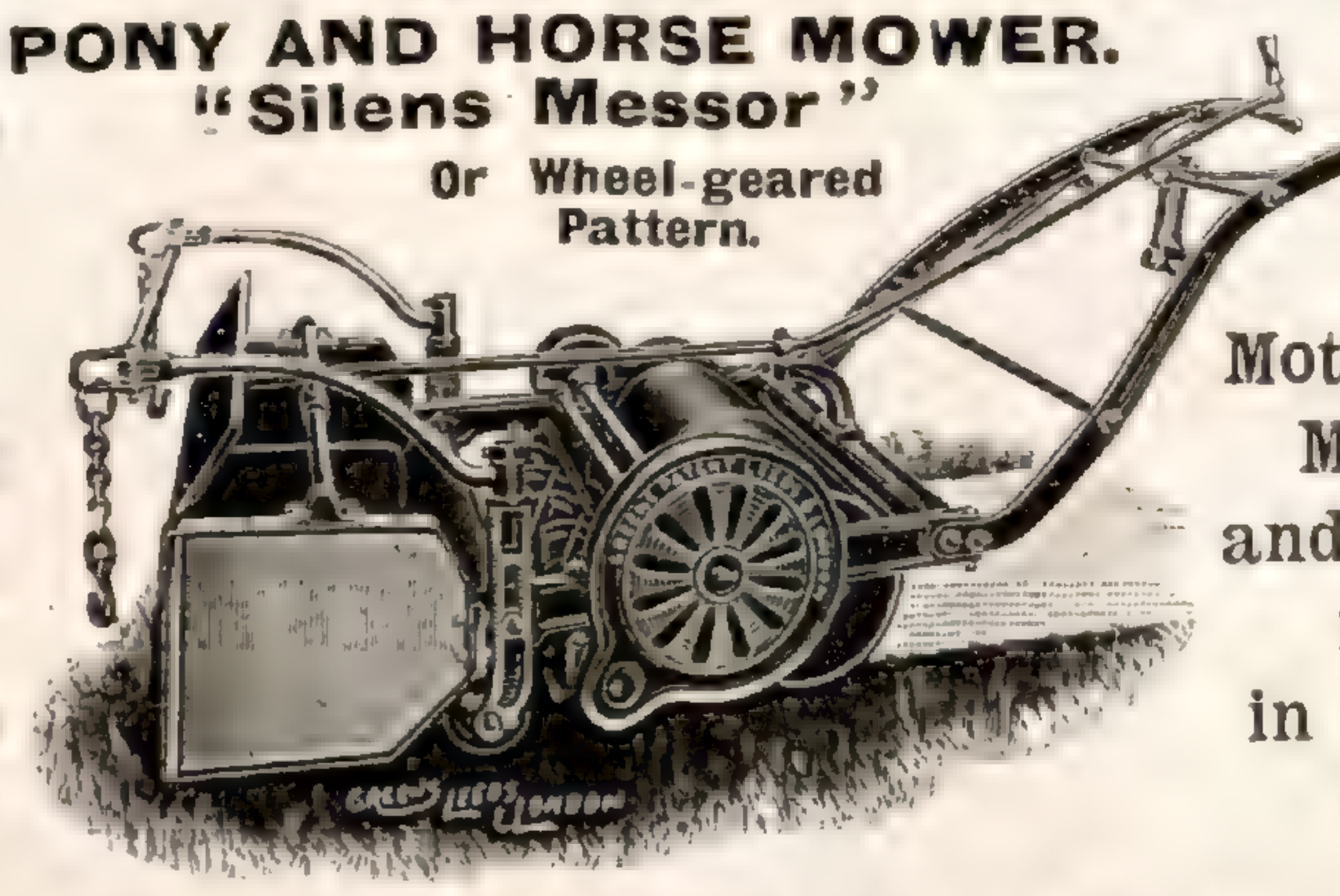

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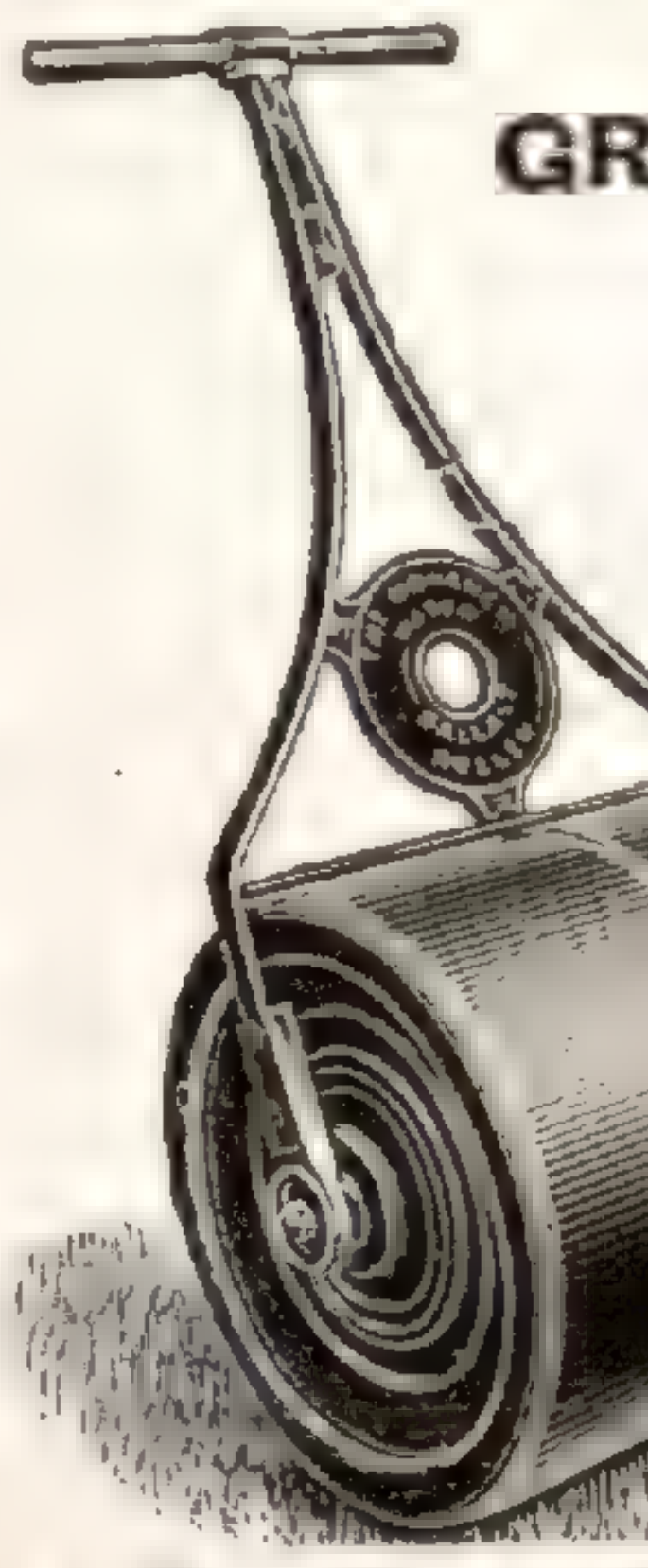

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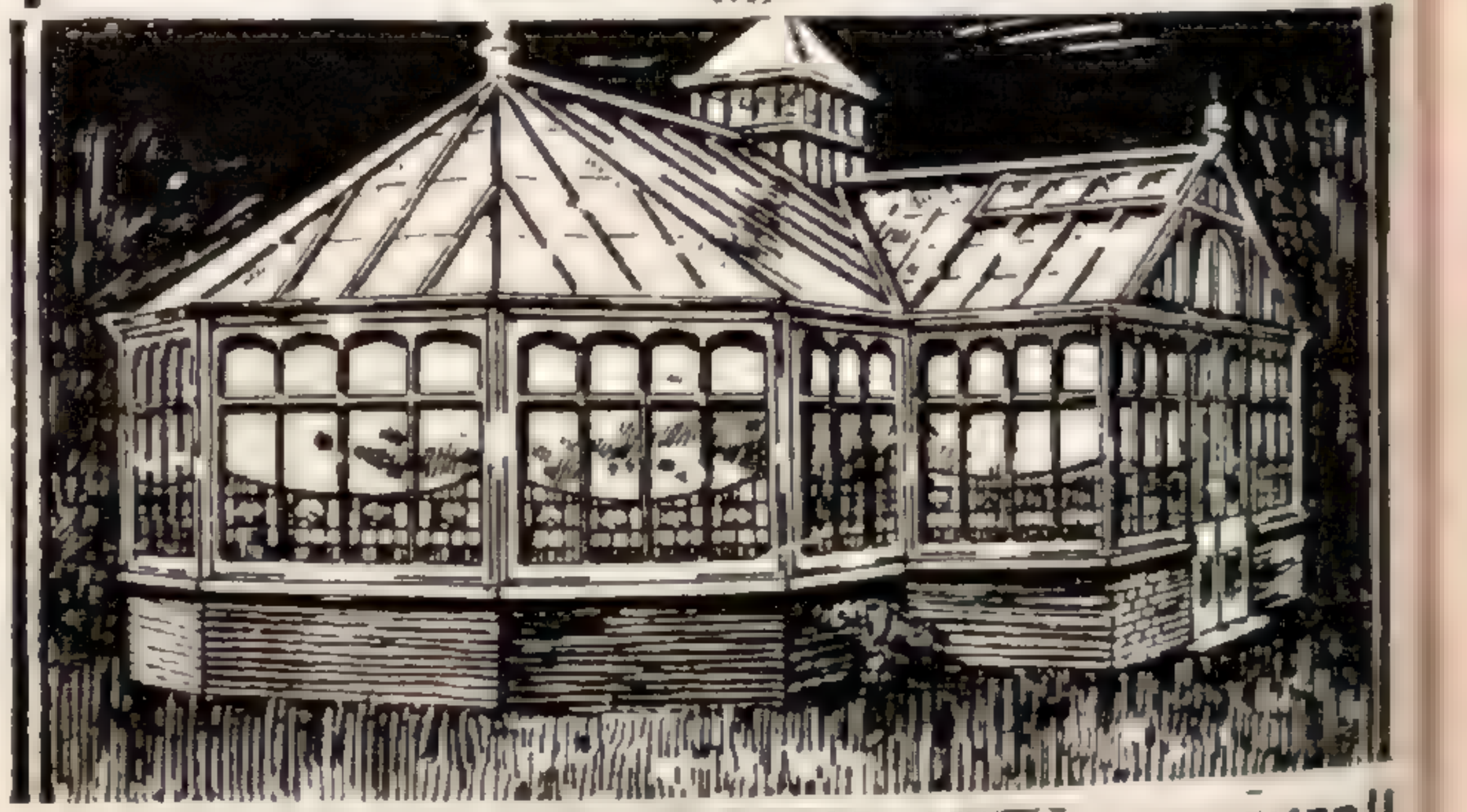

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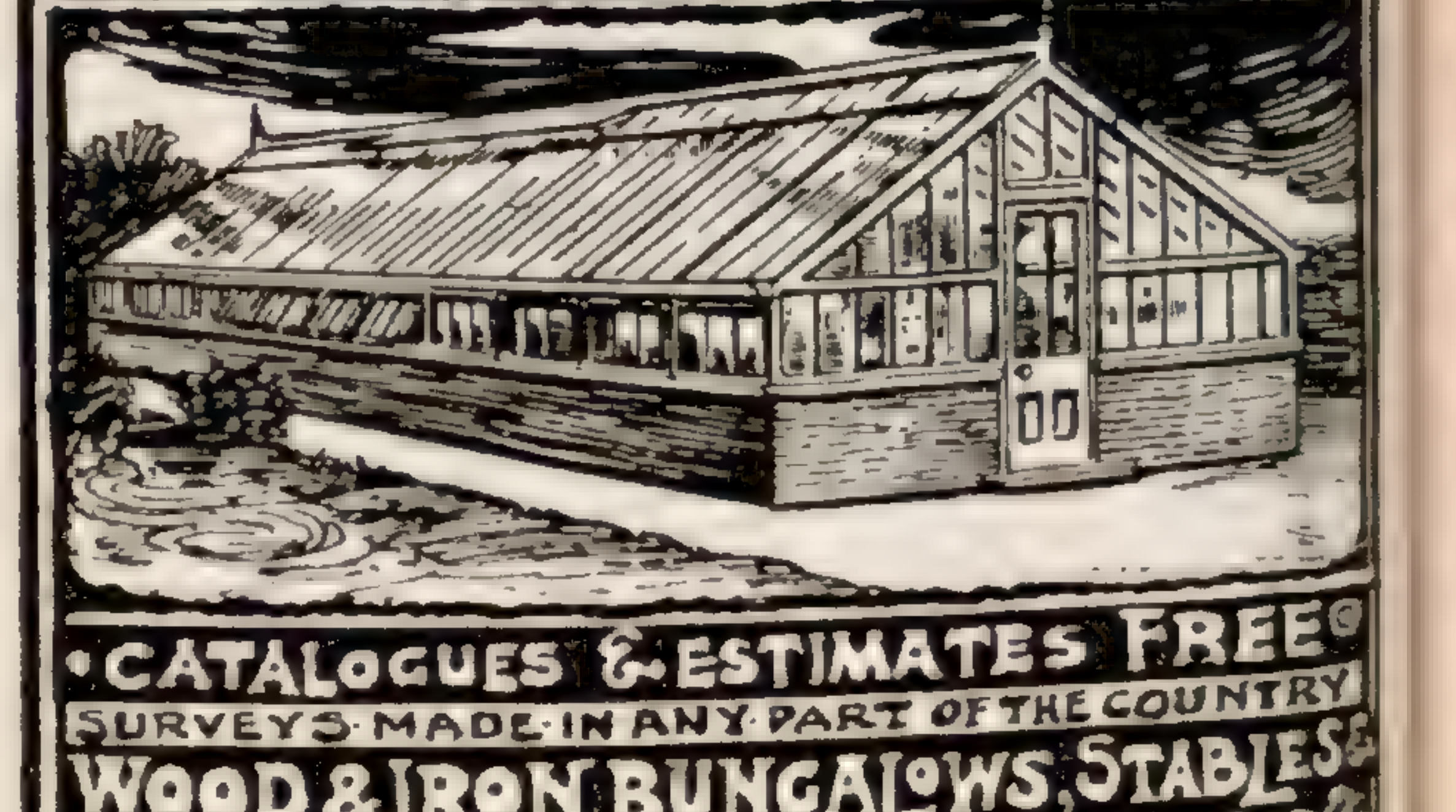

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of medium-size and splendidly-flowered dwarf specimens contributed by Messrs. Fletcher Brothers, Ottenshaw Nurseries, Chertsey; the arrangement was bold, and the colours contrasted with good effect. Immensely attractive were the hardy azaleas arranged in bold groups in their rich red, orange, and yellow hues. Occupying a prominent position in the big tent was the immense group arranged by Messrs. R. and G. Cuthbert, Southgate. On many occasions have this firm presented these useful and richly-coloured shrubs to public notice, but in no case were they in finer form than on this occasion. Dwarf and bush specimens were equally good, and conspicuous among the many fine varieties were the deep golden Nicholas Beets, the light orange President George, the soft red Frau van der Bour, the rich pink Fairy Queen, the soft yellow Anthony Koster, and other of the leading varieties.

A liberal contribution to the colour effects in the great tent was made by the effectively arranged group of mollis azaleas, arranged by Messrs. J. Veitch and Sons. Messrs. W. Cutbush and Son exhibited hardy azaleas in fine form, the varieties being chiefly the fragrant Ghent varieties. A rich display of colour was provided by the fine group arranged by Messrs. Jackman and Son, Woking. The varieties were of the best, the plants well bloomed, and the colours tastefully arranged. Ghent azaleas were also well shown by this firm.

## GREENHOUSE PLANTS.

Messrs. J. Carter and Co. decorated the left-hand side of the entrance, and they did it in their very best style. There is hardly need to say anything more, but there were glorious banks of schizanthuses, beds of stocks and petunias that were worth going miles to see, and the latter stood out from a temporary lawn of the greenest of grass. Beautiful in every particular were the banks of cinerarias, and suspended from the roof were well-furnished flower-baskets. Up the pillars climbed pink roses; palms and conifers formed the background, and—well, the exhibit was Carter's; we need add no other word.

Right in front of you as you entered this great exhibition was a mountain of Cineraria cruenta encircling a column inscribed with the names of fallen British soldiers, and as we approached it we heard a policeman observe that he did not suppose anything like it had ever been seen before. We were inclined to agree with the man in blue, and are rather at a loss for words to describe this magnificent display from the nurseries of Messrs. Sutton and Sons, Reading. The chief part of it was set out in a square, the cinerarias referred to in the middle, a mass of schizanthuses at this corner, then a bed of glorious begonias, a corner of wonderful gloxinias, another of calceolarias, a third of Primula obconica in many shades of colour, and circular masses of rose-coloured clarkias. The sloping sides of the square were edged with green turf, and every item bore the stamp of Sutton all over it.

Further on to the right you saw another grand exhibit from Messrs. Webb and Son, Stourbridge, in the form of an oblong. The schizanthuses, calceolarias, and cinerarias in huge mounds almost dazzled you with their brightness; but the green ferns beneath gave relief, the white lily of the valley were chaste and sweet, the hippeastrums showy, and the white Lilium longifolium pure and spotless. Graceful bamboos and palms gave a finish to an exhibit of surpassing beauty.

On the left as you entered the big tent, Messrs. Cannell and Sons, Swanley, were represented by a glorious bank of showy cannas, calceolarias in beauty, trusses of zonal pelargoniums, and other flowers, which were backed with a collection of rambler roses. A very pretty little collection of Saintpaulia Ionantha were shown by the Marquis of Salisbury.

Rather flat in arrangement, but nevertheless effective, was the group of well-grown gloxinias that won a cup for Messrs. J. Peed and Son, Norwood; and Messrs. R. Kerr and Son, Liverpool, sent up a nice lot of hippeastrums.

The one and only group of sarracenias came from Mr. A. J. Bruce, Manchester, and it deservedly won the gold medal, for the quaint plants were arranged in a delightfully tasteful manner, water and green moss being artistically used in putting up the group.

Messrs. Stuart Low and Co., Enfield, had a wonderfully interesting group in the big tent, which was full of surprises, for you came first on a bank of greenhouse plants in which hydrangeas and ericas predominated; and the next thing to claim attention was a big collection of bottle-brush plants that were much admired. Just round the corner was a very interesting collection of pillar and rambler roses that are described under that section.

Valley lilies and William Iceton, of Putney, are inseparable, and a whole bank of these sweet, spotlessly white flowers peeping above a groundwork of pale green foliage attracted the eye, and the scent was delicious.

The name of Messrs. Geo. Jackman, of Woking, and clematises go together, and the group of these beautiful flowers staged in the big tent was worthy of the firm. We have not space to describe them, but it is doubtful whether the firm has ever shown a finer lot of plants.

THE PRESIDENT'S CUP.

For the most meritorious contribution to the Exhibition, exclusive of Orchids.
Won by Messrs. VEITCH and SONS.

Quaint, pretty, some sweet, others pepperminty in their scent, are adjectives which describe one or other of the scented pelargoniums exhibited in the solid-looking group from the Hon. Vicary Gibbs, Aldenham House; but for those who had time to examine them the plants were highly interesting.

A group of standard acalyphas that were remarkably well grown came from Colonel the Hon. Mark Lockwood, Romford, and next to them was a blazing of zonal pelargoniums that were dazzling in their brightness. Mr. Phillip Ladds, of Swanley, had the first prize for these with finely-grown plants, and Mr. W. A. Page, Hampton, had some striking mounds of flowers.

Great wings of pillar fuchsias clothed with pendant flowers stretched to the right and to the left over the group of greenhouse plants that came from Messrs. J. Veitch and Sons, Chelsea, and underneath were solid banks of beautiful gloxinias, gerberas, or Barberton daisies, pretty little dwarf cinerarias, and schizanthus hybrids. There were also hippeastrums in variety, a grand lot of streptocarpus, and the whole made up one of the finest collections in the show. Mr. Philip Ladds, Swanley, sent some fine specimens of the salmon Paul Crampel zonal.

A nice bank of calceolarias was set up by H. Buckston, Esq., Sutton-on-the-Hill, Derby, which were given a first prize in the class for twenty plants. A collection of a fine strain of large-flowered Primula obconica was set up by Messrs. W. Artindale and Son, Sheffield, and Messrs. Stuart Low and Co. showed some hybrid gerberas.

Some fine specimens of Bottle-brush plants, Metrosideros floribunda, were shown by the Marquis of Ripon, Kingston, and one thought of the shows of other days when one looked at the conical azaleas, all well flowered, that were shown by Mr. Charles Turner, of Slough, who appeared to be the only exhibitor.

Splendidly grown and flowered were the tall pyramid fuchsias exhibited by Mr. Jules Friedlander, Reading, and they deservedly won the first prize that was awarded to them. Half a dozen standard heliotropes, which came from Aldenham House, were quite effective, and Mr. Chas. Turner won with a specimen azalea.

Show pelargoniums in quantity came from Mr. A. Brandt, Bletchingley; also from Mr. W. Tresedar, Cardiff; and the Hon. Vicary Gibbs, Aldenham House, set up some nice specimens of scented geraniums, which won a first prize. The first prize for a collection of Bottle-brush plants was won by Messrs. Stuart Low and Co., Enfield.

A very fine bank of lilacs in full bloom was exhibited in the big tent by Messrs. Jas. Veitch and Sons, Chelsea; and Messrs. Godfrey and Son, Exmouth, made a fine display with show pelargoniums and Oriental poppies. Not the least conspicuous feature in the large tent were the fine specimen plants of scented geraniums that were sent by Mr. J. Hudson, of Gunnersbury. A big collection of quaint cacti was shown by Mr. H. N. Ellison, West Bromwich, who also exhibited a pretty lot of ferns.

Mr. Philip Ladds, Swanley Junction, made a pleasing display with a group of plants, amongst which were fuchsias, pelargoniums, and hydrangeas.

Messrs. J. Peed and Sons, Norwood, were large exhibitors of spotted and self gloxinias, of fine form and substance, and for these they secured a premier award, as they also did for a considerable exhibit of freely-flowered and bright streptocarpuses. Near by the Hon. J. Ward, Hungerford, put up a large group of streptocarpuses, and gained a second prize therewith.

Calceolarias shown by Mr. Goatly, gardener to Lord Northcliffe, Sutton Place, Guildford, formed a bright display, but the cinerarias from the same garden were of higher excellence and merited a first prize; the pink shades were charming. Mr. Goatly was also first for a stellate cineraria with a pretty bank of elegant plants. Yuccas and many succulents from Mr. W. A. Manda, New Jersey, won several prizes.

Miss Troyte Bullock, Yeovil, contributed an interesting collection of scented and Cape pelargoniums, the group containing no fewer than 126 varieties; here was material to help in the elucidation of the nomenclature of these interesting plants at the Wisley trials.

Messrs. W. Wells and Co., Merstham, showed what could be done with chrysanthemums in May by putting up excellent flowers of Queen Mary, Mrs. W. Wells, and early singles; with these they showed their fine new Carnation Wodenethe. In one of the classes the Messrs. Wells and Co. secured first prize with a quite bright collection, chiefly early varieties; Mr. J. E. Knight, Wolverhampton, came second.

## HARDY PLANTS AND FLOWERS.

The wonderful display of hardy perennials for border, rockery, and wild garden was bewildering in extent and variety, and full of absorbing interest. Surely in no feature of the exhibition was there so sharp a contrast between the 1912 exhibition and that of 1866. The vast strides that have been made in raising all manner of hardy flowers of pleasing form, colour, and habit were demonstrated in no uncertain manner, and the heart of the hardy plant enthusiast rejoiced amid the glorious banks of herbaceous and the less imposing but equally fascinating alpines. Would that we could convey to those of our readers who had not the privilege to see for themselves a fair idea of what these exhibits were really like, but, as we hastily pen our notes, we realise that it is impossible in cold print to do full justice to the grand display or to any individual exhibit.

Competition was keen in the class for herbaceous plants, excluding pæonies, for which Sir Trevor Lawrence's cup was offered. This award went to Messrs. G. and A. Clark, Lim., Dover, who showed clean, well-grown plants in big masses tastefully arranged as to colour and natural style. Lathyrus pubescens was one of the uncommon plants included in the exhibit, which was remarkably good throughout. Messrs. Jackman and Sons staged well in this class, but unfortunately disqualified themselves by including pæonies. Second prize went to Messrs. W. Artindale and Son, Sheffield, who also had some good things, among which Geum Heldreichi magnificum and some of the newer verbascums figured largely. Another great bank of the best perennials of the season came from Messrs. Bunyard and Co., Lim., Maidstone; and Messrs. Kelway and Son, Langport, brought choice pyrethrums, pæonies, and gaillardias, which, needless to say, were all of the highest possible quality.

In one of Messrs. Bees, Lim.'s several exhibits were staged some of the new primulas which the firm have introduced from China. P. Beesiana, P. Bulleyana, and P. malvacea were accompanied by the dainty white form of P. malacoides. Oriental poppies of uncommon colours were the strong point in Mr. W. J. Godfrey's exhibit, some of the terra-cotta and fawn shades being very charming.

Messrs. John Forbes (Hawick), Lim., put up a collection of pentstemons and phloxes, together with a few delphiniums, violas, and antirrhinums. Of the pentstemons Mrs. Michie, King George V., and Dr. E. Behring, a pure white, were grand. From the Lissadell Nurseries, Sligo, came a big batch of their very attractive hybrid primula, named the Lissadell hybrid. It is a good-habited, pretty coloured, and very showy variety that has a more vigorous constitution than P. × Unique, to which it is somewhat similar in form and colour.

Messrs. Wallace and Co.'s group of liliums was extremely choice. There were such old favourites as L. testaceum excelsum, L. Browni, L. Krameri and umbellatum, and also the less familiar L. tenuifolia Golden Gleam, L. rubellum, and others. The outstanding feature of Messrs. Cocker and Sons' exhibit was Anemone alpina sulphurea, which was put up in big baskets, the plants carrying great numbers of their pleasing flowers. Trollius and gentians were also good on this stand.

Dr. Macwatt, Morelands, Duns, N.B., brought an exhibit of hardy primulas that was surely as choice and varied a collection as has ever been exhibited in Britain. To name the novelties and rarities in this group would be to compile a catalogue of the best primulas in cultivation, but we must mention P. Listeri, P. Watti, P. Winteri, and P. geranifolia, which has never, to our knowledge, been staged before.

A plant of more than ordinary interest was Calceolaria Veitchi, exhibited by Messrs. R. Veitch and Son, Exeter. It is a very elegant plant, with loose heads of creamy tinted flowers, and it has proved hardy in the Southern Counties. Bronze Age is a fine variety with richly-coloured flowers.

It was a splendid group of primulas that was exhibited by the Right Hon. Lord Northcliffe, Sutton Place, Guildford. P. japonica varieties and pulverulenta hybrids were beautifully flowered, and the nodding yellow flowers of P. sikkimensis were very sweet. Hybrid gerberas from Messrs. S. Low and Co., and also from Mr. H. N. Ellison, West Bromwich, came in for a good deal of admiration. Messrs. Seagrave and Co., Sheffield, and Mr. Chas. Turner, Slough, were exhibitors of twenty-four varieties of violas in pans, baskets, and boxes. Their exhibits were very creditable, and another capital exhibit of violas in pans came from Messrs. Whitelegg and Page, Chislehurst, their varieties being of the latest and best.

Mr. Amos Perry's exhibit was of a varied and very interesting character, the bulk of it being in the form of batches of plants suitable either for cultivation on rockeries or on the margins of ponds or streams. Veronicas, violas, and irises were strong, and the lovely Ixiolirion tartaricum was also well shown. A good length of staging was filled with liliums, and splashes of vivid colour were provided by Oriental poppies, among which a new fringed variety was very attractive. A magnificent collection of rock plants and flowering shrubs was arranged by Mr. J. Grandfield, gardener to Sir Everard Hambro, Hayes Place, Kent. There were represented the choicest of encrusted saxifrages, the brightest of dianthus, and the most elegant heucheras. Among a great many rarities Jankea Heldreichi macedonia was a centre of attraction to all the specialists.

MESSRS. SUTTON AND SONS' CUP.
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A class for alpine plants on a table of fifty superficial feet brought some very good entries. Messrs. Thompson and Charman, The Nurseries, Bushey, had some good plants of Ramondia pyrenaica alba, Dianthus subacaulis, and, in fact, a host of choice gems. On Messrs. Bees' stand a little group of Roscoea-cautilioides, a novelty from China, was quite distinct from anything else—a plant with a future before it. Messrs. Artindale and Son, Sheffield, made a feature of hardy cypripediums, and they also had a choice assortment of primulas, saxifrages, etc. Mr. Andrew Campbell, Ardross, Pannal, Yorks, had a tastefully arranged group that showed a good deal of merit in arrangement, the plants being of a quiet but pleasing character.

Tree pæonies from Messrs. Artindale and Son were really magnificent, Queen Elizabeth being of particularly attractive colour and large size. Messrs. Fred Smith and Co., Woodbridge, made a bold display of bright flowers such as heucheras, Rehmannias, geums, and aquilegias. The same firm also showed annuals and biennials in pots, the clarkias and schizanthus being very beautiful.

## HARDY CUT FLOWERS.

Messrs. Barr and Sons occupied about 600 square feet across the end of the big tent, filling this great space with batches of distinct classes of hardy flowers, among which the German irises, the lupins, and anchusas were as effective as anything, although the eremuri were very noble in aspect. Worthy of note were some excellent polyanthus and auriculas, which Messrs. Storrie and Storrie, Glencarse, Perthshire, staged among their fruit trees and bushes. They also showed their pretty hybrid poppies in a delightful range of colours. Messrs. G. and A. Clark, Lim., Dover, had an effective group of irises, pyrethrums, Oriental poppies, and other bright subjects, arranged in mounds finished off with good spikes of eremuri. Mrs. Lloyd Edwards, Bryn Perog, near Llangollen, showed her set of heucheras, and the rich-coloured Aubrietia Lloyd Edwards.

Mr. G. W. Miller, Wisbech, put up a big mass of his now well-known and popular pyrethrum Queen Mary, and also several other attractive varieties, both single and double. Violas in bold masses constituted the chief feature of one of Messrs. Dobbie and Co.'s stands, and aquilegias of rich decided colours were also staged in great quantity by this firm. Messrs. Gunn and Sons, Olton, Warwick, brought some good phloxes and a mass of their viola Cornuta purpurea.

Messrs. Dickson's, Lim., Chester, had a striking mass of Delphinium Persimmon, also Astilbe Arendsi Vesta, and a great variety of alpines in full flower that made an attractive show.

Violas were shown in quantity, the class for twenty-four varieties bringing three strong entries, among which the winner was Mr. F. J. Bell, Crescent Nursery, Whitley Bay. Second went to Messrs. Seagrave and Co., Sheffield; and third to Messrs. Bastock and Sons, Birmingham. Each stand made a great point with Moseley Perfection, and other good varieties were Lady Grant, Countess of Eglinton, A. J. Bastock, Mother Bastock, and Agnes Kay.

Messrs. J. Harkness and Sons, Bedale, took the lead for a collection of cut herbaceous, covering 200 square feet. Its most telling subjects were Verbascum Miss Willmott, Trollius Triumph, some fine pink lupins, and gorgeous Oriental poppies. Messrs. R. H. Bath, Lim., Wisbech, were large exhibitors of tulips, the flowers being very large and fresh. The varieties embraced many of the best in cultivation. The same may be said of the excellent group put up by Messrs. Barr and Sons, Covent Garden, W.C.

Mr. W. T. Ware, Bath, showed the clear, bright-yellow tulip named Inglescombe Yellow, a capital variety that appeals to everyone, so rich is its colour.

A grand lot of Darwins were shown by Messrs. Alex. Dickson and Sons. Lim., Dublin. Don Pedro, a very distinct bronze-coloured variety was attractive. An unnamed seedling of a darker, mahogany shade was promising, and Orange Globe, Moralis, and Klondyke were all good. Messrs. Hogg and Robertson, Lim., Mary Street, Dublin, showed Darwin tulips in quantity, and a vase of the flaked cottage tulip Scotia was very attractive. The same firm put up early gladioli, ixias, and bulbous irises, all of which were good.

Messrs. W. and J. Brown, Stamford, had a miscellaneous exhibit, among which the border flowers predominated. Gaillardia Lady Rolleston and a number of fine seedlings from that variety were conspicuous. St. Brigid anemones, from Messrs. Reamsbottom and Co., Geashill, Ireland, were a source of great attraction; and the ever-popular centaureas, from Messrs. Jarman and Co., Chard, made another fine display, aided as they were by Viola cornuta. aquilegias. clarkias, and other seasonable flowers. Messrs. Bees, Lim., showed a miscellaneous group of border flowers of the usual early summer subjects, their lupins and single pyrethrums being fairly good.

## CANADA AND AUSTRALIA.

The elegance of the Canadian display was the talk of the show. In a beautifully-furnished tent the Government staged huge glass urns, containing splendid samples of apples, pears, peaches, and grapes. It was

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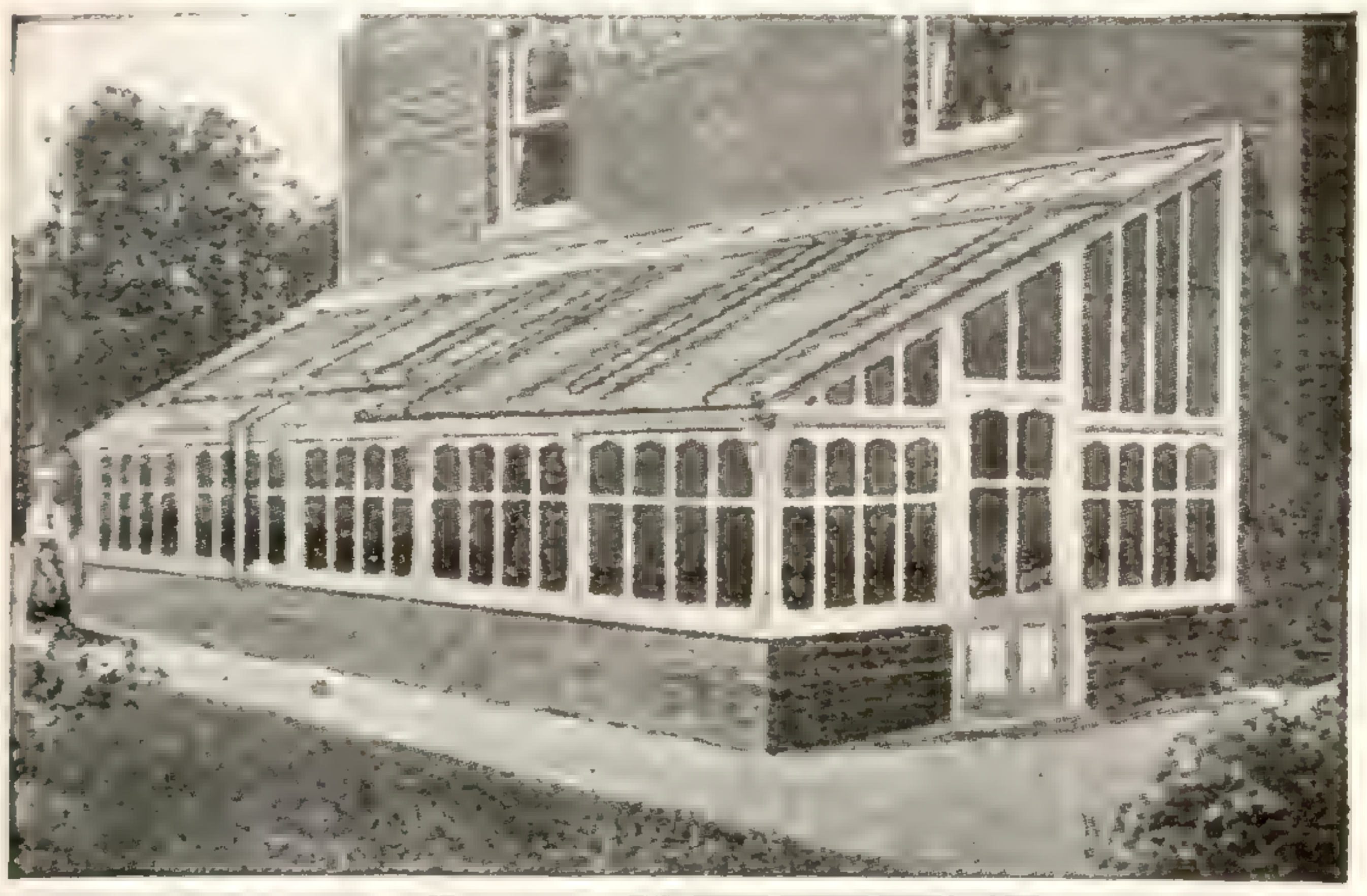

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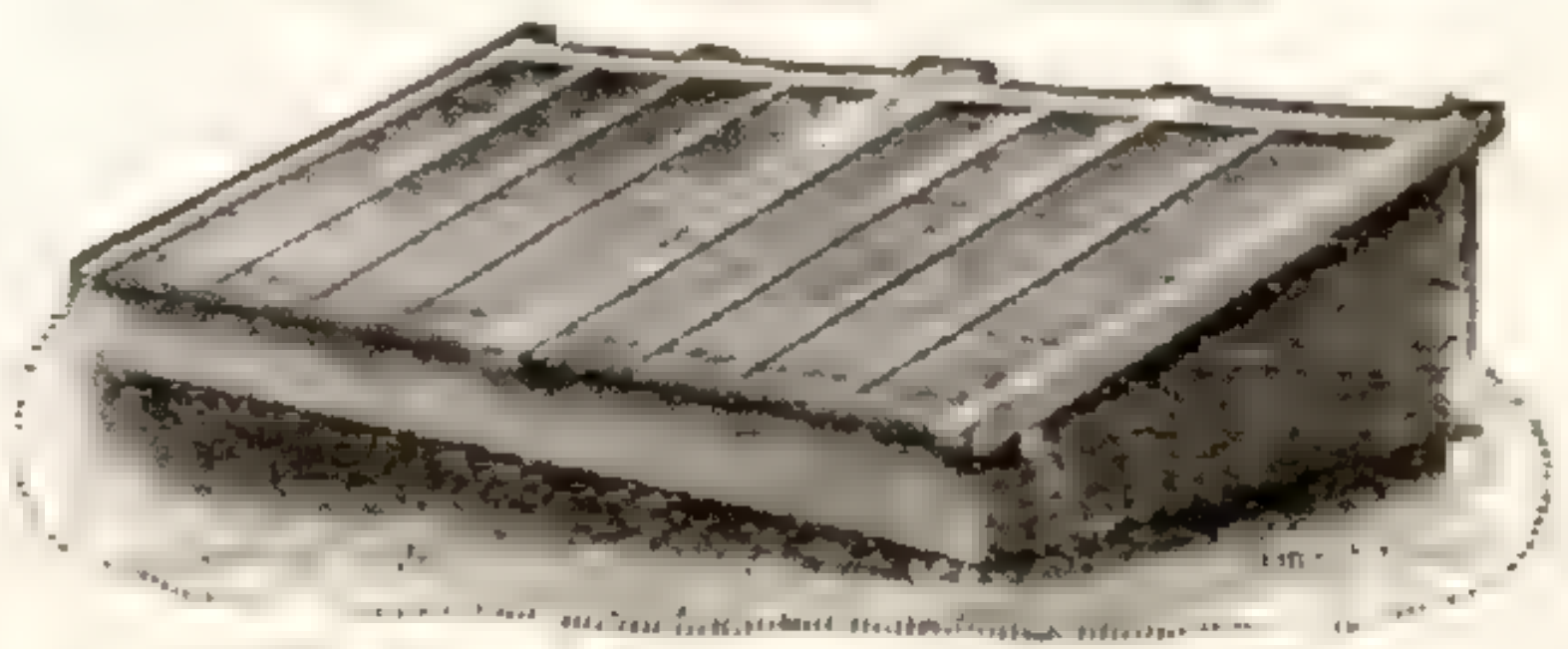

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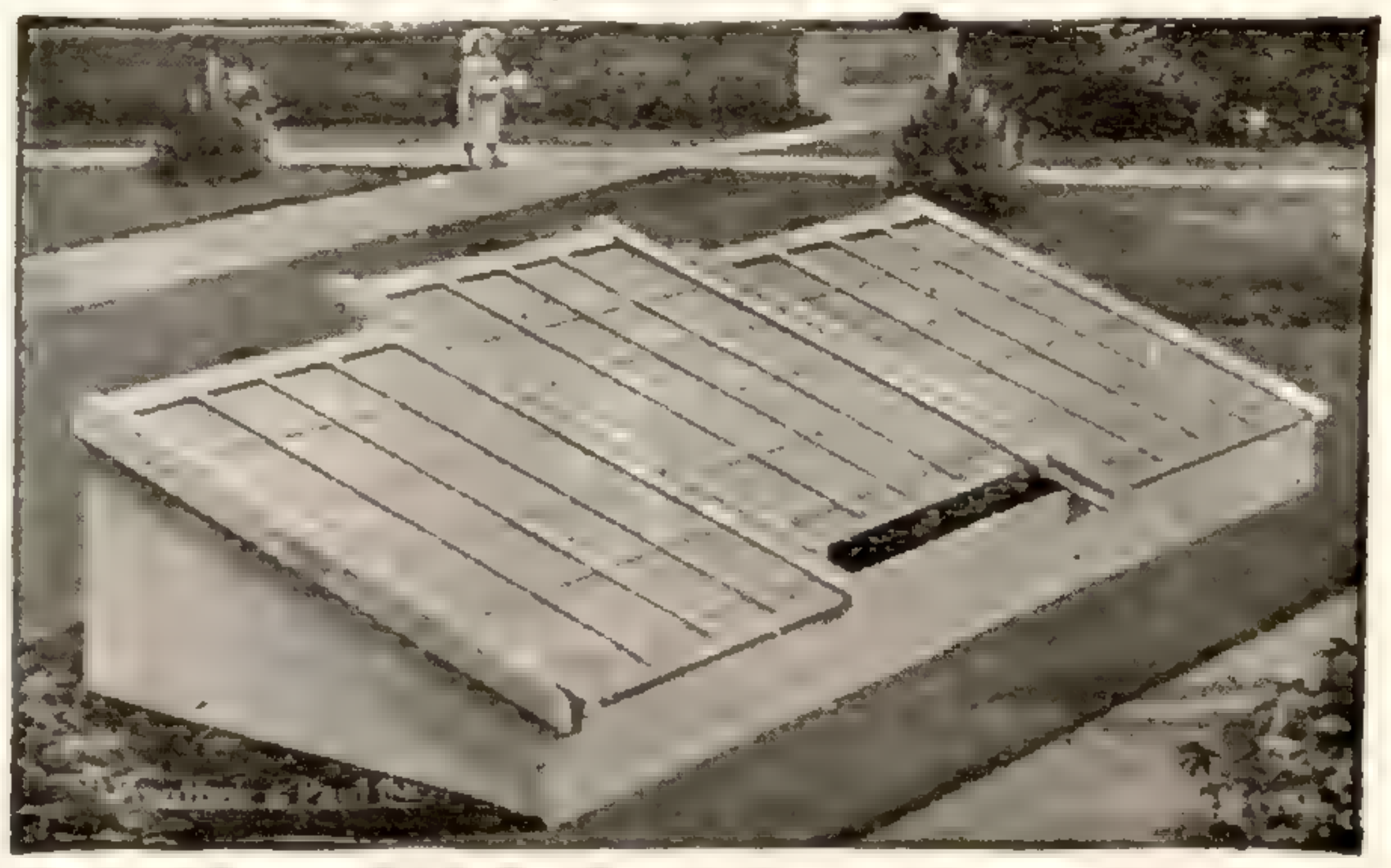

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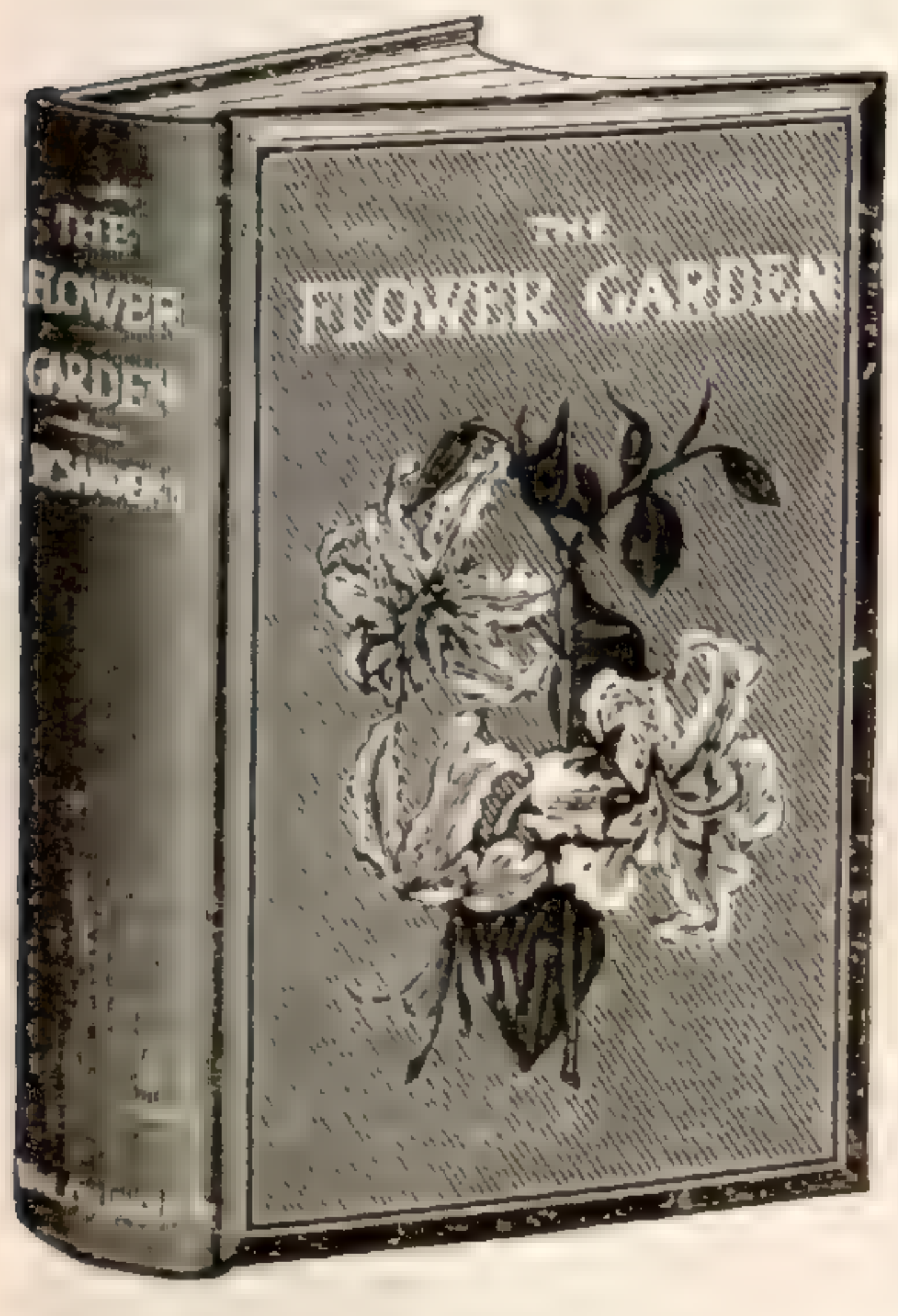

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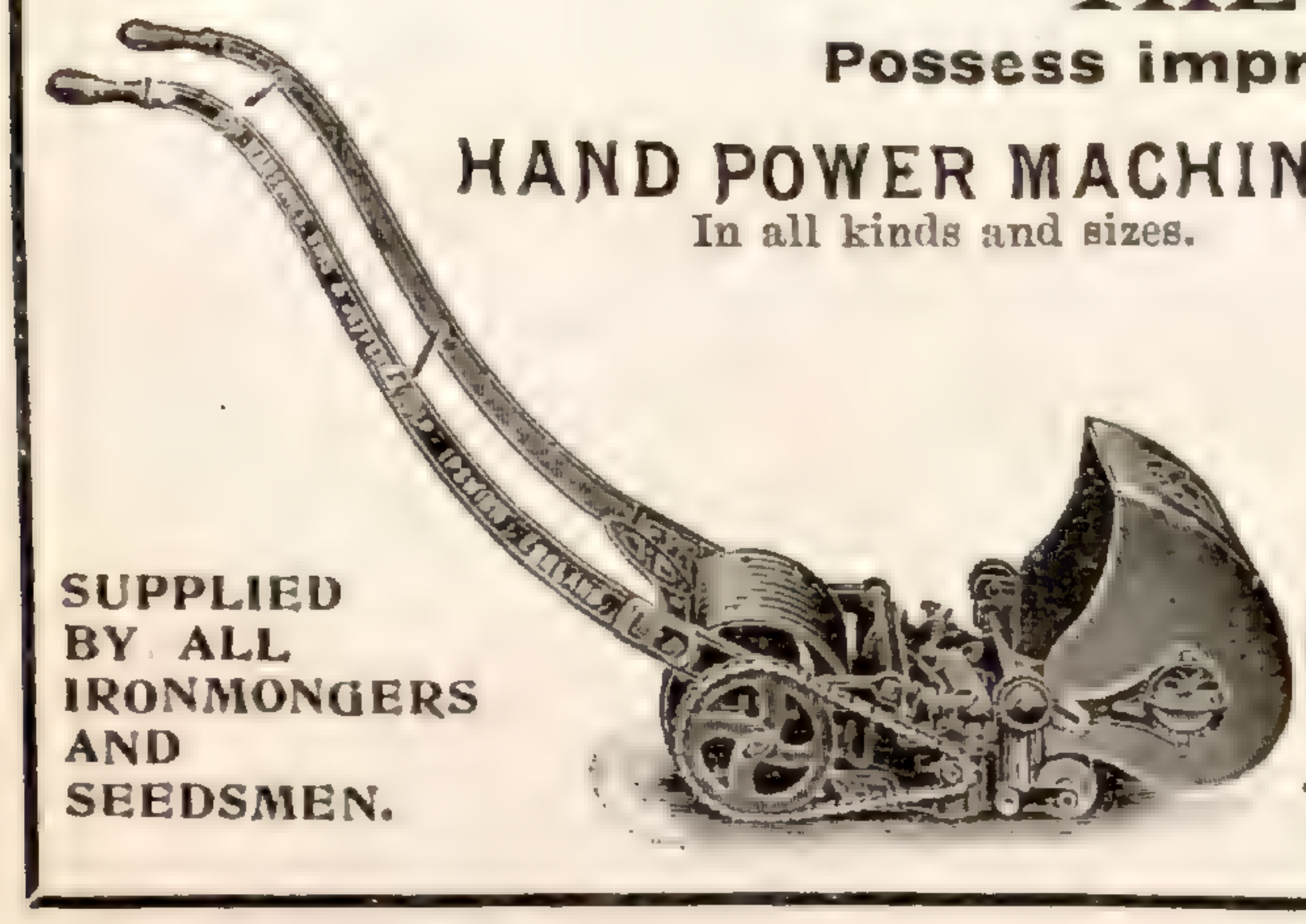

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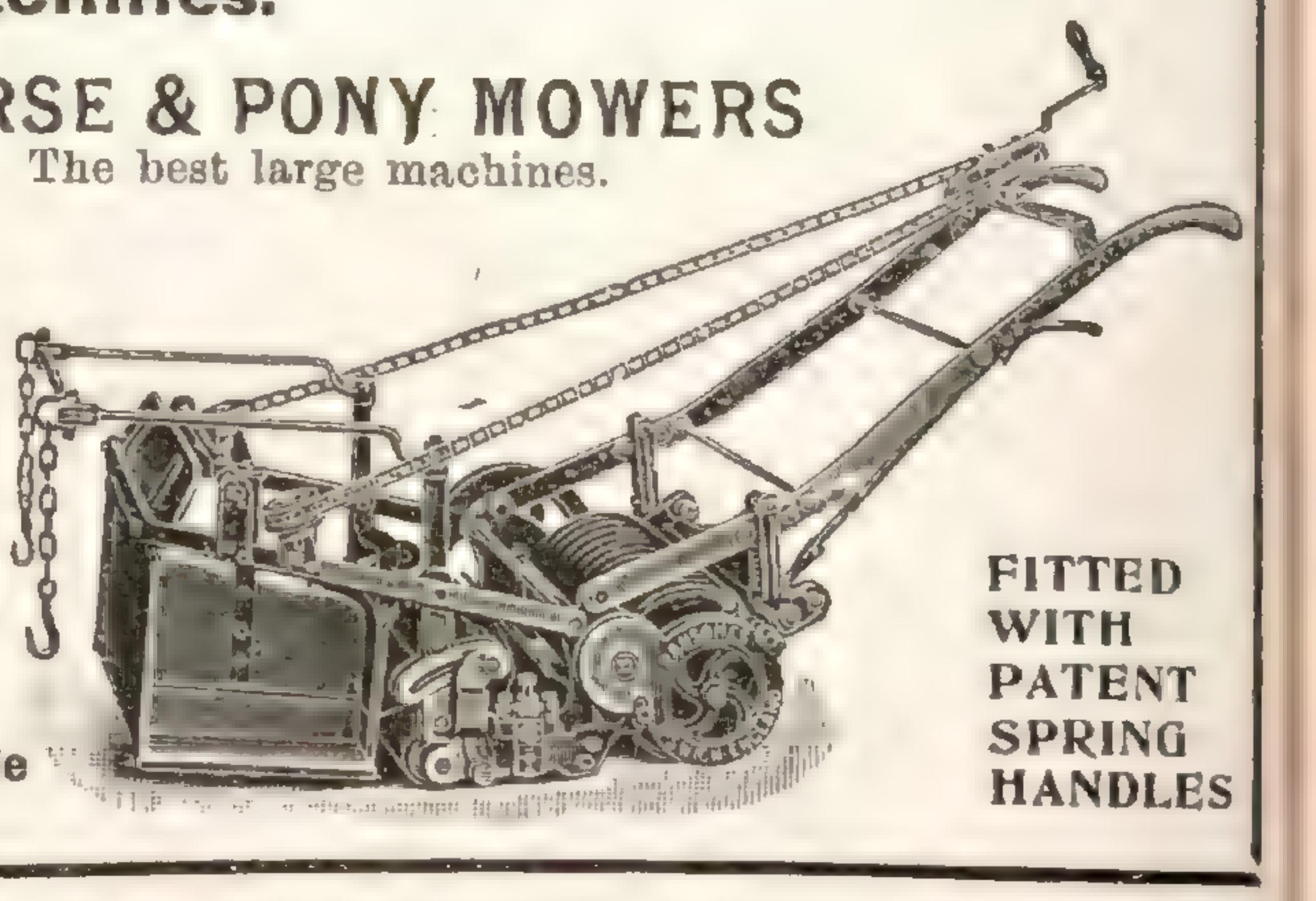

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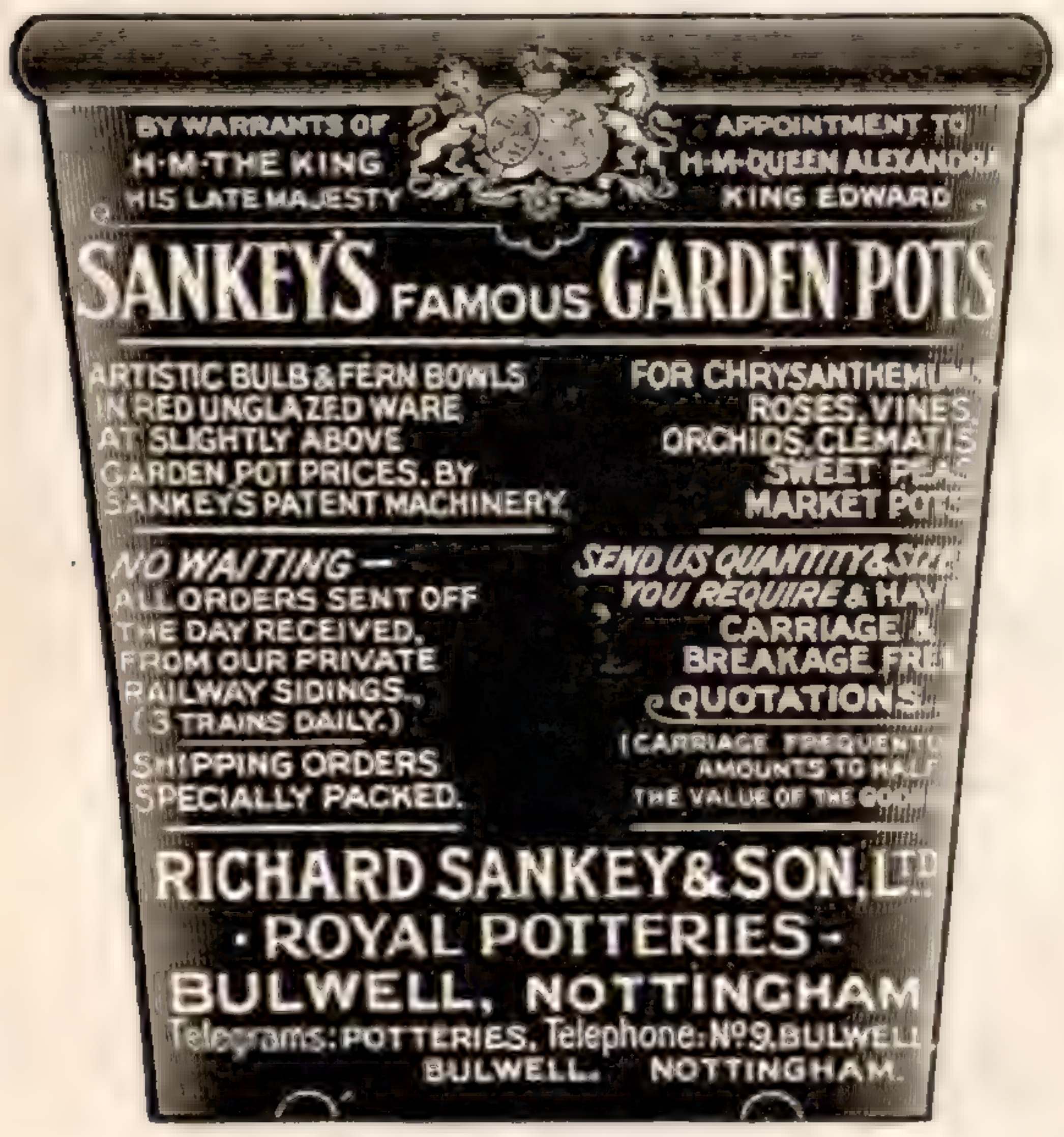

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This Rose was raised from seed borne by Snow Queen (Frau Karl Druschki) the pollen parent being Caroline Testout × Belle Siebrecht.

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STRAWBERRY NETS, best, stout, small mesh, will not rot. Can be sent on approval. As supplied by me to the Royal Gardens. 25 yds. by 2 yds., 2s.; by 3 yds., 3s.; by 4 yds., 4s.; any length or width supplied. Orders over 5s. carr. paid. Lists and samples free. H. J. GASSON, Net Works, Rye.

ORCHIDS FOR AMATEURS.—A practical guide to the Cultivation of Cool and Warm-house Orchids, adapted for Small Mixed Greenhouses. The author is C. Alwyn Harrison, F.R.H.S., and the book can be obtained, by post, for 2s. 10d., from Publisher, 149, Aldersgate Street, London.

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**E. H. TAYLOR,**
**WELWYN HERTS**

an altogether wonderful display worthy of the great Western Country.

Australia brought a splendid lot of apples and pears, as well as corn, and showed that she is no mean contributor to our food supplies.

### JAPAN.

A very pretty and interesting display from Japan was housed in a pretty tent in the Ranelagh Gardens. Dwarfed Japanese trees in great variety, bamboo rods of all heights and sizes, beautiful bamboo screens, paintings, dried persimmons, and lots of other novel exhibits, were contributed, chiefly by the Yokohama Nursery Company and the Japanese Horticultural Society, with Mr. Dimmock in charge of affairs.

### HOLLAND AND BELGIUM.

The splendid displays brought together by the Netherlands Horticultural Federation, which includes some 20,000 members, formed a beautiful scene. In the central part of the tent they had grouped great sheaves of lilac in huge golden baskets, set up on high white pillars, while between these were lower masses of roses and lilacs of wondrous beauty, also in baskets. At one end Messrs. M. Koster and Sons, Boskoop, arranged a collection of new seedling mollis azaleas in all shades of gold, yellow, and salmon. To the right were eremus spikes and astilbes, ranunculuses, and a collection of foliage suitable for floral arrangements. At the bottom end of the tent a marvellous array of vegetables was set out, great pyramids of cucumbers and cauliflowers towering above peas, carrots, and a whole host of salading subjects. Following round we came to hydrangeas, variegated aspidistras, more lilacs, and a grand lot of eremuri, irises, and wonderful Turban ranunculuses, from Messrs. E. H. Krelage and Son, Haarlem. All around the great tent were suspended baskets of Begonia Gloire de Lorraine, that added materially to the general effect; but the vegetables, lilacs, and azaleas were the great features.

Our Belgian friends scarcely did themselves credit. They showed blanched asparagus in large bundles, hosts of cauliflowers and cucumbers, and a goodly display of grapes, strawberries, peaches, and nectarines. The plants were chiefly primulas, lilacs, and azaleas, with the new Adiantum Farleyense Glory of Moordrecht.

### FRANCE.

The French section was particularly gay. The corner beds were filled with cinerarias, hydrangeas, carnations, and petunias. In the centre the Messrs. Vilmorin and Co., of Paris, arranged a wonderful display of annuals and rare vegetables, while along one side M. Lachaume, of Paris, arranged examples of delightful floral art. M. Rivoire, of Caluire, showed new pæonies, and M. Pernet Ducher brought over a fine lot of new roses, in which the salmon and red Mdme. Edouard Herriot was the most conspicuous, and succeeded in winning the "Daily Mail" cup for the best new rose in the show. Lt. Chaure, Sunburst, and Souv. de Gustave Prat (pale cream), were other good things. A combined exhibit of French products, such as French beans, new potatoes, asparagus, giant Globe artichokes, and marrows, strawberries, and cherries, filled one side of the large tent. French horticultural literature, floral paintings by Mdlle. Marguerite Fouchart, and a lot of scientific exhibits filled the top end. Of great merit were the pink and blue hydrangeas from M. G. Fargetson, Angers, France, and among the pink ones we noted Mdme. Chantaud, Souv. de Mdme. Raoult, Mont Rose, Mdme. A. Riverain, and Mousseline as being particularly lovely. The Gerbera hybrids from Antibes also formed an attractive part of this display.

### THE JURY LUNCHEON.

At 1.30 p.m. the general international jury, having finished its work some time previously, met on the terrace in front of the Hospital for luncheon. There was a company of about four hundred, under the presidency of the Duke of Portland, with whom were the Right Hon. Walter Runciman, President of the Board of Agriculture, and notable horticulturists from the four countries of the Kingdom, from distant parts of the Empire, from the United States, and from many Continental countries. After lunch the loyal toasts were heartily acknowledged, Mr. Runciman gave "Success to the Royal International Horticultural Exhibition" in a brilliant speech, which expressed sympathy and assistance for those who are endeavouring to raise the standard of horticultural education, and provide for diplomas in horticulture. Mr. J. Gurney Fowler replied and paid a great tribute to Mr. H. J. Veitch and Mr. H. B. May, and the other members of the Board of Directors, not forgetting a few words of praise for Mr. Edward White and Mr. Geoffrey Henslow.

Sir Jeremiah Colman, Bart., proposed "The Jurors," and to this toast Mons. Jules Hye de Crom and Herr Fritz Benary responded. "The Exhibitors," very ably proposed by Jonkheer Van Doorn, President of the Netherlands Horticultural Council, was humorously responded to by the Hon. Vicary Gibbs. Then Sir Trevor Lawrence proposed "The President," and musical honours accompanied the reception of this toast.

This completed the printed programme, but as the company rose it was felt something was wanting, and there were cries of "Veitch!" Veitch!" and so insistent were the cries that the President promptly seized the opportunity for proposing the health of Mr. Harry J. Veitch. Much moved by this spontaneous call, Mr. Harry Veitch responded in a few words, and expressed his great appreciation of the reception given him. Not yet satisfied the Jury called loudly for Lieut.-Col. Sir George Holford, and the ever-popular and gallant owner of Westonbirt responded to the call with a bright little speech that was enthusiastically received.

### NEW PLANTS.

First-class Certificates.—To Odontoglossum amabile var. Duke of Portland, and to Odontoglossum eximium var. King George, from Messrs. Sander and Sons, St. Albans. To Odontioda Queen Mary, and Odontoglossum Her Majesty, from Messrs. Charlesworth and Co., Haywards Heath. To Odontoglossum eximium var. Excelsior, from Mons. Chas. Vuylsteke, Loochristi, Belgium. To Odontioda Mrs. F. M. Ogilvie, from F. Menteith Ogilvie, Esq., Oxford. To Miltonia Hageana var. Vogelzang, from Messrs. Stuart Low and Co., Enfield. To Cattleya Mendelli Queen Mary; to Brasso-cattleya The King; to Dendrobium Dalhousianum; and to Cattleya Dirce magnifica, from Lieut.-Colonel Sir George Holford, Westonbirt, Gloucester. To Lælia purpurata Schröderiana, from Messrs. Armstrong and Brown. To Miltonia Jules Hye de Crom, from Mons. Jules Hye de Crom, Belgium; and to Lælio-cattleya Lustre von Lavingo, from Lieut.-Colonel Sir George L. Holford. To Leptospermum scoparium Nicholi, from Rev. A. T. Boscawen, Ludgvan, Cornwall.

Award of Merit.—To Calceolaria Veitchi, from Messrs. R. Veitch and Son, Exeter. To sweet peas Melba, Brunette, and Mrs. Cuthbertson, from Messrs. Dobbie and Co., Edinburgh. To Lastrea patens, var. Mayi; and to Polypodium Vidgeni, from Messrs. H. B. May and Sons, Edmonton. To Begonia Princess Victoria Louise, from Messrs. Blackmore and Langdon, Bath. To Lilium myriophyllum, and Eremurus Tubergeni, from Messrs. Wallace and Co., Colchester. To Celmisia spectabilis argentea, from Messrs. Bees, Lim., Liverpool. To Hydrangea Sargenti, from Hon. Vicary Gibbs, Elstree, and Messrs. J. Veitch and Sons, Chelsea. To Oxalis enneaphylla rosea, from Mr. C. Elliott, Stevenage. To Deutzia Veitchi, from Messrs. J. Veitch and Sons, Chelsea. To Leptospermum Boscaweni, from Rev. A. T. Boscawen, Cornwall. To Pyrethrum Queen Mary, from Mr. G. W. Miller, Wisbech. To Iris squalens Libelungen, and Iris variegata Ossian, from Messrs. Barr and Sons, Covent Garden. To Lilium dahuricum luteum, from Mr. A. Perry, Enfield. To Papaver orientale Perry's White, and Papaver Edna Perry, from Mr. A. Perry, Enfield. To Odontoglossum ardentissimum von. Carmen, from F. Menteith Ogilvie, Esq., Oxford. To Cattleya Mossiæ Madame Jule Hye, from Mons. Firmin Lambeau, Brussels. To Odontioda Bradshawiæ, var. Vogelzang, from M. Firmin Lambeau. To Lælio-cattleya Lustre, var. Buddah, and Lælio-cattleya Gladiator, from Sir George Holford. To Odontoglossum amabile Princess Mary and Odontoglossum crispum James McNabb, from Messrs. Sander and Sons. To Lælio-cattleya Ulysses, and L.-c. Ulysses alba, from Messrs. Charlesworth and Co., Haywards Heath. To Zygopetalum Armstrongæ, from Messrs. Armstrong and Brown, Tunbridge Wells.

### SPECIAL CUP AWARDS.

The King's cup, offered for the best exhibit in the show, was awarded to Lieut.-Col. Sir George Holford for his superb exhibit of orchids.

The Duke of Portland's cup was the next highest award. and this fell to Messrs. Jas. Veitch and Sons for their magnificent display of stove plants.

Sir Jeremiah Colman's cup, of no less importance, fell to Messrs. George Mount and Sons, Canterbury, for a grand lot of roses.

The Queen Alexandra Cup for the best rock and water garden fell to Messrs. R. Wallace and Co., Colchester.

The Sherwood Cup for sweet peas was won by Mr. C. W. Breadmore, Winchester; and Messrs. Dobbie's cup for sweet peas went to Sir Randolph Baker.

F. Menteith Ogilvie, Esq., Oxford, Messrs. Sander and Sons' cup for orchids, and Sir Jeremiah Colman won Messrs. Charlesworth and Co.'s cup for orchids.

Baron Bruno Schroeder's cup for orchids fell to Messrs. Armstrong and Brown, Tunbridge Wells; and Messrs. W. Bull and Son's cup for the best hybrid odontoglossum was won by J. Gurney Fowler, Esq.

The Worshipful Company of Gardeners offered a cup for the best display of pot roses, and this was won by Messrs. Paul and Son, Cheshunt.

Jas. Brown, Esq., won Messrs. Paul and Son's cup, and The King's Acre Nursery cup for roses.

Lady Colman's cup for Malmaison carnations was awarded to C. F. Raphael, Esq.

Sir Trevor Lawrence's cup for herbaceous plants went to Messrs. G. and A. Clarke, Dover; and Mr. Speer's cup for annuals to Messrs. F. Smith and Co., Woodbridge; while Sir Trevor Lawrence's cup for alpine plants was won by the Craven Nursery Company, Clapham.

Messrs. G. Bunyard and Co.'s cup for choice dessert fruits was won by His Majesty the King (gardener, Mr. A. Mackellar, V.M.H.), Windsor—a popular win.

The foregoing is not a complete list of the cup winners, as the special jury had not finished its duties when, early in the evening of Wednesday, we were compelled to go to press. The county cups had not been awarded, and so we hope to publish the winners' names in our next issue.

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In our next issue we propose to give descriptions with illustrations of the new plants that received awards at the Royal International Horticultural Exhibition, a report of the scientific and educational conferences, and descriptions of the exhibits of horticultural implements, structures, and accessories.

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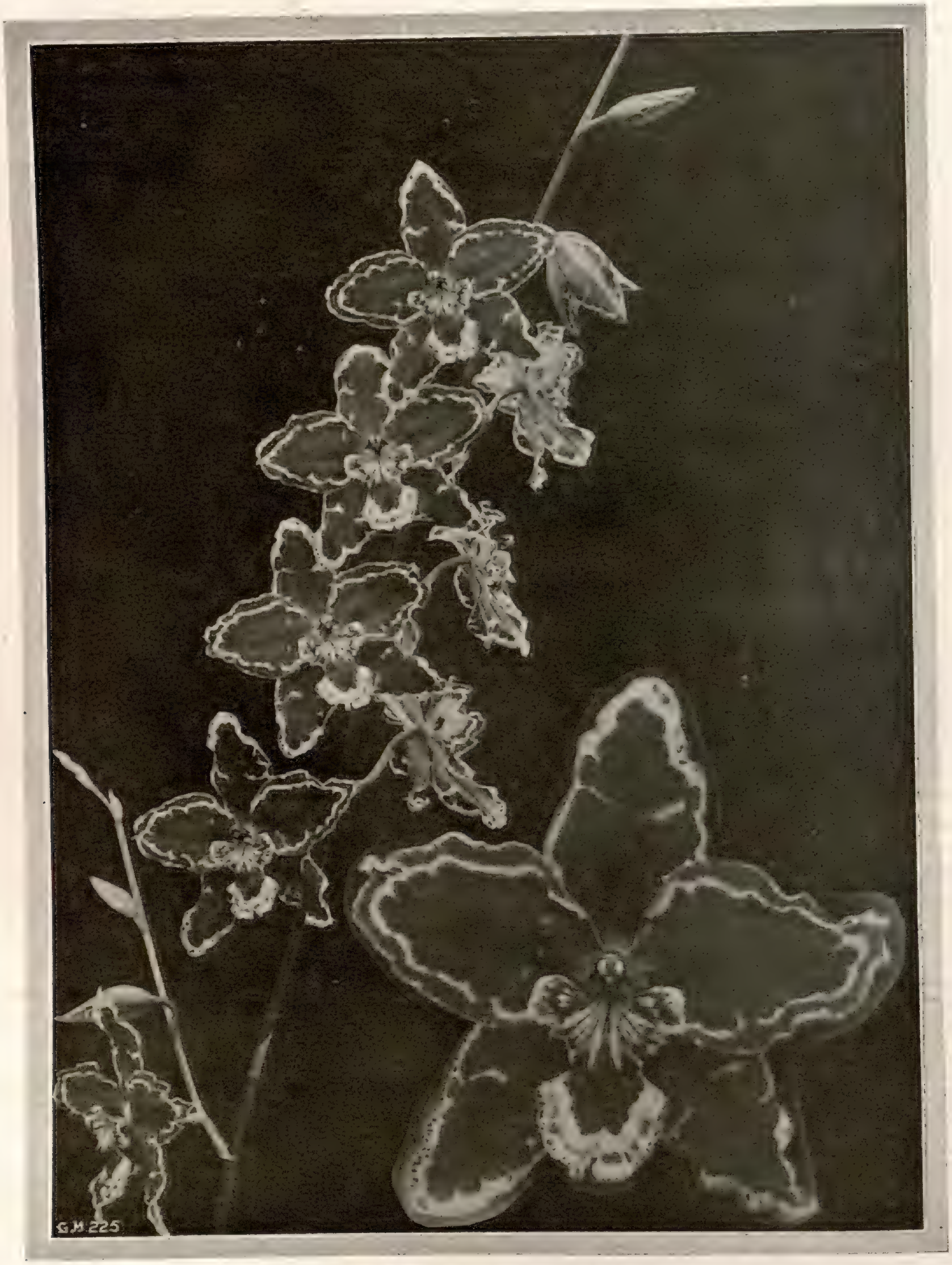
## MEMBERS OF JURY.

### COMPETITIVE CLASSES.

Continued from last week's supplement, p. 10.

Lindsell, E. B., Mr., Bearton, Hitchin.
Looymans, Herr, Oudenbosch, Holland.
Low, Stuart H., Mr., Bush Hill Park, Enfield.
Lunt, T., Mr., Keir Gardens, Dunblane, Perth.
Lynch, R. I., Mr., Botanic Gardens, Cambridge.
Lyne, J., Mr., Foxbury Gardens, Chislehurst.
Mackellar, A., Mr., Royal Gardens, Windsor.
Markham, H., Mr., Wrotham Park Gardens, Barnet.
Maron, C., Monsieur, Brunoy (Seine et Oise), France.
Marshall, W., Mr., Auchinraith, Bexley.
Mawley, E., Mr., Rosebank, Berkhampstead.
May, H. B., Mr., The Plas, Chingford.



ODONTIODA QUEEN MARY.

A remarkably fine hybrid, exhibited by Messrs. Charlesworth and Co., Haywards Heath, and awarded a First-class Certificate at the Royal International Horticultural Exhibition.

McHattie, J. W., Mr., Public Parks Office, City Chambers, Edinburgh.
McLeod, J. F., Mr., Dover House Gdns., Roehampton.
Mease, Mr., The Gardens, Downside, Leatherhead.
Metcalfe, A. W., Mr., Luton Hoo Park Gardens, Luton, Beds.
Miles, G. T., Mr., Wycombe Abbey Gardens, High Wycombe, Bucks.
Molyneux, E., Mr., Swanmore Gardens, Bishop's Waltham.
Molyneaux, H. E., Mr., 11, Portland St., Southampton.
Moore, C., Mr., Euclid Avenue, Hackensack, U.S.A.
Moore, G. F., Mr., Charwar, Bourton-on-the-Water, Glos.
Morse, C. L., Mr., Seed Grower, San Francisco, U.S.A.
Morter, W. H., Mr., Parks Department, Birmingham.
Mortimer S., Mr., Rowledge, Farnham, Surrey.
Moser, Monsieur, St. Symphorien, Versailles, France.
Mount, G., Mr., Exotic and Rose Nurseries, Canterbury.
Myers, W. H., Mr., Swanmore House, Bishop's Waltham.
Nanot, Jules, Monsieur, Directeur, Ecole Nationale d'Horticulture, 4, Rue Hardy, Versailles, France.
Nonin, A., Monsieur, 20, Avenue du Paris, Chatillon (Seine), France.
Nutting, T., Mr. Childwickbury Gardens, St. Albans.
O'Brien, J., Mr., Marian, Harrow-on-the-Hill.
Orpen, C. G., Mr., West Bergholt, Colchester.
Page, C., Mr., Dropmore Gardens, Maidenhead.
Page, C., Monsieur, Jardinier en chef Château de Boudran par Nangis (Seine et Marne), France.
Page, W. H., Mr., Tangley Nursery, Hampton.
Page-Roberts, F., Rev., Strathfieldsaye, Mortimer.
Paskett, A. T., Mr., Burrswood Gardens, Groombridge.
Paul, A. W., Mr., Royal Nurseries, Waltham Cross.
Paul, G., Mr., The Old Nurseries, Cheshunt.
Paul, G. L., Mr., The Old Nurseries, Cheshunt.
Pearson, Duncan, Mr., Chilwell Nurseries, Lowdham.
Pearson, R. Hooper, Mr., Braewyn, Wandsworth.
Peeters, A. A., Monsieur, Laeken, Brussels.
Pettigrew, W. W., Mr., South Park, Cardiff.
Pemberton, J. H., Rev., The Round House, Havering-atte-Bower.
Pfitzer, W., Herr, 74, Militärstrasse, Stuttgart, Germany.
Piper, T. W., Mr. The Nurseries, Uckfield.
Pope, W., Mr., Welford Park Gardens, Newbury.
Poupart, W., Mr., Marsh Farm, Twickenham.
Prichard, Maurice, Mr., Riverslea Nursery, Christchurch.
Prime, H., Mr., Hatfield House Gardens, Herts.
Prince, A. E., Mr., The Nurseries, Longworth, Berks.
Pynaert, C., Monsieur, Digue de Brabant, 85, Ghent, Belgium.
Reynolds, G., Mr., Gunnersbury Park Gardens, Acton.
Riviore, P., Monsieur, 16, Rue d'Algerie, Lyons, France.
Rollit, Albert K., Sir, St. Annes, Chertsey.
Sallier, J., Monsieur, 9 Rue Delaizement, Neuilly, Paris.
Salomon, R., Monsieur, Viticulteur, Thomery (Seine et Marne), France.
Sander, F., Mr., Bruges, Belgium.
Schneider, G., Mr., 3, Meredyth Road, Barnes, S.W.
Schwartz, M. C., Monsieur, Chateau de Ferrieres, Ferrieres en Brie (Seine et Marne), France.
Searle, A. R., Mr., Castle Ashby Gdns., Northampton.
Seidel, Herr, Laubegast, Dresden, Germany.
Shackle, J. B., Rev., St. Anne's Vicarage, Dropmore, Maidenhead.
Shea, C. E., Mr., The Elms, Foots Cray, Kent.
Sherwood, N. N., Mr., Dunedin, Streatham Hill, S.W.
Shill, Mr., The Dell Gardens, Englefield Green.
Siebert, Herr, Palmen Garten, Frankfort a/Main, Germany.
Smet, Firmin de, Monsieur, Vinderhaute, Ghent, Belgium.
Smet, Kraus, Arthur de, Monsieur, Hoeylaert, Brussels, Belgium.
Smet, Romain de, Monsieur, Ledeburg, Ghent, Belgium.
Smith, J. R., Mr., Bedgebury Park Gardens, Goudhurst.
Soupert, Monsieur, Rose Grower, Luxemburg.

(To be continued.)

## SUMMER BEDDING.

The bedding-out season is upon us, and I propose to offer a few remarks as to the arrangement and disposition of the plants. It may be of service to furnish particulars of combinations that were noted last season in a number of large public parks, and that produced a very fine effect. Many gardeners are strictly localised, and it is not too much to say that our leading public parks point the way, and are largely copied with regard to bedding arrangements.

Carnation Britannia, a splendid variety in glowing scarlet, and arranged at about 15 inches apart in a very large bed, with Koeniga maritima as a groundwork, was fine indeed, while the wide framework of Viola Maggie Mott did much to enhance the beauty of the whole. Among cannas Florence Vaughan is a superb variety for bedding purposes. It has ample foliage, a robust constitution, and large yellow, crimson spotted flowers that produce a striking effect. In this case Pelargonium Verona did duty as a groundwork or carpet, Verbena venosa being fittingly employed as an edging.

Very fine was a combination of Lilium lancifolium rubrum, cockscombs, and Dimorphotheca Ecklonis, and the last-named demonstrated very clearly its value as a carpet plant. Fine specimens of Acalpha musaica, Cineraria maritima, three feet in height; a foot wide belt of Iresine Lindeni as an edging, and a mass of Amaranthus bicolor in the intervening spaces, struck a very rich note, and I have nothing but praise for alternately arranged specimens of Calceolaria Burbidgei and Fuchsia Marinka, which were associated with Anthericum variegata and Veronica Andersoni variegata. The last-named is an acquisition for a framework around flower beds, and the most effective method is to arrange a 12 or 15-inch. belt on sloping ground. Three feet high standards of Pelargonium Paul Crampel, with fine plants of Artemisia arborescens of the same height, and a very bold edging of Veronica Andersoni variegata and Iresine Lindeni arranged alternately, produced a telling effect. Heliotropium President Garfield in standard form, associated with white begonias, and with Verbena Defiance, forming a fine finish as an edging, was also good.

A great mass of Begonia Major Hope, a delicate and charming variety, over Chlorophytum Browni, thinly interspersed, and fine plants of Eulalia gracillima variegata, with an edging Dactylis glomerata variegata struck me as being quite the most exquisite example of bedding seen in a large London park last season.

Another first-rate combination consisted of specimen Solanum jasminoides and Plumbago capensis, which took the form of 6ft. high pyramids, arranged 5ft. apart, iresine in two varieties towering up to a height of 4ft., being thinly disposed in the intervening spaces, with a splendid mass of Viola Countess of Hopetoun underneath. Campanula pyramidalis alba and Salvia virgata with long racemes of purplish-blue flowers, created a pretty effect when brought together, and no better edging can be found for such a bed than the bronzy-golden Fuchsia Meteor, which should be arranged in a wide belt. I noted a very large triangular-shaped bed in a coast garden last season which held Fuchsia Lyle's Own, in standard form, a splendid mass of Viola J. B. Riding acting as a carpet and two rows of wonderfully compact ageratum as edging. The fuchsia in question is a glorified Mrs. Marshall, and, further, is well adapted for town and city gardens.

Fuchsia fulgens over Harrison's Musk, struck a distinct note, and it was a good idea to place Chamæpeuce diacantha two feet apart between the two rows of blue lobelia. Three hundred plants of Antirrhinum Queen Victoria, of spotless purity (and incidentally this variety is possessed of a vastly more vigorous constitution than Queen of the North), with the annual Delphinium Blue Butterfly interspersed, presented a very beautiful and charming effect while a huge bed of Salvia Glory of Zurich, with Zea gracillima variegata and an edging of dark-blue violas, was a fine sight. Lantana delicatissima looms large in bedding arrangements, and small wonder seeing that the effect it creates is so soft and pleasing; Gnaphalium microphylla employed as a groundwork, seemed to be in keeping with its general character. A grand bed of celosias in Hyde Park arrested my attention, and very well did Chrysanthemum inodorum flore-pleno associate with these airy beauties. Not far distant from this bed Canna Alphonse Bouvier figured, a splendid thing in richest scarlet, which was toned down by the presence of Viola Niphetos. It was quite refreshing to note a big mass of the old and admirable, but now rarely seen, pelargonium Mrs. Pollock, and the choice of a viola to associate with it was a happy one, namely Admiration. They were thinly disposed over the whole of the bed.

Walter H. Aggett.

## KALANCHOES.

The introduction of Kalanchoe flammea from Somaliland in 1897, and the popularity which it quickly attained, served to direct attention to the ornamental qualities of other members of the genus. Though the species are fairly numerous, and hybrids have been raised, yet up to the present none of them are, from a decorative standpoint, the equal of K. flammea. This is of easy propagation and culture, and effective flowering examples may be grown in four, five, or six-inch pots. The fact that it was taken in hand by some of the foremost market growers so soon after its introduction will serve to show that it was no commonplace subject, for new plants that fulfil the market cultivators' exacting requirements are far from numerous.

The largest member of the genus, as far as I know, is Kalanchoe Dyeri; the flowers, borne in terminal heads quite early in the year, are white, and individually, somewhat suggestive of a large jasmine. This is a spare-growing plant that reaches a height of four feet or more. It is valuable for grouping purposes when tall-growing flowering plants are none too plentiful in the greenhouse. Of hybrid kinds the best known are Felthamensis, Ena, and Kewensis, this last a hybrid between the white-flowered K. Benti and K. flammea. It has pretty pink flowers. A particularly good form of K. kewensis was given an Award of Merit by the Royal Horticultural Society two years ago under the name of Excelsior.

W. T.

**Euphorbia epithymoides.**—This hardy member of the Spurge family forms a very pleasing outdoor feature in the spring, as then the terminal clusters of bright yellow bracts are at their best. The leaves on the upper portion of the stem are also tinged with the same colour. It is of free growth, and forms bold tufts, about eighteen inches in height, and is, as a rule, at its best in April and May. The form grown as E. pilosa major appears to be the same as E. epithymoides.—K.

# WORK FOR THE WEEK.

◆

### THE ORCHID HOUSES.

ONCIDIUMS.—Few oncidiums are more admired when in flower, or more useful for exhibition and decorative purposes, than those of the cyrtochilum section, which includes O. macranthum, O. superbiens, O. serratum, O. loxense, O. lamelligerum, O. corynephorum, and several others. These are of comparatively easy culture, if afforded a cool intermediate temperature, and protected from strong sunshine during the sunny months. During the winter all the light available should be admitted, as it is easily conceivable that in their native habitats the light is more penetrating than in a sombre climate like our own. The flower spikes have now developed, and as they are exceedingly large when compared with the size of the pseudo-bulbs which produce them, they necessarily exhaust the plants to a considerable extent. Therefore the plants should not be allowed to flower until they become fairly strong specimens. These oncidiums produce strong, thick roots, which should not suffer from an insufficiency of water. These species dislike disturbance at the roots, therefore repotting should only be carried out when necessary, still there is always the least of two evils, and if the compost is allowed to become sour or decayed, it is always wiser to repot. Repotting may be carried out at any time when the young growths are producing new roots. Afford ample rooting space and drainage. For the rooting medium, a compost as advised for similar plants on page 324 will answer well. When repotting, the leading growth should be brought down to the level of the compost, as owing to the climbing habit of the whole of this section, the young roots are often produced some distance above the surface of the compost. Should these roots remain exposed they are liable to injury.

PLEIONES.—Such pleiones as P. maculata, P. lagenaria, and P. birmanica, which are now suspended from the roof of the intermediate house, and P. humilis and P. Hookeriana, which occupy a similar position in the cool house, should receive sufficient water to keep them decidedly moist, as they must on no account be allowed to become dry; they may also be sprayed overhead twice a day, and three times on very hot days. Spraying or slight syringing will keep the foliage fresh and clean. When thoroughly established an occasional watering with weak liquid manure will be beneficial, and they may be exposed to more light, as the leaves will then remain green for a longer period, than if grown in a shady position. They must, however, not be exposed to strong sunshine.—J. T. Barker, The West Hill Gardens.

### STOVE PLANTS.

GLOXINIAS.—The main batch of these beautiful flowering plants will now be at their best, and means should be adopted to prolong the season of flowering for as long a time as possible. Our plants are this year carrying large numbers of flowers, and buds, in fact, too many; we shall relieve them of a few flowers for vases, and remove all ill-shaped buds. Except when seed is to be saved, all faded flowers should be promptly pinched off, thus concentrating the energies of the plant to the remainder. The best position for the plants whilst flowering is on a cool ash, or shingle-covered, stage in a low span-house. Admit a fair amount of top air by means of the ventilators throughout the day when fine, and maintain a gentle warmth in the hot-water pipes. The atmosphere should be buoyant but not too dry. Young plants raised from seed sown early in the year are now making good progress, and a batch of these may have their first flowers removed in order to ensure strong plants for later flowering.

EDGING PLANTS.—Propagate further batches of such quick-growing subjects as pileas, panicums, fittonias, and lycopodiums of sorts. Nothing adds so much to the general effect of plant houses as an edging of fresh, young plants in small pots, besides being useful for decoration in rooms. Insert several cuttings in each pot so that they will soon become useful.

GENERAL WORK.—As all plant life is now very active, it is essential to allow the plants ample room for proper development; and to rearrange them occasionally. Many plants have now been removed from the warm houses and pits to cooler quarters, thus making room for setting out those remaining farther apart. Raise the best specimens on pots, or stands specially made for the purpose, so as to allow the air to play about them. Admit air freely by the roof ventilators on fine days, but close early in the afternoon, and syringe heavily. A little air may be admitted for two or three hours early in the evening with advantage during warm weather. This will keep the atmosphere sweet without lowering the temperature. Give a light fumigation occasionally to keep down insects; but care must be taken that any delicate ferns, or other plants, are first removed for the night. —H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

PEACHES AND NECTARINES. — The fruits in the early house will be approaching the ripening stage; maintain a free circulation of air in the house night and day, and dispense with artificial heat during bright, warm, sunny days, but on sunless days and at night artificial heat must be used to maintain the proper temperature. The leaves should be turned aside from the fruits, so that the latter may be exposed to the sunlight, to ensure a fine colour and flavour; discontinue the use of the syringe as soon as the fruits begin to ripen, but at the same time plenty of clean tepid water should be given to the roots when required. It does not follow, although drier atmospheric conditions must prevail in the house during ripening, that the soil should be allowed to become dry at that period. Continue to tie in and train the young growths for next season's bearing; do not hesitate to remove any growths that are not required, as it is a common mistake to tie in a quantity of growths that will have to be cut away when the autumn pruning takes place; every endeavour should be made to retain just sufficient growths. The fruits should be carefully examined every day when they are approaching maturity, and when ripe they should be carefully gathered, exercising great care not to bruise them, or the flavour and appearance will be impaired; place them singly in shallow trays, and, if put into a cool, airy fruit room, they will keep in good condition for several days, if not required for immediate use.

PINE-APPLES.—Any plants that may require repotting should be taken in hand at once. Where successional plants have rooted well in the new soil, and also where they are swelling their fruits, abundance of heat and moisture are necessary. Thoroughly syringe the plants, and close the house early in the afternoon; carefully maintain sufficient artificial heat on dull, sunless days, and also at night, but it should be borne in mind that the pipes must not become over-heated at any time. Applications of liquid farmyard manure or some approved chemicals should be given once or twice a week. Remove suckers other than those that are required for propagation. Fruits that are ripening will require very little water. Admit air when possible, leaving a little ventilation at night when the weather permits.

FIGS.—The fruits on the earliest trees will be ripening, so admit abundance of air both at the top and side ventilators; discontinue syringing, and gradually reduce the supply of water to the roots, but in such a manner as not to allow the soil to approach dryness at any time. Remove all suckers that spring up from the roots, or otherwise the sap will flow to them rather than to the fruiting branches. Continue to stop and tie in the growths when necessary, and make every effort to keep the foliage free from red spider and other insect pests.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

THE ROCK GARDEN.—Plants like saxifragas, aubrietias, and alyssums that have finished flowering must have all dead flower stalks clipped off while any of the plants that are encroaching too much on their neighbours must be restricted. Every means should be taken to maintain the smart appearance of the rockery for as long as possible by giving it constant attention and keeping it free from weeds. Although many of the more showy plants are almost over, there are still numerous subjects to continue the display. Some of the more ornamental of these include Veronica rupestris, V. prostrata, Campanula radiana, Hypericum reptans, Gypsophila cerastioides, G. repens, Edraianthus tennifolius, Lychnis viscaria splendens fl. pl., helianthemums, and pinks in variety. Do not let any of the plants suffer for lack of water, and after bright days damp over the whole rockery in the evening. Various subjects, like arabis and aubrietia can now be rooted readily from cuttings if inserted in light sandy soil on a shady border or in a cold frame.

SEED SOWING.—The present is a suitable time to sow seeds of numerous plants for spring decoration. Amongst the various kinds that should be raised now are wallflowers, myosotis, sweet williams, polyanthuses, anchusas, and campanulas. Choose an open position for a seed-bed, and if the soil is dry, it is an advantage to water the drills before sowing. Delphiniums, aquilegias, and poppies can also be sown now.

PERPETUAL CARNATIONS.—These are ideal plants for outdoor flowering, and, if planted in a partially-shaded position at the present time, will continue to bloom until late autumn. Plants in 48-size pots in active growth, and already set with flower-buds should be employed to ensure the best results, but during the last two seasons we have utilised the old plants that have flowered during the winter with complete success. A bed of Britannia carpeted with Iresine Herbsti is a very showy object when in bloom. In addition to the above variety, Enchantress, Mrs. H. Burnett, May Day, Winsor, Rose Doré, and White Perfection are to be recommended.

PREPARATIONS FOR BEDDING.—Most spring flowers have passed early this season, and as soon as they can be dispensed with commence to prepare the beds for their summer occupants. When the beds were well manured in the autumn it will be sufficient to dig them thoroughly, and in cases where the ground is exceptionally dry it is desirable to thoroughly water the soil before planting is commenced. All bedding plants should be in cool quarters, so that they will be sufficiently hardened off by the end of the month. It is always an advantage to have as many of the plants in bloom at the time of bedding out as can well be managed, and during bright weather such subjects as fuchsias, heliotropes, streptosolens and lantanas will be greatly assisted in the matter of flower production by being kept regularly syringed over. In sheltered localities a start can be made now, commencing with the more hardy subjects first.—J. Gardner, Batsford Park Gardens.

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**Dwarf Polyantha Roses in Pots.**—Apart from their value in the open ground, where their beauty extends over such a lengthened period, these roses are also very desirable for growing under glass, and in this way anticipating their usual season of blooming out of doors. So treated they form an exceedingly pretty feature in the greenhouse. In order to have them at their best, they must not be hard forced, but just brought on gradually. I particularly like the bright coloured variety Jessie when treated in this way.—W.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE: MAY 14.

Present: Mr. E. A. Bowles, M.A., F.E.S. (in the chair); Dr. A. Voelcker, Messrs. W. E. Ledger, J. T. Bennett-Poë, W. Fawcett, W. Hales, J. O'Brien, J. Fraser, C. E. Shea, R. H. Curtis, W. B. Hemsley, and F. J. Chittenden (hon. secretary).

IRISES.—It was reported that the Council had awarded a Certificate of Appreciation to Mr. R. Dykes for his work with the irises which he exhibited at the last meeting of the committee.

ARSENICAL POISONING.—Dr. Voelcker said that he had ascertained that the source of the arsenic in the water referred to at the last meeting was weed-killer.

TULIPS WITH FIMBRIATED EDGES.—Messrs. Pearson, of Lowdham, sent two tulips having their perianth pieces much cut along the edges, which had occurred among T. Gesneriana and Margaret respectively. The plants had been marked so that their behaviour next season might be ascertained. One or two other similarly cut-petalled plants had been reported this season.

HYBRID ORCHID.—Mr. J. O'Brien showed from Mr. E. F. Clark, of Evershot, Dorset, a flower of an orchid raised by crossing Lælia cinnabarina and Lælio-Cattleya × G. S. Ball. The latter is a hybrid between Lælia cinnabarina and Cattleya Schröderæ. The flower was an improved Lælia cinnabarina, large and more open in the lip, but the pollen masses were four large and four not quite so large, thus differing from both lælia and cattleya. Mr. Clark proposed the name Lælio-Cattleya × Cinnabal for it.

PRIMULAS.—Professor I. Bayley Balfour, F.R.S. showed the following primulas: P. Faurei (Franch), from mountains of Japan, a plant with rose-coloured flowers freely produced, and leaves with golden farina below. P. tibetica (Watt), a dwarf plant with rose flowers, allied to P. involucrata and native in the Tibetan highlands. P. Reedi (Duthie) ("Botanical Magazine," 6,961), a fairly well-known and beautiful pale violet species, not quite hardy, from Kumaon, introduced in 1885. P. malvacea (Franch), from Yunnan, allied to P. cortusoides, and having mauve flowers in two or three superposed umbels. P. deflexa, with bluish-lilac flowers, rather small but in dense clusters, and very sweetly scented. P. membranifolia (Franch), with violet flowers, a native of Yunnan. P. uniflora (Klatt), with very pale violet flowers (with a two-flowered scape in this instance), from the Sikkim Himalaya. P. pulchelloides (Balfour), with rather large, beautiful violet flowers, similar in appearance to P. pulchella, but nearly allied to P. nivalis, a native of China. P. Beesiana × P. Bulleyana, a beautiful hybrid with salmon-coloured flowers. Botanical certificates were recommended to the last five plants.

## National Rose Society.

MAY 20.

Taking advantage of the knowledge that a large number of foreign rosarians would be in England for the purpose of visiting the International Horticultural Exhibition, the Council of the National Rose Society arranged to hold a Rose Conference and to invite the leading rosarians of France, Germany, and America. There was an excellent response to the invitation, and the members of the society had an opportunity for seeing and hearing, many for the first time, a considerable number of the leading rosarians beyond the seas.

The conference was held at the Holborn Restaurant and proved a splendid success. Several hundred members were present, and among the foreign rosarians present were M. Pernet Ducher, of Lyons; M. Maurice de Vilmorin who has devoted much attention to species; Herr Peter Lambert, of Trier, Germany; Herr Ketten, of Luxemburg; Mr. E. G. Hill, of Richmond, Indiana, the raiser of the Richmond rose; Mr. J. L. Monk, Holland; and M. Soupert. The conference was opened by the Rev. J. H. Pemberton, president of the society, tendering to the foreign rosarians a hearty welcome, and expressing the pleasure he felt in meeting so many brother rosarians, both from at home and abroad. He then read an interesting paper on the "Modern Development of the Rose," which was followed by a brisk discussion extending over nearly two hours. We regret that space will not permit of our referring to the proceedings other than thus briefly, and we hope to be able to refer both to the paper and the discussion at some future date.

## Horticultural Club.

On Tuesday, the 14th instant, after the usual monthly dinner, at which Sir Frank Crisp presided, and which a large number of members and visitors attended, including many ladies, an extremely interesting lecture on "Trails in the Canadian Rockies" was delivered by Mrs. Henshaw, the hon. secretary of the Alpine Club of Canada. This lady, who has devoted many years to the study of both the flora and fauna of that really wonderful, yet little explored region of the British Empire, illustrated her lecture by a very large number of beautifully coloured slides depicting many of the most interesting plants she had met with, as also of the animals, plus many of the most striking views of the Alpine region of the Rockies, which is really a continuation of the mountainous range that stretches uninterruptedly from Mexico northwards to the Arctic regions. Many thousands of square miles of this domain have never yet been trodden by the foot of white men, and, despite its opening out in comparatively recent times by pioneers, followed by settlers, it presents, therefore, still, for the most part, a perfectly virgin field for the explorer, both botanically and zoologically, to say nothing of the geological and other scientific interests which it embraces apart from its future value commercially as a field of settlement for the ever-increasing population of the British Empire.

The lecturer accompanied every slide with most graphic descriptions of the circumstances attending its production and practically carried her audience with her through the vast panorama of snowy Alpine solitudes and beautiful lakes fed by glacier-born streams and clothed or surrounded by magnificent vegetation. The great glaciers themselves were traversed, and the evidence pointed out which indicated by the form of the lakes and their surroundings of the mighty work of denudation and erosion which had been effected in the past by glacial action in the great Ice Age, of which the ever-diminishing present glaciers formed a still extant remainder and reminder.

Every now and again, as a contrast to the forest scenes (one of which showed one of those raging conflagrations which every now and again occur, sometimes through lightning, but too often through the carelessness of the rare travellers in the way of neglected camp fires), her audience found themselves confronted with densely flower-clad parterres of brilliant blossom, rivalling the renowned ones of our more familiar European Alps. Here the botanical knowledge of the lecturer came in, in proper botanical names of the plants concerned, which the many peculiar semi-descriptive ones locally adopted render unrecognisable on this side. One striking slide showed a brilliant scarlet aquilegia, unnamed, which would certainly be a great acquisition if it has not already been introduced, as a valuable hybridising factor in that genus. Another slide, amongst many showing the animal life of the domain, depicted a group of the Canadian white bear, specimens of which have so far only been obtained by the native Indians, who secured a representative family group for the Victoria Museum. This animal is as purely white as the Polar bear, from which, however, it has been pronounced quite distinct, though very similar in appearance. Wolverines, porcupines, lynx, deer of many species, including wapiti, caribou, and elks, several kind of sheep and goats, as also other species of bear, including the dreaded grizzly, were also shown in their native wilds.

The lecture concluded, which was unanimously pronounced to have formed one of the most interesting in the club records, some remarks were contributed by Messrs. G. P. Baker, Reginald Farrer, C. Shea, W. Bilney, and Professor Balfour, of the Edinburgh Botanical Gardens, and a very hearty vote of thanks to Mrs. Henshaw concluded the meeting.

## FORTHCOMING ENGAGEMENTS.

MONDAY, MAY 27.—Whit-Monday. Bank Holiday.—Royal International Horticultural Exhibition opens at 9 a.m.

TUESDAY, MAY 28.—Royal International Horticultural Exhibition opens at 9 a.m.

Visit of International Jury, etc., to the Royal Gardens, Kew.

Perpetual Carnation Society's visit to Hampton Court; Mr. R. Page's Nursery, Windsor; Mr. Dutton's Nursery at Iver; and Messrs. Lowe and Shawyer's Nurseries, at Uxbridge.

Kew Guild Annual Meeting and Annual Dinner at Holborn Restaurant, 7.30 p.m. Lieut.-Col. Prain will preside.

WEDNESDAY, MAY 29.—Royal International Horticultural Exhibition opens at 9 a.m.

Perpetual Carnation Society's visit to Messrs. Stuart Low and Co.'s Nurseries at Bush Hill Park, Enfield; Mr. Alfred Smith's Nursery, Enfield Highway; and Mr. A. Stevens' and Messrs. Thomas Rochford and Sons' Nurseries at Cheshunt.

Royal Society of Arts Meeting.

THURSDAY, MAY 30.—Last day of the Royal International Horticultural Exhibition; Exhibition opens at 9 a.m.

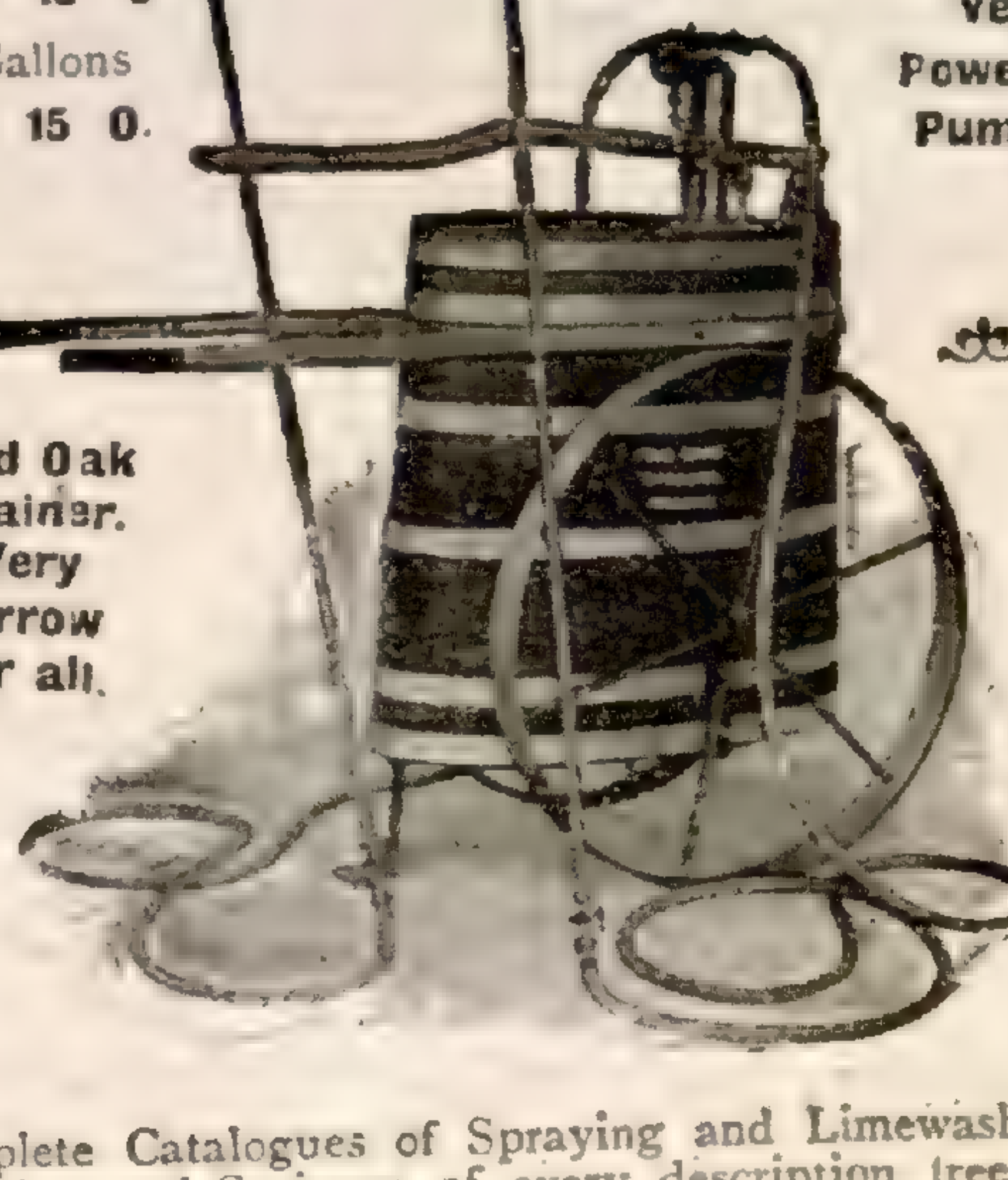
## ANSWERS TO CORRESPONDENTS.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

VIOLAS AND AUBRIETIAS. — F. M., Ewell: Kindly let me know how to propagate violas so as to produce strong, sturdy plants, like one sees in the markets during the middle and end of April, each with a flower or two, and a good ball of roots. If you will also tell me how best to propagate named varieties of aubrietias, I shall be obliged.—Taking the last question first, aubrietias have been dealt with somewhat freely in recent issues, but we may add that they may be propagated by cuttings now, these being inserted in sandy soil in a shady place, and, preferably, in a frame or under a hand-light. Violas for spring planting are raised from cuttings inserted in early autumn in frames where they are kept close up to the light, and only given sufficient shelter to keep excessive cold and wet from them. For a private garden, where spring-raised stock and autumn planting are out of the question, these autumn-struck plants should be transplanted in February or early March, into rich soil, containing a good deal of leaf-mould and grit. Here, still under cold frame shelter, and with increasing light, they grow apace. Whenever the weather is fine the lights are entirely removed, and air is always admitted, except when frost is unusually severe. Under this treatment fine plants that lift well are produced, and if planted out at the end of April or early in May they make a good display almost immediately. A good mulching of old, decayed manure should be given soon after planting, and faded flowers should be removed regularly.

DAMAGE TO BEECH BY SQUIRRELS.—D. H., Hants: We are rather bothered by squirrels in our woods, but we are not allowed to shoot the little animals because they "look so pretty." If you could state the kind of damage done by squirrels, and give suggestions for at least the reduction of that damage, it would be particularly helpful in several ways. — For sentimental reasons this destructive little animal is often



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allowed to increase in such numbers that very serious damage is done to woods, and the Board of Agriculture has recently drawn the attention of foresters to the necessity for keeping it in check. The squirrel feeds chiefly on the fruits of forest trees, such as the beech, oak, spruce, and Scots pine, and abundant signs of its activity may often be detected, for example, in a spruce wood by the piles of broken scales and stripped cones lying on the ground. In consequence, natural reproduction may be greatly reduced. The squirrel also does harm by eating buds (more particularly those of spruce and Scots pine) and biting off twigs. The destruction of the buds in snowy winters may entirely prevent seed from being produced. In plantations and thickets from 1 to 6ft. high, which are not yet provided with flowering buds, the squirrels bite off the top of the previous year's shoots and the side shoots of the last verticil, the buds of which are also eaten. Very few cones are formed on trees where squirrels have lived during the winter. In the summer also, shoots of various lengths up to 8in. are bitten off spruce trees, as at this time there are no seeds or buds to eat. The squirrel may also do great damage by peeling and girdling young trees of larch, Scots pine, silver fir, beech, hornbeam, aspen, willows, and oak. Trees from fifteen to thirty years old suffer most, but woods sixty years old are also attacked. The harm is done between May and July, and chiefly in dry years, to the stem in the crown where the squirrel sits, and is sometimes in rings or spirals, and at other times quite irregular. As it goes down to the sapwood the injured stems may die above the peeled place. Professor Fisher recommends reducing the number of squirrels by shooting, and the protection of the pine-marten (Mustela martes), which is a great enemy of the squirrel, as a natural remedy.

PEACH LEAVES FALLING. — Anxious, Potter's Bar: Could you tell me the cause of the young leaves falling from an apparently healthy peach tree in unheated house? The leaves are quite green, and at the base seem to be quite healthy, and do not appear to have been eaten by insects. This has happened for the past three years, although the tree is a very productive one. If you could kindly tell me, through your correspondence column, the cause of the leaves falling, I shall be greatly obliged.—We are always anxious to help correspondents, as far as lies in our power, but without specimens in the above case, and with such small evidence to go upon, a solution of the trouble is out of the question. If the tree continues healthy and productive, in spite of the regular annual fall of leaves at the end of April and early in May, then there must be some local cause operating, but whatever the cause, there seems little need for worry if the tree shows no signs of decline in health or fruitfulness. Troubles in connection with indoor peach culture are usually traceable to errors in watering, ventilation, and drainage.

CONSTRUCTION OF COW HOUSE. — S. C. T., Brigg: We are considering the question of erecting a new cowhouse, and I am anxious to place before my employers the best possible suggestions for such a construction before the architect is called in. I have an idea that you once referred in your "Answers" column to certain information on this matter obtainable from the Board of Agriculture; if I am right, please tell me how and where to obtain that information.—Leaflet No. 241, issued by the Board of Agriculture, contains a great deal of excellent information concerning the construction of cow houses, and also includes designs for such structures. A copy of this 16-page leaflet may be had post free on application, from the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W.

## NAMES OF PLANTS.

T. L. J., Byfleet.—1, Cattleya intermedia, C. Skinneri.

H. E., Chippenham. — 1, Polypodium lingua; 2, Hoya carnosa; 3, Gasteria verrucosa.

W. J. C., Wellington.—1, Laurus nobilis variegata; 2, Gnaphalium lanatum; 3, not recognised.

H. E. S., Marlow.—1, Anchusa italica; 2, a young growth of Physalis; 3, Polygonum Baldschuanicum; 4, Epigæa repens.

S. P. J., Barmouth.—1, Solanum Seaforthianum; 2, Costus igneus; 3, Odontoglossum polyxanthum; 4, Oncidium pulchellum; 5, a poor Lælia purpurata; 6, Swainsonia galegifolia.

## MARKETS.

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### COVENT GARDEN.

### Flowers.

Flowers are in good supply, and a brisk demand continues.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Anemones | per doz. bun. | 2 0 | | 2 6 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Azaleas | per doz. bun. | 3 0 | | 4 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 15 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Cornflowers | per doz. bun. | 2 0 | | 3 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz | 1 6 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 9 0 | | 15 0 |
| Gypsophila | per doz. bun. | 3 0 | | 4 0 |
| Iris, Spanish | per doz. bun. | 8 0 | | 10 0 |
| Lilac | per bunch | 2 0 | | 3 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 3 6 |
| ,, longiflorum | per doz. | 2 0 | | 3 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 6 | | 2 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Poppies | per doz. bun. | 3 0 | | 6 0 |
| Roses | per doz. | 1 0 | | 3 6 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 5 0 |
| Sweet Peas | per doz. bun. | 3 0 | | 6 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |

### Fruits.

The market is being well supplied with gooseberries, and there is a capital demand for them, and also for choice fruits.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Nova Scotia | per barrel | 10 6 | to | 22 0 |
| ,, Canadian | per barrel | 12 0 | | 22 0 |
| ,, American | per barrel | 20 0 | | 32 0 |
| ,, Californian | per case | 4 0 | | 7 0 |
| ,, Australian | per box | 7 0 | | 10 6 |
| Apricots, French | per box | 1 3 | | 1 6 |
| Bananas | per bun. | 3 6 | | 10 6 |
| Cherries | per ½ sieve | 8 0 | | 9 0 |
| Figs | per doz. | 6 0 | | 10 0 |
| Gooseberries | per ½ bush. | 5 0 | | 6 0 |
| Grapes, English | per lb. | 1 6 | | 8 0 |
| ,, Cape | per case | 4 0 | | 10 0 |
| Lemons | per case | 7 6 | | 25 0 |
| Melons | | 1 3 | | 3 6 |
| Oranges, Denia | per case | 16 0 | | 31 0 |
| ,, Seville | per box | 15 0 | | 18 0 |
| ,, Valencia | per case | 10 0 | | 18 0 |
| Peaches, Belgian | per doz. | 6 0 | | 24 0 |
| ,, English | per doz. | 16 0 | | 21 0 |
| Pears, Cape | per box | 3 0 | | 6 0 |
| ,, Australian | per case | 6 0 | | 10 0 |
| Pineapples | each | 4 0 | | 6 0 |
| Strawberries | per lb. | 0 9 | | 3 0 |

### Vegetables.

Outdoor vegetables are scarce and dear. Asparagus is very good, and selling.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| ,, Jerusalem | per ½-bush. | 1 0 | | 2 0 |
| Asparagus | per bun. | 1 0 | | 5 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 2 0 | | 3 0 |
| Cabbage, New French | per doz. | 1 3 | | 2 0 |
| ,, New Cornish | per doz. | 0 9 | | 1 6 |
| Carrots | per doz. bun. | 4 0 | | 10 0 |
| Cauliflowers | per doz. | 4 0 | | 6 0 |
| ,, Cornish | per crate | 12 0 | | 18 0 |
| Cucumbers | per doz. | 2 0 | | 3 0 |
| Endive | per doz. | 2 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 16 0 |
| Lettuce | per doz. | 1 0 | | 3 0 |
| Mint | per doz. bun. | 2 0 | | 3 0 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Onions | per case | 6 0 | | 11 0 |
| Parsley | per ½-sieve | 2 0 | | 3 0 |
| Peas, French | per pad | 4 0 | | 6 0 |
| ,, Guernsey | per lb. | 0 6 | | 0 9 |
| Radishes | per doz. bun. | 0 4 | | 1 0 |
| Rhubarb | per doz. bun. | 0 6 | | 2 0 |
| Spinach | per bush. | 3 6 | | 4 6 |
| Tomatoes, Canary | per pack. | 10 0 | | 16 0 |
| Turnips | per doz. bun. | 2 6 | | 5 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

### LONDON POTATO MARKETS.

Supplies good, and prices moderate.

| | | s. d. | s. d. |
|---|---|---|---|
| Teneriffe, New | per cwt. | 10 0 | 12 0 |
| Algerian, New | per cwt. | 10 0 | 12 0 |
| Jersey, New | per cwt. | 14 0 | 17 0 |
| St. Malo, New | per cwt. | 14 0 | 15 0 |

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. May 12 to May 18. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| May 12—Sunday | 5 24 | 63 | 59 | 69 | 55 |
| ,, 13—Monday | 6 42 | 55 | 51 | 65 | 46 |
| ,, 14—Tuesday | 8 36 | 60 | 52 | 69 | 41 |
| ,, 15—Wednesday | 3 18 | 61 | 57 | 68 | 52 |
| ,, 16—Thursday | 8 6 | 51 | 46 | 57 | 46 |
| ,, 17—Friday | 9 13 | 52 | 47 | 61 | 43 |
| ,, 18—Saturday | 1 50 | 57 | 52 | 62 | 48 |
| Means | (total) 43 14 | 57 | 52 | 64 | 47 |

| Date. 1912. May 12 to May 18. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| May 12—Sunday | 0·17 | 60 | 56 | 53 | 49 |
| ,, 13—Monday | — | 58 | 56 | 53 | 42 |
| ,, 14 Tuesday | 0·03 | 58 | 56 | 53 | 35 |
| ,, 15—Wednesday | 0·06 | 59 | 56 | 53 | 48 |
| ,, 16—Thursday | 0·17 | 58 | 56 | 54 | 40 |
| ,, 17—Friday | — | 55 | 55 | 54 | 35 |
| ,, 18—Saturday | — | 56 | 55 | 54 | 37 |
| Means | (total) 0·43 | 57 | 55 | 53 | 41 |

Thunderstorms on the 12th and 16th.

## CATALOGUES RECEIVED.

E. J. WOOTTEN, FAIROAK, EASTLEIGH.—A special list of perpetual-flowering carnations, in which both new and old varieties have a place.

J. W. CROSS, WISBECH.—This annual spring catalogue includes hardy flowers and seed potatoes, as well as flower and vegetable seeds; it is freely illustrated.

BARR AND SONS, COVENT GARDEN, W.C.—This new catalogue of hardy perennial, alpine, aquatic, and climbing plants is remarkable for its omissions. The firm has purposely omitted a number of plants usually catalogued, but which have been superseded by improved and later introductions; consequently this descriptive and illustrated list is quite up-to-date.

J. CHEAL AND SONS, CRAWLEY.—In their work of garden designing the Messrs. Cheal have developed a special department for the design and construction of garden furniture. The catalogue before us emphasises the simplicity of the designs in seats, summer-houses, trellises, etc., and also their adaptability for certain positions.

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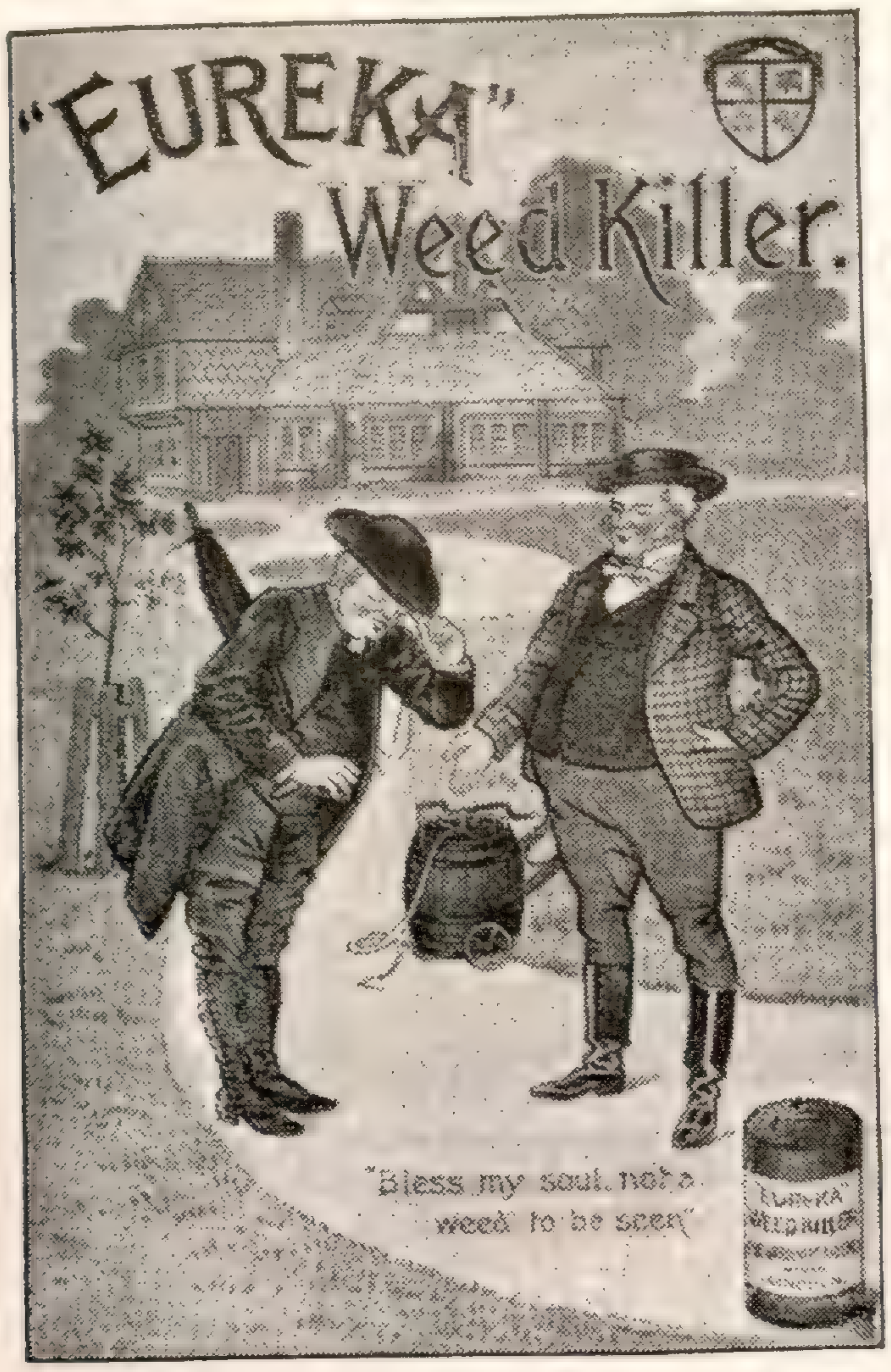
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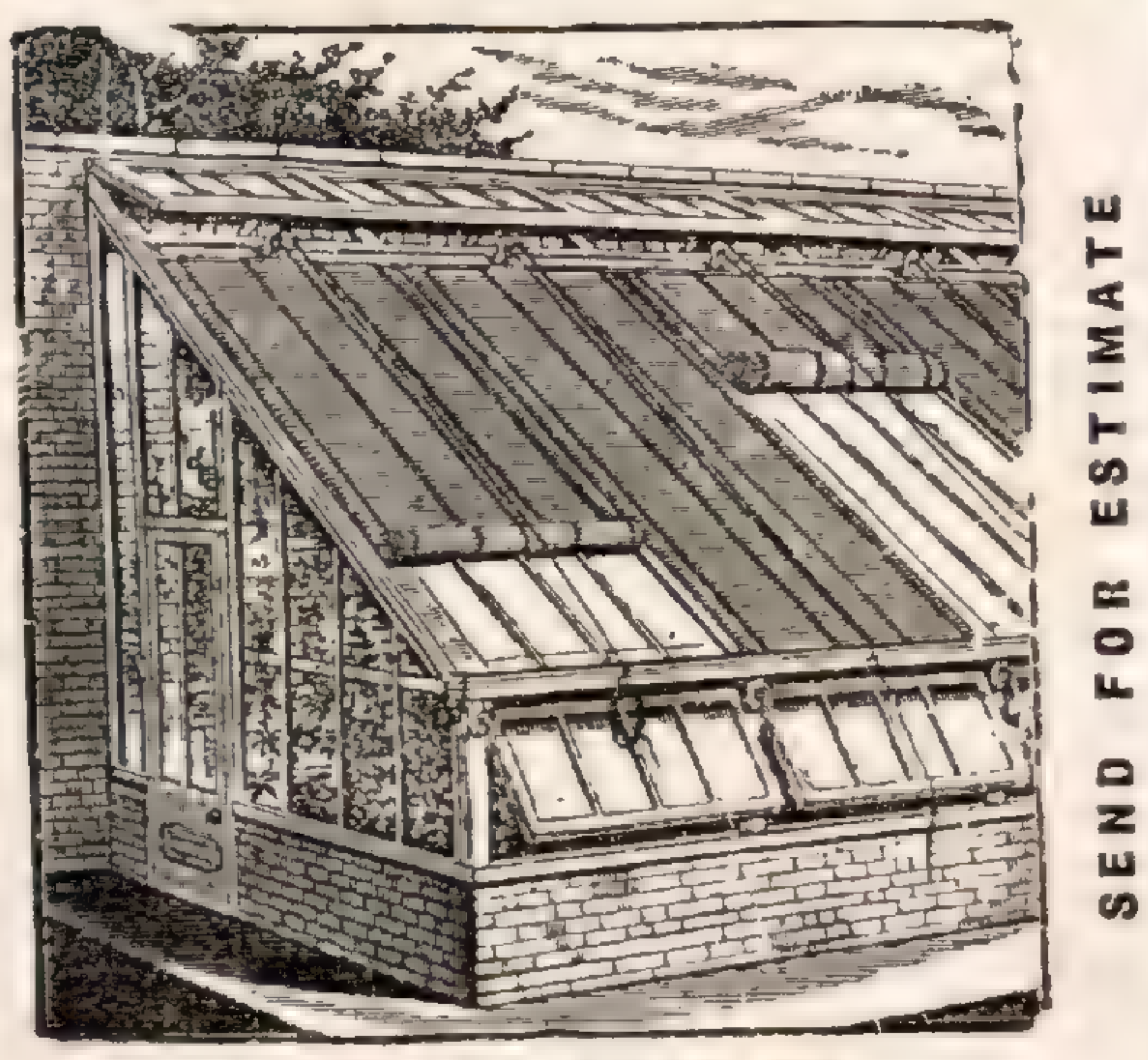

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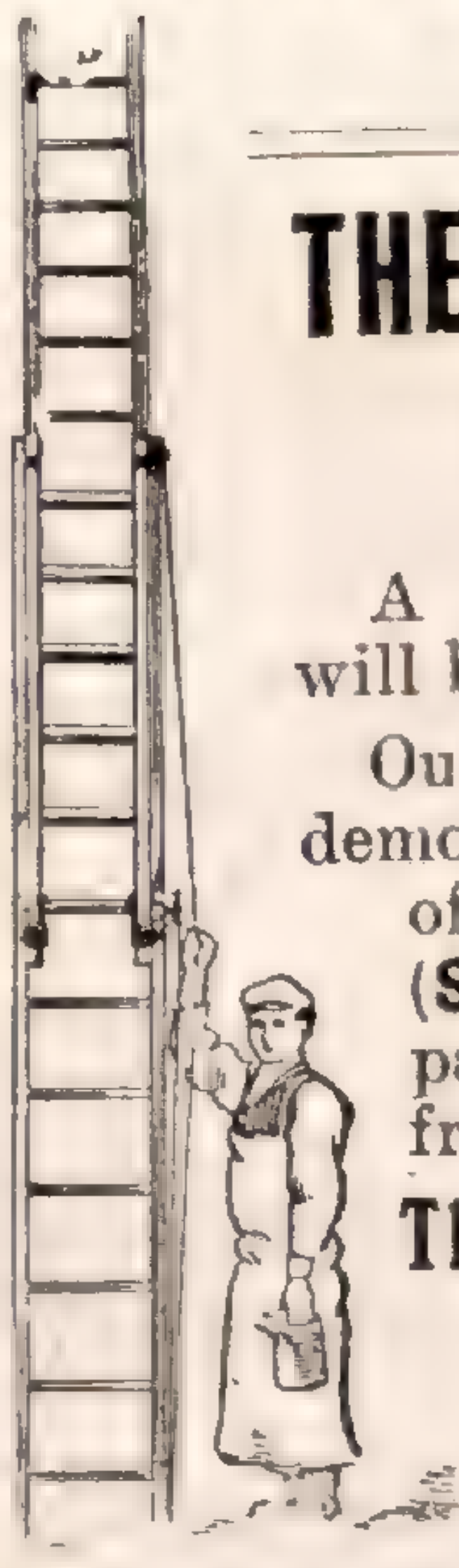

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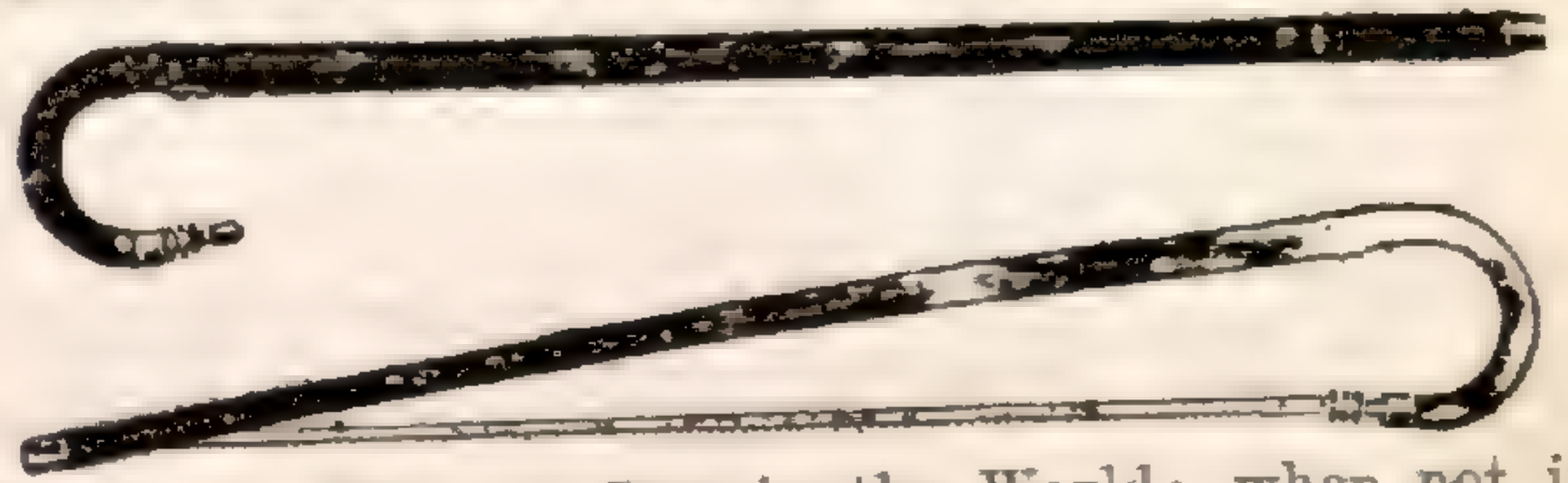

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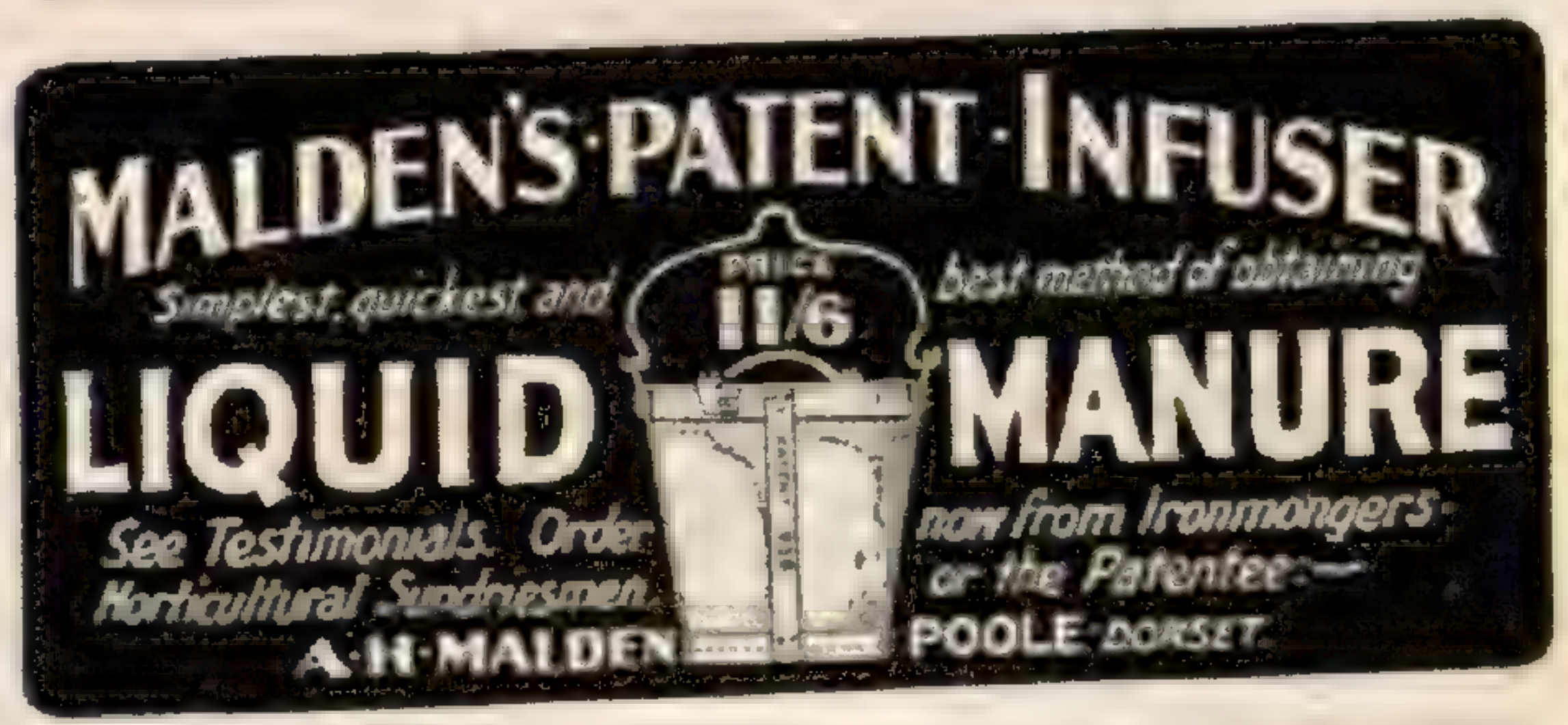

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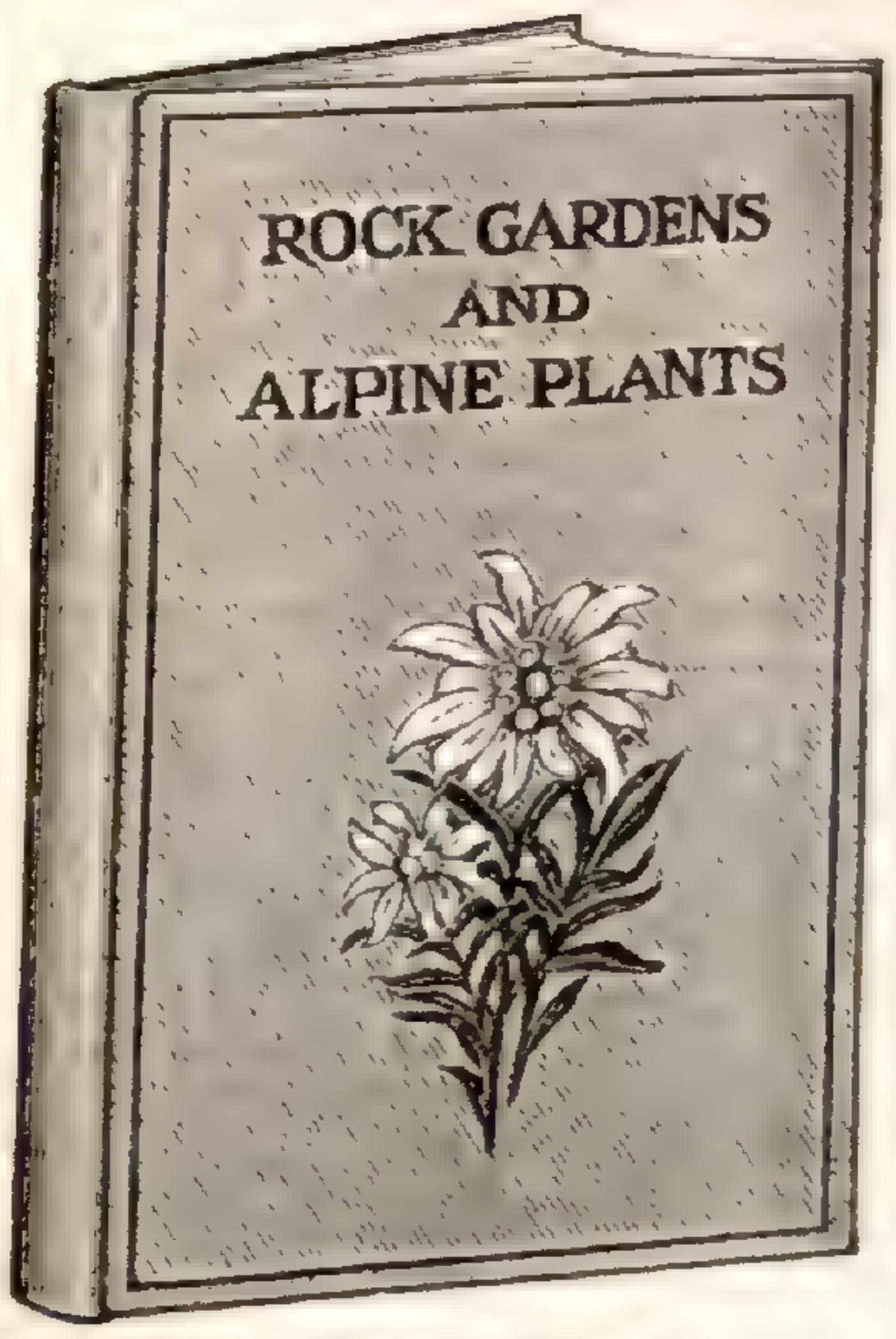

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E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

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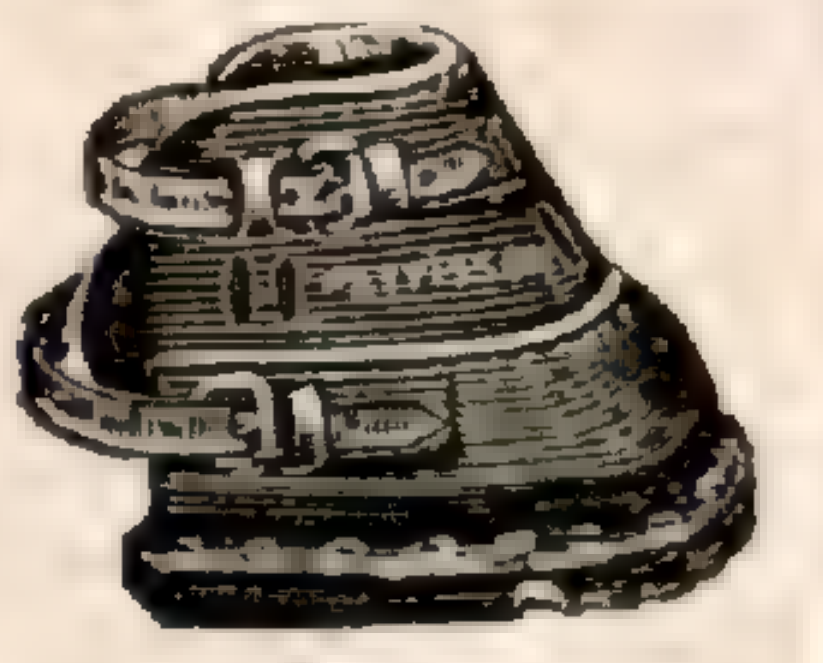

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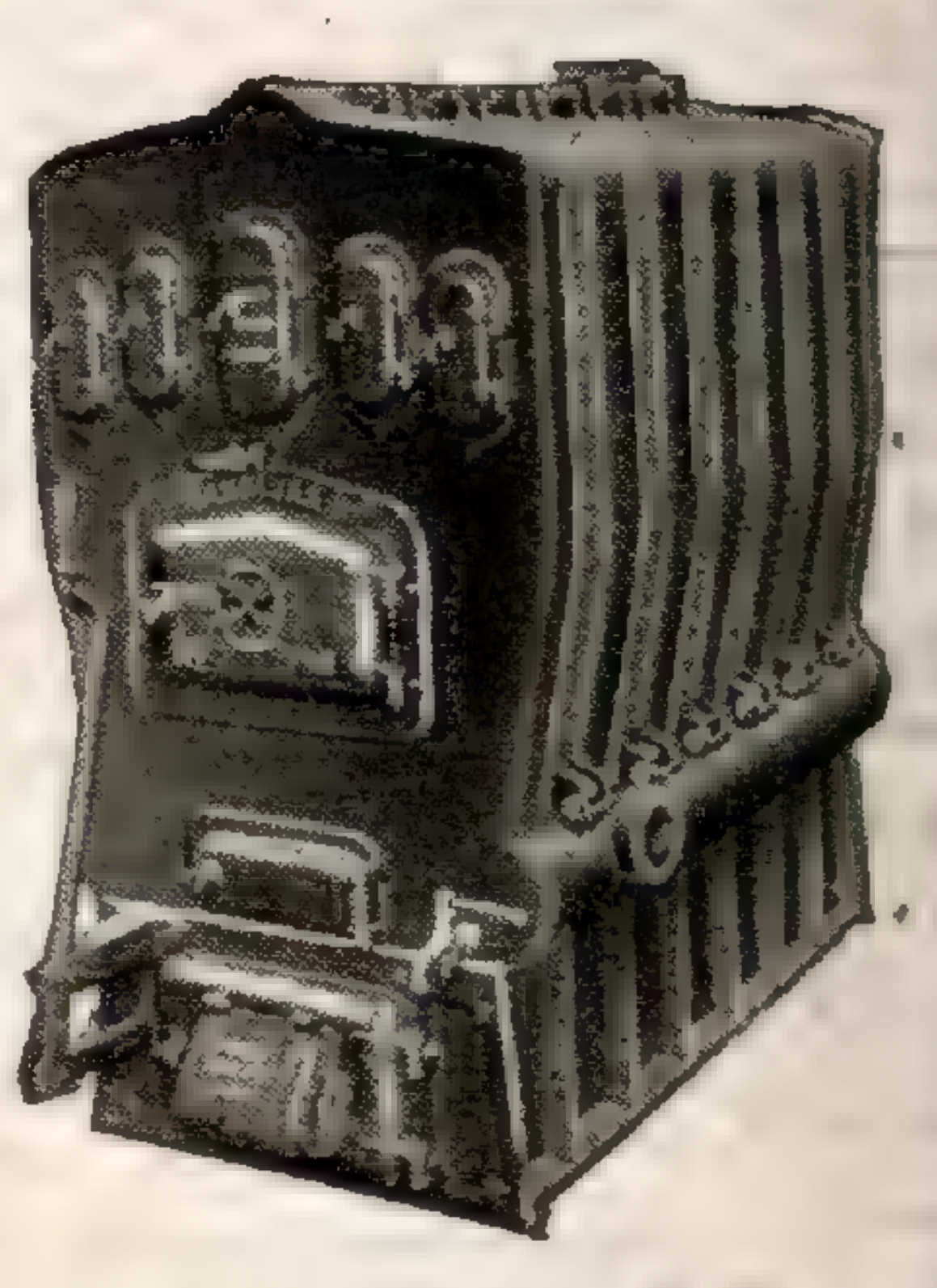

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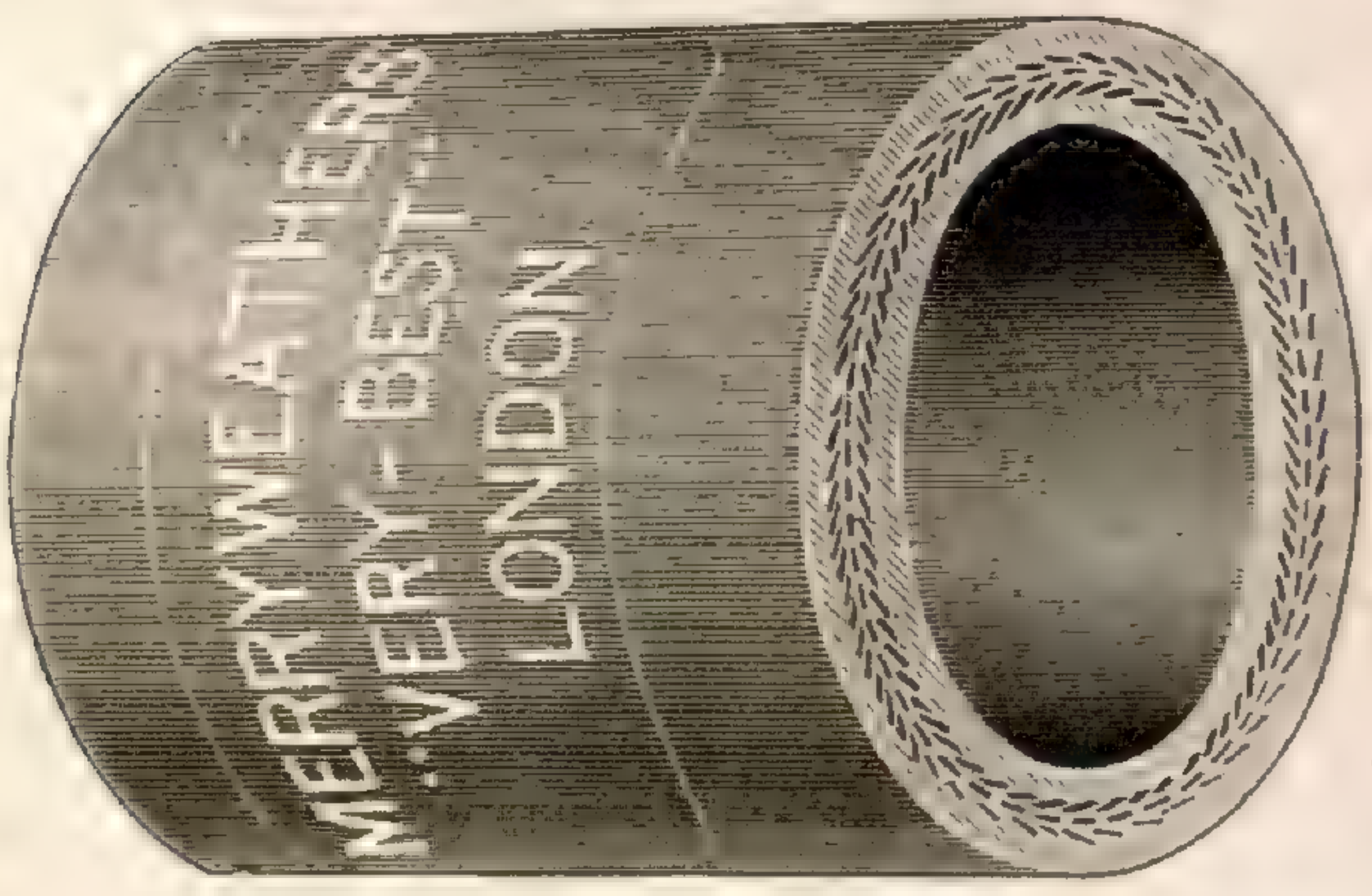

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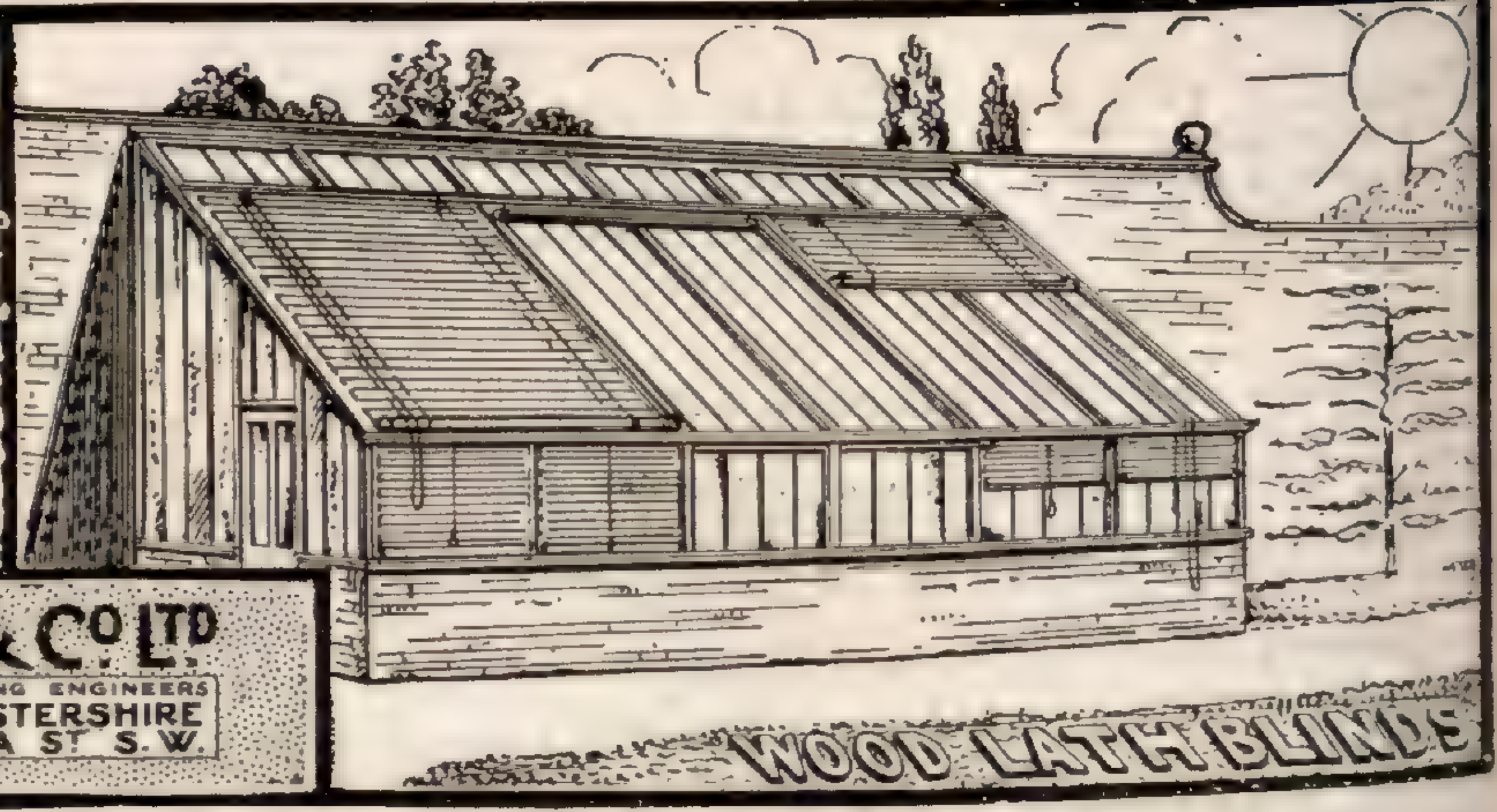

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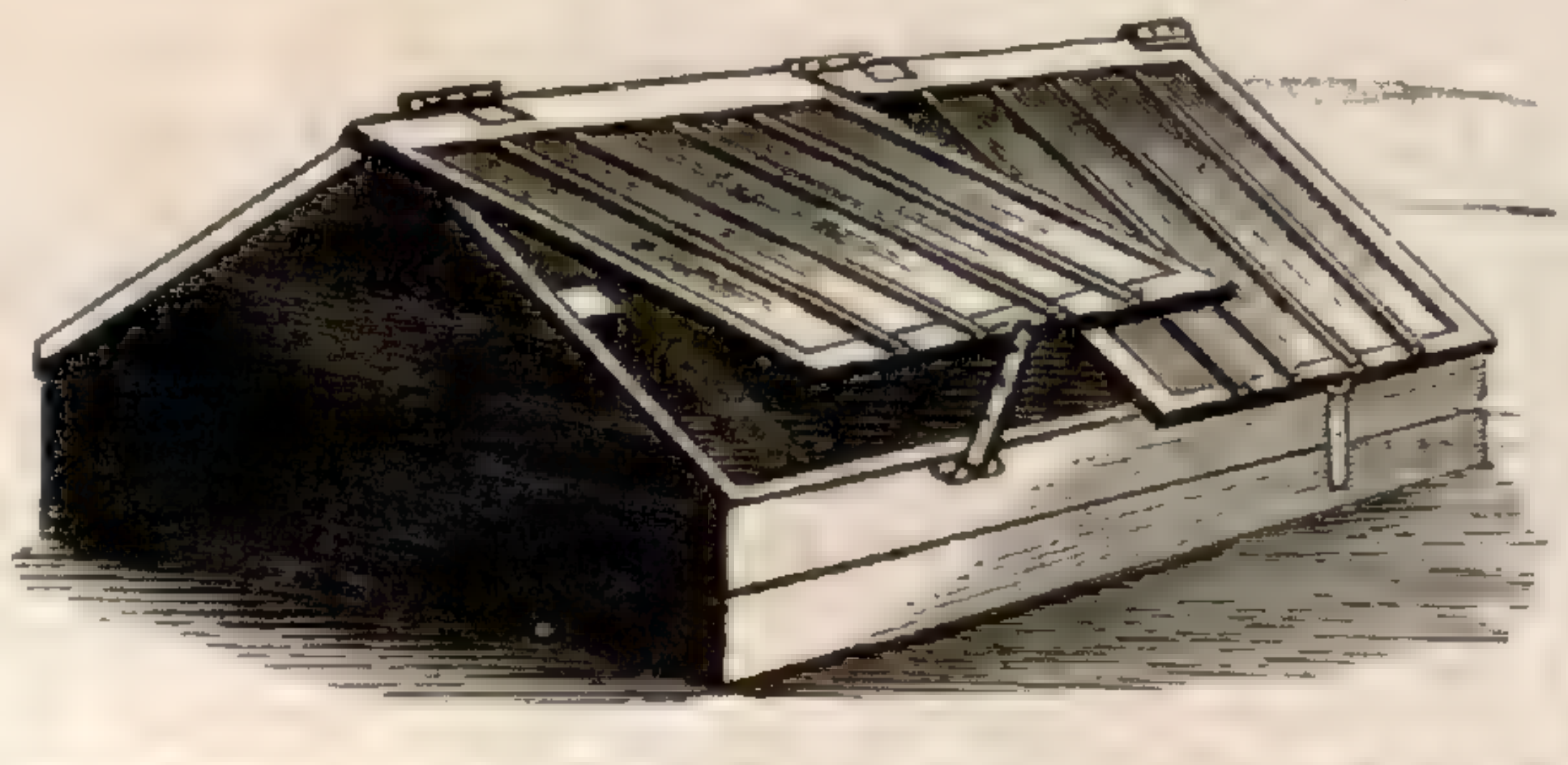

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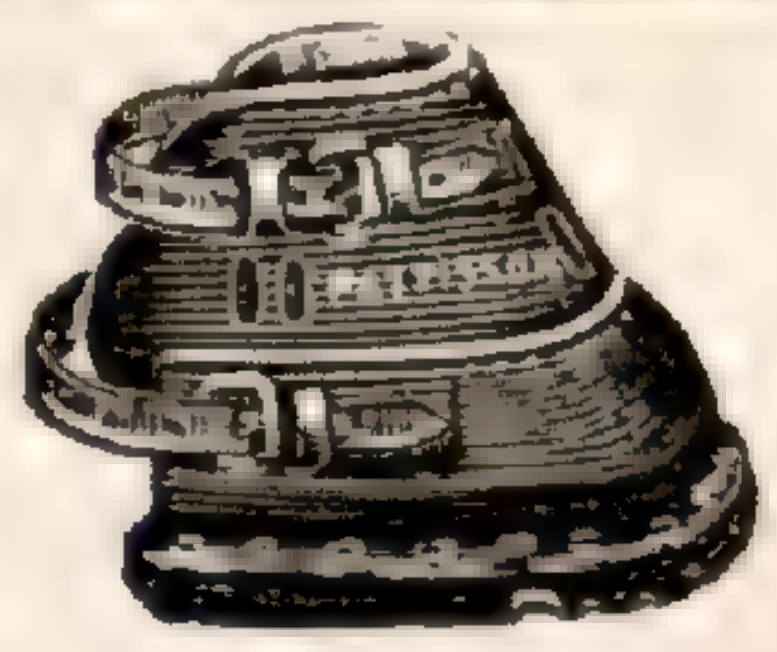

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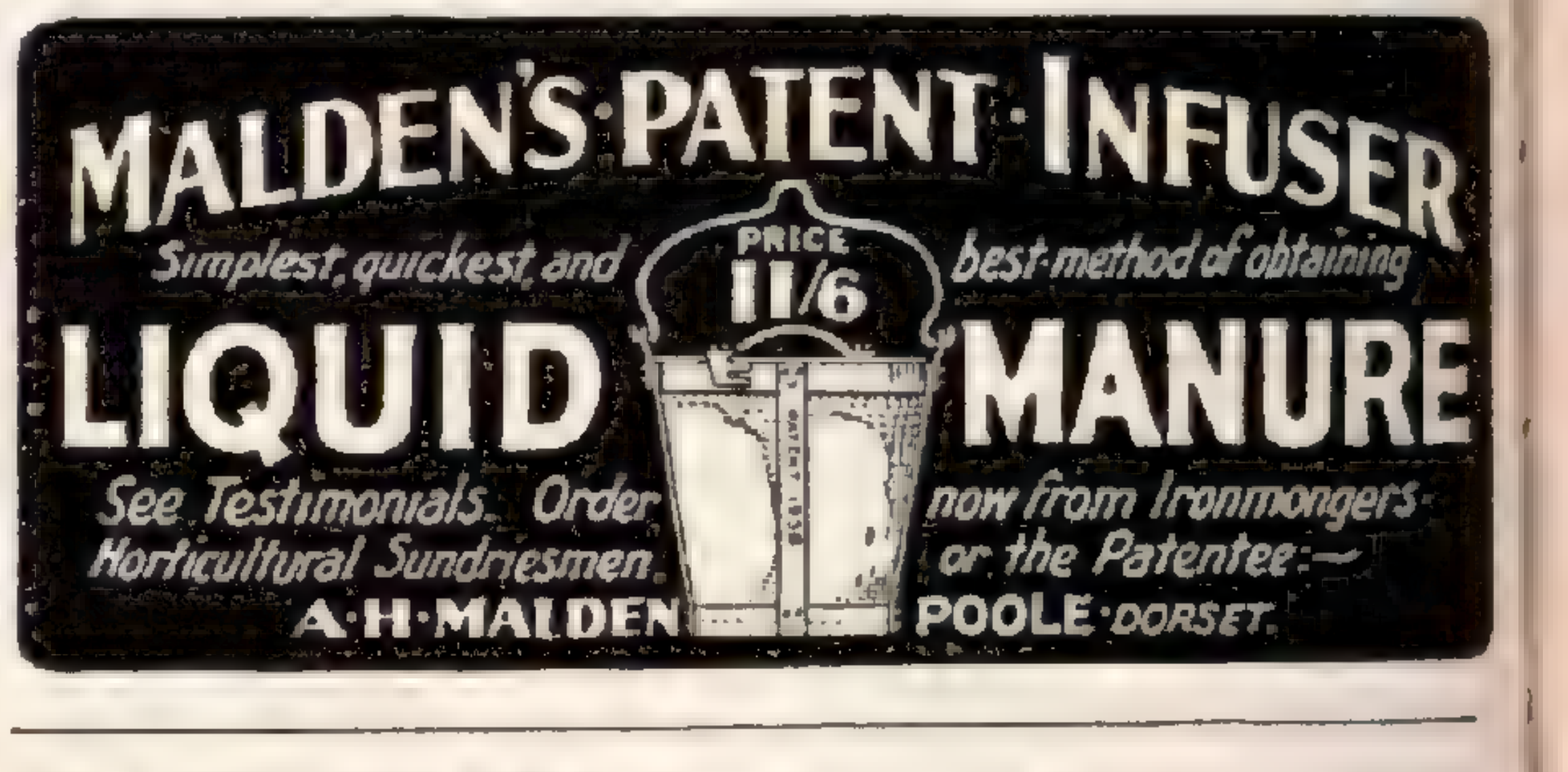

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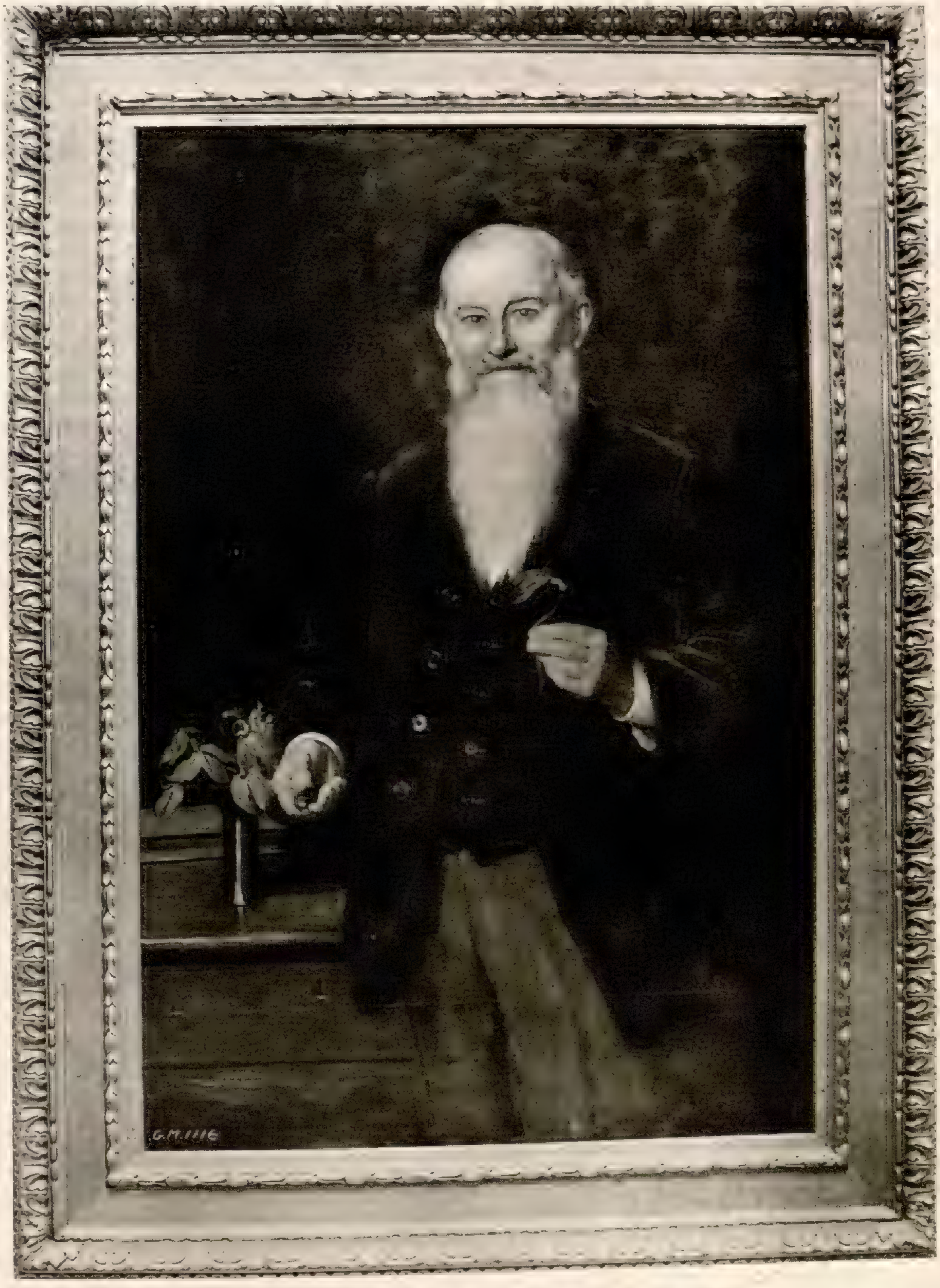
VOL. LV.—No. 3,057. SATURDAY, JUNE 1, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Legislation in Connection with Plant Diseases.

The two conferences held in connection with the Royal International Horticultural Exhibition at Chelsea were so highly successful in every way as to rank high among previous gatherings of a similar character associated with horticulture, and to reflect much credit upon the Science and Education Committee, by whom the programme was prepared and the details carried out. Both conferences dealt with matters of far-reaching importance to the horticulturists of this country, they were largely attended by those specially interested in the questions arranged for consideration, the papers were of an exceptionally high order of merit, and the discussion that followed attained to a much higher level than is customary on such occasions. As shown in our report, which appears elsewhere in the present issue, the first conference was devoted to the consideration of horticultural education and the second to legislation in connection with insect pests and fungoid diseases of plants. The two questions are of so high a degree of importance as to render it unnecessary, or indeed desirable, to attempt to differentiate between them, and if we make special reference to the second of the two, it is because the legislative enactments that have been made within recent years by Colonial and foreign countries in various parts of the world are such as to seriously interfere with the activities of nurserymen and seedsmen, whose trade extends beyond the boundaries of the United Kingdom. How great must be their interference with the trade in seeds, plants, tubers, etc., was well shown in the excellent statement which had been prepared by Mr. Arthur W. Sutton, V.M.H., F.L.S., for the information of the conference; and still more conclusive evidence upon this point is found in the comprehensive summary of regulations relating to the importation of plants, weeds, and insects from Great Britain into other countries, which has been prepared by the Board of Agriculture, and was placed at the disposal of the members of the conference. It may, as Mr. Sutton pointed out, be necessary in the interest of cultivators, and, indeed, of the community at large, to adopt some restrictive measures to prevent the export of seeds, plants, etc., from disease-infected or insect-infested areas, but the regulations that are now in force are not well devised for the exclusion of the enemies of plant life from countries that are wholly free from them. In some cases, only one of two classes of plants have to be examined at the port of arrival, and the regulations are of the simplest, while in other countries a considerable number have to be subjected to examination under regulations of the most elaborate, and it may be, vexatious, character. It was contended with some force that if the elaborate precautions that had been taken by some countries are really necessary, then the other countries have not done sufficient to protect cultivators from the various enemies of plant life from which their gardens and fields are free. Professor Ritzema Bos, who is one of the highest of the European authorities on insect pests and fungoid diseases, and read the first paper at the conference, expressed in no uncertain manner his opinion that the



SIR HARRY J. VEITCH, V.M.H., F.L.S., ETC.

examination of nursery stock, garden produce, etc., at the port of entry is not an efficient protection. His reasons are stated in the summary of the first part of his paper which is given in our report, and therefore need not be recapitulated here. He, however, did not suggest that nothing should be done with a view to the prevention of plant diseases, but, on the contrary, he strongly advocated the examination of the plants, etc., in the country of origin. In referring to the question of inspection and of granting a certificate of health before exportation, he expressed the opinion that in no other way could the importation of diseases from abroad be more effectually prevented than by efficient inspection of the stock in the country where it has grown. But this inspection can, in Professor Ritzema Bos's opinion, only give what is reasonably required of it—a guarantee for the health of the stock when a well-equipped phytopathological service exists in the country from which it comes. In Holland there is such service, and the account that was given of its method of procedure formed an important and interesting part of the paper, and we hope to have an opportunity of making some reference to it at no distant date. Much is being done in this country in the direction of facilitating commercial intercourse between this and other countries, and by means of active co-operation between nurserymen and seedsmen, and the officials of the Board of Agriculture, some at least of the difficulties that arise in connection with exports of plants, etc., might be brushed away. It was pointed out by Mr. Rogers, of the Intelligence Department of the Board of Agriculture, that the utmost the Board can do under existing conditions is to afford nurserymen facilities for complying with the regulations that require some inspection or report as regards the freedom of products from disease of that part of England in which they are grown. Arrangements have accordingly been made for such inspection, and the issue of such certificates and a memorandum setting out what the Board are prepared to undertake has been sent to all the principal nurserymen in England. This has been done in order that the Board's inspectors may be in a position to enter on premises where disease may exist, and search all places where it may be found that certain pests have been scheduled, for in some cases it is necessary to examine not only the premises or the plants in respect of which an application for a certificate has been made, but the adjoining premises also. Mr. Güssow, the botanist of the Canadian Government, who also contributed a paper to the conference, expressed the opinion that the only method by which the spread of diseases and insect pests could be prevented was by the examination of stock in the country of origin, and the issue of certificates for that found free from them. Mr. H. M. Lefroy, the Imperial entomologist for India, in dealing with insect pests of plants in the tropics, showed very clearly that there was ample room for a considerable improvement in the methods of procedure. But to effect these a much wider knowledge of the pests was necessary before it would be possible to adapt the regulations to existing conditions, and all who have paid any attention to the question will be in full agreement with this view of the case. They will also feel with us that both insect pests and diseases should be more carefully studied by all who are engaged in cultural methods, whether on the farm or in the garden.

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**Sir Harry J. Veitch, V.M.H., F.L.S.,** has, in the course of his long and active life, rendered such splendid services in the cause of gardening and gardeners that we are fully assured the whole of our readers will join with us in tendering him our heartiest congratulations on his having had the honour of knighthood conferred upon him by the King. The pleasure that we, in common with other horticulturists, feel, is all the greater from the fact that it has long been felt by those who take an active interest in horticultural affairs that services such as those which have been rendered by Sir Harry J. Veitch during the past fifty years well merited the highest honours that could be conferred upon him by his Sovereign. Expression was given to this feeling at the dinner in his honour at the Royal Horticultural Hall on January 24, 1910, when Mrs. Veitch was presented with a duplicate of his portrait which had been painted by Mr. Hugh C. Riviere, and presented to the Royal Horticultural Society by his many friends. One of the speakers, who had taken an active part in raising the necessary funds which, by the way, was a very easy matter, said that he hoped some day the King and State might see fit to honour horticulture by honouring such a man as the guest of the evening. This expression of hope was received with acclamation, and we now rejoice in no uncertain manner in the fulfilment of this hope. It would give us pleasure to write at length on Sir Harry J. Veitch's achievements, but it would be superfluous. It is well known to all who are interested in horticulture that throughout the half-century or so that he has been associated with the firm of which he has long been the head, he has been unremitting in his endeavours to enrich British gardens with ornamental plants and useful fruits, and as exemplified by the large collection of plants that had been recently introduced from China, which formed so interesting a feature of the International Horticultural Exhibition, he is now not less keenly interested in this branch of his firm's activities than at any previous period. His work in this direction would fully justify the high honour that has now been conferred upon him, but he has done so much, both as a worker and supporter, in the cause of the charities associated with gardening as to give him a unique position among horticulturists. Moreover, as a member of the Council of the Royal Horticultural Society, since 1887, Sir Harry J. Veitch has accomplished work of such immense value, that it would be difficult to set a proper estimate upon it. It may be mentioned that he had the Victoria Medal of Honour in Horticulture conferred upon him in 1906, but he would have been included among the sixty original recipients in 1897 had not the Council then resolved that no member of the Council should receive it, and in 1908 he received from the King of the Belgians the distinction of Chevalier of the Order of Leopold. Our portrait of Sir Harry J. Veitch is reproduced from the fine presentation portrait painted by Mr. Hugh C. Riviere in 1910, which now hangs in the Council Chamber at the Royal Horticultural Hall.

**Royal International Horticultural Exhibition.**—It is with very great pleasure we are able to state that not only is the great exhibition at Chelsea Hospital Gardens a great horticultural success, as we have already shown, but it is a financial success also. So great has been the attendance, and so keen the interest created during this second week of the show that the desirability of extending the period of the exhibition until and including Saturday, June 1, was heartily suggested on all sides on Tuesday, May 28, and received the fullest consideration of the directors. Of course, the Chelsea Hospital authorities and the exhibitors are the chief persons to be considered in this connection, but at the moment of going to press, we believe there is not the slightest possibility of the extension being arranged. The attendance and takings for the several days, so far as available, were as follows: Wednesday, May 22: admission, two guineas until 5 p.m., one guinea after 5 o'clock; takings at the gates, £690. Thursday, May 23: admission, one guinea until 5 p.m., 10s. 6d. after 5 o'clock; takings, £1,932. Friday, May 24: admission 10s. 6d. until 5 p.m., 5s. after 5 o'clock; takings, £2,150. Saturday, May 25: admission 5s. until 5 p.m., 2s. 6d. after 5 o'clock; takings, £1,899. Monday, May 27 (Whit-Monday): admission, 2s. 6d. all day; visitors, 20,000; takings, £1,593. Tuesday, May 28: admission, 1s. all day; visitors, 40,000; takings, £1,720. Wednesday, May 29: admission, 1s. all day; by 12 noon, over 10,000 had passed the turnstiles, and at 3 p.m. visitors were crowding in at all the entrances.

**"Problems of Propagation"** is the title of the eighth Masters Memorial Lecture, to be delivered by Professor Isaac Bayley Balfour, at the Royal Horticultural Hall on Tuesday, June 4. Professor Balfour is director of the Royal Botanic Gardens, Edinburgh, where the most difficult plants to deal with are propagated with comparative ease. The Edinburgh exhibit in the Science Section of the Royal International Horticultural Exhibition was evidence of the skilful way in which plant propagation is conducted in the famous gardens there, and, possibly, afford some indication of the lines which Professor Balfour's lecture will follow.

**The "Gardeners' Magazine" and the Royal International Horticultural Exhibition.**—In our efforts to give our many readers the fullest possible account of the great international exhibition at Chelsea, we have spared no pains, time, or expense during the three weeks now closing, and we have devoted three special issues to this unparalleled horticultural display and its attendant conferences and functions. By means of reproductions from photographs taken on the spot, and descriptive text, we have given our readers an account that has met with unbounded success and admiration. Personal thanks and congratulations have been heaped upon our editorial and publishing staffs, and each post continues to bring us dozens of congratulatory letters. We hope and believe that this issue, the third of the exhibition numbers, will meet with the same hearty approval that the others have enjoyed. The success achieved is largely due to the fact that the whole of the reports are the work of our own regular and expert staff.

**Kew Guild.**—Seldom, if ever, in its history, has the annual gathering of past and present Kewites been so largely and representatively attended as on May 20 at the Holborn Restaurant. The business meeting, presided over by Mr. R. Hooper-Pearson, was well attended. The annual report notified a somewhat serious falling off in annual subscriptions, and a sub-committee was appointed to consider and report upon the financial situation. There appears, however to be no need for alarm as the Guild carries forward a balance of £27 4s. 6d., and has a capital account of £330 14s. 6d. The benevolent fund started last year has already been of great assistance. The business meeting was followed by the annual dinner, and Lieut.-Col. D. Prain, Director of the Royal Gardens, Kew, presided over one hundred and eighteen members gathered from all parts of the United Kingdom, the Continent, and almost all the ends of the earth. A particularly pleasant evening was spent, the only regret being the absence of Mr. W. Watson. Lieut.-Colonel Prain becomes president for the ensuing year, and Mr. A. W. Hill, Assistant Director at Kew, is elected chairman of committee for the ensuing three years. Among those present from other lands we noticed Mr. Burkill, from South Africa; Mr. W. J. Fletcher, from Hong Kong; Mr. Robson, from Montserrat; Mr. A. Hemming, from Philadelphia; Mr. Sillettoe and Mr. Patterson, from the West Indies; Mr. Harry Davis, from India; and Mr. Benbow, from La Mortola.

**Larch Saw-fly in the Lake District.**—We learn that the larch saw-fly is working havoc among the larch plantations that clothe the lower slopes of the fells in the Lake District. Great efforts have been made to stamp out the pest, but so far they do not seem to have been very effective. Tits are being encouraged, as they eat the saw-flies, and so help to keep the pest down.

**Grand Yorkshire Floral Fete and Gala.**—The dates of this great Northern flower show are June 19, 20, and 21, and, as usual, the display will take place in Bootham Park, York. A splendid schedule has been arranged, and the prizes should attract the best of exhibitors. The Archbishop of York is offering a special prize for the most meritorious and attractive exhibit in the show, and gold medals are offered respectively for the best trade displays of orchids, stove and greenhouse plants, ornamental trees and shrubs, and decorative plants and cut flowers.

**Pot Fruit Trees from Gunnersbury House.** — Few exhibits attracted more attention at the great International Horticultural Exhibition, especially from the foreign visitors, than the splendid display of forced fruits in pots staged by Mr. Jas. Hudson, V.M.H., gardener to Leopold de Rothschild, Esq., C.V.O., Gunnersbury House, Acton. We have already referred to it, but it may be of special interest to state that the group included three varieties of grapes, twelve of cherries, three of nectarines, six of peaches, six of figs, eight of plums, four of melons, two of strawberries, two of tomatoes, the Seville orange, the loganberry, the newberry, and The Holman raspberry. We understand that all the fruits exhibited by Mr. Leopold de Rothschild have been distributed among the sick and aged pensioners at the Royal Hospital, Chelsea. The great merit of this exceptionally fine exhibit was recognised by the award of a large gold medal and the special trophy (Prix d'Honneur) offered by the National Horticultural Society of France.

**Guide to the Fruit and Vegetable Trades.**—It is only when one is conversant with the business done in the great fruit, vegetable, and flower markets of London and the large provincial cities and towns, that the immense amount of business passing through the hands of those who grow, handle, and sell the produce of the horticulturist and market gardener, becomes apparent. With almost equal force, however, is an idea of the extent of the trade emphasised in "Castle's Guide to the Fruit, Vegetable, and Allied Trades," a volume of over two hundred pages, neatly bound in blue cloth board, and containing a directory of all who come under its title in the United Kingdom. Beginning with London, the counties are then taken in alphabetical order, and in each county the names of dealers and growers are also arranged alphabetically, while the particular kind of business conducted by the person or firm is in every case indicated. Even horticultural builders and manure merchants, as well as nurserymen and seedsmen are included, so that the directory is of outstanding importance and usefulness to all who do business in the world of horticulture. It is published by Castle's Directories, Lim., Truro. The index of towns, showing their counties, is not the least valuable part of a good work.

**Protection of Rare Birds.**—Mr. Montagu Sharpe, chairman of the Royal Society for the Protection of Birds, writes: This season the Watchers' Committee of the Royal Society for the Protection of Birds is employing and paying 22 watchers in various parts of the country to safeguard the rare birds which are in danger on account of the greed of collectors and from other causes. It is a curious fact that, although many people are aware of the life-long pleasure and enjoyment which they derive from the existence of birds, it is only a few whose appreciation and gratitude takes the form of adequate contributions to the society without whose strenuous efforts during 20 years many species of birds would in all probability have been utterly destroyed. This inadequate support is probably due to the fact that bird protection is not sufficiently sensational to appeal powerfully to the ordinary person's pocket. We therefore appeal to all those who are able to realise the importance of the preservation of what is beautiful and useful in nature, and venture to express a hope through your columns that some will come forward to help by joining the Royal Society for the Protection of Birds as a fellow or member, or by sending a subscription to one or other of its special funds, of which full particulars can be obtained of the secretary, 23, Queen Anne's Gate, London, W.

**New Open Space for Bacup.**—The trustees of the late Edward Hoyle have presented to Bacup the "Moorlands" Estate for use as a public park, and a site for a new school. The estate is worth upwards of £10,000, and includes a fine mansion, which is vacant, and is situated in a healthy part of the town.

**The National Hardy Plant Society** has received some additions to its schedule of prizes for Wednesday, June 19. Two extra classes are announced, one for six bunches of pink, and one for six bunches of scarlet Sweet Williams, and in each class Messrs. Sutton and Sons are providing cash prizes of 21s., 10s., and 5s. respectively for first, second, and third prizes. Mr. A. J. Macself, 52, Beechwood Road, Finsbury Park, N., will supply schedules and particulars to intending competitors.

**Rose Killarney Brilliant.**—Under this name Messrs. Alex. Dickson and Sons, of Newtownards, have registered in America a new sport of Killarney which originated in this country. The blooms of the variety are described as being more double than Double Pink Killarney, and the colour brighter than the original Pink Killarney. The form of the flower and the habit of growth are like the original Killarney.

## NOTES FROM SCOTLAND.

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### The Season and the Crops.

Not for many years past has such a favourable spring-time as that now ending been experienced in the South-west of Scotland, a fact generally confirmed by all classes depending upon the produce gained from the soil for a livelihood.

Frosts, since the early part of April, have been less frequent than usual, and but little damage has accrued thereby to crops; while the amount of bright sunshine by day, and generally mild conditions by night, have assisted forward vegetation, so that at present—May 15—the crops are quite a fortnight earlier than usual, and the promise for the future all that could be wished for. The total amount of rainfall for April just exceeded one inch, thus providing the happy medium between the drought in the South of England and the excess in the northern parts of Scotland.

### The Fruit Crops.

With the exception of strawberries and raspberries, which are now in full bloom, a plentiful set of most kinds of fruits seems now assured, plums and pears being in this respect particularly good, and as the embryo fruits are now so well protected by the foliage, but little damage from inclement weather, should it come, is now feared. The earlier kinds of apples have mostly shed their bloom-petals, while those somewhat later, and orchard standards are pictures of beauty, and form striking objects wherever they may be placed. Bush fruits in general are heavily cropped, gooseberries and red currants being especially so, while black currants, though scarcely so profusely laden, will likely provide an ample supply. Owing to the absence of any very inclement weather, more particularly cold winds, the foliage of all fruit trees is remarkably fresh, and free from insect pests; and so far the gooseberry caterpillar, which is often the scourge of the season, has not made an appearance.

### Vegetables.

The genial atmospheric conditions have also had a most beneficent effect upon all green crops, which of their respective kinds were ready for use from ten days to a fortnight earlier than is usual. Asparagus, which, as a rule, thrives well here, being near the sea, has quite surpassed all previous records, both for size and quality. Cabbages were more prone to running to seed than one cares to contemplate, but later plantings are almost free from this defect, and fine succulent hearts have been for a long time available. The various summer crops, as peas, cauliflowers, and potatoes, promise well, and should the weather during the immediately succeeding weeks prove favourable to growth, bountiful crops of nearly all kinds may reasonably be expected.

### Early Potato Crops in Scotland.

The genial weather of late has proved of immense benefit to the early potatoes so extensively cultivated along the south-western coasts of Scotland. Following upon a long period of almost incessant rainfall, some difficulty was experienced in getting the tubers committed to the ground at the usual time; but as the sprouting process was well advanced, and the atmospheric conditions in general quite favourable to growth, the effects of the delay were not long noticeable. With one exception, frosts of any degree of intensity have been conspicuously absent, so that in most cases a remarkably fresh, healthy appearance is now presented. The dry weather which prevailed throughout April enabled the necessary weeding and general cultivation, by way of horse and machine labour, to be proceeded with under excellent conditions, and at present (May 10) large areas have received the final touches by way of moulding the drills.

Of course, it is impossible to foretell what the weather may be during the remainder of the month, but should it continue favourable—and the time when frost of much severity in this locality and in positions assigned to the crops is rapidly passing away—long and well-experienced cultivators predict a season of unusual earliness and weight of produce. The third week in June may be regarded as the average date for the sales of the crops, privately or by auction, and raising commences immediately thereafter, but with a continuance of the moist, warm breezes now prevailing, this period may be accelerated by at least ten days, thus, over an extensive tract of country, constituting a record for earliness.

Epicure has now largely displaced the one-time favourite Puritan, chiefly, no doubt, owing to its earliness and free cropping qualities, as also to the very uniform size of the tubers when raised, there being, as a rule, comparatively few unsaleable.

Early potato culture has of late years become a very important industry in the West of Scotland, not only to the owners themselves, but equally so to large numbers of the wage-earning class, who invade the district, and find pleasant and remunerative employment, and the start of the season of open-air labour.

JAMES DAY.

Galloway House, Wigtownshire.

## RHODODENDRON DILATATUM.

This species belongs to the azalea group of the genus, and is one of the forerunners of the numerous kinds which bloom between April and July. Normally the flowers open about mid-April, but, with many other shrubs, the flowering time is advanced by quite three weeks this year. Of Japanese origin, it is a less common plant in British gardens than its ornamental qualities warrant, for it grows into a good-sized upright bush, and produces its rosy-purple blossoms with the same freedom as the later-flowering kinds. The flowers are borne in small, loose clusters, each blossom being about 1½in. across. As is the case with other species from Japan, they lack the fragrance which is such an attraction in the North American sorts.

Fortunately it is a species which may easily be propagated from cuttings, if short pieces, 3in. to 4in. long, of semi-ripe shoots are taken in July and inserted in pots of sandy peat in a close propagating case. These root in a few weeks' time, and the best plants are formed when the rooted cuttings are planted in peaty soil in a cold frame for a year before placing them in the open. When selecting a position for this species it is advisable to choose one which is shaded from the east, so that the sun does not shine on the flowers very early in the morning after a frosty night.

W. D.

**Gesnera cardinalis.**—Known also as Gesnera macrantha, this is a very pretty plant for the warm greenhouse. It is one of those gesneras that produces a solid tuber, from which is pushed up a stout stem to a height of a foot or so. This stem is clothed with bright green heart-shaped leaves, while the curved tubular flowers, borne in terminal heads, are velvety crimson in colour.—W. T.

## JAPANESE AZALEAS.

Readers who are conversant with the glowing effects of azaleas when grouped upon the hillsides or in the gardens of Japan, must surely at times wish that these same exquisite effects might be reproduced in our English landscapes. The colourings of some of these azaleas are so attractive, so superb for distance effects, that I may be pardoned if I dilate a little upon such a subject. The use of Azalea mollis has become general, and both for garden decoration and for forcing its varieties have attained great popularity. For planting banks and slopes, this class of azaleas is very attractive, and both at the time of blossoming and in the autumn, when the leaves take on their glowing hues of scarlet and gold, they decidedly enhance the beauty and the interest of the garden.

Azaleas of the A. ledifolium and kindred types are being brought into use for wild garden effects in south country gardens, and the results have been very pleasing, the pure white variety leucanthemum being capable of fine effects.

A. amœna, or Hatsu-giri, is of distinct service for rock gardens, and when it does well, is quite attractive with its purplish blossoms. The Korean A. acuminata comes near to it in colour, though a trifle paler, but the habit of the latter is much taller and more robust. A. acuminata deserves note on account of its earliness and hardiness, as it often blooms like Rhododendron præcox, on a snow-covered landscape.

Away from all the foregoing are the azaleas from the warm mountain slopes of Japan, which are almost, if not quite, unequalled among dwarf shrubs. The usual varieties of Azalea indica do not hold the warmth of colouring and brilliancy of these new subjects, though the small glossy evergreen foliage bespeaks their near relationship to the indica type. One of the best known of this section is the glowing red A. Hinode-giri, which is capable of very fine effects, and with the following, is notable for the multitudes of blossoms which crowd the plants. Good as A. Hinode-giri is, A. Kirishima, to me, is far better. Imagine a set of dwarf shrubs clouded over with sheets of starry rosy-red flowers, a veritable blaze of rich colour, and you will have some conception of A. Kirishima. Provided that A. Kirishima proves hardy enough for the sheltered southern counties, we shall get even yet a touch of Japanese colour in our garden scenes.

Equally good is A. Yaye-giri, one of the most exquisite shades of orange-red ever noted among floral subjects. Unlike A. Kirishima, A. Yaye-giri produces duplex blossoms, but it is not the duplex flowers that one cares about, but the glowing, appealing orange-red shade which lights up the whole of its surroundings that commands attention. If one were compelled to always cultivate this azalea under glass, its beauty would more than compensate for the time and trouble expended upon it, but in the sheltered South I have hopes that it may find a permanent home on the sunny slopes of a warm rock or wild garden.

Grown as pot plants under glass the foregoing azaleas flower in March, but plants grown cool will be at their best in May. It is with the hope that these Japanese azaleas may be more widely admired and utilised that I pen these notes. They are deserving of the closest attention, and should have a good future; and apart from their usefulness for private gardens, they should be valuable to the market grower.

P. S. HAYWARD.

## CHRYSANTHEMUMS.

The plants, grown for various purposes, will now require considerable attention from the cultivator. The stock should be finally selected—for the production of exhibition blooms, cut, and on specimen plants; for conservatory decoration, the outside border, and for walls—so that ample room may be allowed for their development, as at this stage, they require much space in the frame and nursery ground.

### Plants for Large Blooms.

The experienced cultivator knows his plants well; he will not allow them to receive a check through lack of nourishment, but the new grower, who is content to wait until certain dates come before he does the necessary repotting, and carry out other details, will not have the best plants at the end of the season. If certain plants become pot-bound, they should be shifted into larger-sized pots at once, if too early for the final potting; but if intermediate repotting be out of the question, then judicious feeding must be done. Plants with hardened stems just above the soil, rarely ever recover sufficiently to yield the best blooms. Rather than starve young plants in small pots now, I would at once put two of them into an 8in. pot, and then finally transfer them to others, 12in. in diameter.

### Mixing the Compost.

The inexperienced grower should not rely too much on fancy mixtures, composts containing many kinds of ingredients, especially of chemical manures. I have seen healthy plants at this stage—the final potting—ruined by unsuitable composts, the roots perishing instead of pushing their way freely through the soil. Again, I repeat, the old hand knows what should be done. But the novice seeks for a guide. The safest course I can suggest is to use a compost consisting of fibrous loam two parts, leaf-soil one part, decayed manure and coarse sand half a part each. To six barrowloads of the above, add a 7in. potful of bone-meal, a similar quantity of soot, one peck of old mortar rubble, and a 10in. potful of wood ashes. He cannot go wrong in using such a mixture, and he can supply the plants with additional food later on.

Mix the ingredients on a level surface, and keep the heap flat; then the lumpy portion will be evenly distributed, and not roll to the sides all round; in fact, all the parts will remain where placed.

I believe Mr. Molyneux used to have his compost mixed a few weeks before it was actually required for use, and I followed his lead, and found it a good plan.

### Plants for Walls.

In some gardens there are walls and borders in front of them, which might be furnished with early summer and autumn-flowering varieties rather than leave the space bare. The general effect is really very pleasing, the plants furnish blooms for cutting in quantity, and it is a very easy matter to protect the late blooms from early frosts. My plan is to plant fairly tall and dwarf varieties alternately, and so clothe the wall all over with foliage and flowers. Three feet from the base of the wall put in a row of dwarf-growing varieties, and treat the plants as bushes. Here again, very early and late varieties may be mixed, and so prolong the show of blossom.

G. GARNER.

CHRYSANTHEMUMS.—For full instructions on the Culture of Early-flowering Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of CHRYSANTHEMUMS FOR GARDEN AND GREENHOUSE, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# *The* ROYAL INTERNATIONAL HORTICULTURAL EXHIBITION
A·D 1912

### *Third Illustrated Supplement.*

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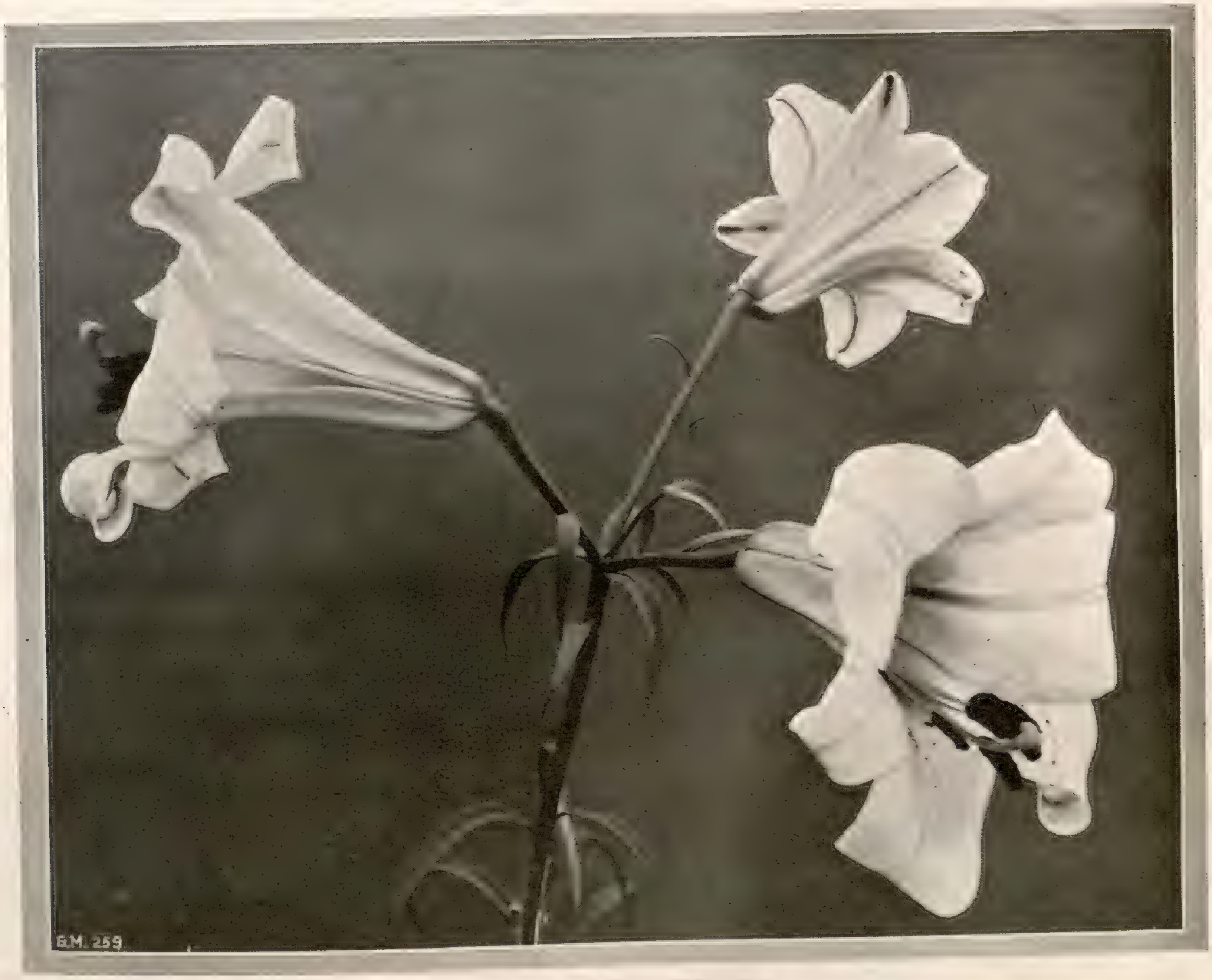
## NEW PLANTS AND FLOWERS OF EXCEPTIONAL MERIT.



LILIUM MYRIOPHYLLUM.
Flowers white, flushed with reddish-rose. A.M., R.H.S. (I.H.E.), May 22. Messrs. R. Wallace and Co., Colchester.

### LILIUM DAVURICUM LUTEUM.

A bold form of a well-known type. It has large flowers of a bright yellow shade, freely spotted with old brown. A showy garden plant. A.M., R.H.S., Int. Hort. Ex., May 22. Mr. Amos Perry, Enfield.

### LILIUM MYRIOPHYLLUM.

An exquisitely beautiful and graceful Chinese lily, with yard-high slender stems clothed with narrow dark green leaves, and crowned with (usually) three trumpet-shaped flowers. These are pure white with a soft yellow throat and golden anthers. The exterior of the flower is heavily flushed with reddish-rose. A very lovely plant. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. R. Wallace and Co., Colchester.

### ODONTOGLOSSUM HER MAJESTY.

A superb odontoglossum, with a spike of nine large and shapely flowers, very difficult to describe. The colouring is bright red-purple, with edging and veinings of blush-white. The sepals, as well as the lip, are charmingly fringed, and the latter organ has a big central area of vivid red-brown, with an edging of white and purple. The parentage is not known, but O. Wilckeanum and O. eximium are probably the parents. F.C.C., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

### ODONTOGLOSSUM EXIMIUM KING GEORGE V.

A striking variety of a very showy hybrid. It had a spike of seven shapely and fair-sized flowers of good form. The chief colouring is rich old purple, but at the bases and margins of the segments a rich rosy-blush colour showed through with some purple markings. The lip is of rich purple with a white fringed apex, and a small yellow crest. F.C.C., R.H.S., Int. Hort. Ex., May 22. Messrs. Sander and Sons, St. Albans.

### ODONTOGLOSSUM MAJESTICUM VAR. JAMES WHITTON.

A striking form of a hybrid derived from O. eximium and O. percultum. It has especially large flowers, about four inches across, white, heavily blotched with bright red-purple, and also spotted and streaked with this rich colouring. On the large crispum-like lip were spots of bright colour, and a very marked yellow crest. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Sander and Sons, St. Albans.

ODONTOGLOSSUM EXIMIUM KING GEORGE.
Flowers rich rose-purple. F.C.C., R.H.S. (I.H.E.), May 22. Messrs. Sander and Sons, St. Albans.

### ODONTOGLOSSUM CRISPUM JAMES McNAB.

A very handsome, large-flowered variety of brilliant colouring and good form. On a white or blush ground the rich red-brown colouring was placed in big blotches and large spots over the whole of the segments. The large lip is white, rich red-brown and yellow at the base and crest. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Sander and Sons, St. Albans.

### ODONTOGLOSSUM AMABILE DUKE OF PORTLAND.

An especially beautiful odontoglossum of wonderfully fine size and lovely form. It has a rosy groundwork, marvellously and richly marked with glowing red-purple, through which the rose colour shows in little marks and veins. On the lip are the same bright colouring, but the basal colour and the tip is white. A fine hybrid. F.C.C, R.H.S., Int. Hort. Ex., May 22. Messrs. Sander and Sons, St. Albans.

### ODONTOGLOSSUM AMABILE PRINCESS MARY.

A beautiful form with especially large and shapely flowers that are white with a few large irregular markings of intense crimson-purple grouped from the base along about two-thirds of the length of the segments. The broad lip has a few central spots, and some side lines of colour, and a yellow crest on the white ground. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Sander and Sons, St. Albans.

### ODONTIODA QUEEN MARY.

This superb odontioda we figured in our issue of May 25. It carried a spike of eleven blooms, and several buds, and the flowers were 2½ inches across. The colour is deepest scarlet-red, while just inside the margin of each segment ran a narrow, irregular line of blush. On the lip is a rich yellow crest and a whitish apex. One of the grandest new orchids in the show. The parents of this are Odontioda Vuylstekeæ and Odontoglossum eximium. F.C.C., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

### ODONTIODA BRADSHAWIÆ VIVID.

A lovely form with medium sized blooms of a bright orange-tinted scarlet shade all over, save for the deep yellow crest and a yellowish shade on the apex of the lip. The plant carried three spikes, one of them bearing about forty flowers. The rich self colouring of this variety received general approbation. A.M., R.H.S., Int. Hort. Ex., May 22. Sir Jeremiah Colman, Bart. (gardener, Mr. J. Collier), Gatton Park, Reigate.

### ODONTIODA BRADSHAWIÆ VOGELZANG.

A superb orchid, with quite large flowers of a creamy-blush ground colour, over which are clear spottings and blotches of vivid scarlet-crimson, while on the lip the bright clear golden crest stands out conspicuously. A.M., R.H.S., Int. Hort. Ex., May 22. Mons. Firmin Lambeau.

### LÆLIO-CATTLEYA LUSTRE BUDDHA.

A very beautiful hybrid carrying an immense flower, with a spread of about nine inches. The sepals are soft mauve, but the ample petals are bright but soft purplish-rose, slightly paler along the centre. The huge lip is intense purple, while in the white throat are a number of lines of rich purple. A.M., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury.

### LÆLIO-CATTLEYA GLADIATOR.

A wonderfully fine and handsome hybrid that carried three glorious flowers. The sepals and petals are of the loveliest mauve-purple colour, and the frilled open lip is vivid crimson-purple with a rosy edge and a rich orange-shaded throat. A very attractive orchid that was very greatly admired. A.M., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford.

### LÆLIO-CATTLEYA ULYSSES.

A lovely orchid with large, shapely flowers of the purest and deepest white, save for two patches of purple veining towards the apex of the wide-fringed lip, and a deep orange-yellow throat. A charming hybrid, derived from L.-c. Fascinator (white form) and Cattleya Mossiæ Reineckiana. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

### LÆLIO-CATTLEYA ULYSSES ALBA.

A chastely beautiful counterpart of L.-c. Ulysses already described. The flowers are of moderate size, and purest whiteness, save for a little pale lemon-yellow in the throat. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

### BRASSO-CATTLEYA THE KING.

A noble and altogether splendid hybrid that carried two enormous flowers of fine rich colouring and grand form. It has purplish-rose colouring with orange, and intense bright purple markings on the wide, fringed lip. By many this was regarded as the

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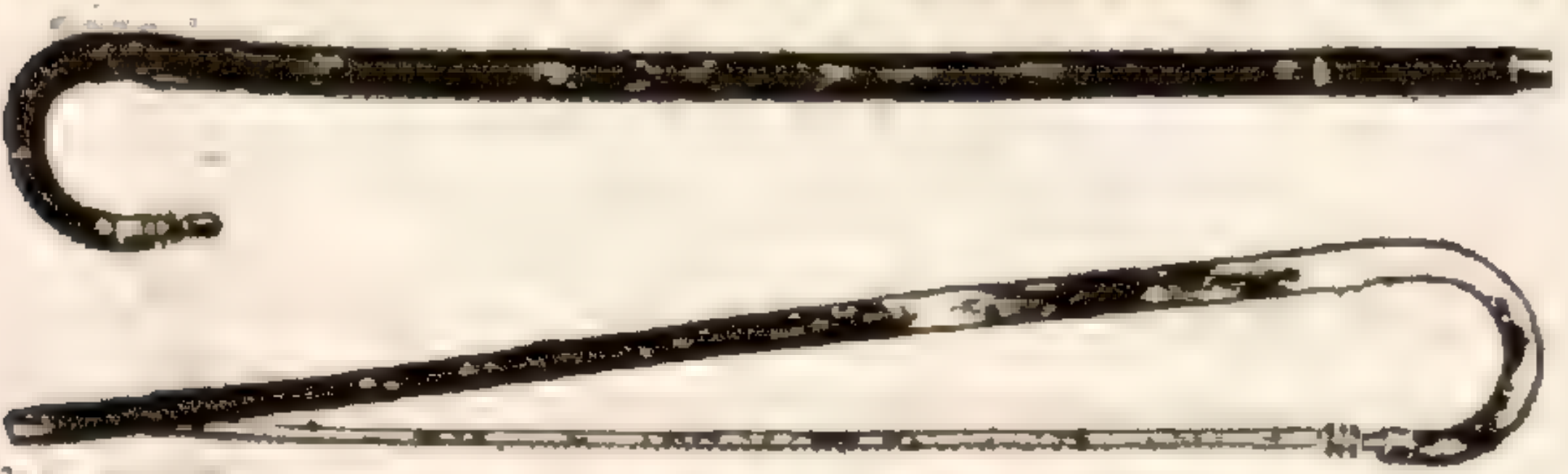

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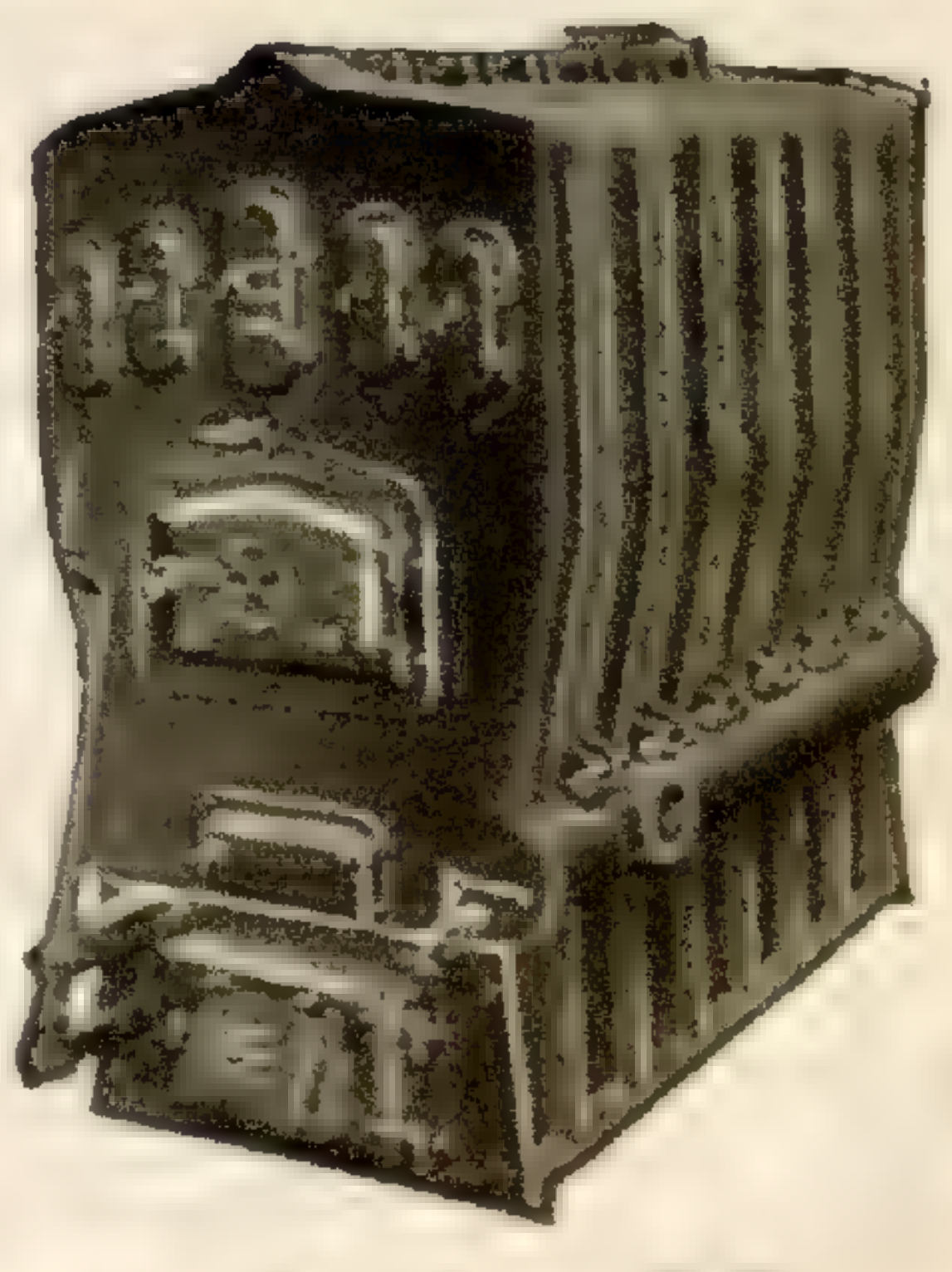

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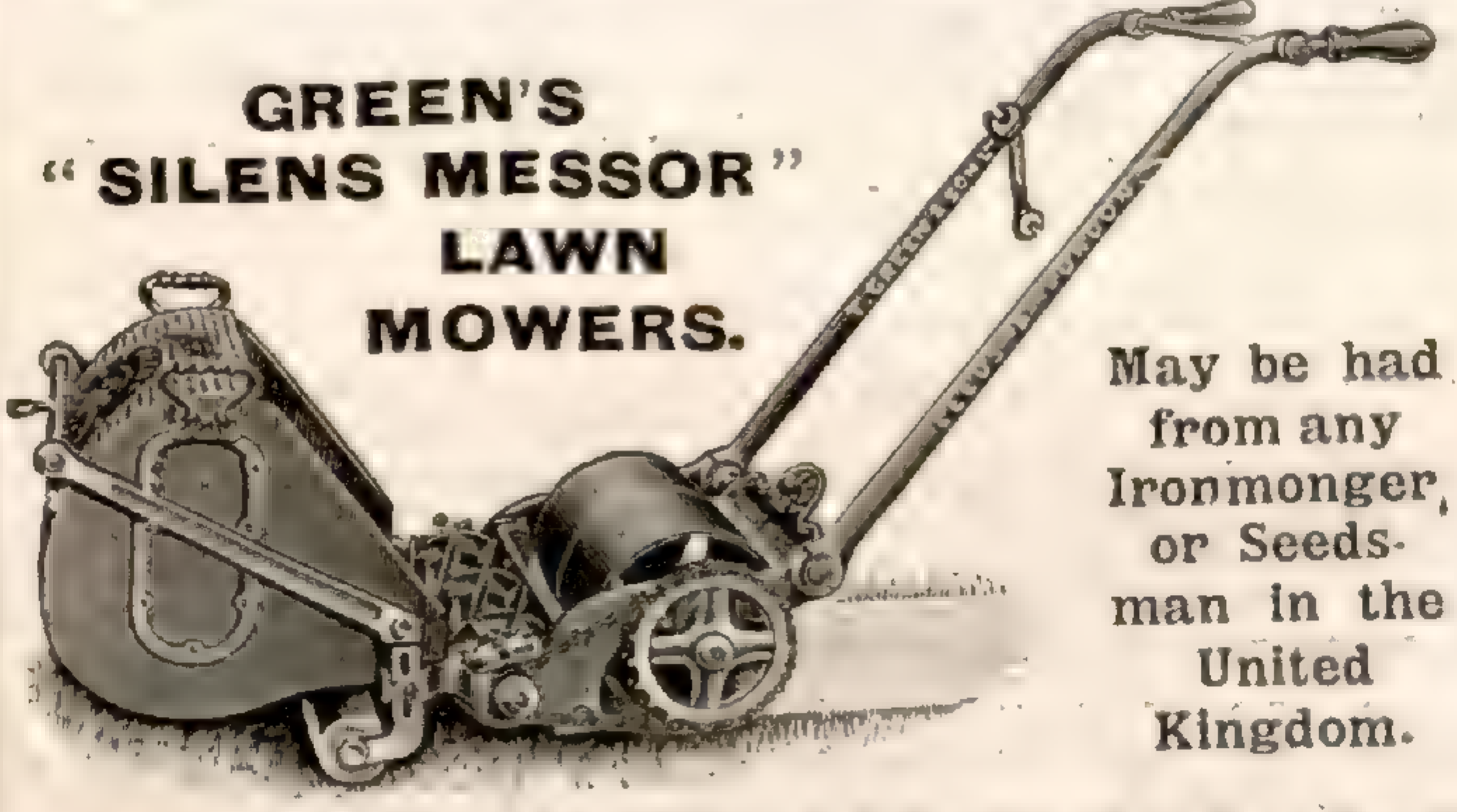

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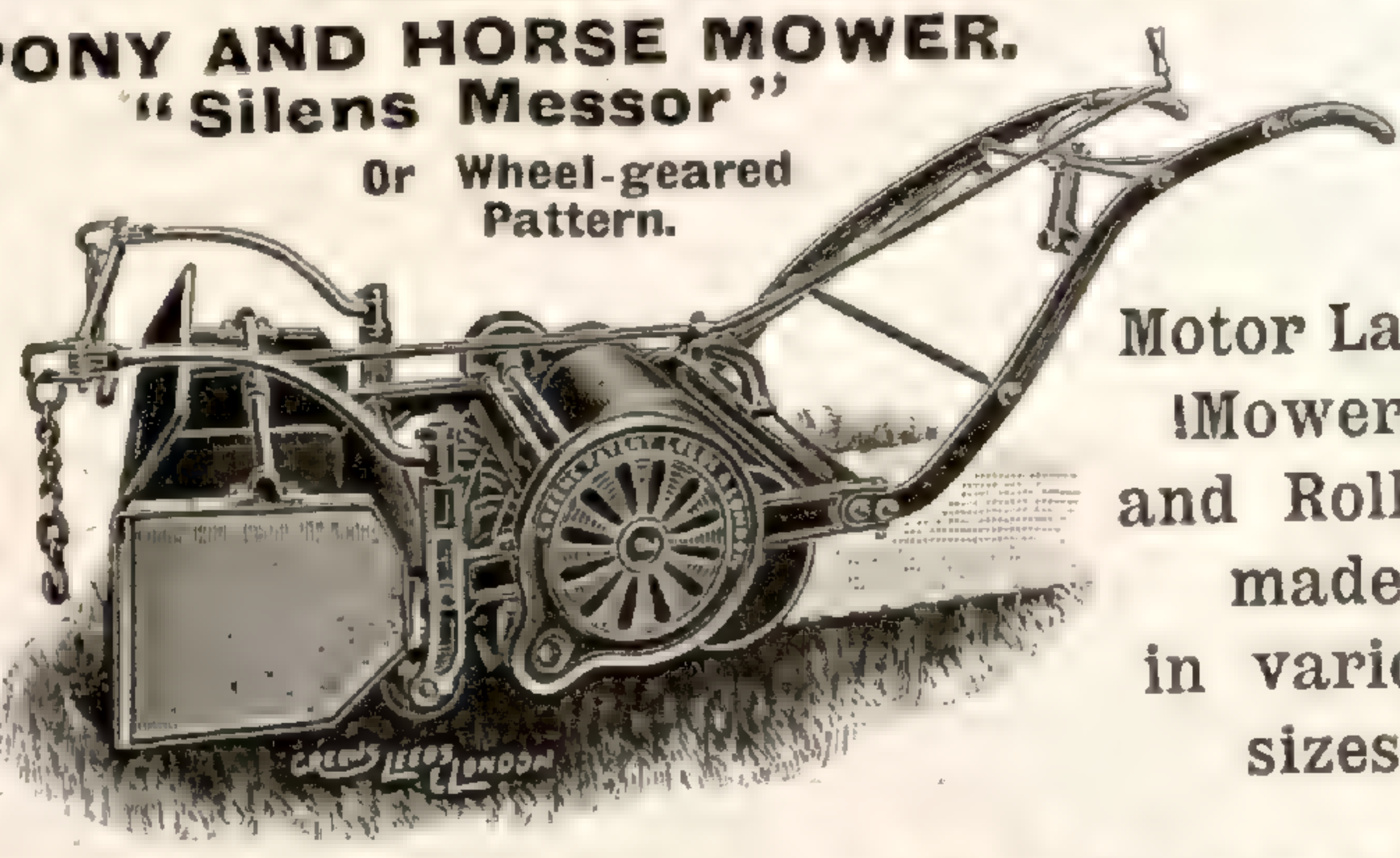

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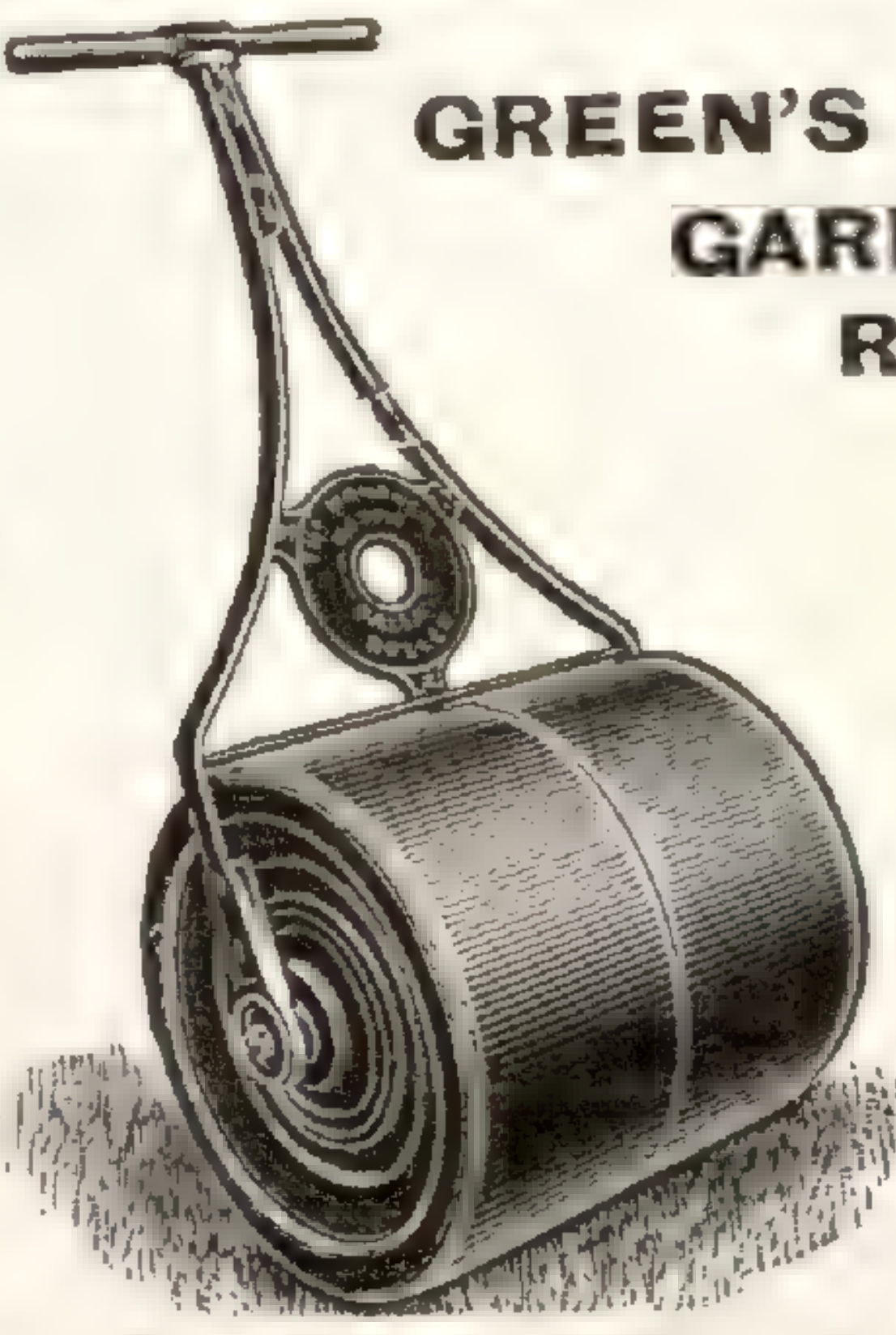

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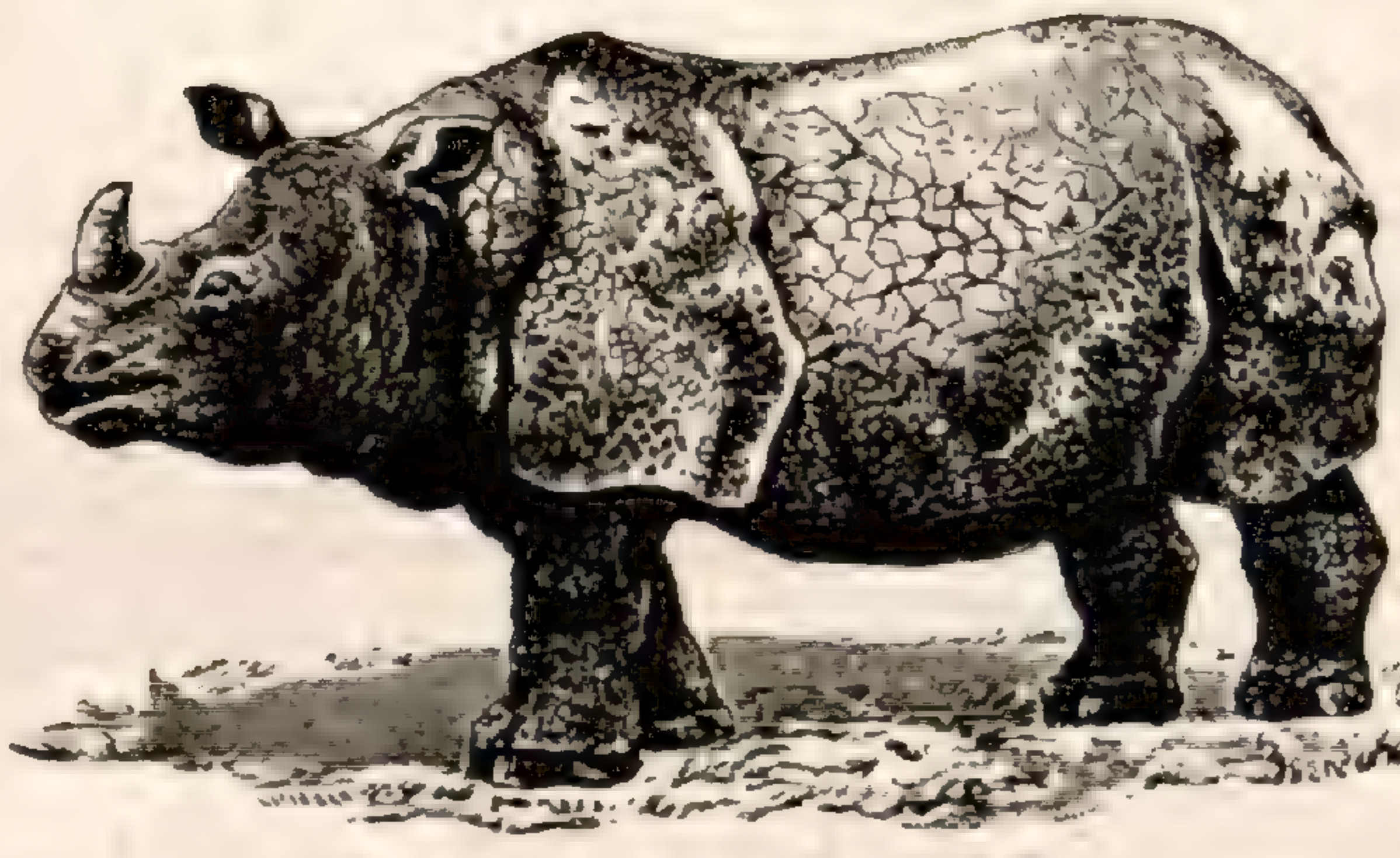

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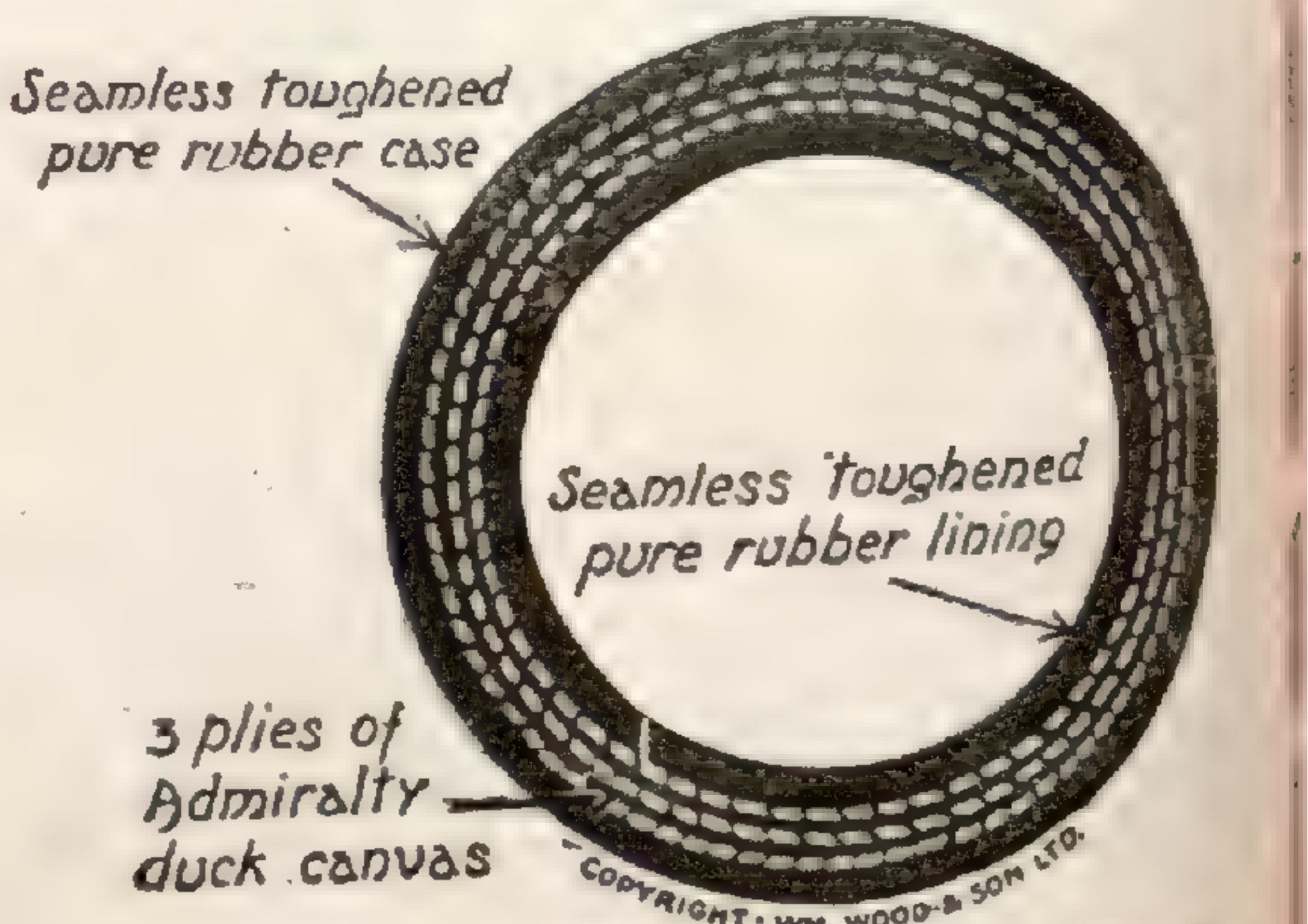
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finest orchid in the show. F.C.C., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford.

### CATTLEYA MENDELI QUEEN MARY.

A very lovely variety of an old favourite. It is one of the very finest as regards size and shape we have seen. The sepals and petals are pure white, the lip of a delicate rosy-blush tint, with a yellow throat. The plant carried four fine blooms, and was a feature of the exhibit. F.C.C., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford.

### CATTLEYA DIRCE MAGNIFICA.

A dwarf hybrid that carries very large and fleshy flowers with rich rosy purple sepals and petals, and a very large lip with a broad, spreading apex of a rich deep royal purple hue margined with a narrow edge of rose. The throat is shaded with orange. F.C.C., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford.

### DENDROBIUM DALHOUSIEANUM LUTEUM.

A splendid and striking dendrobium that grows in similar fashion to the type, bearing its large flowers in pendulous racemes. The sepals and petals and lip are soft fawny-yellow, while on the lip are two large and handsome purple blotches. F.C.C., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford.

### MILTONIA JULES HYE DE CROM.

This striking miltonia was raised by crossing M. Hyeana with M. vexillaria. A quite small plant, carrying four beautiful flowers, was shown. The small sepals and petals are white with a mauvy flush at the base, while the broad lip is white with a crimson velvety butterfly-like marking at the base. F.C.C., R.H.S., Int. Hort. Ex., May 22. M. Jules Hye de Crom, Ghent, Belgium.

### LEPTOSPERMUM SCOPARIUM NICHOLI.

A most graceful shrub, with linear leaves half an inch long, on slender branching growths. These slender branchlets are studded from the base almost to the tip with flowers that are deep carmine-red, and range from one-half to three-quarters of an inch across. F.C.C., R.H.S., and the "Gardeners' Chronicle" cup, for the most noteworthy new plant exhibited, Int. Hort. Ex., May 22. Rev. A. T. Boscawen, Ludgvan, Cornwall.

### BEGONIA PRINCESS VICTORIA LOUISE.

A glorious double tuberous begonia with large, finely formed flowers of large size. The colouring is an exquisite shade of golden-pink. The plant exhibited carried half a dozen or more wonderful flowers. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Blackmore and Langdon, Twerton, Bath.

### CALCEOLARIA VEITCHI.

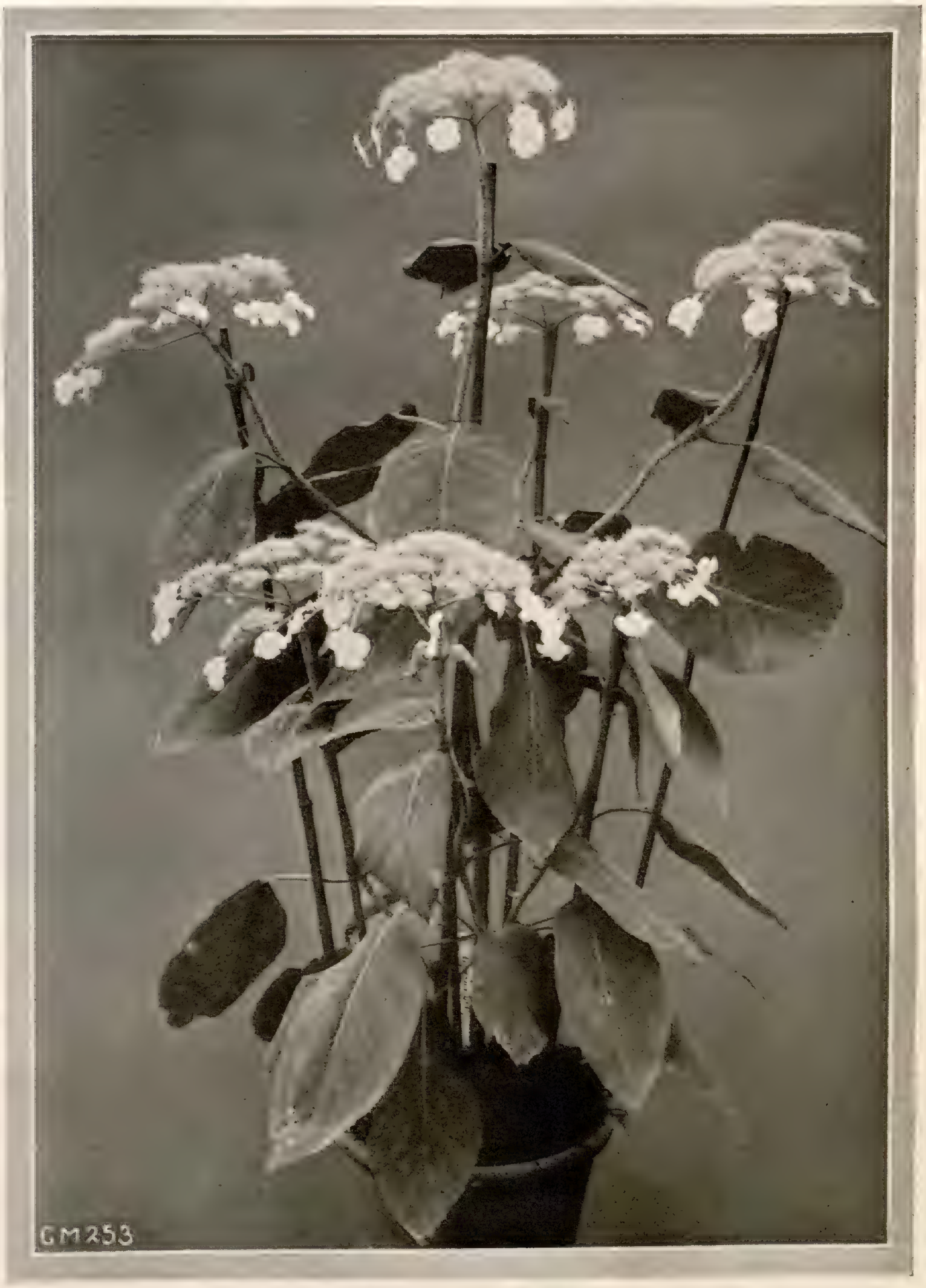
A very graceful plant, growing about five feet high, and bearing loosely elegant branching spikes of cream-white flowers at the tops of the growths. It is the result of a cross between C. alba and an unnamed seedling, and is a beautiful subject. The narrow leaves have curiously serrated margins. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Robert Veitch and Son, Exeter.

### CALCEOLARIA BRONZE AGE.

This is a dwarfer plant than C. Veitchi, but of somewhat similar charcter, and it would form a fine border for the last-named. The flowers are of a deep rich crimson-bronze hue, much brighter than the name suggests. It was well shown by Messrs. R. Veitch and Sons, Exeter, but it was somewhat overpowered by the huge specimens of C. Veitchi shown with it.

### HYDRANGEA SARGENTI.

A distinct shrubby plant that will probably prove hardy, at least in the southern counties. It has leaves nine or ten inches long and six inches broad, oval, and set on rough bright green petioles, the stem being also peculiarly rough. The inflorescence is a broad flattish head, with clusters of rosy-purple and individually small fertile flowers, with one showy large-bracted flower extending from each outer cluster. These are white or blush, and they make the inflorescence very effective. A.M., R.H.S., Int. Hort. Ex., May 22. Hon. Vicary Gibbs, Elstree; and Messrs. James Veitch and Sons, Chelsea.



HYDRANGEA SARGENTI.

Flowers rose-purple and blush. A.M., R.H.S. (I.H.E.), May 22. Hon. Vicary Gibbs, Aldenham House; and Messrs. J. Veitch and Sons, Chelsea.

### LASTREA PATENS MAYI.

A large-growing and particularly graceful fern that is a very finely divided form of the old L. patens, indeed so much sub-divided as to be practically plumose. The fronds are about two feet long, and would be about a foot across at the base if spread out, but the pinnæ rise somewhat on either side instead of spreading out flatly. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. H. B. May and Sons, Edmonton.

### POLYPODIUM VIDGENI.

A splendid fern from Queensland, and one that is capable of cultivation into a large specimen. It has two forms of fronds; one set short and simply divided, and from among these rise the tall, graceful, 2ft.-3ft. long fronds, with the pinnæ very gracefully and deeply cut, and of a bright pleasing green colour. The specimen shown was about a yard high, and four or five feet through. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. H. B. May and Sons, Edmonton.

### CELMISIA SPECTABILIS ARGENTEA.

Not long since we figured a group of celmisias, and gave an account of their introduction and cultivation. Several flowering plants were to be found in the great exhibition, and the above-named had a cluster of lanceolate leaves, each about eight inches long, green, silky-haired above, and downy white underneath. The flowers are three inches across the ray florets, white, and the disk yellow, A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Bees, Lim., Liverpool.

### POPPIES.

Edna Perry.—A delightful oriental poppy with bright salmon-pink petals, fringed at the edges. Each petal has a large blackish blotch. A.M., R.H.S., Int. Hort. Ex., May 22. Mr. Amos Perry, Enfield.

Perry's White.—Another fine and very distinct poppy, the large blooms being silvery or satiny white, with a purplish-crimson centre, and black base. A.M., R.H.S., Int. Hort. Ex., May 22. Mr. Amos Perry.

### IRISES.

I. variegata Ossian.—A fine variety, with deep purplish rose falls and golden-yellow standards. The falls are veined and crested with yellow. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Barr and Sons, Covent Garden.

I. squalens Nibelungen.—This has beautiful rosy-purple falls, charmingly veined with white, and the standards are soft yellow. The flowers are large, and most effective. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. Barr and Sons.

### EREMURUS TUBERGENI.

A fine form, probably derived from E. Bungei. It grows 4ft. high, and has dense spikes of soft sulphur-yellow flowers. A fine garden plant. A.M., R.H.S., Int. Hort. Ex., May 22. Messrs. R. Wallace and Co., Colchester.

### OXALIS ENNEAPHYLLA ROSEA.

A neat little rock garden plant that is native of the Falkland Islands, is the white O. enneaphylla, and it is already a favourite. The newcomer is exactly like it save that it has flowers of a soft rosy shade. A.M., R.H.S., Int. Hort. Ex., May 22. Mr. Clarence Elliott, Stevenage.

A MAGNIFICENT GROUP OF PLANTS, CHIEFLY WITH FINE FOLIAGE.

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## THE CONFERENCES.

Amongst the various functions, social and otherwise, associated with the International Horticultural Exhibition, the conferences arranged for the occasion were by no means the least important. The first, on horticultural education, took place on Thursday, May 23, and a large gathering of educationists who had been invited, assembled in the Great Hall at the Royal Hospital, Chelsea, to hear and discuss the papers. We venture to say that never before has the gentle art of gardening been discussed in that famous hall, round the walls of which hang tattered flags captured in many campaigns, and the portraits of Britain's military heroes, who fought, yea, and in many cases, died, in defence of the Union Jack. Perhaps they were not gardeners, but nevertheless they, and the red-coated old veteran pensioners who moved in and out, have done their share in making our country a place in which the peaceful art can be followed undisturbed.

The Right Hon. A. H. Dyke-Acland took the chair, and amongst those who filled the Great Hall were the staff members of most of the educational establishments in the country at which gardening is taught, and a number of county horticultural instructors who are doing so much to carry, by itinerant and other methods, gardening knowledge into the remotest parts of rural Britain. In his opening remarks the Chairman, who is also the chairman of the Science and Education Committee, said that he was much gratified to see so large and influential a gathering of those who were specially interested in horticultural education, and he had no doubt that their deliberations would be of much assistance in the solution of the various problems associated with horticultural education. The Chairman further observed that in other countries the State had done much more for horticultural education than was the case at home, and he welcomed the declaration made the day before by Mr. Runciman that the Board of Agriculture had at last decided to set up a special branch devoted to horticulture. Further, Mr. Runciman had alluded to the question of giving a diploma for gardeners, and the matter was receiving attention.

### Horticultural Education in America.

The company present were each presented with printed copies of the papers, and the one by Professor L. H. Bailey, of Cornell University, Ithaca, U.S.A., on "Public Horticultural Education in the United States" was, in the absence of the Professor, read by Mr. F. J. Chittenden. The paper took the form of a general summary of what is done on behalf of horticultural education in the United States, and gave a good deal of information as to the courses of instruction given at the establishment mentioned above. One pointed remark in the paper was that in the colleges in the States horticulture is regarded as a phase of agriculture, but, in our opinion, it should not be a phase of anything, but the actual thing itself, and because it is looked upon as a phase of the sister art educational facilities in horticulture are not what they ought to be.

### Horticultural Education in Germany.

The writer of this paper, Herr K. Weinhausen, of the Imperial School of Horticulture at Dahlem, was present, but as he was suffering from some throat affection, it was read by the Chairman. As this paper contains matter of very general interest to our readers, we have pleasure in printing the text of it below:—

German horticulture is exceedingly old. History shows us that as far back as the year 380 A.D. the Huns laid out many gardens and orchards in Germany. Special interest was taken in fruit culture, which soon received energetic support from the German nobles. In the year 800 A.D. the Emperor Charlemagne gave directions that all kinds of fruit should be planted in his domains, and at the same time he established the first nursery garden. Interrupted during times of war, but all the more energetically promoted during times of peace, horticulture in Germany advanced to a state of great excellence. In proportion to the growing importance of horticulture, did the necessity for the systematic theoretical training of gardeners increase. In the year 1842 the first German institution for the theoretical training of gardeners—the present Royal Horticultural College at Dahlem, near Berlin—was established by the Royal General Garden Director, T. F. Lenné, and this is therefore the oldest horticultural training school in Germany. At that time landscape gardening was of greater importance than general gardening, which fact was taken into account when the school was established. Horticulture received a great impetus after the year 1870. People recognised the great national politico-economic, hygienic and social importance of fruit culture, and for this reason endeavoured to promote the training of fruit-growers as much as possible. At the present day we have in Germany a large number of horticultural schools differing widely from one another, and these I may divide into four groups.

To the first group belong the Royal Horticultural Institutions of Dahlem, of Geisenheim, of Proskau, and of Dresden, which may be regarded as the most advanced class of horticultural colleges. The aim of these institutions is the same, inasmuch as they all endeavour to teach their students all branches of horticulture. Owing partly to tradition and partly to their locality, the institutions at Dahlem and Geisenheim have acquired special reputation in special branches of horticulture. Thus, Dahlem is

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## Mrs. Sam. Ross (H.T.)

Strong, vigorous, upright growth; foliage distinct verdant green. Very large, full flowers, petals large, smooth, shell-shaped and slightly cupped, beautifully reflexed at the edges. A flower of the largest size and great refinement. A novel and uncommon shade of colour, at once distinct and pleasing, but difficult to describe. It may be said to shade from pale straw colour to light chamois yellow, with a distinct flush of buff on the reverse of the petals. Very sweetly scented. The handsome flowers are carried on stiff, erect footstalks, showing well above the foliage, and last a very long time in good condition. Very freely and continuously produced, and, in our opinion, one of the finest roses which we have raised. Awarded the Gold Medal of the National Rose Society, Regent's Park, London, July 7, 1911.

## Mrs. Richard Draper (H.T.)

Very free, vigorous, and branching growth, of excellent habit; flowers very large, full, and perfectly formed, with high-pointed centre, petals large, deep, and abundant, beautifully arranged and very smooth. Colour, bright rosy satin pink on the outside of the petals, inside of petals very pale silvery flesh, which shows a delightful contrast as the flowers expand; strong and very sweet perfume. This is a magnificent Exhibition Rose of great lasting qualities, and one of the most perpetual and abundant blooming of garden roses, where it is bound to become a popular favourite. Awarded the Gold Medal of the National Rose Society, Regent's Park, London, July 7, 1911.

## Mrs. David Baillie (H.T.)

Strong, free branching growth, growing to a uniform height of about two feet, making an ideal plant for massing in beds, for which it is exceptionally well adapted. The flowers are medium to large, of beautiful camellia form, with petals nicely and evenly reflexed, and high-pointed centre. Opening freely and continuously on strong, upright growths, which show the flowers to great advantage. The colour is very pleasing and novel, being bright madder carmine, with the delicate veinings of the petals pencilled with a deeper shade; very sweetly perfumed. A decided acquisition amongst bedding roses; occasionally large enough for Exhibition. Awarded the National Rose Society's Silver Gilt Medal, Ulverston, July 19, 1911.

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**HUGH DICKSON, LTD.,**
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regarded as an exceptionally good training school for the art of garden-making, because of the stimulating influence caused by its close connection with the celebrated Royal Gardens at Potsdam. Owing to fruit culture having grown so important in Germany, this branch has become highly valued, and, when nine years ago the schools were reorganised, equal consideration was given to each branch of horticulture. Geisenheim is situated amongst the vineyards which are encircled by Germany's most beautiful river, the Rhine, and it is therefore natural that viticulture and fruit culture should receive special attention at this school.

In the second group I include the higher private horticultural training schools, of which I may name the Pomologisches Institut at Reutlingen as the oldest. The provincial horticultural training schools, of which there are six in Prussia and Saxony, also belong to this group.

A special position is occupied by the third group comprising the private horticultural schools for women, of which I am acquainted with four in Germany, not counting the agricultural schools with special courses for gardening.

In the fourth group I may include all the many smaller horticultural training schools, which are partly independent, but which, more frequently, are connected with agricultural continuation schools. In many of these schools, instruction is confined to the winter months. In many towns in Germany there are horticultural supplementary schools where instruction is given only in the evenings and on Sundays, so that the apprentices and young assistants from nurseries are able to attend.

Between the first and fourth groups there is a wide margin which is clearly shown in the scholastic attainments of the students as well as in the ends to be attained. The different groups, however, are not sharply defined, but there are transitions from the lowest to the highest institutions. In fact, in many schools there is a higher and a lower division to which the students are admitted according to their general education. The preparatory training in the lower horticultural training schools consists of attendance at a public elementary school until they reach fourteen years of age. This is generally followed by a three-years' practical apprenticeship, where the young gardeners acquire practical experience in digging, watering, planting, sowing, etc. The course of training at the lower horticultural schools generally lasts one year. According to the preparatory training of the young men the instruction in these schools is mainly practical. At the same time the most necessary theoretical explanation as well as instruction in knowledge of species, elementary drawing and botany are given. In addition to this instruction, the ordinary school subjects, particularly German composition and mathematics, are taught. Young men who have passed through such institutions work just as do other gardeners who have not attended such horticultural schools. As journeymen gardeners, however, if they are otherwise capable, they are more intellectual and are therefore preferred for better-class work. From this class many are selected to be foremen as well as head-gardeners to the nobility and gentry and to market gardeners. This is a short sketch of the training of gardeners in the lower horticultural schools.

The greater the requirements in theoretical and practical preparation the better is the material the teachers have to work upon, and, of course, the better the teachers are, the better are the average successes. The school cannot, of course, make the man's career, it can only give him the foundations on which each must work out his own position. It may, therefore, happen that a scholar from a lower horticultural school, or even a self-taught man, gets on better in life than one who has gone through the curriculum at one of the higher training establishments. These are, however, exceptions. The rule is that the students who have gone through the course at our higher gardening colleges are generally selected for leading positions.

Now before I pass on to discuss more fully the course of instruction in the higher institutions, I should like to point out the difference existing at the present day between the training of lady gardeners and that of men gardeners. Whereas the male gardener serves a practical apprenticeship before attending the horticultural training school, most ladies, who are desirous of taking up this profession, attend such schools for women without having obtained any previous knowledge whatever, and hope to be both practically and theoretically trained in two years. As long as the ladies do not have the same training as their male comrades, it is not possible for them to do the same work.

BEGONIA PRINCESS VICTORIA LOUISE.

Flowers soft salmon. A.M., R.H.S. (I.H.E.), May 22. Messrs. Blackmore and Langdon, Twerton Nursery, Bath.

Moreover, for about five years outsiders have been admitted to the horticultural colleges, and ladies, with the same preparatory training as men, can enter as full-course students at Dahlem.

I have brought you the prospectuses of the higher horticultural training colleges. On comparing them you will find that Dahlem differs from the rest in the following particulars. Dahlem makes the greatest demands with regard both to general education and to practical knowledge. Whereas the other training colleges require that students should have passed through only four classes at a "Gymnasium," Dahlem is the only horticultural training school in Germany that requires six classes to have been passed through, the student thereby is required to give only one year's military service. Dahlem thus requires the same as the agricultural and technical colleges. Instead of a two-years' practical training, Dahlem requires one of four years. Owing to this, Dahlem is enabled entirely to omit practical work during the two years of study whereby a great deal of time is, of course, gained for the theoretical and technical education. Just as in the lower gardening schools, the Royal Horticultural Colleges, with the exception of Dahlem, unite theory with practice, regular working hours being adhered to. In my opinion, students who have had only two years' previous practical work cannot omit the practical work while at the training school. Those who are acquainted with the practical work in such schools cannot fail to be convinced that this practical work at school is incapable of taking the place of the real workmanlike practice in a nursery garden. The very fact that a large number of young people must be employed in a comparatively small concern is detrimental to success. Another still more important fact is that the students lack that feeling of responsibility which sharpens the young assistants who are doing practical work. At the Dahlem horticultural institution theoretical instruction is supported by practical demonstration, and it moreover requires that the young people come with a four-years' practical training. In the following I will give you a short account of the course of training of young gardeners at Dahlem.

The Royal Horticultural College at Dahlem, near Berlin, is under the joint supervision of the Board of Agriculture, and an associated body of Governors, with Mr. T. H. Echtermeyer as Director.

It prepares its students in science, technical knowledge, and art of all branches of horticulture, as well as of colonial horticulture. A not unimportant task of the institution is to interest agriculturists in the development of fruit culture in the mother country, as well as to cater for the wishes of amateur gardeners.

The full course lasts two years; date of admission, October 1.

In order to be admitted, applicants must show that they have gained the certificate for the one-year's voluntary military service, or that they have had the full preparation in science necessary for obtaining the above-mentioned certificate. Also, the students must prove that he has had four years' practical horticultural experience. It is desirable that of these four years at least one has been spent at a nursery or market gardening.

Dahlem has four courses of one year each.

BRASSO-CATTLEYA THE KING.

Flowers purple-rose and orange. F.C.C., R.H.S. (I.H.E.), May 22. Lieut.-Col. Sir George Holford, Westonbirt.

The first, being a general course, is obligatory for students attending the college. At the conclusion of this course there is an examination which must be passed before one can attend the other three courses. Applicants who wish to be admitted at once to Courses 2, 3, or 4 (Course 2 being for the art of garden making, Course 3 being for fruit culture, Course 4 being for floriculture) must prove that they possess the knowledge comprised in Course 1, either by suitable certificates from other horticultural training schools or by passing the above-mentioned examination. The Courses 2, 3, and 4 are optional. Applicants who do not wish to devote themselves exclusively to the one or to the other course are allowed to attend lectures on different subjects in the three courses. Every six months, however, they are obliged to submit to the Board of Directors a list of the classes they wish to attend. At the end of each of the above courses there is an examination, for which a certificate is given. The students are at liberty to extend their studies still further, and to attend lectures at the Agricultural College and the University as non-matriculated students if they satisfy the conditions of these institutions.

Further, short courses for ladies and gentlemen are arranged as required, e.g., in the spring, a course for amateur gardeners; in late summer, a course on fruit and vegetable preserving, etc. In addition to its museum collection and material for scientific instruction, the college has a department for the utilisation of fruit, an experimental department for plant physiology, with a house for observing the growth of roots, four large hothouses, three vineries, one peach-house, one mushroom-house, a "talut" or shelter-wall for peaches, ten large walls for better-class or dessert fruit, and grounds partly laid out in ornmental beds and partly devoted to flower, fruit, and vegetable culture, which altogether, and with the demonstration fields, is nearly nineteen acres in area.

In addition to the seven lecture halls the College has two large rooms for drawing, which are daily at the disposal of the students till 9 p.m.

Royal favour has graciously placed the Royal Gardens at Potsdam at the disposal of the College for educational purposes, while the neighbouring institution of the Royal Botanical Gardens and museums of Berlin University, and the Biological Institution and the experimental fields of the Agricultural College afford ample opportunity for instruction and demonstration.

I have emphasised the points in which the Dahlem Horticultural College differs from the other Royal Horticultural Colleges in Germany, so I need only briefly describe the remaining institutions.

The Royal Horticultural College at Geisenheim in the Rheingau opened in the autumn of 1872; managing director, Geh. Reg. Rat Prof. Dr. Wortmann.

This college combines the following departments for instruction:—

(*a*) One year's lower course for students for viticulture and wine-making, fruit culture, and landscape gardening. It is necessary to have attended an elementary school in order to be admitted; further, a two years' practical apprenticeship is necessary.

(*b*) A two years' higher course for students in the same subjects. In order to attend this course it is necessary to have reached the standard of the fourth class of a Secondary School for Classics Gymnasium, or of a Realgymnasium or Oberrealschule, or the Secunda of a Progymnasium, or of a Realschule.

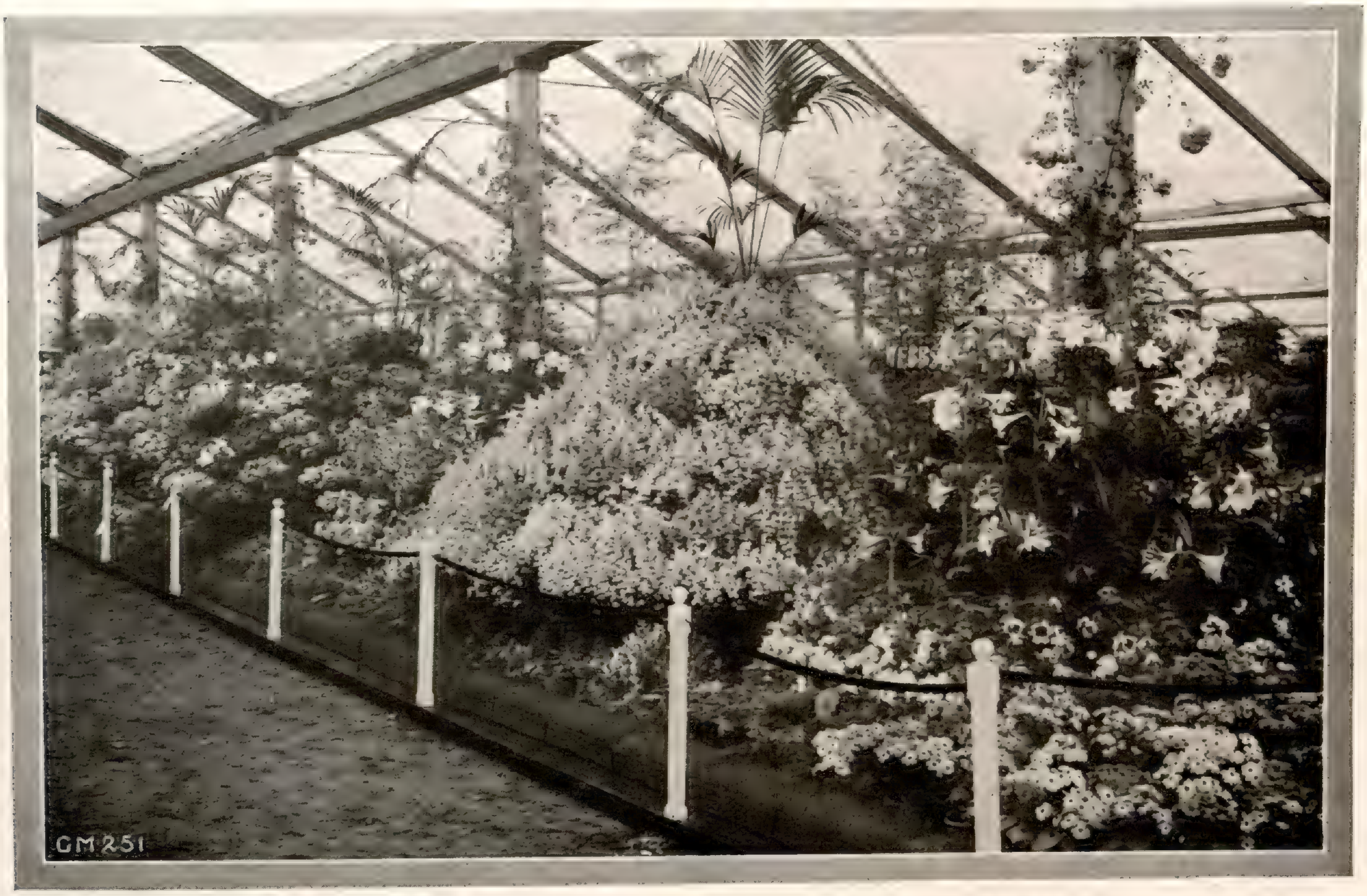
(*c*) A periodic course. This course affords opportunity to the proprietors of vineyards and orchards to perfect themselves in the growing of vine and fruit, as well as in wine-making.

The third Royal Horticultural College at Proskau is under the management of Director Schindler.

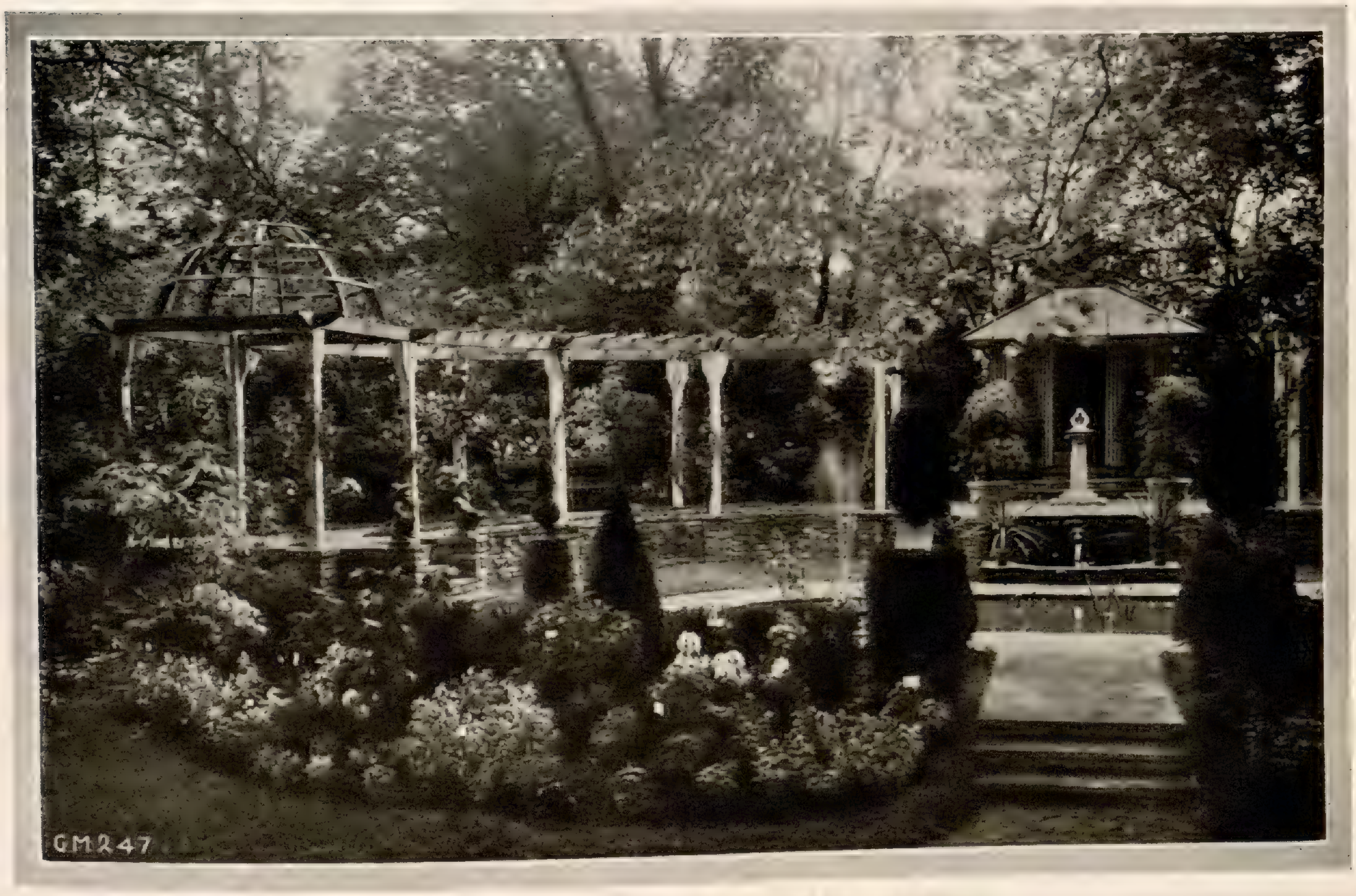
The object of this college is to promote horticulture, especially vegetable and fruit culture, both by theory and by practice. For this purpose the college includes the following courses:—

Two years' course. The pupils must be seventeen years of age, and have reached the standard of the Obertertia or fourth class of a Gymnasium or of an Oberrealschule, or else have passed an examination in which sufficient knowledge of mathematics and German composition is shown to assume the lectures being understood.

Besides the above-mentioned courses a short course for teachers in public schools is held annually in the spring and autumn, and lasts fourteen days. The same is the case with a course for the men in charge of orchards and roadside-grown fruit trees. A pruning course for amateur orchardists last six days. The course for amateur gardeners is held only once a year, either in June or July, and



A REMARKABLY FINE EXHIBIT OF CINERARIAS, GLOXINIAS, ETC.
Shown by Messrs. E. Webb and Sons, Worsley.



A TASTEFULLY DESIGNED TUDOR GARDEN.
Constructed by Messrs. J. Cheal and Sons, Crawley.

lasts three to six days. The ladies' course for the preservation of fruit lasts three to six days.

In spite of the specialisation of the Dahlem course, the training of our young gardeners is very many-sided. This is necessary, because the nursery-gardens in Germany are far more complicated and varied than, for example, those in Belgium and Holland. Formerly, the German gardener went much abroad, and even now we like to see foreign cultivation and to become acquainted with the methods of our neighbours; but practical work in other countries has now lost its importance in the training of gardeners. For a horticultural profession it is necessary to have both practical experience and theoretical knowledge. Excess of the one is detrimental only when the other is lacking, and so horticultural colleges must set themselves the task of combining both in the right way.

### The Education of a Gardener.

There was a very practical strain running through the paper on this important topic by Mr. W. Hales, A.L.S., Curator, Physic Garden, Chelsea, but for the purposes of the conference, and considering that each member of the conference had a copy, it might well have been summarised, for though the paper was exceedingly good, it was rather long, and Mr. Hales, who read it, failed to make himself heard at the back of the hall. After admitting that in the methods for the education of the gardener in this country there was a good deal of "drift," Mr. Hales went on to point out ways to better things, explaining how, in his opinion, gardeners should be trained, and finished up by paying a complimentary tribute to the value of exhibitions, and also the gardening Press, as well as mutual improvement societies, in helping forward the educational work of the gardener.

### Horticultural Education in Belgium.

An item not on the programme was the reading of an extra paper by Professor A. Buyssens, of Vilvorde, on the above topic, and his remarks, rendered in very good English, are mostly embodied in the report on horticultural education prepared by the committee for the conference, and dealt largely with the methods employed at the various educational centres in Belgium.

#### DISCUSSION.

There was an expression of relief on most of the faces of the persons present when the reading of the papers came to a finish, and the members of the audience who desired to take part in the discussion handed in their names. Five minutes was allowed to each by the chairman, and the Rev. Bernard Hall, who set the ball rolling, began by exceeding the limit, in a vigorous yet pleasant speech, in which he criticised some of the methods now in use, and substituted ideas of training gardeners which, in his opinion, were better. Professor Bretland Farmer, of the Royal College of Science, who followed, paid gardeners the compliment of having grit, but said that the young men, in matters of education, should not have things made too easy for them. He upheld the desirability of a thoroughly practical training, which at the same time advanced the interests of science.

Mr. Macoun, horticulturist of the Government of Canada, described the work of the horticultural sections of the Educational Department in that Colony; and, while he deplored the fact that they had no means of training gardeners, he observed that the British gardeners who came to Canada soon adapted themselves to the conditions and proved their ability.

In a lucid speech, Professor Ainsworth Davis, of the Royal Agricultural College, Cirencester, spoke of a scheme he had in hand by which it was hoped to make the work of Mutual Improvement Societies more educational, and he also emphasised the necessity of more being done in the way of continuing education after the young gardeners' schools days are over.

A lady member of the Swanley College staff devoted her five minutes to an account of the methods employed at that establishment.

Professor Bayley Balfour, Edinburgh, advanced the claims of book-keeping and mensuration in the education of a gardener, and in further thoughtful remarks, said that in teaching the rising generation, we should draw more on the experience of the old gardeners who had done such splendid work. We should, he said, work up from the practical, not the other way; and made the remark that most of the gardeners trained at Edinburgh emigrated to America.

Mr. Frogbrook, of Leyton Parks, Essex, supported the apprenticeship system as a means of training gardeners, and the County Instructor from Hertford also spoke on this point.

The discussion was brought to a conclusion by Mr. J. C. Newsham, manager of the Hampshire Farm School at Basing, who made reference to the low salaries that horticultural instructors could command after going through all the training that some of the speakers thought was necessary. Mr. Newsham also had a good word to say for the Horticultural Instructors' Association, which, very strange to say, was the first time this body was mentioned at all in the conference, which seems to suggest that it is either too modest, too unenterprising, or it has failed up to now to attract the notice of the authorities that it deserves. In describing what the association had done, the speaker pointed out what a lot more it might do, and concluded by saying that he should like to see young horticulturists as keen on working up for diplomas as young agriculturists are.

The proceedings closed with the usual votes of thanks.

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## Legislation in Connection with Plant Diseases.

The second of the two conferences arranged in connection with the International Horticultural Exhibition was held on Friday, May 24, and was not less successful than the gathering on the previous day. The Right Hon. A. H. Dyke-Acland again presided, and there was a large attendance, the members of the conference including the leading scientists both at home and abroad who devote special attention to insect pests and fungi injurious to plant life, some of the leading members of the nursery and seed trades, and a few gardeners. The subject for consideration was "Legislation in connection with Plant Diseases," and the great interest taken in the papers that were read and the subsequent discussion was evidenced by the fact that, although the proceedings commenced at the early hour of 9.30 a.m., for the purpose of enabling the members of the conference to join the party visiting the Royal Gardens at Windsor, the sitting continued until about one and a-half hours after the special train had left Paddington without any appreciable diminution in the numbers present. It was evident that the importance of a full discussion on the legislation in relation to plant diseases and plant pests was so fully appreciated by those present, that the great attractions of the Royal Gardens was not sufficient to divert any considerable number from taking advantage of the opportunity of becoming fully acquainted with what has been done in the framing of legislative measures with a view to the prevention of the conveyance of insects or fungi of an injurious character from one country to the other.

In opening the proceedings the Chairman said that the Science and Education Committee, which had been sitting nearly two years, had wisely selected the subject that would be discussed, and hoped those present would give all the help they could in the elucidation of the various points. He heartily welcomed the many scientific and practical men from abroad, and their presence was a sufficient proof that the subject was one that concerned other countries as well as our own. The Chairman then called upon Professor J. Ritzema Bos, chief of the Phytopathological Service of Holland, to head his paper on

### The Value of Importation Regulations.

It is a natural consequence of world traffic, said Professor Ritzema Bos, that animal and fungous enemies of agriculture and horticulture are sometimes transported with the plants on which they live from one country to another. So two very dangerous enemies of the vine, the Downy-mildew (Peronospora viticola) and the only too well-known Phylloxera vastatrix have been successively transported from America to nearly all vine-growing countries of the Old World. So in recent times the serious American Gooseberry mildew has come from America to Europe, where it has spread over several countries in a short time. So the not less grave San José Scale has been carried from one State of the American Union to nearly all others, and the authorities in several European countries, too, fear its introduction. So the Gipsy Moth and the Brown-tail Moth were transported from Europe to America; and last, but not least, the potato "Blackscab" is spreading in every country where the diseased tubers are brought by trade and heedlessly planted for seed.

Now the question, he said, suggests itself: In what way has a country to guard against the invasion of injurious animals and plants diseases from abroad?

The answer seems to be simple. When some very injurious organism feeds on a certain plant in a certain country, take care not to import from that country specimens of this plant or parts of it. In former days this, indeed, was the opinion of the public, the authorities, and the Governments, and this point of view is still held by some people. When about 1877 and 1878 the Colorado-beetle spread in America, some European States closed their boundaries for the import of potatoes from the New World, though neither the beetle nor its grub live in the tubers; they only feed on the foliage. When the San José Scale made a great stir in the Eastern States of America about 1898, most of the European countries closed their boundaries to the importation of American nursery stock, and some of them did so, too, for the importation of American fruit. And since the American Gooseberry mildew causes a great deal of damage in some European countries, nearly every State has ordered prohibitive measures concerning the importation of goosberry, currant, and raspberry bushes.

While not absolutely dissenting from the idea of prohibitive regulations, Professor Ritzema Bos drew attention to some difficulties connected with those measures, and then proceeded to show that in most cases they only represent a misuse of both labour and money. To-day one pest, to-morrow another, menaces a country from abroad. Again and again, new prohibitive orders will be necessary in every country. At last several States will be almost entirely isolated, much to the cost of their trade, their culture, in short, of their whole population.

Often the insistence of prohibitive measures is not free from protectionistic inclinations. Interested persons are anxious to find out pests or blights on the stock of competing countries in order to have a pretext for requesting the Government for a prohibitive order.

With regard to the results of the importation regulations, the question may be asked: Are they proportional to the expectations they raise? The answer of the Professor was: No, indeed!

In the first place, they are nearly always issued too late. Not until a certain pest seriously damages our cultures, and not until the newspapers interfere with it, as a rule, are the Governments reminded that something should be done. But between the intention and the issue of a Governmental order, time passes, and when busy commercial relations exist between the country where the pest is feared, and the country where it has got a firm footing, no doubt it will have stolen across the boundaries long before the order has come into force. That the San José Scale hitherto never gained footing in Europe is, in the opinion of the Professor, not because of the prohibitive measures enacted in several European countries concerning the importation of American stock. The difference in climate, in soil, in cultivation, furnish reasons why it cannot thrive in these regions.

In the second place, attention has to be paid to the fact that sometimes a disease or insect pest is not nearly so destructive in the country of its origin as in the country where it is introduced.

The vine Phylloxera is a striking instance; it is not at all such a bad pest in America, its native country, as in Europe. On the other hand, the Gipsy Moth and the Brown-tail Moth are not among the prominent injurious insects in Europe, while in some of the United States of America, where they are introduced from the Old World, they play havoc with all plantations and parks.

AN ATTRACTIVE ARRANGEMENT OF NEW HOLLAND AND OTHER PLANTS.
Exhibited by Messrs. Stuart Low and Co., Bush Hill Park, N.

How often, on the other hand, a pest which one would like to keep outside the frontiers proves, after being introduced, not to be so destructive as it was expected to be. In 1877 and 1878 Europe stood in awe of the Colorado beetle, the introduction of which was expected to be the ruin of the cultivation of the most indispensable article of food. But afterwards, when the public attention had been turned away from it, the Colorado beetle was unquestionably present for at least three years—from 1884 to 1887—in the potato fields at Torgau (Germany) without developing to a destructive pest.

To avoid being misunderstood, the Professor distinctly stated that he was not an absolute opponent to prohibitive orders as a method of checking pests. Especially when it concerns the prevention of the re-introduction of a pest which is about to be exterminated. He then gave an instance from his own experience. Four years ago the American Gooseberry mildew was observed for the first time in Holland; two years ago it spread over a great deal of the country, and it appeared to be a grave menace to gooseberry cultivation in some districts. The Dutch Phytopathological Service has done its utmost to control this pest. In some districts the efforts to exterminate it were crowned with success, in other parts they had not yet been successful. In the meanwhile, a rather rigorous law was passed enacting measures to prevent the inland spread of the disease. The burgomaster of each community where the disease prevails is authorised by it to order the means of exterminating which are considered necessary and useful by the chief of the Phytopathological Service. So the cutting off and burning of the diseased parts of the shrubs can be ordered. If need be, the uprooting and burning of entire shrubs is ordered, and, anyhow, the transport of infected shrubs, cuttings, or fruits, and even of sound shrubs, from infected grounds or premises, is forbidden.

Having thus taken all possible pains to exterminate the disease, it would, in his opinion, be a great mistake to run the venture of re-infection from abroad. In the present circumstances he considered it quite reasonable, for the Dutch Government has completed the measures by forbidding the importation into Holland of gooseberry, currant, and raspberry bushes. Indeed, this prohibitive measure should have been taken before the disease passed over the frontiers, for this alarming pest already having spread to a great extent in several countries of Europe, which in soil, climate, and culture are not considerably different from those of Holland, it was probable that it would come.

But, however unavoidable, in some cases prohibitive measures may be, yet authorities are cautioned once more not to take refuge in them heedlessly, because of the great obstacles they offer to trade, and the uncertainty of their effect.

In dealing with the question: Can inspection at the port of landing be relied upon as a method of preventing the introduction of plant diseases from abroad? The answer, said the Professor, was, No.

As a rule, the great quantity of imported stock and the solidness of its packing will make it impossible to inspect thoroughly. Let it be granted for a moment that the potatoes imported from abroad must be inspected at the port of entrance for the presence of black scab, which dangerous pest in its first stage only is perceptible at the eyes of the tubers by careful examination. The inspector would be obliged to look attentively at nearly every potato in every imported case; for even when only one in a thousand of the potatoes destined for seed is attacked, the disease can make its introduction.

Taking into consideration the enormous quantity in which cases full of conifers, evergreens, shrubs, and plants are shipped in the export season from Holland to other countries, we must be convinced that it is impossible for the experts at the port of landing to inspect these quantities as carefully as to be secured against the introduction of nests of Brown-tail Moth, egg-clusters of Gipsy Moth, woolly aphis, scales, nectria, monilia, American Gooseberry mildew, and so on.

It was not denied that the use which in some cases may be derived from inspection at the port of landing, for when fungus or insect pests are found on the imported stock, and when this stock is burnt or returned at the consigner's charge, he gets the worst of it. Experience keeps a dear school for him, and he may serve as an example for his fellow-nurserymen.

Professor Ritzema Bos then proceeded to deal at some length with the question of inspection of stock, and the granting of certificates, and expressed the opinion that in no other way could the importation of diseases from abroad be more effectually prevented than by efficient inspection of the stock imported in the country in which it is grown.

This paper, which obtained for its author the heartiest applause, was followed by one not less interesting or important, from the pen of Mr. G. L. Rogers, of the Intelligence Division of the Board of Trade on

### The Aim of English Legislation.

In his opening remarks Mr. Rogers pointed out that although the importance of exterpating contagious diseases of cattle had long been recognised in England, and the State had taken an active part in preserving the health of English cattle for many years past, legislation on the subject of diseases of plants was of quite recent date. Many other countries had been earlier in the field, and have advanced further than it had been found possible to do in this country. Greater powers have been given to the Government, the service of inspectors is larger, and the regulations more drastic and sweeping. But this, he considered, need cause no surprise, nor lead anyone to suppose that the interests of horticulture in this country had been overlooked or neglected.

A SKILFULLY CONSTRUCTED PERGOLA WITH GRAPE VINES, ETC.
Exhibited by Mr. J. Hudson, V.M.H., Gunnersbury House Gardens.

Those countries, it was pointed out, which had led the way in legislating on the subject of insect pests and diseases of plants, had, generally speaking, public attention roused to the necessity of taking action by some sudden, and almost dramatic, disaster. Some new pest, whose life history had been unknown, had appeared in their midst, and swept, like an epidemic, across the country, destroying the crops and ruining the cultivators of the soil. In England, with one notable exception, we had been spared that experience.

The freedom from serious pests that we have so long enjoyed in this country was, Mr. Rogers stated, due, not to any accidental good fortune, but, in a great measure, to the geographical position and climatic conditions of the British Isles. The destructive pests which have spread across Europe, without regard to national boundaries, have been checked by the sea from invading England. Some foreign pests may be, and indeed are, imported every year with fruit and agricultural produce, but most of them are parasites on tropical or semi-tropical plants, which can with difficulty survive a year in this country. In giving expression to these views, Mr. Rogers was careful to point out that there is a danger of the introduction of some new pest that may prove destructive, more especially in fruit plantations, and, therefore, it was essential that a constant watch should be kept, not only in English gardens and fields, but also through foreign publications.

Mr. Rogers dealt at some length with the Destructive Insect and Pests Acts of 1877 and 1907, and their administration, and to this part we purpose making a fuller reference than is now possible in an early issue.

The next paper was by Mr. H. M. Lefroy, M.A., F.Z.S., Imperial Entomologist for India, on

### Legislation in Connection with Insect Pests in the Tropics.

This paper was on the same high level as the two which had preceded it, and proved of much interest. Mr. Lefroy, in the course of his paper, dealt with the many pests of plants that cultivators in India and other tropical countries, have to contend with. He strongly urged the importance of all concerned carefully studying the various insect pests that have become established, and for scientists to study the insect pests of other countries, and to give publicity to the information they may obtain, both for the purpose of educating public opinion and putting cultivators on their guard. The greatest safeguard would be knowledge, that legislation might be effectual, and yet free from useless and vexatious restrictions. We should, he said, be awake to the danger, and be in a position to meet it. It was deplorable to see countries fencing themselves blindly with indiscriminate prohibitions, fumigations, quarantine, and inspections. What, in Mr. Lefroy's opinion, was necessary was to move towards a common basis of legislative action upon which to build a measure adapted to the needs of each area, a necessary preliminary to that being a far wider knowledge of the dangers that exist, so that legislation may be framed against them.

### Legislation in Connection with Fungus Diseases.

This was the title of a paper contributed by Mr. H. J. Güssow, botanist to the Canadian Government. Unfortunately, Mr. Güssow was unable to be present, and the paper was read by the Chairman. In the course of his paper, Mr. Güssow pointed out that legislation in connection with fungoid diseases showed that there had been great ignorance on the part of those responsible for the measures that had become law, and that they had proved of little value. In his opinion, it was impossible to satisfactorily determine whether some plants were diseased or not without their being subjected to a microscopical examination by experts, and as that entails much time inspection is more or less inefficient. The only means, in his opinion, by which a solution of the question relating to prevention of the spread of the diseases of plant life was international co-operation in formulating a scheme for the inspection of plants, trees, fruits, etc., in the countries from which they are exported, instead of the countries into which they are imported.

### DISCUSSION.

The discussion was opened by Mr. A. W. Sutton, V.M.H., who had contributed to the report presented to the conference a valuable statement embodying the information acquired by his firm in the course of their export trade relating to the regulations affecting the importation of seeds and nursery stock that are imposed in various parts of the world. Mr. Sutton said he considered that some restrictions on imports are required, but he felt that, in many cases, they are imposed far beyond what was necessary or desirable. The great diversity in the restrictive measures rendered it extremely difficult for those who were not in a position to obtain the fullest information to become acquainted with them. In many cases, the restrictions were probably for the purpose of protecting the growers from competition rather than their crops from insect enemies or disease. In New Zealand nothing was required beyond a certificate from the country of export. He considered it, however, a serious matter that when a consignment of potatoes, for example, was certificated after careful examination free from disease, that it should not be allowed to land because some portion thereof was found to be infected owing to the development of the disease during the voyage.

Sir F. Moore said there had been much difference of opinion with regard to the value of certificates, and it was contended by some that many were worthless. He was gratified to find that there was some change of opinion on the question, and was also glad to find that growers were beginning to recognise the fact that it was to their interest to stamp out disease.

Mr. W. J. Lobjoit, Professor Potter, Professor E. G. Salmon, and Mr. C. E. Pearson, also spoke, and at the close of the discussion Professor Keeble proposed a resolution to the effect that the Science and Education Committee be requested to remain in being, and to confer with the Board of Agriculture with a view to officially summoning an international conference to consider the means of simplifying and consolidating legislative enactments bearing on plant diseases. The motion was seconded by Sir Daniel Morris, and carried unanimously.

The Chairman proposed votes of thanks to the Chelsea pensioners for vacating their Recreation Hall for the two days over which the conferences had extended, to the readers of papers, and to Mr. J. F. Chittenden for the splendid work he had accomplished as hon. secretary of the Science and Education Committee. These, on being put to the meeting, were passed with acclamation. On the motion of Professor I. Bayley Balfour, a hearty vote of thanks was accorded the Chairman.

## SCIENCE AND EDUCATIONAL EXHIBITS.

An interesting exhibit from the Horticultural Department, Reading University College (Mr. Drew), showed suitable stocks for various fruit trees; best methods of training; the difference between disbudded and undisbudded peaches, etc.; inarching and other methods of vine propagation, etc. Mr. George Massee's paintings of various fungus diseases proved most interesting and instructive, while the series of dried plant specimens showing fungus infestations, from M. H. Eicke, Frankfort, would have raised the hair of a plant diseases inspector. An ingenious set of instruments for recording the rate of plant growth, the amount of water lost by a plant by evaporation, etc., was vastly interesting.

Mr. T. Cheesman, the butler at East Burnham Park, showed a quaint exhibit of a vast range of seedlings, largely of trees, grown in water in receptacles of all kinds and sizes; besides these there were carrot, beet, and parsnip tops in water, and even potatoes in water, all giving suggestions that school teachers might well take up in connection with nature study.

Mr. A. S. Horne, Wisley Laboratory, demonstrated, by specimens and a large number of drawings, the appearance of a number of obscure diseases of potatoes. Messrs. Jas. Veitch and Sons, Chelsea, showed how fairly wide is the effective range of stocks upon which scions may be grafted; photinia on cotoneaster, lycopsis on hamamelis, arthrotaxis on cryptomeria, pyrus on cotoneaster, cratægus on cotoneaster, and hippophæ on eleagnus, were a few very interesting and successful graft experiments.

From the Royal Botanic Gardens, Edinburgh, came a wonderful series of unusual examples of successful plant propagation; the formation of bulbils in bulbs, rooted sterculia cuttings, acanthus leaf cuttings, stem cuttings in endless variety, runners, etc., etc. Dr. Winifred Brenchley, of Rothamstead, showed water cultures; and experiments representing the results of sterilisation of sick soils, also came from Rothamstead, and created a great deal of interest. Numerous exhibits from Reading and elsewhere showed the progress of silver leaf disease, but, so far as we could gather, little progress in the prevention of the disease has yet been made.

The Board of Agriculture sent maps and charts showing the different parts of the country where certain special crops of fruit and vegetables are grown, and also others denoting the distribution of plant diseases. From the Agricultural College, Wye, came a most instructive exhibit of insect and allied pests, of fruit trees and bushes; and Mr. F. Enock and Prof. Newstead showed series of insects that prey on injurious insects, and tropical scale insects respectively. A set of the "Reichenbachia" exhibited by Mr. F. Sander, St. Albans, together with some of the late Mr. H. G. Moon's original paintings of orchids figured in that wonderful work, made book-lovers envious and covetous.

A series of berberis seedlings, showing the effects of careful working on Mendelian lines, came from Major Hurst, Burbage Experimental Station. An exhibit of both old and new types of vegetables, staged by Messrs. Sutton and Sons, Reading, gave ocular demonstrations of the advances made during recent years. The wild cabbage, old long-necked cucumbers, corrugated red tomatoes, and a wild edible pea from Palestine, were contrasted with the most modern

AN EFFECTIVE ROCK GARDEN.
Designed and formed by Messrs. Pulham and Son.

varieties in each case, and, the intervening improvements being left out, the contrast was very wonderful.

A demonstration of Mendelian inheritance in tropæolums was given by the John Innes Horticultural Institution, and the various combinations of characters in the specimens were little short of wonderful, and indicated the possibilities that lie before raisers who tackle their work in scientific fashion. From Reading College came a large series of primulas, showing the results of crossing certain varieties, the re-combination of Mendelian characters, and the loss of Mendelian character. One cross, betwen a palm leaf and a fern leaf primula, gave all palm leaf in the first generation, and three palm leaves to one fern leaf in F. 2; in this case the growing plants were on view to show the results indicated.

A series of drawings in colour from Mr. W. Cuthbertson, Edinburgh, showed the parentage of some of the best known modern sweet peas. These proved that the Spencer form is always recessive in the first generation when crossed with the old type, but it appears in F. 2. Purple dominates all other colours, i.e., when a red, pink, cream, or white sweet pea is crossed with the pollen from a purple flower all the flowers in the first generation are purple. In the second generation (F. 2) the other colours appear. Red dominates pink, cream, and white; white dominates cream. Messrs. H. B. May and Sons showed the gradual evolution of the plumosa nephrolepis from the old type.

A series of specimens from the Woburn Experimental Fruit Farm demonstrated in practically every case, and did so effectively, that fruit and other trees grown during their earlier years with grass over their roots right up to the stems, suffer very materially; while in the absence of grass trees of similar character do well under the same kind of soil and conditions.

CALCEOLARIA BRONZE AGE.

An elegant variety, bearing a profusion of rich crimson flowers. Raised and exhibited (I.H.E.), by Messrs. R. Veitch and Son, Exeter.

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## SOCIAL FUNCTIONS.

On Tuesday, May 21, the President and directors lunched together at the Grosvenor Hotel, and in the evening, the President—the Duke of Portland—held a reception to which most of the foreign visitors were invited.

On Wednesday, the whole of the Jury were entertained at lunch on the Terrace in the Chelsea Hospital grounds, and to this function we have already referred.

Thursday evening, May 23, Leopold de Rothschild, Esq., entertained a large party to dinner at Gunnersbury Park, Acton. Before dinner the guests inspected the beautiful grounds of Gunnersbury Park and Gunnersbury House, where Mr. Reynolds and Mr. James Hudson are respectively the clever gardeners. Great admiration was expressed for all that was seen. At the dinner Mr. Leopold de Rothschild presided in one salon and Mr. Lionel de Rothschild in another. Among the guests were the Comte de Germiny, Comte de Hemptinne, Sir G. Holford, Sir J. Colman, Bart., Sir F. Moore, M. Maurice de Vilmorin, M. Philippe de Vilmorin, Professor Valvassori, Herr Siebert, Herr Bonfledt, Dr. Schrenchner, Mr. Harry J. Veitch, Mr. A. W. Sutton, M. Martinet, M. Gentil, M. Correvon, M. Delmard, Mr. E. H. Krelage, Herr Kuhns, M. de Smet, Mr. J. Farquhar, Hon. Vicary Gibbs, and Mr. N. N. Sherwood.

The loyal toasts were duly honoured, and then Mr. L. de Rothschild welcomed the guests in English, French, and German, and said how delighted everyone was to have the opportunity of meeting so many distinguished foreigners from other lands. He made kindly reference to the exhibits at Chelsea from France, Holland, Belgium, Japan, Italy, Germany, Canada, and Australia, and spoke of the friendly spirit of emulation, rivalry, and admiration existing in the realm of horticulture among the nations represented, a spirit that made for the peace of the world. The Comte de Germiny, Mr. E. H. Krelage, M. Brodersen, Dr. Schrenchner, and the Comte de Hemptinne all responded, and each echoed the sentiments expressed by their host, and spoke in high terms of admiration of the great show that had brought all together.

M. Philippe de Vilmorin proposed the health of the host, and referred to the love of gardening that permeated all classes in the British Isles, and how great was the influence exerted in horticulture by the wealthy gentlemen, who, like their host, were such generous patrons of the gentle art. Mr. Leopold de Rothschild suitably responded, and said that when he was a boy there were only two flower shops in London. He made kind reference to Mrs. Lawrence's garden in the old days at Ealing Park, and of Sir George Holford's father's love of orchids. He wished great success to the show, and Sir Jeremiah Colman, Bart., replied on behalf of the directors. Mr. Farquhar, of Boston, U.S.A., an old Chiswick student, and M. Valvassori, of Florence, each spoke, and Sir George Holford responded for "The Prize Winners."

## Royal Horticultural Society's Banquet.

Some four hundred guests accepted the invitation of the President and Council of the Royal Horticultural Society to dinner at the Hall, Vincent Square, Westminster, on the evening of Friday, May 24. Sir Trevor Lawrence presided, and was supported on the dais by Prince A. Mestschersky, the Lord Mayor of London, Major-Gen. C. Crutchley, Mons. M. de Vilmorin, Lieut.-Col. Prain, Lord Desborough, Sir G. Holford, Sir J. Colman, Bart., Senhor T. Gomes, Comte de Germiny, Baron B. Schroder, Comte de Hemptinne, Dr. C. Mitchell, Professor Waldhein, Dr. Toozanowsky, etc., etc. No fewer than forty-one tables were set out in the hall, and the guests included practically all the best-known men in European, and not a few in American horticulture, Messrs. Farquhar, H. Bunyard, C. Barron, and C. H. Trotby representing the United States.

The Hall was finely decorated, the roof being hung with flags of all nations, while fine palms and other plants filled the corners. Mr. Alfred de Rothschild kindly lent his private band, which discoursed sweet music during the dinner, and to the great enjoyment of the guests, Mons. Tivadar Nachez gave several splendid violin solos during the evening.

It was practically impossible save for the few close to the dais, to hear the speeches, but we may say that great cordiality prevailed, every possible kind attention was paid to the foreign guests, and they in return paid British horticulture the highest possible compliments, and all joined in praise of the immense show and thanks for the hospitality extended to them during their stay.

The loyal toasts were enthusiastically honoured, and Baron von Ernsthausen gave "The Royal International Horticultural Exhibition of 1912," and to this Mr. Harry J. Veitch responded on behalf of the directors. Sir Trevor Lawrence proposed "Our Guests from Abroad," and Mons. A. Truffaut, president of the National Horticultural Society of France, responded in an eloquent and excellent speech.

"The Horticultural Society" was very ably proposed by Mr. Ernst Krelage, of Haarlem, and responded to by Sir Jeremiah Colman, Bart. In conclusion, Sir Trevor's health was proposed in fine fashion by Mons. Maurice de Vilmorin, and accorded an enthusiastic reception and musical honours.

West of Scotland Cup.—To Messrs. J. Waterer and Son, Woking, for conifers and specimen trees.

Somersetshire Cup.—To Sir Eric Hambro, Hayes, for alpines and hardy flowers.

South Wales Rose Bowl.—To Messrs. Jas. Veitch and Sons, Chelsea.

Suffolk Cup.—To Messrs. Fisher, Son, and Sibray, Handsworth, for hardy, evergreen, and deciduous shrubs.

Warwickshire, Cup.—To Messrs. Bakers Wolverhampton, for rock garden.

Wiltshire Rose Bowls.—To Messrs. Sander and Sons, St. Albans, for orchids; and to Messrs. W. Cutbush and Son, Highgate, for rock garden.

Worcestershire Cup.—To Mr. C. Engelmann, Saffron Walden, for carnations.

Yorkshire East Riding Cup.—To Lt.-Col. Sir George Holford, Westonbirt, for orchids and amaryllis.

Irish Cup.—To Mr. J. Wood, Boston Spa, for rock garden.

French Horticultural Society's Statuette.—To Leopold de Rothschild, Esq., Gunnersbury, for fruit trees and pelargoniums.

Jules Hye de Crom's Cup.—To Lieut.-Col. Sir George Holford, for orchids.

Sir George Holford's Cup.—To Messrs. Charlesworth and Co., Haywards Heath, for orchids.

Special Silver Cup.—To Messrs. Sander and Sons, St. Albans, for orchids.

Special Silver Cup.—To Sir Everard Hambro (gardener, Mr. Grandfield), Hayes, for alpines.

Silver Cup.—To Messrs. Laxton Bros., Bedford, for fruit trees.

Silver Cup.—To Messrs. Storrie and Storrie, Glencarse, for fruit trees.

Large Silver Cup.—To Messrs. Benjamin Cant and Sons, Colchester, for roses.

A SHADY POOL.
Exhibited by Mr. Amos Perry, Enfield.

# THE AWARDS.

## COUNTY CUPS.

Bedfordshire Cup.—To Messrs. Laxton Brothers, Bedford, for strawberries and fruit trees.

Derbyshire Cup.—To Messrs. J. Backhouse and Son, York, for rock garden.

Dorsetshire Cup.—To Mr. L. R. Russell, Richmond, for trees and shrubs.

Gloucestershire Cup.—To Messrs. J. Cypher and Sons, for plants and orchids.

Hertfordshire Cup.—To J. Gurney Fowler, Esq., South Woodford, for orchids, etc.

Isle of Wight Cup.—To Mr. Leopold de Rothschild, Gunnersbury, for orchids and fruit trees.

Lancashire Cup.—To Messrs. H. B. May and Sons, Edmonton, for ferns.

Leicestershire Cup.—To Messrs. Jackman and Son, Woking, for conifers.

Norfolk Cup.—To the Netherlands Horticultural Federation, for vegetables.

Shropshire Cup.—To Messrs. G. Bunyard and Co., Maidstone, for fruit trees.

## OTHER CUPS AND SPECIAL MEDALS.

Queen Alexandra's Cup.—To Messrs. R. Wallace and Co., Colchester, for rock and water garden.

Clay and Son's Rose Bowl.—To Messrs. G. Mount and Sons, Canterbury, for roses.

The Veitchian Memorial Medals.—To Mons. Truffaut, Versailles, and to Professor Keeble, of Reading University College.

Veitchian Cup.—To the Hon. Vicary Gibbs, Elstree, for choice trees and shrubs.

"The Gardeners' Chronicle" Cup.—To Rev. A. T. Boscawen, for Leptospermum scoparium Nicholi, as the best new plant not previously exhibited.

Horticultural Club Cup.—To Messrs. James Carter and Co., for Japanese garden.

Ernst Benary Memorial Medal.—To Messrs. Sutton and Sons, Reading, for plants raised from seeds.

Glasgow Cup.—To Mr. A. C. Jackman, for trees and shrubs suitable for smoky towns.

Messrs. J. Walker and Tolhurst's Cup.—To Messrs. Jas. Veitch and Sons, Chelsea.

Special Silver Cup.—To Messrs. G. Bunyard and Co., Maidstone, for apples and pears.

Silver Cup.—To Messrs. Hobbies, Lim., Dereham, for roses.

Silver Cup.—To Messrs. D. Prior and Sons, Colchester, for roses.

Large Silver Cup.—To Mr. Chas. Deitrich, Belgium, for orchids.

Silver Cup.—To Mr. F. H. Davidson, for orchids.

Silver Cup.—To Messrs. Stuart Low and Co., Enfield, for orchids.

Large Silver Cup.—To Messrs. Peeters and Son, Brussels, for orchids.

Silver Cup.—To Mr. H. A. Tracy, Twickenham, for orchids.

Silver Cup.—To Mr. Chas. Blick, Hayes, for carnations.

Small Silver Cup.—To Mr. James Douglas, Bookham, for carnations.

Silver Cup.—To Mr. C. Lange, Hampton, for pinks.

Silver Cup.—To Messrs. Stuart Low and Co., Enfield, for pinks, etc.

Silver Cup.—To Leopold de Rothschild, Esq., Gunnersbury, for carnations.

Silver Cup.—To Mr. L. R. Russell, Richmond, for carnations.

Special Silver Cup.—To Messrs. Young and Co., Hatherley, for carnations.

Silver Cup.—To Mr. W. E. Alsen, Waterlooville, for sweet peas.

Silver Cup.—To Messrs. Reamsbottom and Co., Geashill, King's County, for anemones.

Large Silver Cup.—To Messrs. Barr and Sons, Covent Garden, for hardy flowers.

Large Silver Cup.—To Messrs. G. Bunyard and Co., Maidstone, for hardy flowers.

Silver Cup.—To Messrs. J. Cocker and Sons, Aberdeen, for trolliuses.

Silver Cup.—To Messrs. Dobbie and Co., Edinburgh, for hardy flowers.

Silver Cup.—To Messrs. Gunn and Sons, Olton, for phloxes, etc.

Silver Cup.—To Messrs. Jarman and Co., Chard, for hardy flowers.

Silver Cup.—To Messrs. G. W. Miller, Wisbech, for pyrethrums.

Silver Cup.—To Messrs. F. Smith and Co., Woodbridge, for hardy flowers.

Silver Cup.—To Messrs. Barr and Sons, Covent Garden, for pigmy trees.

Large Silver Cup.—To Messrs. William Cutbush and Son, Highgate, for climbers.

Special Cup.—To Messrs. G. Jackson and Son, Woking, for conifers.

Special Cup.—To Mr. L. R. Russell, Richmond, for ornamental trees.

Silver Cup.—To the Aalsmeer Florists' Association for cut flowers.

Silver Cup.—To Mr. H. N. Ellison, West Bromwich, for cacti.

Special Cup.—To Mr. J. Macdonald, Harpenden, for grasses.

Special Cup.—To Messrs. H. B. May and Sons, for ferns.

Silver Cup.—To the Yokohama Nursery Company, for dwarf trees.

Silver Cup.—To Messrs. Wm. Cutbush and Son, Highgate, for clipped trees.

Special Cup.—To Messrs. James Veitch and Sons, Chelsea, for lilacs and azaleas.

Silver Cup.—To Miss Wilmott, V.M.H., Great Warley, for Chinese plants.

Special Cup.—To Messrs. Backhouse and Son, York, for rock and water garden.

Special Cup.—To Messrs. Bakers, Lim., Wolverhampton, for rock and water garden.

Special Cup.—To Messrs. Wm. Cutbush and Son, Highgate, for rock and water garden.

Silver Cup.—To Messrs. Kent and Brydon, Darlington, for rock and water garden.

Special Cup.—To Mr. Maurice Prichard, Christchurch, for rock and water garden.

Silver Cup.—To Messrs. T. S. Ware, Lim., Feltham, for rock and water garden.

Silver Cup.—To Messrs. Carlton-White, Bond Street, for clipped trees.

Silver Cup.—To Messrs. G. Bunyard and Co., Maidstone, for rock and water garden.

Silver Cup.—To M. Bonfigioli, for anthuriums.

Special Cup.—To Messrs. R. Veitch and Son, Exeter, for calceolarias, etc.

Small Cup.—To Colonel Mark Lockwood, for acalyphyas.

Silver Cup.—To the Pomological and Horticultural School of Florence, for anthuriums.

Special Cup.—To Leopold de Rothschild, Esq., Gunnersbury House, for pelargoniums.

Silver Cup.—To Mr. Dorrien-Smith, Tresco, Scilly, for puya.

Silver Cup.—To Messrs. J. Cheal and Sons, Crawley, for garden designs.

Silver Cup.—To J. Gurney Fowler, Esq., Glebelands, South Woodford, for orchids and selaginellas.

Special Cup.—To Mr. C. Engelmann, Saffron Walden, for carnations.

### LARGE GOLD MEDALS.

To the Australian Government, for fruits, etc.; to the Canadian Government, for fruit, etc.; to Leopold de Rothschild, Esq. (gardener, Mr. J. Hudson, V.M.H.), for fruiting trees in pots; to Messrs. Searle and Sons, Australia, for packed fruit; to Messrs. Jas. Veitch and Sons, Chelsea, for trained fruit trees; to Messrs. George Mount and Sons, Canterbury, for roses; to Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Mr. Amos Perry, Enfield, for rock and water gardens; to Messrs. H. B. May and Sons, Edmonton, for ferns; to the Yokohama Nursery Company, for Japanese trees, etc.; to Messrs. Wm. Cutbush and Sons, Highgate, for roses and carnations; to Messrs. Fisher, Son, and Sibray, Handsworth, for trees and shrubs; to the Hon. Vicary Gibbs, Elstree, for Chinese shrubs; to Messrs. Jas. Veitch and Sons, Chelsea, for Chinese shrubs; to Captain Dorrien-Smith, for olearias; to Messrs. Jas. Veitch and Sons, Chelsea, for bay trees; to Messrs. J. Waterer and Sons, Bagshot, for trees and shrubs; to Messrs. R. Wallace and Co., Colchester, for rock garden; to Messrs. Jas. Carter and Co., Raynes Park, for greenhouse flowering plants; to Messrs. E. Webb and Sons, Stourbridge, for greenhouse plants; to Messrs. Jas. Carter and Co., Raynes Park, for Japanese garden; to Messrs. Sutton and Sons, Reading, for greenhouse plants; to Messrs. Jas. Veitch and Sons, Chelsea, for stove plants.

### GOLD MEDALS.

To J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford, for orchids; to Leopold de Rothschild, Esq. (gardener, Mr. G. Reynolds), Gunnersbury Park, Acton, for vandas; to Mr. H. Burnett, Guernsey, for carnations; to Mr. C. Engelmann, Saffron Walden, for carnations; to Messrs. Dobbie and Co., Edinburgh, for sweet peas; to Messrs. Watkins and Simpson, Covent Garden, for annuals; to the Rev. A. T. Boscawen, Ludgvan, Cornwall, for leptospermums, etc.; to Mr. J. Macdonald, Harpenden, for grasses; to Mr. I. Neale, for insectivorous plants; to Mr. W. Iceton, Putney Park Lane, for lily of the valley; to Messrs. R. P. Ker and Sons, Liverpool, for amaryllis; to Mr. L. R. Russell, Richmond, for stove plants; to Mr. R. C. Notcutt, Woodbridge, for an English garden; to Mr. R. C. Pulham, Newman Street, W., for rock garden.

### SMALL GOLD MEDAL.

To Messrs. H. Cannell and Sons, Swanley, for cannas, etc.

### LARGE SILVER-GILT MEDALS.

To Mr. T. H. Mawson, Windermere, for lead statuary; to Messrs. Carter Page and Co., London Wall, for dahlias, etc.

### SILVER-GILT MEDALS.

To Mons. H. Graire, Amiens, for orchids; to Mons. Chas. Vuylsteke, Loochristy, for orchids; to Sir G. Faudel-Phillips, for carnations; to Mr. C. W. Breadmore, Winchester, for sweet peas; to Messrs. R. H. Bath, Lim., Wisbech, for hardy flowers; to Messrs. Hogg and Robertson, Dublin, for tulips, etc.; to Messrs. J. Kelway and Sons, Langport, for hardy flowers; to the Japanese Horticultural Society, Japan, for pigmy trees, etc.; to Mr. J. Friedlander, for schizanthuses; to Mr. W. Proffitlich, Twickenham, for lily of the valley; to Messrs. Cunningham, Fraser, and Co., Edinburgh, for alpines; to Mr. C. Elliott, Stevenage, for alpines and rock garden; to the Lissadel Floral Farms, Sligo, for hardy flowers.

### LARGE SILVER MEDALS.

To Mr. R. J. Barnes, for roses; to Messrs. Dicksons, Chester, for roses; to Messrs. R. Harkness and Co., Hitchin, for roses; to Mr. C. H. Herbert, for pinks; to Lord Burnham, Hall Barn, Beaconsfield, for carnations; to Mr. H. S. Brassey, for carnations; to Mr. F. Lilly, Guernsey, for gladiolus, etc.; to Messrs. Jas. Forbes, Hawick, for hardy flowers; to the Locksheath Nursery Company, Southampton, for hardy flowers; to Messrs. Carlton-White, for clipped trees; to Mr. S. Mortimer, Farnham, for stocks; to Messrs. Robt. Sydenham, Lim., Birmingham, for sweet peas; to Mr. W. Sydenham, Tamworth, for violas.

### SILVER MEDALS.

To Messrs. Seabrook and Sons, Chelmsford, for apples and pears; to Messrs. Munch and Haufe, for roses; to Mr. J. Mattock, Headington, for roses; to Mr. C. Birchenhall, for orchids; to Mr. R. C. Felton, Hanover Square, for carnations; to Mr. E. W. King and Co., Colchester, for sweet peas; to Mr. J. Stevenson, Poole, for sweet peas; to Mr. A. L. Gwillim, Eltham, for begonias; to Mr. H. J. Harris, for anemones; to Messrs. Hubert and Co., Guernsey, for cut flowers; to the Pyrenees Horticultural Society, for hardy flowers; to Messrs. Walter T. Ware, Lim., Inglescombe, for tulips; to Messrs. Bees, Lim., Liverpool, for alpines; to Mons. H. Correvon, Geneva, for alpines; to Mrs. Edwards, for saxifragas; to Dr. Mcwatt, Duns., for primulas; to Messrs. W. and J. Brown, Stamford, for hardy flowers; to Messrs. Dicksons, Chester, for trees and shrubs; to Mr. Prime, gardener to the Marquis of Salisbury, Hatfield, for stove plants; to Mr. Mercatelli, for mamantas; to Messrs. H. B. May and Sons, Edmonton, for flowering plants; to Mr. G. Reuthe, Keston, for alpines, rhododendrons, etc.; to Messrs. Thompson and Charman, for alpine garden; to Mr. G. Reuthe, Keston, for rock garden; to the Dutch Winter School, Boskoop, for azaleas; to Mr. H. N. Ellison, West Bromwich, for ferns; to Mr. A. A. Fabius, for Adiantum Glory of Moordrecht; to Mr. P. Ladds, Swanley, for pelargoniums; to the Hon. Mrs. Grosvenor, for parterre garden; to Mr. H. Hemsley, Crawley, for formal garden.

### AWARDS IN SCIENCE SECTION.

Veitch Memorial Cups.—To M. Truffaut for collection of insects, and to Professor Keeble for exhibit of primulas.

Gold Medal.—To Professor Winkler for graft hybrids; to Professor Bateson for plant-breeding exhibit; to Professor Theobald for collection of injurious insects; and to Mr. F. I. Brooks for exhibit of silver-leaf and plum rust.

Silver-gilt Medal.—To Professor Newstead for collection of scale insects; to Mr. Pickering for injurious insects; and to Dr. Pethybridge for potato diseases.

Silver Medal.—To Dr. Russell for soil sterilisation experiments; to Miss Brenchley for water cultures; to Mr. H. J. Veitch for bigeneric grafts; to Professor Armstrong for exhibit of chemical differences between allied plants; to Mr. F. G. Drew for the educational value of exhibit showing the training and growth of fruit trees; to Mr. H. B. May for exhibit showing origin of fern varieties; to Mr. A. W. Sutton for exhibit showing comparison between old and new types of vegetables; to Mr. A. W. Sutton for species of solanum; to Mr. W. Cuthbertson for pictures showing origin of sweet pea varieties; to Mr. Malthouse for exhibit of black scab in potatoes; to Dr. Berger for exhibit of scale insects attacked by fungi; and to Mr. Hugh Barton for British mosses.

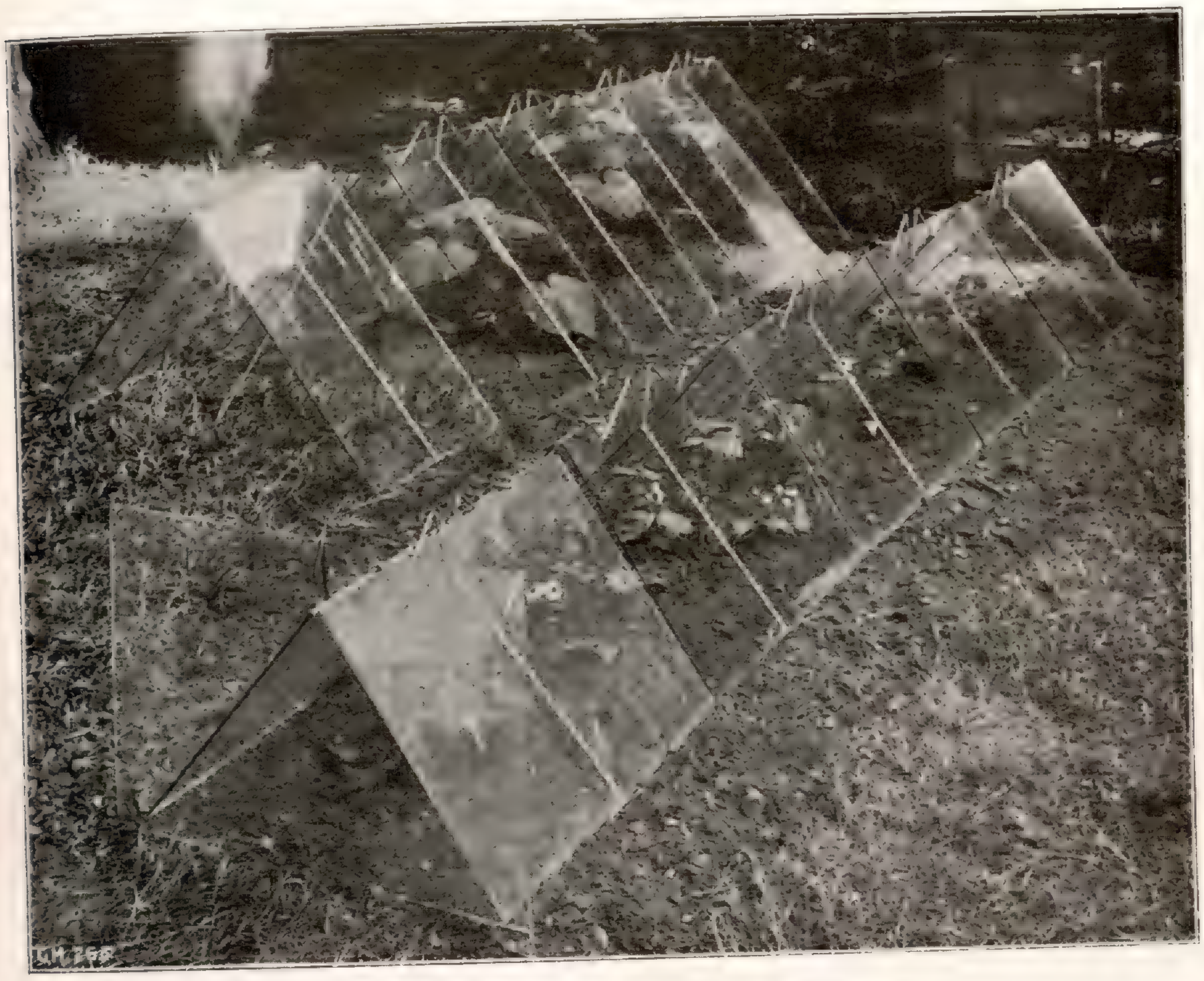
Bronze Medal.—To Mr. T. Cheesman for tree seedlings in water.

Diploma.—To Mons. Daniel for pictures of grafts, illustrative of effect of stock on scion; to Professor Blackman for physiological experiments; to Major Hurst for breeding experiments with berberis; to Mr. Enock for insect parasites of injurious pests; to Dr. McDougall for illustrations of injurious insects; to Mr. E. S. Salmon for fungus diseases of fruit trees; to Professor Percival for exhibit of silver leaf in plum; to Mr. G. Massee for paintings of plant diseases; to Herr Eicke for specimens of diseased plants; and to the Board of Agriculture for maps showing distribution of plant diseases.

### AWARDS TO FOREIGN SECTION.

M. Goosens, Silver Medal; M. Regner, Silver Medal; M. Maquet, Bronze Medal; M. Compoint, Silver Medal; M. Libraire Agricole de la Maison, Large Silver Medal; M. Edouard Debrie, Silver Cup (a); M. Cauchaume, Gold Medal; M. George Truffaut, Gold Medal; M. Vilmorin, Silver Cup (a); MM. Fortin and Laumonmiere, Silver Cup (a); M. Henrie Vacherot, Large Silver Cup; M. Henri Guichard, Silver-gilt Medal;

MM. Rivoire et Fils, Gold Medal; Libraire et Impoimene Horticoles, Silver Medal; M. E. Draps, Large Silver Cup; The Belgian Committee for the Progress of Horticulture, Gold Medal; Dr. D. Baardse, Silver-gilt Medal; MM. Strensina Bros., Silver Cup; Messrs. von. Waveren and Kruyff, Large Silver Cup; Messrs. E. H. Krelage and Son, Gold Medal; The Aalsmeer Florists, Association, Special Cup and Gold Medal; M. Meonder Plasache, Silver Cup; Messrs. T. Smith and Co., Bronze Medal; M. Moos, Gold Medal; M. J. Berger, Bronze Medal; the Syndicat Agricole, Silver-gilt Medal; De Cairllon Producterus, Gold Medal; MM. Robert et Vidal, Gold Medal; M. Roumat, Bronze Medal; M. Chauvin, Silver Medal; M. Victor Platt, Bronze Medal; M. Franciosa, Bronze Medal; M. Carmel Jovine, Bronze Medal; M. Dehaye, Bronze Medal; M. Ekienne Rocca, Silver Medal; M. Francois Ouillet, Silver Medal.



THE CHASE CONTINUOUS CLOCHE.
Exhibited by the Three C.'s Company, Dale Street, Liverpool.

### AWARDS TO SUNDRIES EXHIBITS.

Cups and Gold Medals.—Messrs. Houtsch and Co., Gold Medal; Thames Bank Iron Company, Gold Medal; Four Oaks Spraying Company, Silver Cup; Messrs. T. Crowther and Sons, Silver Cup; Messrs. Drew, Clarke, and Co., Silver Cup; Mr. H. C. Slingsby, Silver Cup.

Bronze and Silver Medals.—Messrs. Abbot Bros., Large Silver-gilt Medal; Messrs. Barr and Sons, Bronze Medal; Messrs. J. Bentley, Lim., Large Silver Medal; Messrs. Berger Lewis and Son, Lim., Large Silver Medal; Messrs. Blake and Mackenzie, Lim., Small Silver Medal; the Bon Arbor Chemical Company, Small Silver Medal; the Boundary Chemical Company, Small Silver Medal; Messrs. Bull and Sons, Bronze Medal; Messrs. Jas. Carter and Co., Large Silver Medal; Messrs. Thos. Christy and Co., Bronze Medal; Miss Colt, Bronze Medal; Messrs. Cooper and Nephews, Large Silver-gilt Medal; Messrs. Corry and Co., Lim., Large Silver-gilt Medal; Messrs. A. Cross and Son, Large Silver Medal; Danysz Virus, Lim., Bronze Medal; Mr. F. C. Edwards, Small Silver Medal; the Elsenham Jam Company, Bronze Medal, The French Cloche Company, Small Silver Medal; Mr. J. George, Small Silver Medal; Messrs. C. H. Glover and Co., Bronze Medal; Messrs. J. Green and Nephew, Large Silver-gilt Medal; Mr. John Groom, Small Silver Medal; Halliford French Gardens, Large Silver Medal, Mr. J. Hansen, Bronze Medal; Mr. A. Harris, Small Silver Medal; Mr. J. Haws, Large Silver Medal; Messrs. Headley Bros., Small Silver Medal; Mr. G. Henniger, Large Silver-gilt Medal; Messrs. Leslie and Greening, Large Silver-gilt Medal; Messrs. Geo. Jackman and Sons, Large Silver-gilt Medal; Mr. H. Jackson, Bronze Medal; Jeyes Sanitary Compound Company, Large Silver Medal; Mrs. F. A. Jonas, Large Silver Medal; Messrs. Kinnell and Co., Silver-gilt Medal; Mr. A. C. Laws, Bronze Medal; Laws Chemical Manure Company, Small Silver-gilt Medal; Mr. F. F. Lemon, Bronze Medal; Messrs. R. A. Lister and Co., Large Silver Medal; Patent Ladder Company, Silver-gilt Medal; Messrs. H. Pattison and Co., Small Silver Medal; Messrs. Pilkington Bros., Small Silver Medal; Messrs. J. Pither, Lim., Bronze Medal; Plant Plantoids, Lim., Bronze Medal; The Potash Syndicate, Bronze Medal; Price's Patent Candle Company, Lim., Large Silver Medal; Messrs. Michael Rains, Lim., Bronze Medal; Mr. G. H. Richards, Large Silver Medal; Messrs. Robinson Bros., Large Silver-gilt Medal; The Sanitas Company, Small Silver Medal; Messrs. R. Sydenham, Lim., Small Silver Medal; Messrs. W. Voss and Co., Lim., Large Silver-gilt Medal; Messrs. Wakeley Bros. and Co., Lim., Bronze Medal; Mr. Wilfred Mark Webb, Bronze Medal; Messrs. E. A. White, Lim., Large Silver-gilt Medal; Preserved Flowers Company, Large Silver Medal; Mr. H. C. Burton, Bronze Medal; Mr. J. A. Evans, Small Silver Medal; Mr. E. D. Greening, Large Silver Medal; International Supply Association, Bronze Medal; Messrs. W. Poupart, Lim., Small Gold Medal; Pwllbach Colliery Company, Bronze Medal; Messrs. Elliott Bros. and Co., Bronze Medal; Mr. Ambrose Palmer, Large Silver Medal; the Army and Navy Co-operative Supply, Silver-gilt Medal; Messrs. Braggins and Co., Silver-gilt Medal; Messrs. Coldrum, Silver-gilt Medal; Mr. W. H. Cook, Silver-gilt Medal; Messrs. Drake and Fletcher, Silver-gilt Medal; Fernden Fencing Company, Silver-gilt Medal; Folding Span-light Company, Silver-gilt Medal; Messrs. Lloyd Lawrence and Co., Silver-gilt Medal; Leyton Timber Company, Silver-gilt Medal; Messrs. Liberty and Co., Silver-gilt Medal; Mr. H. Peach, Silver-gilt Medal; Messrs. Skinner, Board, and Co., Silver-gilt Medal; Twelve-Hours Stove Syndicate, Silver-gilt Medal; Mrs. M. Watts, Silver-gilt Medal.

THE "GARDENERS' MAGAZINE" KIOSK IN THE LIME AVENUE.

## MEMBERS OF JURY.

COMPETITIVE CLASSES.

Concluded from last week's supplement, p. 28.

Smith, W. H., Mr., West Dean Park Gardens, Chichester.
Smith, W., Mr., Lambton Castle Gardens, Fence Houses, Durham.
Soupert, Monsieur, Rose Grower, Luxemburg.
Speed, W., Mr., Penrhyn Castle Gardens, Bangor.
Stanton, G., Mr., Park Place, Henley.
Summers, G., Mr., Sandbeck Park Gardens, Rotherham, Yorkshire.
Thatcher, Mr., Arnold Arboretum, Harvard University, Jamaica Plain (Mass), U.S.A.
Thomson, D., Mr., 113, George Street, Edinburgh.

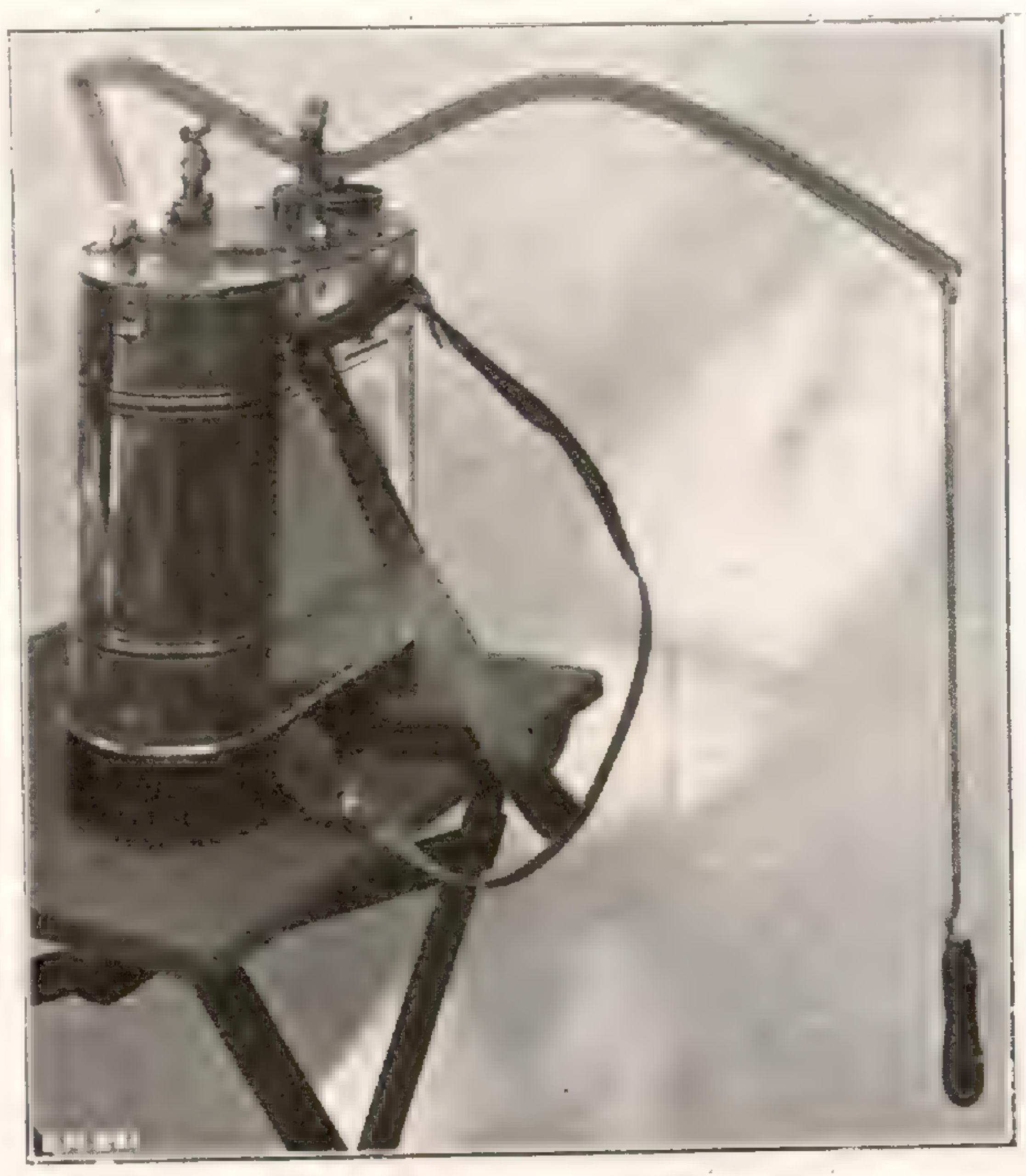
Thomson, J., Mr., Knighton Frith, Leicester.
Thomson, W., Mr., Walton Grange, Stone, Staffs.
Thwaites, R., Mr., 23, Christchurch Road, Streatham.
Troyanowsky, J., Dr., Maison Loukine, No. 11. Skatertny p. Powarskaia, Moscow, Russia.
Truffaut, A., Monsieur, 42, Rue des Chantiers, Versailles, France.
Turner, A., Mr., Royal Nurseries, Slough.
Upjohn, W., Mr., Worsley Gardens, Worsley.
Valvassori, Monsieur, Director, School of Horticulture, Florence, Italy.
Van Waveren, G. H., Herr, Leeuwenstein Nurseries, Hillegom, Holland.
Veitch, P. C. M., Mr., Royal Nurseries, Exeter.
Vilmorin, Philippe de, Monsieur, 66, Rue Boissiere, Paris, France.
Von Solemacher, Herr Baron, President, Pomological Society, Bohn, Germany.
Vuylsteke, C., Monsieur, Loochristi, Ghent, Belgium.
Wallace, R. W., Mr., Kilnfield Nurseries, Colchester.
Wallace, W. E., Mr., Eaton Bray, Dunstable.
Wartel, Monsieur, Société Anonyme Horticole Gantoise, Ghent, Belgium.
Waterman, R. G., Mr., Woolton, Liverpool.
Webster, A. D., Mr., Park Superintendent, Regent's Park, N.W.
Webster, C., Mr., Gordon Castle Gardens, Fochabers, N.B.
Wellesley, F. A., Mr., Westfield, Woking.
Weston, J. G., Mr., Eastwell Park Gardens, Ashford.
White, W. H., Mr., Burford Lodge Gardens, Dorking.
Whitton, J., Mr., Parks Department, Glasgow.
Whytock, J., Mr., The Palace Gardens, Dalkeith, N.B.
Wilke, J. T., Herr, Curator of Botanic Gardens, Rotterdam, Holland.
Williams, J. C., Mr., Caerhays Castle, St. Austell.
Wilson, Gurney, Mr., Glenthorne, Haywards Heath.
Woodward, G., Mr., Barham Court Gardens, Maidstone.
Worsley, A., Mr., Mandeville House, Isleworth.
Wright, H. J., Mr., 32, Dault Road, Wandsworth.
Wythes, George, Mr., Maryville, Chart Road, Folkestone.

### NON-COMPETITIVE SECTION.

(Under canvas.)

Ames, Oakes, Mr., 96, Ames Buildings, Boston, U.S.A.
Bartholomew, A. C., Mr., Parkhouse, Reading.
Beckett, E., Mr., Aldenham House Gardens, Elstree.
Bennett, W., Mr., Rangemore Gardens, Burton-on-Trent.
Beranek, C., Monsieur, Horticulteur, 8, Rue de l'Hermitage, Versailles, France.
Black, A., Mr., Carton Park Gardens, Maynooth, Ireland.
Blair, P., Mr., Trentham Gardens, Staffs.
Brown, J., Mr., Knockbrex, Kirkcudbright, N.B.
Candler, T. H., Mr., Wittington Hall Gardens, Marlow.
Challis, T., Mr., Wilton House Gardens, Salisbury.
Chapman, A., Mr., Westonbirt Gardens, Tetbury, Glos.
Clutton-Brock, A., Mr., Farncombe, Godalming.
Cooke, W. H., Mr., Kingston Hall Gardens, Derby.
Cox, J., Mr., Havering Park Gardens, Romford.
Cranfield, W. B., Mr., East Lodge, Enfield Chase, Enfield.
Cutbush, H. J., Mr., Highgate Nurseries, London, N.
Cuthbert, G. H., Mr., Southgate.
Cypher, J. J., Mr., Queen's Road Nursery, Cheltenham.
Davidson, G. D., Mr., Westwich Gardens, Norwich.
Debrie, Monsieur, Fleuriste, 10, Rue Royale, Paris.
Detriche, C., Monsieur, Route des Ponts de Cé, Angers, France.
Farrer, R., Mr., Ingleborough, Lancaster.
Gentil, Louis, Monsieur, Secretaire, Société Royal de Flore, Botanic Gardens, Brussels.
Gilson, M., Monsieur, 8, Parvis Notre Dame, Laeken, Belgium.
Graaf, Jan De, Herr, Nurseryman, Leiden, Holland.
Gravereau, A., Monsieur, Neauphle-le-Chateau (Seine et Oise), France.
Hales, W., Mr., Curator, Chelsea Botanic Gardens.
Hoog, J. M. C., Herr, care of C. G. van Tubergen, jun., Haarlem, Holland.
Howe, W., Mr., Park Hill Gardens, Streatham.
Jackman, A. G., Mr., The Nurseries, Woking.
Kempshall, H., Mr., Abbotsbury Castle Gardens, Dorchester.
Kuniz, Karl, Herr, Garteninspector, de Baron a Von Rothschildien, Hohe Warte, Vienna XXX, Austria.
Lee, W. R., Mr., Plumpton Hall, Heywood, Lancashire
MacLaren, H. D., The Hon., Bodnant, Talycafn, R.S.O.
Malcolm, A., Mr., South View, Duns, N.B.
Marlow, W. J., Mr., Garden Superintendent, Hampton Court Palace Middlesex.
Mattock, J. R., Mr., The Nursery, New Headington, Oxford.
Moorman, J. W., Mr., 33, Wetherell Road, South Hackney, N.E.
Mottet, S., Monsieur, 7, Rue de Paris, Verrières le Buisson (Seine et Oise), France.
Neubert, W., Herr, Wandsbek, Hamburg, Germany.
Nix, C. G. A., Mr, Tilgate, Crawley.
Nomblot-Bruneau, Monsier, Bour la Reine (Seine), France.
O'Brien, J., Mr., Marian, Harrow-on-the-Hill.
Odell, J. W., Mr., Grove Farm, Stanmore, Middlesex.
Opoix, Pierre, O., Monsieur, Chef des Jardins du Luxembourg, 64, Boulevard St. Michel, Paris.
Pearson, C. E., Mr., Hillcrest, Lowdham, Notts.
Peters, Major, Westwick, Norwich.
Pinguet-Guindon, Monsieur, 21, Avenue du Mans, La Tranchée, Tours, France.
Prior, W. D., Mr., The Nurseries, Colchester.
Reuthe, G., Mr., Sunnycroft, Crown Lane, Bromley, Kent.
Rivers, H. Somers, Mr., Sawbridgeworth.
Smet, Arthur de, Monsieur, Horticulteur a Ledeberg, Ghent.
Stevenson, T., Mr., Woburn Place Gardens, Addlestone.
Turton, T., Mr., The Castle Gardens, Sherborne, Dorset.

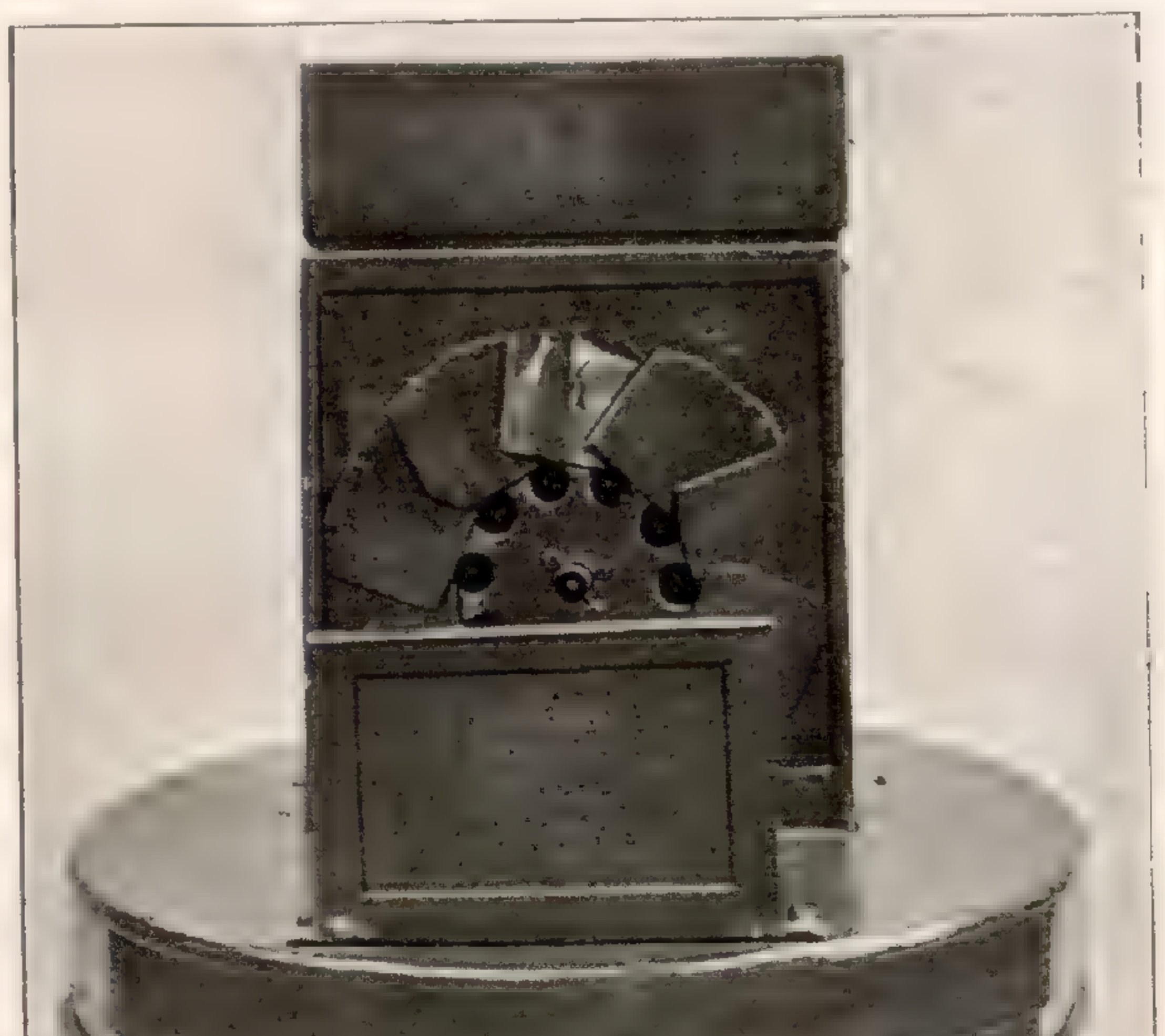
Vert, James, Mr., Audley End Gardens, Saffron Walden.
Ward, H. W., Mr., Nurseries, Rayleigh, Essex.
Ware, W. T., Mr., Inglescombe Nurseries, Bath.
Watkins A., Mr., 12, Tavistock Street, Covent Garden.
Watson, W., Mr., Royal Gardens, Kew.
Witte, E. T., Herr, Curator, Botanic Garden, Leiden, Holland.
Wright, W. P., Mr., The Grey House, Lyminge, Kent.
Young, A., Mr., Witley Court Gardens, Worcester.



NEW DOUBLE-CYLINDER KNAPSACK SPRAYING PUMP.
Exhibited by the Four Oaks Spraying Machine Company, Sutton Coldfield.

### OUTDOOR GROUPS AND SUNDRIES.

Allsop, A. J., Mr., Superintendent of Parks, Leeds.
Backhouse, J., Mr., Holgate, York.
Basham, J., Mr., Fairoak, Bassaleg, Newport, Mon.
Blake, H. W., Mr., Clandon Park Gardens, Guildford.
Clayton, H. J., Mr., Wharfe Bank, Ulleskelf, York.
Cook, W. A., Mr., Leonardslee Gardens, Horsham.
Cornford, J., Mr., Quex Park Gardens, Birchington, Kent.
Elwes, H. J., Mr., Colesborne, Cheltenham.
Goaring, W., Mr., Elmdene Gardens, Lewes.



NEW CYANIDING MACHINE.
Exhibited by Mr. C. F. Edwards, Leeds.

Humphreys, T., Mr., Botanic Gardens, Birmingham.
Iceton, W., Mr., Granard Gardens, Putney Park Lane.
Keeble, F., Professor, University College, Reading.
Llewelyn, J. T. D., Sir, Bart., Penllergaer, Swansea.
Lucas, C. J., Mr., Warnham Court, Horsham.
Naylor Mr. H., The Gardens, The Pleasaunce, Cromer.
Negus, R., Mr., The Lawn, Rydens Avenue, Walton-on-Thames.

Notcutt, R. C., Mr., The Nursery, Woodbridge, Suff
Perkins, F., Mr., Handsworth, Queen's Park Para Northampton.
Pettigrew, H. A., Mr., St. Fagan's Castle Gar Cardiff.
Rochford, Joseph, Mr., The Nursery, Turnford, Broxbourne.
Rogers, J., Mr., The Lodge, Battersea Park, S.W.
Ruys, B., Herr, Moerheim Nurseries, Dedemsvaar Holland.
Sanders, R. C., Mr., Halton Gardens, Tring.
Smith, T., Mr., Dicksons, Lim., Chester.
Spath, Helmut L., Herr Dr., Baumschulenweg, Berl
Stevenson, J. B., Mr., The Parks and Gardens superintendent, Bournemouth.
Tissot, J. C., Monsieur, 7, Rue de Louvre, Paris.
Truffaut, G., Monsieur, 90 bis, Avenue de Paris, Versailles, France.
Turner, T. W., Mr., Royal Hospital Gardens, Chelsea.
Vacherot, J., Monsieur, 12, Rue Carnot, Billancourt (Seine), France.
Warren, W. H., Mr., Aston Clinton Gardens, Tring, Herts.
Waterer, F. G., Mr., American Nursery, Bagshot.
Wheeler, A., Mr., Apley Park Gardens, Bridgenorth.
Williams, P. D., Mr., Lanarth House, St. Keverne R.S.O., Cornwall.

### SCIENTIFIC AND EDUCATIONAL SECTION.

Buyssens, A., Monsieur, 20, Rue des Theresienne, Vilvorde, Belgium.
Cogniaux, Monsieur, Genappe, Brabant, Belgium.
Henry, L., Monsieur, 57, Rue Cuvier, Paris, France.
Lauche, W., Herr Dr. Mahrisch, Eisgrub, Mahren, Germany.
Ritzema Bos, Professor, Wageningen, Holland.
Wittmack, Professor, 42, Invalidenstrasse, Berlin.
And other English jurors.
Du Pré, Mons., Brussels.
Duquesnoy, Mons., Ghent.
Gutteridge, Jas., Mr., Parks, Liverpool.
Hudson, J. F., Mr., Huddersfield.
Iggulden, W., Mr., Frome.
Stansfield, Dr., Reading.
And other English jurors.

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## HORTICULTURAL SUNDRIES.

The section of the exhibition designated by the above somewhat vague term, was indeed an exhibition in itself of no mean order. A tent of large dimensions housed the smaller and more or less perishable articles, but in the open there were a vast array of all kinds of implements, machines, ornaments, and furniture necessary or attractive in gardens.

### IN THE TENT.

Messrs. Robinson Bros., Lim., West Bromwich, who occupied the elaborate stand on the right of the entrance to the tent, had a very attractive array of their many useful "Gardenalities." Carmona fertilizers, specially compounded for various classes of plants, pine spray fluid, and the adjustable syringe for applying the same, and Clift's manurial and liquid soil germicides, were prominent; and the now well-known Alpha spraying machines were shown in various patterns and sizes.

Messrs. Corry and Co., Lim., Finsbury Street, London, were other exhibitors of the very necessary preparations to aid the gardener in fighting the enemies of plant life, and in enriching the soil or counteracting its defects. The Abol specialities from Messrs. A. E. White, Lim., Paddock Wood, including their well-made and popular syringes, were admirably staged, and continuously demonstrated by the firm's able representatives. The Abol superior insecticid was shown in canisters of various sizes.

Mr. G. H. Richards, the well-known sundriesman, of Borough High Street, brought a large glazed cabinet, in which samples of chemicals were displayed. The XL. All fumigants, in liquid and tabloid form, also came in for attention, as well as compound fertilizers and patent washes. Mushroom spawn and growing mushrooms were shown by Messrs. J. Pithey, Lim., Uxbridge. Danysz Virus was smartly advertised by means of clockwork models of cats feeding the last rat left as a result of a "Virus" campaign upon the rodents. The Selborne nesting boxes for birds, shown by the Brent Valley Bird Sanctuary Committee, were cleverly made, and of quite natural appearance.

A collection of antique well heads of real artistic merit was grouped in a recess among the trees in a manner that made their worth apparent to all. It was an exhibit of beautiful objects, set out in an ideal spot. The exhibitors were Messrs. G. Trollope and Sons, West Halkin Street, Belgrave Square, S.W.

## Horticultural Sundries.

(Continued from Supplement, page 20.)

The Climax specialities of the Boundary Chemical Company, Liverpool, were supplemented by the newly-introduced Simplicitas netting and pea supports. This netting, fixed upon suitable framework, has already proved to be an excellent substitute for pea sticks. Messrs. Bentley's insecticides and manures were brought in sample tins, and, of course, their weed killers were given a prominent position on the stand. Messrs. Walter Voss and Co., Lim., Millwall, London, East, had the largest stand in the tent, which was of excellent design, and was replete with chemicals of many uses. The Woburn Bordeaux paste, Voss's winter wash, and banding grease, and the Carlton fertilisers made quite an imposing show.

Lawn boots were, of course, the principal feature of Messrs. H. Pattison and Co.'s stand, who, however, also showed the well-designed and constructed "Max" lawn sprinkler, and a number of other useful implements. Messrs. Robert Sydenham, Lim., Tenby Street, Birmingham, made their stand of rustic floral decorations very attractive by the use of sweet peas, carnations, and other light and elegant flowers.

Messrs. James Carter and Co.'s exhibit took the form of a cleverly constructed model of their Raynes' Park premises, and also of their modern seed-testing apparatus, which were recently described in the GARDENERS' MAGAZINE. An ingenious one-man spray pump on wheels came from Berger's, Homerton, N.E., who also showed their various fluids and preparations for wood preserving. Evans' Challenge ventilating apparatus, from the Quaker City Machine Company, Richmond, U.S.A., is a clevely-designed arrangement for the adjustment of ventilators in glasshouses by simply turning a wheel.

Wakeley's Hop Manure was shown in loose samples, and in bags by Messrs. Wakeley Bros., Lim., Bankside, London. This hop manure, which undergoes special treatment by which it is impregnated with essential plant foods is especially valuable where soils are deficient in humus. Another good fertiliser on view was Barr's Phytobroma in two distinct forms, the one for general use and the other specially adapted as a lawn-grass manure. Messrs. Barr and Sons also brought from their Covent Garden warehouse a comprehensive display of tools and appliances. Plants Plantoids, the new tabloid fertiliser put up in tins like biscuits or tea, brought forth a good many amusing remarks, some critics considering the idea simply fanciful, while other apparently considered that for plants in rooms and conservatories the tabloid food would be useful and convenient.

Messrs. Alex. Cross and Sons, Lim., Glasgow, had sundries of all descriptions. Whether one required fertilizers, insecticides, shears, knives, labels, and plant supports, or baskets, boxes, and packing material, this firm can evidently supply the need. Mr. J. Haws, Clapton, N.E., showed the water-cans that have been for many years associated with his name. They are now made in a more extensive range of sizes and patterns than ever. The "Little Gripper" fruit gatherer, was shown by Mr. A. C. Harris, Howard Road, Leicester. By the aid of this handy little device, an apple, pear, or other fruit can be detached from a tree, and brought to hand with ease and without fear of damaging the fruit.

Mr. C. F. Edwards, Leeds, has for several years made and vended a very good cyaniding machine, but he had on view for the first time a greatly improved machine fitted with a clock-work fan, by which the gas is both cooled and evenly distributed. This machine is an important development in the direction of safety and efficiency in the hitherto somewhat risky operation of cyaniding plant houses, and was, in our opinion, one of the most serviceable novelties in the show.

Disinfectants, germicides, and up-to-date insecticides were exhibited by the Sanitas Company, Lim., Bactox liquid soap, Okol germicide, and Sanitas powder for slugs being worth notice. Jeyes' horticultural washes were also well shown, both winter and summer washes prepared by this well-known firm being well to the fore. Messrs. W. Bull and Sons, the Chelsea nurserymen, had a stand to show their tobacco extract for fumigating. This is put up in bottles and canisters of various sizes.

Other exhibits in the tent were folding garden tables from Messrs. Abbott Bros., Southall, French gardening requisites from the Halliford French Garden, Shepperton, and the French Cloche Company, Caxton House, Westminster. Horticol, the preparation for preserving seeds from the depredations of birds, and the various preparations for horticultural use made by Messrs. W. Cooper and Nephews, Berkhampstead.

Mr. Leslie T. Greening, 6, Park Hill, Richmond, exhibited plans for the modelling of gardens and laying-out of estates, most of them being actual plans of work carried out by the exhibitor.

Other plans of an elaborate character were shown by Messrs. G. Jackman and Sons, Woking, and Mr. C. Engelmann, Saffron Walden, who has added a landscape department to his already large business in carnations. Excellent little glass plant protectors and hand-lights were shown by Mr. A. Overend, High Road, Streatham, S.W. The movable panes of glass were simply held in position by grooved triangles of wood at the corners.

The Potash Syndicate, 117, Victoria Street, Westminster, had in the tent a most interesting stand upon which examples of fruits, flowering, and foliage plants were shown, which had been fed scientifically with potash. Useful pamphlets dealing with scientific feeding were available on the stand.

In the open the Syndicate had another highly instructive exhibit, which practically demonstrated the importance of potash as a manurial agent. Forest as well as fruit trees showed in no uncertain manner that their progress is far away more satisfactory when scientifically fed on manures containing a proper proportion of potash.

Messrs. W. Duncan Tucker and Sons, Lim., 27, Cannon Street, London, E.C., brought a large show of horticultural buildings, comprising an ornamental conservatory, well-built orchid houses, a good plant house, a small suburban house of good construction, and some capital span-roof pits and frames. The Tottenham sectional boiler was exhibited, and such things as tree tubs, dovecotes, and summer houses made up a praiseworthy exhibit. Glasshouses of roomy design and substantial build came from Messrs. J. Crispin and Sons, Nelson Street, Bristol, and also from Messrs. Skinner, Board, and Co., of the same city. Messrs. J. Weeks and Co., Chelsea, showed small models, as well as actual houses and boilers, their designs being excellent, both from an artistic and practical point of view.

The well-known firm of C. P. Kinnell and Co., Southwark Street, London, had their Anglian and Horse Shoe boilers on view, which appeared to attract a good deal of attention from the nurserymen present. A big exhibit of boilers and heating apparatus came from the Thames Bank Iron Company, Lim., Upper Ground Street, S.E., the Crown sectional boiler being a powerful-looking apparatus, capable of doing good work. The Economic and the Waltham are other boilers for large houses.

The Chase Continuous Cloche, exhibited by the Three C's Company, Dale Street, Liverpool, is an ingenious device. As herewith illustrated, it is the simplest and best we have seen for the protection of tender seedlings or the cultivation of small crops on French gardening lines. The panes of glass are held in position by wires twisted and interlaced in a manner that makes a rigid framework without obstruction of light.

George Blay, fencing contractor, New Malden, had gates of both substantial and ornamental character. Extremely beautiful were some of the stone ornaments, well heads, and vases put up by the firm of T. Crowther and Sons, North End Road, Fulham. Every piece was a work of art, fit for the grounds of any mansion. Messrs. Drew, Clark, and Co., Leyton, had their Diamond step ladders and extension ladders on view. The Folding Spanlight Company, Slough, brought their convenient little lights and frames, which are very suitable for French gardening and the protection of small plants. Another exhibit of ladders and steps came from the Acme Patent Ladder Company, Earlsfield, S.W., and still another from Mr. H. C. Slingsby, of Manchester and Liverpool.

The Four Oaks Spraying Machine Company, Sutton Coldfield, had sprayers of many sizes and styles also the undentable syringes and the Dreadnought digging tools, which are useful for hard or harsh soils. A good knapsack sprayer had a pump fixed that could be worked over the shoulder, making the task much easier than with the former side pump. Messrs. Drake and Fletcher, Maidstone, had a large space on either side the approach to the Japanese section, in which they showed various styles of pumps and sprayers, and a very smartly constructed fruit cleaning and grading machine that should appeal strongly to all commercial fruit growers.

Mr. John Pinches, 3, Crown Buildings, Crown Street, Camberwell, had Acme labels in great variety, and also rose shades, flower supports, etc., but a new machine for packing roses, trees, and shrubs was the novelty of the exhibit, and greatly interested the nurserymen. Messrs. S. and E. Collier, Lim., Reading, were exhibitors of garden pottery, and Messrs. Walters and Co., Croydon, brought artistic trellis work and garden furniture. The Hardy Patent Pick Company, of Sheffield, had their excellent spades, forks, and other garden tools on view.

One of the largest exhibits in the open was that of Messrs. Watkins and Simpson, the wholesale seed merchants. Architecturally, their pavilion, which was erected by Messrs. Duncan Tucker, was of imposing aspect, but from a purely horticultural point of view the great interest centred in the wonderful display of annuals, which we might almost describe as the richest in variety of form and colour we have ever seen. Almost every species of annuals worth growing were represented by the grand varieties which this well-known firm supply to the trade throughout the kingdom.

## In the Lime Avenue.

The spaces on either side of the historic avenue were filled with miscellaneous groups, mostly conifers. Near to the upper end of the avenue, Messrs. John Waterer and Sons, Lim., Bagshot, exhibited a group of ornamental hollies, in which numerous fine forms were represented. Near at hand, the same firm had a collection of conifers, amongst which Abies Nordmanniana, Abies concolor, and Sciadopitys verticillata were conspicuous. On the opposite side, this firm had a group of ornamental evergreens, and in this Cupressus obtusa Crippsi was very fine. An interesting little collection of conifers in pots was shown by H. S. Elwes, Esq., of Colesborne. The tall pyramid and mop-headed bay trees exhibited in the avenue attracted much attention, and here were some splendid specimens exhibited by Messrs. F. Sander and Co., St. Albans. A big display of Japanese garden furniture and the inevitable pigmy trees was made by Messrs. Liberty and Co., London. Conspicuous amongst the most effective of the groups of conifers was the one exhibited by Messrs. J. Jefferies and Son, Cirencester. It was evident from the healthy look of the plants that they had flourished well in the elevated nursery on the Cotswold Hills, where they were grown, and amongst the choicest of those shown were Abies Kosteriana pendula, Cedrus atlantica glauca, Cupressus Lawsoniana Stuarti, Cedrus deodora aurea, but underneath the trees the light was not as good as it might have been for showing off the colour. Very large mop-headed bay trees were exhibited in quantity by Messrs. Jas. Veitch and Son.

Messrs. Fromow and Sons, Chiswick, adorned the way into the tents with a large collection of their well-known hardy plants, in which acers figured quite conspicuously.

Messrs. Dicksons, Chester, set up a fine group of hardy shrubs, in which rhododendrons and azaleas were pleasingly interspersed with acers and other variegated foliage plants.

Messrs. Ladhams, Lim., Southampton, showed a group of hardy flowers, in which Muscaria plumosa major was conspicuous. Messrs. Cutbush and Son, Highgate, showed a fine lot of pyramid ivies and varied forms of vitis.

Under a very elegant structure outside the tents, Messrs. Watkins and Simpson, Covent Garden, set up a delightful exhibit of flowers. These were arranged in a bank-like form, but with no solidity of outline, and we noticed, amongst other things, some very fine linarias, Nemesia compacta Blue Gem, Clarkia elegans Vesuvius, hybrid schizanthuses, Lobelia tenuior, and Yellow Prince mignonette.

It is not usual for horticultural journals to have stands at flower shows, but this, of course, was a special occasion, and most of the leading papers having to do with horticulture and rural life were represented. The GARDENERS' MAGAZINE was at home in a rustic summer-house under the lime trees, and it can be congratulated on having quite a garden appearance, as the pillars of our little arbour were covered with Dorothy Perkins rose, the railings in front were entwined with ivy, the miniature garden was embellished with salmon zonal pelargoniums and white marguerites, and the grass verges and gravelled path gave our temporary home, from which literature was distributed, quite a finished appearance.

The Leyton Timber Company, Lim., New Cross, S.E., exhibited rustic summer-houses, both tiled and thatched, as well as arches and flower stands. A revolving tea house was another item of the exhibit. Stearn's lawn mowers, fitted with ball bearings were shown, the Leyton Timber Company being European agents for these machines. The exhibit of the Army and Navy Stores was elaborate and varied. All sorts of garden furniture, tools, and sundries were housed in a pavilion constructed of trellis-work. A big motor mower and horse rollers contrasted in bulk and size with many small but useful garden requisites.

Artistic seats and shelters in both teak and painted white wood were shown by Messrs. Vipan and Headly, Church Street, Leicester; another exhibit of furniture, but of totally different style being the Dryad cane furniture from Mr. Peach, Leicester. Small heating apparatus were shown by the Twelve-Hours Stove Syndicate, Lim., Vauxhall Bridge Road, Westminster, who also had on view an excellent large sectional boiler, suitable for large erections.

Gates, fencing, and hurdles were brought by the Fernden Fencing Company, Haslemere. The Patent Safety Ladder Company, Peterborough, had their excellent and very convenient adjustable ladders. The advantage of these over ordinary ladders is very great, especially for tree pruning, fruit gathering, etc. Messrs. G. F. Braggins and Co., Banbury, brought entrance gates in oak, and they also had a most ingenious little truck called the Scout's Kit Cart. Its detachable sides can be converted into a ladder, its body into a table, and its shafts into scout poles. Its uses would be many in a garden or on an estate.

**Streptosolen Jamesoni.**—It is somewhat strange that this beautiful flowering greenhouse plant should have been completely lost to cultivation for so many years. It was introduced in 1850, but would seem to have soon disappeared till re-introduced about 30 years ago. It is, however, not likely to again disappear, for it has now become a general favourite, not only for growing in bush form, but also for clothing the supporting pillars in the greenhouse or conservatory. Beside this it is often used as large specimens for summer bedding. In addition to the generic name of streptosolen it is also known by that of Browallia.—W. T.

## WORK FOR THE WEEK.

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### CONSERVATORY AND GREENHOUSE.

NERIUMS OR OLEANDERS. — These beautiful greenhouse shrubs are now fast developing their flowers, and where room can be given them to grow freely, they are desirable. They are easily cultivated, and can be grown in any greenhouse, but they are seen at their best when planted in the border in the conservatory and trained on the back walls. Nerines appreciate good culture, and a suitable compost is one consisting of fibrous loam two parts, peat or leaf-soil one part, with coarse sand, mortar rubble, and wood ashes added. During the winter the plants will stand a low temperature, and flower best after having had a good rest. They cannot be so easily propagated as some conservatory shrubs, but cuttings can be rooted quite easily if the following method of procedure is adopted. Select medium-sized shoots, and take them off with a heel, and an ordinary wide-mouthed bottle filled with soft water. Add some pieces of charcoal to keep the water sweet, place the shoots in the water, and stand the bottle on a shelf in a plant stove. The cuttings will soon emit roots, when they may be put into pots in the usual way. The best varieties are Nerium album plenum, N. Madonna grandiflora, and N. roseum plenum.

MARGUERITES. — These are old favourites, and are used extensively for bedding and window-boxes; they are also very useful for the greenhouse. The new variety, Mrs. F. Sander, has, however, eclipsed them all. Queen Alexandra was considered a great improvement on the double form, but, except on very few occasions, it showed a yellow hard centre, which disfigured it very much. When first I saw the first-named at the Temple Show it appealed to me as being a fine acquisition, and my opinion of it has since been fully justified. The blooms are pure white, the centre opening perfectly; it reminds one of a finely-formed pyrethrum. The constitution, however, is not all one could desire; the plants must be rooted from cuttings annually, and the soil should be rich but porous. This variety does not root so freely as some of the marguerites, and if the soil becomes sour the plants often die suddenly. If some plants are bedded out the cuttings from them will be much stronger when required in the autumn for stock.

KALOSANTHUS AND KALANCHOE FLAMMEA.—These may be grown together, the bright colours of their flower spikes making them most conspicuous when arranged in groups. Both are very easily grown to a high degree of perfection. The plants are best grown on a shelf near the glass, and watered only when dry. If the soil becomes in the least degree water-logged or sour, rust sets in on the leaves, and disfigures them very much. The present is the best time to root cuttings. The young growths that are not flowering make the best cuttings, and they will be found to root readily if inserted in 3in. pots, three in each, filled with sandy loam. The plants are best shifted on without being separated, as they then make fine plants.—LEWIS SMITH, Shotesham Park Gardens.

### THE ORCHID HOUSES.

CATTLEYA HOUSE.—Since my previous notes on these lovely plants great advances will have been made, both in the growth of the plants and in the flowers. Amongst those in flower at the present time are C. Mendelli, C. Mossiæ, and innumerable hybrids, which make an imposing display. C. Trianæ and C. Schroderæ, as they commence to make new roots, should have new rooting material afforded them, should the compost in which they are growing show signs of exhaustion. To my mind, these plants are as easily grown as any others, provided a few simple details are followed. The first is simply to keep them in a sweet and healthy rooting medium, and always to repot them when they will receive the least check, and whenever the compost show signs of exhaustion. The second is the application of water to the roots, and in the atmosphere. The compost in which the plant is growing must be taken into account when watering, and a compost which will retain water, much in the same way as a sponge will, must have a much less quantity applied to it, than one through which the water passes readily. During the growing season, providing the compost is in good condition, and the plant well rooted, not much harm will accrue from an over-abundant supply either at the roots or in the atmosphere if the proper temperatures of the house and water are maintained. I am firmly convinced that many growers give their cattleyas much too little water when in full growth, and a great deal too much when at rest.

PLANTS OF C. WARSCEWICZI (GIGAS), which are now making strong growths, and are about showing their flower sheaths, may be kept fairly moist at the roots to assist the plants in developing their flower spikes, and they should be placed well up to the roof glass, where they will receive an abundance of light, but must be shaded from the direct rays of the sun. The plants which fail to produce sheaths must also receive generous treatment, or they will not develop strong pseudo-bulbs. When the growths are fully completed, and the flower spikes removed, gradually expose the plants to more air and sunshine by removing them to another house, where a slightly lower temperature is maintained. The better the pseudo-bulbs are ripened, the better the plants will bloom next year. When the bulbs are completed, only sufficient water should be given to keep them plump and healthy, but on no account should they be put in an out-of-the-way place to take care of themselves.

C. DOWIANA and its variety aurea, having now started into growth, may be placed at the warmer end of the house, and should be carefully watered until the flowers open, and when these fade, the plants should be treated, as advised for C. Warscewiczi. C. Luedemanniana (speciosissima) another species which delights in the temperature of the warm cattleya house, may be repotted in the same way, within a few weeks after the plants have flowered, and then be kept in a cooler and drier atmosphere whilst at rest.

HYBRIDS. — At this season there are numerous hybrid cattleyas and lælio-cattleyas which have passed out of flower, and that need a short period of rest, therefore let them be treated in the same way by placing them in a cooler and more airy position, and no efforts should be made to induce them to start into growth. The same treatment is also applicable to Lælia purpurata and numerous other species and hybrids, which are apt to start into growth immediately after they have flowered.—J. T. BARKER, The West Hill Gardens.

### HARDY FRUITS.

MORELLO CHERRIES.—The training of the Morello cherry is usually followed out on similar lines as the peach and nectarine, and now the fruit is set and growth is making good progress, disbudding may have attention. Pinch back to two or three leaves all foreright shoots, if it be thought advisable to let spurs form, removing those at the back or badly placed. Lay in young extension shoots, and those intended to take the place of present bearing growths. Avoid overcrowding, as each shoot should be allowed sufficient space to properly mature. With us the crop is heavy and the fruits are swelling fast, and it will be necessary to lighten the crop on young trees, and also on some of the old and well-established ones, otherwise growth will be more or less checked and starved. Many young trees are absolutely ruined at the outset by allowing them to carry heavy crops the first year or two after planting. The borders should be mulched with good manure, and water freely applied. Aphis are a source of trouble, and should be kept under by spraying with quassia extract, or a similar preparation; an occasional good wash with the hose or garden engine will materially benefit the trees and ward off attacks of insect pests.

FIGS.—The hot, dry season of last year had a beneficial effect on fig trees, and the crop is most promising. In spite of cold winds the fruits are swelling satisfactorily. The young growths now growing freely should be thinned out, leaving no more than are required for filling blank spaces on the walls and to replace the bearing wood of the current season; strong and vigorous growths should be pinched at the seventh or eighth leaf. It is seldom necessary to apply water to a fig border, unless severe root-pruning has recently taken place, or the roots are strictly confined to a limited area. Where these conditions occur it may be necessary to afford a good soaking of water, and apply a mulch. Trees making a vigorous growth and failing to bear fruit, should be subjected to starving treatment; if this treatment fails to induce shorter and more fruitful growths, root-pruning must be carried out next autumn. The greatest enemy to outdoor figs on walls is red spider. This pest may be kept in check by forcibly syringing the foliage at frequent intervals; cold spring water is most distasteful to red spider, especially when forcibly applied. Young suckers springing up at the base of the tree should be removed unless required for filling up gaps or replacing worn-out growths.

CURRANTS.—The cold winds have caused a considerable amount of leaf-curl, and the aphis has made a home in the leaves. Pinching out the affected tips is practised, but I prefer to spray with quassia extract, and continue so doing until the bushes are quite free of the pest. If aphis are allowed to multiply unchecked the trees suffer, and the fruits are often unusable unless heavy rains wash them prior to the ripening period. Side growths should receive attention, thinning out where there is an excess, and pinching back to four or five leaves on the spur growths, leaving intact such growths as may be required to fill up blank spaces. Black currants require different treatment to the red and white varieties; growths arising from the base should be allowed to grow away, to eventually become bearing wood; old exhausted growths are cut out at pruning time, to make way for young and vigorous growths.

## THE KITCHEN GARDEN.

BEETROOT will require very careful thinning now; leave ample for a time, as birds are often troublesome, till the plants reach a good size, after this the final thinning should take place. Ply the hoe regularly, and give a scattering of soot around the plants previous to this procedure. The latter acts as a fertiliser, and a deterrent to the slugs, which have a strong liking for beetroot when quite small.

CUCUMBERS.—Ridge cucumbers can now be planted out in safety. Use a trench as for celery, filling in with old marrow bed soil, and a plentiful supply of pig dung. In the case of frame cucumbers, continue to plant and sow as may be necessary to meet the requirements of the establishment. Do not overcrop, and cut the fruits so soon as ready and stand in jars where a-half inch of water is kept. Placed in a cool place they will last many days.

PEAS.—Pay special attention to this crop from this date. Special trenches must be provided to maintain a full supply of nice young pods, water regularly, and munch; sow every ten days varieties that are best adapted to the locality.

CELERY for the main crop is now large enough for the final planting. A slight dressing of soot should have been occasionally strewn over the foliage, particularly when the celery fly is plentiful. If this is carried out on the young plants that are pricked off in skeleton frames earlier in the year, and followed up throughout the season, very little would be heard of the celery grub. If fungus is troublesome on the foliage at a later date, use equal parts lime and sulphur, dusting over the foliage similar to the soot. When planting, lift with good balls of soil, plant quickly after taking them up, and make them very firm, then well soak in with water. Perhaps the two best maincrop varieties are Lulham Prize and Standard Bearer, the latter being the best late variety grown in most districts. Its keeping qualities being without reproach.

ENDIVE.—Make a small sowing in drills one inch deep, thin out to nine inches apart, for an early supply.

LETTUCE.—Make frequent sowings up to the middle of July, after which fewer sowings will be sufficient, the later sowings not running to seed so quickly as the autumn advances.

GENERAL REMARKS.—Frequently hoe, water, and mulch all crops as required, and proceed with planting out such things as cauliflower, savoy, French beans, and turnips to maintain a constant supply of young succulent vegetables.—George Ellwood, Swanmore Park Gardens.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. May 19 to May 25. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| May 19—Sunday ...... | 4 42 | 57 | 53 | 66 | 43 |
| ,, 20—Monday ...... | 8 18 | 53 | 55 | 68 | 46 |
| ,, 21—Tuesday...... | 2 42 | 55 | 50 | 65 | 43 |
| ,, 22—Wednesday.. | 5 42 | 55 | 54 | 55 | 51 |
| ,, 23—Thursday.... | 1 36 | 54 | 51 | 54 | 48 |
| ,, 24—Friday........ | 3 24 | 49 | 47 | 58 | 46 |
| ,, 25—Saturday..... | 9 50 | 54 | 47 | 61 | 34 |
| Means ... | (total) 36 14 | 54 | 51 | 61 | 44 |

| Date. 1912. May 19 to May 25. | Rain. | Temperature of the Soil At 9 a.m. | | | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| May 19—Sunday ...... | — | 56 | 55 | 54 | 34 |
| ,, 20—Monday ...... | — | 57 | 55 | 54 | 36 |
| ,, 21 Tuesday...... | 0·14 | 57 | 56 | 54 | 32 |
| ,, 22—Wednesday.. | 0·07 | 58 | 56 | 54 | 49 |
| ,, 23—Thursday.... | trace | 57 | 56 | 54 | 43 |
| ,, 24—Friday........ | trace | 56 | 55 | 54 | 45 |
| ,, 25—Saturday .... | — | 54 | 55 | 54 | 27 |
| Means ... | (total) 0·21 | 56 | 55 | 54 | 38 |

Bracken shoots blackened by frost on Saturday morning.

## FORTHCOMING ENGAGEMENTS.

SATURDAY, June 1.—French Horticultural Society of London.

TUESDAY, June 4.—Royal Horticultural Society; Committees meet at 12 o'clock; Masters' Lecture at 3 p.m. on "Problems of Propagation," by Professor I. Bayley Balfour; Scientific Committee at 4 o'clock.

Scottish Horticultural Association.

THURSDAY, June 6.—Linnean Society.

MONDAY, June 10.—United Horticultural Benefit and Provident Society.

TUESDAY, June 11.—Royal Counties' Agricultural Society: Flower Show; three days.

WEDNESDAY, June 12.—East Anglian Horticultural Club.

Royal Society of Arts.

Royal Cornwall Agricultural Society; two days.

TUESDAY, June 18.—Royal Horticultural Society: Committees meet at 12 o'clock; lecture at 3 p.m., by Prof. E. Henslow, on "Prof. J. S. Henslow as an Ecologist." Scientific Committee at 4 o'clock.

Gladiolus Show at Royal Horticultural Hall.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER AND THE NORTHERN COUNTIES.

GRAND ROSE SHOW
and
SUMMER SHOW,
At the White City and Botanical Gardens,
Manchester,
On JULY 12th and 13th. 1912.
(Please note alteration of dates.)

PRIZES. £200 PRIZES.
FOR ROSES, GROUPS, SWEET PEAS, AND HERBACEOUS FLOWERS.

Schedules and all Particulars from P. Weathers, Secretary, Botanical Gardens, Manchester.

THE NATIONAL HARDY PLANT SOCIETY'S FIRST SHOW
will be held in the R.H.S. Hall, Vincent Square,
on WEDNESDAY, June 19th,
1 p.m. to 6 p.m.
Admission One Shilling.

Since publication of the Schedule two Classes have been added. One for Six Bunches Sutton's Pink Sweet William, and one for Six Bunches Scarlet ditto. Messrs. Sutton and Sons offer prizes, 21s., 10s., and 5s. in each class.

Entries close June 8th.

Schedules and particulars from A. J. MACSELF, 52, Beechfield Road, Finsbury Park, N.

GRAND YORKSHIRE FLOWER SHOW AND GALA.
June 19th, 20th, and 21st, 1912. £800 offered in prizes. £275 for Orchids, Stove and Greenhouse Plants. £175 for Pelargoniums, Carnations, Begonias, etc. £225 for Roses, Cut Flowers, etc. £125 for Fruit and Vegetables. Four Gold Medals and Premier Prize for Trade Exhibits. Entries close June 12th.
For Schedules apply to FRED AREY, Secretary, Davyhall Chambers, York.

NEXT TO THE INTERNATIONAL SHOW, THE SHOW OF THE YEAR WILL BE
THE FIRST GREAT BIRMINGHAM
FLORAL AND FRUIT EXHIBITION
(Formerly Handsworth Flower Show).
Space should be booked without delay at this great
SHOW OF THE MIDLANDS.
Schedules and all information from
WILLIAM G. CARRADINE,
Hamstead Road, Birmingham.

ROYAL SHOW, DONCASTER.
HORTICULTURAL EXHIBITION.
JULY 2nd to 6th.
Intending exhibitors are requested to send in their Entries at once to THOS. McROW, Royal Agricultural Society of England, 16, Bedford Square, London, W.C.

WOLVERHAMPTON.
GREAT FLORAL FETE.
JULY 9th, 10th, 11th, 1912.
£900 IN PRIZES.
Schedules on application to the Secretary (post free), R. F. Amphlett, 80, Darlington Street, Wolverhampton.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

## EXHIBITIONS AND MEETINGS.

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### National Gladiolus Society.

A very successful meeting of the National Gladiolus Society was held on the opening day of the International Horticultural Exhibition at the Royal Horticultural Hall at 5.30 p.m.

The proceedings lasted two hours, and the meeting was very well attended, many of the foreign growers being present. The hon. secretary presented the accounts for the past year, which were passed as being highly satisfactory, the society having money on deposit at its bank, and a balance in the current account.

Many new members have joined since 1911 and the numbers are steadily increasing.

The schedule for the autumn show, to be held on August 13 at the Royal Horticultural Hall, on the occasion of one of the fortnightly meetings, was then drawn up, and it is hoped that the classes will attract a number of exhibitors. A very fine collective exhibit from the growers in Holland will be a feature of this show, and the competitive classes offer scope for all.

Mr. Lionel Perkin kindly offered a silver medal for competition at this show, which was gratefully accepted, and Mr. Warnaar, of Warnaar and Co., Sassenheim, Holland, said he wished to offer a silver cup. Mr. Hopman also expressed his wish to offer a prize and as Messrs. Kelway and Son, and one or two other members have already recorded their wish to give prizes, the list will be attractive and interesting to competitors.

The schedule being completed, the question of awarding certificates to new varieties then came up for discussion, and it was finally decided that two forms of certificate should be in future awarded: 1, To good market varieties; 2, to good exhibition varieties. This received unanimous approval, as it is well known that many of the fine exhibition varieties are useless for market purposes.

The committee then awarded a certificate to Gladiolus Pink Beauty as a good market variety. This was raised, and on this occasion shown, by Firma P. Vos Mz. Sassenheim, Holland. This gladious is a most valuable variety, on account of its early flowering. It can be bloomed outside in June and early in July, when its deep pink colour and fine markings are a most attractive feature in the garden, and for cut flower trade it is supremely useful.

It was then decided that the Council should sit to consider new varieties for certificates on July 30, August 13, and August 27, all of which dates are occasions of the Royal Horticultural Society's meetings. The time and place of meeting will be announced later, and the Council will also sit on June 18 for the same purpose, and on this date the show for early-flowering varieties will be held in Vincent Square.

The annual general meeting of the society will be held on August 13 at the Royal Horticultural Hall.

It was resolved that, in submitting new varieties for certificates, trade growers are required to show six spikes, and must be prepared to put the variety on the market; it is felt that no good purpose is served by awarding certificates to new varieties of which there is no stock and cannot therefore be bought and sold. Amateurs submitting new varieties are required to show three spikes only, and will receive a different form of certificate. Mr. Lionel Perkin, of Berrylands Road, Surbiton, was enrolled a member of the Council, and the proceedings then terminated. All applications for membership should be sent to the Honorary Secretary, The Flagstaff, Locksheath, near Southampton.

## Perpetual Flowering Carnation Society.

Not one of the many functions held in association with the Royal International Horticultural Exhibition was more homely and characteristically British than the dinner at the Holborn Restaurant on May 23, which was given by that young but extremely enterprising Perpetual Flowering Carnation Society, for the purpose of extending a hand of welcome to the florists from the Continent and America, who were over for the big show. France, Belgium, Italy, and the land of the Stars and Stripes were represented amongst the guests, who helped to make up a large company, and seated at the table we observed Mr. Richard Vincent, jun., the President of the Society of American Florists; Mr. W. A. Manda, of New Jersey, who brought over Polypodium Mandaianum to the show; Mr. E. G. Hill; M. Maumené, Editor of "La Vie á la Campagne"; the Brothers Dailledouze, cut-flower growers, of Brookland; C. H. Trotby, of Madison; Joll Evans, Richmond, Indiana; Louis Doupez, White Stone; Harry Bunyard, of the States, and many others.

Mr. J. S. Brunton, who made an admirable chairman, welcomed the foreigners to our land, and spoke of the perpetual flowering carnation as being a flower not of one nation, but of many nations; for, while France was responsible for introducing the perpetual carnation, America had given us good things, and England had improved on what the Americans had done.

Mr. Richard Vincent, jun., the genial President of the Society of American Florists, who replied to the toast of "Our Guests," had very little to say about carnations, but he was feelingly sentimental in respect of the good fellowship existing between the nations that grow the flower, and, Yankee though he is to his finger-ends, it was obvious that he has a warm corner in his heart for the old country.

Mr. E. G. Hill gave the "Perpetual Flowering Carnation Society," and observed that at one time it was thought that the flower could not be successfully grown in this country. Great progress, however, had been made by English growers; but Mr. W. H. Page, who replied, paid Americans the compliment of being the pioneers in perpetual carnation culture.

Other speakers were Mr. H. T. Mason, the Rev. J. Jacob, Mr. H. A. Bunyard, Mr. E. F. Hawes (hon. secretary of the society), and Mr. W. A. Sherwood; and the intervals between the speeches were occupied by songs and music. Everybody was in the best of good humour; an air of jollity prevailed, jokes were cracked, amusing stories were told, and but for the latter some of the rather long speeches would have been a trifle wearying. The presence of many ladies added brightness to the proceedings. It may be observed in passing that, in addition to the banquet, excursions were arranged to different places of interest on four days, all for the benefit of foreign visitors, and it may be fairly said in compliment that the Perpetual Flowering Carnation Society did its share in entertaining our friends from across the seas. Doubtless they will carry back with them happy impressions of the genuine nature of British hospitality.

## British Gardeners' Association.

A large number of members from all parts of the country attended the eighth annual meeting of this association, which was held at Carr's Restaurant on Saturday, May 25, and a more representative meeting of the association has not been held. The members were well satisfied with the balance-sheet and report, the few criticisms made being satisfactorily answered. By a unanimous vote it was decided to hold the next annual meeting in Birmingham. The question of the association's journal cropped up. Many excellent suggestions were made, and eventually the matter was left in the hands of the Executive. Altogether the meeting was a very hopeful sign of the future. The new members of the Executive Council are: Messrs. J. D. Jones, J. Lodge, W. B. Child, and E. Smallman, Birmingham; Bertram Tindall and G. W. Butcher, Kew; T. G. Friend and I. E. Little, London; W. H. Paine, Kildare; E. H. Chitty, Highgate; and T. Aley, East Finchley. Mr. T. Winter again accepted the position of treasurer; and Messrs. J. Weathers and Parrott are the new auditors. Mr. T. Roberts, of Sandy, retired from the Executive, to make room for Mr. Winter. The usual votes of thanks concluded a successful meeting, which was presided over by Mr. J. Collier, of Gatton Park Gardens.

## GARDENING ENGAGEMENT.

Mr. W. J. Middlebrooke, who for the past eight years has been fruit expert to the King's Acre Nurseries, Lim., and who was previously with Messrs. J. Veitch and Sons, has been appointed horticultural adviser and fruit expert to the Locksheath Nurseries, Lim., whose nurseries are situated at Locksheath, near Southampton.

## ANSWERS TO CORRESPONDENTS.

SCABIOUS.—S. L., Yalding: Two amateur friends were discussing plants the other day, and one asserted that all scabious were annuals; the other being equally emphatic that they were perennials. I pointed out that the genus included both annual and perennial species, but, as we were all readers of the "G.M.," we decided to refer the matter to you, so that an authoritative answer could be given.—The very popular Pincushion Flower of gardens is an annual, and the species from which the fine flowers and varied colours we now possess have been evolved is Scabiosa atropurpurea, an annual species that has the curious popular name of Mournful Widow. One of the commonest of perennial border plants is Scabiosa caucasica, and though it is thoroughly perennial in many parts of the country, it is a quite common practice to grow it as a biennial. There are many other species, both perennial and annual, but not a large number are in general cultivation.

PELARGONIUMS PAUL CRAMPEL AND PAUL CRAMPTON.—J. W., Lincs.: Can you tell me the difference between Paul Crampel and Paul Crampton pelargoniums? I fancy the former is a double, and the latter a single; our stock is mixed.—We do not know Pelargonium Paul Crampton, and have vainly searched through a long list to find such a name. Paul Crampel is a fine rich scarlet variety, with large trusses of bold rich scarlet flowers, and it is at present one of the most popular of bedding pelargoniums.

EREMURUS.—A. W. B., Hounslow: I am very unsuccessful with my eremuruses, so that I should be very glad indeed if you would kindly give me a few hints as to the proper cultivation of these plants. For two years in succession fine healthy shoots have pushed up through the ground, and have been protected by litter from frost. Generally, when the flower shoots are just visible (about April), the leaves turn brown at the tips, and ultimately die away about May. The tubers seem still unhurt. They are planted in a border facing south west, in light and fairly rich soil, and they are protected from the north east. E. robustus suffers much more than E. himalaicus, for the latter, although its flower spike dies, retains its leaves through the summer.—Eremuri need light, well-drained, and quite rich soil, but there seems to be very little wrong with the soil or aspect in your case. The great difficulty lies in keeping the ground free from frost just when the growth starts,

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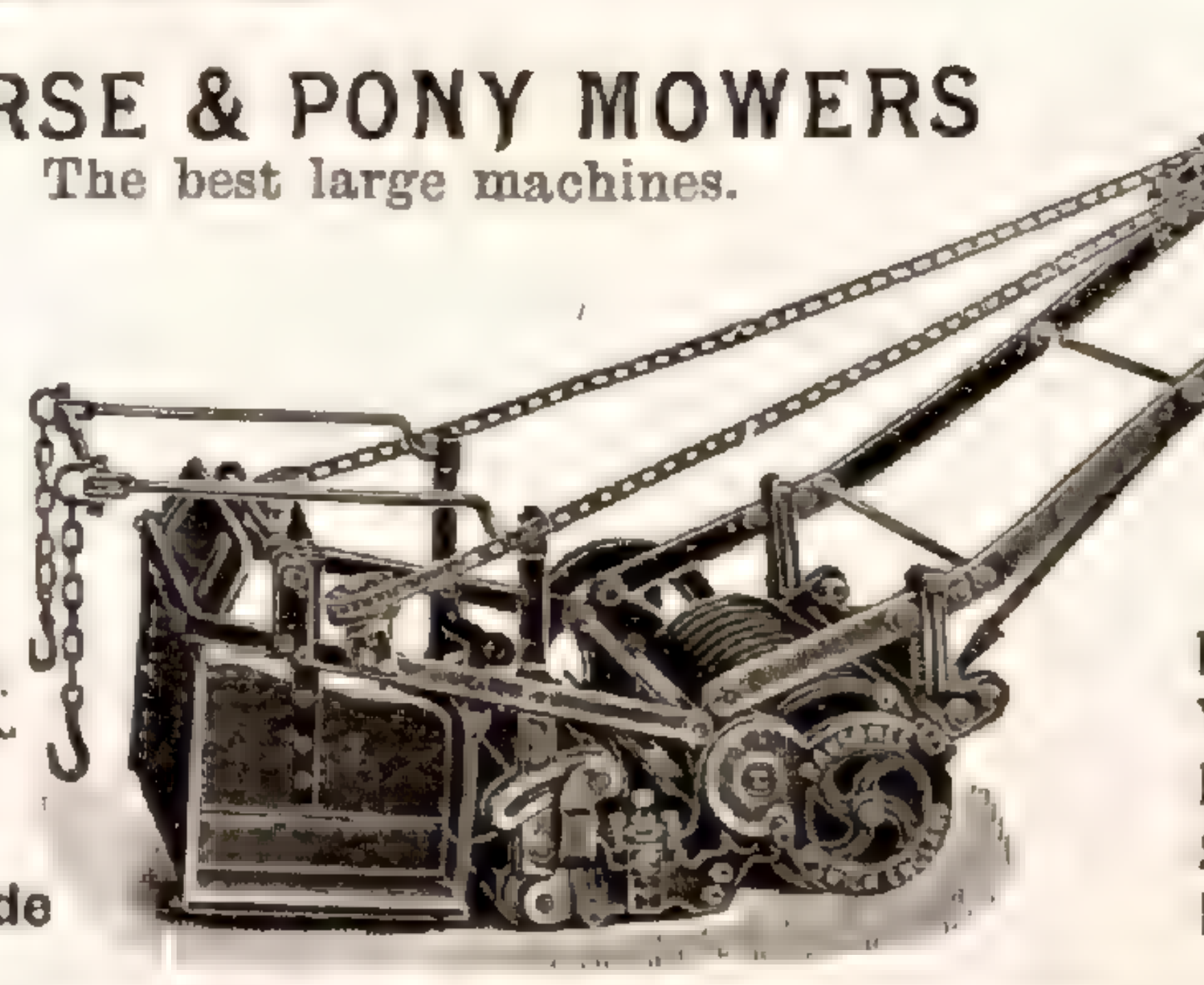

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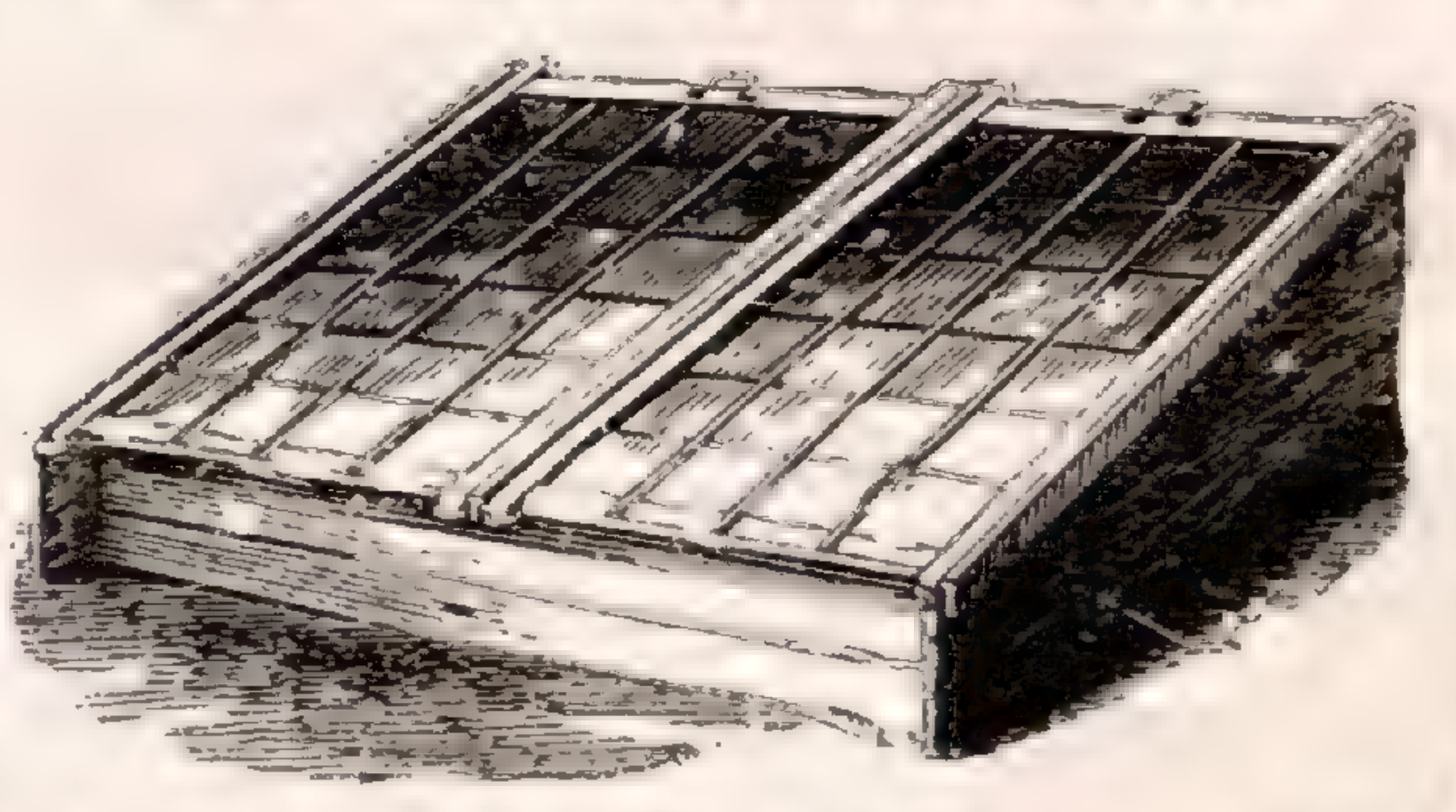

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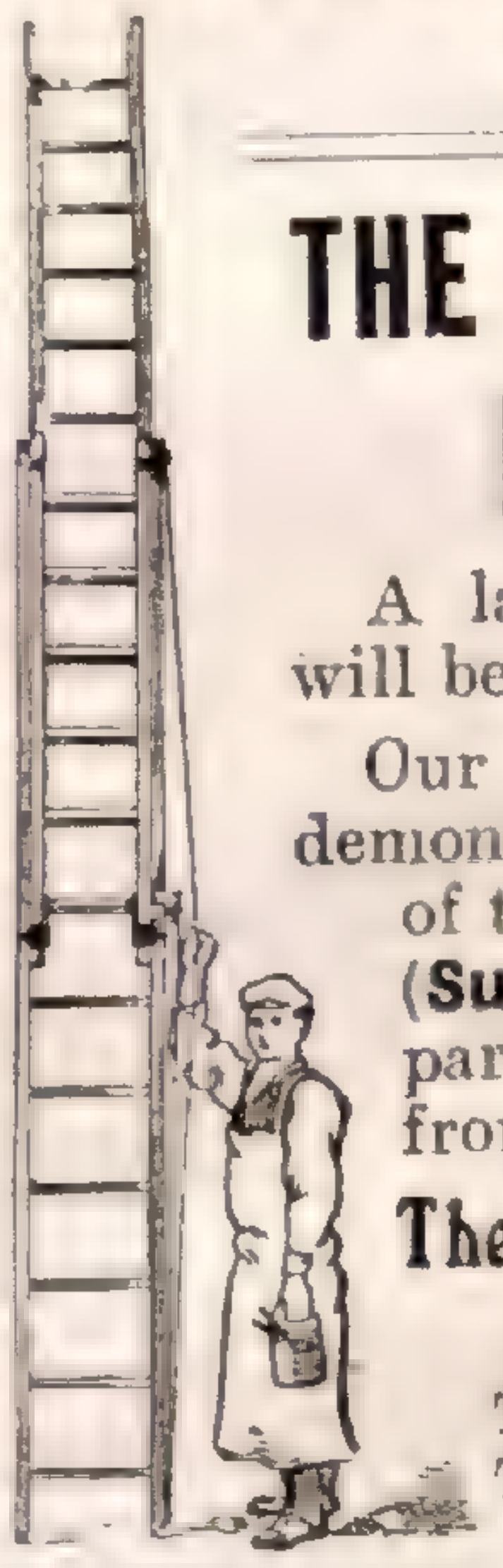

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and, as this occurs quite early, it is always a good plan to cover the ground occupied by eremuri with heather, or bracken, all the winter. If a careful watch is kept and a hand-light is placed over the young growth directly it pierces the soil, then little harm will result from frost or cold rains and snow. Such protection is especially necessary in the Thames Valley, where spring frosts are often so sudden and severe.

IRONWEED.—H. S. T., Bournemouth: I have a strong-growing perennial plant that bears purplish flower heads late in the autumn. It grows about 6ft. high, and has an abundance of rough green leaves. The name given me with the plant is evidently a popular one, and is Ironweed. I believe seeds were brought from the United States.—Ironweed is a title given to a large genus of composites, chiefly natives of North America. Very few of the several hundred known species are of any value for garden decoration, although two of them have some merit in the semi-wild garden. The botanical name of the genus is Vernonia, and the species referred to are V. prælta and V. novæboracensis. Your plant is most probably the latter.

DECORATIVE ALLIUMS.—G. C. M., Faversham: Although the genus Allium is chiefly notable for its economic value and the inclusion of the onion, shallot, leek, and garlic, I believe I saw some quite decorative species when in Italy a few years ago. Perhaps you will tell me if I am right; and, if so, give the names of those kinds that would be useful in a warm garden.—There are several species of alliums of considerable decorative value, but they are not commonly cultivated because of the onion-like odour emitted by the crushed or cut stems and leaves. The best are: A. neapolitanum, white; A. Moly, bright yellow, capital for the rock garden; A. cæruleum, blue, flowers in dense heads; A. nigrum, violet; and the newer A. Schuberti, lilac.

A FAILING DIPLADENIA.—J. B., Forfar: A gardener friend of mine is much grieved over the imminent loss of a fine Dipladenia Brearleyana, which has for many years covered the roof of a large stove, and won the admiration of all who have seen it in flower. At present it is almost destitute of leaves, and it is a very difficult matter to suggest a cause for the trouble. There are no insect pests present, but I send a few leaves and portions of stem for your inspection. The dipladenia is planted out, and over it is a stage for ordinary pot stove plants.—The leaves and stems sent show no signs whatever of insect attack, nor is there anything to suggest the careless use of strong insecticides. We believe the last sentence of your letter points to the source of trouble, and that the condition of the soil and roots is answerable for the collapse. It may be possible to save the plant by lifting and replanting or potting it (if our presumption is found correct), and pruning it moderately hard.

---

## NAMES OF PLANTS.

L. J., Harrogate.—1, Oncidium Marshallianum; 2, Odontoglossum ardentissimum; 3, Epidendrum variegatum; 4, Vanda teres.

T. W., Falmouth.—Jasminum revolutum.

C. F. G., Exmouth.—1, Lycium barbara; 2, Anchusa italica; 3, Allium Moly; 4, Cuphea emineus; 5, C. miniata.

M. P. S., Lynn.—1, Erica Cavendishiana; 2, Dipladenia boliviensis; 3, Polygonum Baldschuanicum; 4, Asparagus Sprengeri.

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Portrait.
Sir Harry J. Veitch, V.M.H., F.L.S.

Supplement.

The Royal International Horticultural Exhibition ... ... ... ... ... ... ... ... ... ... 1-20
Illustrations: Lilium myriophyllum; Odontoglossum eximium King George; Hydrangea Sargenti; A magnificent group of plants, chiefly with fine foliage; Begonia Princess Victoria Louise; Brasso-cattleya The King; A remarkably fine exhibit of Cinerarias, Gloxinias, etc.; A tastefully-designed Tudor Garden; An attractive arrangement of New Holland and other plants; A skilfully-constructed Pergola with Grape Vines, etc.; An effective Rock Garden; Calceolaria Bronze Age; A Shady Pool; The Chase Continuous Cloche; The "Gardeners' Magazine" Kiosk in the Lime Avenue; New Double-cylinder Knapsack Spray; New Cyaniding Machine.

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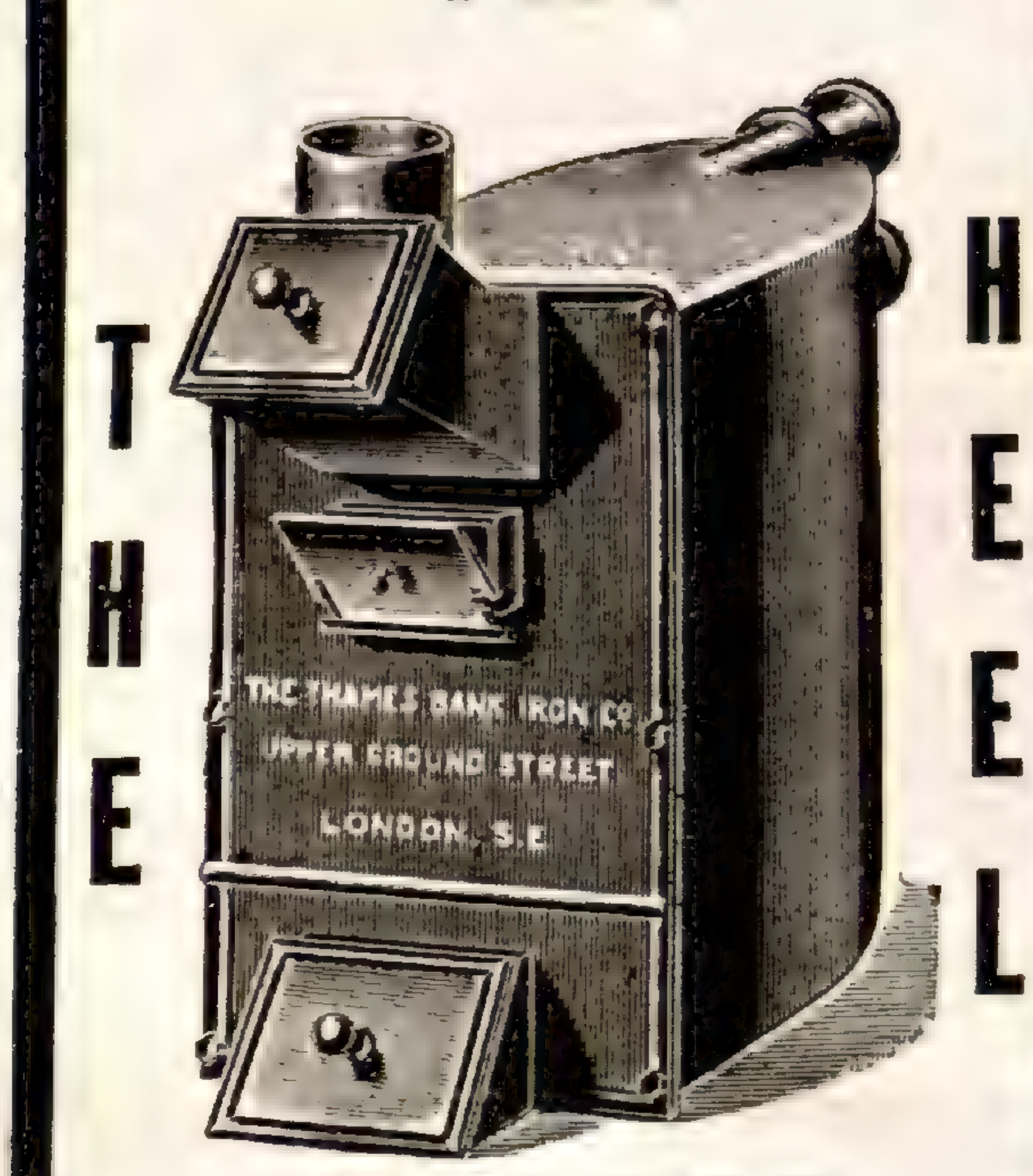

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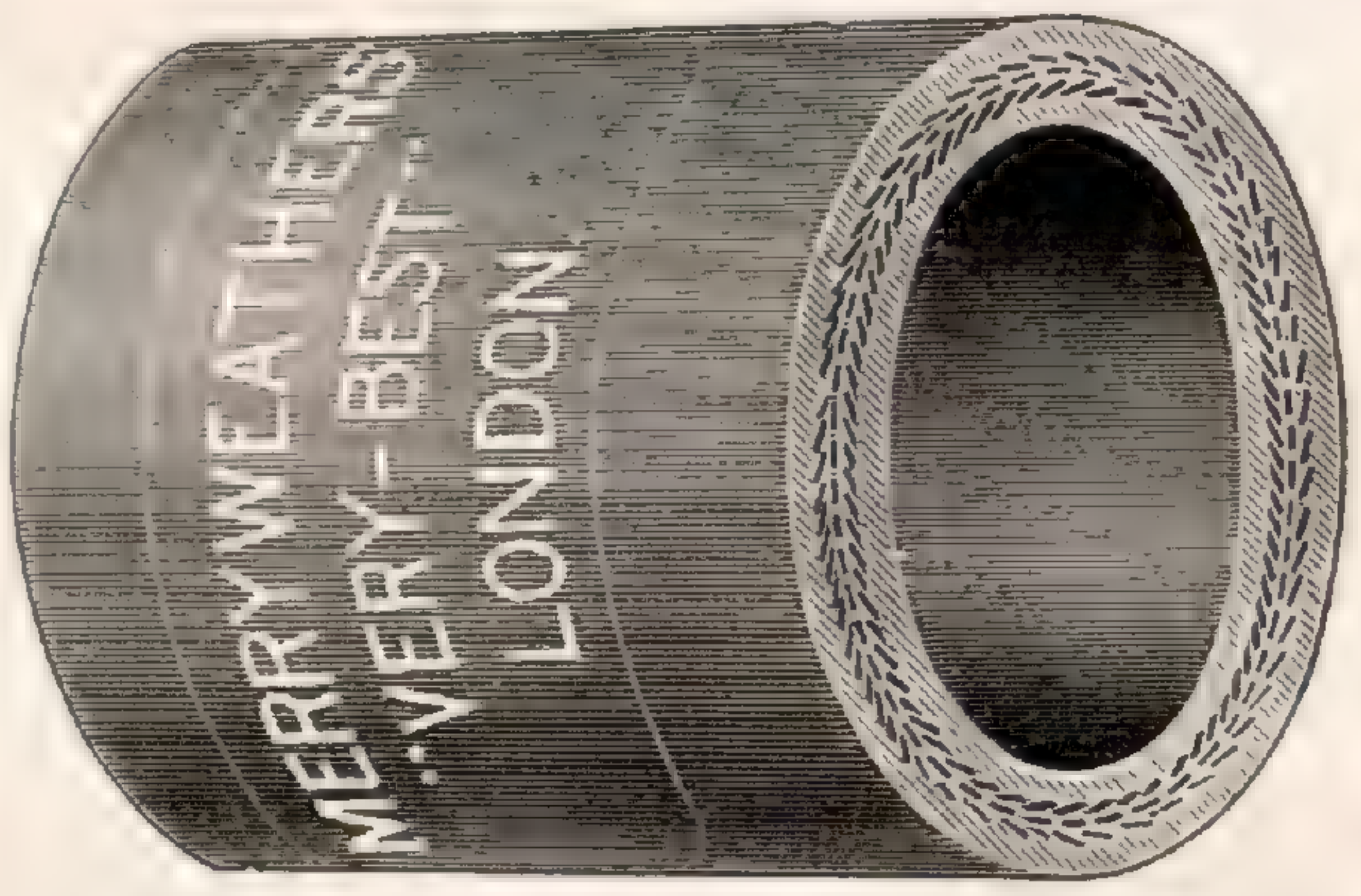

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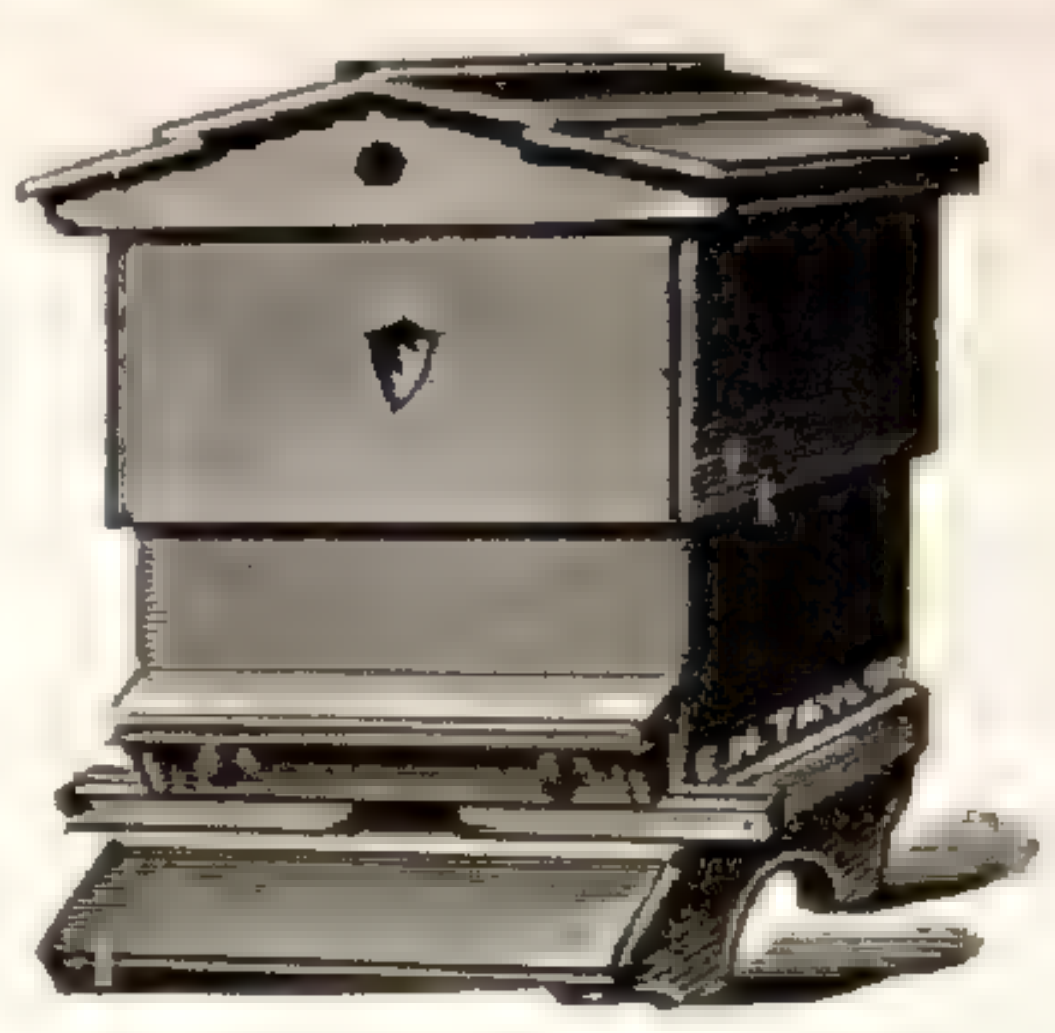

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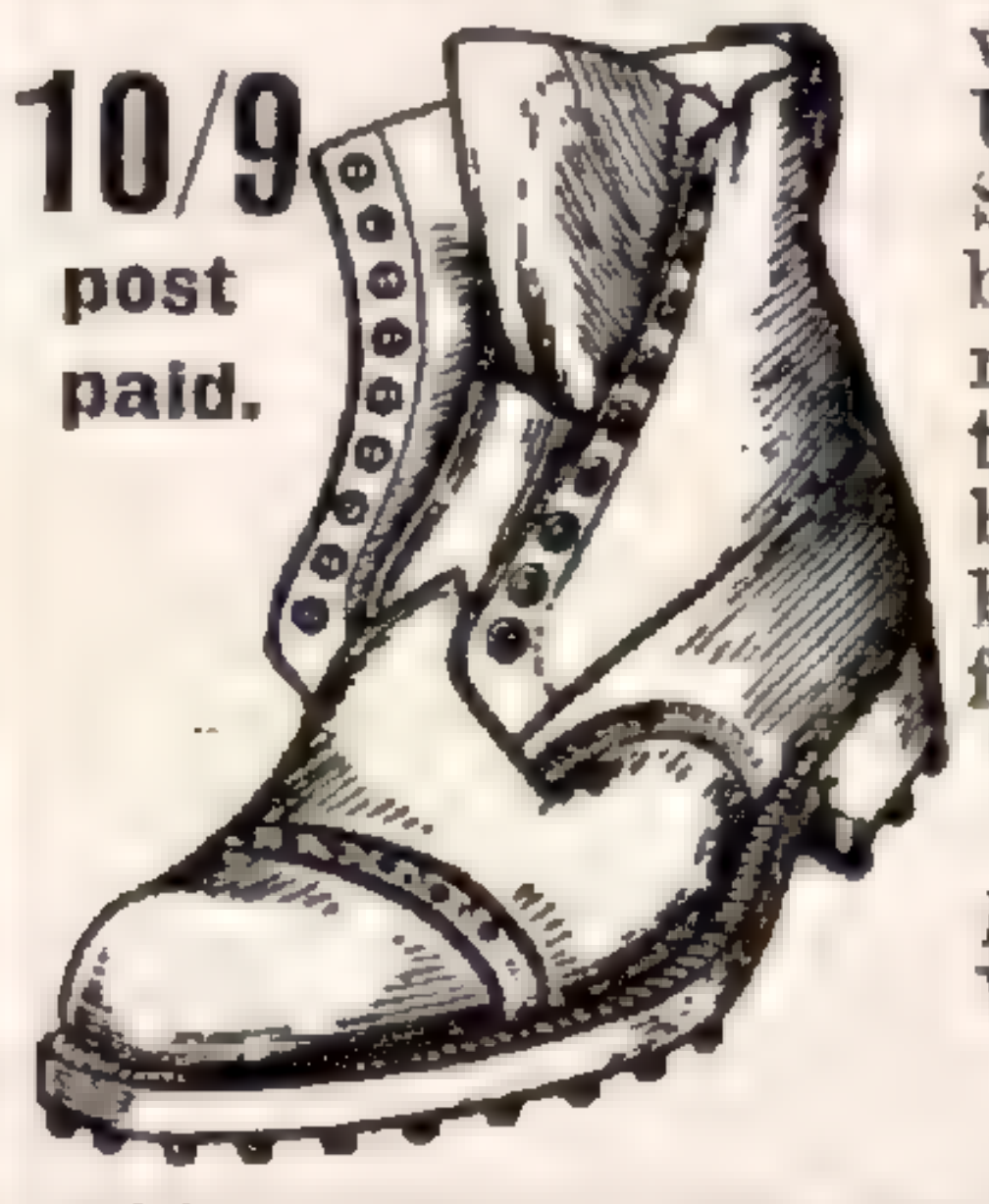

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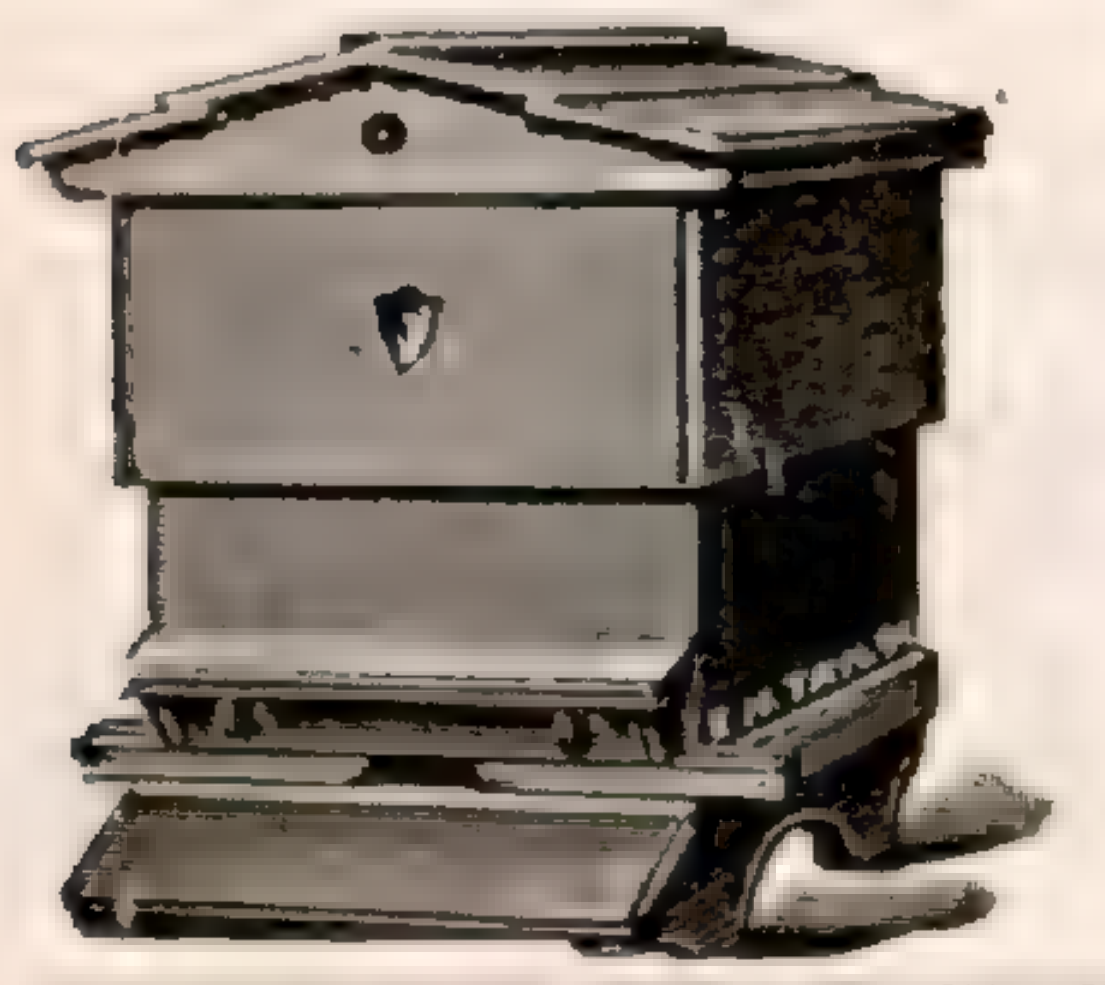

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VOL. LV.—No. 3,058. SATURDAY, JUNE 8, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Foliage.

When we consider the uniform nature of the function which foliage performs in the vegetable kingdom, namely, that of absorption and assimulation of the carbonic acid gas in the air with the salts derived from the soil, and supplied to it by the transmitted sap, it is a very wonderful thing that in the process of evolution it should have developed on such infinitely diverse lines. At this season of the year, particularly when we behold a widespreading verdurous landscape clothed with vegetation in all its pristine freshness, although distance may preclude discrimination of detail, we can still perceive a marvellous diversity in the tints of greens, browns, and other colours, and in the characters and habits of the masses of foliage which form the chief feature, though broken up here and there by stretches of pasture or cereals, or other humbler growths, which are none the less interesting as forms of foliage on different lines. In the nearer distance we may see the rocks coated, or even only stained, by the still humbler forms of the lichens and mosses which, by their minuteness, hardly claim to be foliage proper at all, though none the less is their primary function the same. The main tint, however, is green, the colour proper of the great agent, chlorophyll, which constitutes the one and only link between organic life and the vital influence of the sun, of which we have treated in former issues. This green, however, is very often masked by other tints, and in effect is also modified by the texture of the leaves themselves, so that in many trees and shrubs, especially evergreens, like the holly, ivy, and many conifers, it is so intensely dark as to present an altogether different aspect to the pale tints of the larches and other growths, which stands out as gleams of gold and admirable counterfoils, against the backgrounds of their more sombre fellows. Even within the same genus, as particularly in the maples, we find innumerable bright tints of warm reds, which our Japanese friends have so enhanced by selection that a collection of maples may be almost as brilliant as so many floriferous shrubs, while in another direction, that of form, their diversity of cutting is extreme. A closer examination, indeed, of every species, or even variety, of plants shows such diversity to be general. Apart from the varied habits concerned, we find the foliage, the individual leaves, to be distinctly characterised, ranging from the simple undivided leaf, varied, however, considerably in outlines, from mere needle-like ones in the pines to huge ones in the banana, through serrate forms to much-divided ones, and, in short, ranging through every conceivable gradation of type from the grass blade to the lace-like frondage of the finest fern. In make and texture, too, the foliage varies immense, from the diaphanous to the tough and leathery, from the water-borne vallisneria, whose very veins are so transparent as to display the circulation of its sap, to the tough, leathery, opaque foliage of the saxifrages and sedums, portulaceas, mesembryanthemums, and the general host of xerophils or drought-loving plants, who find congenial homes in parching deserts, these culminating in the cacti and euphorbias, in which the foliar function is really delegated to the leaf stalks to ensure the greatest economy of transpiration of the scarce, but all-essential, water supply. The charm of brightly-coloured foliage, as a decorated adjunct to brilliancy of bloom, has been so highly appreciated by horticultural selective breeders, that Nature has been largely transcended, and it is among highly-cultivated plants that we find the most brilliantly-coloured foliage. Caladiums, for instance, with their large, and yet delicate, leaves of the most delicate rosy tints, veined and mottled with white or green; crotons of gleaming yellow, orange, and gold, and of the most quaint and contorted shapes to boot; while the coleus, in the hands of the selector, has developed coloured leaves often of the most beautiful patterns and designs on extremely varied and brilliant lines, no two plants being probably alike unless propagated by cuttings, to which process they lend themselves freely. Apart from all these wide variations in colour and make, each species has its characteristic form of veining, i.e., the arrangement of the delicate system of main and minor ribs, which perform the double function of supporting the cellular tissue in the leaves, and supplying the cells with material from below. No two leaves, even in the same plant, will be found identical in this respect, although in monocotyledonous plants they run on much simpler and parallel lines, instead of being netted, as in the case of those of dicotyledonous plants.

PROFESSOR FREDERICK KEEBLE, Sc.D.

**Professor F. Keeble, Sc.D.,** Dean of the Faculty of Science of University College, Reading, has, by virtue of his commanding ability and his combining a thorough acquaintance with the practical aspects of every-day life with scientific attainments of a high order, contributed in no small degree to the remarkable success achieved by the college in making Reading famous as an important educational centre. We have on more than one occasion referred to the remarkable results that have been obtained in the teaching of practical and scientific horticulture in the fine garden attached to the University College; but that, it need hardly be said, is only one branch of its activities. It is, however, of special interest as evidence of the completeness of equipment, and the thoroughness of the work that is accomplished in all the departments, and to Professor Keeble belongs much of the honour that is reflected by the high position that this comparatively young college occupies as a centre of university education. We have pleasure in giving Professor Keeble's portrait and making brief reference to his position as a scientist, because of the great value of the work he accomplished as a member of the Science and Education Committee of the Royal International Horticultural Exhibition during the somewhat long period over which the activities of that body extended. Professor Keeble not only devoted a full share of attention to the arrangements that were made for holding conferences and demonstrating some of the scientific aspects of horticulture, but he exhibited a series of primulas which must have been of much interest to gardeners and horticulturists generally who are devoting attention to Mendelism in connection with plant improvement. This contribution of primulas certainly appealed to the section of the jury who were entrusted with making the awards in the scientific part of the exhibition, for they awarded Professor Keeble one of the two Veitch Memorial Cups that were placed at their disposal.

**The Kew Palace Linden.**—A link with the past, when Kew was a Royal domain, disappears by the removal of the Kew Palace linden. Growing on a mound to the left of the entrance gates to Kew Palace from the riverside, the tree was described when in its prime, as a good specimen of singular beauty and great height. The girth of the trunk at 4ft. from the ground was 18ft. 7in. The tree is said to have been a favourite haunt with the children of George III. when "pursuing their youthful studies." It is, perhaps, for this reason that in some books the tree is referred to as the "King's Lime." During a heavy storm on January 27, 1901, the tree suffered severely, but being of historic interest, the portion remaining was made to look presentable with the aid of a few bricks and cement. As evidence of the life left in the old tree two or three vigorous young shoots developed. It was one of these growths, says the "Kew Bulletin," which, coupled with the attack of fungus and decay of the heartwood, finally broke up the trunk. A strong wind during March of this year blew off one of the strongest growths, this unfortunately taking with it at least one-third of the trunk. As the tree was thereby reduced to a complete wreck, the remains were cleared away on April 3 and burned.

**Sir Harry J. Veitch.**—With reference to the Knighthood conferred upon Sir Harry J. Veitch, Sir Trevor Lawrence writes: "I should be glad if you would allow me, as President of the Royal Horticultural Society since 1884, to offer to Sir Harry Veitch, on behalf of the garden lovers of the kingdom, our warm congratulations on the honour conferred upon him. Wherever gardens are valued—and where in Great and Greater Britain are they not?—the name of Harry Veitch stands in the very first rank of those we honour and esteem. This is so, not only on account of his never-tiring labours to promote horticulture, but in recognition of his and his firm's strict adherence to the best traditions of commercial dealing, of his personal qualities, and of his energy, enterprise, and success in every branch of horticulture and in the introduction of valuable trees, shrubs, and plants for the embellishment of woods and gardens. There is not, moreover, a poor member of the garden world who is not grateful for Sir Harry's unremitting labours on behalf of garden charities—nor is there a gardener in the Empire who will not wish him long years to enjoy an honour so worthily bestowed."

**Royal International Horticultural Exhibition.**—According to the official figures the total number of visitors to the exhibition during the nine days over which it extended was 176,889, and the attendance on the several days was as follows: Wednesday, May 22, 4,551; Thursday, May 23, 11,714; Friday, May 24, 15,485; Saturday, May 25, 18,010; Monday, May 27, 20,453; Tuesday, May 28, 39,522; Wednesday, May 29, 41,154; Thursday, May 30, 26,000. The amount taken at the turnstiles exceeded £10,000, and we learn on good authority that the profit will be about £4,000.

**High Prices for Asparagus.**—In accordance with the usual custom, an auction sale was held at the close of the annual asparagus show at Evesham, and high prices were obtained for the winning bundles. The bundle of 100 sticks, which weighed 18lb. 4oz., and obtained for the exhibitor the challenge cup, was sold for £10 10s., the purchaser being Mr. Barnett Emanuel, of Covent Garden, who bought the champion bundle last year for £10. Mr. Emanuel was also the buyer of the heaviest bundle in the show, which weighed 21lb. 4oz., and realised £6.

**Use of Electricity in Plant Culture.**—Professor J. H. Priestley, of the Leeds University, has during the past few years devoted much attention to the investigation of the potential uses and value of electricity in the cultivation of ornamental plants and useful crops, and his lecture the other day at Leeds was of much interest. In his opening remarks, Professor Priestley said the knowledge of the subject was not far enough advanced for electrical energy to be practically applied either in horticulture or agriculture. It is, however, he affirmed, a subject that seems to offer opportunities to the experimenter of ultimately arriving at new methods and new ideas in cultivation. He explained by the aid of diagrams the system of overhead electrical discharge, by which it is believed possible to supplement to useful purpose the natural supply of energy which plants and crops derive from the sunlight. Very little current was needed, but the enormous pressure of 100,000 volts was required. At Evesham experiements had been conducted over some 20 acres of ground bearing crops of wheat, strawberries, mangolds, and potatoes. The results obtained were, on the whole, decidedly satisfactory. The wheat, measured at so many bushels to the acre, showed an increased yield of 29 per cent. in favour of the electrified crop, as against the non-electrified, while the increased yield in mangolds was 18 per cent. The experiment with strawberries was even more striking. The area electrified was only half as big as that which was not, and yet, in the first stages of the experiment, the smaller electrified area yielded 56lb. of fruit, as compared with only 33lb. from the larger one. This increase was unfortunately not maintained, and the final aggregate increased yield was only one of 25 per cent. The experiments made with plants growing under glass had not been so successful, owing to the current being obstructed or diverted by the hot-water pipes and the glass. Several years' work would be needed to demonstrate the practicability or otherwise of the method in this direction.

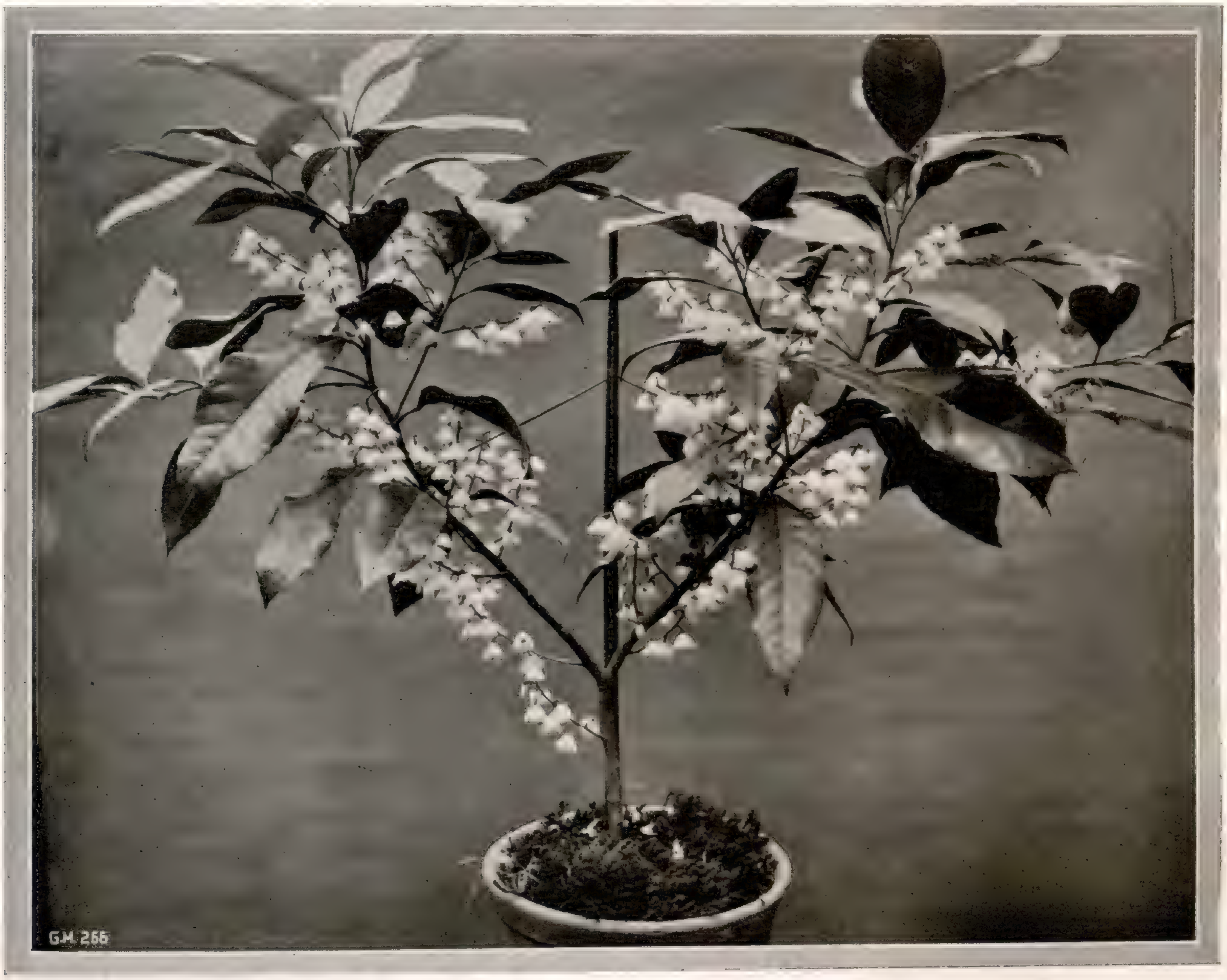
**Portrait of the Late Sir Joseph D. Hooker for Kew.**—To Mr. C. P. Hooker, Dollarward House, Cirencester, Kew is deeply indebted for the gift of a photogravure reproduction of a portrait of his father, the late Sir J. D. Hooker, as a young man. The original, a crayon drawing by the late G. Richmond, R.A., was executed in November, 1855, and is a companion picture to a similar portrait of the late Dr. T. Thomson, the companion of Sir Joseph during the later portion of the travels described in the famous "Himalayan Journals." The two friends returned to England in 1851, and during the next three years were conjointly engaged in the preparation of their "Flora Indica," the first and only volume of which was issued in 1855. The portraits mark the close of this period of companionship and collaboration. That of Thomson was presented to Kew by Sir Joseph many years ago, and it is pleasant to reflect not only that Kew now possesses a vivid likeness of the brilliant author of the "Himalayan Journals," but that portraits of the joint authors of the "Flora Indica" hang side by side in the building in which their work was done.

**Fruiterers' Cup for Messrs. Thos. Rivers and Son.**—In addition to winning a Large Gold Medal for their fruit trees in pots, a Gold Medal for citrus trees, and several Silver-gilt Medals in competition, Messrs. Thomas Rivers and Son, Sawbridgeworth, were awarded a fine cup, offered at the Royal International Horticultural Exhibition by the Worshipful Company of Fruiterers, for their excellent display of pot fruit trees.

**Exhibition of Rhododendrons at Regent's Park.**—The exhibition of rhododendrons now being held by Messrs. John Waterer and Sons in the gardens of the Royal Botanic Society, Regent's Park, is extensive, and of great merit, and while affording a rich feast of flowers, fully maintains the traditions of the firm.

**The Large Larch - Sawfly** (Nematus Ericksoni) was the subject of an interesting paper contributed by Dr. R. Stewart MacDougall to a recent meeting of the Royal Society of Edinburgh. The larvæ of this sawfly, which was first noticed in numbers some years ago in the Lake district, have also been found at work in Wales, and more recently in Perthshire and Forfarshire. Dr. MacDougall stated that in breeding out adults from cocoons collected in spring, he obtained 165 females to one male. Hewitt had previously recorded two males to 298 females. To test this suggested parthenogenesis, seven newly-issued virgin females were placed, on May 26, 1910, on a young larch, which was potted and so confined that no other insect had access to it. By June 12 three were dead, and in a few days the remaining four had died. Although there was no reasonable doubt as to the sex, the dead insects were dissected, and proved all to be females. Eggs had been freely laid, and through June the caterpillars which hatched from them fed greedily. Examination on July 3 showed two caterpillars on the soil of the pot, and these had spun their cocoons by July 7. On July 17, the soil was sifted from the pot, and altogether 47 cocoons and five dead caterpillars were found. The cocoons were kept over the winter in suitable conditions indoors. On April 21 three females issued, and by May 8 fourteen other adults—all female. In five other similar experiments with virgin females, eggs were freely laid and caterpillars hatched.

**Presentation to a Dumfriesshire Gardener.**—Mr. John Johnstone, gardener to Mrs. Hunter Arundel, at the fine old mansion of Barjarg Tower, Dumfriesshire, being about to retire after the long service of forty-three years with the family; was presented with a testimonial the other day as a token of the respect and esteem in which he is held by his friends and neighbours. Mr. J. M'Kie occupied the chair, and Mr. R. Clark, forester on Barjarg Estate, made the presentation in highly appropriate terms, in which he eulogised Mr. Johnstone's character and abilities as a gardener. He handed over the presents, which consisted of a substantial sum of money for Mr. Johnstone, and a handsome silver teapot for his wife. Mr. Johnstone made a suitable reply in acknowledgement, and referred to the kindness and consideration always shown by his employers and his friends.



ELÆOCARPUS CYANEUS.

A beautiful Australian shrub easily grown in a warm greenhouse. It was introduced in 1803, and has neat, lanceolate, reticulately veined leaves. The drooping, graceful, white flowers, each with a little cluster of yellow stamens, are carried on racemes produced from the axils of the leaves. The species was figured in the "Bot. Mag." t.1737, in June, 1815. The white flowers are followed by blue olive-like fruits. Under the name of E. reticulatus (a synonym), this gained an F.C.C., R.H.S., June 4, and was shown by Messrs. Jas. Veitch and Sons, Chelsea.

**R.I.H.E. Awards.**—In the list of special awards published in our issue of June 1, Messrs. C. P. Kinnell and Co., Lim., are credited with having been awarded a silver-gilt medal for their exhibit at the Royal International Horticultural Exhibition. We are glad to learn that they received the more appropriate award of a gold medal. Messrs. R. H. Bath, Lim., were awarded the Van Waveran silver cup for their fine collection of British-grown tulips. The Potash Syndicate were awarded a silver medal for their exhibit. Our list was compiled from information supplied officially.

**American Gooseberry Mildew.**—On the 25th ult. a local fruiterer was summoned at Malton for a contravention of an Order of the Board of Agriculture in failing to observe the conditions of a licence for the removal of fifty currant bushes from Wisbech. As the garden from which they were obtained had been scheduled, the bushes should have been grown for a year in the buyer's garden, whereas some were sold. A technical case was admitted, and fine of 10s. was imposed.

**Fareham Sweet Pea Society** is the most recent addition to the list of organisations formed in the interest of sweet peas. At a meeting held a few evenings since, it was decided to form a sweet pea society for Fareham, and Colonel Mathews was elected president, and Mr. M. Colan, hon. secretary. The date of the show was fixed for June 4.

**Mr. W. Gelder,** who has been the hon. secretary of the Knaresborough Horticultural Society during the past six years, has found it necessary, through advancing years to retire, and the other evening the committee presented him with a silver inkstand as a mark of their appreciation of the splendid service he had rendered the society during the period of his office. Mr. A. A. Gibson, who presided, and made the presentation, testified to the admirable manner in which Mr. Gelder had performed his duties, more particularly with regard to the collection of subscriptions, and to his unvarying courtesy.

## HORTICULTURAL EDUCATION.

There is always a certain stamp of authority about anything that appears in the "Times," no matter whether that staid journal is discussing a question of Imperial importance or such a commonplace topic as the education of a gardener, and therefore the article on the latter question which recently occupied the columns of the "Times" has doubtless been read with interest by a good many members of the horticultural profession.

Reading between the lines of the article referred to one gathered the impression that it was largely based on what was said at the recent Conference on Horticultural Education, which took place in connection with the International Exhibition, and I quite agree with the "Times" that the tendency of the Conference was rather to advertise existing methods than to formulate any general policy that might be adopted in this country.

The "Times" grades gardeners into three sections: (1) the man working for an employer, (2) the fruit grower or market gardener conducting a business of his own, and (3) the horticultural expert—teacher or investigator. It is not quite clear where the nurseryman comes in, but perhaps under the second heading, since he does not answer to the description of either of the other two.

Referring to the education of the three grades referred to above, the "Times" seems to think that the most difficult is that of the working gardener, which is not an unreasonable suggestion when one considers how many different classes of working gardeners there are, ranging from the man who includes boot and knife cleaning amongst his duties to the individual who is head of a pretentious gardening establishment. After describing at some length what the education of the working gardener ought to consist of, the "Times" contends that it can best be obtained during a long apprenticeship in a garden under a gardener where up-to-date methods are employed, and where opportunity is given for a boy of improving his knowledge by study or attending classes or lectures which may be available in the district. Unless I am mistaken, the first part of the suggestion is only a case of history repeating itself, and no better gardeners were ever trained than in the old days of the apprenticeship system before the door of gardening admitted all and sundry, and before so many so-called gardeners were made by a method than can only be called drift. It is this custom of pushing every Tom, Dick, and Harry who obtains employment as a boy in a garden, to become a gardener, that is so fatal, and it only ends in a futile attempt to fit round pegs into square holes. As for scientific knowledge, no matter how desirable it may be to the working gardener, I am afraid he does not get much encouragement to acquire it; in the first place, because the possesssion of knowledge other than that which is practical does not assist the working gardener much in the matter of salary, and there are actually employers who are averse to employing what may be described as educated gardeners on the grounds that the latter are too good for their rquirements. Until employers give distinct preference to men who have those extra qualifications which the "Times" suggests, there will be little encouragement for young gardeners to acquire them. I might add that there is another important essential to the making of a successful gardener that is not altogether a matter of education. The world calls it force of character, or the capacity to get on, and it has been the means of carrying men who have never had any facilities for education from the lowest rung of the ladder right to the very top. There are men who will get on under any circumstances, though they may not be endowed with the heaven-sent gift which men call genius, and these are the individuals who will benefit most by any improved methods of education or training. Any improved methods then, will be welcomed, even if they are only a means of assisting those who possess the capacity for getting on.

For the young market gardener, the "Times" suggests that he should begin at a horticultural college, and then go for at least two years to a thoroughly successful grower, and in his training he should get hold of as much science as will enable him to grapple with problems of manuring, insect or fungus attacks, and so forth, but the article adds this scientific knowledge is no use unless it is read into commercial and business methods. I agree with this, and take no exception to the suggestion as a whole, but I should put the training in a commercial establishment first, and if the college training is desirable, it had better come after, when the young man would be at an age when he would be more likely to appreciate the advantages it had to offer him.

In the matter of teachers, the "Times" deplores the absence of really well-trained efficient horticultural experts. The article enlarges on the shortcomings of the men who were made teachers and lecturers by County Councils some years ago, but without giving these very men credit for having done more to advance rural horticultural education than anybody else, simply because they were practical and experienced, and by these qualities did more to win the confidence of the people whom they were sent out to teach than any college graduates could ever hope to do. Perhaps these early pioneers in horticultural education lacked polish, and were not so grammatical as they might have been, but they possessed common sense, they understood the people they were teaching, they have obtained results, and I question if there is any class of rural teacher who has more to show for his work than the horticultural instructor. All honour, then, to the men who were first in the field in the matter of horticultural teaching. They had the spade work to do, it was for them to break down the local prejudices which they would never have done if they had not been practical, and they have paved the way for the type of lecturer that the "Times" suggests.

According to that authority, he will certainly want a good deal of training. He must first be an efficient practical horticulturist, with experience and knowledge gained under the best and widely different conditions. Added to this he should graduate in science, and his knowledge of chemistry, botany, and zoology should be acquired by systematic work in lecture-room and laboratory. Thirdly, he should be trained in public speaking or lecturing, and I would add, what is as equally important as anything else, he should have a knowledge of human nature.

The "Times" thinks that the demand for men trained on the above lines should be considerable, and their influence on the progress of the horticultural industry would be most valuable. Just so, but I am reminded here of a story I heard from the lips of a well-known old Yorkshire gardener. The authorities of a certain borough were contemplating the appointment of a superintendent for their parks and public gardens, and one of the members of the Corporation, a tradesman, by the way, was favouring the old gardener with his opinion as to the qualifications the man appointed must possess. He went on to great lengths, and in reply the old gardener said: "Yes; it would be a good thing to get a man with all those qualifications; I hope you'll be successful, and when you've got him, I should advise you to have him 'stuffed,' because I'm quite sure you'll never see another like him." If there is any parallel between this story and the ideal horticultural instructor of the "Times," perhaps the reader will see it, but it is not the easiest matter in the world to get or train men whose work and recommendations, to quote the "Times," must satisfy both the scientific and the practical man, and his qualifications and experience must enable him to speak with authority to both, apart from being trained in public speaking. When men possessed of all these qualifications have been trained and are forthcoming, it is to be hoped that the salaries will be better than the miserable £120 a year that some education authorities offer when advertising for a horticultural lecturer, minus, of course, house rent and other perquisites that the majority of head gardeners enjoy.

H.

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**Hydrangea Mdlle. E. Mouilliere.**—This is a white-flowered form of the common hydrangea, being of equally free growth, and bearing large massive heads of flowers. First shown in 1910, it is now extensively grown. Well over thirty years ago the variety Thomas Hogg made its appearance, and is still much grown, though its position is now assailed among varieties of this tint by the newer form.—S. W.

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## AMONG THE ALPINE FLOWERS.

> "Never, ah, never,
> Since Eastward in Eden God planted a garden,
> Was ever a garden that blossom'd like ours,
> With dreams from the shadows
> Of wind-winnowed meadows
> Haunting the alleys, and sun on the flowers."
> —Laurie Magnus.

Few words better express the thoughts in the mind of the lover of the alpine flowers in a season such as this, when, probably the rock garden is more full of beauty than at any other time. Yet it is hard to draw a comparison beween the seasons of the alpine flowers as we know them, for they keep coming and going, one succeeding another, in loveliness of flower or in charm of leafage, until we feel that we echo and re-echo the words of the poet each season of the year. With the writer it is a bountiful year of flowers, and never before has he seen his alpine plants more beautiful than now. Even after the rich feast of beauty shown at the great Chelsea Show one feels glad indeed of one's own flowers, with all their glowing of chaste beauty in the beginning of the "merry month of June." From among the array of beauties let us seek to choose a few for notice, not as being the best, but as giving points of beauty worth recalling and recording.

### Ramondia pyrenaica alba.

Not new, by any means, but still scarce is the real white variety of the Pyrenean Rosette Mullein, Ramondia pyrenaica alba. Very beautiful is it now, with its pure white flowers on the deep green wrinkled leaves, which look so well in a crevice of the rock garden. The true white variety is more beautiful than some of he plants sold as "white," and my plants have more than a passing interest to me, seeing that they serve as a reminder of that true lover of flowers, the late Max Leichtlin, who sent me this ramondia some years ago. For this and other rosette mulleins there seems no better place than the north side of the rock garden or a wall with plenty of soil behind it and with a similar exposure. It is a lesson in cultivation to see how quickly these ramondias will shrivel up in continued dry weather, and with even a moderate exposure to the sun. Coming, as they do, from the crevices of cliffs shaded from the sun, these flowers hate the full sunlight and the heat it generates on the stones. Lovely as are the newer ramondias, there is nothing more beautiful than the virgin beauty of this white variety of R. pyrenaica.

### Oxalis enneaphylla rosea.

Of all the wood sorrels for the rock garden Oxalis enneaphylla is the most beautiful. The type, with its charming silvery leaves and satin-like white flowers, with just a tinge of blush about them, is a diamond of the first water. It is a flower which has been in my garden for years, and now it must have a companion in the exquisite variety rosea, which received an Award of Merit at the International Horticultural Exhibition. The type and this variety form a duet of true harmony indeed, and we cannot but rejoice in their loveliness. It is a true rose, this variety, and is one of the most charming of all the wonderful race of flowers we call the oxalises, lovely indeed as most of them are, though some are not free from a somewhat aggressive magenta tone. O. enneaphylla rosea is absolutely devoid of this, and is a flower to be coveted and grown in any good place in the rock garden, though it apparently prefers some shade with us.

S. Arnott.

## NEW PLANTS.

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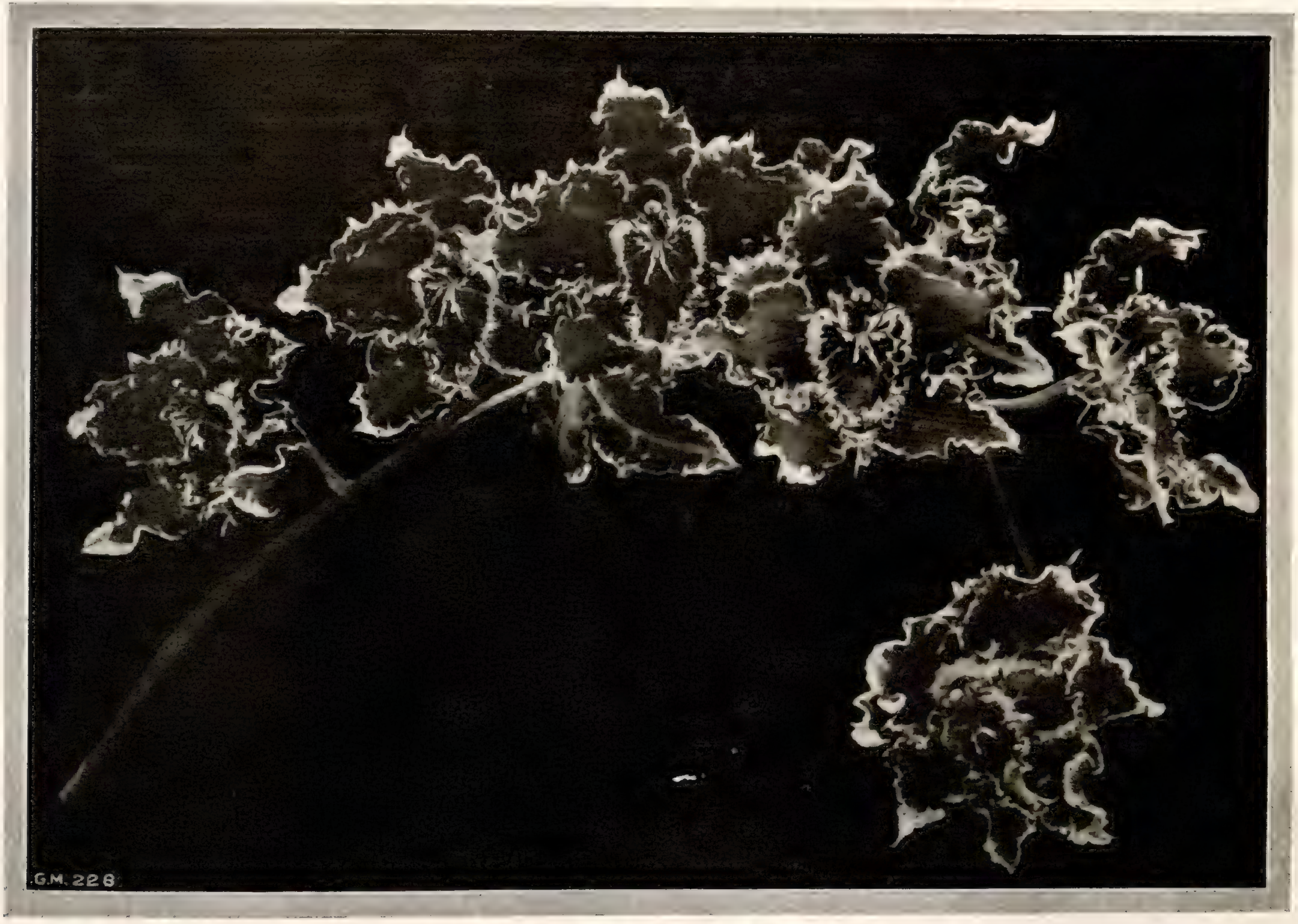
### CYMBIDIUM WOODHAMSIANUM FOWLER'S VAR.

A very fine cymbidium, derived from C. eburneo-Lowianum crossed with C. Lowianum. It has large flowers and a drooping spike. Sepals and petals are of a bright greenish or fawny-yellow tint, almost an apricot-yellow shade. The bold lip has a white base, some red spots at the side, and the characteristic semi-circular red-brown mark on the apical lobe. This orchid was figured in our issue of May 18, p. 391. F.C.C., R.H.S., May 14. J. Gurney Fowler, Esq. (gardener, Mr. Davis), Glebelands, South Woodford.

### LÆLIO-CATTLEYA APOLLO.

The parents of this bright hybrid are Cattleya Schroderæ and L.-c. Warnhamensis.



ODONTOGLOSSUM HER MAJESTY.
Flowers large, deep red-purple on a pale rose ground. F.C.C., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

The flowers are of fair size with soft nankeen yellow sepals and petals, and a rosy lip that has an orange-yellow disk and throat of deep rose-purple veinings. A.M., R.H.S., May 14. C. J. Lucas, Esq. (gardener, Mr. Duncan), Warnham Court, Horsham.

### LÆLIO-CATTLEYA LUSTRE VAR. LAVINGO.

A large-flowered and very beautiful hybrid that attracted a great deal of attention. It has amber sepals and petals, and an intensely rich crimson-purple lip. F.C.C., R.H.S., Int. Hort. Ex., May 22. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester.

### LÆLIO-CATTLEYA BEDOUIN.

This splendid hybrid from Lælio purpurata and L.-c. Hyeana, has been shown previously, but never has such a splendid specimen been seen as the one carrying twenty-three flowers, exhibited by Lieut.-Colonel Sir G. Holford in his superb group of orchids at the International Horticultural Exhibition at Chelsea.

### TROPÆOLUM ALBIFLORUM.

A slender South American climber with an abundance of tiny five-lobed leaves of a light grey-green colour. It flowers freely, as shown, and the blooms are pinkish-white with a pale yellow base. A.M., R.H.S., May 14. Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Great Warley.

### PETUNIA BROWN'S PURPLE.

This very fine single variety has unusually large blooms, and these are of very rich and vivid purple colour. A.M., R.H.S., May 14. Messrs. W. and J. Brown, Peterborough.

### PHYLLOCACTUS COOPERMANNI.

A beautiful hybrid between P. Ackermanni and P. Cooperi. The large flowers are vivid scarlet with purplish flushings, and as they measure about eight inches across, and have an effective central group of creamy stamens, they are most effective. A.M., R.H.S., May 14. A. Worsley, Esq., Mandeville House, Isleworth.

### ODONTIODA MRS. F. M. OGILVIE.

This showy orchid is the result of crossing Odontoglossum amabile Royal George with Odontioda Vuylstekæ. The rounded blooms are of fair size, reddish, with deep rose markings, and veins and margins of white. The white-tipped lip has a golden crest and base. F.C.C., R.H.S., Int. Hort. Ex., May 22. F. Mentieth Ogilvie, Esq. (gardener, Mr. Balmforth), The Shrubbery, Oxford.

### ODONTIODA BRADSHAWIÆ VOGELZANG.

A bright and beautiful orchid with large rounded flowers, the colour being rich red on a soft rose ground. A.M., R.H.S., Int. Hort. Ex., May 22. Mons. F. Lambeau, Brussels.

### ODONTOGLOSSUM HER MAJESTY.

A description of this wonderful odontoglossum appeared in our issue of June 1. The brilliant and deep red-purple colouring of the flowers attracted a large amount of attention. An illustration appears in the present issue. F.C.C., R.H.S., Int. Hort. Ex., May 22. Messrs. Charlesworth and Co., Haywards Heath.

### CEREUS AMECAENSIS.

Another beautiful succulent plant, and one that appeared not unworthy of a First Class Certificate. We believe it was found near Ameca in the Mexican province of Jalisco. It has tall, slender growths, somewhat like those of some of the species of phyllocacti. The flowers are exquisitely beautiful, large, and pure white. A.M., R.H.S., May 14. A. Worsley, Esq., Mandeville House, Isleworth.

### MILTONIA HYEANA VOGELZANG.

This handsome variety has ivory-white flowers, the big spreading lip having a distinct yellow base or disk.

### PYRETHRUM QUEEN MARY.

We have previously described this long-stemmed double pink perennial pyrethrum, and now give an illustration of this splendid variety. A.M., R.H.S., Int. Hort. Ex., May 22. Mr. G. W. Miller, Wisbech.

### CARNATION WODENETHE.

This fine pure white perpetual carnation gains in popularity. Its large, substantial, fragrant, and fringed flowers are of great beauty and usefulness. A.M., R.H.S., April 16. Messrs. W. Wells and Co., Merstham.

## VIVIPAROUS FERNS.

In a general way, most of the plants of higher organisation are viviparous in the sense that the buds seated in the axils of the leaves are really individuals, capable of self-development if removed from their place of origin and installed under conditions enabling them to form roots, or, as in grafting, to obtain nourishment otherwise. The term, however, is usually applied to cases where young plants appear as outgrowths on sites not usually occupied by buds, as in the case of Asplenium bulbiferum, the fronds of which develop a profusion of youngsters which break out from the actual surfaces of the subdivisions, and often attain a size while still attached, which permits them to bear a second generation. This is an extreme case, and as a familiar illustration can hardly be excelled. Many of its nearly related species do the same thing, and it has been remarked that, being this endowed with extra reproductive power in this direction, the spores, though abundantly produced, rarely yield plants.

This viviparous character in its latent form is much more common among ferns than flowering plants, but in the latter we have it, nevertheless, in various types, the strawberry, for instance, and any similar stoloniferous grower, is practically viviparous in so far that it bears well-defined youngsters at the nodes of its stolons prior to their rooting, and in such cases as Sedum soboliferum, we see a quite different type, its little globular offspring being furnished with a root or two, and then sent rolling in all directions to establish themselves on their own account.

Returning to ferns, which, as we have said, present this phenomenon more frequently than other plants, we find many examples of viviparousness pure and simple, some specific and some varietal. Thus among the Woodwardias, W. radicans bears one or more young plants near the end of each frond, and these grow and develop actual roots until their weight brings them in contact with the soil, and enables them to root therein and take a start for fresh strides, a gigantic imitation of the tiny so-called Walking Fern (Camptosorus rhizophyllus), which acts precisely similar. Woodwardia orientalis, however, has its fronds in favourable situations literally covered with little plants produced from surface buds, and so lightly attached as to be easily rubbed off, when they fall parachute fashion to the ground, and so obtain their chance of an independent career.

Many of the Shield ferns (polystichum) bear plantlets in more or less profusion in the axils of their sub-divisions, these under natural conditions being borne to the ground when the frond has run its seasonal course, and decays at the base. A considerable number of varieties of this family, not reputedly viviparous, yet bear one or more such bulbils in the axils of the two lowermost pinnæ. Several forms of Lastrea montana do the like, L. m. Barnesi and L. m. folifera, to wit, two rare forms. An elongated type of Asplenium fontanum known as Asplenium f. refractum bears similar bulbils. Cystopteris bulbifera has a fashion of its own of producing fat, fleshy, bi-lobed bodies, as big as peas in the axils of its fronds, and these when shed, give rise to strong plants wherever they fall, rendering the fern a veritable weed.

In all these cases and many analogous ones which could be cited, the bulbils spring either from the axils of the frond divisions, in which case they are practically identical with ordinary buds of the phanerogams, or from the upper surfaces as viviparous outgrowths proper, but, in rarer cases, as in Lastrea vivipara, we find these bulbil plants originating on the under surfaces of the fronds in conjunction with the spore heaps presumably from modified sporangia. This description of bulbil is also found on several of our plumose varieties of Athyrum felix fœmina, on forms of Adiantum capillus veneris, A. c. v. daphnites, and imbricatum, and in Polypodium vulgare var. elegantissimum. In all these cases, the bulbils spring from the sites of the sori, and are frequently associated with perfect sporangia and spores. In the primary phase of fern life, the prothallus stage, we find also a type of viviparousness, or rather two, since the prothallus fern formed from the spore very frequently buds out at the edges, or even from the surface, into other prothalli, and where apogamy occurs, it is the prothallus which buds out into a fern proper by means of a simple asexual bulbil precisely akin to those formed upon the fronds, and finally we get the converse form of viviparousness when the fronds in the aposporous ferns develop prothalli from these tips.

These various forms of viviparousness are, in most cases, immense aids to the cultivator, since under proper treatment the plants so produced root readily, and form specimens far more quickly than if raised from spores, months being saved in the operation. Furthermore in valuable plants, i.e., whose spores are apt to yield varied progeny, the bulbils may be fairly relied upon to reproduce truly. We say fairly, because instances have certainly occurred where bulbil plants have developed into very different types. This, as bud sports are not uncommon, is only to be expected, seeing that if a tendency to vary is in the blood, so to speak, we may as reasonably expect it to evidence itself in the mother-cell of a bud as in that of a sporangium or single spore. Nevertheless, it may be taken as a fact that selective culture, with a view to improvement of type is far less likely to reap results if bulbils be employed than if spores be sown, the sexual interaction on resulting prothalli undoubtedly being a factor in variations.

Thus, to revert to our illustration of viviparousness in Asplenium bulbiferum, this fern must have been raised by millions by trade hands on account of its facile culture and marketability, but generation after generation originating from bulbils only, not a single variety worthy of the name has made its appearance, while we do not think that any fern raised on a like scale from its spores, can be quoted as equally constant.

Ordinary bulbil growths are, as we have said, easy to raise, but the extraordinary ones associated with the spore heaps are, with the exception of Lastrea vivipara, by no means easy to establish. For one reason, they only make their appearance right at the fag-end of the growing season as a sort of final effort at growth, and hence have a great tendency to perish with the fronds. We have succeeded several times in pulling a smaller percentage through by severing the small pieces of frond on which they are situated, and inserting these in sterilised soil, so that the bulbils just touch the soil, by keeping them close and giving them a little warmth, the strongest manage to retain vitality through the winter, and to form roots the following spring, when, of, course, they are safe. The smaller the portion of attached frond the better, and this is sure to decay and in so doing will too frequently infect its tiny offspring with fatal germs.

Chas. T. Druery, V.M.H., F.L.S.

## FOUR NEW RHODODENDRONS.

During the present century a large number of new rhododendrons have been introduced to European gardens from various parts of China, and some of these are now sufficiently well established to blossom freely enough for us to form an idea of their value as garden plants. The four species to which allusion is made were all introduced by Messrs. J. Veitch and Sons, Chelsea, though the medium of their collector, Mr. E. H. Wilson. All are of comparatively dwarf habit, comparing in height with the two Chinese species, R. yunnanense and R. rubiginosum, which were brought to public notice about twenty years ago. All appear to be as hardy as those two species, which stand the winter well, but sometimes have their flowers or young shoots cut by a late and rather severe spring frost.

R. ambignum forms a bush two feet or more high, with ovate leaves, the larger ones being two to two and a-half inches long. The upper surface is green, the under glaucous, spotted with small brown scales. From four to six flowers, each about one and a-half inches across, are borne in clusters from the points of the branches. The colour is yellow, but the upper petal is heavily spotted with green. Evergreen rhododendrons with yellow flowers are not very common, therefore this is of special interest.

R. augustini is conspicuous by reason of the large size of its flowers, for they bear comparison with those of large-growing garden hybrids. Plants a couple of feet high may be seen growing in companionship with the previously-mentioned species in the vicinity of King William's Temple at Kew. The bushes in question are about two feet high, and bear lanceolate or oblong leaves up to two and a-half inches long, and one inch wide. The stalks are about a quarter of an inch long, and together with the mid-ribs and bark of the younger branches, intensely hairy. From four to six lilac, orange-spotted flowers are borne together in fairly compact heads, each flower being two inches across. This species was described in 1890 in Vol. XXVI. of the "Journal of the Linnean Society," from specimens collected by Mr. A. Henry in the Patung District of Hupeh.

R. concinnum differs from the others by having bright, reddish-purple flowers, each one to one and a-half inch across, in small clusters, the upper petal being marked with reddish-brown spots. The ovate leaves are one and a-half to two inches long, the larger ones being about three-quarters of an inch wide, green above and glaucous beneath, both surfaces being covered with small brown scales.

R. siderophyllum bears a resemblance to R. yunnanense, especially when in flower, for the blooms are of a similar size and shape, but flesh-coloured and spotted with yellowish-brown. The leaves are narrow, one to two inches long, and up to three-quarters of an inch wide. Of loose habit, this species has a less inviting appearance than the others, though it will probably become more vigorous as its requirements become better known.

These and the numerous other new rhododendrons from the same country are well worth the attention of garden lovers, although with a genus which contains such a large number of good garden shrubs as rhododendron, they will have an uphill fight if they are to oust the more beautiful of the older kinds from the foremost places they now occupy.

W. Dallimore.

## SILVERY SAXIFRAGES.

With the star of the alpines still in the ascendant, and the ever-increasing love of rock gardening and its associations, among the garden-making section of the community, a more vivid light is thrown upon the various groups of the alpine flora. Plants that were but little esteemed a few years back are rapidly winning their way into public favour, and novelties are so frequent nowadays that one ofttimes feels the difficulty of keeping in close touch with both new and old.

The glorious range of beauty which the alpine flowers afford, and the haunting interest that enshrouds them, reaches a culminating point in the silvery saxifrages. Here both the amateur and professional gardener can find a field for enthusiastic study. The exquisite beauty, the varying forms, and the deep enthusing interest, stands up as a vision that will remain ever dominant in one's mind. Silvery saxifrages, with the hoary colouring of the frost aglint on the rosettes of foliage, a study in quiet beauty, from the tiny miniatures which barely rise above the surface of the soil to the magnificent pyramids and clouds of blossom produced by the grander species.

Easy of cultivation, revelling in a fairly sunny position, and a soil that is open and gritty (with a distinct preference for lime rubble), the silver-leaved saxifrages are invaluable in the rock garden. Adaptable to many positions, you will find the "frosty" rosettes peeping from rifts and fissures, or creeping like an ever-spreading carpet in the breaks between, and over the face of the boulders, out on the sun-lit ledges, or in the nooks below, while often in half-shady places you will meet with good specimens. But it is in the exposed sunny positions that you will obtain the deep silvery hues to perfection, and there you will note the ripening of growth which makes for a superb blossoming.

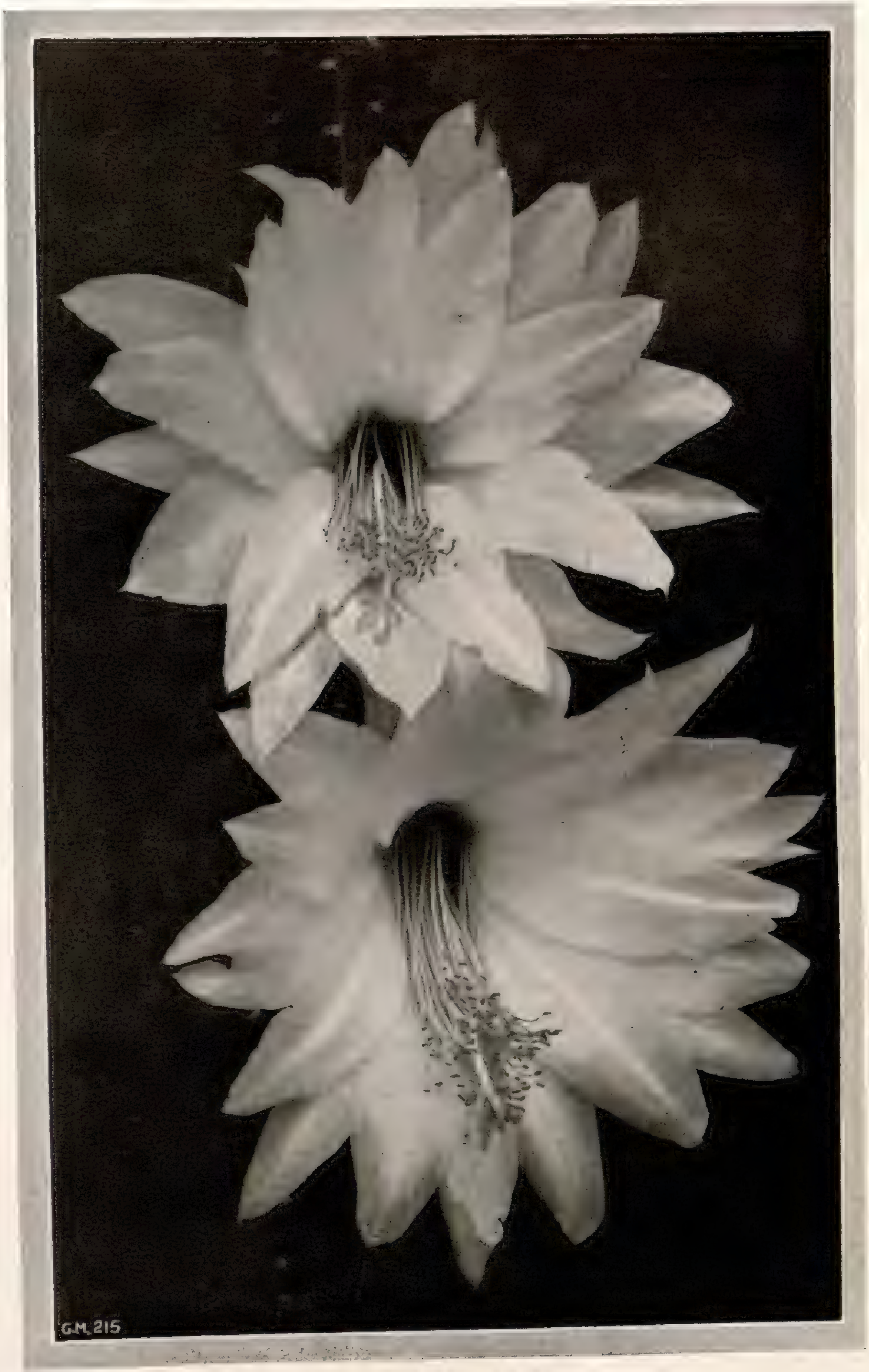
The potential wealth of varieties which S. aizoon affords us is certainly worthy of note, and probably no group of saxifrages has given the same confusion in nomenclature as these. But the whole group is gradually emerging from this cloud of confusion, and many forms now stand out in their distinctive characteristics. Especially interesting are balcana, a fine, bright variety, with good-sized white blossoms, heavily spotted with pink; carinthiaca, a dainty white, with heavily-silvered foliage; flavescens, a lovely rarity from the Southern Alps, with pure lemon-coloured blossoms; lutea, another rare and beautiful yellow, rather deeper in hue; and rosea, a very pretty novelty with bright pink flowers upon purple stems. Paradoxa is charming, its heavy silvery margins contrasting with the deep green of the rest of the foliage; atropurpurea is very rare, but is worthy of acquisition, if only for its bright rosy blossoms; La Graveana is distinctly pleasing, with its coral-red stems, carrying profuse sprays of white flowers, and Malyi is a very compact form with greenish rosettes and close spikes of white flowers.

The two forms of S. cæsia are quaintly pretty. The minute form, which may be regarded as the true species, is noteworthy by reason of the tiny rosettes spotted with silver, and the little wiry stems which support the solitary, or nearly so, flowers. The larger form, known sometimes by the varietal name of major, is useful with a marked habit of creeping over the rocks. A sterling rarity is represented by S. calyciflora, a species revelling in a limestone formation, its spikes of crimson flowers are very pleasing; S. cartilageana is a favourite form, producing spreading masses of narrow-leaved rosettes, surmounted by slender arching panicles of white flowers; S. catalaunica is somewhat rarer, dwarfer in growth than the preceding, very free, and effective.

A very useful group is formed by S. cochlearis and its varieties. The type is noteworthy by reason of its dense hillocks of tiny glaucous rosettes, and its graceful panicles of white flowers, produced upon rosy-purple stems. The principal varieties are major and minor, the former a fine vigorous gem, and the latter a miniature in all but blossom.

That general favourite, S. cotyledon, is seldom omitted from any collection, its free, unrestrained vigour, its massive panicles of blossom, and the handsome rosettes, combine to make it of great value. First-class varieties are represented by pyramidalis, well-known to all rock planters; Icelandica, the giant of the section, and compacta, a dwarf, floriferous form rarely exceeding a foot in height. S. crustata is a plant one can recommend, its pleasing wealth of silvery rosettes and erect panicles of snowy blossoms will ensure it a place for many years. The hybrid form raised as the result of crossing S. crustata with S. Hosti is equally pretty. S. Engleri is a free grower, with narrow silver-margined leaves, and arching sprays of white blossoms carried on red stems. It needs a warm situation to flower well.

It is a question as to which of the two saxifrages that are known as S. Forsteri is correct, but the natural Tyrolese hybrid between S. cæsia and S. mutata, is undoubtedly the better of the two, and worthy of acquisition. Of S. Griesebachi one has nothing but praise; it is a sterling novelty, with handsome glaucous leaves margined with silver. It is early to blossom, and its



CEREUS AMECAENSIS.

Flowers of large size, and pure white. A.M., R.H.S., May 14. A. Worsley, Esq., Mandeville House, Isleworth.

drooping crimson bells are borne upon dark reddish stems.

There is a good hybrid (S. Hausmanni) derived from a cross between S. aizoides and S. mutata. It retains something of the silvered leafage of mutata, and carries rich yellow flowers. A place should be found for this interesting saxifrage, where it can have plenty of moisture. S. Hosti, with its masses of elegant rosettes, and its graceful clouds of white blossoms, tipped with purple, and its pleasing variety altissima with its recurving foliage, are both worthy of note.

P. S. Hayward.

## SOME GOOD HERON'S BILLS.

Many pretty and valuable rock garden or border plants are comprised in the Erodiums, or Heron's Bills, and the attention of the lovers of hardy flowers is called to the beauty and serviceableness of some of these charming subjects, most of which have graceful foliage and distinctly pretty blooms. Their number is too great for full consideration; but among those here mentioned there will be found a sufficient number of good plants to serve for most gardens, however large.

These Erodiums are invaluable for the rockery and rock garden, the smaller species being excellent for the small rockery, and also for the choice border, while the bigger ones are good border flowers, and also look remarkably well when planted in the large rock garden in places where they will not make their smaller neighbours look insignificant. They generally like sun, but can do with a moderate amount of shade. A dryish soil is what they prefer.

For the border the best are the larger ones, such as Erodium chelidonifolium, with rosy-purple flowers with crimson stripes and pretty foliage. It makes a nice bush about a foot high, and is a capital border plant in a dry soil. Even finer for the border is E. Manescavi, which affords us a long succession of good, large, rosy-purple flowers on a bush of neatly-divided foliage. It, also, likes a dry border, and there it will give its bright flowers for a long season.

For the front of the border or the rockery, most of these are lovely and valuable little flowers, and among them we have none nicer than E. guttatum, which has white blooms with a deep, almost black, blotch at the base of each petal. The contrast is very fine. The leaves are very pretty, and the whole plant is only about four inches high. E. hymenodes is not quite so hardy, and has pale purple flowers with a dark blotch, on a plant about nine inches high. It likes a dry and sunny place on the rock work. In E. Reichardi, also called chamædryoides, we find a little plant rising only an inch or two above the soil, and affording us lovely small white flowers on a plant with heart-shaped leaves, the little blooms being adorned with pink veining. I find that this sometimes dies out in northern gardens, so that it is prudent to keep a plant or two in a frame in winter to replace any which may be lost in cold winters.

The charming little E. Sibthorpianum, which has white and crimson-purple flowers on a plant with exquisitely cut foliage, is one of the prettiest. It is only about six inches high, and its habit and general beauty necessitate its inclusion among the best of the smaller Heron's Bills.

These flowers can be purchased and planted in spring, and some of them may be raised from seeds, sown at the same time, and the seeds treated as with other smaller hardy flowers.

S. Arnott.

## TRIFLES ABOUT TREES.

There are two proverbs which describe the life of trees. One says, "Acorns make forests," the other declares, "If no leaf dropped no branch would shoot." When spring has come how joyously we read hope in the budding out of the tender green foliage, but how seldom do we realise that the preliminary growth is taking place in that "sad autumntide" which we call a melancholy season, since not a russet tint but has its usefulness.

Trees minister to our daily wants by their wood in hundreds of ways not generally reckoned or but vaguely understood. For example, when we look upon the common willow how seldom do we remember that it will come in time to be sawn and fashioned into small boats, used to line stone-carrying carts, and the smaller pieces made, probably, into pails, flour tubs, bread plattens, soap dishes, spoons, cabinet rails, bowls, and clothes pegs! The virtue of the wood is its non-liability to be split by any sudden shock. Years ago it used to be so finely sliced that chip hats were made of the younger branches. An old writer says that willows grow always in wet, marshy districts, where fevers abound, because the bark, when shredded into boiling water and allowed to stand until cool, provides a tonic drink of medicinal value approaching that of quinine, and the poorer folk could thus obtain at once a potent remedy. Probably the maladies lingering in low lands are alluded to in the lines,

> "Live near the willow, you'll not live long;
> Its roots ne'er flourish without some wrong."

To live beside an elder tree, on the contrary, is to "have a fair skin and a cheerful hearth," but the tree must have sprung up from seed, not been transplanted from elsewhere. Few people seem aware now that a delicious cooling face wash can be made by soaking the blossoms twenty-four hours in water that is kept gently boiling. Each berry contains three seeds, which gained the tree the name of Trinity bush.

Acorn bread was a general article of food among our distant ancestors, those men of whom a poet wrote,

> "Fed with the oaken mast,
> The aged trees themselves in age surpassed."

Now we forget this usefulness of our native monarch of the woods, although the word acorn is merely the Saxon version of "corn of the oak." The great diarist, Evelyn, states, too, that a pig will increase a pound a day in weight if fed every morn with a peck of acorns in a little bran. It is amusing to note the widespread employment of the word oak in naming towns and villages, for the ancient "Oc" was corrupted in innumerable fashions, giving us the Sussex Uckfield, say some authoritites, Okehampton and Ockley, as well as the more easily recognised Acton, Accrington, and Axminster.

The wood of the oaks grows slowest of all, but lasts longest, which gave rise perhaps to the common saying, about any blustering, restless person, "Oh, he will need an oak coffin." The poet Dryden was not correct in his calculation, but the verse in which he tried to state the career of a tree of this species is not without interest.

> "The monarch oak, the patriarch of trees,
> Shoots rising up, and spreads by slow degrees.
> Three centuries he grows and three he stays,
> Supreme in state, and in three more decays."

There was an oak of over eight hundred years of age at Morley, in Cheshire, according to local traditions. To dream of an oak in full foliage in winter is a sign of the coming of a gift or legacy, but if the branches should be bare then the omen was a mournful one, predicting a fall from fortune. In symbolic lore the oak means hospitality, not strength or fame, as so often declared, while the leaves alone signify bravery. The ancient Romans wished to award a chaplet of oak to Scipio Africanus, for having risked his own life to save that of his father in the battle of Trebia; the great warrior, however, refused to be thus honoured for a deed which carried with it its own reward.

A Norse theory is that man was made out of the wood of the ash tree. The Greeks possessed the same fancy, while in olden Wales no churchyard was thought complete without the "sacred" ash that is a protection against all evil spirits. Spencer alludes to

> "The ash for nothing ill."

Druidic circles in North Britain are proved to have been generally drawn around a mountain ash tree, and the wood provides handles for spades and axes, also oars.

Yews and cypresses have been classed together as solemn graveyard trees, yet the former were chiefly valued as giving stout wood for the bows of yeomen, and it was becoming rare, of costly price, when the invention of firearms relieved the situation.

> "Ye wood, speeding death home unto three kingly hearts,
> Be grown near tombs for aye."

So a poet bids. The monarchs referred to were the great Richard Cœur de Lion, William Rufus, and Harold. Cypresses were cut up into the coffins for heroes of Athens, as well as into the indestructible chests in which Egyptian mummies were always laid, and a plantation of this tree was reckoned a rich portion for a Roman daughter. Organ pipes used to be constructed of the wood, according to Evelyn, also harps and other musical instruments.

An old writer tells us that a favourite hobby of a luxurious Roman was the collecting of rarely-marked maple wood to have made into tables. For curious specimens the sums given were quite marvellous, and the wives of the connoisseurs had a habit of pointing to these articles of furniture when reproached with their lesser extravagancies, whence arose the phrase, "turning the tables."

From sycamores sugar was formerly extracted by the Scotch. Limes supply sounding-boards for pianos, panels for carriages, and other commodities that must never warp, while the famous Grinling Gibbons carved some of his finest work in St. Paul's Cathedral, Windsor Castle, and Chatsworth in the wood. Clogs and wooden soles for shoes come from the alder, guns from the walnut, the bark of old black poplar is so light that it will float like cork, so is used for supports in fishermen's nets. Birch bark yields an oil used in the preparation of Russia leather, and is responsible for its distinctive odour. The wheels of water-mills are mostly of elm.

Old sayings, of proverbial character, dealing with our subject, are the following: "No tree but has rotten wood enough to burn it." "The topmost branch o' the tree is safe but for those that can fly." "Such as the tree is, such the fruit." "An oak is not felled with one blow." "Remove a young tree and it'll soon bear, Remove an auld tree an' it's a'ready withered." "'Tis foolish to send fir to Norway."

M. H.

DAHLIAS TO PERFECTION.—A thorough guide to the successful culture of these popular flowers is "Dahlias and their Cultivation," by J. B. Wroe, price 1s. net, by post 1s. 2d., bound in cloth 1s. 6d., by post, 1s. 8d., from W. H. and L. Collingridge, 148, Aldersgate Street, London.

## THE PERSIAN LILAC.

The popularity of the Common Lilac (Syringa vulgaris) and its numerous varieties rather overshadows the virtues of the more lowly Persian lilac; yet for small gardens, and for certain positions in large gardens also, S. persica has much to commend it. Really old bushes are rarely more than six feet high, whilst plants ten or twelve years old may not be more than a yard or four feet in height. It is easily distinguished by its thin, graceful branches, from which a profusion of fragrant blossoms appear in May. It may be depended on to bloom more freely and regularly than S. vulgaris, for it seldoms happens that a full crop of flowers is not produced. Requiring no special culture, it grows well in light, loamy soil, and may be allowed to grow year after year without attention, no pruning being absolutely necessary, and when any is done it should take the form of a little thinning rather than hard cutting back. For shrubbery planting, and also for masses in conspicuous positions, it is admirably adapted, whilst specimens grown in pots or tubs are excellent for conservatory decoration in spring. In addition to flowers of the ordinary lilac colour, a variety may be obtained which bears white blooms.

W. D.

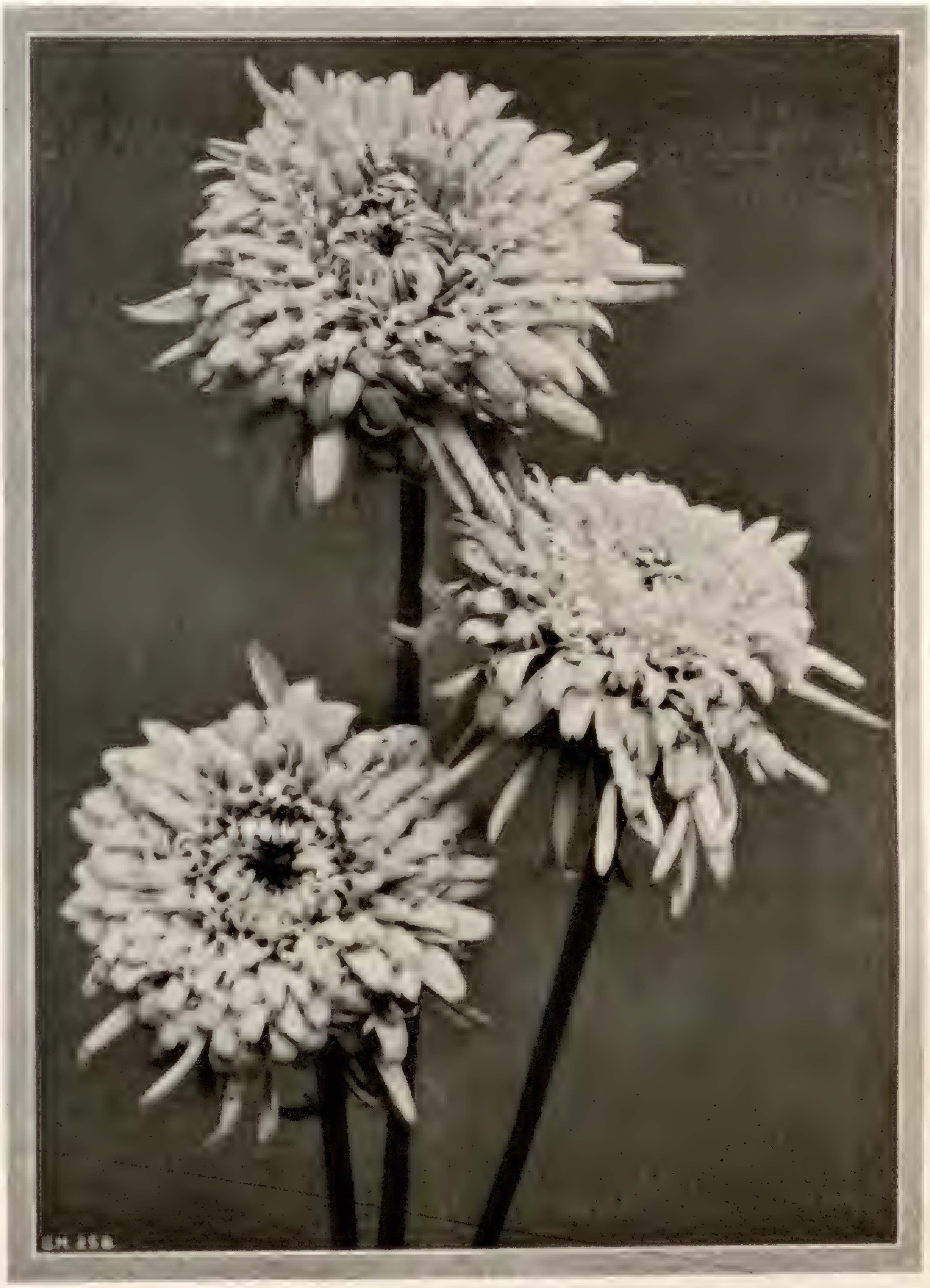
## FRAGRANT BORDERS.

A large garden should contain two borders of scented plants and flowers, one consisting of species that are fragrant all day long, the other devoted to those only possessing evening perfume. The best positions for these will be, respectively, close to the house windows, and around a summer shelter that is much used as a smoking-room. The small garden can seldom contain more than one border of sweet scent, but this can be made very delightful as well as lovely.

**Tobacco Plants and Verbenas** are richly perfumed after sundown, although they may be included as day-scented flowers also. It is noteworthy that the Nicotianas do best in this respect when in shade or semi-shade, but to give them this it is not necessary to inflict shadow upon other perfumed plants that would not do as well then. A short hedge of sweet briar put behind the tobacco plant group, with a bush of gorse and one of golden broom at each side, will make a shady nook, unless the border faces due south; if it does, the right plan is to grow a quintette of pillar roses, a foot apart, and the interlaced side branches will shade a mass of nicotianas behind.

Evening primroses can be similarly arranged for, and the ground sown lavishly with night-scented stocks. Biennial scabiouses should be largely relied upon for bright colour; the rose, terra-cotta, and cerise ones are extra beautiful, while the deep maroon has the best "muskateer" scent. Mignonette ought to be represented by many sorts kept separate, for the perfumes of the red, yellow, and cream-white are noticeably different. Pansies and violas are now recognised as scented. I have always found the named violas Goldfinch and Ardwell Gem of great value. Violets, primroses, and cowslips should have their places.

**Bold Planting in Groups,** or large stretches of "carpeting" is the right method. Individual plants dotted about should be given up in favour of concentration of perfume. Spring bulbous flowers are, of course, of noted scent, and so are wallflowers, but we may now have annual and winter-blooming wallflowers as well, so that few months see the garden devoid of these blossoms. Clove and border carnations and pinks charm most when grown together, their foliage being then so pleasing; a few clumps of sweet rocket can be added, to bloom with the pinks, earlier than carnations. Yellow tree lupins are invaluable. Phloxes are better avoided unless they are obtained as cuttings, or divided pieces, from varieties known to be really sweet, as distinct from sickly in scent. The cream-white Jacob's Ladder has a delicious honey perfume, its title being Polemonium confertum mellitum, while others are rather disagreeable. Sweet woodruff and the fragrant wood sorrel (Oxalis enneaphylla) make fair carpets.



PYRETHRUM QUEEN MARY.

A very fine double pyrethrum with large rose-pink flowers. A.M., R.H.S., May 22, Royal International Horticultural Exhibition. Mr. G. W. Miller, Wisbech.

Day lilies are useful in sun or shade, the best being Hemerocallis aurantiaca major and Hemerocallis flava. The white Goat's Rue (Galega officinalis alba), and the Plantain Lily (Funkia subcordata), the musk-scented Delphinium Brunonianum, the hay-scented, erect-growing Clematis Davidiana, Centaurea montana too, the orange Asclepias tuberosa, the rose-perfumed double Chinese pæonies, Francois Ortigat (rich purple), Madame Furtado (rose-carmine), can be cordially recommended. An unfamiliar flower, with an aromatic odour, yellow, eighteen inches tall, is Grendelia inuloides.

**Sweet Peas are Indispensable,** so, too, are sweet sultans, stocks, Schizopetalon Walkeri, almond-scented, cream, a foot tall; and sweet alyssum. Petunias and heliotropes should be plentiful, with many kinds of scented-leaved geraniums. Auriculas and coloured cowslips may be summer sown to furnish foregrounds. Shrubs that are needed will be the Daphnes Mezereum, cneorum, and Blagayana, the two last being but a foot tall; lilacs, philadelphus, and laurustinus. There must be moss roses, lilies, lavender, rosemary, southernwood, jasmines, and honeysuckles. Seats should always be accompanied by at least some groups of scented flowers.

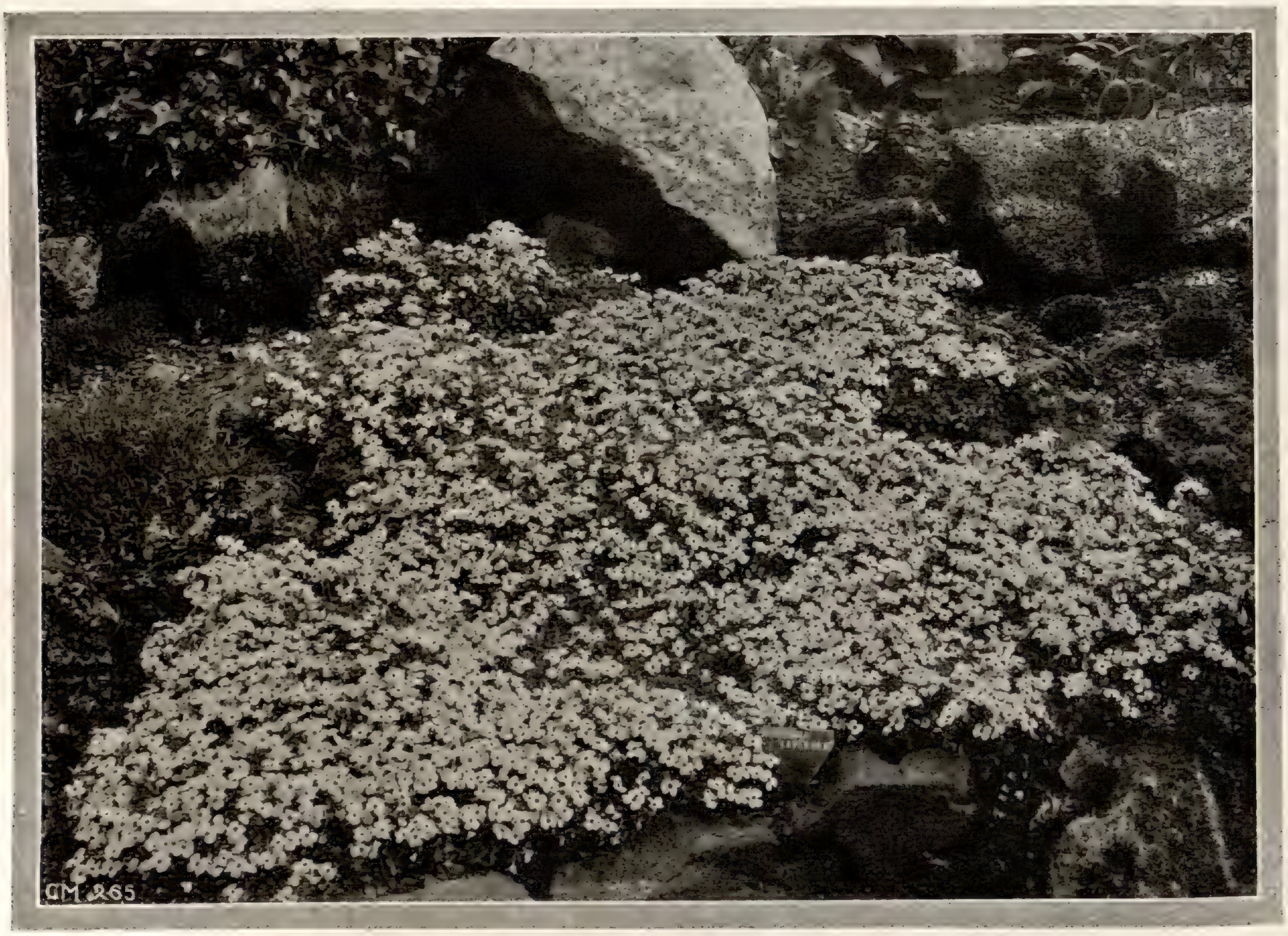
M. H.

"Carnations, Picotees, and Pinks" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## AUBRIETIAS.

Few plants possess higher qualities for rock garden adornment than aubrietias, and few, if any, produce such an effective and striking display of colour during late spring and early summer. Seen from a distance, a large drift is simply a display of colour, the flowers being produced in such abundance that the foliage is almost hidden. One great point in their favour is that they adapt themselves to the shady parts of the rock garden as well as to the sunny positions. The flowers are not so numerous when the plants are grown in the shade, but the foliage has a richer appearance than when growing in full sun.

It is always advisable to plant the variety Dr. Mules in a shady or half-shady spot, for the colour is much better in such a position than it is when exposed to the hot rays of the sun. Cultivation is very simple, for aubrietias will accommodate themselves in any ordinary garden soil of a light character. Early autumn is the most suitable time to plant aubrietias, so that they may become fully established before the winter sets in. The finest effects are obtained when the plants are grouped in masses or drifts; an irregular stream of colour commencing at the top of a mound of rockery and coming down unbroken to the base makes a pleasing picture.



AUBRIETIA DELTOIDEA LAVENDER.
A distinct and beautiful variety with lavender-coloured flowers. The fine example herewith illustrated is growing in the rock garden at Kew.

Regarding the propagation, this can be effected by sowing seeds or by cuttings. Raising plants from seeds is much the easiest method, yet when dealing with named varieties, it is necessary to propagate by cuttings to obtain a true stock. Seed saved from the choice varieties and sown immediately it is ripe produces some beautiful forms, embracing many colours.

The young soft growths, which are produced when the flowering season is over, will be found the most suitable material for cuttings. These should be about an inch or an inch and a-half long and prepared in the ordinary way. Pots or pans filled with clean sand are most convenient for rooting the cuttings in, and they should be placed in a close cold frame, which must be kept shaded until root action commences. When the cuttings have made a fair amount of roots they should be put singly into small pots, and given cold frame treatment through the first winter. During the following spring they may be put into larger pots, with the idea of growing them until good-sized examples are obtained, which, when planted in their permanent positions, will produce an effective display.

Another method of cultivation is to plant out the young stock into raised nursery beds, instead of repotting, and excellent plants are obtained in this way. The one advantage of pot-grown plants is that they may be planted at any time, whereas when they have to be lifted from the open ground it must be done in early autumn.

Apart from rock garden cultivation, the aubrietias are desirable plants for spring bedding, and may be effectively used for carpeting and edging. They also adapt themselves to wall gardening, and large patches in flower on the top of an old wall make pleasing pictures, as these pages have shown.

The two variegated forms, argentea and aurea, are highly appreciated for the colouring of the foliage, which provides colour after the flowers are past. Bridesmaid is a very fine variety of a soft blush colour; Campbelli is violet, with a compact habit of growth; Dr. Mules is still one of the best, the rich purple flowers being produced in great abundance. Fire King gives the best results when grown in a sunny position, and it is the most brilliant red of all the aubrietias; Lavender is one of the newer varieties, with pale lavender flowers, opening somewhat later than many of the older kinds; Leichtlini varies considerably in colour, but when a good form is obtained, the flowers are bright crimson; Moerheimi has beautiful rose-coloured flowers, of a large size, but, unfortunately, it is not such a fast grower as one might wish it to be; Prichard's A1 is rather late in flowering, and has large, violet flowers; Souvenir de W. Ingram has a splendid habit, and is of rapid growth, the rose-coloured flowers being very fine, with bold, rounded petals. Now that the plants are in bloom they should be studied, and notes made for future reference.

Gnaton Gardens. E. C. Pooley.

**Arum The Godfrey.**—This variety presents one of those striking anomalies that frequently occur in gardening, for, whereas the type plant Richardia æthiopica is extensively grown in practically every garden, its merits are quite second-rate to the variety under notice. In The Godfrey the spathes are much whiter and more expanded than in the type; while the plant is dwarfer, blooms earlier, and produces a greater number of spathes, quite a distinct feature being the manner in which the succession is maintained. When grown side by side in quantity, the superiority of the variety is so well defined, that once its merits is recognised, the type plant will not long be entertained in the same collection. Like the common R. æthiopica, it revels in a rich compost with an abundant supply of moisture. I find, however, that the best results follow from a restricted root run, as the spathes always come the most freely once the roots have thoroughly taken possession of the soil.—T. S.

## HARD-WOODED PLANTS.

One of the many features in which the International Horticultural Exhibition of this year differed from the preceding one is that hard-wooded plants occupied a far less prominent position than they did 46 years ago. At that time specimen plants of these subjects were met with in many gardens, and freely exhibited, whereas now their culture is followed by very few.

Not only were hard-wooded plants, then popular, but they had long been extensively grown. This was brought forcibly home to me when perusing some numbers of the "Floricultural Cabinet" for the years 1845-6 and 7. In the reports of the exhibitions then held at Chiswick and Regent's Park the size of some of the specimens was enough to take one's breath away. Thus the following, among a vast number of others were noted: Aphelexis humilis, 2ft. high and 3ft. in diameter; Boronia serrulata, 3ft. by 4ft.; Chorizemas, 5ft. by 5ft.; Chorizema Henchmanni, 2ft. by 2ft.; Daviesia saligna, 4ft. by 6ft.; Eutaxia pungens, 3ft by 4ft.; Hovea Celsi, 3ft. by 2ft.; Leschenaultia formosa, 2ft. by 3ft.; Pavetta caffra, 8ft. by 4ft.; Pimelea decussata, 4ft. by 4ft.; Polygala oppositifolia, 4ft. by 8ft.; and Phœnicoma prolifera, 2ft. by 4ft., with many others almost, if not equally, fine and Cape heaths innumerable.

When one considers the vast improvements that have taken place in horticultural structures and their heating since that period, it says much for the great care and attention that the old-time gardeners used to bestow upon their plants. Whether the vagaries of fashion will ever bring them again into popularity remains to be seen, but the fact is that the culture of hard-wooded plants as large specimens is too slow for present-day ideas, and furthermore, they are not of much use for the supply of cut flowers, which is now the standard by which so many subjects are judged.

The culture of hard-wooded plants is, however, not discontinued in this country; in fact, some of them are grown in very large quantities, but the sorts are, as a rule, decidedly limited, and, instead of huge specimens, they are now, generally speaking, confined to pots from five inches to six inches in diameter. Some cultivators grow a few kinds of heaths by thousands, a busy time being when the annual sales of these plants take place at the end of the summer or in early autumn, within the environs of London. Just at that time, on the point of opening its earliest purplish-red blossoms comes Erica gracilis, and its pretty white variety nivalis, which is in purity superior to the older variety alba. After that comes the little white, sweet-scented Erica caffra, and then follows the winter heath—Erica hyemalis, so valuable from the fact that it may be had in bloom during the month of December, and at the New Year. The little specimens of this heath that one meets with in the florists' shops of London about Christmas time are models of cultural skill. It is strange that the origin and early history of such a valuable heath as this should be unknown, but it is usually regarded as a hybrid. The white variety—Erica hyemalis alba—is also much grown. Another winter-flowering heath, whose culture has been considerably extended within recent years is Erica melanthera, that bears a profusion of very pale mauve, almost white, blossoms, against which the blackish anthers stand out in a conspicuous manner. The flowers are small, and have a slight but pleasing fragrance. With the new year, or, at all events, before it is far advanced, comes the showy reddish-pink Erica Wilmoreana, the beautiful white-flowered E. candidissima, E. persoluta alba, with tiny white bells, the bright red E. hybrida, and E. Spenceriana, whose tubular-shaped blossoms are white, tinged more or less with lilac-rose.

As spring advances the beautiful golden blooms of E. Cavendishiana are at their best, and also the charming dwarf-growing E. ventricosa, represented by several forms. Towards the latter part of the summer the scarlet-flowered E. cerinthoides coronata and E. verticillata are very showy, but at that season there is less demand for them, and consequently they are grown in more limited numbers.

Boronias are another very popular class, of which the most generally grown are Boronia megastigma, whose drooping bell-shaped blossoms, though somewhat dull in their colouring, are deliciously fragrant; B. heterophylla, with bright carmine-coloured flowers; and B. elatior, with drooping rosy-red tinted blossoms, are later in expanding than those of the others.

Epacrises are frequently grown in 6in. pots, and in this way delightful little

LÆLIO-CATTLEYA BEDOUIN.
A magnificent specimen carrying twenty-three fine white and purple flowers. Exhibited by Lieut.-Colonel Sir George Holford at the Royal International Horticultural Exhibition.

specimens are turned out in large quantities by the most successful cultivators. Among their other desirable features is the fact that they may be had in bloom in the depth of winter, while the flowers remain fresh and bright for a considerable time, and, being in many varieties borne in long sprays, they are very useful in a cut state. Of these the white and rose shades are especially pleasing.

Other hard-wooded plants that are still grown, but in limited numbers are aphelexis, Aotus gracillima, pimeleas, chorizemas, polygalas, and the scarlet Bottle Brush plant, known both as Metrosideros floribunda and Callistemon salignus.

Acacias are usually classed with hard-wooded or New Holland plants, but they are less particular in their cultural requirements than those previously mentioned. Except in the case of one or two of the more delicate growers, such as Acacia Drummondi, they require but little peat, whereas heaths, etc., need a soil consisting entirely of peat and sand.

Although botanists tell us that the so-called Indian azaleas are in reality rhododendrons, yet for garden purposes the generic name of azalea is not at all likely to be superseded. The varieties of Indian azalea are to-day as popular as ever, but instead of the huge pyramidal or standard specimens that such of us as are past middle age can well remember, we rarely see other than the neat little plants grafted on to stems about a foot in height, which are grown in a wholesale manner, chiefly in Belgium, and are sent to this country in immense numbers during the autumn months. Small standards on tall stems are now sometimes seen, while one variety in particular, namely Hexe, is grown as little bushy plants on its own roots.

Of rhododendrons proper many of the Himalayan hybrids are much appreciated, but to see them at their best they need, in most cases at least, to attain the dimensions of good-sized bushes. The hybrids in which the compact-growing Rhododendron ciliatum has played a part, bloom more readily in a small state than most of the others.

The members of the Javanese section will, however, flower freely when small, while, what is more, their period of blooming is not limited to any particular season of the year, as they flower more or less continuously from January to December. They form an exceedingly bright and cheerful feature in the warm greenhouse, for the original species, being natives of the tropics, the several varieties need more heat than the Himalayan species and the hybrids that have originated therefrom.

W.

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**Solanum Wendlandi.**—When first introduced this solanum quickly showed its value as a vigorous growing climber for the warm greenhouse, or coolest part of the stove. After a time it was proved that by striking shoots, such as would flower if allowed to remain on the plant, neat little examples, each carrying a large head of blossoms, could be obtained. Beautiful as Solanum Wendlandi is when grown in this way, its merits as a climber must not be overlooked, for, given a good light position in a structure kept somewhat warmer than an ordinary greenhouse, it will flower well. Cuttings of the growing shoots strike root readily in spring and summer. This solanum, which is a native of Costa Rica, was first sent to England by Mr. Wendland, director of the famous Botanic Garden at Herrenhausen, in Hanover, in 1882. Unlike a plant distributed by nurserymen, who naturally push its sale as much as possible, it was a long while before it became generally distributed.—W. T.

## LILIES AT THE INTERNATIONAL EXHIBITION.

Lovers of lilies—and who does not admire these beautiful flowers?—found much of interest at the great show at Chelsea, for in some collections veritable sheaves of the finest forms were to be seen. Special interest is, of course, centred around any new variety, and for that reason a very distinct form of Lilium davuricum or dauricum, which received an Award of Merit, was much sought after. The different varieties of Lilium davuricum are, for the most part, characterised by upright heads of cup-shaped flowers of some shade of red or deep orange. In this particular form, however, which bears the name of L. davuricum luteum, the colour of the flowers is a clear bright yellow, with dark-coloured dots on the basal half of the segments. In the very middle of the flower there is a slight orange suffusion. This lily, which attains a height of 3½ to 4ft., has very narrow leaves, which are on the under sides thickly clothed with tomentum. This feature also occurs on the stems and flower-buds. It is in every way a very distinct lily, and appears to be quite as robust as the ordinary forms of L. davuricum, all of which thrive so well in the open border. It was shown in good condition by Mr. Amos Perry, of Enfield.

A second lily to obtain an Award of Merit was Lilium myriophyllum, a Chinese species, that belongs to the Browni section. Like this last-named species, the funnel-shaped flowers are ivory-white, tinged with purple on the exterior. Inside they are pure white around the edges, with a yellowish shade towards the centre. A particularly notable feature of this lily is the great profusion in which the very narrow leaves are borne, as they are closely packed together on the stem. From this feature the specific name of myriophyllum is derived. The specimens to which the award was made were shown by Messrs. R. Wallace and Co., of Colchester, who have imported this lily in quantity of late, but for its discovery and introduction we are indebted to Mr. E. H. Wilson, who found it when travelling in China some years since.

Nearly all the lilies that it is possible to have in flower at this season were represented, among the most noticeable being the Siberian Lilium tenuifolium, with its prettily reflexed deep scarlet flowers, and its comparatively new form, Golden Gleam, in which the blossoms are of an orange-apricot colour. Lilium Hansoni, too, which is one of the most dependable of the different members of the Martagon section for flowering in pots, was largely shown, while most interesting lilies were the hybrids between it and the white Martagon, known as Miss Willmott, and Marhan.

The Browni class included, beside this species, L. myriophyllum above alluded to, L. leucanthum and L. odorum, known also as L. japonicum colchesteriense. Of the upright-flowered lilies which bloom naturally at this season there was no lack, the dwarf-growing Lilium elegans being represented by many varieties, while numerous forms of L. davuricum were also noted, including the new one above-mentioned. The old Orange Lily (L. croceum) still holds its own as one of the best of these cup-shaped lilies, as in warmth of colouring it stands out alone. Numerous examples of L. Batemanniæ were also noted, a decidedly unexpected exhibit, as it naturally flowers much later in the season. Splendid examples of Lilium longiflorum, L. testaceum, L. candidum, and L. speciosum were to be met with on all hands, the last-named being the result of retarding the bulbs.

Besides these above enumerated, the following were jotted down here and there, while passing the various exhibits: L. Parryi, L. Bloomerianum, L. giganteum, L. Krameri, and the allied L. rubescens, L. auratum, L. Grayi, L. Kellogi, L. Humboldti, L. maritimum, and the distinct L. columbianum.

S.

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## GREENHOUSE CLIMBERS.

The present rage for cut flowers, especially those having long stems, has been the cause of the neglect of many choice, neat-flowering greenhouse climbers, hence the reason so many of these have gone out of cultivation. There are but few establishments where time can be afforded to pay due attention to everything, and unless climbers are regularly looked after during the time they are making their growth, the shoots soon become so entangled as to be beyond control. It is the fashion now in many places to grow only such plants as can be used for cutting and furnishing, and, as but few of the greenhouse climbers lend themselves to these purposes, they have been discarded. The roof of a greenhouse or conservatory looks bare unless plants of some kind are hanging from the rafters, and even though the flowers produced on such plants may be unsuited for indoor decorations, they are nevertheless very pleasing when hanging from the roof. Therefore a small selection of plants of scandent habit should be regarded as essential to the proper furnishing of both the greenhouse and conservatory.

Some, we know, are of little worth individually, but when growing on the plants are very interesting. Take Hibbertia dentata for an example; the flowers would not make any display whatever if gathered and arranged in a vase, but intermingled with their bronze-looking foliage, they are very interesting. Those who take a keen interest in gardening, though they may like to have the rooms in the dwelling-house nicely furnished with plants and cut flowers are also desirous of growing everything they can that is beautiful and interesting, and some of these subjects are to be found among the more hardy of our greenhouse climbers. Streptosolen Jamesoni is one of these, for when allowed room to develop, it blooms most profusely, and as the flowers are of a rich old-gold colour, they have a telling effect, either when growing near the roof, or on a pillar. The flowers, too, are most useful for table decoration, as they can be used with good effect. The streptosolen is of easy culture, and flowers quite in a small state.

Solanum jasminoides is another of these free-flowering plants, and is well worthy of attention, and though it may be hardy in some places, it does best in a greenhouse. Kennedyas, too, form a neat group of free-flowering plants that appear to have gone quite out of cultivation. Their little pea-shaped flowers hang in small racemes among the foliage. Sollya Drummondi and S. heterophylla are also interesting. So are the two varieties of lapageria. To have these climbers do well, they must be kept free from insect pests, which, now there are so many different kinds of insecticides, should not be a very difficult task, provided this is taken in hand before they become too numerous. Repressive measures should be adopted immediately they are seen.

H. C. PRINSEP.

## HARDY PEACH CULTURE.

Much may be said in favour of the cultivation of almost any kind of hardy fruit, as the work is most interesting, and the results, when skill has been employed, the needful attention bestowed, and every requirement of the subject provided for, satisfying and encouraging.

The cultivation of the peach, as a hardy out-door fruit, however, demands the greatest knowledge, keenest discrimination, closest attention, and largest amount of labour in its management, and, for this reason, may be credited with being the most fascinating kind to grow. The introduction of hot-water pipes and cheap glass probably accounts for the absence of this fine fruit on the outdoor walls of so many of the gardens in the country, or, it may be, that a diminished staff cannot afford the necessary time to bestow the attention indispensable to success in its management. Either way, there are many garden walls in England, Wales, and Ireland, which could be utilised for the production of peaches with every success if care was taken in the preparation of the soil, and cultural requirements were attended to.

The peach luxuriates in a well-drained, stiff loam containing a high percentage of phosphates, lime, and potash, but the amount of humus, containing nitrogen, should be varied in accordance with the general atmospheric influences obtaining in the locality. In no case should what is termed strong growth be encouraged in any peach tree grown out of doors in a variable climate, low-lying, or moist situation, as the possibilities are that it will not sufficiently mature to ensure robust blooms and a free "set" of fruit. A rather poor soil with a liberal sprinkling of bone-meal or basic slag and old plaster will prove an excellent medium. If there is a deficiency of potash in the compost, and it is generally the case, this can be added by surface dressings of sulphate of potash of from 1oz. to 1½ozs. to the square yard during the growing season.

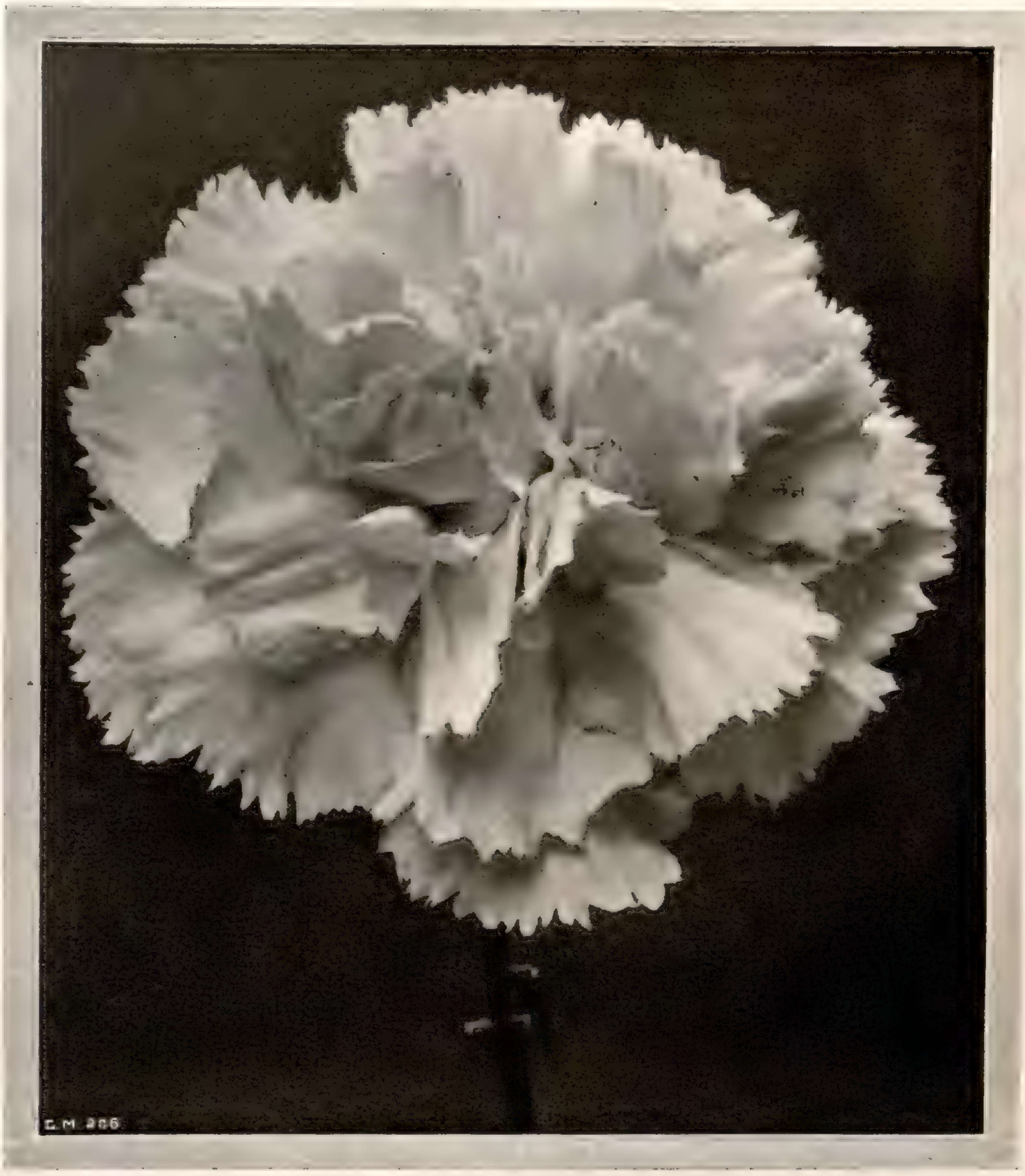
Like most stone fruits, the peach makes roots early, and for this reason autumn is the best time to plant it. When carrying out this operation it is well to remember that the stem will swell with time, and if placed near the wall will get damaged on coming in contact with it at the base. The shoots may be fastened to the wall then with nails and twine, but no pruning attempted till the following spring. At this period it is usually found that a portion of the points of the growths have died. These, and these only, should be removed with a sharp knife, or secateurs with two blades. It is at this stage of growth that real cultivation starts, and the success or failure will depend materially upon the attention bestowed.

Disbudding, as the buds push forth, should be systematically performed by rubbing off about a third of those not required. Allow about four days to pass, and then remove another third, and after another like period reduced the number on the plant to what is required to cover the allotted space so that the shoots will be from 4in. to 6in. apart. It is by attending to this item of management that the vigour of the tree is concentrated in the growths required, and light and air are enabled to play around and ripen them. Although these details of management are familiar to those who grow peaches under glass, yet, although it may seem incredulous, not ten per cent. of those I meet with, who are attempting to grow them out-of-doors, have any idea of thinning the shoots, or the advantages gained by doing so. In fact the majority treat their peaches in much the same way as they do a pear, and then wonder why they do not get fruit.

Established trees under good management will be in flower at the time disbudding is taking place, so that syringing cannot be commenced until the petals have fallen, but with newly-planted trees this operation can be carried out in the afternoons of warm, sunny days. With the object of keeping the plants free from green-fly and spider, a little soft soap should be mixed with the water once a week, and the plants themselves liberally supplied with water at the root on all occasions when moisture is deficient in the soil.

During the summer months the young growths should be periodically attended to, and tied to the wall, in order that they may have the advantage of its warmth to mature them. Any trees carrying a heavy load of fruit could be assisted with nitrate of soda or liquid farmyard manure, but in the use of either, care should be taken not to encourage a too strong growth. As syringing should be discontinued when the fruit is ripe, a thorough drenching, with force, should be given once the trees are cleared.

As a protection against the various mildews, that attack the peach tree out of doors, I have found nothing to equal sulphur and a little clay syringed on trees and walls in winter in no half-hearted way. The only virtue clay possesses in this case is its binding property, and only sufficient of it need be employed to induce the mixture to adhere to the wall and wood throughout May and June. About four parts of sulphur to one of clay, mixed in water, and of the consistency of thin paint, are the proportions I have found most effective. **Hibernia.**



CARNATION WODENETHE.

A pure white, fringed and fragrant perpetual-flowering carnation; blooms of large size and fine substance. A.M., R.H.S., April 16. Messrs. W. Wells and Co., Merstham.

## RHODOCHITON VOLUBILE.

This is a beautiful and useful climber which should be grown in every garden. It is usually treated as a greenhouse plant, but when planted out of doors it succeeds equally as well. In the North of Scotland I have seen it attaining a height of 10ft. and blooming from June till October, when planted against a south wall. It is a rapid grower, and is useful for covering old tree stumps and bare, unsightly walls.

The flowers are borne in long trails; the calyx is of a reddish colour, and the corolla blackish, while the stamens are white. In autumn the leaves turn a deep red colour, giving the whole plant a handsome appearance. Seeds are generally sown in the autumn, but if sown at the present time in pans, good results will be obtained. Sow the seeds thinly, and place the pans over gentle bottom heat. When the seedlings are large enough pot them off singly into 3in. pots, and put a stake to each one. Planting out can be done with safety towards the end of May. During dry weather applications of weak liquid manure will prove beneficial. Those who have not already tried this charming plant should grow it, as I feel sure that they will be delighted with it. **D. S. Anderson.**

Wemyss Castle Gardens.

## ROSE SERICEA AND ITS VARIETY PTERACANTHA.

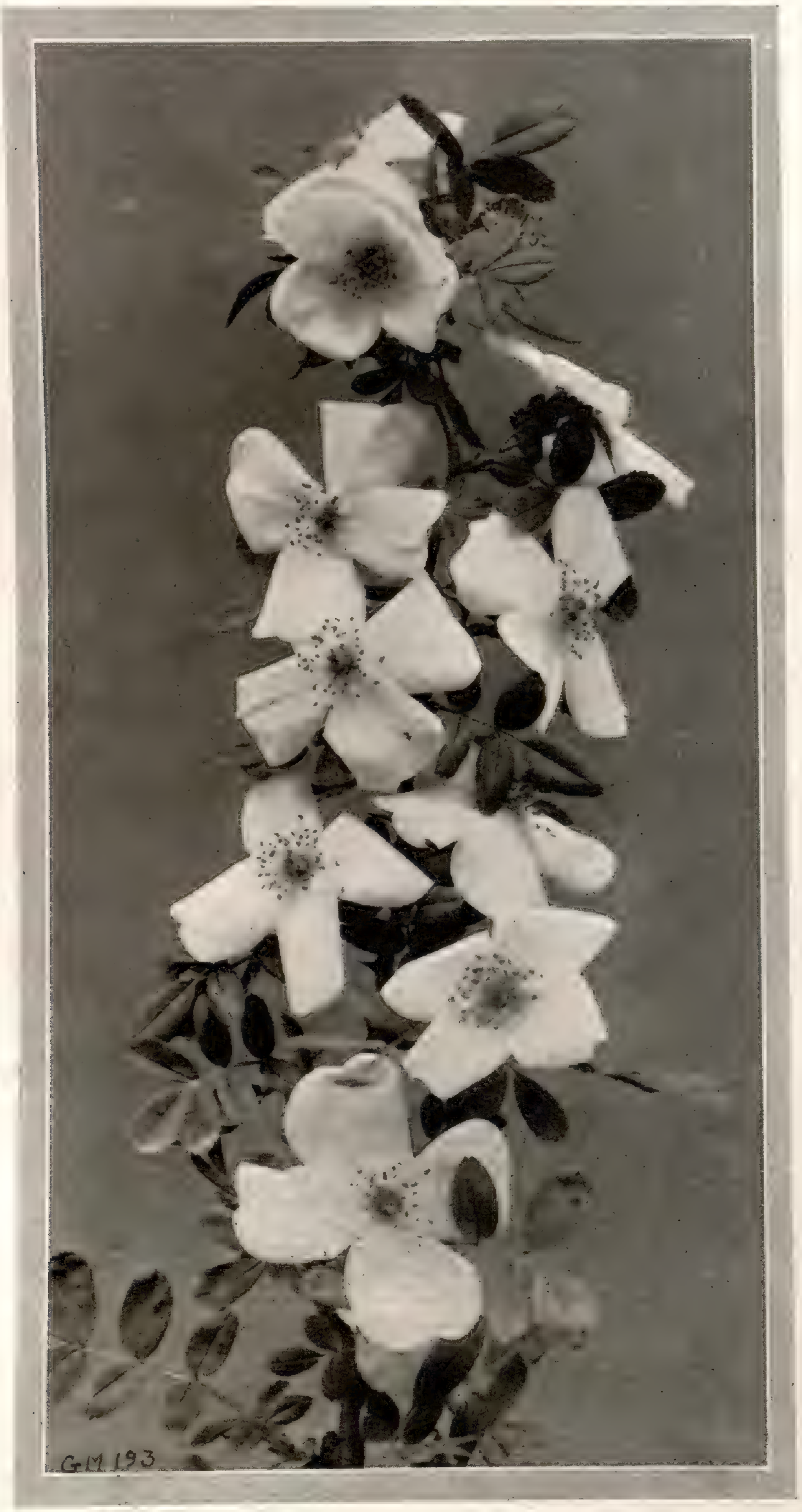
Rosa sericea has been for many years in cultivation in this country, and is commonly known as the four-petalled rose, from the fact that the bulk of the flowers produce only four petals, instead of the normal five, as with other species of Rosa. It was originally introduced from India, where it is common throughout the Himalayan range of mountains. It also is found in Tibet, and extends far into China. From the fact that it inhabits the mountains at altitudes up to 11,000 feet its hardiness is beyond question.

It is extremely variable in habit, size of flower, and fruit, and even in the colour and size of the prickles with which this species is well supplied. For a hot sunny bank, in rather poor or sandy soil, few plants will give better results. The flowers are creamy-white, one and a-half to two inches in diameter, with rich yellow anthers, rather sweetly scented, and produced in profusion all over the bush. The fruits vary considerably in size and colour, being bright red to almost black, and from the size of a pea to that of a walnut, and in shape may be globose, oval, or even pear-shaped. It is said that the fruits are largely eaten by the natives, and have a pleasantly acid flavour.

In the variety R. s. pteracantha the flowers are smaller than the type, but the charm of this plant lies in its large bright-red, winged prickles, which clothe the young stems, and give this plant quite a distinct appearance, even when grown amongst other roses. When first exhibited by Messrs. Paul and Son, Cheshunt, a few years ago, it attracted much attention. Mr. E. H. Wilson, when collecting for Messrs. J. Veitch and Sons, was fortunate in securing a goodly number of seeds of this fine variety, from which a fine stock of plants has been raised. It was also found later on in North-west Yunnan by Mr. G. Forrest, when collecting for Messrs. Bees, Lim.

C. P. Raffill.

Kew.



ROSA SERICEA.

The four-petalled rose. A free-flowering hardy species, bearing crowds of cream-white blossoms towards the end of May.

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## MADRESFIELD COURT GRAPE.

Some cultivators succeed in growing this noble grape to perfection, while others fail to achieve entire success. Hundreds of growers produce crops of fruit of moderate quality; and when one sees perfect bunches one is compelled to closely examine them, and admire them fully.

The bunches I admired first were staged by Mr. E. Molyneux at Southampton, when the exhibitions used to be held in Westwood Park. These bunches were not extra large, but they were, as regards size of berry, form, and finish, perfect, and no one would wish to have bunches larger. This was about twenty years ago, perhaps a little more. In more recent years I have seen grand bunches staged by other growers in various parts of the country, notably by Mr. Doe, of Rufford Abbey, at the Hanley Floral Fête.

The perfecting of the grapes depends chiefly on the management. In a few instances, no doubt, the best management fails if the roots are not under control, or the structure is an unsuitable one. I have both succeeded and failed with grapes grown under exactly the same circumstances. The success followed close attention to general treatment, and the failure a certain amount of inattention, owing to the claims of other matters.

Madresfield Court grape is very often recommended as a greenhouse variety for cool structures, etc. The vine is one of the best as regards growth; it is remarkably fruitful, but if overcropped while young it will take a period of three years to bring the vine back to its normal state of good health. Inexperienced cultivators are tempted to leave on too many bunches before the vines are five years old from the date of planting. Overcropping at all times militates against good colour. A close, moist atmosphere is also inimical, and such we often find in amateurs' greenhouses, where a miscellaneous collection of pot plants is grown. If there are chiefly zonal pelargoniums in the house, the atmosphere may be maintained in a suitable condition for the grapes.

When I have had the most satisfactory bunches of Madresfield Court, it has been after watering the border freely with water heated to over 100 degrees, and after each watering covering the surface immediately with dry cut straw. At such times when one could see the heat shimmering on the roofs of houses, and just above the ground, the ventilators were opened to their fullest extent. A good wind at the same time improved matters. In such circumstances the berries coloured splendidly in twenty-two days. Splitting or cracking of the berries did not occur. But when the weather was dull at times, bright at others, and no heat was put on during the nighttime, a few berries cracked every morning, the berries did not colour satisfactorily, and the process was much slower.

These conditions prevailed in other years. But when the pipes were warmed on dull days, and throughout the night, the colour was better, and splitting did not occur. Splitting occurs when the soil has been allowed to become dry, and is then thoroughly saturated with water, but I think a very low temperature and close, moist atmosphere, the chief causes, combined with overcropping, of bad colour, and cracking.

Geo. Garner.

# HORTICULTURAL EDUCATION IN AMERICA.

The following is the text of the paper by Professor L. H. Bailey, of Cornell University, Ithaca, U.S. America, read at the Conference on Horticultural Education held in conjunction with the Royal International Horticultural Exhibition at Chelsea.

General horticultural education in the United States is mostly a part of a national system of industrial education of collegiate grade or name. There is little development, as yet, of the training-school idea on either a private or a public basis, and relatively few institutions or establishments in which persons are trained for "gardening" as they are trained in the Old World. There is no recognised apprentice system for gardeners.

The whole subject, therefore, needs to be considered quite by itself, and not in comparison with systems or methods of education in horticulture in other countries; and it is necessary to understand something of the system of publicly endowed industrial education, of which this is but an incident or a part.

The public industrial education of the United States, of college grade, is founded on the Land Grant Act of 1862. By the terms of this great instrument, every State received from the Federal Government 30,000 acres of land for every representative that it had in Congress, the proceeds of which are to be used for "the endowment, support, and maintenance of at least one college where the leading object should be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." This endowment has been supplemented by subsequent direct federal appropriations, to further the objects for which the original grant was made. On this liberal foundation all the forty-eight States comprising the Union have established colleges of agriculture and the mechanic arts, about half of them separate institutions and about half of them connected with, or part of, State universities or other general institutions. The States themselves have supplemented the proceeds of the land grant, often many times multiplying their incomes. These colleges represent many types of organisation and method. Many of them cannot be called technical colleges. Their purpose is increasingly to train young men and women broadly by means of agricultural and country-life subjects. They are now exerting great influence in re-directing rural civilisation in the United States. They are rapidly putting agricultural and rural subjects into educational form, and are demonstrating that such subjects may have training and even cultural value equal to that of historical subjects.

The land-grant colleges contain many departments, and horticulture is usually one of these departments, co-ordinate with the others. In one college of agriculture, for example, which is part of a university, there are twenty-two teaching departments, aside from the work in the fundamental arts and sciences, as follows: Chemistry in its relation with agriculture; entomology, biology, and nature-study; plant physiology; plant pathology; plant-breeding; soil technology; farm crops; farm management (the principles of business as applied to farming); horticulture; pomology; forestry; animal husbandry; poultry husbandry; dairy industry; home economics; farm mechanics; rural economy; landscape art; drawing; rural education; meteorology; extension teaching. It will be seen, therefore, that horticulture is only one contributing part in an educational establishment for the teaching of agriculture in a broad way; and the same may be said of all the other land-grant colleges. There are a few other regular colleges that teach horticulture with other work, but they have not made great headway, although the subject will assert itself strongly in many of these institutions in the future. There are two or three training schools, one for women.

The students in agriculture in the land-grant colleges number many thousands, in some cases a thousand and more in one institution. They come from all walks and conditions of life, and from city and country alike. Some of them, of course, have strong inclinations for horticulture, and soon specialise in that subject. The full course of instruction is uniformly four years, following college-entrance requirements, and the student at graduation receives a diploma carrying Bachelor of Science or a similar degree. In many of these institutions, post-graduate work in a variety of subjects is provided, leading to a master's degree, or even to a doctor's degree.

## The Horticultural Work.

We may now consider the horticultural work of these colleges in more detail.

In the early days of such instruction, the horticulture was set over against the agriculture, and these two comprised the main applied groups. The breaking-out of the group of horticulture was really the beginning of the broadening of these institutions and of their more perfect articulation with the conditions before them.

Horticulture, as understood in these colleges, comprises fruit-growing, flower-growing, vegetable-gardening, together with the nursery and glasshouse subjects naturally associated with them. With the further differentiation of the curriculum, horticulture tends to be split or separated into its three main parts, with separate units or teacherships for each, but this division has not yet proceeded far. If this division is ever carried to its conclusion, the name "horticulture" as an administrative unit will pass out.

In the colleges horticulture is regarded as a phase of agriculture. For the most part, the student approaches the subject from the point of view of farming by means of fruits or vegetables, or even of flowers. The strictly amateur or plant-love phase is incidentally emphasised, as a rule, and this undoubtedly is one of the weaknesses of American horticultural instruction. The amateur attitude, however, will appear more markedly as time goes on. The present attitude very well represents the development that America is now making, as expressed particularly in the great orchard interests. The gardeners, as a group, have had relatively little touch with these institutions in the way of dictating or even influencing their development. So far as institutions are concerned, the gardening phase of horticulture is best expressed where the great collections are, as at the Shaw or Missouri Botanical Gardens, Arnold Arboretum, Bussey Institution, New York Botanic Gardens, and the like; and these institutions will also produce highly trained specialists in related scientific lines. This excellent class of institutions I am not discussing in this paper.

## Courses of Instruction.

The content of the work in the land-grant colleges varies greatly, depending, of course, on the constituency of the particular college, as well as on the staff. Naturally, in the States in which horticultural interests are large, the work will express itself strongly in the college. At one of the colleges, in which there are four professorships and a number of minor posts in horticulture, about two dozen separate courses are given. These are transcribed here, not at all as patterns, but merely as an indication of the kind and scope of work that such institutions may offer:—

Elementary Pomology.—First term. Three hours. A study of the methods of propagation and early care of commercial fruits, including the growing of seedlings, cuttings, and layers; the principles of budding, grafting, pruning, and planting; the soils, varieties, and planting plans for the orchard. (See following course.)

Elementary Pomology.—First term. One hour. Required of students taking the advanced courses in Pomology. Laboratory course to accompany preceding course. A study of the methods of budding, grafting, pruning, and planting; varieties, nursery trees and fruit buds.

Practical Pomology. — Second term. Three hours. Pre-requisite first course above. A study of the soils and varieties for the orchard; cultivation, cover crops, fertilsation, spraying, pruning, and thinning as practised in orchard management; the picking, grading, packing, storing, and marketing of fruit. This course considers the apple, pear, quince, cherry, plum, apricot, peach, and the nuts.

Bush Fruits.—Second term. One hour. Pre-requisite first course above. A lecture course which considers the grape, raspberry, blackberry, dewberry, currant, gooseberry, and strawberry. The topics discussed are: Varieties, planting, culture, picking, grading, packing, and marketing.

Spraying of Fruit Trees.—Second term. Two hours. Pre-requisite first course above, a course in Plant Pathology, and a course in Entomology. A study of the preparation and application of the spray mixtures used in orchard practice.

Advanced Practical Pomology. — First term. Two hours. Pre-requisite first two courses above, and a course in Botany or one in Biology. The course considers the packing of apples in boxes and barrels; a comprehensive study of the varieties of peaches, plums, grapes, pears, and apples; the judging of fruits; the preparation of planting and working plans; the disposition of inferior grades and culls. From the students in this course, teams will be chosen to do practical judging at the annual meetings of the State societies at Rochester. The preparation of the fruit exhibit at the college is required of the students in this course.

Systematic Pomology.—Second term. Two hours. Pre-requisite, first three and last courses above, and a course in Botany or one in Biology. A course designed primarily for graduates and students who are preparing to do experimental work. A study of the characters and botanical relationships of the fruits of the United States. Each student is required to collect and mount a number of varieties and species.

Research in Pomology. Throughout the year. One or more hours a term. Pre-requisite first three courses above, and last course but one above; students taking this course are required to take Seminary in Pomology, mentioned below. Original investigation of problems in Pomology. A typewritten thesis is required.

Seminary.—Second term. One hour. Open only to graduates and students taking last two courses mentioned above.

Commercial Floriculture.—Second term. Three hours. Pre-requisite first term of Greenhouse and Garden Practice (see below), or commercial experience. Students are advised to take Greenhouse Construction before entering this course. Studies in the propagation and culture of the leading florist crops. As facilities permit, students will be assigned space in the greenhouses for practical experience in the growing of roses, carnations, chrysanthemums, violets, sweet peas, etc.

Commercial Floriculture. — First term. Three hours. A continuation of the preceding course, with discussions on diseases, insects, botany, and the packing, handling, and marketing of cut flowers and plants for retail and wholesale markets. Class will participate in a required excursion.

Garden Flowers.—Second term. Three hours. This course is designed to acquaint the student with garden plants and to give practical knowledge of the propagation and culture of the annuals, herbaceous perennials, bulbs, and shrubs used for cut flowers or in ornamental planting.

(To be concluded.)

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

COOL HOUSE.—The principal occupants of this house usually consist of odontoglossums and oncidiums, but there are other species of orchids which are of interest, and worthy of attention. Among them is the sweet-scented Trichosma suavis, and where fragrant flowers are appreciated it should be grown for its perfume. The partially-developed stems are now making new roots, and if repotting is needed it should be done at once. The plants will succeed either in pots or shallow pans, which must be well drained, and a compost similar to that used for cœlogynes will answer. The plant delights in a moist damp position on the stage of the house, and must not be exposed to strong sunshine, and, when well established, may be kept moderately moist the year through.

LÆLIA MONOPHYLLA.—At the present time plants of this little gem are producing their flower spikes, and it is advisable to keep them well up to the light, but a draughty position, where they will dry too quickly must be avoided. They may receive plenty of water at the roots, and must be carefully shaded from all sunshine. When established this orchid is not a difficult subject to deal with, as, given a suitable compost, kept cool and moist, it grows satisfactorily, and flowers freely from its very slender stems. Such well-known orchids as L. autumnalis and L. albida, which are often classed as cool house orchids, succeed better if rested and grown in a cool intermediate house, suspended close to the glass in a light position. Any repotting of either of these species necessary may be done at this season.

COOL HOUSE DENDROBIUMS.—Among the different orchids that will thrive in this house are Dendrobium Kingianum, D. delicatum, D. speciosum, D. Hilli, D. teretifolium, D. glomeratum, D. japonicum, and D. Victoria Regina. Any of these now starting to grow may have fresh rooting material afforded them; they prefer rather a shallow layer of compost to root in, and succeed best when grown in a strong light. A compost as used for other dendrobiums will answer their requirements. D. teretifolium is best grown on a teak raft, with a little of the compost packed closely between the bars, and under the base of the plant. It should be suspended in such a way that the pseudo-bulbs or foliage hang down naturally. D. Victoria Regina prefers a shady position, and thrives best in teak-wood baskets, in a compost in which live sphagnum moss predominates. When in full growth these all may be well supplied with water at the roots, but when at rest water must be administered to them with great caution, as many of the species require a long dry rest to induce them to flower satisfactorily.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

FERNS.—Whether grown as large specimens, or in small pots for decorative purposes, and cutting, exotic ferns are indispensable. Not only are they objects of great beauty when seen in bold groups, as was instanced at the International Show at Chelsea, but for general usefulness and beauty in association with flowering and ornamental foliage plants they are beyond price. It is pretty generally known that all kinds of ferns resent frequent disturbance of the roots, but at the same time they must have sufficient room in the receptacles for the roots to ramify, or the fronds will be soft and stunted in growth. A certain amount of shade is necessary, but in many cases this is carried to excess, the result being weak, elongated fronds that are subject to insect pests, and altogether useless for cutting. All ferns delight in abundant supplies of water at the roots, and in the atmosphere, during the season of active growth, therefore, the drainage must be of the best, or the plants will probably become water-logged and the roots perish. Established plants should be assisted by occasional applications of weak guano water, alternated with weak liquid cow or sheep manure, to which has been added a little soot. Maintain plenty of moisture in the atmosphere of the house, but avoid heavy syringings overhead. As growth develops admit a fair amount of top ventilation to the structure in order to solidify the fronds.

SELAGINELLAS.—These include many species of great decorative value, and deserve extended cultivation. Seldom has such a representative collection of these been seen as at the International Exhibition. They not only reflected great credit on the skill of the cultivator (Mr. Davis), but the exhibit went to show how pleasing these plants are when artistically arranged in association with flowering plants. The cultivation accorded the majority of stove ferns will answer for these, except that the receptacles should be shallow, as selaginellas are surface-rooting subjects.

KALANCHOE FLAMMEA.—The present time is opportune for propagating this plant, either from seeds, or stem cuttings inserted in sandy soil and plunged in a mild bottom heat. The young plants when nicely rooted should be potted off singly, using 3-inch pots, and grown on a shelf in a warm house fully exposed to sunshine, and given some air in order to ensure ripened, short-jointed wood for the production of fine flower heads. The compost most suitable for this plant consists of three parts fibrous loam to one each of leaf-soil, and old mortar-rubble, sand, and broken charcoal. A sweet porous soil is very essential to success in the cultivation of kalanchoes, and the drainage must be ample. Shift the plants into 48's when well rooted, and grow on steadily until autumn, when less water will be required.—H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY VINES.—Immediately after the crop has been gathered, special efforts should be made to keep the foliage clean and healthy. This can generally be done by the frequent use of the garden engine. The water must be applied forcibly to the under sides of the leaves. Where red spider has been troublesome, and a difficulty has been experienced in keeping this pest in check while the fruit was ripe, a good dusting of flowers of sulphur should be sprinkled upon the foliage and allowed to remain for a day or two before being washed off. Give the borders several good soakings with weak liquid manure, admit plenty of air at all times, and allow the laterals to grow more freely, but not in such a manner as to cause confusion.

SECOND EARLY VINES.—The berries will be colouring, and plenty of air should be admitted, both at the top and side ventilators, allowing a little to remain on at night. Water the borders occasionally with weak liquid farmyard manure. Stop all laterals as required, to one leaf; examine the bunches, as it may be necessary to carefully remove a few berries with a sharp pair of scissors, to allow plenty of room for the full development of the remainder.

LATE VINES.—The thinning of the berries will be accomplished, so carefully tie up the shoulders with slender pieces of raffia. Stop all laterals to one leaf, and give the borders some stimulating manure occasionally. Damp down the paths and walls frequently during warm, sunny days. Keep a sharp look-out for red spider, and sponge the affected parts with soapy water immediately it is discovered. In some localities mildew is very troublesome upon the foliage and berries of vines grown in the late houses; we have found a sulphur vaporiser, if used according to directions, is a sure and speedy remedy under these conditions.

EARLY MELONS.—Immediately all the fruits have been cut the plants should be pulled out. Give the glass and woodwork a good wash down with soapy water, remove the top portion of the soil, and add sufficient new compost to bring it up to the desired level. The house should then be planted with good strong plants that have been specially grown for this purpose. In many places it is desirable, and quite possible, to grow a second crop of fruit upon the early plants, instead of replanting again; but this can only be done where the plants have been kept in a perfectly healthy condition, and are free from red spider and thrips. The plants should be top-dressed with a mixture of good loam, wood-ashes, lime rubble, and bonemeal. Remove all useless leaves and laterals, cutting them clean away; but at the same time care should be taken to retain all fully-developed leaves that are in a healthy condition. The temperature of the house should be kept at 70 degrees, allowing a rise of 10 degrees with sun heat when the house is ventilated. Close the house early in the afternoon, thoroughly syringe the plants, and they will soon respond to this treatment. Carefully select the strongest fruiting laterals, pollinate the female flowers as they appear, and follow the cultural details, as recommended in a previous calendar.—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

SUMMER BEDDING.—This work should be pushed on as fast as circumstances permit, as in the coldest districts it is now safe to plant out the more tender subjects. The variety of plants suitable for bedding purposes is very wide, but those that are known to succeed in the district, and that are most suitable for the special position should be chosen. In an ordinary flower garden of formal design there is room for a considerable variety of plants, but a free use of standards in some of the beds when the intermediate spaces can be carpeted with suitable subjects is very desirable, for when employed as dot plants they remove any flatness in the whole arrangement. It is essential to have the standards of uniform height, and to plant very firmly, afterwards staking all the specimens that require support. The various subjects, like iresines and mesembryanthemums, that are used for carpeting require to be pegged down when planted, and subsequently as growth advances. In addition to regular waterings at the root tender bedding plants derive much benefit from frequent dampings overhead during bright dry weather, as humidity of atmosphere greatly encourages free growth.

CLIMBERS.—These now require a good deal of attention in the way of tying and regulating the growths. It is always an advantage to remove the weakest of the young shoots to avoid overcrowding the stronger ones, and also to allow them to mature more fully for flowering. Train them evenly over the trellises or poles, so that the space at disposal may be evenly covered. Climbing roses require similar treatment before they commence to flower, while plants that are affected with aphides must be sprayed with quassia to eradicate those pests.

GENERAL WORK.—Various plants in the herbaceous borders require further tying, and when dealing with subjects like Michaelmas daisies and phloxes remove the weakest of the growths, as they would only produce poor flowers, and by this treatment the remaining growths are allowed more space to develop, and invariably give better results. Keep flower borders regularly stirred with the hoe, and remove all dead flowers as they appear. Tulips should be lifted after flowering, and the bulbs laid out to ripen, and vacant spaces so caused must be filled in with plants grown for the purpose in pots. Pentstemons and border carnations require neatly staking as the flower stalks are developing fast. Newly-planted shrubs must not be allowed to suffer for want of moisture at the roots, and after watering a good mulching of partly decayed manure will assist in checking evaporation. Frequent sprayings overhead are always an assistance in helping them to make free growth. Give annuals a final thinning before they become overcrowded.—J. GARDNER, Batsford Park Gardens.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER AND THE NORTHERN COUNTIES.

GRAND ROSE SHOW
and
SUMMER SHOW,
At the White City and Botanical Gardens,
Manchester,
On JULY 12th and 13th, 1912.
(Please note alteration of dates.)

PRIZES. £200 PRIZES.
FOR ROSES, GROUPS, SWEET PEAS, AND HERBACEOUS FLOWERS.

Schedules and all Particulars from P. Weathers, Secretary, Botanical Gardens, Manchester.

THE NATIONAL HARDY PLANT SOCIETY'S FIRST SHOW
will be held in the R.H.S. Hall, Vincent Square,
on WEDNESDAY, June 19th,
1 p.m. to 6 p.m.
Admission One Shilling.

Since publication of the Schedule two Classes have been added. One for Six Bunches Sutton's Pink Sweet William, and one for Six Bunches Scarlet ditto. Messrs. Sutton and Sons offer prizes, 21s., 10s., and 5s. in each class.

Entries close June 8th.

Schedules and particulars from A. J. MACSELF, 32, Beechfield Road, Finsbury Park, N.

NORTH LONSDALE ROSE SOCIETY, ULVERSTON.

29TH ANNUAL EXHIBITION
will be held FRIDAY, JULY 12th.

An Open Challenge Shield, 9 Challenge Cups, 5 Gold, 10 Silver, and 15 Bronze Medals, in addition to the usual money prizes, to be awarded for Roses, Sweet Peas, etc. Three "Single Bunch" Classes for Sweet Peas, in which £26 is offered.
All Leading Seedsmen are offering substantial prizes.
ENTRIES CLOSE JULY 6th.
Schedules, etc., apply, Hon. Secs., County Square, Ulverston.

CARDIFF AND COUNTY HORTICULTURAL SOCIETY. 24th GRAND ANNUAL SHOW, SOPHIA GARDENS, CARDIFF, WEDNESDAY and THURSDAY, JULY 17th and 18th, 1912.
Specially good Prizes in every Section, amounting in Money and Plate to nearly £500. Two programmes of Music each day by the Band of the 2nd Batt. "The Royal Scots." Mr. John Studt's up-to-date Fun of the Fair each day. Tents lighted by Electricity by Messrs. Fred Price and Co., Lim.
Popular Prices. Tickets and Schedules may be obtained from the Secretary, Mr. A. MAURICE BAILEY, 24, Duke Street, Cardiff.

RICHMOND HORTICULTURAL SOCIETY.

THE 38TH SUMMER EXHIBITION
will be held in the
OLD DEER PARK, RICHMOND, SURREY,
WEDNESDAY, 26th JUNE.
(Entries close 19th.)
For Schedules, and all information, apply to W. J. Cook, Hon. Sec., Holmsley House, Richmond.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

On June 4, close after the great International Exhibition, one expected a small meeting at Westminster, but met with an agreeable surprise for the hall was crowded, and even annexes were filled. On the whole, the quality of the exhibits was rather below the usual average, but no one complained. There was a fairly good attendance.

### FLORAL COMMITTEE.

Messrs. Dobbie and Co., Edinburgh, were again to the front with sweet peas, and set up glorious flowers in grand style, staging large bunches and stands of each variety. Dobbie's Scarlet, May Campbell, Earl Spencer, Afterglow, Chas. Foster, the lovely Melba, Eltrida Pearson, Mrs. Cuthbertson, and Rosabelle were a few of the many lovely varieties in a delightful group. St. Brigid anemones in great variety of colouring were well set up by Messrs. Reamsbotton and Co., Geashill, King's Co., Ireland.

Early dahlias from Messrs. Carter, Page, and Co., London Wall, were associated with charming violas and such annuals as dimorphotheeas, Phlox Drummondi, salpiglossis, etc. Messrs. Whitelegg and Page, Chislehurst, contributed some excellent delphiniums, a blaze of the fine Geum Mrs. J. Bradshaw, Calceolaria Clibrani, and Anchusa italica Opal.

Mr. James Box, Lindfield, filled a corner of the hall with a handsome group of cut hardy flowers. Delphinium Moerheimi, Heuchera gracillima, Papaver orientale Duke of Fife, a selection of irises, and long-spurred columbines, made up a very bright exhibit. From Messrs. G. Bunyard and Co., Maidstone, came a most effective bank of hardy flowers; pæonies were a fine feature, but Spanish irises, delphiniums, Oriental poppies, and heucheras in variety added grace and brilliant colouring.

Across the end of the hall Messrs. Kelway and Son, Langport, Somerset, displayed some of their specialities in pæonies and delphiniums; among the former the single varieties, such as Meteor Flight, Sea Shell, Heart's Desire, very fine rich rose; Nellie, Princess, Cherry Ripe, and Tinted Venus especially attracted our attention, while the deep violet-blue delphinium Zinfandel was grandly shown.

Mr. Amos Perry, Enfield, specialised in Oriental poppies, and showed a wide range of colour and size. Of special merit were Silver Queen, Queen Alexandra, Menelik, Iris Perry, Mrs. Perry, and Nancy. Mr. Perry also staged large bunches of Dictamnus caucasicus.

Messrs. Pipers, Bishop's Road, Bayswater, filled a considerable space with roses, campanulas, primulas, aubrietias, and a little group of the long-tubed Polemonium flavum.

Messrs. Paul and Son, Cheshunt, had a goodly bank of single and double pæonies, bordered by vases of heucheras, their H. purpurea marmorata being very rich and fine. Messrs. Phillips and Taylor, Bracknell, had a lily pool surrounded by irises and primulas, and a bank of Oriental poppies, pyrethrums, and invarvilleas, the whole having a neat rockwork edging.

Mr. C. Blick, Hayes, Kent, staged some superb carnations, and set up quite large bunches of Thos. a'Becket, the White King George, Elizabeth Shiffner, Rebecca, Argonaut, Donald MacDonald, and Dauntless; in every case the flowers were of fine size and good form. Messrs. S. Low and Co., Enfield, exhibited perpetual and Malmaison carnations in variety, and put up a set of the newer hydrangeas.

Superb perpetual carnations were set up by Mr. H. Burnett, Guernsey, whose blooms of Mrs. Tatton, R. F. Felton, Mrs. C. F. Raphael, Mikado, White Wonder, and Mandarin were glorious. Mr. J. Douglas, Great Bookham, exhibited border carnations and pinks in variety and of high quality, especially noteworthy being the brilliantly-coloured yellow-ground fancy Margaret Lennox.

Eremurus robustus was finely shown by Messrs. Thos. S. Ware, Lim., Feltham, who put up great sheaves of this stately flower among vases of delphiniums, pyrethrums, Oriental poppies, campanulas, and the lovely Fair Maid antirrhinum.

Messrs. E. W. King and Co., Coggeshall, had a quite artistic display of sweet peas, staging these dainty flowers in vases of varying heights and in tall stands and on arches. Yankee, Anglian Blue, Anglian Pink, Gladys Burt, and Mrs. W. King were prominent varieties. Messrs. S. Bide and Sons, Farnham, exhibited sweet peas in neat bunches, their Edrom Beauty, Isobel Malcolm, Mrs. C. W. Breadmore, Scarlet Monarch, and Blue Belle standing out most distinctly.

Messrs. Frank Cant and Co., Colchester, presented vases of beautiful blooms of such roses as Mdme. Melanie Soupert, Una, Queen Mab, W. A. Richardson, Braiswick Beauty, the exquisite Margaret Molyneux, and the yellow climbing Braiswick Gem. Roses from Messrs. B. Cant and Sons, Colchester, made a brave show, and the pillar plants of Blush Rambler, White Dorothy, Christian Curle, the new White Sweet Pea, and Lady Godiva formed a fine background. Elizabeth, Colcestrea, Claudius, and Lady Reay were roses finely shown in the foreground.

Mr. E. J. Hicks, Hurst, Berks, put up a bank of climbing and rambling roses in the orchid annexe, and made a very pretty exhibit with Claire Jacquier, Jean Giuchard, Trier, Alberic Barbier, Aglaia, Electra, Harrison, etc. Mr. G. Prince, Longworth, Berks, exhibited rambling and garden roses in the fruit anexe, but the position was not a good one, and the flowers were crowded; W. A. Richardson, Mdme. Abel Carriére, and Gruss an Zabern were three varieties effectively staged. Messrs. Paul and Son, Cheshunt, displayed garden roses, among which the old Black Moss, Shower of Gold, Gerbe Rose, Sinica, and Austrian Yellow were notable.

Messrs. Wm. Cutbush and Son, Highgate, presented a bold group of palms, crotons, and dracænas, these forming a background for fine examples of such handsome hydrangeas as Mdme. E. Mouillière, La Perle, Monsieur Ghys, the pink Pres. Viger, and General de Vibraye. A very pretty group from Mr. L. R. Russell, Richmond, consisted of graceful Japanese maples, cytisus, etc., as a background to a sloping face of rockwork, well filled with dianthuses, iberis, sedums, campanulas, and other alpine and dwarf herbaceous plants. Messrs. R. H. Bath, Lim., Wisbech, had a very bright exhibit of pæonies, delphiniums, Spanish irises, pyrethrums, among the latter Louis Figuer, Hampton, Toreador, Persimmon, and Mrs. K. F. Carron were excellent. A little group of dwarf yellow and red-brown calceolarias, the variety named Tortoiseshell struck us as being a remarkably good bedding plant.

Mr. T. Hobbs, gardener to Vivian Phillips, Esq., Crofton Court, Orpington, displayed a magnificent lot of herbaceous calceolarias; the plants were not exceptionally large, but grandly flowered, and the individual blooms were of enormous size, some of these measuring four inches in width. The range of colouring, too, was splendid—indeed, the whole exhibit was of high quality.

Messrs. H. B. May and Sons, Edmonton, filled a table with well-grown pot verbenas, Swainsonias, ixoras, heliotropes, and bright lantanas. Messrs. Jas. Veitch and Sons, Chelsea, occupied their usual position. Under graceful standard heliotropes and fuchsias they put up a brilliant set of the very finest cannas, Calceolaria Clibrani, the glorious Clianthus Dampieri, the pretty Lavatera assurgentiflora with satiny flowers, and the beautiful drooping, white-flowered Elæocarpus cyaneus. The same firm contributed a bank of their excellent strains of Nemesias; Blue Gem and White Gem were particularly fine and freely flowered.

Mrs. Lloyd Edwards, Bryn Oelog, Llangollen, brought up a collection of heucheras, and staged these in baskets in the manner she has adopted previously with saxifragas; H. Princess Mary, H. Liberty, H. Cherry Spray, H. Queen of Roses, and H. Corallina appealed to us by reason of their grace and special beauty. Mr. G. Reuthe, Keston, showed some hardy cypripediums, ixias, Calochortus pulchellus, pæonies, and a collection of alpines. Messrs. J. Peed and Son, West Norwood, filled a corner with a little rock garden with flanking groups of their excellent strain of gloxinias.

Mr. F. W. Smith, gardener to E. Ferguson, Esq., The Hollies, Weybridge, well-known as a raiser of new delphiniums, exhibited a large set of new varieties, all characterised by strong spikes and a graceful setting of the flowers on the spike. Among cream and white varieties Mr. Smith has good things in Snowdon, Ben Nevis, Floreat, and Nellie, the latter especially good in size and form.

Rhodesia and Neapoli among soft blue forms were also excellent. Mr. Downes, gardener to J. T. Bennett Poë, Esq., Holmwood, Cheshunt, brought up a little group of Utricularia montana, the plants all finely flowered. Zonal pelargoniums, a collection of fuchsias, cannas, and irises made up a bright group from Messrs. H. Cannell and Sons, Swanley.

Mr. Delmard, gardener to the King of Bulgaria, Sofia, exhibited interesting photographs of Bulgarian gardens and scenery. The Hon. F. Wolseley, Glynde, exhibited a model garden.

Messrs. Bakers, Wolverhampton, were also exhibitors of hardy flowers, and presented a pleasing little display.

### ORCHID COMMITTEE.

A superb bank of orchids, every plant a specimen and grandly flowered, was staged splendidly by Mr. H. Alexander, grower to Lieut.-Colonel Sir G. Holford, Westonbirt, Gloucester. There were beautiful examples of Lælio-cattleya Aphrodite, L.-c. Luminosa Canary Bird, L.-c. Canhamiana, with from twenty-five to thirty flowers; L.-c. Martineti The Prince, a grandly coloured and large-flowered variety; the chaste Odontoglossum armainvilliersense xanthote Westonbirt var., a specimen of Miltonia vexillaria Snowflake with thirteen spikes and seventy-three flowers, M. v. Empress Augusta represented by eight specimens carrying an aggregate of 295 flowers, M. v. marmorata carrying nine spikes and forty-one flowers on one plant, Cattleya Warscewiczi, one having five spikes and twenty flowers, and the graceful Oncidium dwaricatum, as well as many other good things. A grand group, especially after the Westonbirt effort at Chelsea.

Messrs. Charlesworth and Co., Haywards Heath, had a very pretty and graceful group of orchids. In the centre they grouped about three dozen spikes of Phalænopsis Rimstadiana. On either side of these they staged Lælio-cattleya Fascinator, Cattleya Mossiæ Wagneri, Sobralia Cliftoni—a lovely white flower with pink-tinged lip, Bulbophyllum vivescens, miltonias, and numerous hybrid odontoglossums and odontiodas.

Messrs. Sander and Sons, St. Albans, put up an effective exhibit of orchids, and showed capital plants of Lælia purpurata, Dendrobium Gouldei, fine forms of Cattleya Mossiæ, Maxillaria Sanderiana, Cattleya gigas Sanderiana in splendid form, thunias, odonticdas and odontoglossums in variety, and a few graceful phalænopsis.

Mr. J. and A. McBean put up some beautiful forms of Cattleya Mossiæ, several fully grown plants of Miltonia vexillaria, M. Bleuana, white forms of Odontoglossum crispum, and several good odontiodas. Messrs. Hassall and Co., Southgate, displayed Cattleya Mossiæ in variety, a white form of C. Mendeli, C. gigas, Angulosa Clowesi, etc. Lælio-cattleya Martineti Southfield var., with yellow sepals and petals, was sent by W. Waters Butler, Esq., Southfield, Edgbaston.

Mr. Stables, gardener to De Barri Crawshay, Esq., Sevenoaks, submitted the handsome Odontoglossum Leonides (Hallio-crispum x triumphans), Odontioda Devoniana and the lovely O. Rosefieldiensis with a pair of beautiful spikes of rich-hued flowers. Odontoglossum Thais from Mr. E. G. Phillips, The Glebes, Sevenoaks, was greatly admired.

From the Liverpool Orchid Nursery Company, Liverpool, came a group of hybrid lælio-cattleyas, such as L.-c. Cowani, L.-c. Aphrodite, L.-c. dominiana, and the bright L.-c. Eudora. Mr. A. W. Jensen, Haywards Heath, showed a little group of Cattleya Mossiæ and C. Mendeli in fine varieties.

A large group from Mr. G. Day, gardener to H. S. Goodson, Esq., West Hill, Putney, occupied a prominent place in the orchid annexe. The plants were capitally arranged over ferns, and included a host of odontoglossoms, Brasso-lælio-cattleya Veitchi Goodson's var., and lælio-cattleyas in variety. A few odontiodas and masdevallias were also included. Mr. H. A. Tracey, Twickenham, put up some lovely forms of Cattleya Mossiæ, C. Mendeli, Disa Veitchi, and odontoglossums.

Messrs. Stuart Low and Co., Enfield, had a very bright exhibit of orchids that included Lælio-cattleya callistoglossa, Dendrobium thyrsiflorum, Cattleya Mossiæ, Dendrobium Dalhousianum, miltonias, and Renanthera Imschootiana.

### FRUIT COMMITTEE.

Messrs. Laxton Brothers, Bedford, exhibited a splendid, highly-flavoured strawberry of light colour, named The Queen; it may be regarded as an improved British Queen, and a better cropper and grower than that fine variety. Of its flavour we can speak very highly.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Elæocarpus reticulatus, from Messrs. Jas. Veitch and Sons, Chelsea; and to Miltonia vexillaria Snowflake, from Lieut.-Colonel Sir G. Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury.

Award of Merit.—To Dendrobium Goldei, from Messrs. Sander and Sons, St. Albans; to Odontoglossum Lambeauianum Princess Mary, from H. S. Goodson, Esq. (grower, Mr. Day), West Hill, Putney; to Delphinium Dusky Monarch, from Messrs. J. Kelway and Son, Langport; to Carnations Queen Mary and Attraction, from Mr. Chas. Blick, Hayes, Kent; to Silene Hookeri, from Messrs. T. S. Ware, Lim., Feltham; to Zonal Pelargonium Champion, from Mr. P. Ladds, Swanley Junction; to Gladiolus Rosina, from Mr. Blamfield; to Sweet Peas Dobbie's Lavender George Herbert, Thos. Stevenson, and May Campbell, from Messrs. Dobbie and Co., Edinburgh; to Carnation Margaret Lennox, from Mr. Jas. Douglas, Great Bookham; to Lælio-cattleya Aphrodite Cowan's var., from the Liverpool Orchid Nursery Company, Liverpool; and to Odontoglossum Thais, from C. G. Phillips, Esq., The Glebes, Sevenoaks.

### MEDALS.

Gold.—To Lieut.-Colonel Sir G. Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester, for orchids; to Messrs. Dobbie and Co., Edinburgh, for sweet peas.

Silver-gilt Flora.—To H. S. Goodson, Esq. (grower, Mr. Day), West Hill, Putney, for orchids; to Mr. H. Burnett, Guernsey, for carnations; to Messrs. J. Kelway and Son, Langport, for pæonies and delphiniums; to Messrs. Paul and Son, Cheshunt, for roses and pæonies.

Silver Flora.—To Messrs. B. Cant and Sons, Colchester, for roses; to G. Ferguson, Esq. (gardener, Mr. F. W. Smith), The Hollies, Weybridge, for new delphiniums; to Messrs. J. Peed and Son, Norwood, for gloxinias; to V. Phillips, Esq., Orpington, for calceolarias; to Mr. G. Prince, Longworth, for roses; to Messrs. J. Veitch and Sons, Chelsea, for greenhouse flowering plants; to Messrs. T. S. Ware, Lim., Feltham, for hardy flowers; to Mr. Amos Perry, Enfield, for poppies; to Messrs. Sander and Sons, St. Albans, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids.

Silver Banksian.—To Messrs. J. and A. McBean, Cooksbridge, for orchids; to Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Hassall and Co., Southgate, for orchids; to Mr. J. Box, Lindfield, for hardy flowers; to Messrs. F. Cant and Co., Colchester, for roses; to Mr. A. Delmard, gardener to the King of Bulgaria, Sofia, for photographs; to Mr. E. J. Hicks, Twyford, for roses; to Messrs. E. W. King and Co., Coggeshall, for sweet peas; to Messrs. H. B. May and Sons, Edmonton, for greenhouse plants; to Mr. C. Blick, Hayes, for carnations; to Mrs. Lloyd Edwards, Llangollen, for heucheras.

Bronze Flora.—To Messrs. Whitelegg and Page, Chislehurst, for hardy flowers.

Bronze Banksian.—To Messrs. Bakers, Wolverhampton, for hardy flowers; to Liverpool Orchid Nursery Company, for orchids; to Mr. H. A. Tracey, Twickenham, for orchids; to Mr. A. W. Jensen, Haywards Heath, for orchids.

## Croydon Gardeners' Society.

This society completed its first session of this year a few days ago, and the programme was slightly altered owing to the unavoidable absence of the scheduled lecturer. However, there are members who can at short notice come forward and give a lecture instructive and entertaining, and Mr. M. E. Mills, Coombe House Gardens, entertained his fellow-members with an illustrated lecture on "The Cultivation of Rock Plants in Pots and in the Rock Garden." The gardens at Coombe are well known as possessing an ideal rock garden, and it has been the members' pleasure to inspect this garden on past occasions. For pot culture, Mr. Mills' advice was to first know the natural habitat of the plants to be grown, and in drainage, as well as soil, the idea should be to make as near alike to its natural position as possible. Generally speaking, the soil should be firmly pressed into the pot, and where the plant thrives in dry altitudes a few small pieces of tufa or sand-stone should be placed on the surface for the plant to rest upon. They require no artificial heat, simply a cold frame, and the pots or pans plunged in spent ashes is sufficient for them. During the winter months very little moisture is required, and it is only during their flowering period they require the aid of the water-can.

Perhaps pot culture does not show them off to the best advantage, and good clumps of different kinds growing in the rock garden, or at edges of garden paths, better conveys the beauty they possess. The views shown were mostly from photographs taken by the lecturer, and to his audience they opened up a picture of pleasing character. Mr. Mills emphasised the fact that in a collection one must study the colour scheme, and also the different times of flowering, for in the latter one can find bloom all the year round.

The big selection of slides shown on the screen gave evidence of photographic skill as well as cultivation, and it was with much applause and congratulation the hearty thanks of the meeting were given to Mr. Mills when he concluded his discourse.

An interesting exhibit came from Mr. F. W. Moore, who put up a pot of Ornithogatum pyramidalis. Mr. O. Jeal staged a capital brace of cucumbers, and Mr. T. W. Hayden a dish of Mayduke gooseberries.

**Aralia Sieboldi** — This shrub, which botanists tell us should be known as Fatsia japonica, is well known, and a favourite one for indoor decoration. It is often popularly though erroneously referred to as the Castor Oil Plant, which is really a member of quite a different order. Plants of it in the dwelling-house are apt to become tall and leggy, and cutting down is often practised. It is not so generally recognised that this aralia is quite hardy, and forms a very valuable evergreen, hence plants that have grown too large indoors may be safely planted out towards the end of May. They will then become hardened before the winter. Aralia Sieboldi is one of the best of all evergreens for towns.—W. T.

→ **Spraying** ←
The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested

"FOUR OAKS"
which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-.** No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 C, SUTTON COLDFIELD.**

## ANSWERS TO CORRESPONDENTS.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

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CRICKET BAT WILLOW.—Bats, Falmouth: I am becoming interested in the matter of willow timber for bat-making purposes, and, remembering you have referred to the matter on several occasions, I am writing to ask if you could tell whether the subject is dealt with fully in any special publication.—You will find this subject of cricket-bat willow (a form of Salix alba var. coerulea) dealt with fully in the "Kew Bulletin" of 1907. It may be possible to get the special issue separately, but the volume for that year can be obtained from Messrs. Wyman and Sons, Lim., Fetter Lane, E.C., for 5s. 5d., post free. In a recent issue (No. 4, 1912, price 4d.), of the "Bulletin" further reference is made to the subject.

"G. M." SPECIAL EXHIBITION NUMBERS.—B. M. J., Dublin: Is it possible for me to obtain copies of the Gardeners' Magazine of May 18, May 25, and June 1, containing reports and illustrations of the Great International Exhibition? I cannot get copies here, and several friends are anxious to have them.—The issues of May 18 and June 1 may be obtained from our Publisher, 148, 149, Aldersgate Street, London, E.C., but at the moment of writing there are no copies of May 25. However, a few may yet return from provincial newsagents, and if you send your full address a postcard will be sent stating whether that issue can then be supplied.

BUDDLEIA VARIABILIS VEITCHI.—S. B. C., Godalming: What would be a good position for Buddleia variabilis Veitchi? I can place it in the open, where it will be sheltered from cold winds, or plant it against the house wall, having a south by south-west exposure.—As the plants are not costly, and can be supplied in pots at this season of the year, we suggest you try one in each of the positions suggested, or, better still, try B. variabilis Veitchi in the open, and B. variabilis magnifica against the house. These Buddleas will stand hard pruning in the late winter, or early spring, and so can be kept well secured to the wall. Growth is vigorous, however, and the grace of the plant would be spoiled if this were tied in closely during the summer. The soil should be rich, light, and well drained, and in a border close to a house wall, some attention to watering and feeding will be desirable in due course.

HORTICULTURE AND THE BOARD OF AGRICULTURE.—R. E. N., Banbury: Can you give me any idea of the programme which the proposed Horticultural Division of the Board of Agriculture will follow. Until the matter is officially published we can say little about the working of the Horticultural Division, which Mr. Runciman is instituting. The statement that £3,000 a year will be set apart for horticultural purposes, from the Development Fund, is erroneous, as also is the statement that intensive gardening is to be a great part of the work of the Division. Judging from what Mr. Runciman has said, special attention will be given to—more effective administration of the Destructive Insects and Pests Acts; issue of more and better advice to horticulturists in the form of leaflets; expert answers to inquiries on all horticultural subjects; stimulation of horticultural education in the counties; and extension of the present system of granting clean bills of health with reference to plants for export. Bee-keeping in its relation to fruit culture is to receive special attention. We understand that in a month or so the arrangements for putting the new Division into working order will be completed. There are rumours to the effect that Mr. A. D. Hall, who is leaving Rothamsted in the autumn to take up an appointment under the Government, is to take charge of this Horticultural Division, but so far there has been no official pronouncement in this connection.

VARIEGATED GROUND IVY.—L. L. C., Swanage: We have a plant of the pretty variegated ground ivy in the rock garden, but it never seems quite happy, quite failing to grow as vigorously as some examples I have seen elsewhere. It is a sunny position and good soil. Can you suggest a reason for its partial failure under those conditions?—The variegated ground ivy (Nepeta Glechoma variegata) does better in a rather shady place than in a sunny one, and it also loves a moist situation. If you can provide these conditions in some other part of the rock garden you will find the plant succeed quite well.

GERMAN OR BEARDED IRISES.—C. P., Hunstanton: Having a number of good varieties of German or Bearded irises, and wishing to plant them in a new position for a special purpose, it has occurred to me that I have seen statements in the Gardeners' Magazine to the effect that planting is best done just after flowering. Am I right?—Yes; the best time to divide and replant German irises is as soon as they have finished flowering, as they are then making new roots, and soon become re-established. Select a site where the soil is rich but thoroughly well drained; see that the soil is moist before planting, and also give the plants a good watering a few hours before lifting them. Plant firmly, but barely cover the rhizomes, and take care that sufficient water is given until the plants are quite at home in their new quarters.

LIST OF SWEET PEA NAMES.—G. C. M., Beckenham: I believe the National Sweet Pea Society has issued a List of Sweet Pea Names, and is offering the same as a modest price. Kindly tell me from whom I can obtain a copy.—The official "List of Sweet Pea Names" is 7d. post free, and can be obtained from Mr. C. H. Curtis, hon. secretary, N.S.P.S., Adelaide Road, Brentford.

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### NAMES OF PLANTS.

S. S., Epsom.—Cotoneaster horizontalis.

J. R. S., Boscastle.—Santolina Chamæcyparissus.

J. M., Wells.—1, Euonymus europæus; 2, Ilex crenata major; 3, Ononis luteus.

F. L. S., Chester.—1, Lychnis viscaria; 2, Saxifraga pyramidalis; 3, Chrysogonum virginianum.

M. E., Chippenham.—1, Anchusa italica; 2, probably Gaura Lindheimeri, too small for proper identification.

C. K., Gloucester: 1, Dracocephalum grandiflorum; 2, Iris sibirica; 3, Sprekelia formosissima; 4, probably Pyrola rotundifolia.

A. G. B., Swanley.—1, Daphne alpina; 2, Verbena venosa; 3, Lycium barbarum; 4, Aciphylla squarrosa; 5, Fabiana imbricata.

W. R. J., Felixstowe.—1, Trollius europæus; 2, Swainsonia galegifolia; 3, Ajuga Brockbanki; 4, Phlox divaricata; 5, Streptosolen Jamesoni.

C. M., Lincs.—1, Cytisus purpureus; 2, probably Heuchera cylindrica; 3, the pelargoniums are hybrid forms obtained by crossing large-flowered kinds with the scented-leaved species.

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## TRADE NOTE.

From Messrs. McDougall Brothers, of Port Street, Manchester, so well known for their special insect-destroying preparations, we have received a sample of "Katakilla" wash, manufactured expressly for the purpose of combating caterpillars, green and black fly, psylla, and similar garden pests. Used according to directions, this is a most effective wash, and it has the very great merit of being non-poisonous. A special measure is supplied free with each tin.

Canary Guano

"THE BEST IN THE WORLD."

There is no Fertilizer that gives such good all-round results as Canary Guano. It is used by the leading Amateur and Trade Growers all over the country. A postcard to the Manufacturers will ensure full particulars. . . . . .

Sold by practically all Seedsmen in Tins, 6d., 1s., and 2s. 6d., and in Bags (14lb.) 3s. 6d.; (28lb.), 6s.; (56lb.), 11s., and 1 cwt., 20s. each.

Manufactured by:

The Chemical Union, Ltd.
IPSWICH.

## MARKETS.

◆

### COVENT GARDEN.

#### Flowers.

A good and steady demand prevails, and supplies are good, though not over-abundant.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 5 0 | to | 8 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 15 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 15 0 |
| Cattleyas | per doz. | 10 0 | | 12 0 |
| Cornflowers | per doz. bun. | 1 0 | | 3 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz | 1 6 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 5 0 | | 12 0 |
| Gypsophila | per doz. bun. | 4 0 | | 8 0 |
| Iris, Spanish | per doz. bun. | 6 0 | | 10 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 2 0 | | 3 6 |
| ,, longiflorum | per doz. | 2 0 | | 3 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 6 | | 2 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 3 0 | | 4 6 |
| Pæonies | per doz. bun. | 3 0 | | 10 0 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Pinks | per doz. bun. | 2 0 | | 3 0 |
| Poppies | per doz. bun. | 2 0 | | 5 0 |
| Pyrethrums | per doz. bun. | 2 0 | | 5 0 |
| Roses | per doz. | 1 0 | | 3 6 |

#### Fruits.

Although the strike has not affected business seriously, it has slightly curtailed certain supplies. There is an excellent demand for grapes, peaches, oranges, and strawberries.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, Australian | per box | 8 0 | 13 0 |
| Apricots, French | per box | 0 10 | 1 0 |
| Bananas | per bun. | 4 0 | 13 0 |
| Cherries | per ½ sieve | 5 0 | 8 0 |
| Figs | per doz. | 2 0 | 6 0 |
| Gooseberries | per ½ bush. | 3 6 | 5 0 |
| Grapes, English | per lb. | 1 6 | 8 0 |
| ,, Cape | per case | 4 0 | 10 0 |
| ,, Guernsey | per lb. | 1 6 | 2 3 |
| Lemons | per case | 7 6 | 22 0 |
| Melons | each | 1 0 | 3 0 |
| Nectarines | per doz. | 4 0 | 15 0 |
| Oranges | per case | 8 0 | 28 0 |
| Peaches, English | per doz. | 3 0 | 15 0 |
| Pears, Australian | per case | 8 0 | 15 0 |
| Pineapples | each | 3 0 | 5 0 |
| Strawberries | per lb. | 0 9 | 3 0 |
| ,, Southampton | per basket | 2 0 | 4 0 |

## OBITUARY.

### MR. HUGH RANGER.

We regret to record the death of Mr. Hugh Ranger, which occurred after a long illness at his residence at Cressington, Liverpool, on the 27th ult., in his 61st year. From 1878 Mr. Ranger occupied the position of nursery manager to Messrs. R. P. Ker and Sons, at Aigburth, Liverpool, and during his long period of service did excellent work both as a cultivator and raiser. With the co-operation and generous encouragement of the firm, he first devoted attention to the raising of crotons, and, as evidence of the result achieved, several of the varieties now occupy a prominent position among those in general cultivation. Subsequently, on the suggestion of the firm, he turned his attention to the improvement of amaryllis. In this work he was assisted by the advice and the encouragement of Mr. R. Wilson Ker, V.M.H., F.L.S., who, by the purchase of the finest varieties of the day, both at home and abroad, as supplementary to the fine collection in the nurseries of the firm at Aigburth, contributed materially to the rapid strides that were made in the improvement in the form of the flowers and the development of new shades of colour. Mr. Ranger was, it should be added, a skilful cultivator as well as a successful raiser.

## FORTHCOMING ENGAGEMENTS.

MONDAY, June 10.—United Horticultural Benefit and Provident Society.

TUESDAY, June 11.—Royal Counties' Agricultural Society: Flower Show; three days.

WEDNESDAY, June 12.—East Anglian Horticultural Club.

Royal Society of Arts.

Royal Cornwall Agricultural Society; two days.

TUESDAY, June 18.—Royal Horticultural Society: Committees meet at 12 o'clock; lecture at 3 p.m., by Prof. E. Henslow, on "Prof. J. S. Henslow as an Ecologist." Scientific Committee at 4 o'clock.

Gladiolus Show at Royal Horticultural Hall.

WEDNESDAY, June 19.—York Floral Fete and gala; three days.

National Hardy Plant Society's Exhibition at the Royal Horticultural Hall.

THURSDAY, June 20.—Linnean Society Meeting.

WEDNESDAY, June 26.—Southampton Rose Show.

Colchester Rose and Summer Show.

Richmond Horticultural Society.

Royal Botanic Society Meeting.

Royal Society of Arts.

THURSDAY, June 27.—Isle of Wight Rose Show.

SATURDAY, June 29.—Windsor Rose Show.

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**WM. DUNCAN TUCKER & SONS, LTD.,**
**HORTICULTURAL ENGINEERS, &c.,**
**AWARDED**
**LARGE GOLD MEDAL,**
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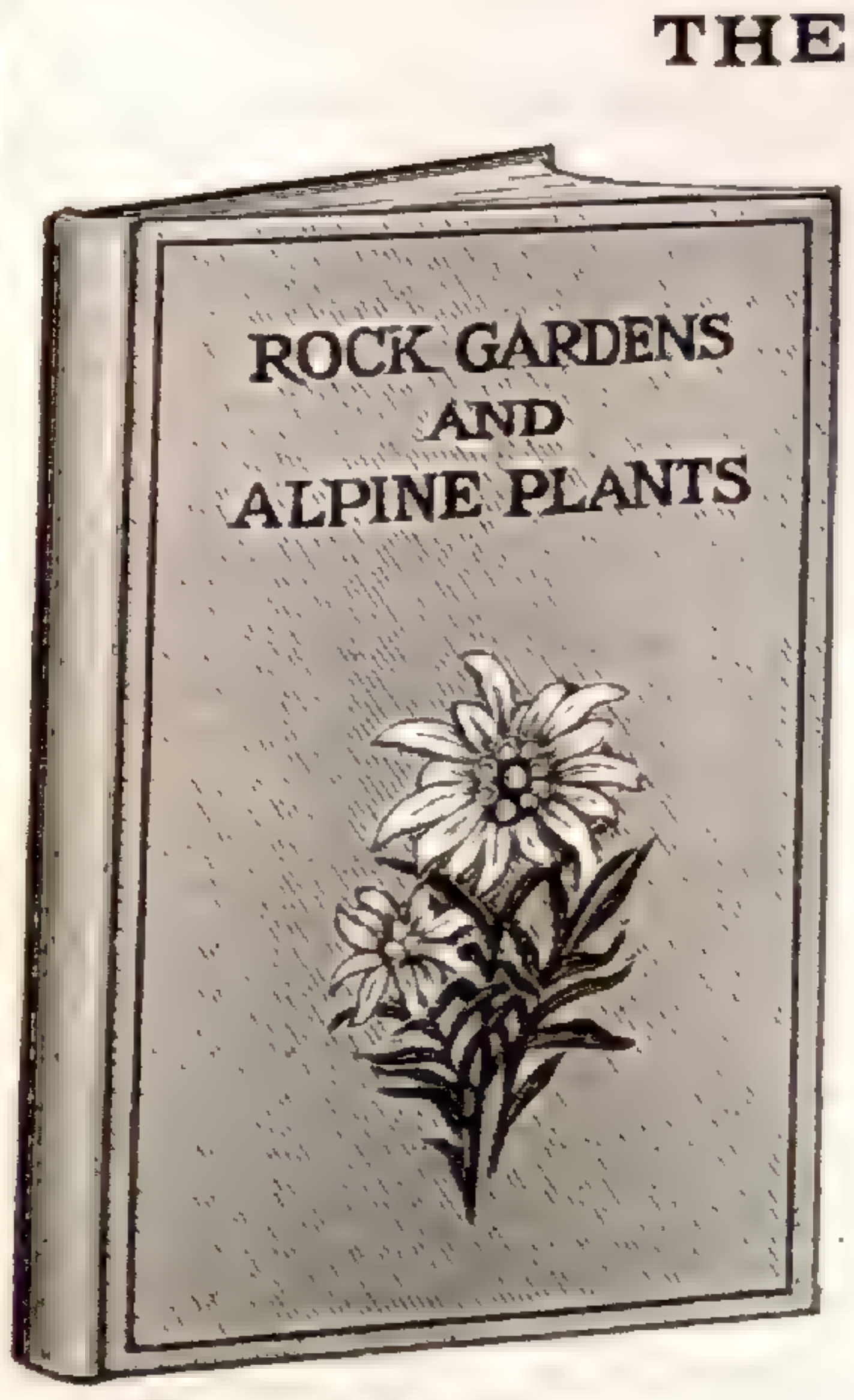
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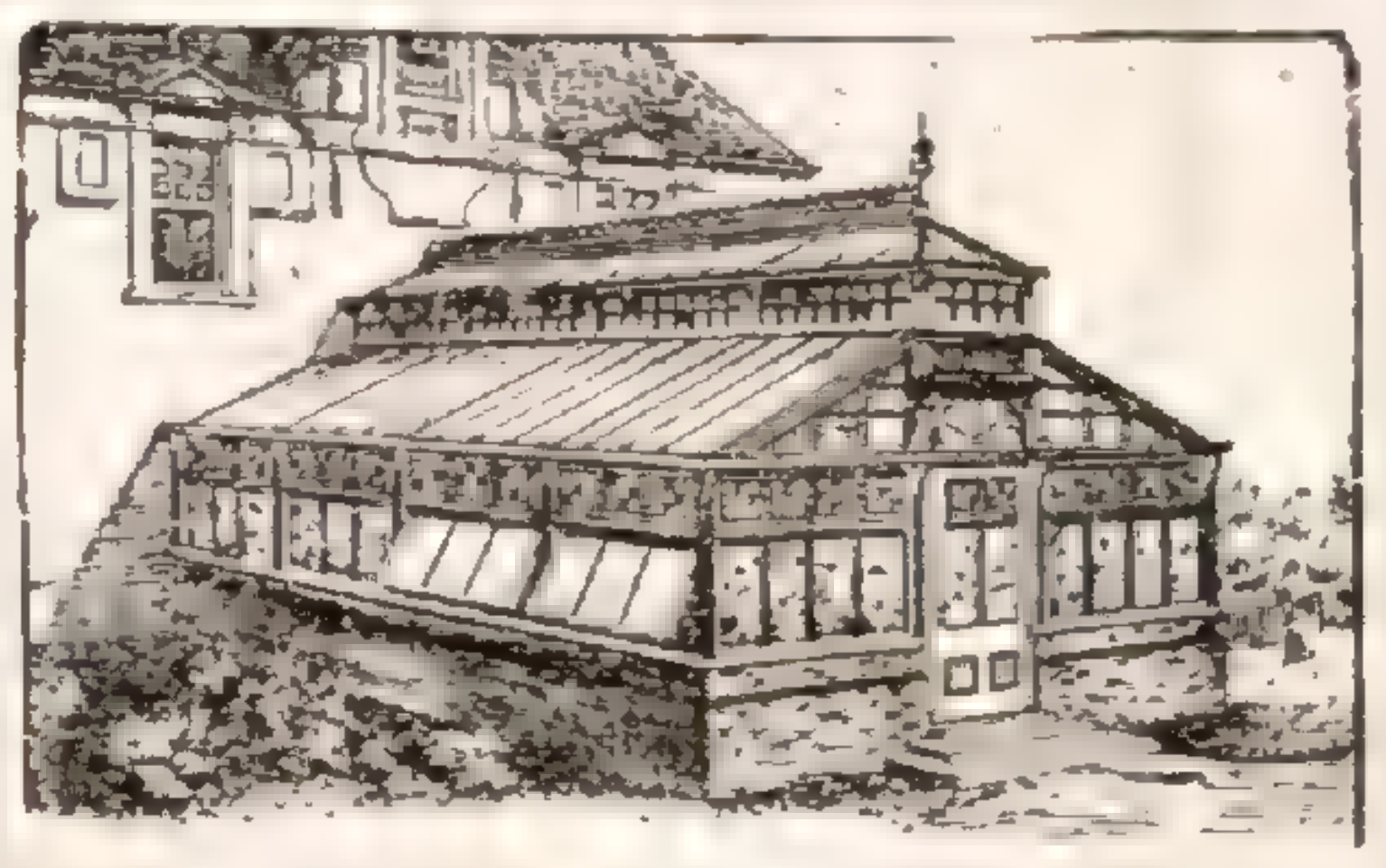

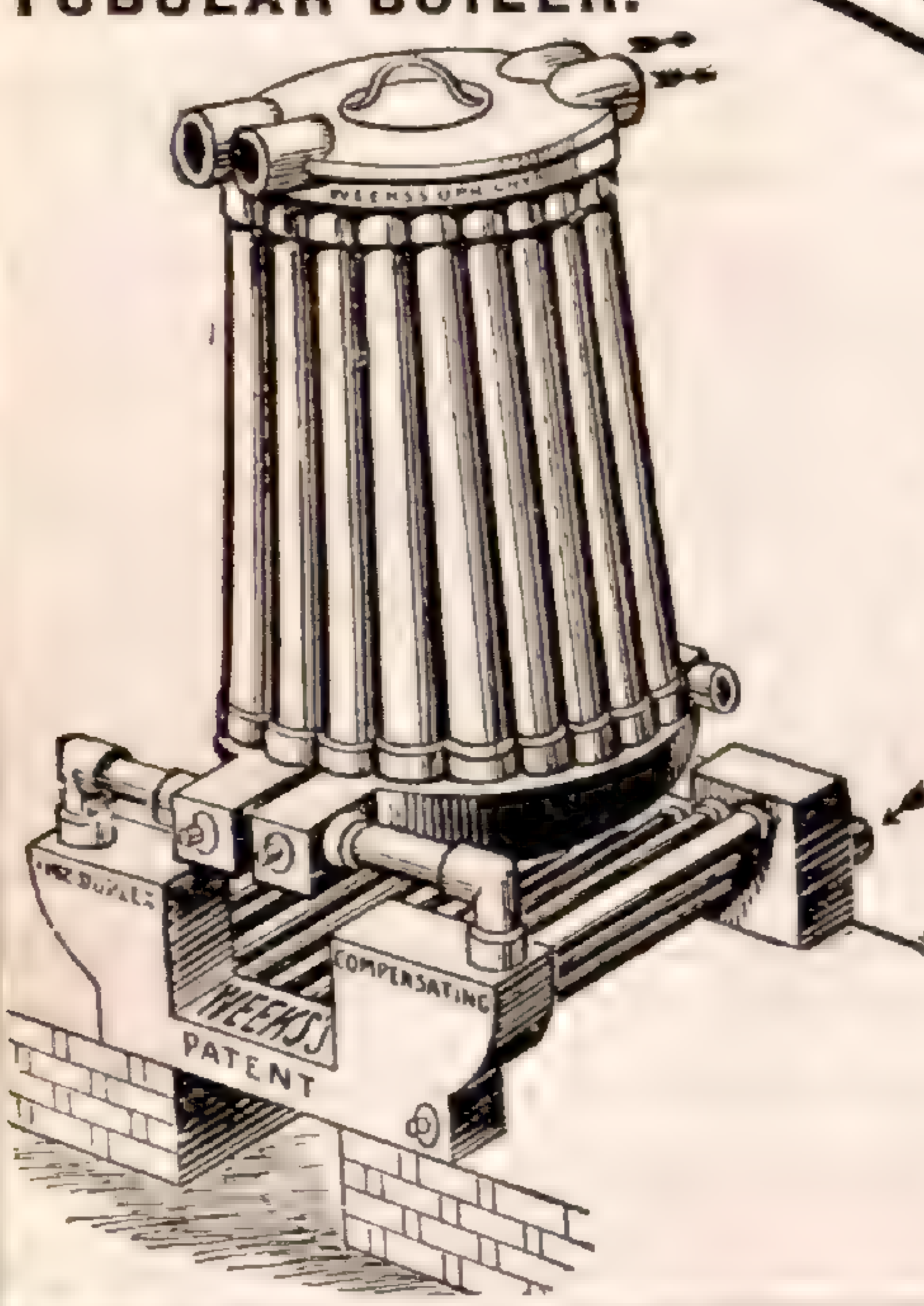

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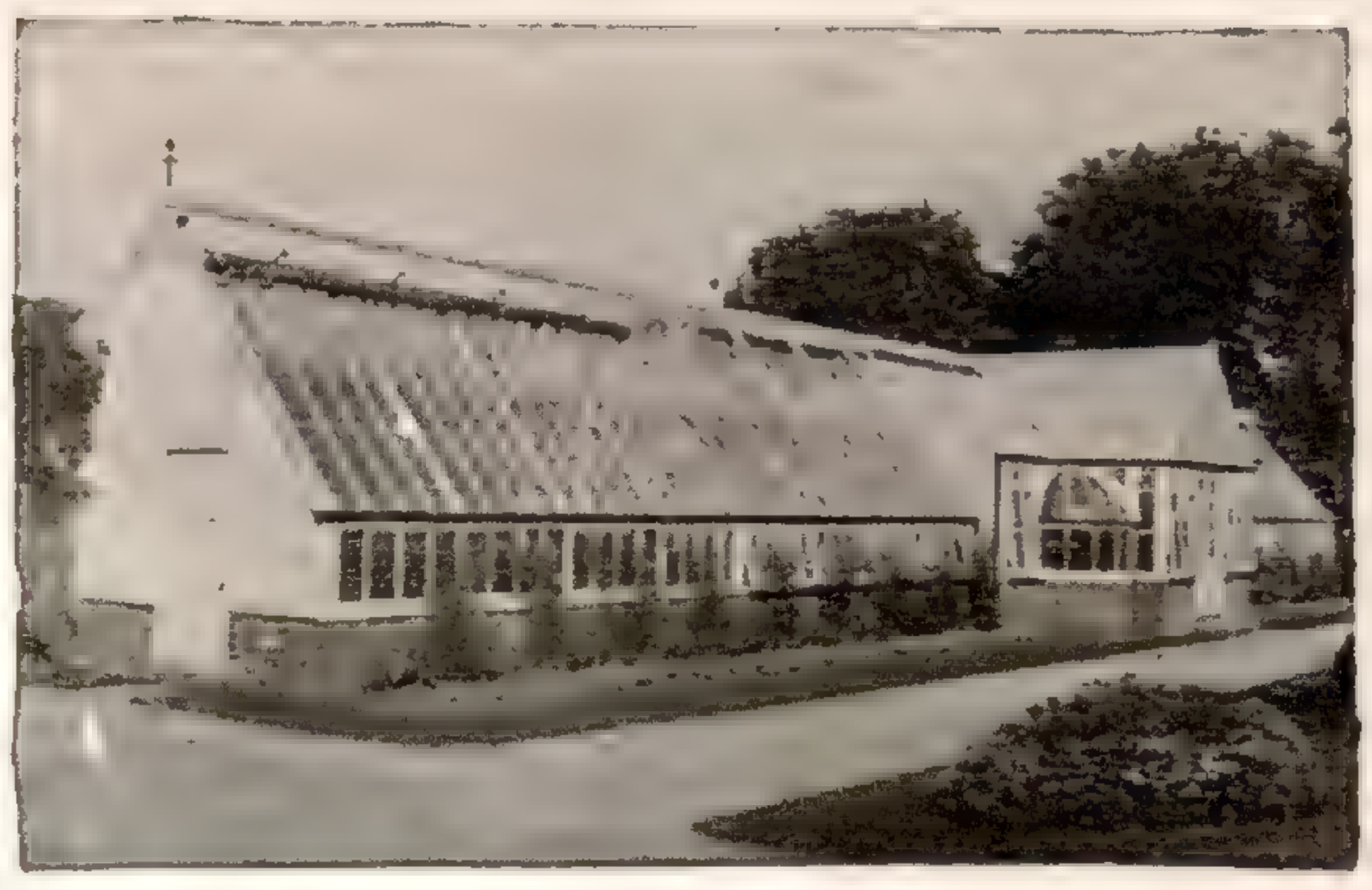

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VOL. LV.—No. 3,059. SATURDAY, JUNE 15, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Xerophitic Plants.

MR. J. W. McHATTIE.
Superintendent of the Edinburgh Parks and Gardens.
Neill Prizeman for 1912.

Xerophils, or drought-loving plants, and hydrophils, or moisture-loving ones, are the outcome of evolution in environments of quite opposite character, and form a most interesting study as to the immense range of conditions to which plants have been able to respond. With regard to the first-named class they are undoubtedly the more interesting of the two, though naturally not the more beautiful, since they inevitably lack the charm of delicate foliage and in point of fact, the two great races of cacti and euphorbias are largely devoid of foliage proper, true leaves having been suppressed, and their function delegated to thickened fleshy stems beset with thorns. In the euphorbias of the cactus type, leaves have not yet been entirely suppressed, since the thorny excrescences are at first accompanied by small leaves which, however, soon become useless, and fall off. Some of the cacti, such as the Phyllocacti, produce apparent leaves of a flat fleshy character, but closer examination shows even these to be merely flattened and expanded stalks, and not leaves proper, the flowers when produced springing, as with the rest of the tribe, direct from these edges or terminals. One must, however, have travelled in countries such as Mexico, where, on the sunburnt plains and plateaus the great bulk of the vegetation is subjected through the greater part of the year to absolute drought unrelieved by even a shower, to appreciate the full effect of such conditions. It would be imagined that no plant could live, much less thrive, with such an absence, or apparent absence, of the all-essential water, and yet we may see the ground bristling here and there with cacti, like bunches of huge erect cucumbers, ten to twelve feet high, and occasionally with a group of the great Cereus giganteus, thirty feet high and more, and if we sever a branch of these, we shall find it full of sap, though the scanty roots may be anchored in the hardest of rocky soils, and so hot that the hand can hardly bear to touch it. Cacti there imitate, at a distance, the most rampant of brambles, like bunches of tortuous snakes, and every here and there, weird little, or large heaps of, cannon-ball like species, are piled like oranges on each other, each one a veritable vegetable hedgehog or porcupine, so far as its abundance of prickles, short and long, are concerned. The long thorns look the more formidable, but it is the myriad tiny barbed ones at their bases, which the traveller dreads, for at a touch they attach themselves to the skin, set up a little irritation, just enough to induce a rub, and straightway they embed themselves, and are only removable by the judicious use of tweezers. In some places the opuntias or prickly pears cover the ground as densely as does the bracken on our heaths, mostly showing the characteristic tennis-bat shape, but sometimes, as with O. horrida, covering acres with plants formed of branches like close-set chains, beset with innumerable thorns two inches long, and so brittle that a blow with a stick will shatter a plant into scores of short lengths, each of which will root where it falls, and so multiply itself indefinitely. Even the very fruits, of the usual pear shape, fall and root in the same fashion, independently of the contained seed. Succulent as all these species are, they seem absolutely incapable of shrivelling, and in this respect are marvels of natural adaptation and provision against undue transpiration. Here and there we find orchards of opuntias of very large growth, in which it is curious to note how the primary bat-shaped leaf, from which they started, has swollen and thickened into a sort of trunk nearly a foot thick and quite round, while the old leaves, if dissected, are found to be built up of numerous extremely hard, flat, woody internal plates of very beautiful pattern, each thorny knob on the fleshy exterior being represented on them by a perforation in the woody framework, so as to form, in conjunction with innumerable fellows, the charming patterns aforesaid. These cultivated opuntias grow to a considerable height, and are almost entirely devoid of thorns. Their fruits are used to make a sort of sweetmeat, which is somewhat insipid. In some species of cacti, the thorns are greatly modified; in the species popularly called the Old Man Cactus they are transformed into long whitish hairs, the ball-like plant resembling an old man's head covered with long unkempt hair, fully justifying the name. In these small-growing spherical species, the flowers usually appear as a sort of circlet near the top of the ball and are of varied colours, bright rose, yellow, etc., but are very short-lived and usually eaten by the ants and other insects of the locality. Incidentally, an interminable procession of ants, each bearing a portion of a leaf from some leaf-bearing stem, such as the Mesquit, an acacia-like plant, suggests a factor inducing leafless vegetation, in addition to the drought. Mingled with the cacti are other xerophitic plants, the hills in many places bristling with species of yuccas, agaves, and other sword-like vegetation, the yuccas especially forming grand specimens, which manage to produce magnificent spikes and bunches of their white lily-like flowers. From the agaves the natives obtain the potent spirit "Mescal." The fleshy leaves are all cut away leaving a central mass like an immense pine apple, from which they distil the spirit, mostly, we imagine, in unlicensed stills. In Arizona, a very insidious opuntia grows in the fields among the grass; it lies quite flat on the ground, and, having very formidable spikes, would be apt to give considerable trouble to anyone thinly shod. At a short distance it is quite imperceptible. At the railway stations children offer specimens of the Resurrection plant, the curious Selaginella lepidophylla, in some respects one of the most interesting xerophites known, since it belongs to a moisture-loving genus, and yet grows on the exposed prairies. In the dry season it is represented by curious brown inrolled balls which are blown about loose, and when the rainy season comes, root where they lie, and unfold into beautiful green rosettes.

**Mr. J. W. McHattie.**—The Council of the Royal Caledonian Horticultural Society have awarded the Neill Prize for the biennial period of 1910 to 1912 to Mr. John W. McHattie, City Chambers, Edinburgh. The prize is one which is in the gift of that society, and commemorates the late Dr. Patrick Neill. It is awarded to distinguished Scottish botanists or cultivators. Mr. McHattie is a native of Morayshire, and began his gardening career in the gardens of the Mackintosh of Mackintosh, at Moy Hall. He served at various other places, including Altyre Forres, Raith House, and Oxenford Castle, and was afterwards appointed to take charge of the gardens of the Marquis of Lothian, and later those of the Duke of Wellington at Strathfieldsaye, Berks. He then was entrusted with the laying out of the grounds and gardens at Lea Park, Surrey. In 1901 he took charge of the City gardens in Edinburgh. He filled all these positions with marked success, and the state of the gardens and parks in Edinburgh testifies to his ability. That Mr. McHattie deserves the honour conferred upon him is demonstrated by his success as a cultivator of fruits and flowers. In these directions he has few equals, having won the Royal Horticultural Society's Gold Medal for a collections of fruits, the Banksian Medal for a collection of trees and shrubs, the Veitch Memorial Medal twice for fruits, the City of Edinburgh Cup three times for chrysanthemums, the National Chrysanthemum Society's Gold Medal for chrysanthemums, and many other notable prizes at London, Manchester, Newcastle, Edinburgh, and Glasgow. He devoted much of his attention to landscape gardening, and successful examples of his work may be seen at Strathfieldsaye; Tylney Hall, Hampshire; Lea Park, Surrey; Saughton Hall Park, Blackford Hill, Colinton Hospital, and Princes Street Gardens, Edinburgh. In addition, Mr. McHattie has rendered valuable services to various societies, both horticultural and arboricultural. He also contributed largely to the gardening Press, and wrote under "Work for the Week" in the Gardeners' Magazine for some years. His services as judge are in request at international and other exhibitions at home and abroad, and are much valued.

**The Royal Society** will celebrate its 250th anniversary this year, and the functions in connection therewith will commence on Monday, July 15, when there will be an evening reception of the delegates in the rooms of the society at Burlington House from 8.30 to 11. On July 16 there will be a short commemorative service in Westminster Abbey, beginning at 12 o'clock. In the afternoon at 2.30 the formal reception of the delegates will take place in the Great Library of the Royal Society. In the evening the Royal Society will entertain the delegates and other guests at a dinner in the Guildhall. On July 17 the Duke and Duchess of Northumberland will give a garden party at Syon House, and in the evening there will be a conversazione at the Royal Society's rooms. On July 18 the King and Queen will receive the President, Council, and delegates of the society at Windsor Castle, where a garden party will be held. The Universities of Oxford and Cambridge will entertain the delegates on the following day.

**Horticultural Club.** — A house dinner of the club will be held on Tuesday, June 18, when a lecture, entitled "Pictures from a London Garden," illustrated by lantern slides in colour, will be given by Mr. H. J. Wright. The dinner will, as usual, commence at 6 p.m.

**Herbaceous Pæonies** are among the choicest flowers of modern times, and are very largely the result of the careful crossing practised for years past by Messrs. Kelway and Son, of Langport, Somerset. We have received a box of blooms of some of Messrs. Kelway's latest introductions, among which were charming varieties named Lady Godiva, Exquisite, Mrs. Richmond, Emperor of Russia, Purple Emperor, Louis N. Parker, Miss Brice, Pink Domino, and Viscountess Cross. These form a choice little collection in varied colours, and both double and single blooms, all modern representatives of our grandmothers' "pæony roses."

**Vacant Land Cultivation Society.**—From Mr. R. L. Castle, who superintends the preparation and cultivation of waste lands that come under the care of this society, we have received a copy of the fourth annual report. It appears that there are 14,000 acres of waste land in the Metropolitan area, but so far only 60 acres are controlled by this society, although 470 applicants are anxiously waiting for the opportunity of cultivating rent-free plots. About 500 persons are cultivating plots on what was waste land, and it is estimated that 2,500 people are deriving benefit from such cultivation; and these benefits include fresh vegetables, improved health, lessons of self-reliance, patience and perseverance, and a knowledge of the reward that follows well-directed industry in connection with land cultivation. Mr. Joseph Fels is the moving spirit of the society, which was founded in 1908 for the purpose of obtaining the loan of land and letting it rent free to needy working-men and women. The society cannot do all the work it would like to do because of lack of funds; anyone interested in this excellent work should write to Mr. J. Fels, 39, Wilson Street, E.C., or Mr. R. L. Castle, 7, Caxton Road, Wimbledon, for further particulars.

**Professor J. S. Henslow as Œcologist** is the subject of the lecture that will be given by the Rev. G. Henslow, M.A., V.M.H., at the general meeting of the Royal Horticultural Society on Tuesday next, the 18th inst. The relationship of flowering and other plants to their environment is a most interesting and instructive study, and the lecture should prove highly instructive to those who are giving special attention thereto.

**National Hardy Plant Society.** —This comparatively young and vigorous society will, as we have previously announced, hold its annual exhibition at the Royal Horticultural Hall, Vincent Square, Westminster, on Wednesday, the 19th inst., and it has the promise of proving a decided success. As this is the first show held by the society in London, it is creating much interest among lovers of hardy flowers resident within a short distance of the Metropolis, many of whom will be found among the exhibitors. The Gardeners' Magazine is offering a gold medal, to be awarded to the best competitive exhibit in the show.

**The Westonbirt Hippeastrums,** so ably grown by Mr. A. Chapman, gardener to Lieut.-Colonel Sir G. Holford, secured a Large Gold Medal, apart from the orchids exhibited, at the recent International Horticultural Exhibition, while two dozen particularly fine examples secured the Silver Cup offered by Messrs. Guillemans and Sons. Every variety exhibited was raised at Westonbirt, Tetbury, by Mr. Chapman.

**Gardeners' Royal Benevolent Institution.**—Sir Jeremiah Colman, Bart., writes from Gatton Park: I am anticipating the pleasure of presiding on the occasion of the anniversary festival dinner of the Gardeners' Royal Benevolent Institution on Tuesday, June 25 next, which will be held in the ancient Hall of the Worshipful Company of Grocers through the courtesy of their Court. The Institution has for its laudable object the permanent or temporary assistance of gardeners and others, including their widows, engaged in horticultural pursuits, who, through fortuitous circumstances, have become incapacitated, or are in distress. No fewer than 253 persons are at the present time receiving permanent aid at a cost of upwards of £4,500. The great work accomplished in the past has been recognised by the substantial support accorded by lovers of horticulture, and to-day it is more than ever necessary that the members of the committee, who devote so much valuable time in the able administration of the funds at their disposal, shall be loyally and generously supported not only by those who may become entitled to the benefits of the Institution, but by all lovers of flowers and gardening. The growing popularity of horticulture in the present age has been little short of phenomenal, and with it has come as a natural sequence the demand for a much higher standard of gardening and gardeners, and an ever-increasing demand upon the resources of the Institution. I invite with confidence your sympathy and generous aid in support of an Institution which is doing so beneficent a work amongst those whose vigilance and care in attending our gardens adds so much to the pleasures of our home life, and who are, I think, thoroughly deserving of any help we can secure. Your hearty co-operation and generous support will be much valued, and any contributions sent will be gratefully acknowledged by the Secretary, Mr. G. J. Ingram, 92, Victoria Street, S.W.

**Headquarters of the B.G.A.**—Mr. Cyril Harding, the new secretary of the British Gardeners' Association, asks us to state that his address and the offices of the Association, are now Ulysses, Fortune Green, London, N.W.

**Library of the Royal Gardens, Kew.**—A catalogue of the books that were added to the Library of the Royal Gardens during 1911 has been published as an appendix to the "Kew Bulletin," and may be obtained in the usual course, the price being twopence. As in the case of the catalogue, the list is printed on one side of the page to allow of its being cut up. It is thought probable that many persons and institutions will make the Kew catalogue the basis of their own, and will use the lists of additions to supply printed slips for fresh titles.

**Protecting Fruit Crops.**—Professor Willis L. Moore, chief of the Weather Bureau, United States Department of Agriculture, when speaking the other day at the Royal Institution on the practical value of the study of meteorology, said that by the River and Flood Service of the United States Weather Bureau they were able to estimate the height of floods, almost to the inch, even three weeks in advance, and by the Wheat and Corn Service and the Cotton District Service they telegraphed to all parts of the States the conditions of vegetation over the whole area. Probably ten million dollars' worth of property was put into safety in consequence of a single forecast by the bureau officials of the approach of a cold wave, and they probably had as many as 20 or 30 such passing across the Continent in the course of the winter. A warning of only 24 hours to the fruit cultivators of Florida enabled them to gather everything that was ripe, to protect their beds with straw, and, by means of the heaters, entirely to protect their orchards. With the aid of these heaters, which were distributed throughout the orchards, they were able to maintain a temperature 14 degrees higher than in the neighbouring region, which, as a rule, was sufficient to save the industry from the disaster which threatened it.

**American Gooseberry Mildew.**—Eleven baskets of gooseberries, from the Wisbech district, were seized at Hull recently under the order of the Board of Agriculture, because they were infected with the Gooseberry Mildew. A Pinchbeck market gardener was fined 10s., and costs, in each case for not pruning affected trees and failing to destroy clippings from affected gooseberry bushes; this was the first prosecution of the kind in Lincolnshire, but it was pointed out that offenders were liable to a fine of £10, and costs. Referring to the American Gooseberry Mildew Order of 1912, Dr. Collingridge, Medical Officer of Health for the City of London, states in his report that "It has been suggested that a repeated spraying with a 4 per cent. solution of potassium sulphide is effective in destroying the spores or threads of the fungus, but it must not be overlooked that the American Gooseberry Mildew is not confined to the surface of the fruit only, like other kinds of mildew, but exists within the diseased shoot itself, ultimately thoroughly infecting the entire bush. It appears that unless energetic measures are taken growers of gooseberries in Europe are threatened with serious loss."

**The Fairchild Sermon.** — The Master and Wardens of the Worshipful Company of Gardeners attended in state at Shoreditch Church on May 29, to hear the annual Fairchild Sermon, which was preached this year by the Venerable E. E. Holmes, Archdeacon of London, who took for his text a passage from Genesis ii., "God made the earth and the heavens, and every plant of the field before it was in the earth, and every herb of the field before it grew." As we have previously stated, Thomas Fairchild was a famous Hoxton gardener, who in 1722 wrote "The City Gardener," and on his death in 1729 left a sum of £25 for the preaching of an annual sermon on "The wonderful works of God in the Creation" or "The Certainty of the Resurrection of the Dead, proved by certain changes of the animal and vegetable parts of the Creation."

**Preservation of Commons and Footpaths.** — At the recent monthly meeting of the Commons and Footpaths Preservation Society, at which Lord Eversley presided, it was decided to request the Home Secretary to receive a deputation to urge that facilities should be given for the second reading of the society's Rights of Way Bill. The object of the Bill is to simplify the proof of rights of way. Arrangements for the settlement on lines indicated by the society, of questions affecting 39 footpaths and bridle paths, were approved, and it was reported that 49 other cases had been referred to the society for arbitration. It was stated that the society was assisting to secure the preservation of Leziate Heath, Norfolk, and Hollesley Common, Suffolk, and that £300 was still needed to complete the fund for acquiring Minchinhampton Common, Gloucester, in order that the land might be vested in the National Trust.

**Casual Workers in Market Gardens, etc.**—The Insurance Commissioners have decided that, under certain conditions, casual workers employed in gathering fruit, hops, peas, and flowers, and lifting and picking up potatoes, are to be excluded from the provisions of the Insurance Act as persons engaged in a subsidiary employment. It is provided, however, that where a person engaged for a time in one of these excepted occupations is at other times engaged in work in connection with which he or she is an insured person, the exclusion referred to will not apply. For example, if a person engaged as a fruit or hop picker for a few weeks is at other times regularly engaged in agriculture or any other employment, and is an insured person, he or she and the employer will be required to pay insurance premiums while the fruit or hop picking is going on.

**Proposed Extension of Wimbledon Common.**—The progress with the fund that is being raised for the purchase of a considerable area of land with the object of extending Wimbledon Common is not so satisfactory as could be wished. At a meeting of the Wimbledon District Council, held the other evening, it was decided to defer for six months the question of obtaining from the Local Government Board power to raise by means of a loan the £10,000, which the Board voted in aid of the scheme at a meeting held in October, 1910.

## FERN SPORE VARIATION.

To those who devote their careful attention to the raising of varietal ferns from spores, phenomena are frequently presented of a very puzzling nature, and which certainly merit record, since it is only by the accumulation of such records that any laws underlying these apparently erratic phenomena can ever be discovered. That spores or seeds from variable plants, possibly of mixed origin, should give rise to diverse progeny appears natural enough, hence in the case of seeds, cross-fertilisation is the rule rather than the exception, and therefore the offspring are naturally the outcome of a sort of compromise between diverse parental influences, with the result that adjustment of the diverse potencies occurs in different degrees.

With the fern spore the case is rather different. From the nature of the prothallus, or small green scale, produced by the spore prior to the development of the sexual apparatus beneath the scale, self-fertilisation must be the rule and crossing the exception, the homologues of the pollen grain, and the incipient ovule being so close together, and the process of fertilisation of the one by the other so dependent upon the presence of a minute drop of water which forms the conveying medium, that any other mode of conveyance which can bridge the gap between one prothallus and another is almost precluded. Nevertheless, it has been abundantly demonstrated that such transference does occur, since a number of easily recognisable crosses between diverse types are well known to exist.

It is not, however, with these easily accountable cases that we desire to deal, but with cases where normal self-fertilisation may be reasonably assumed, and yet in which the progeny are of the more diversified character. The comparatively recent introduction of a new strain of Polystichum aculeatum, known as the "gracillimum" type is a case in point. We commence here with a wild plant of P. aculeatum, found in a Dorsetshire hedge as a huge specimen. Instead of the robust, somewhat dense, normal form of the species, it was of much slenderer make, the secondary pinnules of the fronds being much smaller and further apart, and the primary ones or pinnæ running out into very slender terminals. The fronds, much longer than the normal ones, terminated uniquely by the pinnæ curving inwards and overlapping the midrib, the tip finally extending very slenderly to match those of the subdivisions. Finally, the tips of both fronds and pinnæ showed a tendency to expand fan-like, suggesting minute tassels. So unique a form was naturally greatly prized, but despite robust growth and a marked tendency to produce lateral offsets, which enabled it in time to be widely distributed, some forty years elapsed before any spores were discovered.

In view, however, of recent experience since that discovery, it appears probable that the supposed barrenness was really due to the fact that it bore no obvious spores or spore-heaps accompanied by an indusium or spore cover, but only produced sporangia or spore capsules in twos or threes on the very edges of the subdivisions, and these only here and there on very robustly-grown specimens. Hence they escaped observation, and were eventually only discovered with the aid of a lens. Since, however, the sporangia were well developed and each contained the normal number of spores, some thirty or forty each, the first batch discovered yielded considerably over a hundred plants, which it was anticipated would yield as many specimens of the parental type. As they developed, however, it was soon seen that a number of them were extremely unlike the rest, the little fronds bearing almost thread-like subdivisions, and these being separated and specially tended, eventually produced some thirty plants of the most remarkable type.

The normal sized half-inch pinnules grew in many cases to over two inches in length, very slender and lineal until near the tip, where they expanded into a fan-like arrangement of points. The most unusual feature, however, was that, while the parental pinnæ were widest near the midrib of the frond and narrowed regularly, as we have seen, to a slender point, the pinnæ here were narrow near the midrib, and the linear pinnules grew longer and longer as they approached the terminal, which consisted of a long serrated tongue with an expanded fan-like end. These fan-shaped tips, though tassel-like, appeared to consist of short pinnuloid extensions rather than crests proper, and were evidently extensions of the parental tendency to tip expansion. Of the very long hair-like growths, and their lengthening in the reverse direction to the normal, the parent form did not betray the slightest sign. Although all but one of the thirty plants were singularly alike, there were marked individual differences in the ultimate development of their growth.

The exception, named "plumosum" (Green), assumed a beautiful decomposite development, since instead of the long pinnules, the pinnæ divided and sub-divided on feathery lines, the fronds were broader and more imbricate in growth, and hence quite distinct. Of the remaining seedlings a good percentage reproduced the parental form exactly, while the balance presented several grades of reversion, some presenting the broad, stalkless pinnules of aculeatum; while several, strange to say, had unmistakably the plainly stalked pinnules of P. angulare. This naturally suggests the idea that the original wild find of P. aculeatum pulcherrimum, as the plant was named, owing to its exceptional beauty, was and is a hybrid between the two.

On sowing, however, by way of test, from one of the reversions which most nearly approached P. angulare, nothing but a batch of unmistakably aculeatums resulted, though Mr. Cranfield reports that one gracillimum occurred in his sowing, showing that the sportive tendency in that direction had been inherited. No variation at all occurred in the writer's batch. A peculiar feature in this case is the sharp line drawn between the gracillimums and the rest, only one plant appearing, which we named dimorphum, and which resembled the parent strongly, but in which the lengthening tendency of the sub-divisions showed itself erratically in some of the fronds, hence the name.

A second batch raised from the spores of another season, discovered in some quantity on another plant, but, of course, a division of the original, hence practically the same, yielded very similar results, but on a larger scale. In the progeny, however, which inherited the true pulcherrimum character, a number showed very little of this until planted out, when the coarser set of first fronds was followed by fronds of even improved pulcherrimum type, which, at the time of writing, promise to become very handsome indeed, seemingly as a sort of after-thought on their part, since they began very unpromisingly as apparent reversions.

We have here consequently a case in which the spores from one and the same symmetrical and constant plant are endowed with the faculty of producing several quite distinct types, and in fairly definite ratios since the proportions in which the gracillimum, pulcherrimum, and reversional types occur are about the same with both sowings, with plumosum thrown in as a fourth, though solitary, exception. None of the reversions showed the faintest trace of the characters of the rest; all the sections stood clearly apart. Even the theory of a hybrid origin of the parent, which is by no means established, affords no explanation, since P. angulare, the possible other parent, has yielded no sport on similar lines except perhaps plumosum, and in any case a wild hybrid, is little likely to be other than a normal form as would also presumably be the P. aculeatum concerned in the cross.

Chas. T. Druery, V.M.H., F.L.S.

## MARKET GARDENERS AND RAILWAY COMPANIES.

As the outcome of negotiations carried on between the Agricultural Organization Society and the railway companies a short time since, the latter have agreed to make special provision for cucumbers in the General Railway Classification of Goods by entering "cucumbers, in cases or boxes, or in baskets with wicker or wooden lids, owner's risk."

This announcement is of interest from the point of view both of the market gardening industry and of the circumstances under which the concession has been secured.

The production of cucumbers, mainly under glass, has undergone very considerable expansion of late years in various parts of the country, and more especially so at Worthing, where the glass-houses devoted to the raising of vegetables, fruits, and flowers for the market have a total length of over thirty miles, while the output there of cucumbers alone, apart from other commodities, is estimated at about 1,200 tons a year. Hitherto, however, there has been no special entry of cucumbers in the General Railway Classification, in which they have counted as "vegetables," either "hot-house" or "not hot-house." Inasmuch as all the cucumbers at Worthing are grown under glass, they have thus come under the definition of "vegetables, hot-house," and have been allotted to Class 4, and charged the rates of that class when consigned from Worthing; though it is alleged that from London the cucumbers are reconsigned by Metropolitan dealers to Northern markets as "vegetables, not hot-house," thus coming under Class 2, and so being carried at cheaper rates.

It has also been especially complained by the Worthing market gardeners that they have paid much higher rates than the growers in the Broxbourne, Enfield Lock, and Waltham Cross districts of Hertfordshire, Middlesex, and Essex respectively, who have the advantage of sending their cucumbers to the Northern markets, as "vegetables packed," at "exceptional" and certainly much lower rates; though, in point of fact, these exceptional rates apply only to minimum consignments of either one ton or two tons, which allow of the railway company running a through truck to destination. The rail traffic in cucumbers from the districts in question to the North generally moves in these quantities, while the average consignment from Worthing is between 1 cwt. and 5 cwt. To the Covent Garden Market the growers in the three districts mentioned—situate at distances of from twelve to seventeen miles from London—can forward by road motor, and from Broxbourne, it is understood, no cucumbers at all are sent to London by goods train.

The Worthing growers have hitherto been unable to consign direct to the Northern markets, and they have had to submit to seeing the advantages of those markets gained by growers in the Broxbourne and other districts, by wholesale dealers in London handling the Worthing supplies, or by importers of Dutch cucumbers received via Hull, and distributed by rail throughout Lancashire and Yorkshire under the designation "not hot-house."

Certain material concessions were obtained from the London, Brighton, and South Coast Railway Company, but the Worthing growers especially desired that cucumbers should be placed in Class 2 of the General Railway Classification (on the same basis as tomatoes in wicker baskets) and thus be charged, on all the railways alike, a lower rate than if they were carried in Class 4. At the request of the Worthing and District Market Growers' Association, the Agricultural Organization Society—to which the Worthing Association is affiliated—took the matter up, while on the suggestion of the railway goods managers, a deputation, representing the two societies mentioned, waited upon them at the Railway Clearing House, the final outcome of the negotiations being the making of the desired concession, as stated.

The fact that this result should have been brought about through the instrumentality of the Agricultural Organization Society affords gratifying evidence of the useful purpose which that body is able to fulfil, not only in its efforts to improve the general agricultural conditions of the country, but also as an intermediary between growers and railway companies in the attainment of improved transport facilities on an organised basis. The granting of the concession asked for is also no less evidence of the desire of the railway companies to encourage the efforts which the federated agriculturists are making to better their economic outlook.

Under the new arrangement in regard to classification, Worthing growers will be able to consign their cucumbers to Liverpool, Manchester, Sheffield, Leeds, Bradford, Nottingham, and Leicester, instead of having to be content to forward them only to London dealers, who themselves would undertake the further distribution; and in this way there should be, in addition to a saving in railway rates: (1) a saving in intermediate profits; (2) decreased risk of gluts in the Covent Garden Market; and (3) the obtaining of better prices, not only on this account, but through the direct dealing with the great centres of population in the North.

These various advantages constitute important phases of that system of "scientific marketing" of English-grown market-garden produce, which it has been one of the main purposes of the agricultural organization movement to effect. They are of still greater importance in view of Mr. Runciman's announcement that the Board of Agriculture is creating a Horticultural Branch which, it is understood, will include, in addition to horticulture in general, market gardening, flower and fruit growing, and nursery gardening. The scientific production it will, presumably, be the special purpose of the new branch to promote, will obviously fail to confer adequate advantages to the growers unless it is supplemented by the scientific distribution, which can alone render production sufficiently remunerative as a business proposition.

**Outdoor Tomatoes.**—These have made very rapid growth during the long period of dry and sunny weather; those in five-inch pots are showing strong flower spikes. They now need a full southern aspect to be successful with them. A site on walls of outhouses, and even boardings facing south, will generally ensure profitable crops of fruit. Very little soil will be needed when first planting, rather deferring this till good trusses of fruit show, applying this by frequent top-dressing as the roots protrude from the soil. This plan will be found to counteract excessive growths, making a fair balance of flower and growth combined. A hard bottom is perhaps the best of all for tomatoes, that possessing a hard ash bottom for preference. Well ram this, and place small hillocks of turfy loam, and a slight dressing of burnt garden refuse is all that is necessary. Water as required, and for the final top-dressing use a good surfacing of horse droppings and a little soot to finish swelling up the fruit.

## NEW PLANTS, ETC.

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### ELÆOCARPUS CYANEUS.

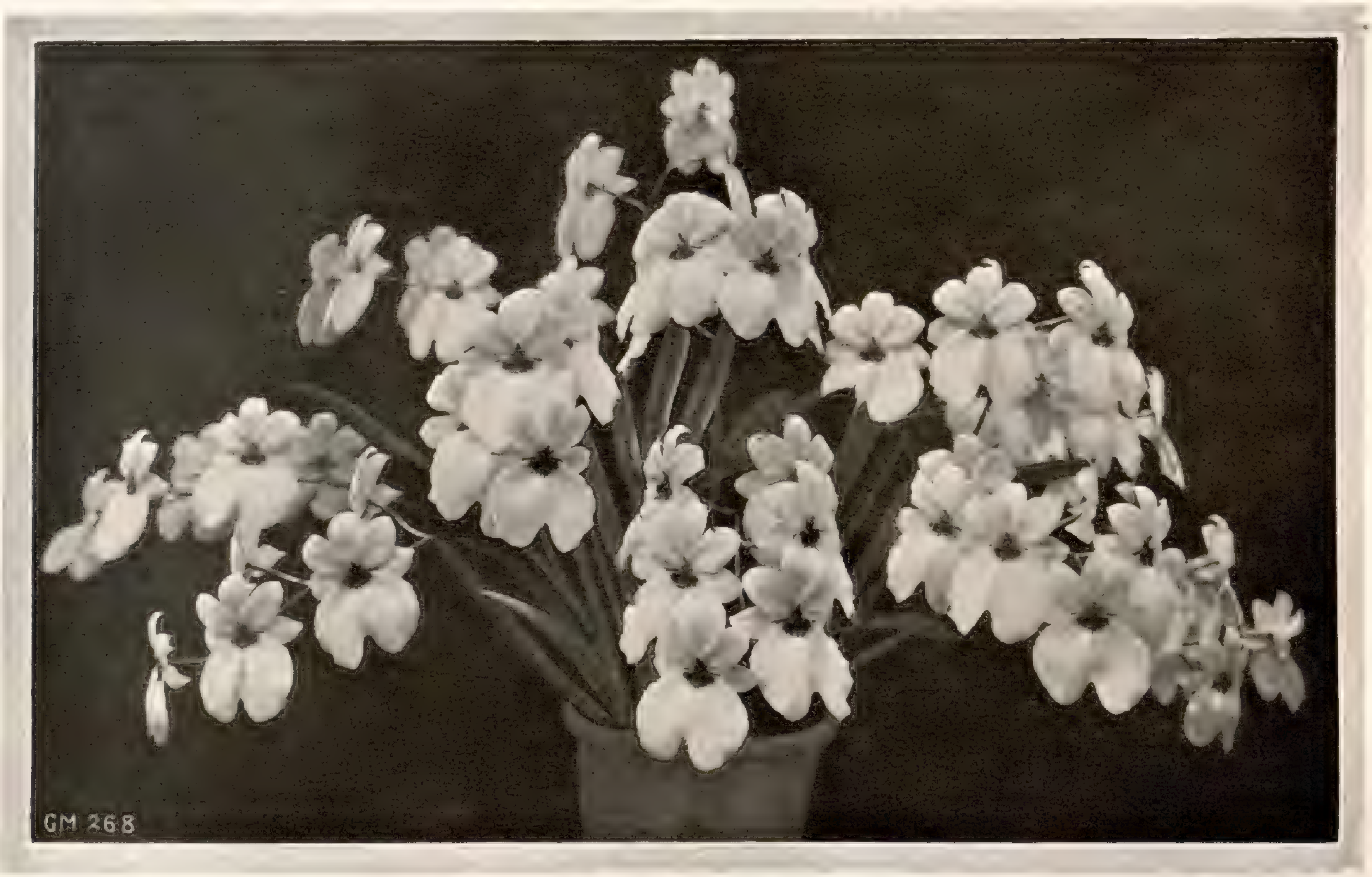
Under the name of Elæocarpus reticulatus this beautiful evergreen greenhouse shrub gained recognition. It was figured in our issue of June 8, and there described. Its chief beauty lies in the axillary racemes of white fimbriated flowers, which, as shown in our illustration, are freely produced. F.C.C., R.H.S., June 4. Messrs. Jas. Veitch and Sons, Chelsea.

### CARNATIONS.

Queen Mary.—A beautiful, well-formed, large, and clove-scented border carnation; the colour is salmon-rose. A.M., R.H.S., June 4. Mr. C. Blick, Hayes, Kent.

Attraction.—Another fine border variety of large size and purest whiteness, and also of excellent form. A.M., R.H.S., June 4. Mr. C. Blick, Hayes, Kent.

Margaret Lennox.—An especially handsome border carnation, or, more strictly, a yellow-ground fancy. The colour is rich golden-yellow, with a bright scarlet margin and markings on the petals. A.M., R.H.S., June 4. Mr. Jas. Douglas, Great Bookham.



[Photo: F. Waldock.

MILTONIA VEXILLARIA SNOWFLAKE.

A beautiful white variety that carried 73 flowers. F.C.C., R.H.S., June 4. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury.

### MILTONIA VEXILLARIA SNOWFLAKE.

A remarkably beautiful form with large white flowers. The specimen shown was not less remarkable for high culture than was the variety for its chaste beauty. It carried thirteen spikes, and a total of seventy-three flowers. F.C.C., and Cultural Commendation, R.H.S., June 4. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### SWEET PEAS.

May Campbell.—A pretty and distinct variety with cream ground, and a flushing or flaming of rosy-carmine over the centre of the standard, and some veinings of the same colour on the wings. A.M., R.H.S., June 4. Messrs. Dobbie and Co., Edinburgh.

Dobbie's Lavender George Herbert.—A fine lavender variety, not entirely new, but, we understand, this is a fixed stock. A.M., R.H.S., June 4. Messrs. Dobbie and Co., Edinburgh.

Dobbie's Thomas Stevenson.—A very finely-formed variety of brilliant orange-scarlet colouring. A.M., R.H.S., June 4. Messrs. Dobbie and Co., Edinburgh.

### GLADIOLUS ROSINA.

This good addition to the early-flowering or Colvillei group of gladioli is a very graceful form with long spikes of soft pink flowers that have markings of a dark pink hue. A.M., R.H.S., June 4. Mr. Blamfield, St. Martin's, Guernsey.

### SILENE HOOKERI.

A charming little plant that appears to be eminently suitable for the rock garden. The rose-coloured flowers are freely produced. A.M., R.H.S., June 4. Messrs. T. S. Ware, Lim., Feltham.

### PELARGONIUM CHAMPION.

A finely habited pelargonium that appears to be especially suitable for summer bedding. It is a seedling from Paul Crampel, and carries large trusses of fine pink flowers. A.M., R.H.S., June 4. Mr. P. Ladds, Swanley Junction.

### WAHLENBERGIA GENTIANOIDES.

This pretty border or rock garden plant closely resembles a campanula in growth and flowers. It grows about a foot high, and its rather large, campanulate, drooping blue flowers are carried on slender, erect stems. A.M., R.H.S., June 4. Messrs. Piper, Bayswater.

### DELPHINIUM DUSKY MONARCH.

This very fine delphinium grows from 8ft. to 10ft. high, and bears very large spikes of fine purple flowers. A most effective variety of high quality. A.M., R.H.S., June 4. Messrs. J. Kelway and Son, Langport.

### ODONTOGLOSSUM THAIS GLEBE VAR.

This handsome variety was represented by a splendidly tall spike of nineteen large flowers, the creamy flowers are flushed with rose, and freely marked with dark red-purple. A.M., R.H.S., June 4. C. E. Phillips, Esq. (grower, Mr. R. J. Bucknell), The Glebe, Sevenoaks.

### ODONTOGLOSSUM LAMBEAUIANUM PRINCESS MARY.

A large-flowered variety, in which the sepals are white, while the white lip has purple markings. A.M., R.H.S., June 4. H. S. Goodson, Esq. (grower, Mr. G. Day), West Hill, Putney.

### DENDROBIUM GOLDIEI.

A fine Australian species, hailing from the York Peninsula. It is closely allied to D. superbiens, but has larger rounded flowers of a rich, deep rose-purple colouring. A.M., R.H.S., June 4. Messrs. Sander and Sons, St. Albans.

### LÆLIO-CATTLEYA APHRODITE COWAN'S VAR.

A beautifully rounded form of L.-c. Aphrodite. It has white sepals and petals, and a white lip, that has a wonderfully fine crimson-purple apex to the fringed front lobe. A.M., R.H.S., June 4. Liverpool Orchid Nursery Company, Liverpool.

### STANHOPEA PERUVIANA.

A handsome, fragrant species with large golden-yellow flowers, slightly shaded and spotted with purple; the column is creamy-white, with purple spots. It is a finer subject than S. Wardi, but, like so many members of the genus, its flowers are short-lived. It was discovered in Peru by Mr. Forget in 1907, when collecting for Messrs. Sander and Sons, St. Albans. (Bot. Mag. t. 8,417.)

### STRANVÆSIA UNDULATA.

A very hardy shrub, that is said to reach a height of 30ft., and to become a good tree in Central China. Apparently the species shows considerable variation, and even on the same plant the lanceolate leaves run to extremes of form. The small white flowers are freely produced, but are so short-lived that the plant has little value as a flowering subject. It is for its abundant bright orange fruits that it is desirable, and no doubt the plant will take its place in gardens for the same purpose to which the Fire Thorn is now so commonly put. (Bot. Mag., t. 8,418.)

DELPHINIUM DUSKY MONARCH.
A tall and stately variety bearing fine spikes of large semi-double flowers, of purple hue. A.M., R.H.S., June 4. Messrs. J. Kelway and Son, Langport.

### LEPTOSPERMUM SCOPARIUM NICHOLLI.

Recently described in these columns as the finest new plant at the great Royal International Horticultural Exhibition, this leptospermum bids fair to become a popular cool greenhouse shrub, while in the sheltered parts of the southern counties it will be hardy. The crimson flowers are produced with great freedom, and plants a year old from the cutting bloom in the spring time, and the blossoms last for six weeks. This new shrub was brought to England in 1908, from New Zealand, by Captain A. A. Dorrien Smith. (Bot. Mag., t. 8,419.)

### OLEARIA CHATHAMICA.

A very fine species introduced to cultivation by Captain A. A. Dorrien Smith. It has been grown and flowered out of doors by the Rev. A. T. Boscawen, at Ludgvan Rectory, Marazion, Cornwall; there it is propagated easily from cuttings, and does well in bog earth and leaf-soil. O. Chathamica makes a stoutly branching shrub from 3ft. to 7ft. high, the serrate, oblanceolate, leathery leaves being covered on the underside with dense white wool. The flower heads are about two inches across, and born singly on stout peduncles from the axils of the leaves towards the end of the branches. The ray florets may be white, usually pale violet-purple, and the disk is deep violet-purple. (Bot. Mag., t. 8,420.)

### CRASSULA BARKLYI.

A quaint little succulent plant growing not more than two inches high. Each one is a little column of closely imbricating leaves clustering round a simple stem, and at flower-time, surmounted by a little cluster of tiny white or pinkish flowers. Dry tropical conditions appear to be most suitable for the cultivation of this native of Little Namaqualand. (Bot. Mag., t. 8,421.)

### BRUNSFELSIA UNDULATA.

A beautiful West Indian shrub that succeeds in a warm house, producing its white flowers in terminal clusters in the autumn. Each flower is about two and a-half inches across the spreading, five-lobed and undulate mouth, and has a yellowish or greenish tube over three inches long. B. undulata is a plant that appears to be well worth cultivation where there is room, for it is a large stove house plant. (Bot. Mag., t. 8,422.)

### SYRINGA JULIANÆ.

A very distinct lilac found in Western China by Mr. E. H. Wilson. It is a hardy, medium-sized shrub, sweetly scented, and flowers in May and June. It is peculiarly striking because the pedicels, peduncle, and outside of the corolla tube are deep purplish-lilac, while the inner side of the corolla segments is white. The tiny calyx is violet. (Bot. Mag., t. 8,423.)

### DOMBEYA CALANTHA.

A strong-growing tree or shrub from British Central Africa. It flowers freely in the Mexican House at Kew, and bears its showy, rose-coloured flowers in rounded pelargonium-like trusses. Each flower, about one and a-half inches across, bears a close resemblance to a mallow. (Bot. Mag., 8,424.)

### COROKIA COTONEASTER.

A very curious much-branched species from New Zealand. It cannot be regarded as hardy, though on a south wall at Kew it grows well, and produces its bright yellow flowers plentifully every May. The little spathulate leaves are generally in clusters of three on the short interlacing branches, but the old stems are usually naked. The flowers of this shrub are followed by red fruits. (Bot. Mag., t. 8,425.)

### CEREUS SILVESTRI.

A very pretty species from Argentina discovered by Dr. P. Silvester, and placed in commerce by Messrs. Haage and Schmidt, of Erfurt. Its prostrate, spiny stems are rarely more than three inches long, and from these the showy orange-scarlet flowers are produced laterally and erect. Each flower is about one and a-half to two inches wide, and composed of numerous segments. At Kew it grows readily with the other succulent plants, and is so bright and attractive when flowering that it possesses a considerable horticultural value.

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**Novel-trained Fuchsias.**—Repeating on a larger scale an exhibit of fuchsias made for the first time last year at Olympia, Messrs. J. Veitch and Sons put up a very noticeable group at the International Show. The plants, some 10 feet or so in length, were trained cordon fashion, and disposed at an angle corresponding with the roof of a greenhouse, thus showing their suitability for training to the roof of that structure. The blossoms hung down in the greatest profusion, and though treated in this way the plants presented a somewhat formal appearance, yet they attracted a good deal of attention. The varieties represented, all of which may be taken as good roof plants, were Clipper, Final, General Grenfel, Lustre, Mrs. Marshall, Mrs. Rundle, Mrs. Todman, Olympia, and The Shah.—K

## HEMEROCALLIS OR DAY LILIES.

The genus hemerocallis embraces a large group of showy garden plants, alike useful for border and shrubbery planting, while for naturalising by waterside and in woodlands they are more or less indispensable. The flowers are in the form of expanded trumpets, and borne in clusters on stout, erect stems, well above the foliage; the colour is usually some shade of yellow, orange, or orange-crimson, so that even where the various kinds are grown together the colours readily harmonise with each other. So far as their cultural requirements are concerned, the day lilies are of the easiest possible culture, succeeding in any ordinary garden soil. They take a year or two before attaining their maximum beauty, and few plants require less attention than these exact, once they are fairly established.

One of the best-known species of hemerocallis is H. aurantiaca, a native of Japan, of dwarf habit, and with rich orange-yellow flowers; the variety major is a glorified form, bearing ten to a dozen flowers of the richest orange-yellow, the segments gracefully recurving and forming widely-expanded trumpets some seven inches across.

Hemerocallis flava is a well-known garden plant, with narrow, grass-like foliage, and produces sheaves of yellow flowers. This species is distributed through part of Europe and in temperate Asia. Hemerocallis fulva, also known as H. disticha, is a vigorous-growing perennial, with large orange-crimson flowers, carried on stout stems and producing an exceedingly bold effect when massed in quantity; the variety fl. pl. is distinct, with its double flowers of orange-crimson, while another form is distinguished by having the foliage elegantly striped green and white, the latter being one of the most decorative in the whole group; the two last-named are generally known in gardens as H. Kwanso plena and H. Kwanso plena variegata.

Hemerocallis citrina is one of the most distinct, and less frequently met with in gardens, the segments are long and coloured bright citron-yellow, the flowers being produced in August and September, when many of the other species have passed their best; it is a Chinese introduction and grows to a height of 4ft. Hemerocallis Middendorffii is an Asiatic species that attains a height of 3ft., and produces soft orange-yellow flowers, above a dense mass of graceful drooping foliage.

Hemerocallis Thunbergi, another Japanese species, grows 3ft. high and bears rich yellow flowers in July. Between H. aurantiaca major and the last-named species has arisen the hybrid form luteola, the flowers of which are most freely produced on three-foot stems and are coloured bright orange-yellow. By intercrossing of the older species many hybrid forms have arisen, of the greatest value as garden plants, their chief characteristics being increased substance in the petals, widely expanded and generally large flowers, and a more or less perpetual habit of flowering. Of these one of the most desirable is Dr. Regel. This fine form attains a height of 2½ft., and has expanded flowers seven inches across, of a soft shade of apricot; the flowering season is from July onwards. Other hybrid forms of merit include Apricot, a dwarf June-flowering variety with soft apricot-coloured flowers; Buttercup, flowering in June, with bright yellow flowers on two-feet stems; Gold Dust, resembling flava, with deep orange flowers on three-feet stems; Orangeman bears orange-coloured flowers on two-feet stems, and is in season during June and July; and Sovereign, one of the dwarfest, has widely-expanded flowers of rich orange-yellow, the reverse of the petals being bronzy-yellow.

All the forms of hemerocallis are invaluable for the production of flowers for cutting, the individual blooms only last a day or two, but as the buds open readily in water, the spent flowers are practically renewed each day, and the average life of a spike is thus from five to seven days.

Thomas Smith.

Coombe Court Gardens.

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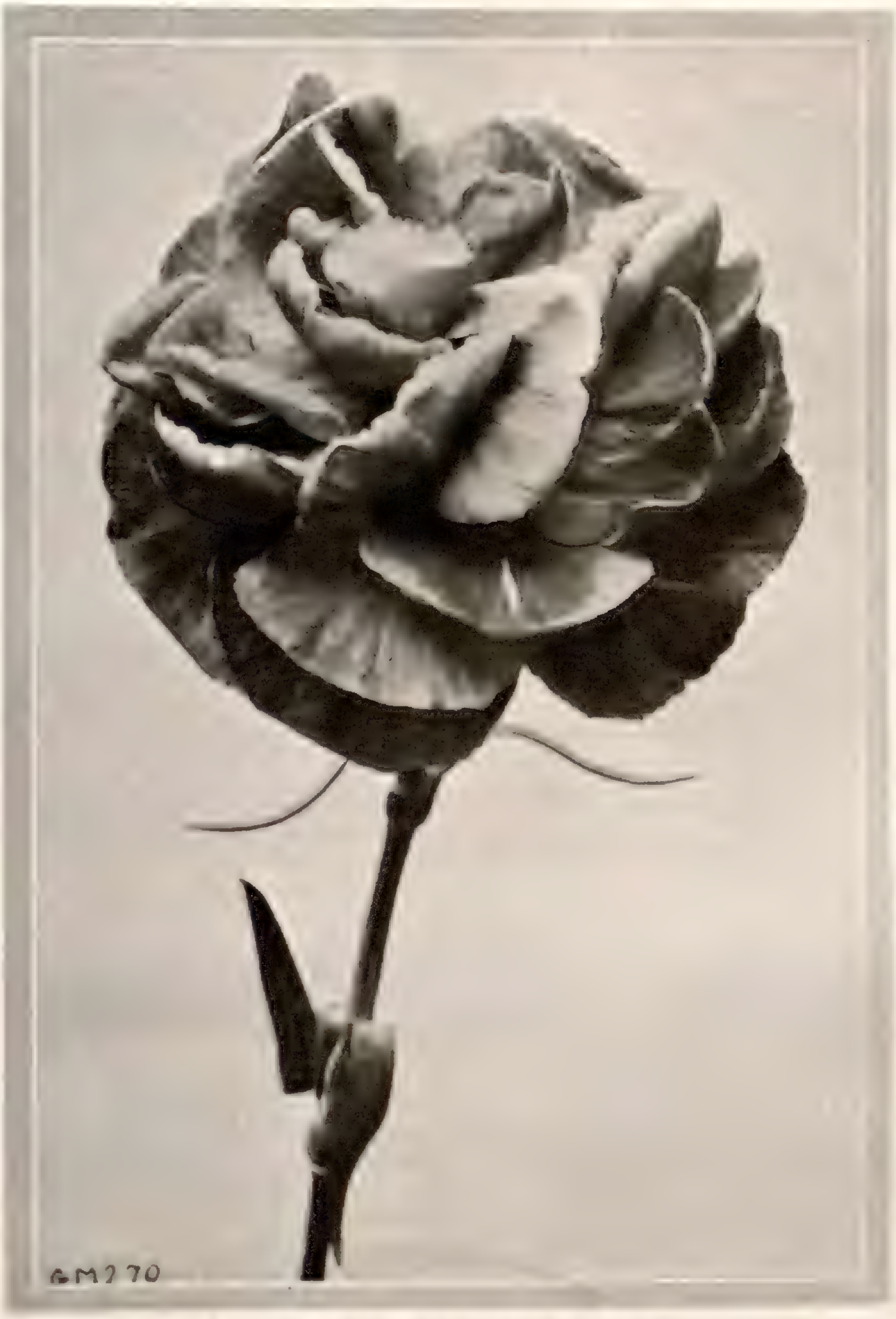
## ACANTHOPANAX RICINIFOLIUM.

An illustration of a fully-developed example of this ornamental Araliad may be found in Sargent's "Forest Flora of Japan," and at page 45 of the same work an account of the tree, as seen growing in Japan, is given. In gardens in the British Isles it is met with but rarely, and at the best is little more than a bush, its presence being due to the decorative effect of its foliage. In the forests of Japan, however, it grows to a height of 80 feet, with a trunk four or five feet in diameter, its timber being included amongst the commercial woods of the country. Boards exhibited at the Japan-British Exhibition of 1910 showed the wood to be of a light brownish colour, though it is sometimes described as white, straight-grained, moderately hard, with a fine smooth surface. In the East it is used for the interior finish of houses, furniture, packing-cases, etc.

The tree is most common in Yezo, the southern part of Saghalien, and the northern portion of Hondo, where its largest proportions are attained in fertile soil in sheltered positions. It is not found as a pure wood, but mixed with maples, birches, oaks, etc. As a small plant, it is awkward to handle, by reason of the stout yellowish spines which clothe both trunk and branches.

From a decorative point of view its principal asset lies in its large rounded dark green leaves, which are sometimes as much as nine or ten inches across, with margins divided to a depth of two or three inches by five triangular acciminate lobes. Trees which have attained a flowering age are said to be very ornamental when in bloom for the small white flowers are borne in large terminal inflorescences during August and September. It is not solely a Japanese tree, for it also occurs in China.

W. Dallimore.



CARNATION QUEEN MARY.

A handsome salmon-rose border carnation, large, and effective. A.M., R.H.S., June 4. Mr. C. Blick, Hayes, Kent.

**PROFITABLE FRUIT GROWING** for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## BRITISH FERNS AT THE INTERNATIONAL.

Although the schedule of the great show at Chelsea embraced a number of competitive classes for British fern varieties, so far as the amateur was concerned the opportunity afforded was by no means as favourable as it appeared, since the show was held several weeks too soon in the season, and as the hardy species do not take kindly to forcing, few of the splendid specimens shown had finished their growth, and none were so fully developed as to present themselves at their absolute best. Some species, indeed, Polypodium vulgare, for instance, were not even scheduled, presumably for the reason given.

Messrs. H. B. May and Sons devoted a fair portion of their space to hardy ferns, mainly British, embracing a number of the best varieties, such as the plumose and tasselled lady ferns, the plumose polystichums, including a fine specimen of P. aculeatum gracillimum Drueryi, a large number of the frilled and crested hart's tongues, Osmunda in variety, and, in short, a fairly representative number of the best forms in commerce. It was, however, left to Mr. W. B. Cranfield, of East Lodge, Enfield Chase, to exhibit as an amateur a still choicer lot, embracing some unique plants which have been rescued from the collection of the late Mr. Moly, which Mr. Cranfield acquired a year or so ago. These, though somewhat handicapped by lack of time for perfect development, were, though mainly lifted from the open, so far advanced that only the eye of the expert, acquainted with the types, could detect the lack and recognise that a week or two would have greatly improved them. The frilled or crispum hart's tongues, for instance, had unrolled their fronds to very handsome effect, but had still to lengthen, widen, and deepen the frilling considerably to their great enhancement, and so with other species. Despite this drawback, however, each class obtained a First-class award and the collection certainly merited an additional recognition as a whole.

Amongst the more beautiful specimens were to be seen finely-grown examples of the elite of the "superbum" section of Athyrium filix fœmina, viz., plumosum Druery, percristatum, grandiceps, crispatum, and, above all, as the original progenitor of these exquisite forms, a division of the original superbum itself, the parent of all of them. Several large specimens of the P. aculeatum gracillimum (Druery) and P. a. plumosum (Green), exemplified these new additions to the British fern flora, while some half-dozen of the finest frilled, fringed, and crested hart's tongues, grandly grown, and in fine shape, showed what this wonderful species is capable of in skilful hands.

The only competitive group was that of Lady Tate, which included several hardy exotics associated with some well-grown British varieties. Mr. Amos Perry, of Enfield, showed a good number of British ferns, accompanied by an interesting and instructive exhibit, showing the various stages of development, from the tiny prothallus through the full-grown one, to the picked-out and potted-off specimen plants ready for the market. A collection was also shown by Messrs. Artindale and Sons, Sheffield, covering a hundred square feet, and embracing many very pretty varieties, with, however, unfortunately, a number of wrong names.

Altogether, despite the drawback mentioned, the exhibition of 1912 will have marked an immense advance over that of 1866, if indeed, hardy ferns appeared in any shape at all in those early days, a fact the more to be doubted as the furore which they aroused in the fifties had subsided, owing to the flooding of the market, and the extinction of the popular taste by the lack of discriminaion shown by the raisers and exhibitors of those days, who, to judge by extant catalogues, put a premium on the "ugliest," and charged high prices according to the defects they presented.

C. T. Druery, V.M.H., F.L.S.

## DAHLIA CULTIVATION.

Many young dahlia plants are eaten by slugs and the worst part of the damage is done close to the surface of the ground. If growers only fully realised what a serious matter this partial, or complete, gnawing of the bark is in its effects on the aftergrowth of the plants, more care would be taken to prevent the mischief. When the weather is perfectly fine and dry very little damage is done, as a rule, but as soon as a damp or rainy day occurs, the slugs assemble round the stems as if by magic. The very best thing to do is to remove the soil immediately round the base of the stem, thus laying it bare, and then, in the evening, go round and dash a handful of quicklime round the stem. Do not be afraid of using the lime. I have frequently used it quite hot. Anyone who cares to note the after effects of slugs can easily do so by examining the cankered and unkindly condition of the stems in the autumn.

During June the plants make roots, and get well established, if planted at the end of May, and it is not till early July that any great attention is needed, beyond an occasional tie here and there. Old tubers, however, may have thrown up a quantity of growths, and these will need thinning down to three or four, selecting the best, and cutting off the weaker beneath the soil. Early in July the plants require a careful survey, and it must then be decided as to whether they shall be stopped to force them to branch out, or if already throwing side shoots, these should be reduced to six. There is a great difference in the way the varieties act at this period. In one instance they may run up two feet high, if left to grow naturally, and not produce a single lateral. A variety of this nature requires drastic measures in order to get sufficient side shoots to ensure a number of flowers, and the only way to treat stubborn varieties is to cut them back, leaving only six or eight joints with the leaves intact. Whatever course is adopted, the joints must be made to break into growth. Other varieties break very readily, and are very easy to handle. Yet others break too freely, and soon produce a mass of spindly laterals, some of which must be removed. It is by no means advisable to leave the forward ones, as these may already have formed buds, and will flower too early. In a few cases it may be worth while to cut down the entire plant if young shoots are breaking up freely from the base.

All through July the plants will need syringing or watering overhead during the evening, if the days are at all fine and dry, and, as a rule, thrips will infest the heads unless exterminated by syringing with nicotine insecticide of about normal strength. It is useless to expend time and labour on plants which are being slowly killed by the presence of thrips, and very often I have found growers quite at a loss to account for the unhealthy appearance of their plants, through being ignorant of the habits of these very small and deeply concealed enemies. During wet seasons this trouble is minimised, but may still be met with in the case of some varieties. Snowdon, for instance, being singled out as a prime favourite, from the time the cuttings push forth from the parent tubers. It is hardly, I think, necessary to state that in no instance should a young plant be allowed to flower, and just as a test it is worth while to allow one plant to produce a bloom, and note the effort on the growth, as compared with a plant of the same variety which had the buds and one or two top joints removed.

My remarks have, to a great extent, referred to cactus dahlias. In the case of shows and fancies, the young plants go to work in a business-like way, and late-planted stock left to run up and flower on the main stems, often produce very fine flowers. In the case of earlier plants they may need the bud removed, and will then produce stout laterals, which may be restricted to four or five, and as these varieties are shown as specimen blooms, the laterals left to flower should be as varied as regards age as possible, and in allowing for this always depend on the upper growths flowering first.

It is impossible to say definitely what should be done to the land during July. In very wet seasons I have had it dug all over when opportunity in the way of a dry spell has occurred. One very wet year it was necessary to dig right close up to the plants, so hard and unkindly had the ground become, whereas last year it was perfectly friable, and no digging between the rows was needed. As a rule, a light forking along the centre of the rows, and not too near the plants, is beneficial. It is a capital plan to give a good mulching of rough stable manure, immediately after digging, and if the grower has the good fortune to obtain a soaking rain on this, the plants will grow like weeds. In dry summers a free watering through a coarse rose, during the evenings will have much the same effect. From this time onwards, the exhibitor and the grower for cut flowers may be said to part company, as the one will be tying and thinning incessantly, while the other will be content to let the plants grow naturally. At the same time, it will well repay anyone to periodically thin out the weakly growths and tie up the plants.

The work of securing dahlias against damage by wind is no mean portion of the entire routine, or at least, this is so in all open situations, and three good stakes per plant are the least that can be used if the latter is to be safely guarded. One stake having been placed at the back of the plant at planting time, two others are now added, forming a triangle, wide at the top, and narrow at the base. Round the three stakes run rough string at a height just sufficient for the branches of the plant to reach when spread out. In doing this, i.e., the spreading out, take care not to strip off the laterals at the juncture of base and main stem, as when young they slip out very easily, and should there be any wind, many good laterals may be blown out, if not secured both at the top and the bottom. It is usual to see tarred twine used for running round the stakes, but a rough string is much better. As the plants grow and become loose, add other string, tier above tier, but four tiers are enough for plants of ordinary height, whilst two rounds is ample for the dwarf sorts such as Mercury and Mrs. Dyer. Once the stems are tied to two strings they are safe, and if the plants are attended to once a week and a tie given where needed, they will always be in a fit state to withstand a sudden gale, which is far better than waiting for the wind to rise, and then rushing off to secure the branches.

P. P.

## NOTES ON NEW ROSES.

The trade in new roses has been almost revolutionised during the last few years. Not that there are fewer varieties offered, but the generality of growers wait now until their merits are more thoroughly known. Nor is this any surprise when we bear in mind the enormous number of varieties now in cultivation, the majority of which are really first class. It must, indeed, be something well out of the common to tempt the average grower under these conditions; and perhaps the greatest opening lies in producing better and more reliable forms of ever-blooming varieties for pillars and archways. Although we have several good ones already there are so few that continue in flower, like Gruss an Teplitz, Alister Stella Gray, and Papillon. Something larger and sweeter, and with the perpetual qualities found in Madame Ravary, Madame Antoine Mari, Theresa Bevan, General MacArthur, and Edu Meyer would certainly be desirable. Among recent roses we have far too many pinks, of varying shades, it is true, and some of them very beautiful, but there is not sufficient distinctness from the shades already proved reliable. Naturally one does not care to give high prices for what is oftentimes no real improvement upon cheaper varieties. Of the following we have seen sufficient to form a fairly trustworthy opinion.

Rose du Barri is one of the most persistent bloomers we have among bedding roses, and is good from the bud stage until fully expanded. The name describes its colour, which is quite distinct among roses, and it is also exquisitely scented.

Rose Queen, from America, makes an extra early pink forcer, coming in as rapidly as Richmond, a variety distributed by the same firm. With very long slender and pointed buds, and a centre of glowing colour when expanded it is very taking. The flowers are borne perfectly upright and upon long stems, rendering it an ideal variety for cutting from. It is considerably fuller than Killarney, opens equally as well, and is bright and certain even in dull winter weather.

Radium is another of the few striped roses. These do not appeal to me, and this sport from Caroline Testout resembles an indifferent variegated tulip.

Sunburst, like Rayon d'Or, is now fairly well known from the great reputation of the few flowers seen. It will undoubtedly be a grand decorative variety in the open, while it appears destined to oust many erstwhile favourites under glass. It is long since a new rose promised so well in this connection, and, being of such gloriously distinct and bright colouring, it will, without doubt, become very popular. It has the advantage of being an excellent grower, with green bronzy foliage and few thorns. In the bud stage it is very long and pointed. Some large consignments have been forwarded to American growers for culture under glass in their immense establishments, and I feel quite certain it will prove a permanent variety on this side of the Atlantic.

Frau Oberburgermeister Piecq resembles a creamy-yellow form of Maréchal Niel. It is very large, full, and of good shape, each bloom carried boldly upon upright growth, and likely to be useful both to the exhibitor and for cut flowers. It has the merit of being very sweet-scented, a charm we appear to be falling away from in many of our newer roses.

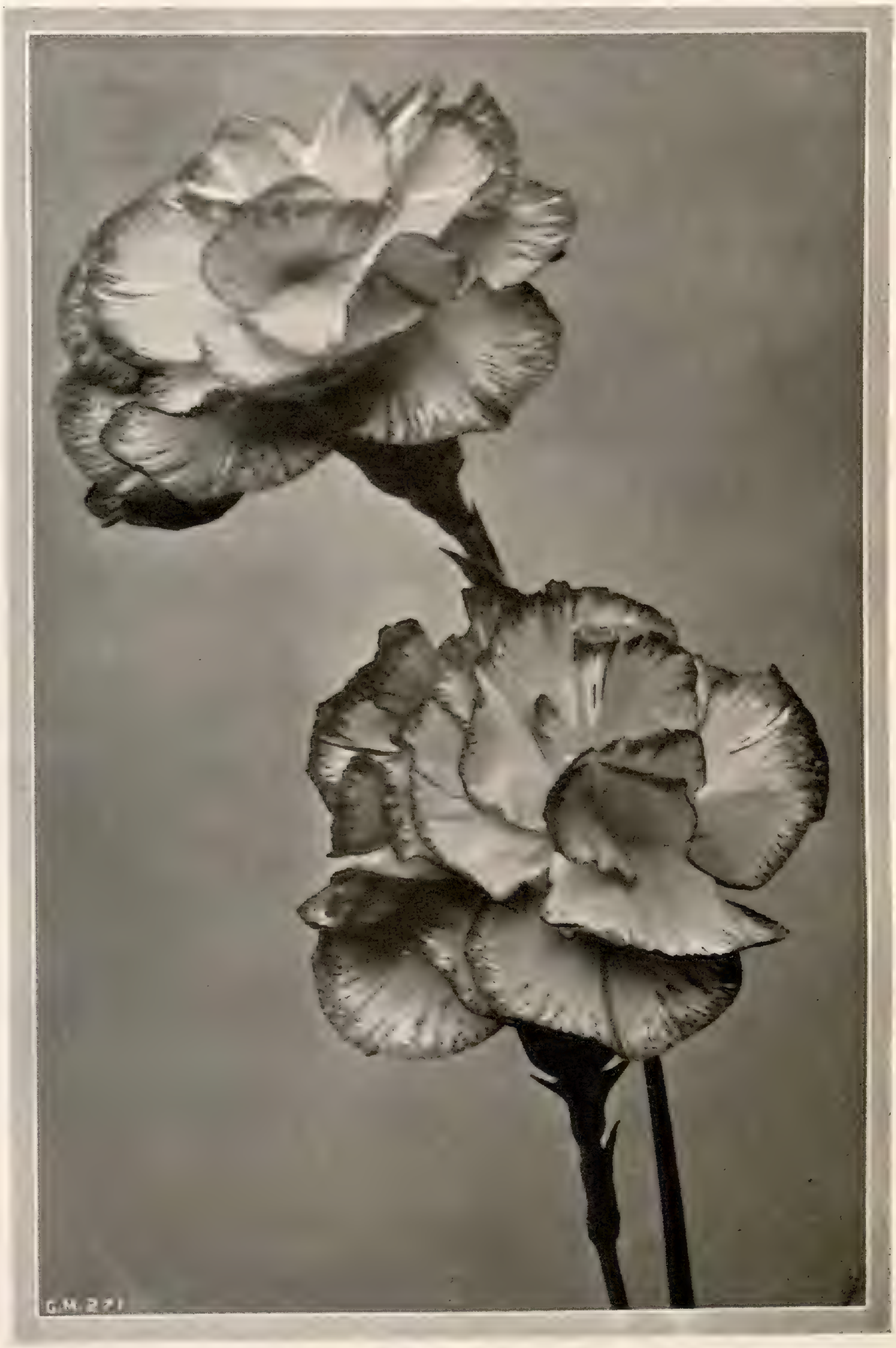
Flame, a seedling from Crimson Rambler, is one of the most distinct climbers of late years. Large trusses of brightest salmon-pink are carried well away from glossy green foliage. In other respects it resembles Crimson Rambler, and is a much brighter pink than found in other climbing polyanthas.

Edward Mawley is a magnificent example of the much-needed rich velvety crimsons to brighten up the rapidly-growing class of hybrid teas. Apparently it has no fault, being large, full, of good form, while by no means its least charm is its delicious perfume, seldom found in any but a few of the dark-coloured hybrid perpetuals.

Elizabeth is the result of a cross with the well-known Frau Karl Druschki, which it resembles in growth and form. The distinction lies in its deep rosy-pink centre, shading off lighter towards the edge of outside petals. Undoubtedly one of our most reliable pinks, and as free an autumnal bloomer as Frau Karl Druschki, which we all know as one of the last to succumb to frost and bad weather.

Deutschland affords a novel and welcome colouring. Golden-yellow, shaded with rose and orange. The flowers are large, full, and expand freely. This is one of the newer hybrid briars, being a cross between Frau Karl Druschki and Soleil d'Or. It is decidedly promising.

Later on, when we have seen a little more of the introductions of last autumn and the present spring, I hope to supplement these notes; but it is scarcely safe to write assuredly before. **Rosarian.**



CARNATION MARGARET LENNOX.

This fine border variety has large rich yellow flowers, each petal edged with scarlet. A.M., R.H.S., June 4. Mr. Jas. Douglas, Great Bookham.

**Cineraria Pompadour.**—Not so very many years ago this race of cinerarias, to which an Award of Merit was recently given by the Royal Horticultural Society would have made quite a furore. The prominent feature is the clear and distinct longitudinal striping of the florets which give them a singular appearance. At the present time, however, self-coloured flowers are far more in favour than parti-coloured ones, as these last, viewed from a little distance, do not stand out as markedly as the others.—T.

## CERASTIUM NOTES.

One is apt to regard cerastiums as common and weedy subjects, but such is really not the case, for weediness is often but the lack of proper attention. Cerastiums have a distinct value for present-day gardening, now that the ideal is for natural effects, for unrestrained freedom, for bits of mountain scenery and flora, for all that speaks of natural beauty without formalism. With these aims in view, there is surely a place for the cerastium in almost every garden.

A place may be found where these silvery-foliaged plants can make an appealing effect. It may be in roaming down from the top of an old wall, where in early summer the countless hosts of snowy blossoms may gleam like stars from their silvery cushions of leafage. The banks of the wild garden, where the sun has full play, is ideal for cerastiums. In such a position one obtains the sturdiest possible growth, and a good effect during the time of blossom. Then, again, they can be utilised in the spacious parts of the rock garden, where they will give a good account of themselves if grouped in exposed positions. Exposure to full sun and wind is necessary to bring out the fullest leaf-colouring, and it exerts a dwarfing influence upon the plants.

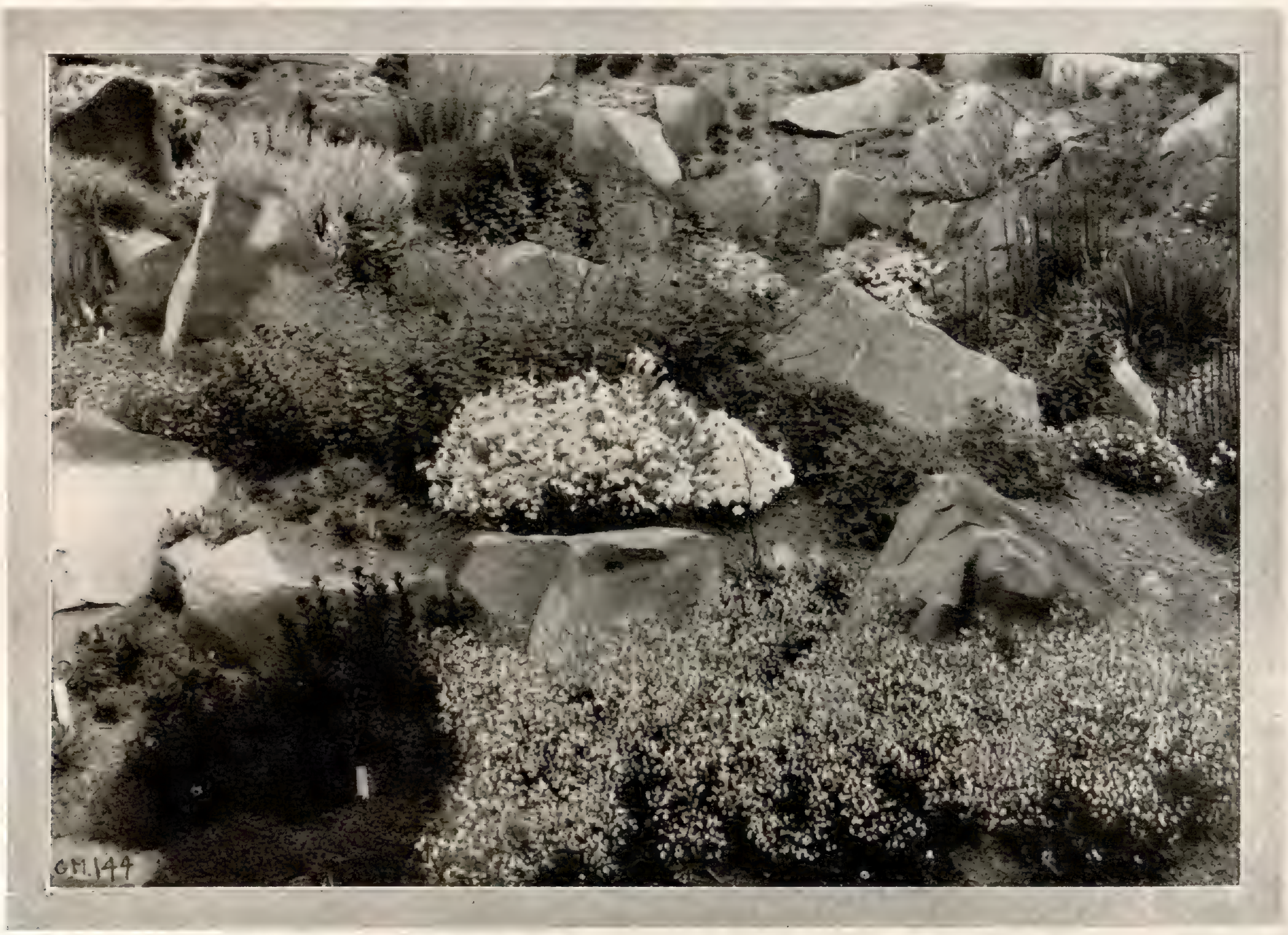
They are particularly valuable in the rock garden for contrasting, the clear white of the blossoms assisting to add to the effect of coloured flowers near by, and coming when the garden is aglow with blue, gold, purple, and other telling colours, the white of the cerastium gives an exquisite contrasting touch. The appended illustration from a photograph taken in the rock garden at Holland House, Southcliff, shows Cerastium grandiflorum as the central part. In the foreground are saxifrages of the umbrosa section, at the back a grouping of the pink Heuchera Rosamunde, while violas, aubrietias, Nepeta Mussini, and other plants are near by.

Cerastiums are chiefly confined to C. tomentosum, C. Biebersteini, and C. grandiflorum, which are readily propagated from seeds or cuttings. The latter can be rooted in quantity during late summer by placing several cuttings in sandy soil in 60-sized pots, and giving them the shelter of a cold frame until rooted. The number of pots of cuttings will be, of course, regulated by the requirements of the garden. If a large quantity is required for edging borders or a like purpose, they should be confined to one form only, for the sake of ensuring a regularity of growth. All plants should be cut over after flowering, as one gains not only neatness but a better foliage growth, and if too rampant, old plants should be cut back hard, or replaced by young ones.

In addition to the cerastiums mentioned there are a few others of interest and utility for the rock garden. The dwarf silvery form of C. alpinum (which is itself probably but a variety of the better-known C. tomentosum), variously known as C. lanatum and C. villosum, is worthy of inclusion. The dwarf woolly foliage masses are especially good, and the yellowish flowers are of certain interest. A miniature form, known as C. gracilis, is also worthy of attention. This is decidedly smaller in its parts than the usual run of cerastiums.

Several others are to be obtained, but it is hardly desirable to have a collection of cerastiums when the above typify all that is best in the group. The main thing for the grower to do is to make the most of his plants by planting simply for effect. Put them just where the silvery foliage and snowy blossoms will tell; put them where something light is required to contrast with deep-hued subjects, remembering that few situations in an English garden could prove too hot or dry for the successful development of cerastiums.

P. S. Hayward.



VIEW IN THE ROCK GARDEN AT HOLLAND HOUSE, SOUTHCLIFF; THE CENTRAL PLANT IS CERASTIUM GRANDIFLORUM.

## THE VALUE OF SHADE.

In the issue of the Gardeners' Magazine for May 25, page 408, "H. C. P." has a timely note on shading plants generally. I quite agree with all the writer advances, but would like to add a few words. Many glasshouses are built with their fronts facing due south, or as nearly so as possible. Throughout the summer months the fully-exposed soil in pots along the front stages must dry up quickly, and also become very hot. Water from taps, pumps, and underground cisterns is poured into these pots liberally, and rather frequently, and sudden chills to the roots of the plants occur. In such circumstances I favour a permanent shading on the front lights high enough to protect the pots. It does much good, and such plants as tomatoes and zonal pelargoniums receive the maximum amount of light while their roots are kept comparatively cool in the pots.

If it be necessary to put on any permanent shading on frame lights, a smear down the centre of the squares of glass is generally sufficient. A good deal of light penetrates, while the direct sun's rays are broken.

G. B.

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**Portulacas.**—Such a summer as that of 1911 should lead to the extended culture of these brilliantly coloured annuals. When the intense heat and burning sun quickly destroyed the beauty of many of our annual flowers, the portulacas simply revelled in the conditions that then prevailed, and formed for a long time a brilliant feature in the garden. It is useless to attempt to grow the portulacas in a shady, moist spot, but given a warm, well-drained border, or the sunny part of a rockwork ledge, they are most beautiful. They belong to what are termed half-hardy annuals, that is to say, they do best when sown under glass, and the young plants are put out after due hardening off, and when the cold weather of spring is over.—W. T.

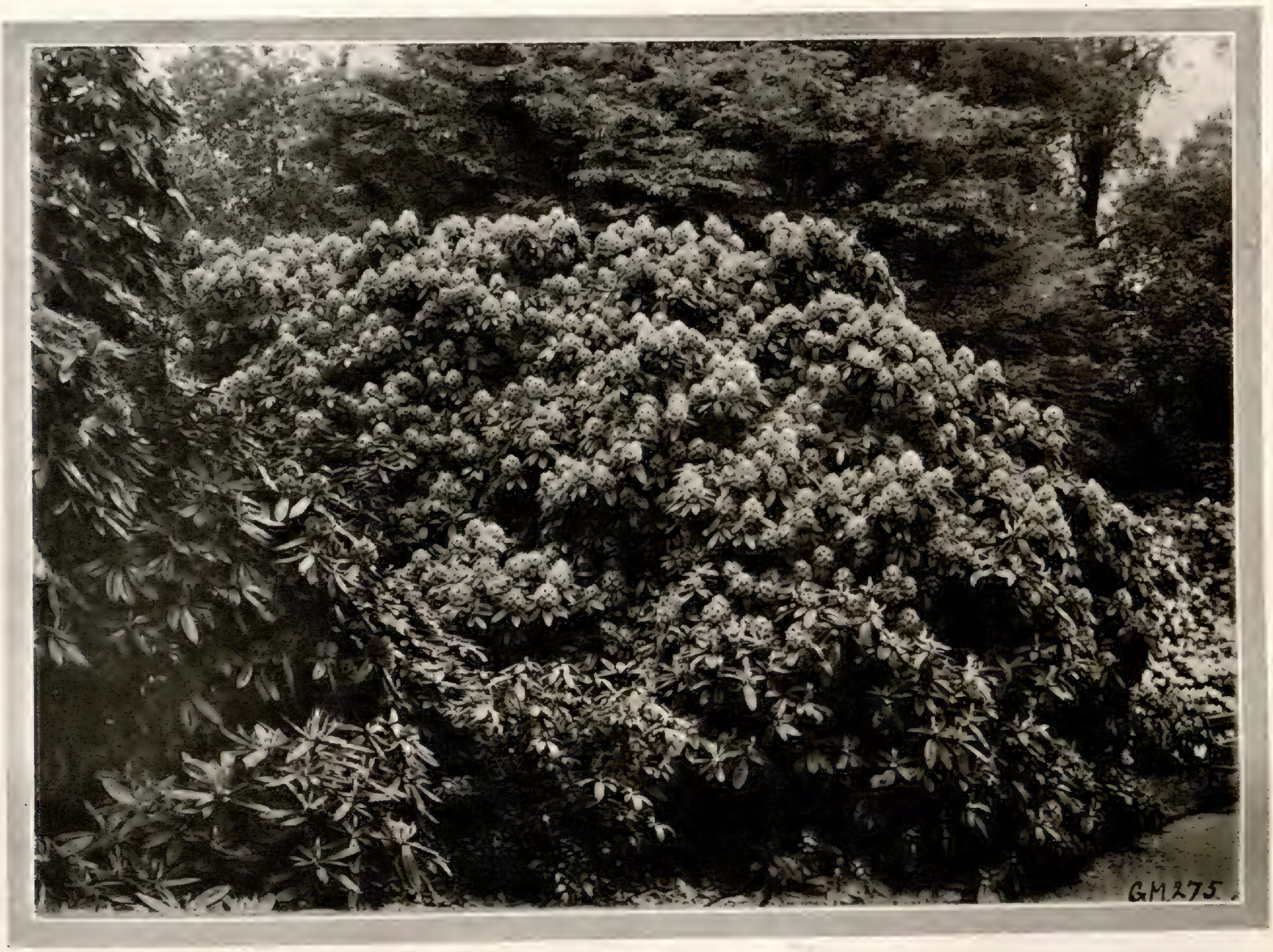
## CAMPANULA GARGANICA HIRSUTA.

Of all the plants of the class to which it belongs, best known by the typical Campanula garganica, the variety hirsuta and its forms is the best for ordinary rock gardening. Nominally, C. garganica itself ought to be more amenable to cultivation, especially in districts where there is much winter wet. Really, however, this is not the case, although the glossy leaves of the Gargano Bellflower would induce us to think this. Even in districts with a heavy winter rainfall, accompanied by intervals of severe frost—perhaps the most trying of all the troubles which await the cultivator of alpine flowers—the variety hirsuta is vastly superior, seemingly indifferent to the vicissitudes of our climate, and giving, in due season, an abundance of its light blue, white-eyed flowers, which constitute a delightful feature on any rockery.

It is of rather trailing habit, though not obtrusively so, in the way that it is not a rampant plant, and is not likely to give much trouble in the sense of overlapping other things. It has a plentiful supply of pretty leaves, grey or silvery, from the hairs which cover it, and the sprays of foliage bear an abundance of the charming flowers which attract everybody when they are open. These are borne for a long time in summer and late autumn, and ofttimes frost comes before it has finished its prolonged flowering period. It is a very beautiful and most useful rock garden plant.

Not a bit less beautiful, but a scarcer plant, is the white variety, C. garganica hirsuta alba, although it is not quite so vigorous, and is a trifle more tender. This lovely bellflower, or harebell, is easily grown in any light soil, but it seems to prefer one of loam, sand, and peat, or with leaf-soil in lieu of the peat. There should be plenty of grit in the compost, and a sunny place in the rock garden may be selected if desired. It flowers well in partial shade also, and is a most delightful thing when trailing over a low stone or ledge. It can be raised from seeds, or propagated by division.

S. Arnott.



RHODODENDRON BROUGHTONI.

A finely-developed specimen of this beautiful hybrid in the Rhododendron Dell at Kew. The flowers are bright rose-red.

## RHODODENDRON BROUGHTONI.

The rhododendron of which a remarkably fine specimen is herewith illustrated, is of special interest to those who appreciate and plant hardy shrubs distinguished by the beauty of their flowers. It is one of the most notable of the varieties now in commerce, although it takes us back to the first half of the last century when the raising of hybrid rhododendrons was being carried on with much success at Highclere, the Hampshire seat of the Earl of Carnarvon, and the late Mr. Anthony Waterer was commencing his work in the improvement of these shrubs, which made the Knap Hill Nurseries famous. An explanation of the high degree of popularity it has enjoyed for about three-quarters of a century is to be found in the fact that it combines in a marked degree finely-formed and attractively-coloured flowers with splendid foliage and a good habit.

It is interesting to have the evidence, which this hybrid and a few others that are still in cultivation afford, that raisers in those early days of the hybridisation of rhododendrons appreciated the importance of a free-branching habit, and handsome leafage, and thereby set up a standard which it is satisfactory to know has been followed by raisers of later date. It may be that not every one of the descendants of Rhododendron catawbiense and some of the other species that have been utilised in the creation of the race of hardy rhododendrons, now in general cultivation is not all that could be desired in the matter of habit. But, regarded as a whole, they are eminently satisfactory in this respect, and prove to demonstration that not only was the habit and foliage given full consideration by the raisers when making selections for distribution, but that they must have made many sacrifices to maintain the high standard which, judging from the results they had constantly in view. Large, well-formed flower trusses are essential, but it is not less important the shrubs should have a free-branching habit, and handsome leaves, for, while the flowers of any particular plant pass through their various stages within a few weeks, the leaves necessarily remain throughout the year.

We have persistently advocated the selection of rhododendrons in which both foliage and flowers contribute to their beauty, but at no time have we been able to illustrate a finer specimen in support thereof. The specimen illustrated occupies a position in the rhododendron dell in the Royal Gardens, Kew, and has a height of eighteen or twenty feet, and a spread of about thirty feet. The freedom with which it usually blooms is admirably shown, and when it is remembered that the flowers are bright rose-red, there is no difficulty in realising the fact that such a specimen is wondrously beautiful in its season of blooming. R. Broughtoni is rather early in flowering, but it is not so early that the flowers are injured by spring frosts.

G.

## GREENHOUSE PRIMULAS.

When one considers the great improvements, and the remarkable breaks from the original species that have within the last twenty years or so taken place in the case of Primula sinensis and Primula obconica, the question arises where, with the vast number of comparatively new Chinese species, will the development of these flowers end ? It is not so many years since that Primula obconica was represented only by the typical kind, a poor little lilac-coloured flower, but now the range in colour is as marked as the size and shape of the individual blossoms. Primula sinensis, too, shows a great divergence from the type and from each other, the massive blooms of the gigantea strain being arranged at one end of the scale, and the light and graceful Star primulas at the other. Another present-day feature is the clear and decided hues that generally prevail among the flowers, especially if the seed has been selected from a good strain.

Foliage distinctions, too, are both numerous and interesting among the varieties of the Chinese primula, for, beside those of the ordinary type, there is what is termed the fern-leaved section; while in some the stems and midribs are dark-coloured, whereas in the ordinary form they are green. Again, at a meeting of the Royal Horticultural Society, a group of plants with leaves somewhat resembling those of a pelargonium, was shown. The flowers of these were semi-double and salmon in colour.

Though my horticultural experience extends over many years, I can remember very few plants that have bounded into popularity as rapidly as did Primula malacoides, a recent introduction from China. The numbers to be seen in the florists' shops in London, and the quantities used for decorative purposes, serve to show that it has gained the confidence of the market grower; than which there is no keener critic. The typical lilac-coloured kind is, as a rule, more grown than the white-flowered variety. The seeds of Primula malacoides germinate readily, and it is in all stages a plant of easy culture. As a window plant for the dwelling house, it is just the thing. When one considers the great changes that have taken place in Primula obconica since its introduction, the possibility of P. malacoides proving just as amenable, cannot be overlooked.

The prospect, however, of improving any species by a gradual process of selection, is not the only light in which many of the new primulas may be regarded, for nowadays so great is the skill of the hybridist, and such an amount of perseverance is brought to bear upon the work, that races now undreamed of may make their appearance in the near future. It is somewhat singular that the finest of the yellow-flowered forms—Primula Kewensis—should have originated as an accidental hybrid, and still more singular that, though it was at first barren, yet seeds are now readily obtained. When such fundamental changes as this take place, it is impossible to say what further surprises await us. At all events, the future of the primula, from all points of view, is in every way most promising. W. T.

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**Araucaria excelsa Silver Star.**—As a matter of individual taste, I prefer this variety of Araucaria excelsa to the newer elegantissima aurea, with foliage a yellowish tinge, which is, however, most marked in the young shoots. These last are in Silver Star almost white; in fact, it is an improved variety of the older form known as alba spica.—W. T.

## PROPAGATION OF ROCK GARDEN PLANTS.

The maintenance of a reserve stock of pot-grown plants is of great importance to the up-keep of the rock garden. So many subjects succumb to the dampness experienced during the late autumn and winter months that it is quite essential there should be a supply to fall back on. A stock of plants can be raised by the three following methods, viz., seed sowing, cuttings, and layers, and it is the intention of this note to deal with the two latter methods.

The propagation of the various subjects by cuttings demands attention during several months of the year, commencing now with aubrietias, alyssums, arabis, etc., and following on with others as they cease flowering. A small frame or hand-light is necessary for the purpose, and about six inches of clean sand should be placed within for a rooting medium. This will be found to be the quickest and surest plan of rooting some of the most difficult of plants. The cuttings are prepared in the ordinary way, and inserted in the bed of sand, well watered in, and kept shaded and close until root-action commences. The quickest way to insert the cuttings is to well water the sand first, then take a piece of glass, and make a cut across the bed about an inch deep to receive the cuttings. After the latter are placed in position, by using a little pressure when making the next cut, the previous one may be closed, and when all the cuttings are put in, a good watering will tighten them all. The sand will settle down round the bases quite closely, making them absolutely air-tight. On no account must the sand be allowed to become dry, or failure is sure to follow. Immediately the cuttings are rooted, they must be carefully lifted and put into small pots, growing them in frames until established.

Successful propagation depends a great deal on the right sort of cuttings being taken, for, whilst those of some plants root best from young growths, older and harder wood of others will be found most suitable for the purpose. A commencement should be made with arabis, and at this season there is usually an abundance of young shoots, which form splendid cuttings. To obtain good material for the purpose when dealing with the aubrietias, it is necessary to cut the plants back when flowering ceases, and young shoots are then produced from the base of the plants. These shoots root freely when taken off about two inches long, and trimmed in the ordinary way. The alyssums root freely when a "heel" or portion of the old wood is allowed to remain on the shoot. Lithospermum prostratum is rather a difficult subject to propagate from cuttings, yet if the young growths are detached from the plant by gently pulling them off, they root readily in the sand.

Androsace lanuginosa is easily rooted in the same way, and nice little plants are thus obtained for planting out in the following spring. Androsace sarmentosa and A. Chumbyi are most successfully propagated by pressing the rosettes into the soil and pegging them down, without removing them from the plant. When rooted the rosettes are lifted and potted. The various members of the Rock Pink family root freely from slips—that is, the shoots drawn off and inserted in the sand without being trimmed at all. Phlox subulata and setacea are increased either by cuttings of the young growths, or by pegging pieces down into some fresh soil. The helianthemums respond readily to the cutting treatment, and these should have a portion of the older wood attached. All the iberis family root best when the cuttings are taken from the young growths.

The young, tender shoots of Cynanthus lobatus and Codonopsis ovata quickly form roots when propagated in July. The ramondias are increased in the same way as begonias or gloxinias, by leaf propagation. Campanulas may be readily raised from seeds, yet when a true stock of any special species or variety is desired, it is necessary to resort to cuttings, as the colours vary considerably when increased by seeds. Daphne Blagayana, D. cneorum, and D. rupestris should be layered, pegging the growths into the soil, and when rooted potting them. This treatment answers for other subjects, such as Ledum palustris, Dryas octopetala, Shortia galacifolia, S. uniflora, Gaultheria procumbens, etc. In fact, there are numbers of plants which are not mentioned that will respond to these two methods of propagation, and with the necessary care and attention, a good stock of pot-grown plants is easily obtained. E .C. Pooley.

Gnaton Gardens.

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## POTENTILLAS.

When so much thought is given to the adornment of the rock garden and the wall garden it is well to consider the claims of the potentillas. Though somewhat lacking the brilliancy of some other rock garden subjects, they furnish us with a group of exceedingly pretty species, well adapted for decorative work. It is often the misfortune of rock garden potentillas to be relegated to the least prominent positions, resulting naturally in a partial failure as far as effect is concerned. Bring them out into the front rank of the rock dwellers, provide them a situation suitable for their needs, and they will give many effective pictures, which will be worthy of the contemplation of any garden lover.

It may be remarked in passing that our subjects are chiefly sun-lovers, delighting in a fairly open situation, with a good light sandy soil as a rooting medium, while their culture is of the easiest possible character. Grown in the open points of a stone wall, many of the potentillas give fine sheets of foliage and blossoms, which for length of duration have few equals.

Picture P. Tonguei in such a position, with its trailing growths hanging pendantwise down the wall face, and studded with a host of exquisite terra-cotta, crimson-marked blossoms. Or, P. ambigua, with its dense masses of rich greenery, clouded over with a golden haze of bright blossoms, is equally charming in its own way. P. flagellaris, too, is very pretty, with its trailing stems stealing down the rock face, and its short-stemmed yellow blossoms, singly, but freely, produced.

Or go a step further, and try the effect of P. nepalensis, or, better still, its variety Miss Willmott, in a similar position, the profusion of rosy-pink blossoms given by the latter is especially fine. Or try the charming P. Hopwoodiana from the wall top, or a well set-up position among the rocks, and note the effect of yellowish-buff and rosy-carmine blossoms. P. glandulosa, a bright golden-yellow Californian species. will succeed best in a situation as noted, and the forms of the charming P. nitida will also do well, if not too hot and dry.

Speaking of P. nitida, may I remind the reader that this is one of the most exquisite of all rock plants, carrying pretty ternate silvery leaves and pale rosy flowers. It spreads by means of underground stems, and really should be found in all collections of rock plants. Its varieties are alba, a pretty white; atrorubens, with fine-sized, rosy-purple blossoms, borne above thick clusters of the silvery leaves; grandiflora, a larger and very pretty edition of the type; and rosea, a fine rosy-pink, with the colour deepening at the centre.

P. nivalis is a good white, with a neat, close habit, and is deserving of note. Other fine whites are P. alba, a continuous flowerer, with fine divisions to the leaves; P. alchemilloides, a very distinct subject; P. Clusiana, with downy leaves and terminal corymbs of white; P. davurica alba, a white variety of the little-grown yellow-flowered P. davurica; P. rupestris, a first-rate early-flowering gem, which is decidedly worthy of note; P. splendens, a finer, bolder form than P. alba; and the pretty P. tridentata, which is notable for its thick masses of foliage and its freedom.

Of other colours, the yellows claim a large proportion of the species, these necessarily include the silky-leaved P. villosa; the palmate-leaved P. recta; P. nevadensis, a very pretty dwarf species; P. montenegrina, from the mountains of Montenegro; P. opaca, which, though a native species, is worth growing for its interest and charm. P. Kotschyana, too, large, except where plenty of space can be given; P. alpestris, and its finer form pyrenaica, both very pleasing; P. aurea, a splendid, attractive, high mountain form; P. arguta, a pale yellow, and the silvery-leaved P. argentea.

I may also note the orange-hued Himalayan P. fulgens; P. atrosanguinea, a fine crimson variety of P. argyrophylla; P. valderia, a fine silver, with creamy blossoms; the shrubby native species P. fruticosa, and its miniature form humilis; and the fine North American P. Thurberi, which gives a wealth of brown-red blossoms.

Many others might be included, but the foregoing list will suffice for all but the keenest collectors, giving ample material for selection.

Potentillas plant out most satisfactorily in autumn and early spring, and one has so few losses that propagation need not be resorted to unless one has an extension of planting in view.

With the hybrid varieties of garden origin, one can also use the potentillas for garden planting, where they are distinctly pleasing when well grown, but the wealth of more attractive herbaceous subjects effectively preclude them from ever gaining a front rank position for border decoration, though I may say that an edging of P. nepalensis or P. Miss Willmott can be effectively used as a foreground to taller subjects, as these potentillas certainly gain in effect when planted in number, and an edging well kept is very pleasing. H.

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**Crossandra undulæfolia.**—Some good examples of this uncommon yet pretty Acanthad were noted in one of the groups at the International Exhibition. Like many of the aphelandras, eranthemums, and other plants of the same order, it is of an upright sparsely branching habit of growth, the pointed oblong-shaped leaves being much waved at the edges, hence its specific name. The flowers, which are borne in compact spikes, are of a rich orange-salmon colour, a very pleasing tint. The individual blooms do not last long, but a succession is kept up from one head for a considerable time. It is of easy culture if potted in ordinary compost and given the temperature of an intermediate house; as in a stove, it is apt to run up tall and weak. This Crossandra is a native of the East Indies, and was first distributed by the late Mr. William Bull, of Chelsea, in 1881, under the name of Crossandra infundibuliformis. At present this crossandra is not nearly so popular as it deserves to be.—S. W.

## HORTICULTURAL EDUCATION IN AMERICA.

(Concluded from p. 435.)

Greenhouse Construction.—First term. Two hours. Pre-requisite course in Drawing. The development of the modern greenhouse; types of houses, materials, and methods of construction, installation of heating systems, etc. Laboratory practice in erecting section of cypress and iron-frame houses, and in planning and estimating the cost of commercial ranges. The class will participate in a required excursion.

Investigation in Floriculture.—Throughout the year. One, two, or three hours a term. Pre-requisite second course in Commercial Floriculture given above, and Garden Flowers; permission to register. Designed primarily for upper-class men and graduate students. The investigation of problems in the growing of cut flowers, exotics, and garden flowers; hybridising; study of varieties.

Greenhouse and Garden Practice.—Throughout the year. One to three hours. Designed to give the student practical knowledge of greenhouse work. Lectures and exercises in greenhouse management, propagation, composting soils, potting, watering, etc.

Conservatory Plants.—Second term. Two hours. Pre-requisite preceding course. Students are advised to take Greenhouse Construction before entering this course. A study of the culture and uses of tropical and sub-tropical plants grown in conservatories, including palms, ferns, begonias, orchids, etc.

Floral Design.—First term. One hour. A study of the principles of floral art. Practice in the arrangement of flowers in designs and bouquets, baskets, table decorations, interior decoration, etc.

Elementary Vegetable-Growing. Second term. Three hours. Open to those who have

SWEET PEA DOBBIE'S LAVENDER GEORGE HERBERT.
One of the best of lavender-coloured varieties. A.M., R.H.S., June 4. Messrs. Dobbie and Co., Edinburgh.

taken or are taking Soils 1. The principles of vegetable-growing as applied in commercial production. Important vegetable crops —their adaptation, culture, special requirements, varieties, enemies, marketing, and profits. The laboratory work includes exercises in management and planning, the growing of early plants under glass, and the planting and care of early outdoor vegetables. Each student assumes charge of his own plantings, carrying them through to the end of the term.

Vegetable-Forcing.—First term. Three hours. Pre-requisite preceding course and Soils 1. Vegetable-growing under glass. Important forcing crops. Laboratory will consist of practical work in crop production. Each student will be assigned a plot in the greenhouse on which he will grow vegetables to maturity, assuming full charge except in heating and ventilation. This will be supplemented by descriptive studies.

Systematic Olericulture.—First term. Two hours. Pre-requisite Elementary Vegetable-Growing (see above). Lectures and descriptive studies dealing with vegetable crops, their origin and botany. Special attention will be given to varieties, and their adaptation to different cultural and market conditions. The important commercial types of the different vegetables are grown in the garden each year, and there is an abundance of first-hand material for the course.

Advanced Olericulture.—Second term. Two or three hours. Pre-requisite Elementary Vegetable-growing and Vegetable-forcing. The student's time will be divided between advanced studies of vegetable crops and their culture and the study of a special problem to be agreed upon. An excursion to two or three important vegetable-growing centres will constitute a part of this course.

Home Vegetable-Gardening.—Second term. Two hours. A study of vegetables and their production for home use. The planning and management of the garden, special crop requirements, factors influencing quality, and control of pests will be considered. The laboratory work consists of actual practice in the garden. The starting of early plants in hotbeds and frames, intercropping, and succession cropping to get largest yields from small areas will be studied. Each student will assume charge of his own plants, and carry them through to the end of the term.

Elementary Horticulture. — Throughout the year. Two hours a term. Much be preceded or accompanied by Botany 1. This course aims to emphasise principles and practices involved in the cultivation of garden plants grown for pleasure or profit. It includes the propagation, botany, culture, and economic uses of plants. Some attention is also given to garden-making. Designed for teachers of Nature study or of Elementary Agriculture.

Nuciculture.—Second term. Two hours. Pre-requisite training in Systematic Botany. Lectures on the practical and systematic phases of nut culture, with special reference to the cultivation and improvement of the forms native to the United States. The Morris collection of edible nuts of the world in the Department of Horticulture furnishes abundant material for illustrating the lectures. The Robert T. Morris prize of twenty-five dollars for proficiency in propagating nut trees is offered in this course.

Sub-tropical Pomology.—First term. Three hours. Pre-requisite Botany 1 and 2. A study of citrus and other tropical fruits, with special reference to American conditions. Copiously illustrated. Laboratory work in describing and judging the various fruits.

Literature of Horticulture and Landscape Gardening.—First term. Three hours. Open to juniors and seniors, and required of graduates. A comprehensive survey of the writings of European and American authors, with special reference to the evolution of horticultural methods.

Evolution of Plants.—Second term. Three hours. Open to juniors and seniors, and required of graduates. Historical development of theories of evolution; recent theories, including a careful examination of present-day methods. Practice in the greenhouse in the technique of plant-breeding.

Investigation.—Either term. One or more hours. For advanced students and graduates. The student is assigned a subject which, as far as possible, combines original research with bibliographical methods.

Seminary.—Throughout the year. One hour a term. Required of advanced students who elect preceding course, and of all graduate students.

Gardening.—Throughout the year and the summer. Three hours. Open to a limited number of students. A personal and informal course for lovers of plants and gardens. The course consists of actual work with identification and growing plants, supplemented by conferences and informal discussions. Attention will be given garden literature and history, planning of grounds, etc.

## Equipment of Class-rooms and Laboratories.

The equipment for the horticultural work usually consists of class-rooms, laboratories with tables, and sometimes equipped for microscopic work, and herbarium; more or less rough workrooms, in which practice may be had in the mixing of soils, the compounding of spraying materials, the testing of machines, the study of vegetables and fruits, and the like; a range of glasshouses; and a number of acres of land for gardens and orchards. Sometimes the orchard area will amount to fifty and more acres. In some colleges the plant-breeding is included with the horticulture; and in some of those that are least differentiated the plant pathology and economic entomology are included, as also forestry. In the courses detailed above all these subjects are excluded as horticulture, since they are handled in regular departments by themselves in numbers of different courses. The department of plant pathology, for example, in this institution offers the following courses in horticultural applications:

Diseases of Field and Truck Crops.—First term. Three hours. Pre-requisite Plant Pathology 1.

Diseases of Fruit and Fruit Trees.—Second term. Three hours. Pre-requisite Plant Pathology 1.

Designed especially for students who expect to become practical fruit-growers.

Diseases of Forcing-house and Florists' Crops.—First term. Three hours. Pre-requisite Plant Pathology 1.

Designed especially for students specialising in forcing-house of floricultural work.

The subject of landscape architecture, or landscape gardening, has developed in the institutions in the United States from two sides. When it is an offshoot of colleges or departments of architecture, or when strongly dominated by architectural ideas, it is likely to be known as landscape architecture. In the agricultural colleges, however, the subject has developed from the horticultural or gardening side, and has usually been called landscape gardening. As a part of the curriculum, landscape gardening is given more or less attention in nearly all the land-grant institutions. In three or four of them, however, the subject is now being given special attention, as also at Harvard and at Columbia, which are not land-grant institutions. At the present moment only one institution gives a post-graduate degree in the subject, and this is the degree of Master of Landscape Architecture given by Harvard. Columbia and Cornell, however, are expecting to establish degrees for the subject, but the name of the degree is not yet determined or published. At Harvard, Columbia, and Cornell, the landscape work has taken on a distinctly professional character. At the Massachusetts Agricultural College, Amherst, the landscape work has been prominent for some years.

These colleges of agriculture are engaged rather largely in extension work, the extension meaning all educational efforts prosecuted at the homes and on the farms of the people. Some of the work at the institution itself, as brief winter courses and the like, may also be considered to be extensional in its character. The extension work is welfare work, and it is properly a necessary part of an institution that is maintained by the people for the service of the people. Some of this extension work is horticultural. It comprises tests and experiments in orchards, gardens, and greenhouses; co-operation with growers' associations; surveys of conditions and industries; the issuing of popular bulletins and other literature; lecture courses, reading courses, and much correspondence.

The Federal Government appropriates $30,000 to each of the States for the maintenance of an experiment station. In nearly every case this experiment station is connected with a college of agriculture; sometimes it is a department of it, and sometimes it is an attached unit. Horticulture has long been an important phase of the experiment-station work, and hundreds of bulletins have been published by the stations on fruit-growing, vegetable-gardening, flower-growing, and similar subjects. The United States Department of Agriculture is also engaged in large experiments in horticultural lines, and is publishing the results of them in many bulletins and reports; and, although the Department is not engaged directly in the teaching of students, it is nevertheless an educational institution in a broad way, and reaches all parts of the country.

In the public schools there is now a strong sentiment for the introduction of agriculture. This pertains in all parts of the United States. This agricultural instruction will be organised eventually on the same basis as other instruction in the common schools. Agriculture will include a great variety of subjects, the horticultural affairs being given their due consideration. This will result in a gradual re-direction of the youthful mind toward horticultural and other rural pursuits.

The nature-study movement is widespread and established, and the material of the teaching is in part of plants. School-gardening is growing in popularity and importance. All these subjects are finding their way into normal schools and colleges, in some of which there is definite horticultural work for the training of teachers. Correspondence courses, the rural press, State departments of agriculture, and other agencies and enterprises are also forwarding horticultural education as a part of the general rural betterment.

Perhaps this brief sketch will present a general view of the kind of education in horticulture that is now developing—as yet, of course, very imperfectly—in the United States. It is largely a training for citizenship on the basis of general collegiate education. I have tried to avoid comparisons with your own methods, except in the most general way, for it would be presumptuous for an American to try to measure English horticultural training. He would be carrying coals to Newcastle. The Americans have had a continental area to discover and to conquer; they are endeavouring to conquer it by many means, and the most fundamental means is by organising all industry educationally. The horticultural subjects are important not only in themselves, but in their personal appeal, and the organising of horticultural knowledge into large plans and methods of human training is one of the best privileges of any people.

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**Crassula coccinea.**—This showy succulent, which is said to have been introduced from South Africa as long ago as 1710, is known also as Kalosanthes coccinea, while, according to the "Kew Handlist," it should be Rochea coccinea. It is, therefore, a question of taking one's choice. It is, and has been, for many years popular for market, and ideal little specimens may be frequently seen hawked about the streets of London. There are some varieties with pink blossoms, but a good form of the typical kind whose flowers are of a rich scarlet colour, is the best of them all. Of easy propagation and culture, this crassula is in every way a most desirable greenhouse plant.—K.

## INSPECTION OF NURSERY STOCK IN HOLLAND.

In the course of his paper, read at the International Conference on Legislation in connection with Insect Pests and Plant Diseases, Professor Ritzema Bos gave the following particulars of the method adopted in Holland for the inspection of nursery stock.

In no other way, he said, could the import of diseases from abroad be prevented more successfully than by efficient inspection of the stock executed in the country where it has grown. But this inspection only can give what reasonably can be required of it—a guarantee for the health of the stock—when a well-equipped Phytopathological Service exists in the country from which it comes. I hope to convince you of the truth of this opinion by telling you something of the work of the Phytopathological Service in Holland, especially of that branch of it which takes care of the export nurseries.

All nurseries in Holland where stock is grown, directly or indirectly destined for export, are inspected several times a year by a local inspector. When some pest is found the infected plants or trees are removed and destroyed, or, if possible, they are disinfected or cured by an efficient treatment. The results of the treatment are attended to by the inspector at settled times. In this way, for instance, Phytoptus, Aleyrodes, and the galls of Exobasidium are dealt with on Azalea indica, Tingis on rhododendron, Peridermium Strobi on Pinus Strobus, Mytilaspis pomorum on Buxus. Of course, a complete record of the occurrence of pests and the results of treatment is kept by the inspector, and a copy of it is sent to the Chief of the Phytopathological Service.

In the season of shipment the inspector regularly goes to the sheds of the nursery tradesmen, where the stock from their own grounds is brought together with stock of other nurserymen who do not trade to foreign countries, but only apply themselves to nursery work. Now the inspector can find—reasonably speaking—every fungus or insect attack which might be overlooked at the nursery inspection; moreover, he now finds root diseases, for instance, root and crown galls. He removes all that is not perfectly healthy, and he sends a record of the inspection of each shipment to the Chief of the Phytopathological Service. The nursery-tradesman in his turn sends the corresponding certificate, on which mention is made of the contents and other particulars of the shipment to the Chief of the Service to have it stamped and countersigned. The Chief of the Service compares the statement of the nurseryman with the record of the inspector, and when it is obvious that the stock is in good condition he authenticates the certificate by his written signature and official stamp, and he returns it to the inspector. Mind what I say: not to the nurseryman, but to the inspector. For it might be that some slight difference is found between the statement of the nurseryman and the inspector's record, or that the nurseryman packs other stock in the boxes than what has been inspected, and now the inspector has the occasion to control another time if it is all right. When nothing is wrong he gives the precious document, and now the boxes can be closed and expedited.

Of course, all beginnings are difficult, and so too, our earliest efforts were sometimes unsatisfactory, but each year renders our certificates of health more reliable, and the nurserymen gradually take more care that no act of theirs shall detract from its reliability. Of course, even by the arrangement sketched, the possibility is not quite excluded that some pest may be transported from Dutch nurseries to foreign countries. Inspectors are human; they may sometimes overlook an insect or a fungus attack. Absolute freedom never can be certified, but we may say, reasonably speaking, that the possibility of transport of pests from our nurseries is an extremely small one. Mr. Howard (the renowned entomologist of the American Department of Agriculture), Mr. Washburn (State entomologist of Minnesota), and other American authorities assure us that the certificates of our Phytopathological Service are reliable, and they greatly appreciate our method of working.

According to the authorities just mentioned, the same cannot be declared of the certificates of health delivered in several other European countries. Therefore countries which import stock are cautioned against putting too much confidence in these papers, and may be advised to combine an inspection at the port of entry with the claim for a health certificate. We have already seen that the mere inspection at the port of entry will not give the desired warrant; nor need it be repeated that it is impracticable to examine the imported stock with sufficient accuracy. But by combining the claim for a certificate with the inspection at the port of entry a country bids fair to succeed in holding out of doors all pests which can be imported by shipment of nursery stock. The fact that the nurserymen in the country of export are aware of their stock being inspected will aid in making them careful in regard of its state of health.

Of course, the inspectors at the port of landing can make allowance for the nature of the stock and for the country from which it comes. For instance, when it comes from a country ith an excellently organised Phytopathological Service the inspection needs not to be done with equal carefulness as when it comes from a country with a seeming Service. When a shipment consists in part of a species of plant, which may be the bearer of a very dangerous pest, the introduction of which should be prohibited at any cost, a very cose inspection of the stock belonging to this species is required, while the inspection of the other stock of the shipment, say, perennials or ornamental shrubs, can be executed less punctiliously.

The nursery stock is expedited late in autumn or early in spring—anyhow a season in which the frost may set in suddenly. To prevent possible damage by frost, it is necessary that the stock should not stay too long unpacked in the port of entry in behalf of the inspection. Of course, lots of work are to be done by the import-inspection Service, and care cannot always be taken to have the boxes opened, inspected, and closed in a short time. This is quite obvious to those who know the business in the season of shipment and have a notion of the enormous quantities of trees and shrubs which by artificial means are pressed and tied together and packed in bales and boxes. So the bringing of the contents after inspection in its former condition being almost an impossibility, it might occur that some stock on its further expedition to the consignee is injured by frost. This trouble may be prevented by putting the inspection off till the cases have arrived at the place of their destination. So, in fact, the inspections of imported stock are executed in several of the United States of America.

In conclusion, summing up all our arguments, it may be stated that the best warrant against the importation of plant diseases and injurious animals is given by the combination of two measures: First, certificates of health, delivered by the State phytopathologist of the country of origin, are to be required for each imported consignment; secondly, inspection and, if need be, disinfection, is to be executed before the consignments are accepted by the consignee.

Only in very exceptional cases prohibition of importation is to be adopted as a method of preventing the introduction of pests; but this method is not at all to be relied upon as a never-failing expedient.

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**Salvia splendens.**—Whereas the typical Salvia splendens used to be regarded solely as an autumn-flowering subject, some of the improved forms may be had in bloom quite early; in fact, flowering examples are now often met with in the spring. Owing to this they are now largely used for summer bedding when they vie in colour with the brightest of the pelargoniums.—W.

# WORK FOR THE WEEK.

### CONSERVATORY AND GREENHOUSE.

GREENHOUSE CLIMBERS.—Many of our most beautiful plants are good climbers, and when allowed to roam at will over the rafters, up the pillars, and on the back walls, produce a prodigious amount of bloom, and present a charming effect in any large greenhouse, conservatory, or winter garden. I would advise that these be planted out whenever practicable in suitable soils prepared for each subject.

BOUGAINVILLEAS. — These are very strong growers, and do splendidly against a back wall or trained up a pillar and allowed to ramble over the rafters or trellis. Bougainvilleas are generally classed as stove plants, but they will do equally as well in a conservatory or corridor. In fact, I get better results from plants grown in a large conservatory than from those grown in a stove. They like an open compost, and the material from a builder's rubbish heap suits them well, and they simply revel in it. A hole should be taken out 4ft. square and 3ft. deep; and at the bottom place brickbats and mortar rubble, putting one foot of sandy compost on the top. When the plant is established the strong shoots should be encouraged to go to the top of the house. At the present time the plants are just coming into bloom; the weak shoots should be cut out, and the strong branches allowed to droop as these are most effective when covered with bloom four or five feet of their length. The best to grow are B. glabra, B. Maud Chettleburgh and the new salmon variety B. Rosa Catalina.

STREPTOSOLEN JAMESONI. — This climber is at present at its best, the trusses of gorgeous orange blooms making a mass of colour on the back wall of the conservatory here. Those who have only seen this grown as small bushes in pots cannot imagine how lovely it is when grown freely. It needs a rich compost, and when planted out makes strong growth, and it will then produce a succession of bloom for six months out of the twelve. It also does well in pots when disbudded to one or three growths.

LAPAGERIAS.—These are beautiful subjects, both the white and rose forms being much prized. These plants do best trained up centre pillars. It is best to build brick pits to accommodate them, and the compost should consist of two parts peat, one part loam, and one part coarse sand, over good drainage. Slugs are very fond of the young shoots, and a strict watch must be kept for them.

BIGNONIAS AND TECOMAS. — These are all suitable for covering the roofs and rafters; they grow and luxuriate in a sandy compost when planted out. Sheaves of bloom can be gathered from them when they are well established.

CLEMATIS INDIVISA LOBATA.—This is the only member of the family worth growing inside, but when trained on the roof and kept restricted, its white ropes of flower are very effective. All thin shoots should now be cut away, the strong ones only being left.

JASMINIUM GRANDIFLORUM. — This jasminum is very chaste, and when planted out in a centre bed and allowed to ramble on the roof, it will flower abundantly, its large, starry, white flowers being very effective and deliciously fragrant. When cut and placed in small vases a succession of bloom appears which keeps the vases effective for several days. This climber is best increased by layerings

TACSONIAS.—These are rapid climbers, and they will all do well if planted out in beds of fibrous loam and peat. If allowed to ramble they soon cover a large space, and their large flowers hanging suspended from the growths always command attention. Tacsonias root readily if side shoots are placed in a sandy compost. There are many more, equally useful and effective, climbers which might be made use of, such as Swainsonias, Plumbago capensis and its variety alba, heliotrope, rhynchospermum, etc., and where large quantities of choice cut flowers have to be kept up it will be found that these plants can always be relied upon to furnish an abundance.—LEWIS SMITH, Shotesham Park Gardens.

## THE ORCHID HOUSES.

EAST INDIAN HOUSE.—In this house the Ærides, Saccolabiums, Angræcums, Renantheras, Sarcanthus, Arachnanthes, and other Vanda-like plants, now developing leaves and roots, should be given sufficient water to keep the sphagnum moss on the surface growing freely. These plants do not need large quantities of water, but great humidity in the atmosphere, therefore a moist atmosphere must be maintained until growth is completed. The majority delight in plenty of sun-heat, but an excessive amount of fire-heat quickly debilitates them. On warm, bright days the fire-heat must be kept as low as possible, and, in order to preserve a moist atmosphere, the top ventilators must be kept closed, the lower ventilators being used to afford the necessary amount of air. When both top and bottom ventilators are open at the same time, the air dries too quickly, especially in houses where it is necessary to provide a humid atmosphere. In the ventilation of the different houses it is always necessary to consider the class of plants they contain; if a buoyant atmosphere is required, the top ventilators may be brought into use; if a humid one, they must be kept closed to prevent evaporation. The whole secret to success depends on these small details. When the weather is bright the ventilators should be closed about 4 p.m.; but if the weather be dull and sunless it should be done a little earlier, and the house be at once thoroughly damped down and the temperature allowed to rise as high as possible. Where the glass is covered with stippling, the blinds may be pulled up about one hour later to allow the sun to shine full on the roof. Where there is any danger of the plants scorching, this latter operation must be deferred for some little time until the sun has lost some of its power. For several months to come a temperature of about 70 degrees should be maintained, and early in the morning, should the temperature, through rain or any other cause, fall below 65 degrees, no damping should be done until the pipes are made warm and the proper temperature is obtained. Nearly all these plants produce large, fleshy roots, which are dainty morsels for cockroaches and similar pests.

DENDROBIUMS.—The young growths of the deciduous and semi-deciduous dendrobiums are now developing fast, and the amount of water at the roots must be increased, especially where the growth is vigorous and roots plentiful. When growing strongly, the plants should be examined occasionally, and the longest of the growths looped up to prevent breakage, and admit light and air freely. Dendrobiums of the evergreen section, such as D. thyrsiflorum, D. densiflorum, D. Farmeri, and D. Bronkarti, which have passed out of bloom, should be kept cool, and rather dry, until growth recommences. Strong-growing species like D. calceolus are now producing their new growths, and those that need repotting must have attention. They should have ample rooting space, and the receptacles be well drained, using a compost as previously advised for this family. After potting, the tallest of the pseudo-bulbs should be tied neatly to stakes, so that each plant is kept firmly in position, as a rocking plant cannot form roothold. Place the plants at the warm end of the house, and when they are well rooted copious waterings can be given until the terminal leaf is completed. The above remarks will apply also to other late-flowering dendrobiums, such as D. chrysotoxum.—J. T. BARKER, The West Hill Gardens.

## HARDY FRUITS.

STRAWBERRIES.—Before the fruits commence showing colour, protection will be required against the attacks of blackbirds and thrushes; one-inch mesh fish netting answers the purpose admirably. For small beds or borders three rows of inch-square rails supported on stakes will suffice to carry the nets; the middle rail should be sufficiently elevated to prevent the net sagging on to the plants, the sides and ends of the net must be securely pegged down to the ground. Plantations of a larger area are most conveniently covered by means of stout stakes and rails, standing four feet six inches to five feet clear of the ground, each row of rails seven feet apart, with wire netting around the sides, to which the top nets may be securely fastened; this makes a neat protection, and though an erection of this description entails more work in the first instance, it amply repays the extra trouble involved. In this particular distrct the prolonged drought has had a serious effect on the plants and swelling fruits, and watering has become imperative to save the crop. The planting out of recently forced plants on well-prepared borders should be done as soon as the plants have been duly hardened off; with due care and attention these will produce a crop of fruit by the latter end of the summer, but this means the loss of an early crop the following season. If new plantations are contemplated, the required number of 60-sized pots may—on wet days—be washed and a piece of turf placed over the bottom in readiness for layering.

RASPBERRIES.—The canes springing from autumn-fruiting stools should be thinned out to five to each stool if supported by stakes, but if supported by wires a distance of ten inches apart should be allowed. The young growths on early fruiting stools should be treated in a similar manner, and as growth advances they may be looped up to the stakes or wires, otherwise many of the strongest and best growths are apt to be damaged when gathering the fruit, or by strong winds. If mulching has not yet been accomplished a good thick layer of manure should be at once applied; this will naturally assist the swelling fruits and young growths.

PEACHES AND NECTARINES.—The young growths should be regularly attended to in the way of tying in and stopping; lateral growths should be pinched at the first leaf, unless required for extension purposes; to provide an equal balance of growth it is usually necessary to keep the growths on the top portion of the tree closely stopped after the shoots have made the desired growth. The final thinning of the fruits should be done without further delay, the best placed fruits on each shoot should be selected, the remainder being pulled off. For peaches, one square foot is the general allowance for each fruit, and nine square inches for nectarines. Much, however, depends upon the health and vigour of the individual tree; trees making extra vigorous growth may be, with advantage, more heavily cropped; while those of a weakly character should carry a much lighter crop. The trees should be frequently and forcibly syringed to keep down red spider, and the border must be kept moist.—W. MESSENGER, Woolverstone Gardens.

## THE KITCHEN GARDEN.

CUCUMBER HOUSE.—The early batch of plants is almost exhausted. Pull them out and plant again with strong young plants that were raised a month previously, and are now well established in 6in. pots. The old bed should be taken clean out, the glass and woodwork washed with strong soft soap and water, the walls lime-washed, and the new bed placed in position. For this purpose use equal parts stable manure and leaves. Place thereon a compost consisting of three parts good turfy loam, and one part leaf-soil, with a dressing of lime rubble and a little soot. Plant on hillocks at 3ft. apart, after the heat from the bed has somewhat receded. Stop the leads at the first wire, and at every three and four leaves succeeding. Syringe morning and early afternoon, and damp the walls and floors at midday, to maintain a constant moisture.

COLEWORTS.—Make a plentiful sowing of this highly esteemed vegetable, perhaps one of the most important early winter crops we have. Sow in well-prepared beds or drills in a partially shady place; protect from birds, and water as required. Plants will then be ready to plant out on ground that has been occupied by early peas and potatoes.

PARSLEY.—It is a capital time now to sow a good breadth of parsley for the winter. Sown at this date it makes strong serviceable plants in good time, therefore standing the wintry weather more readily. A sowing can be made on a border facing south, and another on a border facing west. Draw drills 15in. apart, fill in with old potting compost, and scatter some over the seeds also, as this, I am sure, strengthens and invigorates the seedlings surprisingly. Sutton's Winter Curled is an excellent variety for this sowing.

WINTER GREENS.—Broccoli and late cauliflowers must be planted as fast as ground can be procured for them, planting them not less than 2ft. apart, with the exception of savoys, when 18in. all ways will answer well. If it is found that all cannot be planted out as one desires, and the plants are thick, resort to thinning them out even if many plants have to be destroyed. Give a dusting of soot occasionally to ward off fly. Water in when planting.

LEEKS.—These are growing apace, and will require every encouragement to bring up the blanching as often as necessary. Every week is not too often at this season. In this operation take the paper tube in one hand, and draw it slightly up, with the other hand add little or much soil as the case may be, but do not, on any account, put soil higher than the bottom tube-leaf, or it will get into the leaf-axils, and stain and check growth. Overhead sprinkling is very beneficial to growth.

MARROWS are growing freely, and will need copious supplies of water. Regularly stop the leading growths. As the fruits get large enough, and if not wanted for preserving purposes, cut when ready. If fruits are wanted for jams, pickles, etc., it is the better plan to grow a few plants expressly for this purpose, and the early fruits can be selected to ripen early, these being superior to late-ripened fruits.—GEO. ELLWOOD, Swanmore Park Gardens.

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**Gerbera Jamesoni.**—The leaves of this plant somewhat resemble those of the Globe artichoke, except that they are much smaller. The flowers are borne on long stems well above the foliage, and are nearly five inches across, on strong, well-grown specimens; the colour is a very pleasing rich orange-scarlet. The plants flower in the summer time chiefly, but strong ones continue to bear blossoms until late in the autumn. They are very attractive greenhouse subjects, the temperature of this structure being suitable for them both in summer and winter. Loam, leaf-soil, rotten manure, and coarse sand form a suitable compost.—G. B.

**Chrysanthemum Mrs. G. Rundle.**—It was with great pleasure I saw in a recent issue of the widely-circulated GARDENERS' MAGAZINE references made by "S. W." and "J. B. Riding" to Chrysanthemum Mrs. G. Rundle and its sports. These are grand old favourites of mine, and I have grown them for over thirty years. We have a class for them at our show, open to amateurs and gardeners alike, and I may say that, although I am only an amateur I have won first prize in this well-filled class for many years. Mrs. Rundle has been grown and shown in this district to my knowledge for forty years, and I do not think there are any chrysanthemums to beat the Rundle family for decorative effect. I am greatly surprised so few societies provide classes for flowers that are so easily grown as these.—J. BARKAWAY, Northampton.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—JUNE 4.

Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Prof. Boulger, Sir Everard im Thurn, Messrs. Wilson, Odell, Pearson, Cuthbertson, Shea, Gordon, Ledger, Bennett-Poë, Sutton, Worsley, Elwes, and Chittenden (hon. secretary), with Mr. Alexander, visitor.

AFZELIA CUANZENSIS.—Mr. E. M. Holmes showed a pod of seeds of this African tree, the seeds of which are half-black, half-scarlet.

BOTANICAL CERTIFICATES.—Professor I. Bayley Balfour exhibited the following new or uncommon plants: Oxytropis yunnanensis, Franchet (bearing deep blue flowers), Saxifraga [illegible] (very closely allied to S. Brunoniana, but much larger in all its parts), S. diversifolia var. foliata with marked veining of the ovate leaves, Primula × Edna (which received a Botanical Certificate at the last meeting), Senico Lyalli, Hook f. (with yellow flowers about 1½ inches across, from New Zealand), Aster likiangensis, Franchet (with large, deep-blue flowers about two inches in diameter on stalks three inches long, from Yunnan, a very beautiful little plant), Primula × Inverleith (P. Bulleyana × P. pulverulenta), much in the way of P. × Edina, but a shade deeper in colour and more robust in habit. Botanical Certificates were unanimously recommended for the last three plants.

VARIATION IN SWEET PEAS.—Mr. Cuthbertson brought examples of sweet peas, original forms. (1) A rich ruby-coloured unnamed variety produced waved flowers on normal plants, i.e., plants having waved leaves. Two plants of the same variety with perfectly plain leaves, like the leaves of the old type, had produced perfectly waved flowers with open keels. (2) In the white waved variety (Etta Dyke), in the waved cream variety (Dobbie's Cream), and in the pink-and-white bicolor (Mrs. Cuthbertson) he had found a deep purple-flowered plant—one in a thousand, perhaps—giving a colour approaching the colour of the wild sweet pea, but retaining the waved formation.

SWEET PEA WITH LEAFY TENDRILS.—Mr. Cuthbertson also showed some sweet pea leaves with some of the tendrils becoming leafy, the result possibly of high cultivation.

## Royal Counties Exhibition.

JUNE 11—14.

In connection with the exhibition of the Royal Counties Agricultural Society, a horticultural department was provided, and was a distinct success. No schedule of prizes was issued, the executive depending upon the trade mainly to make a display, in which they were not disappointed. Entering the tent the first exhibit to attract attention was a handsome collecton of sweet peas from Messrs. S. Bide and Son, Alma Nurseries, Farnham, consisting of such varieties in first-class condition as Mrs. Townsend, Dorothy, Orange King, Blue Bells, Thomas Stevenson, Mrs. D. Hallam, Melba, Mrs. Stewart Champion, Edna Harland, and Harold (Silver-gilt Medal).

Messrs. Jarman and Co., Chard, arranged a nice table of centeaureas, roses, etc. (Silver Medal). Messrs. H. B. May and Sons, Edmonton, filled the end of the tent with choice ferns, consisting of such kinds as Nephrolepis Marshalli compacta, Adiantum farleyense gloriosum, Osmunda palustris undulata, and Nephrolepis Whitmani (Silver-gilt Medal). Messrs. Maurice Young and Sons, Milford, Godalming, exhibited carnations in variety (Award of Merit). Messrs. E. W. King and Sons, Coggeshall, Essex, contributed a most attractive collection of sweet peas, arranged in huge masses, notably Mrs. W. King, Elsie Herbert, Anglian Cream, Mrs. H. Sykes, Rosabelle, and Constance Oliver (Gold Medal). Mr. Goatley, gardener to Lord Northcliffe, Sutton Place, Guildford, displayed a tasteful group of miscellaneous plants (Silver-gilt Medal). Mr. Blake, gardener to the Earl of Onslow, Clandon Park, Guildford, had a group of well-grown plants of Lilium Harrisi, arranged on a base of ferns (Silver Medal).

Messrs. John Waterer and Sons, Bagshot, formed an attractive group with rhododendrons, kalmias, etc. (Gold Medal). From Messrs. B. Ladhams and Co., Shirley, Southampton, came huge masses of pinks and gaillardias, also pæonies, campanulas, and rockery plants (Silver-gilt Medal). Mr. Elisha J. Hicks, Twyford, prettily displayed climbing roses and other garden varieties. Especially noticeable was Rose Moyesi Sarah Bernhardt, Irish Beauty, Trier, Comtesse du Cayla, Seagull, Richmond, and Edu Meyer (Gold Medal). Mr. C. F. Waters, Dearland Nursery, Balcombe, contributed carnations in large numbers and of high quality, the varieties including Edith Waters, Rose Pink Enchantress, Carola, A. E. Marden, and Mrs. Bennett (Silver-gilt Medal). From Messrs. W. H. Rogers and Son, Southampton, came a small but interesting exhibit of rockery plants, which included Rubus australis or the Australian Bramble, R. foliosa, and Philesia buxifolia, clematis in variety, and choice herbaceous plants.

Messrs. Stuart Low and Co., Bush Hill Park, Middlesex, exhibited orchids in quantity, among them being Cattleya Mendelli, Miltonia vexillaria, Lælio-cattleya Canhamiana, and numerous cypripediums and odontoglossums; carnations were attractive as Baroness de Brienen, Lady Alington, Calypso, Lady Coventry, Maggie Nettlefield, and Princess Juliana (Gold Medal). Orchids were also admirably shown by Mr. H. A. Tracey, Amyand Park Road, Twickenham, the most noteworthy examples being Cattleya Mendelli White Queen, Lælio-cattleya Canhamiana Our King, Odontoglossum grande Williamsianum (Silver Medal).

The Guildford Hardy Plant Nursery arranged an effective rock garden at one end of the tent, planting it with such useful subjects for the purpose as Cypripedium spectabile, heucharias, dianthus, double poppies, Onosma taurica, Aster alpinus albus, and Edelweiss (Gold Medal).

Messrs. Sutton and Sons, Reading, had as usual a capital display of flowers and vegetables. The potatoes, which comprised thirty-five varieties, were most interesting; they included the new Balmoral Castle and Acquisition, White City, Supreme, Satisfaction, and May Queen, the last named being still the best early variety; cabbage, Sutton's Earliest, the result of seed sown in January; tomatoes Best of All, Princess of Wales, and Golden Perfection, with grand pods of Sutton's Centenary marrowfat pea, were also of much interest. In the decorative portion of Messrs. Sutton's display were magnificent gloxinias, double begonias, etc., with effective borders outside of lobelias, Chrysanthemum coronarium, Verbena Miss Willmott, etc. Messrs. Toogood and Sons, Southampton, had an attractive vegetable display in the horticultural tent, as well as at their stand (Gold Medal).

## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 4th inst. Mr. Massie, the president, was in the chair, and there was an attendance of seventy-five members.

The evening was devoted to papers by juniors, for which book prizes were offered by the President. Fourteen young men contributed papers, the subjects being of their own selection, and the first prize (Wright's Vegetable Grower's Guide), was awarded to Mr. A. Brotherston, Shiplake Court Gardens, Henley-on-Thames, for a paper on "The Early Treatment of the Perpetual-flowering Carnation"; the second (Robinson's English Flower Garden), to Mr. Wm. Reach, Cullen House Gardens, for a paper on "Primula sinensis"; and the third to Mr. Charles Cook, Dalkeith Gardens, for a paper on "Violets in Winter." A paper on "Malmaison Carnations," by Mr. Wm. Smith, Whittinghame Gardens, East Lothian, was highly commended; and papers on "The Cultivation of Schizanthus Wisetonensis" and "The Culture of Begonia Gloire de Lorraine," by Messrs. D. Armstrong, Riccarton Gardens, Midlothian, and Thos. Cload, Keir Gardens, Dunblane, respectively, were commended. On the motion of the President, a hearty vote of thanks was accorded to the judges—Messrs. Whytock (Dalkeith), Fife (Dobbie and Co.), and Cairns (Murieston)—and a similar compliment was accorded to the President, on the motion of Mr. Comfort, for his kindness in providing the prizes.

The exhibits were: New hybrid Primula Leddy Pilrig (P. Bulleyana × P. Beesiana), from Mr. Wm. Robertson, Pilrig House Gardens, Leith (awarded a First-class Certificate);

collection of collarette dahlias and early-flowering chrysanthemums, and Calceolaria Veitch's Glory, from Messrs. Dobbie and Co. (awarded a Cultural Certificate); collection of pansies and violas, from Mr. C. Cockburn, Pencaitland, who drew attention to the differences between the various kinds of pansies and violas (awarded a Cultural Certificate); Hydrangeas Fraicheur and Mdme. Emile Mouilliere, from Mr. A. Porter, Davidson's Mains (awarded a Cultural Certificate); seedling perennial lupines, from Mr. John Fraser, The Old Manse Gardens, Inverkeithing (highly commended for strain); seedling amaryllis and pelargonium, from Mr. J. K. Brown, Dunnikier Gardens, Kirkcaldy; seedling Ox-eye Daisy, from Mr. F. Baillie, Liberton; Pelargonium Martha Bouchier, from Messrs. Todd and Co., Edinburgh.

At the meeting on July 2, Miss Burton, Polton, will read a paper on "Geraniums."

Several of those present who had visited the Royal International Horticultural Exhibition, at Chelsea, gave their impressions of the show at the close of the meeting.

## Wimborne Gardeners' Association.

JUNE 10.

On the above date Mr. G. Garner gave a lecture on "Grape Growing," at the Technical Institute, before the members of the above society. There was a good attendance, and a capital exhibition of roses for competition by some of the members. Mr. Garner directed the attention of his audience to the principal points connected with successful vine culture, briefly dealing with each one. He advocated the building of vineries in warm positions, with adequate shelter on the north and east sides. The walls of span-roofed and the front wall of lean-to houses should be low, the remainder glass, so that as much of each vine as possible and the border might be exposed to the influence of the sun. He deprecated deep borders, but preferred those from 20in. to 24in. deep, with sound drainage and drain pipes inserted in the border, connecting with the drainage, for ventilation. Permanent vines should be gradually built up, the annual pruning being rather severe as regards leader, so that the vines would be strengthened from the base upward.

The "setting" of the berries of various varieties was illustrated by diagrams drawn by the lecturer.

Mr. Garner did not recommend the constant drenching of vine borders with water (clear or liquid manure), but said their treatment should be similar to that of plants grown in pots. Water and stimulants being applied as the vines required them. He advocated the admission of air at night in moderation, and warm pipes after the berries had stoned, and not much atmospheric moisture. The colouring of the berries was particularly dealt with.

During the discussion Mr. Garner answered a number of questions, cordial votes of thanks being passed to Mr. Welch and Mr. J. Stevenson, chairman, and the lecturer.

## Bournemouth Gardeners' Association.

AN EVENING OUTING.

By the kind invitation of J. J. Norton, Esq., the members visited Ashton Court Gardens on Tuesday evening, June 4. Mr. Norton, and his able gardener, Mr. C. Nippard, gave the visitors a very hearty welcome, and they at once commenced a tour of the beautiful gardens, the principal feature of which is the magnificent collection of rhododendrons, probably the finest in the country, in any private garden.

Every specimen seemed to be in perfect health, and out of a collection of several thousands of plants, fewer than a dozen were lost as a result of the exceptionally dry weather of last summer. The display of blossom was grand indeed, Pink Pearl being represented by very fine specimens carrying huge trusses of flowers. The following new varieties have been added to the collection recently, namely: Mdme. Albert Moser, Mdlle. Jeanne Bois, Fritz Benary, Lady Mosley, and Auguste Lemaire. A fitting bordering to the beds is Retinospora aurea, which is kept trimmed at a height of 1ft.

There are many pine trees towering above the rhododendrons, their stems nicely clothed with climbing roses. Apple and other fruit trees are also grown among the rhododendrons, and are bearing fine crops; they are mostly standard and half-standard trees, and the stems are clothed with the climbing roses. Standard roses are interspersed among the shrubs, and lovely specimens of climbing varieties treated as tall standards, are planted in groups on the lawn. Indian and Mollis azaleas, and many kinds of spring-flowering shrubs are judiciously mixed with the rhododendrons, and in front of them. Very fine are the azalea plants grown in large pots for flowering under glass; zonal pelargoniums, winter-flowering carnations, tuberous begonias, and gloxinias are grown in large numbers. Sweet peas looked well, and were just beginning to flower freely.

The bush fruit trees of apples and pears were well laden with young, clean fruits, thus proving that by good management fruit as well as flowers can be grown in the light soil of Bournemouth. Before leaving, the members very heartily thanked Mr. Norton and Mr. Nippard for all they had done to make the visit interesting and instructive.

## TRADE NOTES.

At the Royal International Horticultural Exhibition Messrs. J. Kelway and Son were awarded a silver cup for a group of hardy plants, including their delphiniums, gaillardias, lupines, tree pæonies in pots; and a silver-gilt medal for cut flowers of herbaceous pæonies, pyrethrums, lupines, gaillardias, etc. These awards were not included in the official list.

We have received from Messrs. Robinson Brothers, Lim., West Bromwich, Staffordshire, a report on some investigations that have been made by an eminent biologist on the effect of Clift's Fluid Insecticide on the various forms of insect life that are found in the soil. Two sets of experiments were carried out, one in the laboratory and the other in the open, and as the result it was found that it had a most destructive effect upon pupæ of various moths that are injurious to plant life, wireworms, millipedes, etc. The matter is one of such general interest that we advise those who have to deal with insect-infested soils to obtain a copy of the report from Messrs. Robinson Brothers, who are the manufacturers of the insecticide.

## FORTHCOMING ENGAGEMENTS.

MONDAY, June 17.—United Horticultural Benefit and Provident Society, Special General Meeting at the Royal Horticultural Hall, at 7.30 p.m.
TUESDAY, June 18.—Royal Horticultural Society: Committees meet at 12 o'clock; lecture at 3 p.m. by Prof. E. Henslow, on "Prof. J. S. Henslow as Œcologist." Scientific Committee at 4 o'clock.
Horticutural Club: House Dinner at Hotel Windsor, Victoria Street, Westminster, at 6 p.m.; to be followed by lecture entitled "Pictures from a London Garden," illustrated by coloured lantern slides, by Mr. Horace J. Wright.
WEDNESDAY, June 19.—York Floral Fete and gala; three days.
National Hardy Plant Society's Exhibition at the Royal Horticultural Hall.
THURSDAY, June 20.—Linnean Society Meeting.
WEDNESDAY, June 26.—Southampton Rose Show.
Colchester Rose and Summer Show.
Richmond Horticultural Society.
Royal Botanic Society Meeting.
Royal Society of Arts.
THURSDAY, June 27.—Isle of Wight Rose Show.
FRIDAY, June 28.—Canterbury Rose Show.
SATURDAY, June 29.—Windsor Rose Show.
Reigate Rose Show.
Sutton Rose Show.
TUESDAY, July 2.—Holland House Show: three days.
Gloucester Rose and Sweet Pea Show.
Baltic Rose and Summer Show.
Epsom Horticultural Society.

## NOTES OF OBSERVATION.

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**Polypodium Mandaianum.**—Brought all the way from South Orange, New York, by Mr. W. A. Manda, this fern promises to be a very valuable one for decorative purposes. It is a markedly plumose form of Polypodium aureum, and is of good free growth with bold arching fronds of a pleasing glaucous hue.—W.

**Staking Plants.**—This work calls for a good deal of attention, and it is important that it be done before the plants are in actual need of support, otherwise they become twisted, and rarely recover fully. Delphiniums and pæonies are among the first subjects to require attention. The stakes should not be too heavy, but sufficiently strong to support the plants they are used for. One stake will suffice for each root of delphiniums, but pæonies require several stakes around each clump, so that a piece of tar twine can be placed right round to keep them in position. Proceed with other plants as necessity arises, and cut all stakes neatly and evenly to present a tidy appearance.—J. Gardner.

**Tydæas.**—By some cultivators these are given a period of rest during the winter, while by others they are kept in a growing state throughout that time, and flowers are produced more or less freely in the dull season. Plants that have been allowed to grow unchecked will run up to a height of two feet to four feet, and flower profusely at this season. They are in this way of considerable value for decorative purposes, not the least notable feature being the quaint but pretty markings of the flowers of some varieties. They may be as readily raised from seeds as Gloxinias are, while dormant rhizomes can be purchased at a comparatively cheap rate. —S. W.

**Plumbago rosea.**—The flowering of this pretty rose-coloured plumbago, and its brighter-coloured form (coccinea superba), extends over such a lengthened period as to almost overlap at both ends with the summer and autumn flowering Plumbago capensis, whose porcelain-blue flowers are so much admired. Plumbago rosea will flower profusely when grown as bushy plants from 2 feet to 4 feet in height, or even more. Its cultural requirements are not at all exacting, as cuttings of the young shoots strike root readily in the spring, and the young plants so obtained grow freely in an intermediate temperature. They prefer a liberal amount of leaf-mould in the potting compost.—K.

**Apple Court Pendu Plat.**—If the extent of the popularity of a fruit may be judged by the number of synonyms it possesses, this apple should be very widely grown indeed, for Dr. Hogg enumerates twenty different names by which it is known, though they are of French origin for the most part. There has been much discussion as to the origin of the name, which is generally held to mean "short suspended," from the shortness or almost entire absence of stalk to the fruit. There are some apples which are very handsome, and of the highest excellence when grown under the best conditions, but, in ordinary circumstances, insignificant to look at, and tough in texture. Court Pendu Plat is an example of such. On the exhibition table it sometimes has the size and colour of a dessert Blenheim, and is as firm in texture in March as when picked, but it is more often small, russety, and wizened. Therefore a planter should consider whether he has the best conditions to offer it—a good warm soil and a sunny situation. It is almost the last variety to come into flower, and is hence known as the Wise Apple. It is a good bearer, almost too good for its rather weak growth, hence the strongest trees should be selected for planting. It is scarcely strong enough for a standard as a rule, and is short-lived in that form; but, given a strong tree, it makes a good compact pyramid or bush on the Paradise or crab. At its best it is one of the firmest and best-flavoured apples we possess in April.—A. P.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

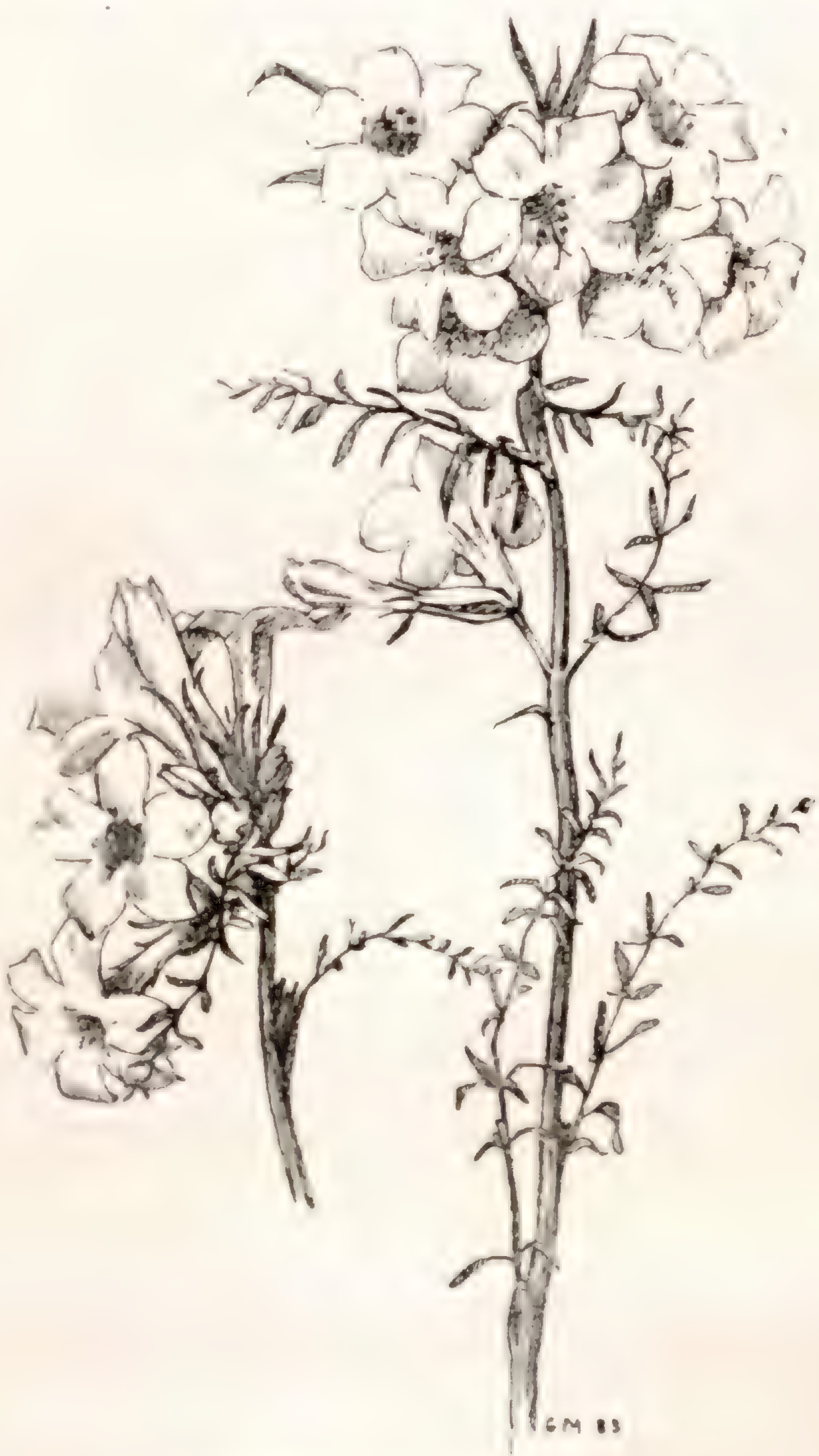
Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

NON-FRUITING OF STRAWBERRIES.—B. M., Maldon: We have not received any communication from you respecting the non-fruiting of strawberries. Your postcard received on Monday was dated May 10. Was this a clerical error, or has your correspondence been accidentally mislaid by someone?

SEAWEED AS MANURE.—I. S. P., South Wales: Kindly tell me what seaweed is worth as a manure in comparison with some other kinds, and also wherein lies its special value?—The average content of British seaweed, as gathered, for manurial purposes, is as follows:—Water, 75 per cent.; organic matter, 18; nitrogen, 0.5; potash, 1.2; phosphoric acid, 0.09. A considerable amount of water is lost on drying in the air, and if the weed has not been washed by rain in the meantime, its content of nitrogen, potash, and phosphoric acid is increased four-, five-, or even six-fold. It is difficult to form an estimate of the money value of seaweed to the farmer. The fertilising materials present in one ton of seaweed possessing the average composition would cost 8s. to 10s. if purchased from a dealer in the form of a merchantable manure in a finely divided state ready for putting on to the land. This value is arrived at by allowing 12s. for each per cent. of nitrogen, 4s. for each per cent. of potash, and 3s. for each per cent. of phosphoric acid. No account is taken of the sodium, calcium, and magnesium salts, which on most soils, but especially light soils, would be distinctly beneficial; nor is any allowance made for a possible stimulating effect of the iodides present. It does not, however, follow that seaweed is worth 8s. to 10s. a ton on every farm near the sea coast. The question of availability of its constituents—i.e., of its decomposition under various conditions—would have to be ascertained by careful trials before even a tentative estimate of its money value could be made. In farm practice seaweed more or less takes the place of dung, but there are several important differences. Seaweed contains no fibre, and, consequently, does not produce the black structureless material characteristic of the dung heap: in decomposing it forms soluble substances which easily wash away. For the same reason it decomposes more completely than dung. It is even said to facilitate the decomposition of dung on light soils and in dry districts, but there is no definite proof of this. A ton of dung and seaweed would break down in the soil more quickly than a ton of dung alone, and would therefore have less of a drying effect if put on late. The freedom of seaweed from weed seeds and from spores of disease organisms is of considerable advantage on light soils where weeds are common, or on soils liable to such diseases as finger-and-toe, the spores of which can hardly be kept out of dung. Experiments to test the manurial value of seaweed have been made at Trondhjem, at the Rhode Island Experiment Station, and by a few workers in Great Britain. In Hendrick's trials seaweed proved fully as effective as dung for early potatoes so far as quantity of produce was concerned, but it somewhat retarded ripening. On the other hand, seaweed and superphosphate proved better than dung and superphosphate. It is, however, on such gross-feeding crops as mangolds and the cabbage tribe that seaweed would be expected to show its fullest effects.

POLEMONIUM CONFERTUM.—S. L. C., Winchester: We have a little plant in the rock garden labelled Polemonium confertum; it has pinnate leaves and blue flowers, but I do not find it mentioned in the catalogues I have. Is the name correct?—Polemonium confertum is a dwarf species from the Rocky Mountains, summer flowering, with pinnately divided leaves, and clusters of funnel-shaped, deep blue flowers. We expect your plant is correctly labelled, and the accompanying illustration will help you to decide. P. confertum is a fine plant, and very widely grown, but fully deserving of attention; it is hardy, and thrives in good, rich, well-drained soil.



POLEMONIUM CONFERTUM.
A pretty, blue, summer-flowering hardy plant.

EXCRESCENCES ON VINE LEAVES.—H. W. T., Devon: Will you kindly tell me what you consider the cause of the excrescences on the back of the vine leaves enclosed? The only thing I can think of as the cause is that about a fortnight ago the hot water pipes were sulphured to check red spider, and on one or two occasions the pipes got rather hot.—The excrescences are due to an excess of moisture in the atmosphere, this probably resulting from heavy waterings and failure to commence ventilating early enough in the day. The trouble is not serious, however, and the leaves are sufficiently large and substantial to carry out their duties provided no error in cultivation follows. The blackening of some of the burst cells is due to the sulphuring process acting upon the infected watery cells that form the excrescences. Use fire-heat with the utmost care, and in fine weather commence to ventilate quite early, increasing the ventilation as the temperature advances.

## NAMES OF PLANTS.

T. AND S., Windsor.—Appears to be Tellima grandiflora. What were the flowers like?

B. B., Harpenden.—1, Delphinium Zalil; 2 Arnebia echioides; 3, Campanula persicifolia; 4, Heuchera sanguinea.

G. S., Ryde.—1, A form of Veronica spicata; 2, Aster graminifolius; 3, Allium italicum; 4, a Robinia, why not send flowers?

W. H. A. T., Bristol.—The trusses of pelargoniums had all shed their petals ere the package reached us, consequently the varieties were not recognisable. We would remind, you, however, that we cannot undertake to name florists' varieties of flowers. No. 5 is Hedysarum microcalyx.

→ Syringes. ←

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# MARKETS.

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## COVENT GARDEN.

### Flowers.

The supplies are moderate, but of good quality, and there is a steady demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum ... | per doz. bun. | 5 0 | to | 8 0 |
| Asparagus plumosus ... | per doz. bun. | 8 0 | | 14 0 |
| ,, Sprengeri ...... | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia ................ | per doz. bun. | 6 0 | | 7 0 |
| Carnations ........................ | per doz. | 1 6 | | 2 0 |
| ,, ................. | per doz. bun. | 10 0 | | 14 0 |
| Cattleyas ........................ | per doz. | 9 0 | | 12 0 |
| Cornflowers .............. | per doz. bun. | 1 0 | | 3 0 |
| Croton leaves ................ | per bun. | 1 0 | | 1 6 |
| Eucharis ........................ | per doz. | 2 0 | | 3 0 |
| French fern .............. | per doz. bun. | 2 6 | | 4 0 |
| Gardenias ........................ | per doz. | 1 6 | | 2 0 |
| Gladiolus Colvillei ...... | per doz. bun. | 5 0 | | 12 0 |
| Gypsophila .............. | per doz. bun. | 4 0 | | 8 0 |
| Iris, Spanish ........... | per doz. bun. | 6 0 | | 8 0 |
| Lilium auratum .............. | per doz. | 4 0 | | 5 0 |
| ,, speciosum .............. | per doz. | 2 0 | | 3 6 |
| ,, longiflorum ........... | per doz. | 2 0 | | 3 0 |
| Lily of the Valley ...... | per doz. bun. | 8 0 | | 15 0 |
| Marguerites ........... | per doz. bun. | 1 6 | | 2 0 |
| Myosotis .................... | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums ...... | per doz. blms. | 3 0 | | 4 6 |
| Pæonies .................. | per doz. bun. | 3 0 | | 8 0 |
| Pelargoniums ........... | per doz. bun. | 4 0 | | 6 0 |
| Pinks ..................... | per doz. bun. | 2 0 | | 3 0 |
| Poppies ..................... | per doz. bun. | 2 0 | | 4 6 |
| Pyrethrums .............. | per doz. bun. | 2 0 | | 4 0 |
| Roses .............................. | per doz. | 1 0 | | 3 0 |
| Smilax ................. | per doz. trails | 2 0 | | 3 0 |
| Spiræa .................... | per doz. bun. | 4 0 | | 5 0 |
| Sweet Peas .............. | per doz. bun. | 2 0 | | 4 0 |
| Tuberoses ..................... | per doz. | 0 5 | | 0 9 |
| Violas ...................... | per doz. bun. | 1 0 | | 1 3 |

### Fruits.

The demand for grapes, peaches, oranges, and strawberries continues satisfactory.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Australian ........... | per box | 8 0 | | 13 0 |
| Apricots, French ............. | per box | 0 10 | | 1 0 |
| Bananas ........................ | per bun. | 4 0 | | 12 0 |
| Cherries ...................... | per ½ sieve | 5 0 | | 7 0 |
| Figs ................................ | per doz. | 2 0 | | 6 0 |
| Gooseberries ............. | per ½ bush. | 3 0 | | 4 0 |
| Grapes, English ................. | per lb. | 1 6 | | 8 0 |
| ,, Cape ..................... | per case | 4 0 | | 8 0 |
| ,, Guernsey ................ | per lb. | 1 6 | | 2 3 |
| Lemons .......................... | per case | 7 6 | | 22 0 |
| Melons ................................ | each | 1 0 | | 3 0 |
| Nectarines .................... | per doz. | 4 0 | | 15 0 |
| Oranges ........................ | per case | 8 0 | | 28 0 |
| Peaches, English ............. | per doz. | 3 0 | | 15 0 |
| Pears, Australian ........... | per case | 8 0 | | 15 0 |
| Pineapples ......................... | each | 3 0 | | 5 0 |
| Strawberries ...................... | per lb. | 0 9 | | 3 0 |
| ,, Southampton ...... | per basket | 2 0 | | 3 0 |

### Vegetables.

Green vegetables are being marketed more freely, but salading is becoming cheaper.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe .............. | per doz. | 2 0 | to | 2 6 |
| ,, Jerusalem ........ | per ½-bush. | 1 0 | | 2 0 |
| Asparagus ....................... | per bun. | 1 0 | | 6 0 |
| Beans, Guernsey ........... | per lb. | 0 6 | | 1 0 |
| Beet ............................ | per bush. | 2 0 | | 3 0 |
| Cabbage, New French ...... | per doz. | 1 0 | | 1 3 |
| ,, New Cornish ...... | per doz. | 0 9 | | 1 0 |
| Carrots ....................... | per doz. bun. | 4 0 | | 7 0 |
| Cauliflowers .................... | per doz. | 4 0 | | 5 0 |
| ,, Cornish .............. | per crate | 10 0 | | 12 0 |
| Cucumbers ...................... | per doz. | 1 6 | | 2 6 |
| Endive .............................. | per doz. | 1 0 | | 1 6 |
| Horseradish ........... | per doz. bun. | 10 0 | | 16 0 |
| Lettuce ............................ | per doz. | 1 0 | | 2 0 |
| Mint ..................... | per doz. bun. | 1 0 | | 2 0 |
| Mushrooms ................. | per doz. lb. | 8 0 | | 10 0 |
| Onions ............................ | per case | 6 0 | | 10 0 |
| Parsley ....................... | per ½-sieve | 1 6 | | 3 0 |
| Peas, French ................. | per pad | 2 0 | | 4 0 |
| ,, English ......... | per ½ bush. | 2 0 | | 4 0 |
| Radishes ................ | per doz. bun. | 0 4 | | 1 0 |
| Rhubarb ................ | per doz. bun. | 1 0 | | 2 0 |
| Spinach ........................ | per bush. | 2 0 | | 2 6 |
| Tomatoes, Canary ........ | per pack. | 10 0 | | 16 0 |
| ,, Guernsey ............. | per lb. | 0 4 | | 0 8 |
| ,, English ................ | per lb. | 0 3 | | 0 7 |
| Turnips .................... | per doz. bun. | 3 0 | | 6 0 |
| Watercress ................ | per doz. bun. | 0 4 | | 0 6 |

**Holidays in the West of England.**—The London and South Western Railway Company have issued their fourteenth annual official guide, and, like its predecessors, contains much that is useful and of interest to those who purpose taking their holidays at the various pleasure resorts on the company's system. Upwards of eighty of the most attractive places in the south-west of England are described, and a considerable number are illustrated. The guide contains a list of hotels and other establishments that provide accommodation for visitors.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.
Height above Sea-level, 150 feet.

| Date. 1912. June 2 to June 8. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| June 2—Sunday ...... | 5 0 | 55 | 55 | 62 | 53 |
| ,, 3—Monday ...... | 3 30 | 53 | 53 | 64 | 40 |
| ,, 4—Tuesday...... | 6 12 | 55 | 52 | 60 | 48 |
| ,, 5—Wednesday.. | 8 6 | 54 | 50 | 62 | 46 |
| ,, 6—Thursday.... | 13 42 | 60 | 54 | 66 | 48 |
| ,, 7—Friday........ | — | 52 | 51 | 56 | 45 |
| ,, 8—Saturday..... | 2 18 | 54 | 53 | 62 | 51 |
| Means | (total) 38 48 | 55 | 52 | 62 | 47 |

| Date. 1912. June 2 to June 8. | Rain. | Temperature of the Soil at 9 a.m. | | | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| June 2—Sunday ...... | 0·09 | 59 | 57 | 55 | 49 |
| ,, 3—Monday ...... | 0·10 | 57 | 57 | 55 | 34 |
| ,, 4—Tuesday...... | 0·29 | 57 | 57 | 55 | 40 |
| ,, 5—Wednesday.. | — | 57 | 56 | 55 | 42 |
| ,, 6—Thursday.... | — | 58 | 56 | 55 | 41 |
| ,, 7—Friday........ | 0·71 | 59 | 57 | 55 | 36 |
| ,, 8—Saturday .... | 0·02 | 58 | 57 | 55 | 52 |
| Means | (total) 1·21 | 58 | 57 | 55 | 42 |

# CATALOGUES RECEIVED.

ROBERT VEITCH AND SON, EXETER.—A descriptive and illustrated pamphlet relating to the new hybrid calceolarias raised at Exeter.

G. S. EVANS, BEXLEY HEATH.—A descriptive and illustrated catalogue of American and British perpetual carnations, and malmaison varieties.

WM. PAUL AND SON, WALTHAM CROSS. — A timely catalogue is the one listing roses in pots from Waltham Cross. The list is descriptive and illustrated, and contains a full-page coloured plate of the firm's new H.T. rose Nerissa.

J. SMELLIE, BUSBY, NEAR GLASGOW.—Mr. Smellie makes a speciality of early-flowering chrysanthemums, and he grows and shows them to perfection. He also lists dahlias, pansies, and violas.

JAMES COCKER AND SONS, ABERDEEN.—Special opportunity for securing roses and hardy plants is afforded by the removal sale the Aberdeen firm is holding through the present month. The nursery is being moved from Sunnypark to Springhill, hence the cheap offers.

AMOS PERRY, ENFIELD.—A new, comprehensive, and admirably descriptive catalogue of alpine and hardy border plants, including a large selection of hardy ferns.

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**E. D.**

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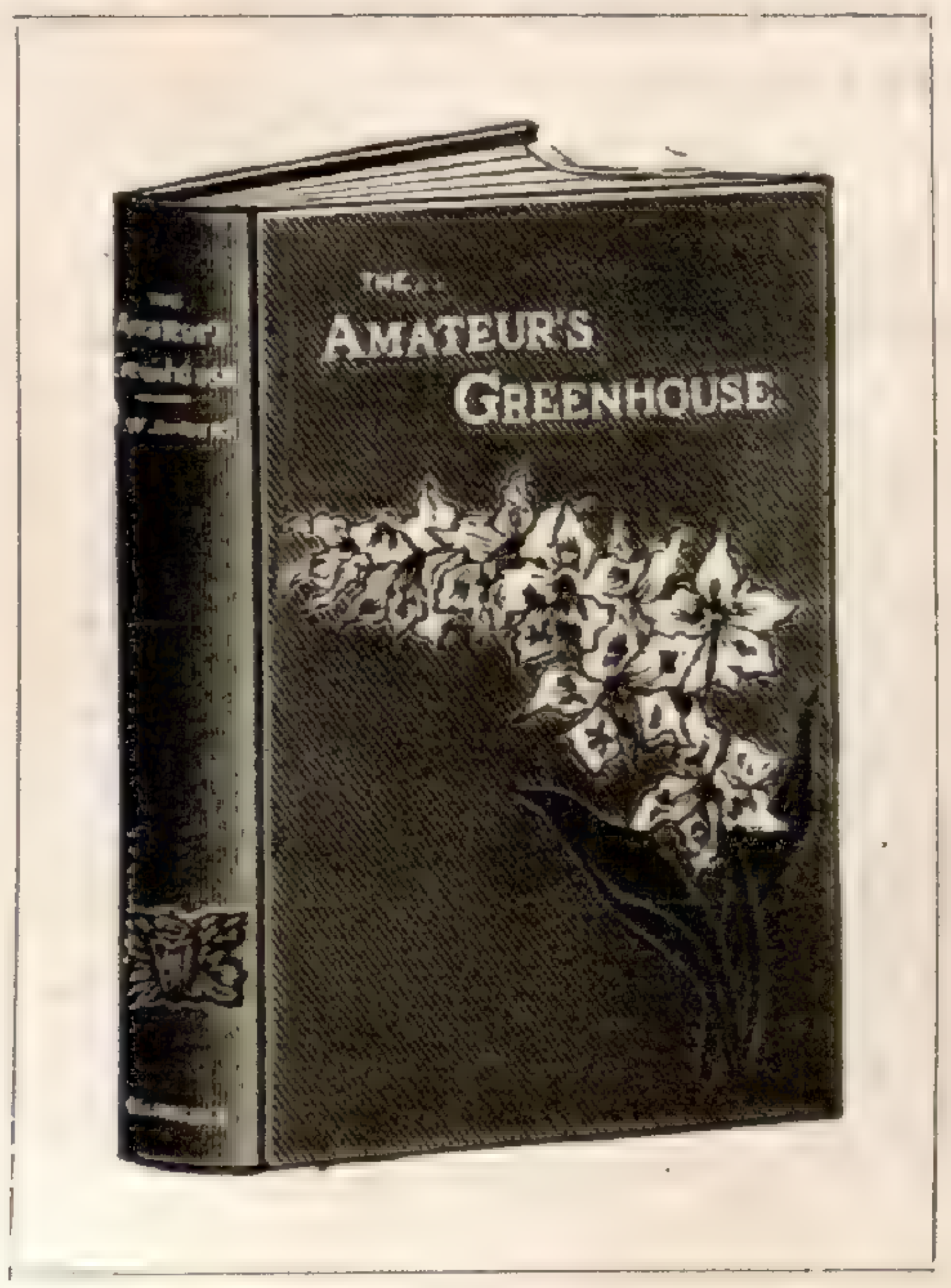

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For full particulars see page viii.

RICHARDSON'S for GLASSHOUSES and HEATING APPARATUS, for full advertisenent see page viii., Darlington.

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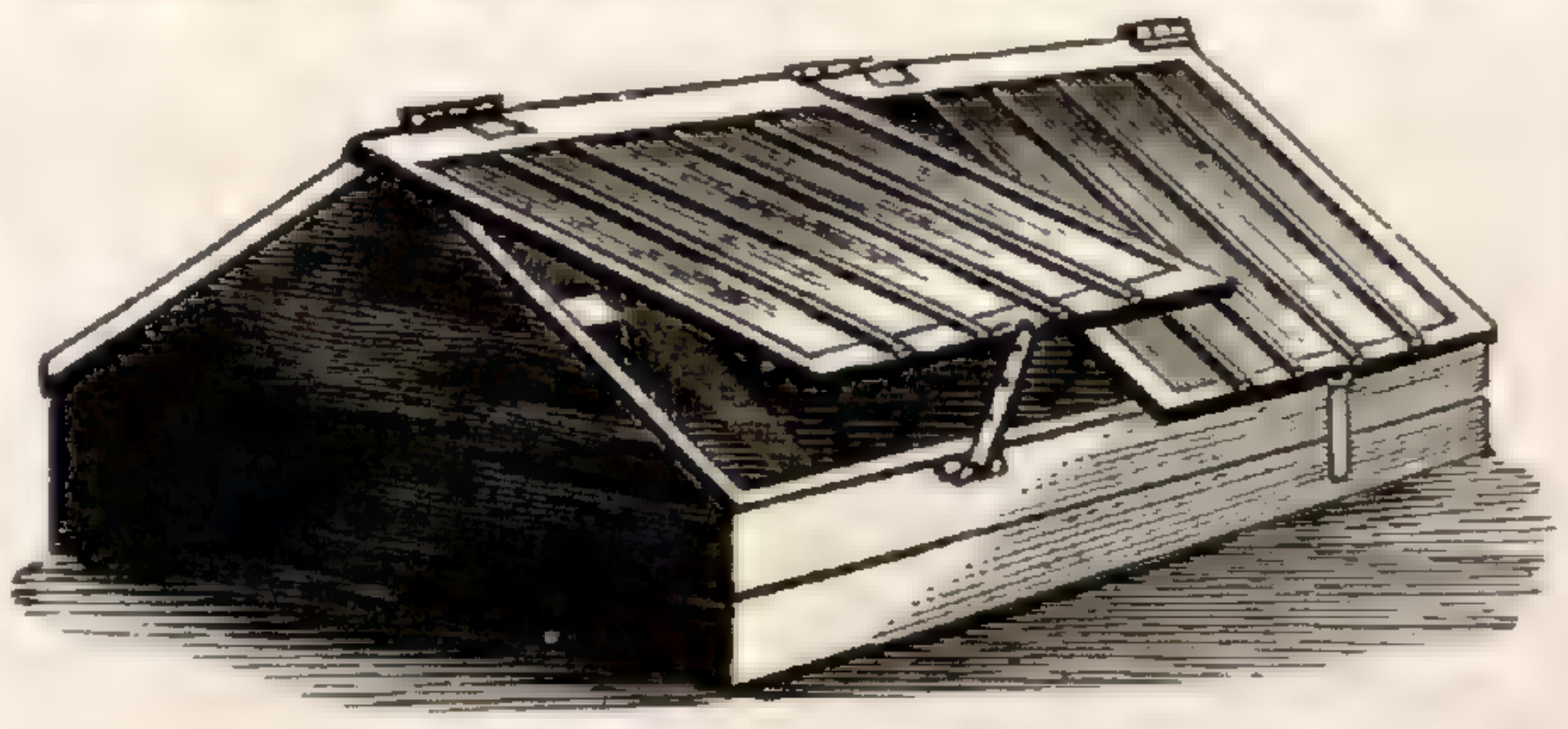

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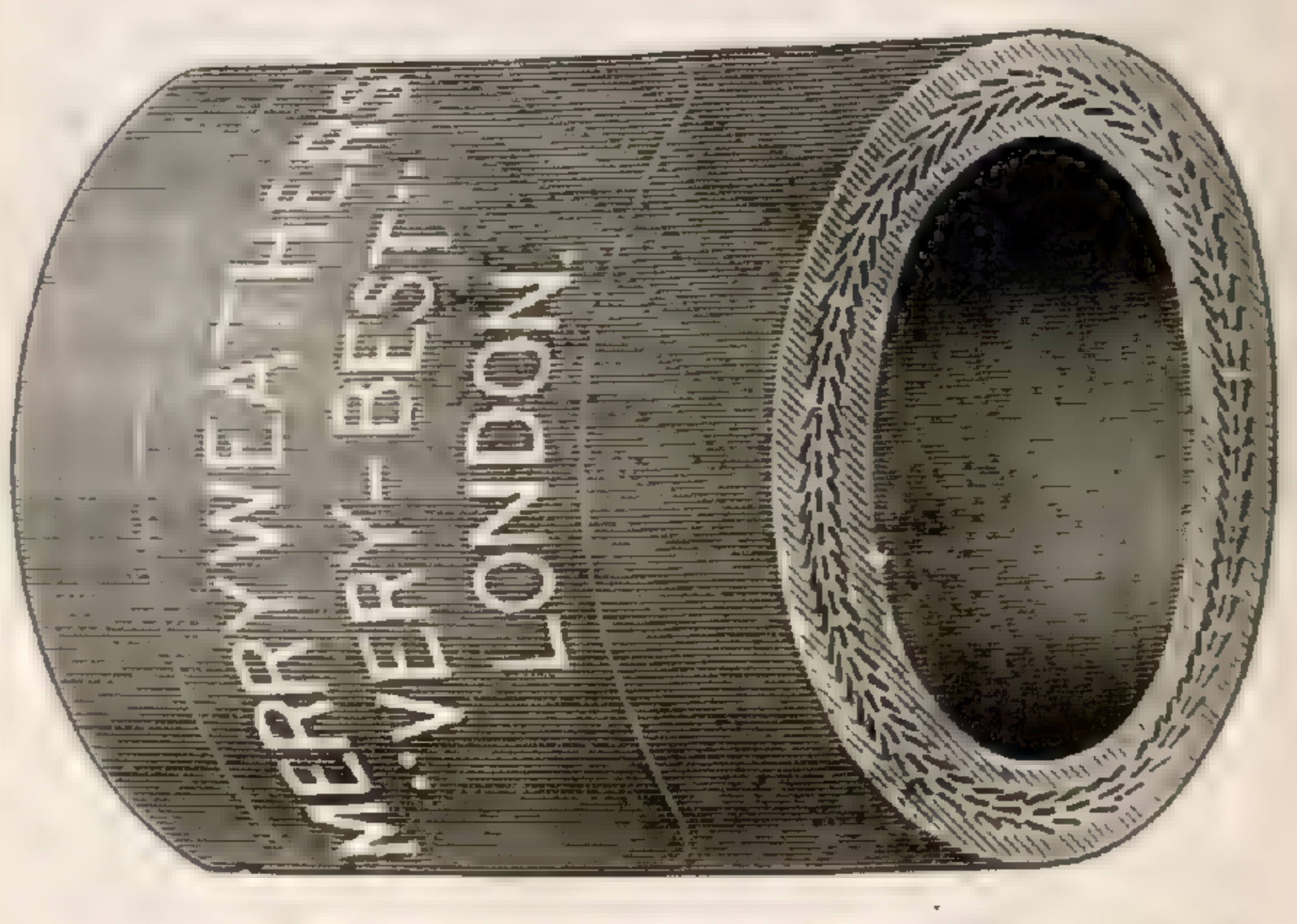
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VOL. LV.—No. 3,060. SATURDAY, JUNE 22, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Trials of Roses.

Encouraged by the high degree of popularity which roses of all classes now enjoy, raisers both at home and abroad have redoubled their efforts to provide new and improved varieties, and of late years the introduction of novelties has been on so large a scale as to render it extremely difficult for either the amateur or the professional rosarian to keep pace with them. Were it not necessary to do more than take into consideration the roses raised in the United Kingdom, there would be no difficulty in deciding which of those annually introduced should be added to the occupants of the rose garden. The number is comparatively small, the varieties represent careful selection from large numbers of seedlings, and with but few exceptions, they are presented to public notice at least once at the leading exhibitions and meetings, and rosarians have therefore opportunities for seeing some, if not all of them, before they are placed in commerce. This is an immense advantage to the general body of cultivators, for if all do not fulfil their promise—and it would be unreasonable to expect them to do so—rosarians are able to see them, and formulate an opinion on their merits before making purchases. Not all the home-raised roses will succeed equally well in every part of the United Kingdom, but they differ less in this respect than do the varieties that have their origin abroad, and consequently this point is a quite minor one as regards varieties that have originated within our own borders. In the case of foreign roses the number annually distributed through the usual channels of trade is large, they are selected as the result of opinions based on plants that are developed under conditions that widely differ from those which obtain in this country, and in very few instances are there opportunities for seeing plants and blooms until they have passed through the hands of trade growers and been generally distributed. Consequently those who desire to have the new roses of foreign growth within a short time of their introduction must make their purchases before much information relating to them can be obtained, and when any considerable proportion fail to realise expectations, there is necessarily much disappointment. This failure may be due, in the case of both home and foreign-raised roses, to the varieties not maintaining their initial vigour, or in the case of the latter to the great difference in the climatic conditions of the place of origin and this country. In view of the large annual output of new roses and the desirability of bringing varieties of a high order of merit into prominence within a short time of their introduction, it appears to us that we might in this country follow the example of the French rosarians, and make arrangements for subjecting such of the new varieties as are available for the purpose to a comparative test before or after their introduction, the time of the trial depending, as a matter of course, upon the assistance rendered by the raisers. It might be thought by some that the raisers would have an objection to their roses being included in trials; but we have no fear that this would be the case, provided they are conducted on proper lines and under the direction of a responsible authority. There is no objection by the raisers of this, or any other country, to sending their novelties to the Bagatelle trials, as evidenced by the fact that last autumn eighty-five varieties were contributed. It is evident also that raisers resident in this and other countries are equally ready to contribute freely of their novelties, for the varieties mentioned by Mr. Arthur W. Paul in his interesting notes on the new roses at Bagatelle, which appear in this issue, include novelties of both British and foreign origin. Much time and consideration would have to be devoted to the preparation of a scheme for conducting such trials before practical effect could be given to the suggestion here made. But it is quite obvious that the proper body for taking the project in hand is the National Rose Society, which has already done such an immense amount of useful work for the advancement of rose culture. Its enormous increase in membership within recent years is a proof that it enjoys to the full the confidence of all who are interested in roses, and its annual income would be sufficient to enable it to engage in such work under conditions that would ensure a full measure of success. It would probably be necessary to make a slight reduction in the number of exhibitions, as compared with the current year, and possibly to make some modification in the amount expended on publications, but, unless we are much mistaken, the rearrangement necessary would not be great, and it would have ample compensation in a material increase in the usefulness of the work in which the society is so actively engaged. The establishing of a trial ground would necessitate some modification in the method of making awards to novelties, and it will be readily seen that the value of a gold medal award to a new rose would be greatly increased by being made after the variety had been subjected to a comparative test than under the present method of procedure. Failing a trial on the lines of the Bagatelle trials, it is difficult to see how the present method of making awards could be greatly improved upon, for both plants and blooms have to be submitted, and the awards are made by a committee comprising both amateurs and professional rosarians of the highest eminence. This year the society has provided

MR. ALGER PETTS.

two classes for new roses, one for varieties of value for exhibition or garden decoration and the other for those specially adapted to glass culture. The innovation is a good one, and should be useful in obtaining proper recognition for the second of the two classes of roses which have become of greatly increased importance within recent years.

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**Mr. Alger Petts** is an enthusiastic and exceedingly clever amateur gardener, residing at Chelmsford. He has become familiar to the readers of the Gardeners' Magazine for the last ten or twelve years by reason of his contributions to our pages. He believes his great love for gardening is largely due to hereditary influence, and he tells us that his father cultivated one hundred varieties of roses half a century ago. Mr. Petts was born and brought up on an Essex farm, and has always lived in the county. With a wet, clay soil, in which to practice his hobby, he has secured surprising results, especially with hardy flowers and small fruits. When reading Mr. Petts' cultural recommendations it is as well our readers should bear in mind the kind of soil with which the writer has to do. Mr. Petts studies his hobby, and takes a scientific, as well as a purely practical and economic interest in it. Not only is he a contributor to our pages, but he contributes to the "Notes and Abstracts" published in the "Journal" of the Royal Horticultural Society.

**Holland House Show.**—The summer show, which has for many years past had a prominent position in the annual programme of the Royal Horticultural Society, will this year be again held in the beautiful grounds of Holland House, Kensington. As the society did not hold an exhibition in the gardens of the Inner Temple this year, the Holland House show is likely to be of exceptional importance, and Fellows and the general public alike should make note of the dates, which are July 2, 3, and 4, the admission on the third day being one shilling.

**New Roses at Bagatelle.**—Mr. Arthur W. Paul, F.L.S., who, as for some years past, has this year been one of the judges of the new roses grown at Bagatelle, very kindly sends us the following particulars of the awards made by the judges at the recent meeting. "The beautiful rosery in the gardens of Bagatelle, now included in the Bois de Boulogne, at Paris, was at the height of its beauty on the morning of June 13, when the annual judging of the new roses sent for trial took place under the direction of the authorities of the City of Paris. The judges consisted of well-known French and foreign rosarians, both amateur and professional, and some 85 new varieties of roses sent in 1911 were examined with a view to be awarded gold medals and certificates. As the result of a rule prohibiting the same raiser from receiving a gold medal more than two years in succession, the varieties of M. Pernet-Ducher were not eligible for this distinction, but a special Diploma of Honour was awarded to his new H.T. Sunburst, and the red H.T. President Vignet, of the same raiser, was in fine condition. None of the other varieties were considered to be of sufficiently outstanding merit at the time of the judging to receive a medal, but three Certificates of Bagatelle were awarded, viz., to Madame Jules Bouché, a flesh-white H.T.; Fru Margretha Möller, a fine rose-coloured H.T. of Danish origin; and to Orleans-Rose, a rose-coloured polyantha that has been frequently finely exhibited in this country. Some other kinds that followed closely in the number of points awarded were Mrs. Edward Powell, a fine red H.T.; Erna Teschendorff, a brilliant dark-red polyantha; Ethel Malcolm (H.T.); Mrs. Herbert Stevens (Tea); Ellen Poulsen, a soft pink polyantha; and Rodhätte, a crimson hybrid polyantha. Of the varieties of 1912, provisionally examined, with a view to granting awards next year, the following appeared the most promising: Madame Faucheron, a light-coloured H.T.; Yvonne Lornago, an orange-red hybrid of Tea and Noisette; Madame C. Chambard, a pale pink H.T.; Madame Charles Lutaud, a deep yellow H.T.; Madame Edmond Rostand, H.T., flesh colour, with orange centre; Melody, a fine yellow H.T.; Merveille des Rouges, crimson polyantha; Mrs. Amy Hammond (H.T.), and Mrs. Joseph Welch (H.T.)."

**Presentation of Garden Produce to the Lord Mayor.**—The Master of the Worshipful Company of Gardeners (Alderman Sir Horace Marshall), together with the Wardens, following an old custom, recently presented to the Lord Mayor a basket of British-grown flowers, fruits, vegetables, and herbs. To the Lady Mayoress a splendid bouquet of orchids was presented. After a suitable acknowledgments of the gifts, the Lord Mayor entertained the Master and Wardens at luncheon.

**Cereus amecaensis [Heese].**—With reference to this beautiful species recently illustrated in these pages, Mr. A. Worsley writes: "In Schumann's classification, this species appears thus placed: Subgenus speciosus.* Characters—Rooting on the branches, climbing or hanging down, often epiphytic plants. Branches without nose-like appendages under the aureolæ, spines multiplied in old age. Branches 4 to 5 angled, ovary spiny, sepals and petals generally red. Habitat Mexico. Specific characters—Branches pale green when young, flowers white. My plants were given to me many years ago by Mr. H. J. Elwes, V.M.H., who gathered them in Mexico, at some elevation in the temperate zone, growing on the stumps of trees. They grow vigorously, and flower freely every year in May and June in a cool house. Each flower lasts about three days. I have raised and flowered coloured hybrids between this and garden cacti." *Of Salm. Dyke.

**Sir David Prain, LL.D., F.R.S.,** etc., has rendered such splendid service in the cause of botanical science during the twenty-eight years that have elapsed since he entered the Indian Medical Service in 1884, that his inclusion in the list of those selected for the honour of Knighthood on the occasion of the King's birthday has afforded satisfaction to his many friends, and, indeed, to all who are acquainted with his work. A native of Kincardineshire, Sir David Prain had a brilliant career at Aberdeen University, and, after filling appointments at his University and Edinburgh, he entered the Indian Medical Service, and for two or three years was in medical charge of native regiments in various parts of India. Possessing a taste with a strong trend for botanical work, he was, some three years after entering on his Indian career, appointed Curator of the Herbarium and Library of the Royal Botanic Gardens, Calcutta, and this position he held eleven years. On the retirement of Sir George King in 1898, Sir David Prain was appointed superintendent of the Calcutta Botanic Gardens and of Chinchona cultivation in Bengal, and Director of the Botanical Survey of India, and these positions he held until towards the close of 1905, when he succeeded Sir W. Thiselton Dyer as Director of the Royal Botanic Gardens, Kew. We need not now refer to Sir David Prain's remarkable capacity for work, as evidenced by what he accomplished during the eighteen years over which his appointments in Calcutta extended, neither is it necessary we should say that this capacity has been made abundantly manifest during the seven years he has been Director of the Royal Gardens, Kew. This is admirably exemplified by the splendid manner in which the traditions of this great establishment are being maintained.

**Watercress Beds in Relation to Disease.**—The medical officer of the Croydon Rural District, in his annual report, states that he has given much attention to watercress beds, as the typhoid bacillus almost invariably gains access to the human body by the digestive track—among other ways, by the eating of watercress; and he adds: "It should be clearly understood that it is extremely advisable that any persons buying watercress should not only have some idea as to where it was grown and through whose hands it may have passed, but should assure themselves before eating it that it has been thoroughly washed in running water." As we have previously stated, the importance of thoroughly washing watercress that is purchased cannot be too strongly insisted upon, and Dr. Fegen renders good service in directing attention to the point.

**An Old-time Rose Garden.**—With reference to the old-time rose garden that has been formed in the gardens of the Palace of La Malmaison, Mr. A. W. Paul, F.L.S., writes: "An additional attraction to rosarians in the neighbourhood of Paris is this year open for the first time in the gardens of the Palace of La Malmaison, where a beautiful rose garden has been laid out, and where Mr. Gravereaux is forming a collection of old roses that may be supposed to have been flowering in the gardens in the time of the Empress Josephine, one hundred years ago. This collection is already very interesting, and will no doubt improve both in the number of the plants and the quality of the flowers as time advances."

**The Yorkshire Rhubarb Industry.**—Although it is well-known that enormous quantities of early-forced rhubarb are produced in Yorkshire to meet the demands of the great markets of the United Kingdom, and some on the Continent, it is not so generally known that the industry is still growing, and that almost all the suitable available land in Hunslet, Stourton, Rothwell Haigh, and Rothwell is being utilised for the cultivation of rhubarb for forcing. At this season of the year the district just south of Leeds reveals great tracts of vivid greenery produced by the large leaves of finely cultivated rhubarb.

**Prizes for the Prudhoe Miners.**—The late Mr. Norman C. Cookson, of Wylam, proved that the best workmen among the miners of the Prudhoe district were those who took up gardening as a hobby. Evidently the same happy state of affairs continues, for the Mickly Coal Company is offering valuable prizes through the committee of the famous Prudhoe Flower Show, for the best vegetable and flower garden, the best vegetable garden, and the best kept garden. These competitions are open to the company's workmen resident at West Wylam, Prudhoe, Low Prudhoe, and Half-way House.

**Dr. D. H. Scott, F.R.S.,** ex-president of the Linnean Society, has been elected a foreign member of the Royal Danish Academy of Science and also of the Royal Society of Sciences, Upsala.

# YORKSHIRE FLORAL FETE AND GALA.

Although this is the fifty-fourth year of the Yorkshire Flower Show and Gala the northern function shows no signs of age, except that each year the authorities grow wiser, and their exhibition more beautiful. To the wisdom of years is added a youthful vigour that is most refreshing. The exhibition was held on Wednesday, Thursday, and Friday, June 19, 20, and 21, in Bootham Park, and the display in the huge tents presented a fine picture. Orchids were unusually good, and roses were fine; specimen plants were present in fairly large numbers, and the groups arranged for effect were quite up to the usual standard of excellence. The hardy flower displays were excellent, and the classes for a garden of hardy flowers and for a rock and water garden were of special interest and high merit, the former promising to become an outstanding feature at York. The trade exhibits were abundant and good, and evidence of the smartness of the staff was found in the fact that all the medal award cards were in position before the time for the admission of the public.

FINE GROUPS OF ORCHIDS AT YORK FLORAL FETE AND GALA.

The group on the left was staged by Messrs. J. Cypher and Sons, Cheltenham; that on the right by Messrs. Mansell and Hatcher, Rawdon, Leeds. These displays combined to make one of the finest features at York.

## LARGE GROUPS.

In the large group class each of the six exhibits covered an area of 300 sq. ft. The competition was good throughout, and once more our friend, Mr. J. Donoghue, gardener to J. Pickersgill, Esq., Weetwood, Leeds, gained the premier award of £20 with a beautiful effort in which he utilised rambling roses and palms in the background, and handsome crotons and odontoglossums over the centre and front; in the immediate foreground, odontoglossums, crotons, cattleyas, sonerilas, and phalænopsis were charmingly associated, and here and there over the whole rose the misty gracefulness of Humea elegans and Cyperus papyrus. Mr. W. A. Holmes, Chesterfield, won second prize, and his crotons and oncidiums were especially good. Next in order came Mr. W. Vause, Leamington, with roses and crotons as leading features; he was followed in order by Mr. F. H. Ward, Scarcroft, York; Messrs. R. Simpson and Son, Selby; and Mr. T. M. Petch, St. John Street, Bridlington.

There were three entries in the class for a group of miscellaneous plants, arranged on a space of 200 sq. ft. Here Mr. Donoghue was still to the fore with a goodly exhibit, in which miltonias and roses were conspicuous; Mr. W. A. Holmes, Chesterfield, occupied second place, and Mr. W. Vause, Leamington, was placed third.

## ROCK AND WATER GARDEN DISPLAYS.

What has come to be known as the rock and water garden class at York was again a great attraction. There were three entrants, and each filled a space 30ft. by 12ft. The first prize of £15 fell to Messrs. Jas. Backhouse and Son, York, for a fine rock garden exhibit with a central ravine, holding a lily-studded pool of water. Conifers, rhododendrons, bamboos, and purple beeches formed a high background for alpine shrubs, campanulas, and hardy ferns. Near the water were colonies of irises, choice primulas, mimuluses, orchises, and cypripediums. The front portion of the group held colonies of oxalis, cytisus, ramondias, cheiranthuses, sedums, and dainty dianthuses. Messrs. W. Artindale and Son, Sheffield, won second place with a bold design of rocky cliff, mountain pass, and tiny stream; bamboos, irises, violas, azaleas, and spiræas were plants freely used. Mr. S. Pickering, Clifton, York, came third; he used campanulas, saxifragas, and irises in masses, and a rose-clad rustic bridge spanning the pool of water was the central feature.

## HARDY FLOWER GARDENS.

It will be remembered that the York executive instituted a quite new class in 1911 for the better and more natural display of hardy flowers. The idea was to secure a garden-like effect, and the first effort was a success. This year 300 square feet was allowed each competitor, and there were four entries. Messrs. James Backhouse and Son, York, won the first prize with a garden composed of a hedge-backed border, gay borders at the end and front, and three central beds surrounded by rough flagged pathways. The entrance was by low steps in the front centre. Anchusas, delphiniums, foxgloves, lupins, liliums, and verbascums towered up in front of the background of conifers. At either end liliums, irises, spiræas, gladioli, and lupins, grouped very naturally, were the chief features, while the front border was composed chiefly of Lilium elegans, Spanish irises, pæonies, poppies, and lupins. In the central beds gladiolus, iris, and poppies were conspicuous, while the other beds were gay with delphiniums, Spanish irises, pyrethrums, pæonies, and dictamnus.

An even bolder effect was produced by Messrs. W. Artindale and Son, Sheffield, who filled a semi-circular border with grand groups of eremurus, lupins, Spanish irises, spiræas, verbascums, lupins, pæonies, etc. A narrow path divided this from a large front bed in which Astilbe Arendsi Kriemhilda, Lilium Szovitzianum, Incarvillea Delavayi, Iris Cajanus, etc., were edged with white Viola cornuta. Messrs. G. Gibson and Co., Leeming Bar, Bedale, adopted the usual herbaceous border design, using eremurus, poppies, liliums, and campanulas; and they won third prize. Messrs. J. Harkness and Sons, Bedale, was commended for their exhibit.

### ORCHIDS.

In the premier class of this section the requirements were a display of orchids on a table space of 12ft. by 5ft.; plants and cut flowers were both admitted. There were three competitors. Messrs. J. Cypher and Sons, Cheltenham, secured the first prize with a very effective arrangement of Cattleya Mossiæ, Lælio-cattleya Fascinator, L.-c. Canhamiana, white odontoglossums, Brassia verrucosa, oncidiums, cymbidiums, and miltonias. Second prize was won by Messrs. Mansell and Hatcher with a very beautiful exhibit of Renanthera Imschootiana, white odontoglossums, Cattleya gigas, C. Mossiæ, miltonias, and oncidiums. Messrs. Hassall and Co., Southgate, gained third prize, and they showed Odontioda Charlesworthi and Cypripedium niveum in good form.

Messrs. J. Cypher and Sons led for ten orchids with fine examples of Cypripedium Curtisi, Vanda teres, Miltonia vexillaria, Phalænopsis Rimestadiana, Epidendrum prismatocarpum, Lælio-cattleya Aphrodite, Cattleya Mossiæ, etc.; Mr. Barker, gardener to W. P. Burkinshaw, Esq., Hessle, Hull, was second with Lælio-cattleya Fascinator, L.-c. tenebrosa Walton Grange var. Star of York, C. gigas, Miltonia vexillaria, etc.; Messrs. Hassall and Co., Southgate, third.

MESSRS. JAS. BACKHOUSE AND SONS' FIRST PRIZE GARDEN OF HARDY FLOWERS AT YORK FLORAL FETE AND GALA.

Mr. J. Barker led for six orchids in a close competition, and his best plants were Renanthera Imschootiana, Cattleya gigas (very fine), C. Mossiæ (with twenty-one blooms), Cypripedium Shillianum, L.-c. Fascinator Schroderæ, and Miltonia vexillaria. Messrs. J. Cypher and Sons were second, and here the best examples were of Cattleya Whitei with five blooms, Lælio-cattleya Canhamiana with sixteen flowers, L.-c. Krauzlini, Cattleya Mossiæ, and Renanthera Imschootiana. Messrs. Hassall and Co., Southgate, came third.

Mr. Barker scored for a specimen orchid with a neat example of Miltonia Bleuana Hessle var., with two spikes. Messrs. J. Cypher and Sons came second with a very fine form of Odontoglossum perultum. Messrs. J. Cypher and Sons scored for three orchids, and Mr Barker was second.

### ROSES.

Roses were a very fine feature of the gala, the flowers being of good size and fine colouring, and they were largely displayed by leading growers. The class for seventy-two blooms, not less than three dozen varieties, found Messrs. D. Prior and Sons, Colchester, to the front among three competitors. A few of the best blooms were Mons. Joseph Hill, Hugh Dickson, Yvonne Vacherot, Florence Pemberton, Mrs. W. J. Grant, Countess of Caledon, A. K. Williams, Bessie Brown, Mdme. Jules Gravereaux, and Mrs. Coxhead. Messrs. Frank Cant and Co., Colchester, came second, with Messrs. Jarman and Co., Chard, third. For forty-eight blooms, Messrs. D. Prior and Sons were again chief prizewinners with fine flowers of Mildred Grant, White Maman Cochet, La France, Dean Hole, Mdme. Jules Gravereaux, Lyon, Juliet, and Countess of Caledon; Mr. George Prince second, and Messrs. Frank Cant and Co. third. For thirty-six blooms, Messrs. D. Prior and Sons were again to the front, with Messrs. Frank Cant and Co. and Mr. H. Drew, Longworth, following in the order given.

Five competitors staged two dozen blooms, and here Messrs. Frank Cant and Co. came to the front with fine examples of Gloire de Chedane Guinoisseau, J. B. Clark, Helene Guillot, Maman Cochet, O'Donel Brown, Boadicea, and the good old Mrs. John Laing; Messrs. D. Prior and Sons came second. The last-named firm annexed the first prize for a dozen flowers of white roses with Frau Karl Druschki, Mdme. Constant Soupert, Medea, etc.; Mr. George Prince second; and Messrs. F. Cant and Co. third.

The premier award for eighteen roses, distinct, fell to Mr. George Prince, whose examples of Ethel Malcolm, Mrs. Hubert Taylor, Bessie Brown, Mdme. Jules Gravereaux, W. Shean, and Lady Ursula were notably good; Messrs. D. Prior and Sons had to be content with second place, and Mr. E. J. Hicks came third. Mr. W. Hutchinson, Kirby Moorside, scored in the amateur classes for twelve and for eighteen blooms with fair specimens.

### SPECIMEN STOVE AND GREENHOUSE PLANTS.

These continue to figure at York Gala, and as they are very effective, and show evidence of high cultural skill, they invariably attract a great deal of attention. As each competitor places his plants together, instead of setting them out in their respective classes, it is not always easy to pick out the prizewinners in due order.

The best collection of stove and greenhouse plants, in bloom, came from Messrs. James Cypher and Sons, Cheltenham, who, in a space 20ft. by 10ft., arranged many famous examples of Statice profusa, Erica ventricosa, E. Cavendishi, Clerodendron Thomsonæ, Franciscea eximea, Clerodendron Cypheri, and anthuriums; Mr. W. Vause, Leamington, came second, and he showed fine examples of Pimelea Hendersoni, and Erica Cavendishi. Noble specimens of Clerodendron Thomsonæ, and Erica Cavendishi and E. ventricosa, the latter a giant, won for the Cheltenham firm first prize for three greenhouse plants in bloom; Mr. W. Vause second. For one stove plant in flower Messrs. J. Cypher and Sons scored with a handsome Ixora Williamsi, and Captain Walker followed with a large Anthurium Scherzerianum.

### FRUIT AND VEGETABLES.

The fruit classes provided a capital display. There were three tables of ripe fruit, decorated, and here Mr. N. F. Barnes, gardener to the Duke of Westminster, Eaton Hall, Chester, won first prize. His decorations consisted of odontoglossums, Lilium speciosum, and thalictrum. His fruits were excellent specimens of Madresfield Court (10) and Muscat of Alexandra grapes (13), Peregrine and Royal George peaches (13), Lord Napier and Pineapple nectarines (13½), Eatonian and James Grieve apples (10½), Kirk's and Jefferson plums (9½), Dr. Jules Guyot and Triomphe de Vienne pears (10), Hero of Lockinge and Eaton Seedling melons (9). For decoration

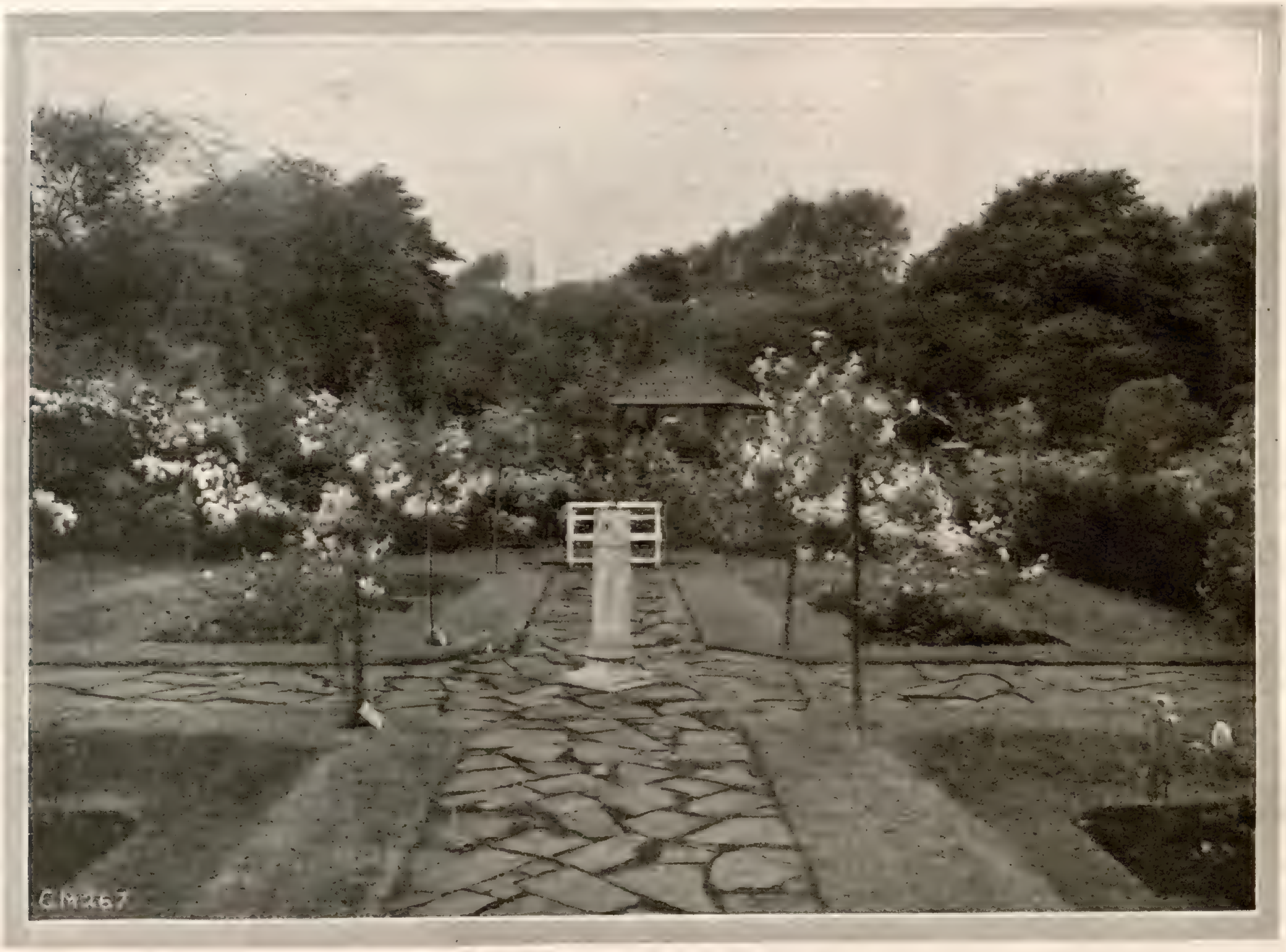
(Continued on page 478.)

## A FORMAL ROSE GARDEN.

Notwithstanding the wonderful expansion of rock gardening and wild gardening during the last ten years, or, perhaps, because of this expansion, there has been a steady increase of formal gardening. But whereas in the olden times the whole garden was laid out in rigidly formal fashion, or, at least, the part around the mansion was so treated, it is now the pleasing custom to set apart a portion of the grounds for the display of formal gardening. Even then, however, the old-time formality of clipped hedges, carved trees and shrubs, geometric beds of formal plants, or of coloured gravel, is not rigidly adhered to, but within a close clipped hedge the disposition of paths and beds is formal, but the plants used to beautify such a garden are free and graceful.

Such gardens as here indicated are by no means uncommon, but they differ widely the one from the other in arrangement and in the subjects selected by the planter. At the recent International Horticultural Exhibition, Mr. R. C. Notcutt, of Woodbridge and Ipswich, planned and planted a formal garden. Along one side was a high sheltering bank of rhododendrons, lilacs, and pillar roses. A flagged pathway ran the length of the yew-hedged enclosure, and another crossed this in the centre, the point of intersection being marked by a sundial, with numerous alpine plants about its base, growing in the crevices of the flagstones.

Four large rose beds, each set in a sunken lawn, were leading features, and these were filled with dwarf and standard roses, chiefly free-flowering hybrid tea varieties. Four tall weeping standard roses, such as Dorothy Perkins, White Dorothy, Hiawatha, and the like, stood in graceful stateliness around the sundial, while a pair of these stood sentry-wise just inside the entrance, and at either end of the longest walk, another pair kept fragrant watch over the comfortable garden seats.



A FORMAL ROSE GARDEN.
Designed and planted by Mr. R. C. Notcutt, Woodbridge and Ipswich, at the Royal International Horticultural Exhibition.

There is a great danger in the present taste and fashion of rock and wild gardening, and it lies in the possible excess of either or both. Fashion is ever fickle, and her pendulum has a knack of swinging right back at short notice. With this in mind, it is as well to remember that formal gardening has much merit, rightly planned and planted, and, in a large garden, it provides pleasing shelter and a fine contrast to the informality of the rock garden, the beauty of the water garden, and the natural style of the wild garden. B.

## SHRUBS IN FLOWER AT CHRISTMAS.

One of the prettiest and most easily grown shrubs is Jasminum nudiflorum; it is always in flower at the festive season, and well repays for a little extra trouble in summer. A good mulch of manure and an occasional good watering will work wonders. It is happy on a north wall or a south-west wall, and is very pretty growing up the trunk of a small tree, and in such positions is attractive and beautiful at this season. It is not at all particular to soil when once established.

Chimonanthus fragrans grandiflora is another remarkable and much-admired shrub, and was originally introduced from Japan as long ago as 1766. The flowers are deliciously fragrant, and they should be picked and placed in small china saucers, and put about in the rooms, when their perfume will be much appreciated. The plant makes a lot of growth, which should not be cut away until flowering is over, as the young shoots are studded with flowers. It does best when planted against a warm wall, otherwise the flowers are much later. We have one large plant which covers the whole wall on the south side of a fernery, and this makes strong shoots 3 to 4ft. in length each season. Plants will flower without wall protection, but so much later that they are not so valuable, though at all times their fragrance is an attraction.

The beautiful Erica lusitanica (codonodes) is a mass of bloom. It is quite easy grown, and easily raised from seeds, making good plants in three years. This heath is very valuable for cutting, as large branches may be cut from good-sized trees. We have five or six hundred trees about the grounds here, but, of course, the older trees, and those in favoured spots, afford the earliest bloom.

Erica carnea is one of the most desirable of hardy heaths, as from Christmas to the end of April it is covered with bloom. It is a dwarf, compact grower, and when planted in clumps soon becomes effective. Plants may be placed round the base of a standard shrub with good effect.

Azara integrifolia produces pretty, sweetly-scented flowers, and makes its presence known by its delicious vanilla perfume. It flowers earlier than A. microphylla, and is therefore much prized at the Christmas season. If treated in the same way as the chimonanthus it will grow perfectly, but should be planted against a wall for early flowering. W. A. Cook.

Leonardslee Gardens.

**Aotus gracillima.** — This hard-wooded plant is still grown to a certain extent, and very pretty it is, as the habit is very loose and graceful, the exceedingly long, slender shoots being packed for the greater part of their length with small pea-shaped flowers, in colour bright yellow, marked with red. It was introduced from Australia about sixty years ago.—S. W.

## AQUILEGIAS.

These flowers have become immensely popular, since the introduction of the improved forms of the long-spurred varieties. During recent years a great development has taken place amongst them, and a high standard of excellence attained. It is not very long ago that aquilegias were looked upon as commonplace, but now they are considered as well deserving a foremost position among herbaceous plants. Their hardihood goes without saying, although some are apparently not of such strong constitution as others. They are exceedingly accommodating, and will thrive where many subjects fail. Beautiful effects are to be obtained by freely planting them in the wild garden and in shady walks, in bold groups of two or three dozen plants.

Although not commonly used for decorative purposes in pots, they are excellent for furnishing the conservatory, and a group in flower is very pleasing. Two-year-old plants are most suitable for potting in October, and wintering in cold frames. In the early part of the year they should be placed in a cold house when the flower spikes soon appear. On no account must there be any attempt at undue forcing, or few flower spikes will be the result of the treatment. When the spikes are a few inches high, a little stimulant should be given to the plants, which will greatly assist in the production of good flowers.

The result in the second flowering season are no doubt the best, the blossoms are finer and more numerous than they are at any time. After the plants have flowered the third year, it is advisable to dig them up, throw them away, and plant young stock. To carry out this scheme of cultivation, it is necessary to raise a batch of seedlings annually, which will enable one to maintain a succession of strong flowering plants, from which satisfactory results will be obtained. Raising the seedlings is a simple matter, but it is absolutely necessary that a good strain be obtained or disappointment will surely follow, and time and labour be wasted.

Hundreds of plants are easily raised from seeds in a cold frame or hand-light, no artificial heat whatever being required for the purpose. May is the most suitable month for seed sowing, and the plants thus raised are able to make a good season's growth before the first winter. We use pots or boxes for sowing the seeds in, and these are filled with a mixture of leaf-soil and loam in equal parts, adding sufficient sand to keep it open. When the seeds are sown the pots or boxes are placed in a cold frame or hand-light until germination takes place, covering the former with glass and paper to prevent undue evaporation. It frequently happens that the seeds germinate very irregularly. The young seedlings are transplanted into other boxes and afforded cold frame treatment until they are well established, when they are gradually hardened off and transferred to well-prepared nursery beds, being planted out in rows, twelve inches apart, and about nine inches from plant to plant. Here they will become well established before the winter arrives, and be quite capable of looking after themselves.

Given good treatment during the first season, that is, from the sowing of the seeds until the plants are put out into nursery beds, many plants will flower the following season. It is an easy matter to determine which crowns are likely to produce flower spikes when growth commences by their plumpness, and all such may be planted in their flowering quarters, and the smaller crowns be replanted in the nursery beds for another season.

Slugs are extremely fond of the young tender growths, and they quickly ruin a batch of seedlings if measures are not taken to prevent them doing so. A slight dressing of artificial manure, lightly forked in between the plants before growth commences, acts as a protection from slugs, and as a stimulant to the plants.

As aquilegias are early summer-flowering plants, the question of what shall be done with the gap caused by the cessation of their flowers arises. This may be filled by planting gladioli between them, as these former produce a display when the aquilegias are over. Again, the aquilegias may be safely lifted when their flowering season is over, and the gap made good with early-flowering chrysanthemums. Of course, the latter must be grown in nursery beds for this purpose, but the extra trouble is amply repaid. The operation of lifting both the aquilegias and chrysanthemums must be carefully carried out, and if dull, showery weather can be selected for it, success will surely follow. E. C. Pooley.

Gnaton Gardens.

## A SUCCESSION OF PEAS.

The season of green peas is now with us, and it is worth while to remember that there has been a considerable increase in the number of varieties of culinary peas during recent years. In many cases vast improvements have been made, and, as a general rule, the green wrinkled pea has almost outclassed the white round-seeded. Improvement is generally to be noted in the increase in the crops and the size of the pods, especially in the early varieties, and to make a selection of a few really good peas is often a puzzling matter. Most experienced gardeners hold that in order to grow peas to perfection trenches should be prepared in the autumn or winter by taking out two feet of soil, and breaking up the bottom, and spreading it with a layer of well-decayed cow manure. The trench is then partly filled in with soil and a layer of bonemeal, the remainder of the soil being left exposed to the winter rains and frost, so that it will become thoroughly sweetened and pulverised. Before sowing, this soil is replaced in the trench.

Two thousand years ago the Greeks sowed their peas in November, but the Romans did not plant theirs until spring—so says the historian, Pliny. The first mention of them in England appears to be in the time of Henry VIII., according to one narrative. And in 1737 there are sixteen different varieties of peas mentioned in Miller's Dictionary. Most of these varieties were various forms of the Hotspur pea. The first wrinkled marrowfat pea was introduced by Thomas Andrew Knight, the President of the Royal Horticultural Society, in 1787; it was either the result of a cross, or a sport, which had been bred true. Subsequently the old Champion of England appeared, and then came Ne Plus Ultra, Veitch's Perfection, and William I. Culverwell raised the Telegraph, and afterwards Telephone, Autocrat, and Duke of Albany were introduced.

At the present day it is the earliest varieties of peas that prove most popular. Some gardeners may be able to produce peas in April, with special facilities, of course, but the majority of growers have to content themselves with their first dish of peas in the middle of May, or even the early part of June. Channel Island pea growers are known to devote whole houses to the production of early peas, and it is said that in one large house the grower prepares the ground with a plough. The Early Giant pea is a favourite variety with these growers, but any early wrinkled varieties can be employed. Seeds are sown in November, December, or January, and the pods gathered from April onwards. Green Gem is described as a useful early pea for sowing in borders or pots under glass, where a whole house is not available. For pot culture, however, a good variety is Seedling Marrowfat, which has pointed and very free-setting pods and fine-flavoured peas. A still dwarfer pea for this purpose is Harbinger, which, with Reading Wonder, is one of the two earliest dwarf wrinkled peas in existence. Quite a new variety of dwarf pea, which is finding favour amongst many growers for pot culture or early borders, is Pioneer.

Any of the first early or second early peas may be sown in pots or boxes in December or January to follow those grown entirely under glass. After sowing, they may be grown on in cold frames, and subsequently planted out in the open. Gradus, Early Giant, Early Morn, Carter's Eight Weeks, May Queen, Thomas Laxton, Duke of Albany, and others, are all extremely useful for this purpose. Care must be taken not to make the sowings too thick, and also to prevent the plants becoming lanky and spindly in growth, they should be kept near the glass and given plenty of ventilation on all favourable occasions. At or about the middle of March these may be put out in trenches, prepared in the manner described in a former paragraph. Many growers have to keep up a successional supply of peas from May to October, so that in such cases it is essential to make a sowing every ten or twelve days. Peas sown under glass, and afterwards transplanted after this fashion, will, in the ordinary way, be ready for picking much earlier than the first outdoor wrinkled peas.

In the latter case, sowings can usually be made as early as February on a sheltered and fairly warm border, provided, of course, the weather conditions are favourable. Giant Lightning, Reading Wonder, Pioneer, Duke of York, Excelsior, Little Marvel, English Wonder, and also those mentioned above, can all be treated in this manner. For more exposed situations, however, and where a sheltered border is available, Bountiful, Ameer, William I., or Pilot may be used. All these are peas of a somewhat hardier constitution than those mentioned above, Pilot especially being a new and very prolific pea that has great promise. For maincrops it is exceedingly difficult to get at the best varieties, as there are so many different sorts, all of them being very free bearers, with fine quality peas, and large-sized pods. A good stock of the old Duke of Albany is difficult to surpass, while others that are equally reliable in this respect include Edwin Beckett, Centenary, Alderman, and Criterion. A dwarfer pea is Nonsuch, while among other popular maincroppers are Daisy, International, Harvestman, Dreadnought, Quite Content, Prizewinner, and Incomparable.

In a later section there are Sharp's Queen, Superlative, Perfection, Jubilee, and Dr. McLean. We also have a number of varieties of peas which, if sown at the same time as the ordinary second early types, will not mature until quite a month later. These include Autocrat, Late Queen, Michaelmas, and the most popular variety of all, Gladstone. Late pea production is not, however, a very certain business, and in some parts, where only a naturally dry and light soil is available, it is often useless to sow after May or early June. Even then a considerable amount of attention has to be given to the crop in the way of watering and mulching, otherwise it will scarcely ever be possible to obtain a good supply of late peas. During a very hot summer moisture must not be withheld from peas, either at the roots or overhead, for if this is lacking the plants quickly die off. Shade is also essential, especially in the case of outdoor sowings of early varieties during June or July, for the purpose of providing a late supply of pods. The young pea plants cannot stand up against the scorching effects of the hot sun, nor must they be allowed to become dry at the roots. J. C. Newsham.

## TRAINED FRUIT TREES.

Our neighbours in France are adepts at the art of training fruit trees, but our nurserymen at home, especially those who pay special attention to the matter, lack nothing in skilfulness in this direction. That this is so was amply demonstrated by several firms at the recent Royal International Horticultural Exhibition. The Messrs. Laxton Brothers, of Bedford, especially famous as raisers and cultivators of fine new strawberries, grow fruit trees, roses, carnations, and other things on a very large scale, and their trained fruit trees are models of clever cultivation. It is certainly not the fault of the nurseryman if, as some suggest, the art of training fruit trees on walls, trellises, etc., is suffering loss at the hands of the younger generation of gardeners. The Messrs. Laxton Brothers put up a fine exhibit at Chelsea, and a part of this is represented in the accompanying illustration. Practically every form of trained tree was exhibited, from simple cordons, to gridiron, fan shape, palmette, horizotal espaliers; standards of varying height, pyramids, dwarf bushes, etc. Apples and pears were the kinds of fruits most largely displayed, but there were also peaches, nectarines, plums, cherries, and gooseberries, and throughout this interesting collection the trees carried excellent crops of young fruits.

MESSRS. LAXTON BROTHERS' TRAINED FRUIT TREES.
As exhibited by them at the Royal International Horticultural Exhibition.

## BEAUTIFUL FOLIAGE TREES FOR SUMMER EFFECT.

Attention is often drawn to trees and shrubs that are conspicuous in autumn on account of their brilliantly coloured foliage, but the many beautiful trees that are objects of unusual beauty during the summer are not so frequently alluded to.

At the present time the foliage of numerous trees is especially bright and attractive, and the more handsome of these in no small measure add to the beauty of our gardens. Atmosphere very largely affects the leaf colouring, so much so that in some districts specimens of the same kinds are so dissimilar as to be almost unrecognisable. Contrast in colouring is essential for a good arrangement, otherwise it would not be possible to create such attractive features, for when the colours are suitably contrasted they are considerably intensified.

Few trees are more ornamental at the present time than Cedrus atlantica glauca, and a large planting of these forms a picture not readily forgotten. Their silvery-blue colour is lovely in full sunshine when associated with trees possessing green foliage, but when in contrast with Fagus sylvatica purpurea or F. s. cuprea the result is exquisite. The well-known Prunus Pissardi is very striking associated with Populus canadensis aurea, or with Negundo californicum aureum, while the same tree contrasts favourably with Cornus alba Späthi when grown dwarf in beds. Cupressus Lawsoniana lutea is exceedingly handsome, and when sparingly grouped with other subjects of a more sombre colour the effect is very noteworthy, especially when located for distant effect. C. L. Allumi, a blue-coloured form, and C. macrocarpa lutea are both unusually attractive just now.

Among the more highly-coloured subjects Taxus baccata elegantissima, Sambucus racemosa serratifolia foliis aureis, and Corylus avellana purpurea are some of the most ornamental, but, as in the case of the others mentioned, they need to be rather sparingly planted, and always in conjunction with other trees of similar character, to give the most pleasing and artistic results. Moreover, a certain number of trees of more subdued colouring should be utilised.

There are so many good things suitable for this kind of planting, and subjects that at certain seasons possess enhanced attractions, owing to their flowers or other attributes, are so numerous that it is unnecessary to give a selection here. In some cases the existing trees on the site may be requisitioned with good results, but when planting specimens of Quercus coccinea and Q. pedunculata concordia should always be included in the scheme.

To proceed with ornamental foliaged trees, Juglans regia laciniata is a very distinct and striking subject, as also is Koelreuteria paniculata, especially when the leaves are young. This tree produces panicles of bright yellow flowers later in the summer, and is worthy of more extensive planting. Hippophæ rhaminoides the Sea Buckthorn, is ornamental both in foliage and fruit. Catalpa bignoniodes aurea is an effective and handsome tree, and forms a fine specimen. Pyrus salicifolia pendula is a charming subject, with silvery foliage, and looks remarkably well near the stream side. Abies pungens glauca, A. lasiocarpa, Retinospora squarrosa, and Cedrus deodara also spica are especially attractive conifers; while Juniperus chinensis aurea and J. japonica aurea variegata, are both handsome.

When writing of ornamental trees, the Japanese maples must not be overlooked, as for beauty and diversity of colouring they are unsurpassed. To give a complete list of these is not my purpose, but Acer japonicum laciniatum, A. palmatum dissectum, A. p. sanguineum, A. p. atropurpureum, and A. p. septemlobum elegans are especially noteworthy. Acer rubrum, the Scarlet Maple, is very showy, and usually assumes considerable dimensions when given a suitable position, when it produces a glorious display of colour.

J. Gardner.

## THE GREEN OF THE GARDEN.

It is during summer droughts, when the green of the countryside is scorched and faded into brown, that we realise the true value of the colour, which can still be observed in perfection in well-kept gardens. Without derogating from the merit of gay flower hues, or the brilliance of white blossoms under sunshine, it may be claimed that green is the tint we could least do without; when the sun rises the pale greens of lawns, hops, primroses, calendulas, sunflowers, and countless others, take on a flush of rose that the grey-greens of the sweet peas, centaureas, and pinks cannot receive; when the sun sets even dark ivy will blush to a copper hue, and evergreen oaks and firs glow crimson.

Refinements of choice in planting trees and shrubs should be more practised; before the season comes for new introductions, we should do well to ponder over the nature of leaves, even as to texture and substance. A dusty high-road garden will not look refreshed during dry weeks if the foliage in borders and on walls is of the dull or rough-surfaced order; climbers and shrubs are needed of shining quality from which a slight shower, or the morning dew, is sufficient to detach the dust. Mossy saxifrages, violets, and Veronica spicata alba are instances of plants upon which dust seems reluctant to lie. A north garden, that receives scarcely any sun from the sides, requires the gayest of greens to cheer it, and, fortunately, the primrose family, and the summer calceolarias and tobacco plants, that will thrive in it, supply this. A pale green ivy is the best wall climber, but the Snowberry Tree (Symphoricarpus racemosus) can be trained against brick, and will offer several of the loveliest effects, the pea-green of early spring, the pink coral-suggesting blossom, and white cherry-shaped fruit in abundance.

A dank, dark garden often suffers in these respects because the climbers and shrubs, trees, even the tall plants are too uniformly heavy-foliaged. It should be remembered that one leaf of a nearly black-green ivy gives denser shade than a dozen leaves of a light verdant variety through which sun-colour penetrates. Similarly, a small laurel bush has a more darkening influence than a tall tree of beautiful guelder rose, with its yellow-green leaves and branches, that sway and part under each breeze.

When gazing over a distant landscape how vividly do special fields or plots stand out from others by their colours. We may call cabbages green, but their massed effect is pale blue, plantations of peas are a deeper shade, young wheat a grandly joyous yellow, but most verdant of any expanse will be a field of trained raspberries, or loganberries, such as may be seen upon the Sussex Downs, where slopes look south to the sea. In gardens immense care should be taken to locate striking green shades where they will not clash with others, or where they can form charming contrasts.

One illustration of the use of foliage edgings may be suggested: mossy saxifrages and thrift, violas and primroses or polyanthuses, will never be quite satisfactory round lawn beds, because the contour of those beds will be obliterated by the union of green leaves with green grass, whereas for gravel-cut beds, or those against stone or brick walks, they are ideal subjects; in beds in turf the use of grey-green, blue-green, silver, or gold foliage edgings and carpetings is infinitely more artistic, and allows the handsome shapes to be clearly defined.

During summer countless evergreen and deciduous shrubs and climbers can be quickly propagated by layers and cuttings. A survey of the garden should be made and sites marked where the green either needs adding to by young stuff, or lessening by winter removals.

Half the secret of good preparation for winter bedding is the cultivation of plants, also miniature shrubs, that will present an evergreen appearance; most of the hardy campanulas carry their leaves throughout the year; wallflowers, hardy stocks, pansies, pinks, sedums, heucheras, irises, arabises, hypericums, vincas, and double red and white daisies are of this nature.

The summer care of foliage is an important task. Evening syringings should be given to palms and all the leaved beauties of the beds, also to the too frequently neglected wall and trellis climbers, while any roadside beds or borders that have suffered from dust can, by a sprinkling through a fine-rosed can, be restored to their pristine excellence.

Each year sees foliage bedding-out displays more valued, but in innumerable cases the pattern designs made with leaf yellows, reds, pinks, maroons, and silvers would be greatly softened in effect if the true green of Herniara hirsuta and the curled saxifrages had been freely added.

M. H.

## ROSES AT KEW.

With the season of roses once more with us, a visit to Kew serves to show the great variety that exists among these beautiful flowers, and the various purposes for which they may be employed in the garden.

Although in the middle of June one scarcely expects the numerous groups of which the rose family is composed to be at their best, still there is already a splendid display, and the promise of a more extensive one to follow.

At Kew there are three special spots towards which the rose lover directs his steps, namely, the rose pergola, running parallel with the wall of the herbaceous ground, and situated between it and the rock garden, the formal beds near the Palm House, where the best bedding varieties are represented; and the sunken garden near the Pagoda, remarkable chiefly for the huge masses of vigorous ramblers which are allowed to dispose themselves in a totally informal manner.

Taking first the pergola, it is already very beautiful, though the display will be greater later on. Of course, such varieties as Crimson Rambler, Dorothy Perkins, Lady Gay, Hiawatha, and others of this class are not yet expanded, but there is already a good display of bloom on the following: Aglaia, soft yellow, large clusters; Bordeaux, reddish-rose; Claire Jacquier, nankeen-yellow; Euphrosyne, pink; Helène, mauve, yellow centre; Leuchtstern, bright rose; Psyche, pale pink, with a yellowish suffusion in the centre; Tausendschon, pink; Tea Rambler, coppery buds, pink when expanded, and Veilchenblau, which, under the name of the Blue Rambler, has aroused a deal of interest. It, however, requires a considerable stretch of imagination to regard it as blue, and the best that can be said is that it is distinct from the others. The true Wichurianas are very promising, but the only one actually in bloom is Gardenia, a beautiful variety with pale yellow flowers, but richly coloured when in the bud state.

Other beautiful kinds are: The Garland, with clusters of small semi-double flowers, in colour white and pink; Thoresbyana, double white; Cheshunt Hybrid, cherry carmine, remarkable as being the first of the now extensive race of hybrid teas; Madame d'Arblay, blush-white; Carmine Pillar, single, carmine; Flora, bright rose, almost an evergreen; and Longworth Rambler, a charming flower of a cherry-crimson colour. Not only are all of these very beautiful when closely inspected, but the colours are so blended that when viewed from one and the effect is delightful.

Near the Palm House a bed of the bright coloured dwarf Polyantha Jessie is full of bloom, while the Orleans Rose, another of the same class is not yet flowering. Most of the varieties, among which hybrid teas predominate, are not yet at their best, though some have a good sprinkling of blossoms. Lyon Rose, so variable in colour, is a beautiful flower that would be still better if it held up its head in a bolder manner. The hybrid teas, Madame Ravary, salmon-orange; Madame Jules Grolez, rose-pink; Duchess of Wellington, deep orange; and Liberty, rosy-crimson, are all capital bedders, while that Tea variety Lady Hillingdon, which has proved to be such a grand rose for forcing, and has such a beautifully formed deep orange bud, appears as a bedding variety.

The sunken garden near the Pagoda occupies the site of an old gravel pit, and the various climbing roses are there allowed to ramble over old tree stumps. Such a position is eminently calculated to display the members of the Rambler and Wichuriana sections to the best advantage, many of them having formed huge wide-spreading masses. The Wichurianas are remarkable for their beautiful glossy foliage, and in none is this more pronounced than that popular variety Dorothy Perkins, of which there is a grand mass which later on will be quite a picture. Those already more or less in bloom include Alberic Barbier, semi-double, canary-yellow flowers, with deeper-tinted buds; Edmond Proust, coppery-carmine; Gardenia, yellow; Jersey Beauty, rich leathery foliage and pale yellow blossoms; and Paul Transon, rosy-pink. Other bold-growing kinds of different sections are: Electra, yellowish-white; Una, a hybrid briar, grand as a bush, with large creamy-white flowers; and The Garland, Helène, and Psyche above alluded to.

The variety Tausendchon in this part of the gardens merits at least a note to itself, as it just now forms a magnificent feature, the long, wide-spreading shoots being absolutely wreathed with its charming pink blossoms. These banks of bold-growing roses are arranged in a more or less undulating manner, and in the bays thus formed many of the smaller kinds are planted. A particularly interesting feature of these is the fact that many of the varieties there displayed are not generally met with at the present day. Among them may be named the York and Lancaster, Gloire de Rosomenes, Fimbriata, fringed at the edge like a pink; Stanwell Perpetual, a form of hybrid Scotch, with pink flowers. Several forms of the Moss Rose, the golden-yellow Rosea lutea flore plena, that distinct Chinese species—R. Moyesi, and a fine group of the old bush-growing variety Fellenberg, profusely laden with its crimson-lake coloured blossoms.

A word or two must be spared for roses in other parts of the gardens; for instance, near the refreshment room is a bed of that beautiful variety Billard et Barre, whose long shoots have been pegged down, and the entire bed is now sprinkled over with the rich orange-yellow flowers.

Near the Temperate House large masses of such varieties as Electra, Una, Mrs. Anthony Waterer, and Gruss an Teplitz show them at their best, though the last-named has at present but few flowers open.

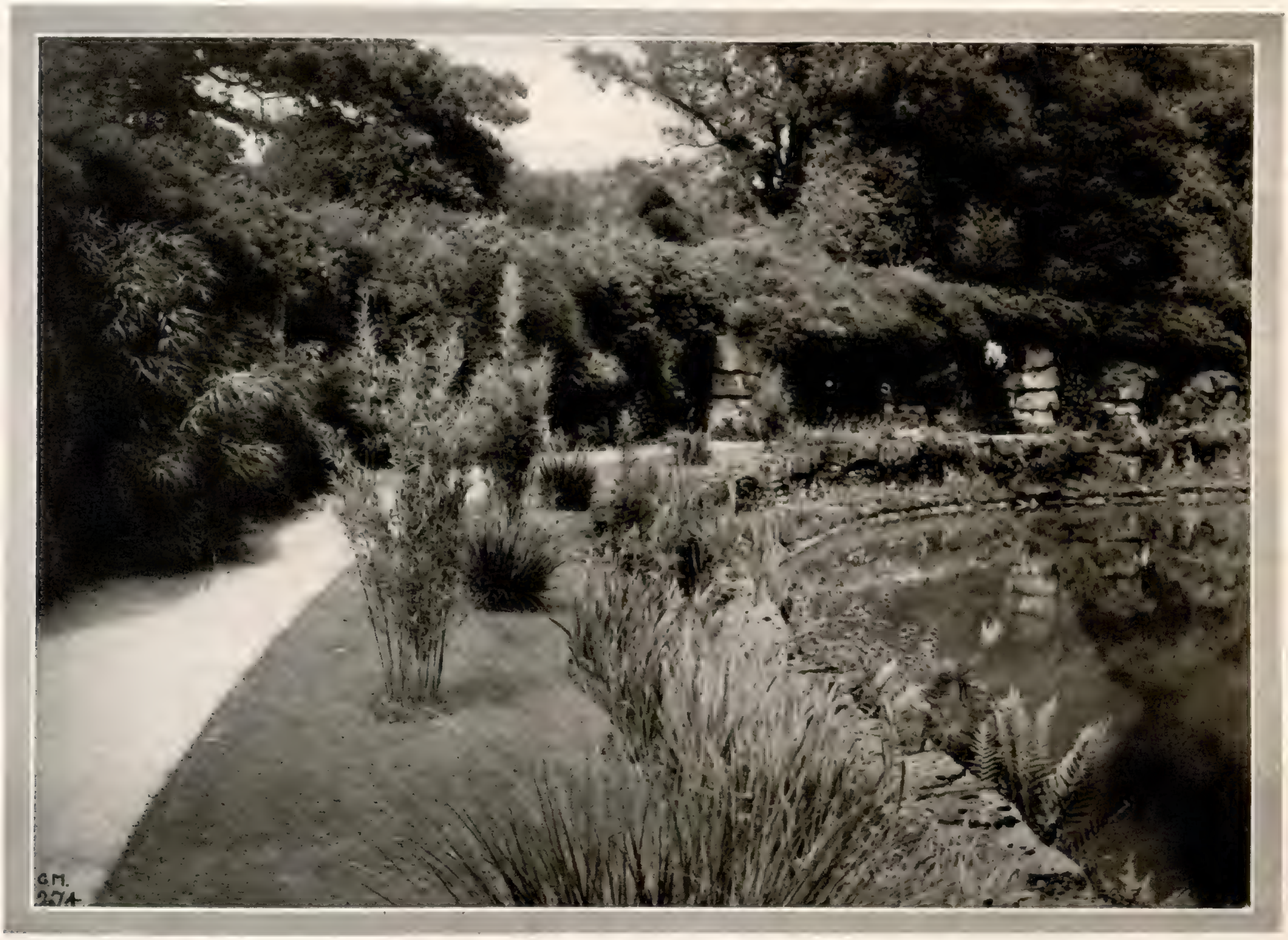
K.

## A ROCK-MARGINED POOL.

Gardens that are remarkble for their extent, interest, and beauty are well-nigh innumerable within a radius of four or five miles of the health-giving town of Tunbridge Wells, and prominent among the most noteworthy of them are those of Swaylands House, the residence of G. J. Drummond, Esq. These gardens extend over a large area, are surprisingly beautiful, and admirably kept, and they include within their boundaries so many distinct features as to afford visitors ample entertainment, whatever may be the trend of their taste in relation to garden design and management. Unless we are much mistaken, the weeping standard rose which now enjoys so high a degree of popularity, and contributes so appreciably to the attraction of the rose garden, had its origin at Swaylands House. Herbaceous plants are so largely and well grown that the spacious borders devoted to them produce glorious displays of flowers throughout the summer. So we might continue, but for the present it must suffice to say that the outstanding feature is the rock and water garden.

Notwithstanding an intimate acquaintance with what has been accomplished in the British Isles in making provision for the cultivation of plants that thrive on the ledges and in the crevices of the rockery, or luxuriate in bog or pool, we know of no garden in which rock and water is combined that has a greater area, or is more remarkable for boldness of design. This interesting feature of the Swaylands House gardens was described and illustrated in the Gardeners' Magazine of January 9, 1909. Special reference was then made to the large area over which the rock and water garden extends, to the diversity of its attractions, and to the fact that it was planned and constructed by Mr. R. Hosier, the gardener, under the direction of Mr. Drummond, who takes a keen interest in the gardens which form so delightful a setting to the stately mansion.

There are two water areas in association with the rockeries and the rock-loving plants, and the largest of these forms a long, rather narrow lake, which skirts the lower side. This is separated from the rock masses by a breadth of turf and a broad gravel walk, and is fringed with plants suitable for such a position. The other area of water is on the eastern side, and partly enclosed by bold masses of rock in the manner shown in the accompanying illustration. This forms a large circular rock-girt pool. It will be seen that the outer margin is formed with large pieces of rock, and that ferns and flowering plants of various kinds have been planted in the crevices, and form an elegant fringe. The water is kept within the desired bounds by an inner wall, which rises a few inches above the usual level, and between the two walls is a terrace several feet wide, affording accommodation for a considerable number of flowering and other plants. On the breadth of turf between the margin of the pool and the walk are bamboos, grasses, irises, etc., etc., and these produce a distinct and pleasing effect, and add much to the enjoyment of this sheltered and otherwise pleasant walk.



A ROCK-MARGINED POOL.
In the gardens of Swaylands House, the residence of G. J. Drummond, Esq.

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An edition of "SWEET PEAS AND THEIR CULTIVATION," by C. H. Curtis, has been issued for 1912, and consequently this is an up-to-date work on the subject. The price, by post, is 1s. 2d. (cloth, 1s. 9d.) from the Publishers, 148-9, Aldersgate Street, London, E.C.

## HERBACEOUS CHRYSANTHEMUMS.

The use of chrysanthemums as herbaceous plants for the mixed border can be made very effective, though one often sees it quite the reverse. It is the later varieties of the early-flowering section—those flowering from mid-September onwards—which are best adapted for this purpose, most of us agreeing with the dictum in Mr. William Robinson's "English Flower Garden" that, "getting chrysanthemums much before their natural season is a practice of doubtful value." We do not want to be reminded of autumn in July and August, nor do we want a subject in bloom at that season, even though it is the queen of the autumn, which we shall be seeing through September, October, and November.

As regards

### Soil and Situation,

in the sense that people sometimes say that Shirley poppies will grow on a dust heap, it may be said that the chrysanthemum will grow anywhere, but if it is to look presentable during the summer months, with strong, dark, healthy foliage, to be followed by fine clusters of flowers, the soil must not be of too dry a character, for in that case the leaves along the main stems will become dried up, while, unless the soil is pretty deeply cultivated, though not necessarily rich, the plants will be weedy and generally unsatisfactory. Where space permits, it is a good plan to prepare the ground by digging it to a depth of a couple of feet, and mixing with it a moderate amount of both animal and mineral manures.

**Planting** is better done in the spring than in the autumn, as the plants are then less liable to suffer injury from slugs, frost, and dampness. Where one has old clumps these should be broken up in early March if they have a nice lot of new growth by that time, and the youngest and best rooted pieces put in the places prepared for them. When the ground has been well prepared, the plants may be allowed to go for two, or even three, years without moving if they survive; but, looking to results, it is better in a general way to treat them like the more rampant Michaelmas daisies, and transplant them every spring. Good groups of plants look better, and grow better, than single plants dotted about in gaps among the perennials—some of them very greedy—but it is, perhaps, a matter of taste whether such groups should be of one colour only or otherwise.

The **Uses** to which chrysanthemums can be put is only limited by the imagination of the grower. Apart from their use as a component part of the mixed border, to be treated in the main like its other occupants, they have a very important use as reserves for beds and borders when their earlier-flowering summer occupants are over, for, if grown at a fair distance apart on a spare piece of ground in the vegetable quarters, they may be taken up in damp weather with a good mass of earth and roots attached at any time of the summer without suffering much damage, and used to fill up gaps or even whole beds. Beds, too, may be planted with chrysanthemums and other plants in mixture so designed that when the latter go off flower they may be pulled up and the whole bed given up to the chrysanthemums.

The matter of **Varieties** is an important one, for, however different the uses to which these plants may be put, varieties differ no less widely, and must be chosen accordingly. Where they are to be treated as herbaceous perennials, it is essential to select those varieties which make good strong tufts of growth from the base in the autumn, many of the newer and improved varieties being very shy in this respect; and where the plant only makes one or two shoots, not only does a little damage by slugs mean the possible loss of the plant, but it is difficult to get those masses of blossom which we look for in border chrysanthemums. On the other hand, where it is intended to raise plants in pots every year, this point is not of much importance. But there is another difference of habit which has obvious results in a damp autumn. Many of the older varieties which are condemned now by experts have not sufficient stiffness in the flowering stems to keep the blooms erect, especially when they are wet, and, defect though this may be, it results in keeping the rain out of the centres of the flowers, and so lessening their liability to rot or mildew in a wet autumn. Some of those with sturdy, upright flowering stems, such as that beautiful Champ d'Or, are of little use in the open in wet, or even foggy, weather. The fine varieties in this early-flowering section which are now being brought out, however attractive they look on the exhibition table, are many of them better adapted for growing in pots than in the borders. As regards standing the winter, it is commonly observed that the yellow varieties, which are the most appreciated in the autumn garden, readily succumb during the winter.

Alger Petts.

## THE VINE AND FERN WEEVIL.

A note from a correspondent induces me to give a few particulars regarding this insidious and destructive fern pest (Otiorhynchus sulcatus). In the first place, its ravages are not by any means confined to ferns, as its general name is the vine weevil, but it is probable that, once it obtains a firm foothold in a fern collection, it is more absolutely destructive of the plants than it can be in the case of vines. Curiously enough, it appears to be somewhat sporadic in fern collections, so much so that when I published "Choice British Ferns," in 1888 (now out of print), I was taken to task for omitting any mention of it in the chapter on "Fern Foes, and How to Fight Them," an omission due to the fact that although I had been accumulating a fine collection of ferns for some years, the pest had never put in an appearance, nor had I heard of it from my fern-loving friends. Eventually, however, it introduced itself, probably in conjunction with some well-intended, and certainly more welcome, gifts and acquisitions, and ever since I have had to wage unceasing war against it to preserve my pets from annihilation.

For the past three years I have kept a record of the mature beetles found in my glass fernery, and the numbers average three to four hundred per annum, constant search reducing the number by one hundred last season, while this season, so far, a great reduction seems to be promised. No record has been kept of the even more destructive fat white maggots or grubs which effect their insidious underground work during the winter and in the spring, until they assume the beetle form and emerge to attack the foliage above ground, and, if not detected and destroyed, lay their eggs, in the late summer, and so secure a fresh generation. The beetles, happily, do not survive the winter, and hence, if all the grubs can be found and destroyed, there is no new generation. This, however, is not so easily accomplished. The presence of the grubs in the soil of moderately-sized pots and pans containing ferns is clearly evidenced by the plants flagging and becoming discoloured, while in the case of hartstongues, which are their favoured prey, the fronds, when pulled, come freely away from the caudex, having been gnawed through at the base. In pans of seedlings the young plants will be found lying quite loose on the surface, the roots and crowns being devoured and undermined. With deciduous ferns, whose fronds die down in any case, the presence of the depredators is only indicated by late and imperfect growth, or no growth at all.

All this time there is nothing visible above the soil except the signs of ill-health indicated; all the grubs are beneath it, and the beetles are non-existent. Hence, in the winter and spring, it is essential to look out for such signs, and wherever they appear, to turn out the plant and shake out the soil, when quite possibly a dozen or a score of fat white maggots, about half an inch long, and half as thick, curved into a semicircle, will be found among the mostly dead roots, and burrowing into the caudex. To make sure that all are found, the remaining roots and caudices must be washed quite clean, or some of the grubs may escape by having burrowed into the caudex itself, in which, however, they are always perceptible owing to their whiteness. All dead matter should then be cut away, and the fern, or its fragments, then may safely be repotted with a fair chance of survival if any centre of growth has been left intact.

These grubs are so tenacious of life that we have submerged infested plants, which we have been reluctant to destroy, for fourteen days in a bath without drowning them, and though a few were found lying apparently dead on the surface, we found they revived when allowed to get dry, and exposed to the air. The difficulty of entire extermination in the grub stage lies in the fact that with large, old-established specimens of ferns, in big pots, the plants are too robust to show any evidence of their presence in small numbers, and hence such specimens form refuges for a sufficient number of future beetles to survive and carry on the pestilent race. Obviously, therefore, equal attention must be paid during the growing season to the capture of the beetles.

In a cold conservatory the beetles commence to emerge from the soil about the beginning of May, first as soft, dark-coloured beetles, but speedily hardening into very tough-coated ones, nearly black, with an oval body about half an inch long, and a peculiar small head, with two short antennæ. They at once crawl up the stalks of the ferns, and gnaw the edges of the rising fronds, thus doing great damage to those of the hartstongues, as subsequent growth enlarges the gaps considerably, and quite spoil their appearance. Immediately such damage is observed search should be made for the depredator, which, very likely, may be found snugly ensconced in one of the frills or tassels, when it is easily extracted by the finger and thumb. If not so seen, it is practically certain to be found somewhere on the soil or in the caudex, since it rarely travels from one plant to another unless disturbed. If search still fails, immerse pot and plant in a pail of water, so as quite to cover the soil. The beetle cannot stand immersion at all, and will at once crawl out from its hiding place, and creep up one of the frond stems, where he is easily secured.

On large specimen ferns the black body of the beetle is easily distinguishable against the light, but here diplomacy is required, since directly it suspects an enemy, or is startled, it drops to the ground, and lies as if dead, its dark colour then rendering it almost impossible to detect. My diplomacy takes the form of a metal dessert spoon attached to a stick, and when a weevil is observed I cautiously bring the spoon beneath it, into which it incontinently drops when the frond is slightly tapped. The weevil's presence is sometimes only indicated by small blobs or drops of brownish liquid on the fronds, and also by a distinct paleness of the normal green colour which is reassumed speedily when the beetle is removed. This fact is difficult to account for, but admits of no doubt. All this, of course, involves considerable trouble, but is unavoidable if once the pest has, by ignorance of its habits or neglect, been allowed to establish itself, as it is quite immune in both stages from vaporisation, or any insecticide I know.

C. T. Druery, V.M.H., F.L.S.

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**Tree Pæonies.**—These look their best when planted in the forefront of shrubberies, but they are sometimes grown in the ordinary herbaceous borders or in beds by themselves. Flowers of the Mountain Pæony exhibit a great variety of colours, and their large blooms are invariably much admired. They are greatly benefited by a mulching of well-rotted manure, as this not only checks evaporation, but helps to feed the plants. Remove any suckers from the root-stocks as they may appear.—J. Gardner.

# EDUCATION OF GARDENERS.

The following is the text of the paper on "The Education of Gardeners" read by Mr. W. Hales, A.L.S., Curator, Physic Garden, Chelsea, at the conference on "Horticultural Education" held in conjunction with the Royal International Horticultural Exhibition:—

When one considers the methods for the education of a gardener in this country, it may be said with a great deal of truth to be more or less a system of "drift."

That such a system—or rather, want of system—has produced many excellent gardeners is freely acknowledged, and is clearly shown in the magnificent exhibition which has just been opened; and when one ponders over the training these men have had, the thought naturally arises, how are we to improve upon the methods employed?

Since gardening is a progressive art which does not admit of finality, all true gardeners must ever feel that their education is *never* complete, and that they must always be alert to adapt themselves to new methods and ideas if they are to hold their own in the competition of life.

During recent years rapid strides have been made in educational methods generally, and one finds that the number of elementary schools which teach gardening as a purely educational subject have increased very considerably; but so far as the actual training of the real gardener is concerned, these schools play very little or no part.

There are, however, a certain number of institutions which teach gardening as a whole, or as one of the subjects in their courses, with the object of training gardeners; but after careful consideration one is forced to the conclusion that many of these institutions fall short of filling the position in the training of a gardener which they should occupy. What one feels to be most needed is that the work of these various establishments should be arranged and coordinated so that any boy who intends to make gardening his profession may be able to pass through such an organised course of training as will ensure him receiving the proper blending of practice with science, which, in this competitive age, is essentially necessary for the man who desires to reach the top of his profession.

## The Gardener's Work.

The work of a gardener covers such a number of different branches of the great tree of horticulture, that the education a gardener should receive must of necessity be a subject upon which there are many diverse opinions. There can, however, be no two opinions but that the boy who wishes to make gardening his life's work should have received whilst at school as full a general education as the circumstances will allow; and if it were possible for him to continue his studies up to the age of sixteen or seventeen years at a good secondary school, where he will receive an additional training in those sciences which will ultimately have a direct bearing upon his profession, such as geology, botany, chemistry, and land-surveying, he will be possessed of an asset which will undoubtedly be of value to him in his future work.

Gardening to-day makes demands upon the skill and intelligence of the individual such as was undreamt of in bygone years.

This is partly explained when one considers the enormous wealth of exotics from all climes with which quick transit and the work of collectors and travellers have enriched our gardens—to say nothing of the work of the hybridist—all of which the gardener is expected to grow and make flourish under conditions far removed from those in which they grow naturally. Therefore, the better the education a boy has received at school the more fitted will he be for dealing in an intelligent manner with the difficulties—and they will be many—of his future work.

## Learning Elementary Details.

We will assume, then, that a boy who intends to make gardening his profession has had the best education afforded by the elementary schools of the country. The next step in our policy of "drift" is for him to obtain employment in a garden as a garden boy, where he should be initiated into all the elementary details of the usual routine work of a garden. The size of the garden will matter little, providing that it is of a more or less representative character, and has at its head a thoroughly practical man, who is also prepared to take an interest in moulding the boy's character, and generally interesting him in his work.

This last is most important, as it has to be remembered that since the old system of indentured apprenticeship has become almost extinct, no head-gardener in our present system is under any definite obligation to instruct a beginner. Fortunately, however, there are numbers of head-gardeners who consider they have a moral obligation in this respect, and there is not, as a rule, any great difficulty in getting a boy well placed.

Personally, I am a great believer in a boy beginning on the bottom rung of the ladder, and gradually working his way up. It is, however, particularly necessary at this period of his career that he should be properly taught the elementary details of his work, and the correct reasons for their performance, or he will never become a good gardener.

Two years spent in acquiring the sound elementary details of his work will be ample to fit an intelligent and capable boy for the more important duties of a journeyman, and he must now realise that the future success or failure of his life as a gardener will largely depend upon himself, in the use he makes of the many and varied opportunities of acquiring knowledge which occur in his daily work. Neither must he forget to use every endeavour to further improve his general knowledge of those subjects which have a direct bearing upon his profession, since it is at this period of his life that his mind is most receptive to new facts and ideas, and his memory more retentive.

## Influence of Environment.

At this stage of a young gardener's life one fears that the environment in which he finds himself often plays a very large part in making or marring his future. Should circumstances be fortunate, and he falls in with studious companions, he will most likely endeavour to emulate their example. Conversely, if his fellow-workmen have no interest in striving to garner educational knowledge after their working hours, he will most probably follow the line of least resistance and do likewise. One feels that this is particularly true in the case of those gardeners who, from the very nature of their calling, are often isolated in country places far removed from the educational influences to be found in the neighbourhood of large towns and cities. Most of us realise the difficulties of getting classes together for these men, but one feels that the county educational authorities might very well step in here and supply the great need of assistance which these men require in the way of providing lectures upon subjects connected with their work. The young journeyman, however, should never forget that the cardinal point in his early training must be centred upon making himself proficient in the actual manual part of his work. Other subjects should be studied more in the way of "intellectual amusements," rather than as things which must be acquired at this stage. Deeper pursuance of these subjects should be reserved for the later stages of his training, when he will be more likely to have a clearer idea of what he ultimately desires to attain.

It has been well said that "Everyone has, or should have, two educations: namely, the one he receives from others, and the other he acquires for himself, and the latter is, as a rule, by far the most valuable to him." The man who does not earnestly strive to educate himself can never hope to be a success in his profession, neither can he hope to get the full enjoyment out of his life.

Let me, however, make it clear that I do not desire my young journeyman to always have his "nose on the grindstone." He should make time for the healthy physical recreations of life, such as cricket, cycling, etc., as I am a firm believer that a healthy body makes a healthy, active mind; and that taken in moderation, recreations are essentially necessary for the full development of both mind and body.

## Practice and Science.

When discussing the education of a gardener one is often met with the remark that there are many excellent gardeners who know nothing whatever of the sciences; and whilst this may be true to a certain extent, the very fact of their being successful cultivators of plants shows that they unconsciously follow their practice upon scientific principles, although they may not be able to describe their reasons for the performance of any particular practice in a systematized manner; which, after all, *is* science, pure and simple.

I believe it was Huxley who once described science as "organised common-sense," and if we were to keep this definition in mind, one would never hear of people trying to divorce good practice from science, since they are inseparable.

The young gardener should very early acquire the habit of using his powers of observation upon the objects of his daily work; and having observed, he must try and discover for himself the reasons for what he has seen, and then act upon his conclusions.

The success of his work will largely depend upon the use he has made of his powers of observation, since no work is more exacting in this respect than gardening. His watchword must always be, "Keep your eyes open to things which want attention," and never do things in a mechanical manner. I labour this point a little because, having had a fairly wide experience of men, I know only too well how common it is for them to get into a mechanical way of doing work. They will go through a house of plants for watering, and never see *the* plant which needs watering most; or they fail to notice the first sign of distress from insect pests, such as thrips and red spider, until a great deal of damage has been done.

It is, of course, only to be expected that at times no satisfactory solution of an observed phenomenon may be forthcoming; but with accumulated knowledge the right solution may present itself. As bearing upon this, I may be pardoned if I cite a case which happened in my own early gardening days; when I well remember being soundly rated by my chief—who was a man of far more than average erudition—because in a mixed house of plants of which I then had charge a particular plant during a spell of very bright sunny weather lost its leaves. I was told that I had neglected to give this particular plant sufficient water; but I on my part was equally certain that I had not been remiss in this respect. There the matter ended; until several years afterwards, when reading about the vegetation of the Catinga region of Brazil, I found that many of the plants of this region during spells of hot, dry weather, cast off their leaves, so as to prevent transpiration, and thus enable them to live through these dry periods. Upon looking it up I found to my surprise that the particular plant to which I have referred was a native of this region, and was doing under cultivation exactly what it would have done in nature. This is just one case in which a knowledge of botany might help the gardener to solve problems which occur in his daily work; but I wish to make it clear that I do not think a deep knowledge of any of the sciences is at all necessary to anyone in the early stages of their gardening career, proficiency in the performance of the manual work being far more desirable. They should, however, be sufficiently versed in the subject of botany to be able to describe in clear, concise language, the various parts of a plant, and understand its structure well enough to know what the particular functions are of each part, then the work of nutrition, food elaboration, and reproduction will add an increased interest to their work.

### Advantage of Moving About.

The young journeyman who has been properly advised will be alive to the advantages to be obtained from moving about to gardens in different parts of the country, where he will see the various methods practised under varying conditions of soil, climate, etc., and he ought not to stay much longer than two years in any one place. This moving about to different localities and gardens will tend to broaden his ideas, and teach him many lessons which it would be impossible to learn in any one garden, and to this end he should make it his business to get into as varied gardens as possible.

It is, perhaps, hardly necessary to mention any particular gardens in this respect, as in this country there are so many which are noted for their special features, and it can well be left to the choice, or the varying circumstances of the individual.

I may, however, call attention to the great value to be obtained from spending part of one's training in a good market or general nursery, where the methods of work are usually conducted with the greatest economy and profit, factors which are indispensable in the successful management of any garden.

If the journeyman could spend part of his training in a good Continental nursery or public garden he will be still further equipped, as here, besides his purely horticultural training, he will also have the advantage of acquiring a knowledge of the language of the country, which would probably be of much value to him in after years.

I venture to suggest that this is a subject this Conference might well consider, and see if some sort of organised exchange system between young gardeners of this country and Continental countries could not be instituted, on somewhat similar lines to those which at present exist for elementary school teachers between this country and France.

The journeyman desirous of making the best use of his early training will endeavour to spend two years in our great national botanic garden at Kew; or, failing Kew, either Edinburgh or Glasnevin, in either of which places he will find gardening of the very highest order carried on. It is true that at neither Kew nor Edinburgh are fruit and vegetables grown, but knowledge of these important subjects will have been acquired in the previous training. The great value of these gardens lies in their great wealth of collections of plants, such as are not found elsewhere. Further—and this is equally as important—in the association with men who are anxious to become the best men in their profession: in these associations with men of ambitious inclinations the best is brought out of any young man, and he soon shows by his work, and in the lecture-room, of what sort of stuff he is made.

It is just possible that when a young man sets out upon his career he may have some definite ideas of the class of gardening he wishes to follow; but whether this be private work, service under public bodies in parks, market and nursery work, or the teaching of horticulture, he will find that if he has gone through such a course of training as I have indicated, he will be much better equipped for specialising in any particular branch.

One cannot leave this part of the subject without acknowledging the great value of the horticultural Press in helping forward the educational work of a gardener. The man who wants to keep himself posted in what is going on in the horticultural world cannot afford to ignore the weekly Press, which fills a far more important part in a gardener's training than many people like to admit.

Mutual Improvement Societies, especially in the neighbourhood of some of our large towns, are also doing good work; but with reference to these one feels that if they could work in connection with local educational authorities, and have some definite courses of instruction given through a *competent* teacher, their work would be of much more value. This need not interfere with the "mutual" character of their work, but should be regarded as an amplification of it.

Flower shows also play their part in our educational work; especially is this true of those of the Royal Horticultural Society, and many of the larger provincial societies, several of the latter having special features for which they are noted.

So far we have dealt with our system of education more or less as one who sets out to become a gardener finds it.

### Educational Establishments.

From the mass of information, however, which this Science and Education Committee have collected together, it is evident that there is an enormous amount of teaching of gardening provided by the various educational authorities of the country; but, after carefully considering the whole of it, one is reluctantly forced to the conclusion that very little of it is designed for the man who is making gardening his profession. More especially does this seem to be the case with the higher college courses, which appear to be designed more for schoolmasters, who, it is hoped, will then be able to teach gardening in the schools.

This is certainly not quite as it should be, and what many of us would like to see grow out of this Conference is some definite coordinated system of educational teaching designed for the man who is making gardening his profession. This system should insure that the young gardener would finally be able to pass through a period of training in the higher branches of his profession, so as to be able to compete more successfully with the purely college-trained theory men, who, it has to be admitted, are often preferred for positions before the purely practical men because of their supposed superior scientific equipment.

Organise some system of training so as to make it possible that a thorough blending of the two types of men are the result, and horticulture will stand to gain untold advantages.

The pure scientist often has to lament his non-acquaintance with practice, as was the case with Darwin, who said that every botanist should have spent part of his training as a gardener.

Personally I am more than satisfied that, given the necessary training in research methods, the intelligent young gardener would often be a greater success than are many of the purely class-room men.

If, then, it were possible for the best men in gardening to spend two years or so at institutions which would make it their business to specially cater for them with teaching of the *right* kind, a race of workers would result who would be highly qualified to deal with unsolved problems in horticulture, in a thoroughly intelligent manner, and with great and lasting good to the community.

Very careful selection of the men who would be most likely to profit by this specialised training would be an essential part in the success of this scheme, and I would venture to suggest that one way by which they might be discovered would be by means of the examination for the National Diploma in Horticulture which it is proposed to establish.

Since horticulture is of such vast importance to the people of this country, is it too much to ask that the Government should render financial assistance, in the way of bursaries and scholarships, to help forward this scheme for the better education of gardeners? Surely not! And one ventures to hope that something of a definite nature in this respect may be the outcome of this great gathering.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

MILTONIAS.—In many collections Miltonia vexillaria will have passed its flowering stage, and in others will be in full beauty. After flowering the plants should have a short rest, and nothing should be done that will induce growth, for the longer period of rest this species enjoys the stronger will be the new growths, when the season of activity commences. For the next eight or nine weeks it will only be necessary to keep the compost moist, but on no account must the plant be allowed to suffer from excessive dryness at the roots or in the atmosphere. The pseudo-bulbs must be kept plump and healthy until new growths appear. In strong, healthy plants this will occur before the plants have finished flowering. Whilst at rest, M. vexillaria in dry localities enjoys a cool atmosphere, and is best accommodated in the cool house, and will enjoy as much fresh air as any subject grown therein. In a damp and cold locality I find the cool intermediate house the best place for this orchid when at rest. I do not advise repotting until the new growths are of some considerable length, and are about to push forth new roots; the middle or end of August is quite early enough. Should hot, dry weather prevail, I find Miltonias do not appreciate being disturbed. With the different varieties of this most useful orchid, it is possible to maintain a supply of flowers during the whole of the summer months. After the early-flowering varieties are over, the succession is maintained by M. v. splendens, M. v. Lambeauiana, M. v. Queen Alexandra, M. v. superba, M. v. Leopoldi, and M. v. rubella. These late-flowering varieties should be kept in the intermediate house until they bloom, after which they may also, should everything be favourable, be removed to the cool house.

M. BLEUANA.—The hybrids, M. Bleuana and M. Hyeana, and their many varieties, should always be given a position in the intermediate house. These plants make their growth after the same manner as M. vexillaria, and should be treated much in the same manner, with the only exception of temperature. I find these hybrid Miltonias commence to grow a little in advance of the species mentioned, therefore they may be repotted earlier. Being purely surface-rooting, they are best grown in what is known as half-pots, which must be well drained. For compost, I recommend equal portions of peat, polypodium fibre, osmunda fibre, sphagnum moss, and pure oak leaves, from which all the fine particles have been taken.

MILTONIA PHALÆNOPSIS is another species which may be treated after the same manner, but care must be taken that the plant is not over-potted, as it has not the power to push through a great thickness of compost.

CULTURE.—When potting Miltonias, care must be taken not to pack the compost too tightly, but it should be moderately firm around the whole plant. One of the greatest errors made is an excess of water after repotting; only just sufficient should be given until the roots have freely entered the new compost. Small yellow thrips often attack the foliage of Miltonias, and, when found, the plants should at once be dipped in some safe insecticide, the leaves carefully sponged, and subsequently cleaned in tepid rain water. After an attack of this pest, the plants may be vaporised from time to time with some safe compound. Woodlice do much damage to the young roots of Miltonias, and should be diligently searched for at all times, and destroyed. Baits of apple and potato should be laid for them, and every means taken to entrap them, until they are exterminated.—J. T. Barker, The West Hill Gardens.

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*SPECIMEN PAGE.*

*ENCYCLOPÆDIA OF GARDENING.*

flora (Syn. Achimenes amabilis), white, Aug., 2 ft., Mexico; zebrina, yellow and scarlet, Oct., 2 ft., Mexico.

**Nail-wort.**—See Paronychia.

**Naked-flowered Azalea** (Rhododendron nudiflora).—See Rhododendron.

**Naked-flowered Crocus** (Crocus nudiflorus).—See Crocus.

**Nandina** (Heavenly Bamboo).—Ord. Berberidaceæ. Half-hardy evergreen flowering shrubs.

CULTURE: Soil, peat & loam. Position, sheltered beds or borders in mild districts only. Plant in May or Sept. Propagate by cuttings inserted in sandy peat in a warm greenhouse in spring or summer.

SPECIES CULTIVATED: N. domestica, white, summer, 4 to 5 ft., leaves assume reddish tint in autumn, Japan.

**Nankeen Lily** (Lilium testaceum).—See Lilium.

**Nanodes.**—See Epidendrum.

**Narbonne Flax** (Linum narbonense).—See Linum.

**Narcissus** (Daffodil; Jonquil; Chinese Sacred Lily; Chalice Flower; Lent Lily).—Ord. Amaryllidaceæ. Hardy bulbous perennials.

CLASSIFICATION: Narcissi are divided into three main sections or groups, viz.: I. Magni-Coronati (Trumpet Daffodils). II. Medio-Coronati (Chalice-cupped Daffodils or Star Narcissi). III. Parvi-Coronati (Dolly-cup or Poet's Narcissi). Group I. have large trumpets; II., short trumpets or cups; III., very short cups or trumpets. To first group belong the following types: Yellow, white & yellow (Bicolor), & cream trumpet kinds, Johnstonii, cyclamineus, bulbocodium, Humei, Backhousei, & tridymus; to second group, incomparabilis, Barrii, Leedsii, montanus, Bernardi, Machai Nelsoni, triandrus, juncifolius, & odorus; to third group, Burbidgei, Engleheartii, poeticus, poetaz, tazetta or polyanthus, biflorus, and jonquilla. The name Daffodil usually applies to kinds with long trumpets.

OUTDOOR CULTURE: Soil, ordinary for common kinds; sandy loam for N. bulbocodium & vars.; peaty soil for N. cyclamineus. No manure must be applied. Position, partially or quite shady beds or borders facing N. or N.E. for robust kinds; rockeries sheltered from N. or N.E. winds for choice or dwarf kinds. Plant, June to Oct. Depth for planting, 3 to 4 in. on heavy soils; 6 in. on light soils. Distance apart, 2 to 6 in. Lift N. bulbocodium in July & replant in Oct.; other kinds every three or four years in July. Do not remove foliage until quite dead. Manures: 4 oz. of basic slag or 4 oz. of bonemeal for heavy soils; ½ oz. of sulphate of potash for sandy soils. Apply above quantities per square yard before planting.

CULTURE IN TURF: Make holes 2 to 3 in. wide, 3 in. deep. Place one bulb in each & cover with soil & turf. Plant, July to Oct. Grass must not be cut until leaves turn yellow.

INDOOR CULTURE: Compost, two parts fibrous loam, one part well-decayed manure or leaf-mould, one part sand. Pot, Aug. to Nov., placing 3 large, 6 medium-sized, or 12 small bulbs in a 5-in. pot. Depth for planting: Allow apex to just appear above surface of soil. Position, under cinder ashes outdoors or in frame until growth begins, then remove to greenhouse or window. Water only when growth commences; moderately afterwards. Apply weak stimulants when flowers appear. Temp. for forcing, 55° to 65°. After flowering, plant bulbs, except those of N. bulbocodium & N. cyclamineus, outdoors. Keep soil of the latter dry after flowering.

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## STOVE PLANTS.

HIBISCUS COOPERI VARIEGATA. — This is a stove species well worth growing for its compact habit and beautifully marked leafage; but, as far as my experience goes, the plant is seldom met with in private collections at the present day. To bring out the rich colouration of the foliage, which is its real beauty, the roots should be restricted in rather small pots. Being of a shrubby character the plant is very accommodating, as it may be pruned hard back in winter to whatever shape is desired. The compost most suitable is three parts good friable loam to one part each of peat and leaf-soil, with plenty of sand and mortar-rubble added. Propagation is readily effected by cuttings of the young shoots in spring, and essential points to bear in mind are firm potting, avoidance of over-potting and feeding, and removal of flowers.

GARDENIAS.—Established plants will now be flowering, or approaching that stage, if started into growth as advised. With proper management gardenias will provide a wealth of their fragrant flowers successionally over a long period, and especially will this be ensured if two or three batches are grown. High feeding is necessary directly the flower buds are formed, and all weak lateral growths should be removed in order to concentrate the whole energies of the plant upon the blooms. When these are all cut give every encouragement to the plants to again break by maintaining a stronger heat than was desirable whilst in flower, and syringe freely twice or thrice daily. Provided the plants were given a liberal shift early in spring, no further potting will be necessary, except in the case of young plants being grown on. A top-dressing of good maiden soil, to which should be added a sprinkling of bone-meal, soot, and artificial manure, should be given immediately after flowering. The blooms should be cut before fully expanded, and placed in water in a temperate room; if allowed to open fully on the plant they quickly turn yellow.

FOLIAGE PLANTS FOR TABLE DECORATION.—Well-grown specimens, in small pots, of crotons, dracænas, pandanus, and aralia of the elegantissima type, are of immense value during the dull winter months, when flowering plants suitable for table decoration are scarce. Among the first-named the narrow and twisted leaved varieties are best, such as Chelsoni, Countess, Warreni, Johannis, and others of like habit. Assiduous attention should be given to the propagation of sufficient numbers of these from now onwards. Cleanliness, both of the structure in which the plants are grown, and the plants themselves, with plenty of light and a humid atmosphere, with top-ventilation on fine days, are important factors in success. Where much table decoration is carried out, a goodly number of plants in small 60-sized pots may be grown and utilised, as well as those in larger pots; for, if turned out and neatly massed up they can be artistically disposed in a variety of ways about the table and sideboards. Some growers dibble small pieces of the close-growing Selaginellas, such as denticulata, apeda, etc., on the surface of the soil some time before the plants are needed for use, where they quickly root and form a pleasing set-off to the plants; small pots of these subjects may be grown separately, and then placed on the surface when the plants are taken indoors. —H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY PEACHES AND NECTARINES.—The crop of fruits will have been gathered from these trees, and immediate steps should be taken to cleanse the foliage from insect pests. Where red spider has been troublesome, the trees should be dusted several times with flowers of sulphur when the foliage is wet. Thoroughly syringe the trees regularly with the help of the garden engine for several weeks. It is absolutely necessary to apply the water forcibly to eradicate red spider and thrips, but, at the same time, sufficient care should be exercised, so that no damage is done to the leaves in any way. Give the roots several good soakings with clean water, and allow the ventilators to remain fully open night and day. Examine the trees, and remove all surplus growths that are not required for next season.

MID-SEASON AND LATE TREES.—Continue to tie in the young growths as required, and admit plenty of air, both at night and in the daytime. At this season of the year copious supplies of water should be administered to the roots; syringe the trees thoroughly every morning and afternoon to keep the foliage in a clean, healthy condition; trees that are carrying heavy crops of fruit will require frequent applications of both liquid farmyard and chemical manure. Pull aside the foliage to expose the fruit to the sunlight and air, and maintain a moderately dry atmosphere in the house during the ripening stage.

PINE APPLES.—Where the successional plants have filled their pots with roots, they should be shifted into fruiting pots, exercising great care not to break the ball of soil during this operation. Spray the plants over lightly on bright afternoons, and close the house early. Supply liquid manure twice a week to plants that are swelling their fruits, but as soon as they commence to ripen stimulants of all kinds, as well as syringing, must be discontinued.

CUCUMBERS.—These will require constant attention to regulate and tie in the growths. Remove any leaves that have performed their functions, and show signs of decay. Frequently damp down the houses to maintain a humid atmosphere, and thoroughly syringe the foliage once a day to ward off the attacks of red spider. This pest has been a great source of trouble to many large growers in this locality. Give copious supplies of clean tepid water, and stimulants as required; top-dress the roots with a good rich compost when necessary. It is a good plan to damp down the paths and walls, late in the evening, with weak liquid farmyard manure; this will not only promote a healthy foliage, and the production of finer fruits, but it will also assist to keep red spider in check.

TOMATOES.—The earliest plants have produced heavy crops, and will still be in a good fruitful condition where the cultural details have been carefully followed out. Dryness at the roots should not be allowed at any time. When applying water see that sufficient quantities are given to well soak the whole bulk of soil. Stimulating manure can be used more freely now, and soot water, liquid manure, and chemicals should be used occasionally to assist plants that are bearing heavy crops. Top-dress the plants with a rich loam and a sprinkling of bone-meal when necessary. Later plants will require to be carefully tied in; remove all side laterals as soon as they appear; admit plenty of air night and day, and pollinate the flowers daily.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

ORNAMENTAL VINES.—Many of these are very beautiful and effective climbers, and, owing to their quick growth, they very soon create a decorative appearance. They are especially suitable for planting against arches and pergolas, and when the more vigorous kinds are allowed to ramble freely over forest trees in the wild garden, they are seen in all their natural beauty. Owing to their brilliantly-coloured foliage in autumn they are particularly effective at that season of the year. They succeed in any good garden soil, but copious waterings are necessary during dry weather if they are to make luxuriant growth, while they derive considerable benefit by being damped over with the syringe after a hot, sunny day. Vitis vinifera purpurea, V. Coignetiæ, V. Thunbergi, are vigorous growers; white V. armata, V. flexuosa, V. Wilsoni, and V. hedracea are all lovely kinds.

THE WATER GARDEN.—This feature is now becoming attractive, and some of the nymphæas are expanding their flowers. The foliage is so far very free from aphis, but should this appear the leaves must be sprayed with insecticide in the evening, when the flowers are closed. When the plants are in full bloom they present a really charming sight. Any growing at the water's edge and becoming too large can be carefully reduced at the present time. The masses of spiræas, Japanese and other irises, growing on the banks are commencing to make a gorgeous display. The showery weather has suited these admirably, and also the gunneras, which are fast developing their huge leaves. These are assisted in their growth by having some artificial fertiliser well washed into their roots, and a mulching of decayed manure is of material assistance to them. The flower spikes should be removed as they rob the plants of nutriment very considerably.

THE WILD GARDEN.—This is at all times attractive, more especially at present, while the rich and varied colouring of the trees is fresh and brilliant. Japanese maples add not a little to the beauty of this portion of the grounds. These are very effective in beds, or planted singly. The ground around them should be kept carefully cleaned and free from weeds during the summer. This is also essential treatment for the various colonies and beds of plants in the wild garden. It is necessary to mow the long grass now, and gather it up carefully to avoid injury to any of the shrubs and plants. Everything should be kept as natural and informal in appearance as possible, and groups of plants should always be of irregular outline. The wild garden is a place where self-sown seedlings are to be encouraged. For instance, masses of foxgloves, evening primroses, pæonies, poppies, and other subjects are extremely charming growing in natural masses as they do here.—J. Gardner, Batsford Park Gardens.

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**Double-flowered Lilacs.** — Complaints are sometimes made that these do not flower with the same freedom as the single-flowered kinds, and in the case of small specimens this frequently holds good. When large this same feature cannot be urged against them, as they then bloom profusely. I have had under my observation a veritable tree of the white-flowered variety Madame Lemoine, which has been a mass of flowers and admired by everyone.—K.

**Hippeastrums.**—These are, in most gardens, referred to as amaryllis, it being an exceedingly difficult matter to change a once thoroughly-established name. While differences of opinion may exist on this point, and also as to the best season in which the bulbs should be repotted, there can be no question as to the high ornamental qualities of the different garden forms, and their value for decorative purposes during the spring months. Various species have played a part in the production of the hippeastrums of to-day, but that Veitchian publication, "Hortus Veitchii," gives to Hippeastrum Leopoldi the credit of having exercised the greatest amount of influence on the present-day race. That beautiful and distinct species, H. pardinum, whose flowers have a cream-coloured ground dotted more or less with crimson, though so attractive in itself, has not proved of great value to the hybridist, while the distinct Hippeastrum procerum (known popularly as the blue amaryllis) has not up to the present proved fertile, either as a seed bearer or pollen parent when crossed with the garden forms. Considerable changes have of late years taken place among the hippeastrums, there being a great improvement in the shape of the flower, while the green centre is now almost eliminated. Added to this are the decided breaks in colour which are now to be found among the newer forms, of which the variety Rose du Barri, which was given an Award of Merit by the Royal Horticultural Society on March 19, may be quoted as an example.—K.

# EXHIBITIONS AND MEETINGS.

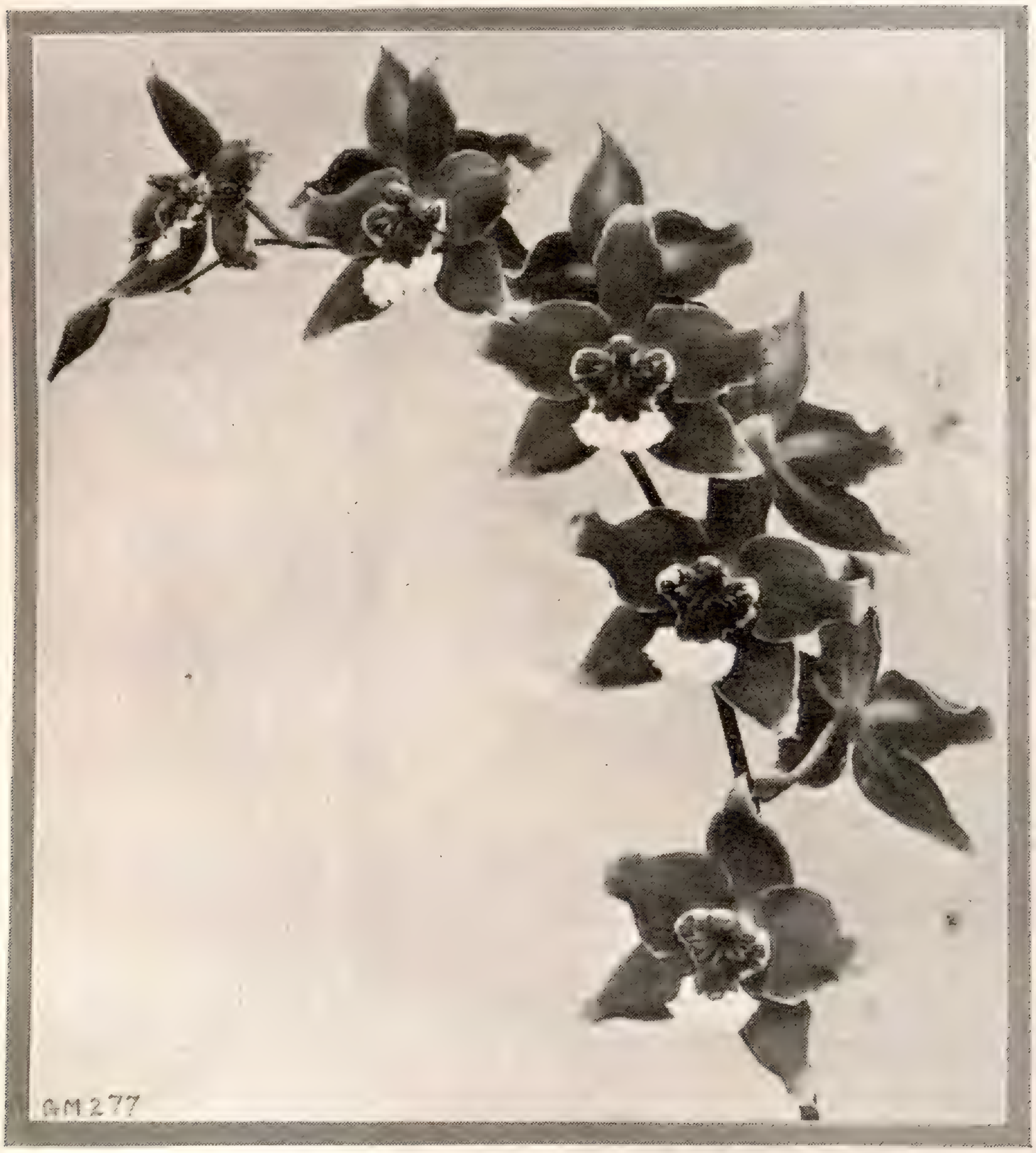
## Royal Horticultural Society.

JUNE 18.

A beautiful exhibition was held at the Royal Horticultural Hall, Westminster, on Tuesday last, and, though there was a good attendance, the crush was not nearly so great as usual. Orchids filled comparatively little space. Delphiniums, pæonies, roses, and sweet peas were very much in evidence, while alpines and greenhouse subjects were well represented.

### FLORAL COMMITTEE.

Right across the end of the hall Messrs. Sutton and Sons, Reading, put up a beautiful exhibit of sweet peas. The background was formed of ten arches, but only the pillars were filled with sweet peas, the arching portion being clothed with smilax and asparagus. Beneath each arch bunches were grouped (in one variety) to form wedge-shaped masses. Below these, again, were vases of flowers set over black velvet. The whole arrangement was excellent, and overcrowding had been carefully avoided. A few of the leading varieties were Sky Blue, Imperial Blue Spencer, Doris Usher, Chas. Foster, Audrey Crier, R. F. Felton, Prince George, Thos. Stevenson, Southcote Blue, Mrs. Cuthbertson, Clara Curtis, and Edrom Beauty.



ODONTIODA COOKSONIÆ FOWLER'S VARIETY.

A splendid new hybrid. Flowers large, crimson-scarlet, with rosy tips to the sepals and petals, and a white apex to the yellow-crested lip. F.C.C., R.H.S., June 18. Messrs. Charlesworth and Co., Haywards Heath.

A large group from Messrs. J. Kelway and Son, Langport, once more demonstrated the beauty and usefulness of pæonies and delphiniums. The deep blue, white-centred Delphinium Huish Beauty, was very fine, and the Dusky Monarch and the lighter Star of Langport were other superb varieties; while the single pæonies Heart's Desire, White Knight, Eileen Kelway, Elf, Queen Alexandra, and Admiral were all exquisitely beautiful. Messrs. Barr and Sons, Covent Garden, filled a long table with a bright exhibit of hardy flowers. Their chief subjects were delphiniums, Anchusa italica Dropmore, and A. Opal, the lovely Dimorphotheca aurantiaca, nemesias, lupins in variety, phloxes and Spanish and English irises in a wide range of colouring.

The delphiniums from Messrs. Blackmore and Langdon, Twerton-on-Avon, Bath, were charming. There were grand spikes of Rev. E. Lascelles, the large velvet-purple Henri Moissan, Robert Cox, King of Delphiniums, Eva, Walter T. Ware, and the long-spiked Novelty. Messrs. W. and J. Brown, Stamford, showed a goodly group of Lilium Sovitzianum, with Gaillardias Lady Rolleston and The King, both very fine. Messrs. William Bull and Sons, Chelsea, sent a wide selection of Spanish irises. Mr. R. Prichard, of West Moors, Wimborne, a new exhibitor, showed a small group of alpines.

A large and handsome group of hardy flowers from Messrs. Wm. Cutbush and Son, Highgate, had a little pool of water-lilies in the foreground, a background of spikes of Eremurus robustus and sheaves of E. Bungei. In front were groups of English irises, Romneya Coulteri, Lilium Humboldti magnificum, Sidalcea candida, and Gladiolus America, a lovely pink form. Messrs. G. Bunyard and Co., Maidstone, presented a bold exhibit of the finer varieties of delphiniums, with bunches of Pentstemon tubiflorus, Centaurea macrocephala, Iris Monnieri (fine), English irises, pæonies, and Oriental poppies.

A little rock garden from Messrs. J. Cheal and Sons, Crawley, was daintily filled with dwarf campanulas, mimuluses, sedums, primulas, violas, Genista shipkaensis, etc., backed by Japanese maples. Messrs. Carter Page, and Co., London Wall, put up cactus and pæony-flowered dahlias, and a collection of fragrant and pretty violas, staged in low pans.

A handsome collection of hardy flowers from Mr. Maurice Prichard, Christchurch, included pæonies and delphiniums, Campanula grandis pallida, Watsonia Ardernei alba, Kniphopia Goldelse, and the showy Lavatera Olbia (A.M.), with large silvery-rose flowers. Messrs. Pulhams, Elsenham, were represented by a small collection of herbaceous and alpine flowers and plants.

Messrs. G. and A. Clark, Dover, filled a corner with a most effective group of hardy flowers. Iris Monnieri, I. Monspur, delphiniums, pyrethrums, Geum Mrs. Bradshaw, alstremerias, and Gilia coronopifolia were all finely represented. Mr. G. Reuthe, Keston, put up a collection of alpine flowers and shrubs, the Edelweiss attracting a good deal of attention.

Messrs. A. A. Walters and Son, Bath, put up a group of delphinium spikes, the most conspicuous variety being the handsome Rev. E. Lascelles. Canterbury bells of enormous size, notably the big cup-and-saucer varieties, ranging from purest white to deepest blue, were shown finely by Mr. W. J. Godfrey, Exmouth.

In the group of hardy flowers staged by Messrs. R. Wallace and Co., Colchester, we noticed such good things as Lilium myriophyllum, Incarvillea Delavayi, Eremurus Warei, Iris Monnieri, Campanula macrantha, and Iris spuria lilacina. Messrs. George Jackman and Son, Woking, showed Delphinium Rev. E. Lascelles in grand style, Gaillardia Meteor, a selection of pinks, Clematis recta, Crambe maritima, etc., in their group of hardy flowers.

A pretty exhibit of sweet peas from Messrs. E. W. King and Co., Coggeshall, included Anglian Lavender, Mrs. C. W. Breadmore, Gladys Burt, Rosabelle, Mrs. W. King, and Constance Oliver.

Mr. Jas. Box, Lindfield, filled a corner with a beautiful lot of delphiniums, pæonies, Spanish irises poppies, Helenium Bigelovi, Canterbury bells, and a fine set of heucheras. Mr. Box also set up a large exhibit of sweet peas, his best varieties being Audrey Crier, Chas. Foster, Mrs. H. Dickson, Mrs. W. J. Unwin, Orange Perfection, and Bertha Massey. Messrs. R. H. Bath, Wisbech, put up a splendid lot of delphiniums, Spanish irises, and herbaceous pæonies; among the latter Mons. Chas. Leveque, carnea elegans, Mandarin, Her Grace, Victor Lemoine, and Marie Lemoine were fine.

Messrs. T. S. Ware, Feltham, showed delphiniums, pæonies, and gaillardias largely, and set up a collection of very dainty little dwarf alpine campanulas. Iris ochroleuca was well represented. Delphinium Lamartine, D. Moerheimi, Viola cornuta purpurea, the pretty Mimulus Bennetti, Clianthus Allioni, and Oriental poppies were shown by Messrs. Baker's, Wolverhampton.

Mr. Vincent Slade, Taunton, showed some excellent zonal pelargoniums and a set of plants of the pretty Polypodium vulgare cambricum. Messrs. W. Wells and Co., Merstham, had a little exhibit of Oriental poppies, delphiniums, etc., and Messrs. Hobbies. Lim., Dereham, sent a good new crimson semi-double climbing rose named Effective (A.M.), a fine form. Charles Blick (A.M.) is a fine new white Malmaison carnation, shown by Mr. C. Blick, Hayes, with lovely bunches of King Arthur. Scarlet Gem. Elizabeth Shiffner. John Ruskin, Dora Blick, and other good border varieties.

Mr. P. Ladds, Swanley, showed the new pink pelargonium Champion, finely flowered. Messrs. Gunn and Sons, Olton, opened their season of phloxes with a bright exhibit of the finest varieties, the white E. van

MESSRS. SUTTON AND SONS' GOLD MEDAL DISPLAY OF SWEET PEAS.
At the Royal Horticultural Society's meeting, June 18.

Lassberg being conspicuously good; Viola cornuta purpurea was also beautifully shown by the Messrs. Gunn. Mr. L. Greening, Richmond, staged a pleasing little alpine and water garden. Graceful ferns in great variety were brought up by Messrs. H. B. May and Sons, Edmonton; Nephrolepis Roosevelti, Adiantum Farleyense gloriosum, and Nephrolepis Marshalli compacta were particularly good.

Mr. Amos Perry, Enfield, banked up delphiniums at either end of a fern-margined lily pond, wherein lovely flowers of Nymphæas Jas. Brydon, Marliacea carnea, M. rubra, and M. alba were very beautiful. Eremurus Warei, Ostrowskia magnifica, Lilium Krameri, and the fine dianthus Mrs. Perry, also formed part of the display.

Messrs H. Cannell and Sons, Swanley, put up an interesting lot of begonias, the drooping pink B. Fleur de Chrysanthème being particularly graceful, and suitable for baskets. Some good fuchsias were also included. A bright bank of Salvia splendens Pride of Zurich contrasted with the bank of the new Marguerite Mrs. Sander, from Mr. L. R. Russell, Richmond.

Messrs. Jas. Veitch and Sons, Chelsea, made a brave show of perpetual and Malmaison carnations growing in pots, and gorgeous cannas, all arranged under fine weeping standard fuchsias. The same firm put up a charming lot of Spanish irises, the varieties Cajanus, Louise, Solfaterre, and Lemon Queen being especially good. They also had a very fine group of such yellow or yellowish eremuri as E. Bungei magnificus, E. Warei, and E. Bungei superbus; they were grand spikes set over Thalictrum japonicum, with an edging of funkias. Philadelphus Vio Lactée (A.M.), and P. Bouquet Blanc (A.M.), the latter with semi-double white flowers closely set on the branches, were also exhibited by the Messrs. Veitch.

Messrs. Frank Cant and Co., Colchester, filled a length of tabling with splendidly developed roses tastefully arranged in stands, vases, and boxes. A particularly wide range of varieties was presented, and among the many we made special note of Mdme. Jules Gravereaux, Mdme. Ravary, Lady White, Una, Prince de Bulgarie, Corallina, Mdme. Melanie Soupert, Juliet, Irish Glory, Lady Waterlow, Lady Hillingdon, Mrs. Alfred Tate, Comtesse du Cayla, Peace, and Irish Elegance.

Messrs. Paul and Son, Cheshunt, were represented by a large bank of handsome herbaceous pæonies, spiræas, irises, and a collection of roses, the latter including Butterfly, Sweet Lavender, Will Scarlett, Eccentric, and other free-flowering varieties. They had also a vase of sprays of Philadelphus Vio Lactée (A.M.).

Messrs. William Paul and Sons, Waltham Cross, presented roses in baskets, and also set up pillar specimens in pots. Juliet, Ophelia, Warrior, Mdme. Segond-Weber, and the new Bianca were varieties especially well shown, and proved highly attractive.

Messrs. B. Cant and Sons, Colchester, filled one length of tabling with beautiful roses. Rambling roses made a background to the stands of Mdme. Melanie Soupert, Mdme. Segond-Weber, Irish Glory, Mdme. Ravary, Mrs. Alfred Tate, Le Progrés, Sunburst, Betty, Lady Ashtown, Peter Blair, and other lovely varieties.

Some excellent blooms of roses from Messrs. Stuart Low and Co., Enfield, represented the varieties Betty, La France, Chateau de Clos Vougeot, Duchess of Wellington, Rayon d'Or, Mildred Grant, Lyon, and Juliet. The Messrs. Low in another group, presented a selection of perpetual carnations and flowering plants of Maggie Nettlefield, Sir E. Wood, Maggie Hodgson, and other Malmaison varieties. Some first-rate perpetual carnations from Mr. H. Burnett, Guernsey, included fine bunches of Marmion, R. F. Felton, Bonfire, Mikado, Orpheus, White Perfection, and Mrs. Tatton.

## ORCHID COMMITTEE.

Messrs. Sander and Sons, St. Albans, displayed a bank of orchids set in ferns. Cattleya gigas Sanderiana was grandly shown, and so were Miltonia vexillaria Lambeauiana, Dendrobium superbiens, Anguloa Ruckeri, Cœlogyne asperata alba, very pretty; Dendrobium Sanderæ, L.-c. Fascinator, white forms of Cattleya Mossiæ, and the beautiful C. Mrs. Myra Peters. Mr. Black, gardener to R. Thwaites, Esq., Streatham, contributed a large selection of odontiodas, mostly small plants, representing a large number of crosses. Conspicuous in this group were nine plants of Cattleya Mossiæ Wagneri.

The Liverpool Orchid Nursery Company, Liverpool, contributed a small group of hybrids, chiefly Lælio-cattleya Cowani and L.-c. Canhamiana. Cypripedium bellatulum was also included. Mr. E. H. Davidson, Borlases, Twyford, put up a very pretty set of orchids, showing Cattleya gigas, C. Mendeli, C. Mossiæ, L.-c. Aphrodite, a fine form of Odontoglossum hibernicum, O. eximium, and O. Airworth. Mr. G. Day, gardener to H. S. Goodson, Esq., Fairlawn, Putney, exhibited Odontoglossum percultum Clarksoni, O. crispum-Wiganianum, and the quaint, striped Cattleya Mossiæ Mrs. Goodson.

Messrs. Charlesworth and Co., Haywards Heath, presented a few interesting orchids, notably Cattleya Mossiæ Wagneri, Dendrobium Sanderæ, D. Dearei, Trichopilia tortilis, Odontoglossum citrosmum roseum, and Cleisostoma crassifolia. Odontioda Cooksoniæ Fowler's var. (F.C.C.), shown by Messrs. Charlesworth and Co., was superb. It had ten splendid flowers two and a-half inches across, rich deep crimson-scarlet, with rosy tips to the sepals and petals, and a white lip, with yellow crest and a large crimson-scarlet area over the centre. We believe this plant has passed into Mr. Gurney Fowler's collection.

Oncidiums and Renanthera Imschootiana formed a pleasing background to a group of orchids staged by Mesrs. Stuart Low and Co., Enfield. Here was a beautiful plant of Lælio-cattleya Haroldeana carrying five handsome rosy-carmine flowers; Odontoglossun grande, Dendrobium formosum giganteum and Miltonias were also displayed. Mr. E. V. Low, Vale Bridge, Haywards Heath, showed the curious Brasso-cattleya Corona, a good plant of Cœlogyne Burfordiense (the hybrid between C. pandurata and C. asperata), and the lovely Cattleya Harrisonæ alba.

Mr. D. Shill, gardener to Baron Bruno

BATH GRAND ROSE SHOW
and
GENERAL SUMMER EXHIBITION,
WEDNESDAY and THURSDAY, JULY 10th and 11th.

Classes for Roses (Nurserymen and Amateurs), Bouquets, Cut Flowers. Sweet Peas, Strawberries, Plants, and Tuberous Begonias.
Entries close Friday, July 5th.
For Prize Schedules, etc., apply,
B. R. F. PEARSON, Secretary.
Office: 17, Argyle Street, Bath.

BIRMINGHAM, THE NEW CENTRE OF HORTICULTURAL ACTIVITY.
Space should be booked without delay at this
GREAT SHOW OF THE MIDLANDS
The Opening Ceremony will be performed by The Right Honorable the Countess of Warwick, on Friday, July 19th. at 12 o'clock mid-day.
Schedules (post free) from Secretary:
William G. Carradine, F.R.H.S., Hamstead Road, Birmingham.

BLETCHLEY AND FENNY STRATFORD HORTICULTURAL SOCIETY.
BLETCHLEY PARK, BUCKS.
Magnificent grounds, adjoining Bletchley Junction, L. and N.W. Rly.

THIRD ANNUAL SHOW,
AUGUST 5th, 1912, BANK HOLIDAY.
The leading Show in the Midlands.
Prizes amounting to £18 offered for Carnations, £16 for Roses, in open classes, Special Prizes for Table Decorations, etc., etc.
Schedules on application to Secretary,
THOS. BEST.
Bletchley. June 17th, 1912.

Cardiff & County Horticultural Society.
24th GRAND ANNUAL SHOW
SOPHIA GARDENS, CARDIFF,
Wednesday & Thursday, July 17 & 18, 1912.
Specially good prizes in every Section, amounting in Money and Plate to nearly £500.
Tents lighted by electricity by Messrs. Fred Price and Co., Ltd.
POPULAR PRICES.
Schedules from the Secretary,
Mr. A. MAURICE BAILEY, 24, Duke Street, Cardiff

HANLEY PARK, STAFFORDSHIRE.
JULY 3rd and 4th, 1912.
SIXTEENTH
GREAT ANNUAL FLORAL FETE.

£500 in Prizes, Silver Cups, Gold and Silver Medals, Silver Challenge Cup, value £10 10s., offered for "Trade Exhibit" (for particulars see page 7 in Schedule).
Valuable Special Prizes offered by the Principal Firms in England.
Schedules post free on application to
WM, POULSON, Secretary.
Town Hall, Hanley.

SALTAIRE, SHIPLEY, AND DISTRICT ROSE SOCIETY.

TENTH ANNUAL EXHIBITION will be held in SALTAIRE PARK, on WEDNESDAY, JULY 17th, 1912. (Postponed from July 9th.)
Entries close July 12th.
Schedule and further particulars from the Hon. Secretary, E. WRIGHT, Rosedene, The Glen, Saltaire, Yorks.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

Schroder, The Dell, Egham, exhibited the glorious Lælio-cattleya Baroness Emma (C. Hardyana × L.-c. eximia) with grand purple lip (F.C.C.); and Miltonia Bleuana Rising Sun (A.M.), white with orange-yellow disk. Cattleya gigas Mandaiana came from Mr. W. A. Manda, St. Albans; and Messrs. Sander and Sons secured an A.M. for Odontonia St. Albans (Miltonia fuscatum × Odontoglossum Pescatorei).

### FRUIT AND VEGETABLE COMMITTEE.

Mr. A. E. Bourse, Hope Vitw, Biggleswade, gained a Silver Medal and Cultural Commendation for three bunches of wonderfully fine asparagus. Messrs. Whitelegg and Page showed the Newberry, a strong rambling grower, and very free fruiting, the berries even larger than those of the loganberry.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Lælio-cattleya Baroness Emma, from Baron Bruno Schroder (gardener, Mr. Shill), The Dell, Egham; to Odontioda Cooksoniæ, Fowler's var., from Messrs. Charlesworth and Co., Haywards Heath.

Award of Merit.—To Odontonia St. Albans from Messrs. Sander and Sons, St. Albans; to Miltonia Bleuana Rising Sun, from Baron Bruno Schroder, The Dell, Egham; to Carnation Mrs. Husan Morris, from S. Morris, Esq., Thetford; to Begonias James Braid, F. W. Walker, and Golden Shower, from Messrs. Blackmore and Langdon, Twerton, Bath; to Delphinium Harry Smeatham, from Messrs. Blackmore and Langdon, Bath; to Delphiniums Drake, Tagalie, and Lovely, from Messrs. J. Kelway and Son, Langport; to Eremurus Lemon Queen, from Messrs. Jas. Veitch and Sons, Chelsea; to Philadelphus Bouquet Blanc, from Messrs. Jas. Veitch and Sons; to Philadelphus Vio Lactée, from Messrs. Jas. Veitch and Sons, and Messrs. Paul and Sons, Cheshunt; to Lavatera Olbia, from Mr. M. Pricsard, Christchurch; to Delphinium Lavender, from G. Ferguson, Esq. (gardener, Mr. F. W. Smith), Weybridge; to border Carnation Cyclops, from Mr. Charles Blick, Hayes; to Malmaison Carnation Charles Blick, from Mr. Charles Blick, Hayes; to roses Pink Pearl and Effective (pillar variety), from Messrs. Hobbies, Lim., Dereham.

After trial at Wisley the following delphiniums have been granted an Award of Merit: To Darius, Cymbeline, Jessica, and Lorenzo, from Messrs. G. Bunyard and Co., Maidstone; to Mrs. James Kelway, Smoke of War, Dr. Lodwidge, and Royal Standard, from Messrs. J. Kelway and Son, Langport; to Mdme. E. Geny, J. S. Sargent, Colonel Crabbe, and Dr. Bergman, from Messrs. J. Forbes, Lim., Hawick; to J. S. Brunton, from Mr. B. Ruys, Dedemsvaart, Holland; and to Lizzie Van Veem, from Mr. J. Box, Lindfield.

### MEDALS.

Gold.—To Messrs. Sutton and Sons, Reading, for sweet peas.

Silver-gilt Flora.—To Messrs. Frank Cant and Co., Colchester, for roses; to Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. Sander and Sons, St. Albans, for orchids; and to Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse plants and hardy flowers.

Silver-gilt Banksian.—To Mr. Jas. Box, Lindfield, for hardy flowers and sweet peas.

Silver Flora.—To Messrs. Blackmore and Langdon, Twerton, Bath, for delphiniums; to Mr. H. Burnett, Guernsey, for carnations; to Messrs. G. and A. Clark, Dover, for hardy flowers; to Messrs. Wm. Cutbush and Son, Highgate, for hardy flowers; to Messrs. Gunn and Son, Olton, for phloxes and violas; to Messrs. G. Jackman and Son, Woking, for hardy flowers; to Messrs. Carter Page and Co., London Wall, for dahlias, etc.; to Messrs. Wm. Paul and Son, Waltham Cross, for roses; to Mr. Amos Perry, Enfield, for hardy flowers; to Messrs. R. Wallace and Co., Colchester, for hardy flowers; to Messrs. Stuart Low and Co., Enfield, for orchids; to Mr. Black, gardener to R. Thwaites, Esq., Streatham, for orchids; to Mr. H. Davidson, Borlases, Twyford, for orchids.

Silver Banksian.—To Messrs. Barr and Sons, Covent Garden, for hardy flowers; to Messrs. R. H. Bath, Lim., Wisbech, for pæonies and delphiniums; to Messrs. G. Bunyard and Co., Maidstone, for hardy flowers; to Messrs. H. Cannell and Sons, Swanley, for begonias, etc.; to Mr. W. J. Godfrey, Exmouth, for Canterbury bells; to Mr. L. Greening, Richmond, for rock garden; to Messrs. J. Kelway and Son, Langport, for pæonies and delphiniums; to Messrs. Stuart Low and Co., Enfield, for carnations; to Messrs. H. B. May and Sons, Edmonton, for ferns, etc.; to Messrs. Paul and Son, Cheshunt, for roses; to Mr. Maurice Prichard, Christchurch, for hardy flowers; to Mr. A. E. Bourse, Biggleswade, for asparagus; to Messrs. Charlesworth and Co., Haywards Heath, for orchids.

Bronze Flora.—To Messrs. Bakers, Wolverhampton, for hardy flowers; to Mr. R. L. Russell, Richmond, for salvias, etc.; to Messrs. T. S. Ware, Lim., Feltham, for hardy flowers.

Bronze Banksian.—To the Misses Hopkins, Shepperton, for hardy flowers; to Messrs. E. W. King and Co., Coggeshall, for sweet peas; to Mr. G. Reuthe, Keston, for hardy flowers; to Messrs. A. A. Walters and Son, Bristol, for delphiniums; and to the Liverpool Orchid Nursery Company, Liverpool, for orchids.

## National Hardy Plant Society.

JUNE 19.

The first show of this latest aspirant to national honours was held in the Royal Horticultural Hall, Vincent Square, Westminster. The competitive section hardly came up to expectations, but the trade exhibits made up for any deficiency in the other classes, for the result was a fine show. The arrangement of the hall might have been better from a spectacular point of view, but this was partly owing to its following so closely on the heels of the fortnightly show, and partly to some of the exhibitors cancelling their entries on the morning of the show.

The premier class in the show was for a collection of hardy flowers to occupy a space fifteen feet long by five wide. Here there were four very fine entries, the first prize being awarded Messrs. Fred. Smith and Co., Suffolk Seed Stores, Woodbridge, who staged a splendid exhibit, lightly arranged. The chief subjects employed were delphiniums, papavers, alstremerias, campanulas, Potentilla Louise Van Houtte, heucheras, and Inula glandulosa. If a fault could be found it was with the long sticks supporting the labels. The second prize falling to Mr. Frank Bouskell, Market Bosworth, Nuneaton, who had a more richly coloured group, the papavers with delphiniums, gaillardias, irises, pæonies, and pinks were nicely blended, and there was a lightness about the group that must have made the exhibit a very close second; while Messrs. Bees, Lim., were third. Messrs. F. Smith and Co. were awarded for their collection the gold medal offered by the GARDENERS' MAGAZINE for the best exhibit in the show.

Class 2 was for a collection of hardy herbaceous perennials grouped on the floor in a space twenty feet by nine. The first prize was well won by Messrs. G. and A. Clark, Lim., Dover, who had a really fine display, arranged in a most artistic fashion. The irises were beautifully grouped, with fine clumps of Betonica grandiflora, Artemesia tinctoria, Pyrethrum Mrs. Alfrey, Pentstemon tubiflorus, and campanulas. The group was well finished off with grasses and turf.

Messrs. Whitelegg and Page, Chislehurst, were second with a rather loose but highly effective group. The chief features were the delphiniums, anchusas, campanulas, and gaillardias, the front being formed with alpine pinks and violas.

For a collection of irises, Mr. F. Bouskell was awarded second prize for a collection that were unnamed, and consequently of little educational value.

For a collection of delphiniums there were only two competitors, Messrs. Blackmore and Langdon being placed first with splendid examples of Harry Smetham, Lord Curzon (very

MESSRS. F. SMITH AND CO.'S COLLECTION OF HARDY HERBACEOUS PLANTS.

Awarded the first prize in its class, and the GARDENERS' MAGAZINE Gold Medal for the best exhibit in the competitive classes at the Hardy Plant Society's Show, June 19.

fine), Queen Wilhelmina, Fred Miles, Perfection, Mrs. W. Shirley, Rev. E. Lascelles, Era, and Ampere. Messrs. R. H. Bath, Lim., were second with a beautiful display, but they lacked the weight of the first prize collection.

There was but one entry for twelve vases of laced pinks, and the second prize was awarded to Mr. R. Morton, Grange Dene, Woodside Park, whose best vases were A. Brown, Lufra, Jean Douglas, Chantilly, Prince Christian, and Fred Hooper.

The class for four vases of hardy flowers appeared most popular, there being five entries. Brodie Henderson, Esq., Little Berkhampstead (gardener, Mr. H. Smith), was placed first with Campanula persicifolia alba, Pæony Summer Day, Spiræa aruncus, and a seedling delphinium. Mr. R. Morton was second with five vases of King of Delphiniums, Eremurus Bungei, and Iris Black Prince; while Mr. F. H. Norman was third. Mr. F. H. Norman was the only exhibitor for a collection of hardy perennials to occupy a space four feet by three, and he was awarded the first prize.

For a collection of violas, Mr. J. Bastock, 75, Springfield Road, Birmingham, won first prize with a fine display, the best varieties being Mother Bastock, Moseley Perfection, George Dunn, A. J. Bastock, Moseley Purple, and Ajax; while Mr. A. M. Sharratt, Shenley, was second, having good specimens of Countess of Eglinton, Adie Elsdon, Kathleen, and Willie Farmer.

### NON-COMPETITIVE EXHIBITS.

Mr. G. W. Miller, Clarkson Nurseries, Wisbech, had an arrangement of pyrethrums, Iceland poppies, pæonies, and Viola cornuta purpurea. Messrs. H. B. May and Sons, Upper Edmonton arranged a splendid group of hardy ferns, comprising some sixty species and varieties. The plants were in splendid condition, and looked beautifully cool and refreshing beside the other groups. Athyriums, lastreas, polystichums, scolopendriums were in variety, with blechnums in fine condition. Messrs. Blackmore and Langdon, Twerton Hill Nursery, Bath, had a splendid exhibit of Delphiniums, which were mostly fresh flowers. Robert Cox was magnificent with spikes two to three feet long. The Rev. E. Lascelles, Elsie, and Checla were also amongst the best.

Messrs. Barr and Sons, Covent Garden, rearranged their fine group, and added some new features, which included a fine collection of gladioli, including Queen Mary and Chas. Smith.

Messrs. Kelway, Langport, also refurnished their group with pæonies and delphiniums, making a bold display. While the magnificent group of delphiniums, pinks, and nymphæas from Mr. Amos Perry, Hardy Plant Farm, Enfield, were greatly admired. Messrs. R. H. Bath, Lim., Wisbech, also added to their fine group of pæonies, delphiniums and Spanish irises, the whole forming an attractive feature. Mr. Vincent Slade, Staplegrove Nursery, Taunton, also staged some nice specimens of Polypodium cambricum.

Mr. James Box, Lindfield, Sussex, had his fine exhibit of hardy flowers still on view, as did also Mr. G. Reuthe, Hardy Plant Nursery, Keston, Kent. Mr. W. J. Godfrey, Exmouth, rearranged his famous group of Campanula calycanthema; while Messrs. G. Bunyard and Co. Lim., Maidstone, presented their fine table of hardy flowers. The delphiniums and irises were beautifully bright and fresh.

Messrs. Pulham, Elsenham, also displayed some nice alpines. Messrs. Paul and Son, Cheshunt, also had their exhibit in fine condition, staging about fifty varieties of pæonies, with a fine collection of heucheras. Messrs. Wm. Cutbush and Son, Highgate, had altered their group considerably, adding some fine English irises, also a number of gladioli.

Mr. R. Prichard, West Moors, Wimborne, also left his fine collection of alpines on view.

The naturally arranged exhibit of Messrs. J. Cheal and Sons, Lim., Crawley, displayed their hardy flowers to perfection. It was a really charming display.

Mr. Maurice Prichard, Christchurch, had the same exhibit as on Tuesday, but it was as fresh and bright as on the previous day, the campanulas and delphiniums being excellent.

Messrs. Carter Page and Co., 52, London Wall, London, E.C., exhibited a large collection of violas, in pans, the most conspicuous being Bute Yellow, Royal Scot, James Pilling, Mrs. J. H. Rowlands, and Mauve Queen.

Messrs. Pipers, Bayswater, W., contributed an artistic group of hardy flowers, arranged with stone. The eremuri were excellent, as were also the liliums, irises, primulas, and alpines at the foot.

Messrs. J. Gibson and Co., Leeming Bar, also staged some fine hardy flowers, in which were noted Gaillardia Meteor, Eremurus robustus, pæonies in variety, liliums, and centaurias.

Messrs. W. and J. Brown, Stamford, also contributed a fine display of hardy flowers, the liliums and gaillardias being especially fine.

The Misses Hopkins, Shepperton-on-Thames, had a tasteful display of hardy flowers.

Mr F. Bouskell, Market Bosworth, exhibited a large collection of verbascums, which were somewhat marred by a lack of greenery. The best were V. Pannosum, A. M. Burnie, V. Chaxi, and Ivanhoe.

### AWARDS.

Gold Medal to Messrs. Blackmore and Langdon, Messrs. Wm. Cutbush and Son, Mr. Maurice Prichard, Messrs. Barr and Son, Mr. Amos Perry, and Messrs. J. Piper and Son.

Silver-gilt Medals to Messrs. W. and J. Brown, Messrs. H. B. May and Sons, Mr. G. Reuthe, Messrs. T. S. Ware, Lim., and Mr. J. Box.

Silver Medals to Messrs. R. H. Bath, Lim., Messrs. G. Gibson and Co., Messrs. G. Bunyard and Co., Messrs. Carter Page and Co., Messrs. Bakers, Messrs. Kelway and Son, Messrs. W. J. Godfrey and Son, Mr. F. Bouskell, and Messrs. J. Cheal and Son.

Messrs. F. Smith and Co. were awarded the Gardeners' Magazine Gold Medal for the best exhibit in the show

F.C.C. to Wahlenbergia gentianoides, from Mr. R. Prichard, Lithospermum Froebelli, from the same exhibitor; to Delphinium Dusky Monarch, from Messrs. J. Kelway and Son; to Gladiolus Queen Mary; to Delphinium Lavender, from Mr. G. Ferguson; to Lavatera Olbia, from Mr. M. Prichard; to Rodgersia tabularis, from Mr. Amos Perry.

## National Gladioli Society.

This society held its first summer show of early flowering gladioli in the Royal Horticultural Hall, Vincent Square, Westminster, in conjunction with the usual fortnightly meeting. Although it was not a great effort, it will suffice to draw attention to this beautiful section of the gladioli. For twelve varieties, six blooms each, Messrs. E. H. Wheadon and Sons, Guernsey, won the premier award with beautiful vases of Sarnia's Glory, Dawn, Orient (a very beautiful vase), Peach Blossom, Dauntless, Beauty, The Queen, and Dictator. Mr. C. Blamfield, Guernsey, was second. For six varieties, Mr. F. Lilley, Guernsey, led off with some fine spikes, King Edward VII., Dewdrop, Princess Victoria, Pink Perfection, Salmon King, and Queen Alexandra. For a small group, three feet by six feet, Mr. Lilley was again successful, staging fine vases of Princess Victoria, King Edward, Queen Alexandra, King of Spain, and Dewdrop.

Mr. K. Velthuys, Hillegom, had a nice representative collection in which were noted the distinct Baron Jules Hulot, Augusta, America, etc. Mr. F. Lilley also contributed a gay group, though he had rather an unfortunate position for staging.

## East Anglian Horticultural Club.

At the June meeting of this club Mr. Hy. Goude, the Norfolk County Council Lecturer, gave a discourse upon "Pests" (Insect and Fungoid) that he has met with in the course of his work as horticultural instructor in the large county of Norfolk. As there are on the western side large tracts of land which each year are devoted to potato culture, it was only to be expected that they came first for comment. The leaf-curl disease is generally in error attached to "the disease" of which everyone dreads. Both the American and the old form of mildew are often met, and are proving disastrous to gooseberry growers. The mite has entirely prevented growers in some of the districts growing black currants, whilst in others the strawberry beetle has carried on its ravages to an injurious extent. Caterpillars and aphis, apple suckers and scale, appeared more in some places than in others; the bright side of it, however, was that one noted nowadays more active and stringent steps were taken to check and eradicate these enemies, by spraying and clean culture. The matter brought out a very animated general discussion.

There was a capital display of flowers, fruits, and vegetables upon the tables, the thanks of the meeting going to Mr. F. Wilby, gardener to F. A. Bainbridge, Esq., for sweet peas; to Messrs. A. J. and C. Allen, for their group of new roses; and to Mr. Frank Neave, for a display of pansies and columbines. The summer excursion of the club is this year fixed for July 11, to the notable gardens of Westwick House, by kind permission of Colonel B. J. Petre.

⁂ Mr. H. N. Ellison, West Bromwich, was awarded a Silver-gilt Medal for the fine collection of plants he exhibited at the Royal Counties Show, Guildford.

## Yorkshire Floral Fete and Gala.

(Continued from page 464.)

Mr. Barnes secured 20½ points, making a total of 109 points. Second prize fell to Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood Park, Arnold, Notts, who had good dishes of Royal Sovereign strawberries, Lord Napier nectarines, and Black Hamburgh grapes; for this exhibit the judges awarded 95 points. Carnations and gypsophila were used for decoration. Third prize fell to Messrs. C. E. Simpson.

In the class for a collection of ten kinds of fruits there were four entries. Mr. S. Barker, gardener to the Duke of Newcastle, Clumber, Worksop, was a capital first with Black Hamburgh and Foster's Seedling grapes, Early River's cherries, Lady Sudeley apples, Brown Turkey figs, Royal George peaches, Royal Sovereign strawberries, Royal Jubilee melon, Early Transparent Gage plums, and Lord Napier nectarines. Mr. J. Edmonds came second with good strawberries and Dymond peaches; Mr. J. E. Hathaway, gardener to J. Brennand, Esq., Baldersby Park, Thirsk, third.

Mr. Edmonds led for six kinds of fruit, and he had a very nice Queen pineapple in his set; Mr. S. Barker second, and Mr. J. Hathaway third. For four dishes of fruits the prizes fell in due order to Mr. W. N. Hague, gardener to W. D. Cliff, Esq., Meanwood Towers, Leeds; Mr. Edmonds, and Mr. J. Hathaway.

Mr. Edmonds scored for a pair of bunches of Black Hamburgh grapes, with finely-berried and deeply-coloured clusters; Mr. H. E. Bray, gardener to Lady Hawke, Tadcaster, second. Mr. Edmonds also led for a pair of bunches of white grapes with neat examples of Muscat of Alexandria; Mr. Hague second, and Mr. N. F. Barnes third.

### NON-COMPETITIVE.

Messrs. Sutton and Sons, Reading, occupied their usual position, and made up an elaborate exhibit of flowers, fruits, and vegetables, the whole arrangement being good; the firm's specialities in peas, cucumbers, tomatoes, melons, and beans were pleasingly associated with sweet peas, stocks, gloxinias, poppies, delphiniums, and other charming summer flowers. Messrs. J. Kelway and Sons, Langport, exhibited stately and beautiful delphiniums in association with such charming single pæonies as Queen of Roses, Heart's Desire, Scilla, and Purple Cup, the latter rich crimson-purple, and a real beauty. Messrs. Dickson's, Chester, filled a goodly length of tabling with sheaves of pæonies, delphiniums, and irises, fronted with a wide selection of pæonies, poppies, campanulas, liliums, and spiræas

The delphiniums from Messrs. R. H. Bath, Lim., Wisbech, were particularly good, notably the varieties Mrs. K. F. Caron, Rev. E. Lascelles, Hampton, and Duke of Buccleuch; pæonies and Spanish iris were also good. Messrs. Wm. Cutbush and Son, Highgate, showed a capital lot of perpetual carnations, Alma Ward and Mrs. L. Mackinnon being very fine; the new pink named Princess Christian, very free, was splendid, and the new hydrangeas, araucarias, coleus, etc., all added to the effectiveness of a good display.

Messrs. Dobbie and Co. Edinburgh, showed a glorious group of bunches of sweet peas, in which May Campbell, Thos. Stevenson, Inspector, Melba, Decorator, Dobbie's Scarlet, and other of their specialities were conspicuously beautiful. Early dahlias, chrysanthemums, and antirrhinums were also staged. Messrs. Aldersey and Marsden Jones, Tilston, contributed a few sweet peas and hardy flowers. Mr. C. F. Waters, Balcombe, contributed a collection of perpetual carnations. Messrs. Young and Co., Hatherley, Cheltenham, exhibited carnations finely, putting up splendid bunches of good blooms of Duchess of Devonshire, Robert Craig, Mikado, Cecilia, Mrs. Greswolde Williams, Britannia, and White Enchantress. Mr. W. J. Godfrey, Exmouth, sent his new Canterbury bells and poppies. Miss Hemus, Upton-on-Severn, had an exhibit of dainty Iceland poppies and sweet peas.

Mr. Clarence Elliott, Six Hills, Stevenage, put up a most interesting rock garden, planted with colonies of Wahlenbergia saxicola, Nepeta Musseni, Campanula pulla, Oxalis enneaphylla, Orchis maculata, and other pretty plants. Messrs. E. J. Batchelor and Sons, Harrogate, massed fine varieties of useful ferns, and made free use of Nephrolepis Batchelori, a lovely mossy-fronded form of great beauty; N. Schouleri, N. Whitmani, and N. todeaoides were other fine things staged in a goodly group. Messrs. Seagrave and Co., Sheffield, were represented by a fragrant display of violas flanked by ivy-leaved pelargoniums.

Messrs. Hogg and Robertson, Dublin, showed ixias grandly—indeed, they made an unusually fine display of these beautiful flowers, in association with Spanish irises. Messrs. S. Broadhead and Son, Huddersfield, put up a little rock garden, and Mr. J. E. Sadler, Newbury, showed hybrid orchids, liliums, and hardy flowers. Mr. A. F. Dutton, Iver, Bucks, contributed one of his fine exhibits of beautiful carnations, and if any were better than the rest they were Mikado, Enchantress, Mrs. A. F. Dutton, White Lawson, and Winsor. Mr. C. W. Breadmore, Winchester, put up a beautiful lot of sweet peas, and the colouring of his Scarlet Emperor, Marjory Linzie, Stirling Stent, Princess Mary, Dazzler, and Aggie Elder was lovely.

Messrs. Webb and Sons, Wordsley, Stourbridge, displayed their fine gloxinias in front of a bank of sweet peas, liliums, spiræas, etc. In front of all this beauty they arranged first-rate cauliflowers, peas, marrows, potatoes, melons, tomatoes, etc. Messrs. H. B. May and Sons, Edmonton, submitted a large, beautiful, interesting, and educational exhibit of useful ferns. Messrs. Jarman and Co., Chard, sent pelargoniums and their charming varieties of sweet sultans. Mr. Chas. Warner, Abbey Nurseries, Leicester, put up a most interesting exhibit of hardy fuchsias,

Messrs. Bide and Sons, Farnham, contri-

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AND BEST IN
HAND PNEUMATIC SPRAYERS.

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buted a nice set of sweet peas; Mr. W. A. Manda, St. Albans, sent new ferns, etc. Mr. H. N. Ellison, West Bromwich, interested hosts of people with a collection of curious cacti (set up by him for Messrs. F. A. Haage, jun., Erfurt), and choice ferns. Mr. W. J. Unwin, Histon, showed Mrs. W. J. Unwin, Clara Curtis, Nora Unwin, Gladys Burt, and Arthur Unwin, and other sweet peas of his raising. Messrs. G. Massey and Sons, Spalding, sent a lovely lot of herbaceous pæonies. Messrs. A. W. King and Co., Coggeshall, put up an artistic display of sweet peas, arranging their flowers in stands of varying height rising well above the usual bunches of bloom; Mrs. W. King, Anglian Lavender, Anglian Orange, and Anglian Crimson were foremost varieties. Mr. G. W. Millar, Wisbech, again showed his fine new pyrethrum Queen Mary.

Messrs. Charlesworth and Co., Haywards Heath, put up a pretty group of orchids, wherein the leading plants were Odontioda Bradshawiæ, Odontoglossum Aireworth, L.-c. Canhamiana alba, Cattleya Mossiæ Wagneri, and C. M. Reineckiana. Messrs. Mansell and Hatcher, Rawdon, Leeds, had also an attractive exhibit of orchids, and here Cypripedium Curtisi, C. Smithi, Lælio-cattleya Martineti, L.-c. Eudora, and Lælia purpurata were conspicuous. Messrs. Sander and Sons, St. Albans, presented a goodly group of orchids, and they had fine examples of Lælio-cattleya Martineti, Cattleya gigas Sanderiana, L.-c. Fascinator, and Miltonia vexillaria Lambeauiana, with lovely white flowers.

Mr. George Yeld, Burton Lane, York, submitted a small but very beautiful collection of hybrid and cross-bred hemerocallis and irises; among the latter Asia, Purity, Sea Nymph, Nero, and Geraldine were particularly pretty. Mr. Yeld's excellent work is becoming more and more important and useful. Mr. E. J. Hicks, Twyford, displayed roses finely, and his stands of Mdme. Abel Chatenay, Richmond, Mdme. Jules Grolez, and Frau Karl Druschki were first-rate.

Mr. George Prince, Longworth, was a large exhibitor of roses, and put up charming lots of Le Progrés, Lady Hillingdon, the new Rayon d'Or, Lady Pirrie, Juliet, and other bright varieties. Mr. Henry Drew, Longworth, displayed a nice collection of rambling, decorative, and garden roses. Mr. R. Sydenham, Tenby Street, Birmingham, staged a set of sweet peas in rustic ware.

### MEDALS, ETC.

Premier Prize.—The Archbishop of York's prize for the most meritorious exhibit in the show went to Mr. J. Donoghue, gardener to J. Pickersgill, Esq., Weetwood, for his group.

Special Gold Medal.—For best collection of orchids, to Messrs. Sander and Sons, St. Albans. For the best collection of decorative plants and cut flowers, arranged for effect, to Messrs. Wm. Cutbush and Son, Highgate.

Large Gold.—To Messrs. Webb and Sons, Wordsley, Stourbridge; to Messrs. E. W. King and Co., Coggeshall; to Mr. E. J. Hicks, Twyford; to Messrs. Dobbie and Co., Edinburgh; and to Messrs. Sutton and Sons, Reading.

Gold.—To Messrs. Sander and Sons, St. Albans; to Messrs. W. Cutbush and Son, Highgate; and to Messrs. Young and Co., Hatherley, Cheltenham.

Large Silver-Gilt.—To Messrs. Hogg and Robertson, Dublin; Mr. G. Yeld, York; and Messrs. Charlesworth and Co., Haywards Heath.

Silver-Gilt.—To Mr. C. Elliott, Stevenage; to Messrs. R. H. Bath, Wisbech; to Messrs. Mansell and Hatcher, Rawdon, Leeds; to Messrs. J. Kelway and Son, Langport; to Messrs. H. B. May and Sons, Edmonton; to Messrs. W. and J. Brown, Stamford; to Mr. C. F. Waters, Balcombe; and to Mr. C. W. Breadmore, Winchester.

Large Silver.—To Mr. G. Prince, Longworth; and to Messrs. Batchelor and Son, Harrogate.

Silver.—To Messrs. Aldersy and Marsden Jones, Tilston; to Messrs. Seagrave and Co., Sheffield; to Mr. H. Drew, Longworth; to Miss Hemus, Upton-on-Severn; to Messrs. W. J. Godfrey and Son, Exmouth; to Mr. J. E. Sadler, Newbury; to Mr. F. A. Haage, jun., Erfurt; to Mr. W. J. Unwin, Histon, Cambs; to Messrs. Massey and Sons, Spalding; to Mr. C. Warner, Leicester; and to Messrs. Jarman and Co., Chard.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

---

RUST ON FERNS.—C. C. W., Clapham: I should be glad of information, cause, and cure, if any, regarding the rust as on specimens of fern fronds enclosed. Rust of this character appears to be a local trouble here, and some gardeners will not attempt to grow pteris in this district because of the trouble. At present I have a fernery where plants are growing freely in rockwork, and there are no signs of rust on these, but a batch of pteris in another house is badly affected.—We have on several occasions pointed out that the "rust" that appears all too frequently on ferns, is similar to, if not identical with, the Begonia rust. One of the mites, a species of Tarsonymus, is the cause of the trouble, and it is encouraged by a dry atmosphere. Infested plants should be dusted freely and frequently with tobacco dust, and the atmosphere of the house must be kept moist. Another method of dealing with the pest is that of dipping the infested plants in a soft soap and sulphur mixture. Take four ounces of soft soap and knead into it as much flowers of sulphur as it will comfortably hold; add hot water and stir vigorously till the soap and sulphur are dissolved, and then add sufficient tepid soft water to make up a gallon and a-half of solution. Into this dip the plants at intervals of a week; one dipping will kill the mites but not the eggs, hence a second, and probably a third dipping will be necessary. See that the surroundings are clean, or the pest may re-infest the ferns from other plants.

THINNING PEACHES AND NECTARINES.—F. R., Chatham: Kindly tell me what would be a fair crop of peaches and nectarines for trees covering a wall space about ten feet high and twelve feet wide.—Where the conditions are satisfactory, and the trees are in good health, peaches should average one fruit to every square foot of space occupied of the tree, and nectarines about one fruit to every nine-inch square. Thus your peach trees filling a space 10ft. by 12ft. should carry 120 fruits; rather more if the tree is very robust; somewhat fewer if it is not growing freely. A nectarine occupying a similar space might carry 212 fruits, or thereabouts. When there is a good set of fruit the aim should be to so thin them that they are as evenly distributed as possible all over the tree. Some consideration must also be given to the size of the variety; the smallest nectarines may well be left a little closer together on a vigorous and well-fed tree, while the largest peaches should be thinned rather more severely than the medium ones.

ASPARAGUS BEDS.—M. G. E., Pinner: What is the best method of dealing with asparagus beds at this season of the year?—Cutting should cease by the end of the month, and the beds be then carefully weeded and given a dressing of nitrate of soda at the rate of one ounce to the square yard. If the weather is dry, water the nitrate in. A similar dressing a fortnight later will prove beneficial, and if you have liquid farmyard manure at disposal give the beds a good soaking with it between the nitrate dressing, and then once a week for a month after. The aim should be to encourage strong growth, as it is only by so doing that fine crowns are built up for next season's crop. Such encouragement is altogether better than piling wet manure on the beds in the late autumn after the growths have been removed. Put stakes at the corners of the beds and some at intervals along the sides, and attach cords thereto, running the cords across and also round the beds, at about three feet from the ground; this will prevent damage to the growths by wind and heavy rain.

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IPSWICH.

SPECIMENS OF DRACÆNA SANDERIANA.—E. D., St. Neots: Can you tell me how some growers manage to get such useful, tall specimens of Dracæna Sanderiana in 32-sized pots, and sometimes even in 48's.? Do they cut back old plants for the purpose?—The useful examples of Dracæna Sanderiana so often seen where plants are freely used for decorating, are produced by placing three, four, or five young, newly-rooted plants together, the tallest in the centre, and growing these in brisk heat and a moist atmosphere. One stake is used, and the growths are "slung'" to it. When a fair size has been obtained, a hardening-off process is carried out, and the specimens are soon fit to stand rough usage and exposure. We have seen Dracæna Sanderiana used freely out of doors during the summer in sub-tropical gardening.

THE SOURCE OF SAFFRON.—P. B., Newquay: No doubt you know that many Cornish people have a liking for Saffron cake; I believe saffron is the product of a crocus, but am not at all sure how it is produced. A few words of enlightenment will greatly oblige.—Saffron is obtained from Crocus sativus, an autumn-flowering species that was once cultivated extensively around Hinton, in Cambridgeshire, and especially round Saffron Walden, in Essex. At the present time Spain provides most of the saffron in commerce. Saffron is a drug as well as a dye, and is obtained by picking the stigmas and part of the style; these are picked in early morning, made up into a mass two or three inches thick, pressed with a heavy weight, "sweated" in considerable heat, and then dried in a lower temperature. The cake thus produced is commercial saffron. Some idea of the expensiveness of the drug may be gathered from the fact that about 4,300 stigmas are needed to make an ounce of saffron. It is said that one grain of saffron will suffice to give a distinctly yellow tint to ten gallons of water.

SEA HOLLIES.—B. S., Southampton: Having quite fallen in love with Eryngium alpinum, I wish to add other good sea hollies to my collection of hardy perennials, and shall be glad if you will name those that are worthy of cultivation, so that I may make their acquaintance before purchasing. —Besides Eryngium alpinum, good sea hollies include E. maritimum, 1½ft.; E. amethystinum, 1½ft.; E. Oliverianum, 3½ft.; E. Bourgati, 2ft.; E. giganteum, 4ft.; and E. planum, 1ft.

### NAMES OF PLANTS.

A. J. G., Calne.—Thalictrum aquilegifolium.

W. C. B., Doncaster.—Appears to be a form of Mertensia dahurica.

L. P., Grasmere.—1, Oncidium Marshallianum; 2, Cattleya gigas—a capital form.

F. T. R., Rye.—1, Anchusa italica; 2, Isatis glauca; 3, Campanula persicifolia; 4, Thalictrum flavum 5, Polygonum Baldschuanicum; 6, Lathyrus rotundifolius.

N. E. H., Chirk.—1, Lychnis viscaria fl.-pl. 2, Viburnum Lantana; 3, Sonerilla margaritacea; 4, Lælia purpurata; 5, Pyrus Aria; 6, Dianthus alpinus.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. June 9 to June 15. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| June 9—Sunday | 8 30 | 61 | 56 | 66 | 51 |
| ,, 10—Monday | 12 0 | 55 | 52 | 65 | 51 |
| ,, 11—Tuesday | 9 18 | 63 | 55 | 69 | 44 |
| ,, 12—Wednesday | — | 57 | 56 | 62 | 55 |
| ,, 13—Thursday | 12 12 | 61 | 57 | 68 | 47 |
| ,, 14—Friday | 7 36 | 60 | 54 | 68 | 49 |
| ,, 15—Saturday | 8 54 | 60 | 52 | 66 | 50 |
| Means | (total) 58 30 | 59 | 54 | 66 | 49 |

| Date. 1912. June 9 to June 15. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| June 9—Sunday | trace | 58 | 57 | 56 | 42 |
| ,, 10—Monday | 0·1 | 60 | 58 | 56 | 46 |
| ,, 11—Tuesday | 0·2 | 60 | 58 | 56 | 36 |
| ,, 12—Wednesday | 0·11 | 61 | 59 | 56 | 54 |
| ,, 13—Thursday | — | 59 | 58 | 56 | 41 |
| ,, 14—Friday | — | 60 | 58 | 56 | 43 |
| ,, 15—Saturday | 0·54 | 60 | 58 | 56 | 43 |
| Means | (total) 0·68 | 59 | 58 | 56 | 43 |

**Fabiana imbricata.** — Though a member of the order Solanaceæ, this Chilian shrub bears a good deal of resemblance to a heath, the leaves being small and scale-like, while the pure white flowers are tubular in shape. In the South and West of England it is a delightful out-door shrub, but even where it will not stand the winter in the open ground it is well worth culture as a decorative plant for the greenhouse.—T.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Business is quite brisk, and supplies are now liberal and good.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 4 0 | | 7 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Coreopsis | per doz. bun. | 2 0 | | 2 6 |
| Cornflowers | per doz. bun. | 0 9 | | 1 6 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 1 6 | | 2 0 |
| Gardenias | per doz. | 1 6 | | 2 6 |
| Gladiolus Colvillei | per doz. bun. | 4 0 | | 12 0 |
| Gypsophila | per doz. bun. | 3 0 | | 5 0 |
| Iris, Spanish | per doz. bun. | 6 0 | | 8 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 6 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 6 | | 3 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 2 6 |
| Pæonies | per doz. bun. | 6 0 | | 10 0 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Pinks | per doz. bun. | 1 6 | | 2 0 |
| Poppies | per doz. bun. | 1 0 | | 2 0 |
| Pyrethrums | per doz. bun. | 2 0 | | 3 0 |
| Roses | per doz. | 0 9 | | 2 6 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 5 0 |
| Sweet Peas | per doz. bun. | 2 0 | | 5 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

A steady demand continues for strawberries, bananas, and oranges. Other subjects are also in good request.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Australian | per box. | 7 0 | | 13 0 |
| Apricots, French | per box | 0 10 | | 1 0 |
| Bananas | per bun. | 4 0 | | 12 0 |
| Cherries | per ½ sieve | 5 0 | | 7 0 |
| Figs | per doz. | 2 0 | | 6 0 |
| Gooseberries | per ½ bush. | 3 0 | | 4 0 |
| Grapes, English | per lb. | 1 0 | | 8 0 |
| ,, Almeria | per doz. lbs. | 6 0 | | 8 0 |
| ,, Guernsey | per lb. | 1 0 | | 2 0 |
| Lemons | per case | 7 6 | | 22 0 |
| Melons | each | 0 6 | | 2 0 |
| Nectarines | per doz. | 4 0 | | 15 0 |
| Oranges | per case | 8 0 | | 28 0 |
| Peaches, English | per doz. | 3 0 | | 15 0 |
| Pears, Australian | per case | 8 0 | | 15 0 |
| Pineapples | each | 2 6 | | 5 0 |
| Strawberries | per basket | 1 0 | | 2 0 |

### Vegetables.

Supplies are excellent, and cabbages, peas, cauliflowers, and salading sell readily.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| ,, Jerusalem | per ½ bush. | 1 0 | | 2 0 |
| Asparagus | per bun. | 1 0 | | 5 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 2 0 | | 3 0 |
| Cabbage, French | per doz. | 1 0 | | 1 6 |
| ,, Cornish | per doz. | 0 9 | | 1 0 |
| Carrots | per doz. bun. | 4 0 | | 7 0 |
| Cauliflowers | per doz. | 4 0 | | 5 0 |
| Cucumbers | per doz. | 1 6 | | 2 0 |
| Endive | per doz. | 1 0 | | 1 6 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per tally | 2 0 | | 4 0 |
| Marrows | per doz. | 6 0 | | 10 0 |
| Mint | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms | per doz. lb. | 8 0 | | 10 0 |
| Onions | per case | 6 0 | | 10 0 |
| Parsley | per ½ sieve | 1 6 | | 3 0 |
| Peas, French | per pad | 2 0 | | 4 0 |
| ,, English | per ½ bush. | 2 0 | | 4 0 |
| Radishes | per doz. bun. | 0 4 | | 1 0 |
| Rhubarb | per doz. bun. | 1 0 | | 2 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, Canary | per pack. | 10 0 | | 16 0 |
| ,, Guernsey | per lb. | 0 4 | | 0 6 |
| ,, English | per lb. | 0 4 | | 0 7 |
| Turnips | per doz. bun. | 2 0 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

### LONDON POTATO MARKETS.

The demand is now almost entirely for new potatoes.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Jerseys | per cwt. | 10 0 | | 10 6 |
| Cherbourg | per cwt. | 8 0 | | 9 6 |
| Bedfords | per cwt. | 8 6 | | 9 6 |
| Teneriffe | per cwt. | 8 0 | | 9 0 |

## FORTHCOMING ENGAGEMENTS

WEDNESDAY, June 26.—Southampton Rose Show.
Colchester Rose and Summer Show.
Richmond Horticultural Society.
Royal Botanic Society Meeting.
Royal Society of Arts.
THURSDAY, June 27.—Isle of Wight Rose Show.
FRIDAY, June 28.—Canterbury Rose Show.
SATURDAY, June 29.—Windsor Rose Show.
Reigate Rose Show.
Sutton Rose Show.
TUESDAY, July 2.—Holland House Show; three days
Gloucester Rose and Sweet Pea Show.
Baltic Rose and Summer Show.
Epsom Horticultural Society.
WEDNESDAY, July 3.—Newcastle Horticultural Association; three days.
Penarth Rose Society.
Southampton Jubilee Garden Fete.
Doncaster Flower Show in connection with the Royal Agricultural Society's Exhibition.
Weybridge Horticultural Society.
Croydon Horticultural Society.
Cambridge Horticultural Society.
Hanley Floral Fete; two days.
Colchester Summer Show.
Dover Rose Show.
Ealing Horticultural Society.
Farnham Horticultural Society.
Harrow Rose Show.
Warminster Rose Show.
Cowlinge Horticultural Society.

## CATALOGUES RECEIVED.

VILMORIN, ANDRIEUX, AND CO., PARIS.—The plant catalogue from Paris is of encyclopædic character, extending to 112 closely-printed pages. New plants and their descriptions fill eight pages.

W. SANFORD AND CO., LIM., HALL GREEN NURSERIES, BIRMINGHAM.—A neat list of bedding plants, dahlias, carnations, etc.

M. V. SEALE, SEVENOAKS.—Although bedding plants are included in this handy catalogue the major part of the space is devoted to descriptive lists of the various kinds of dahlias.

C. ENGELMANN, SAFFRON WALDEN.—This freely illustrated list of perpetual carnations gives portraits of Mr. Engelmann's novelties and recent introductions are given, with an excellent description of each.

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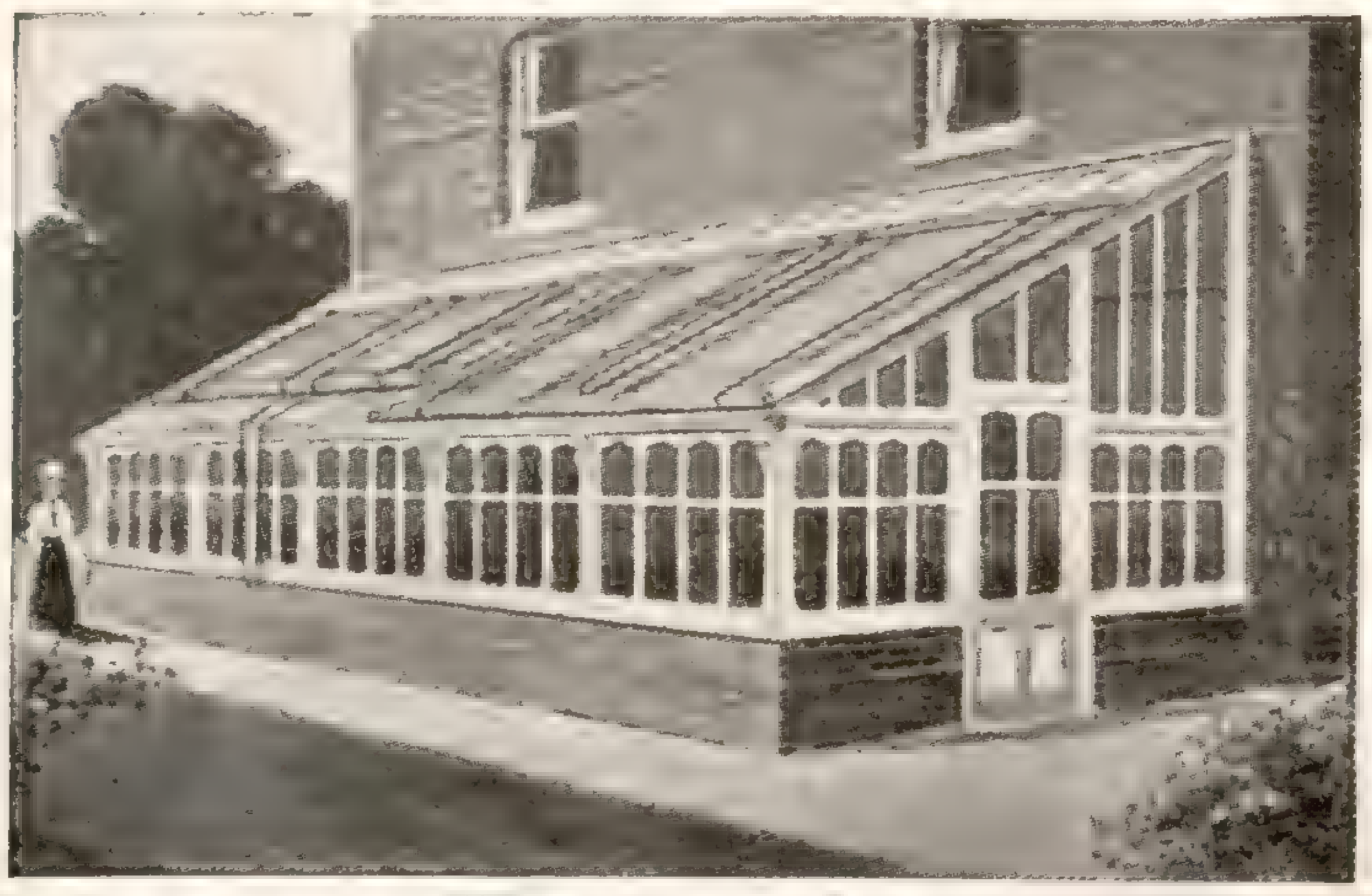

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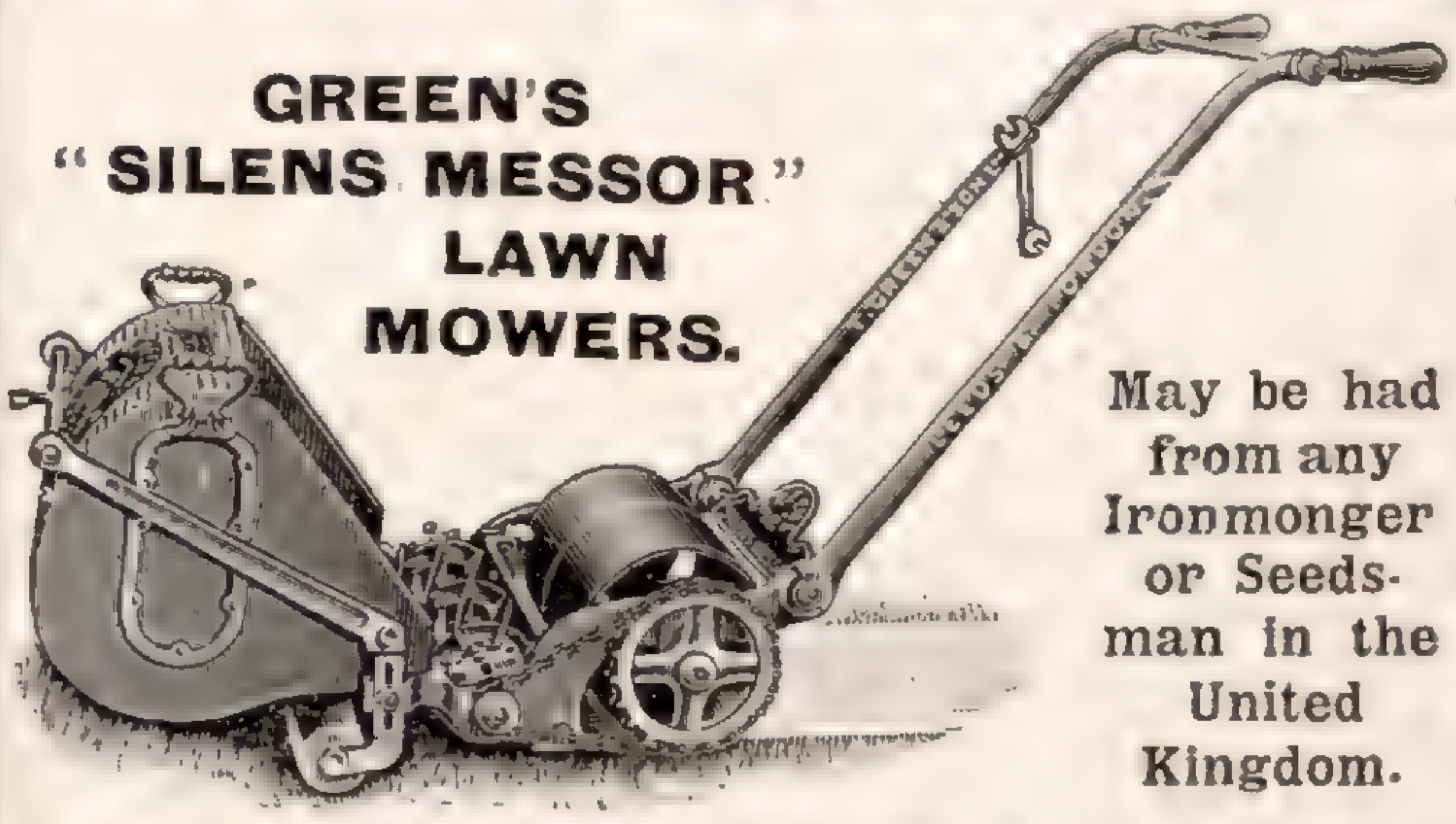

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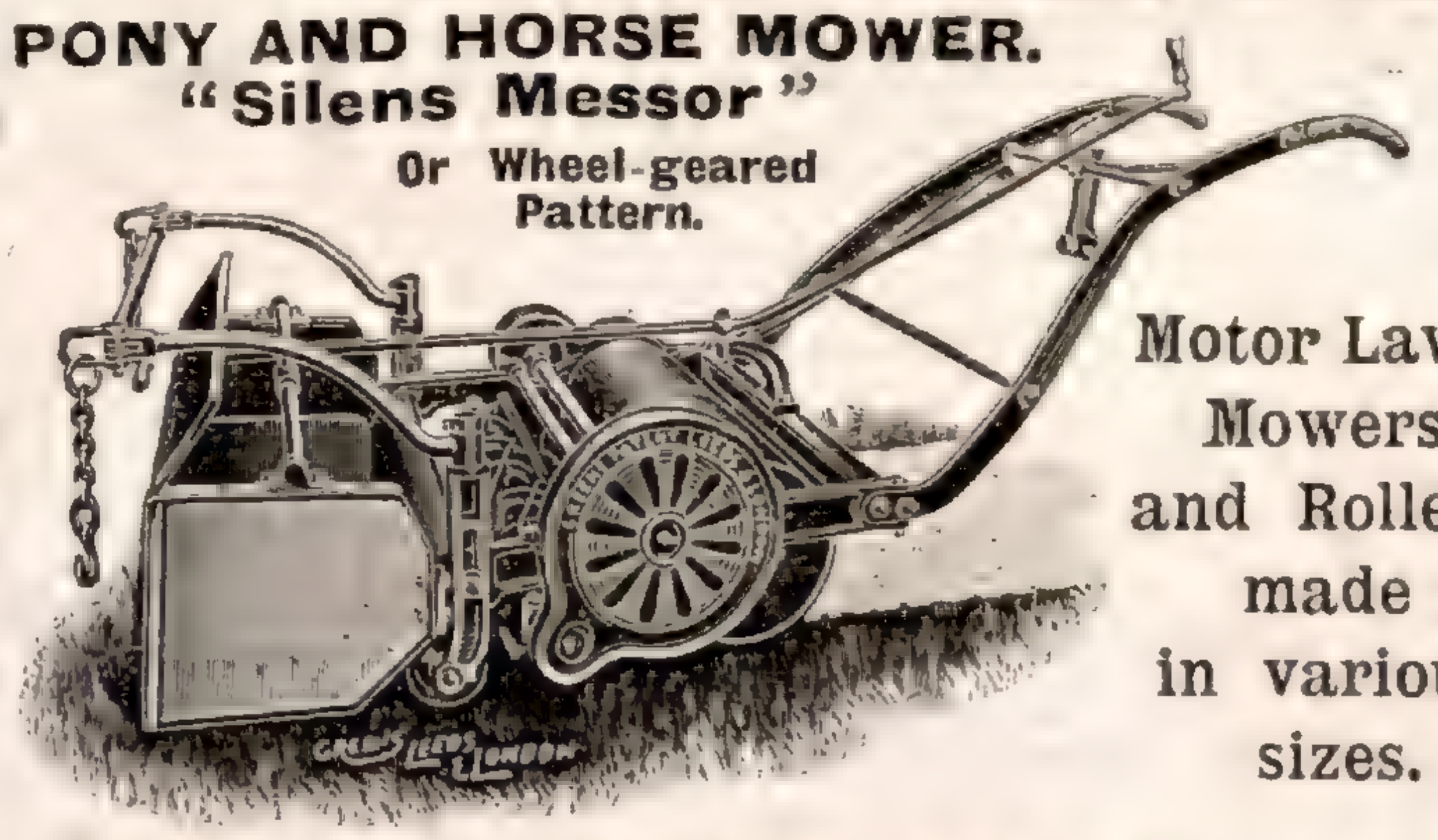

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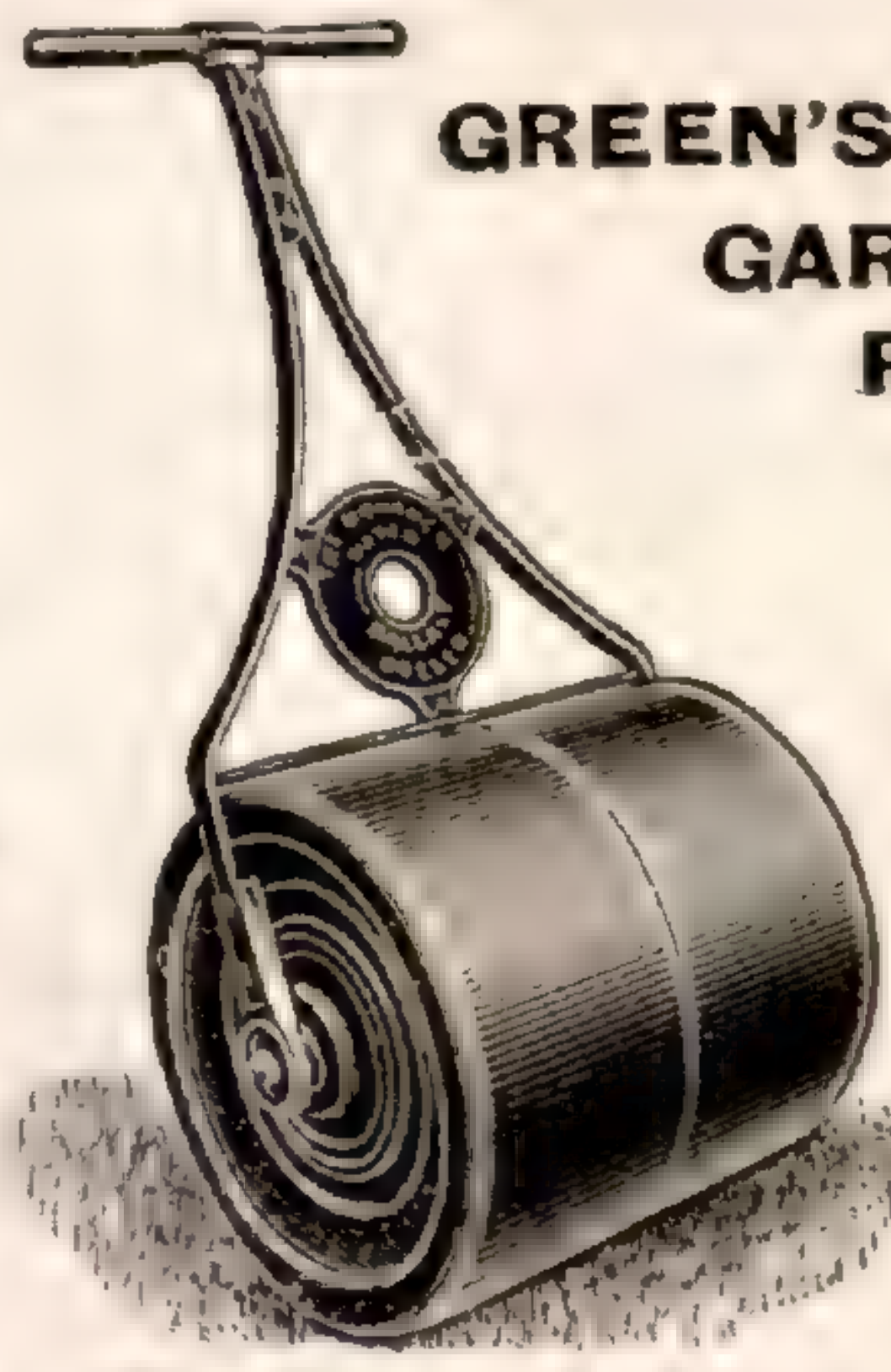

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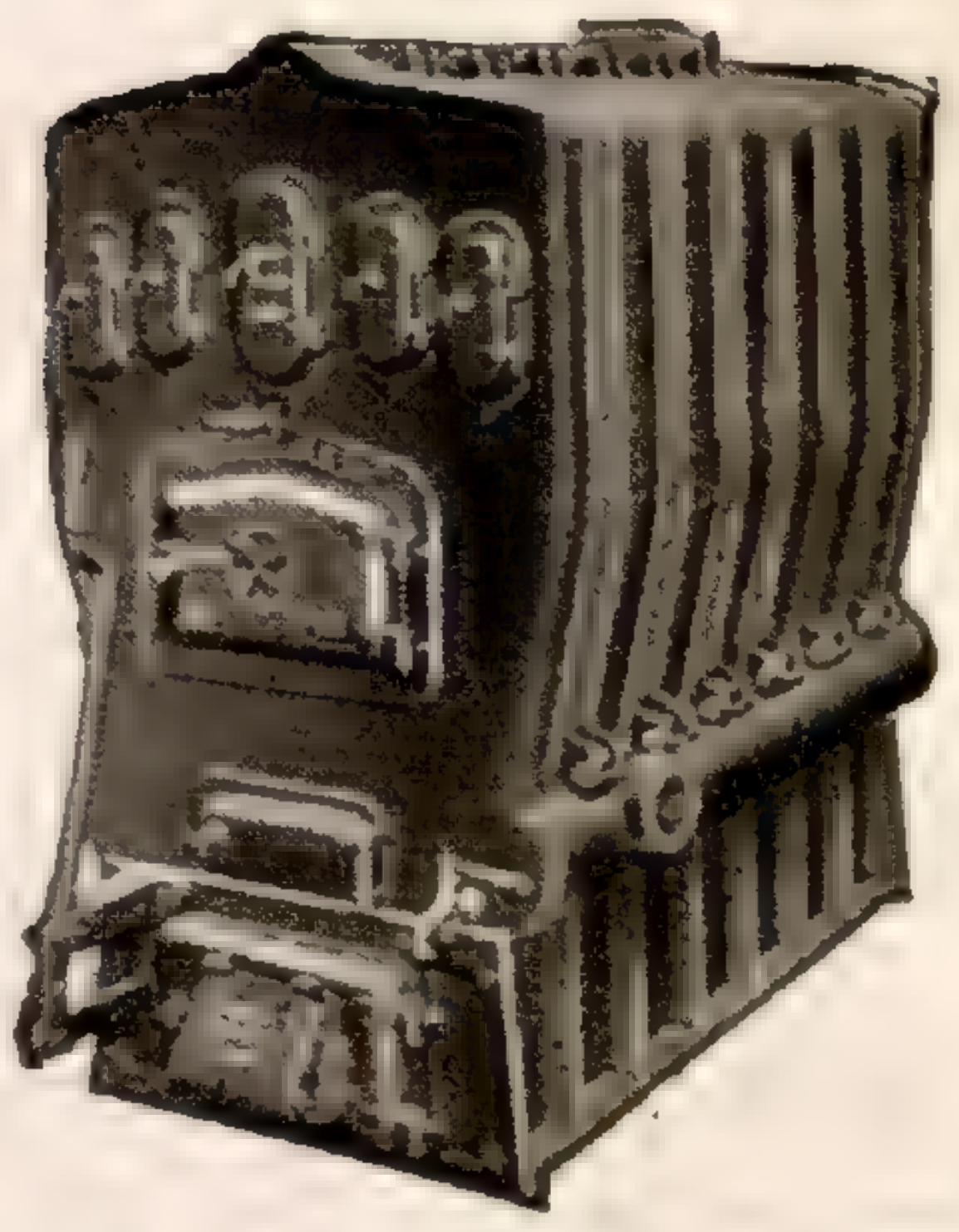

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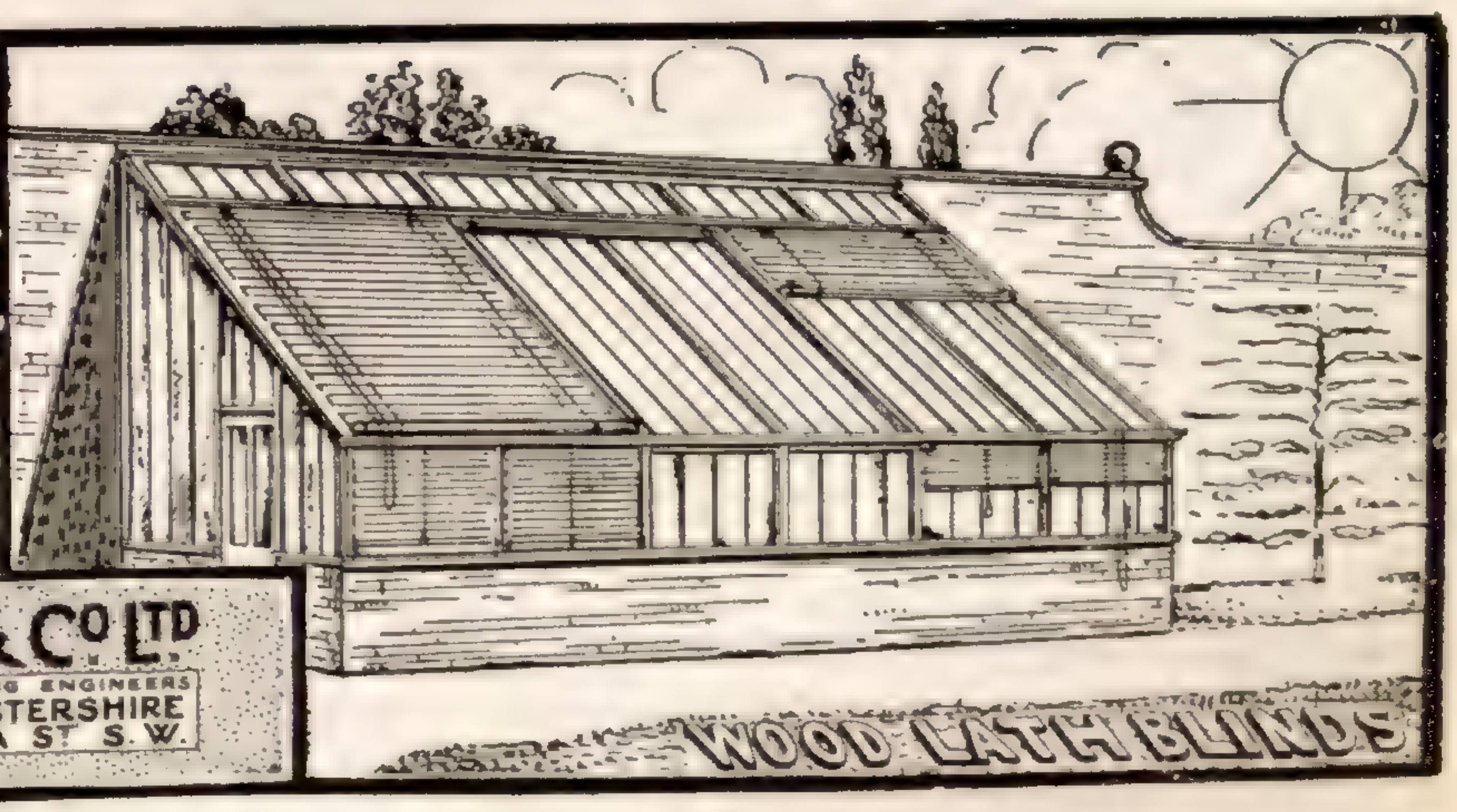

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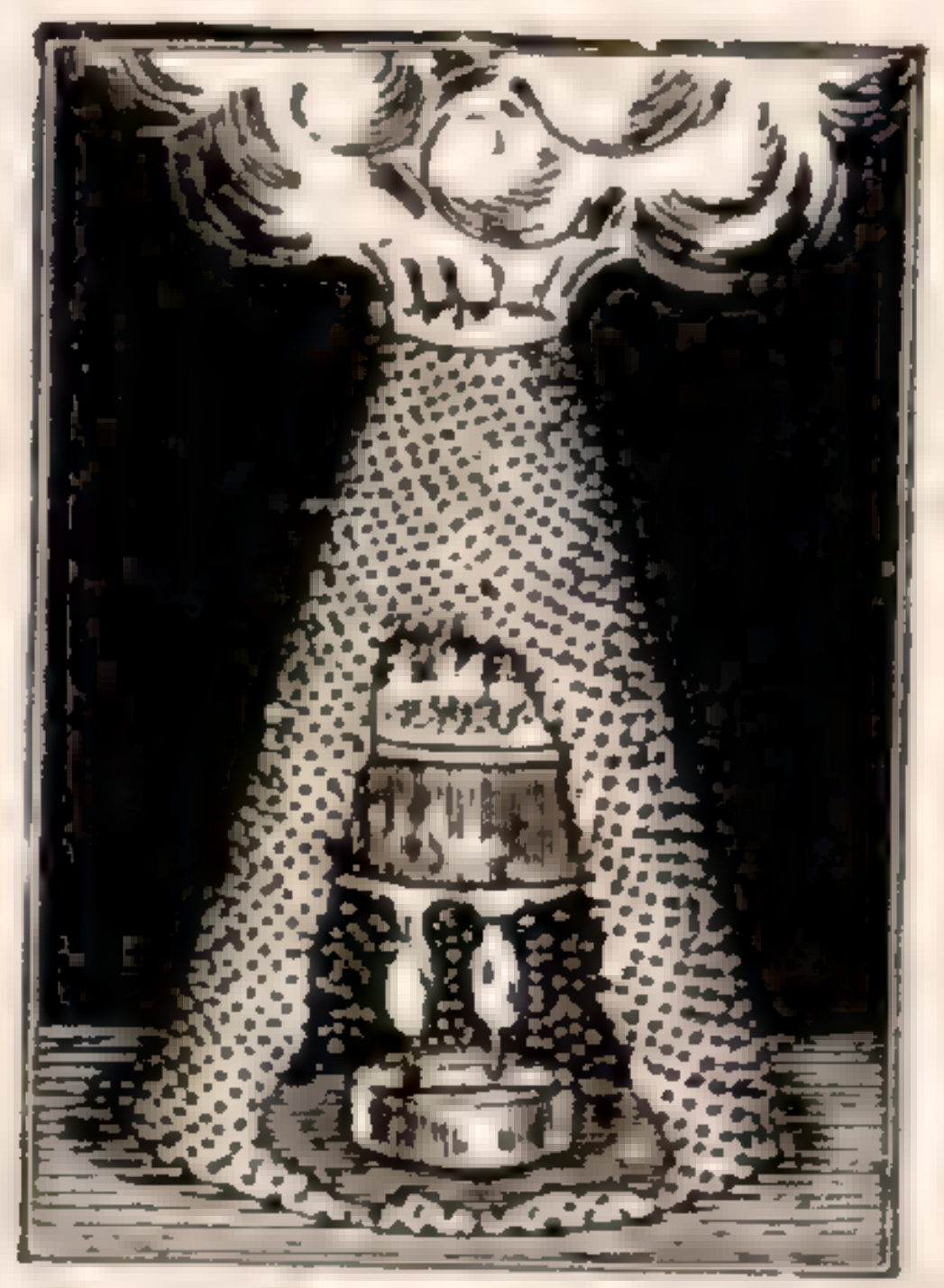

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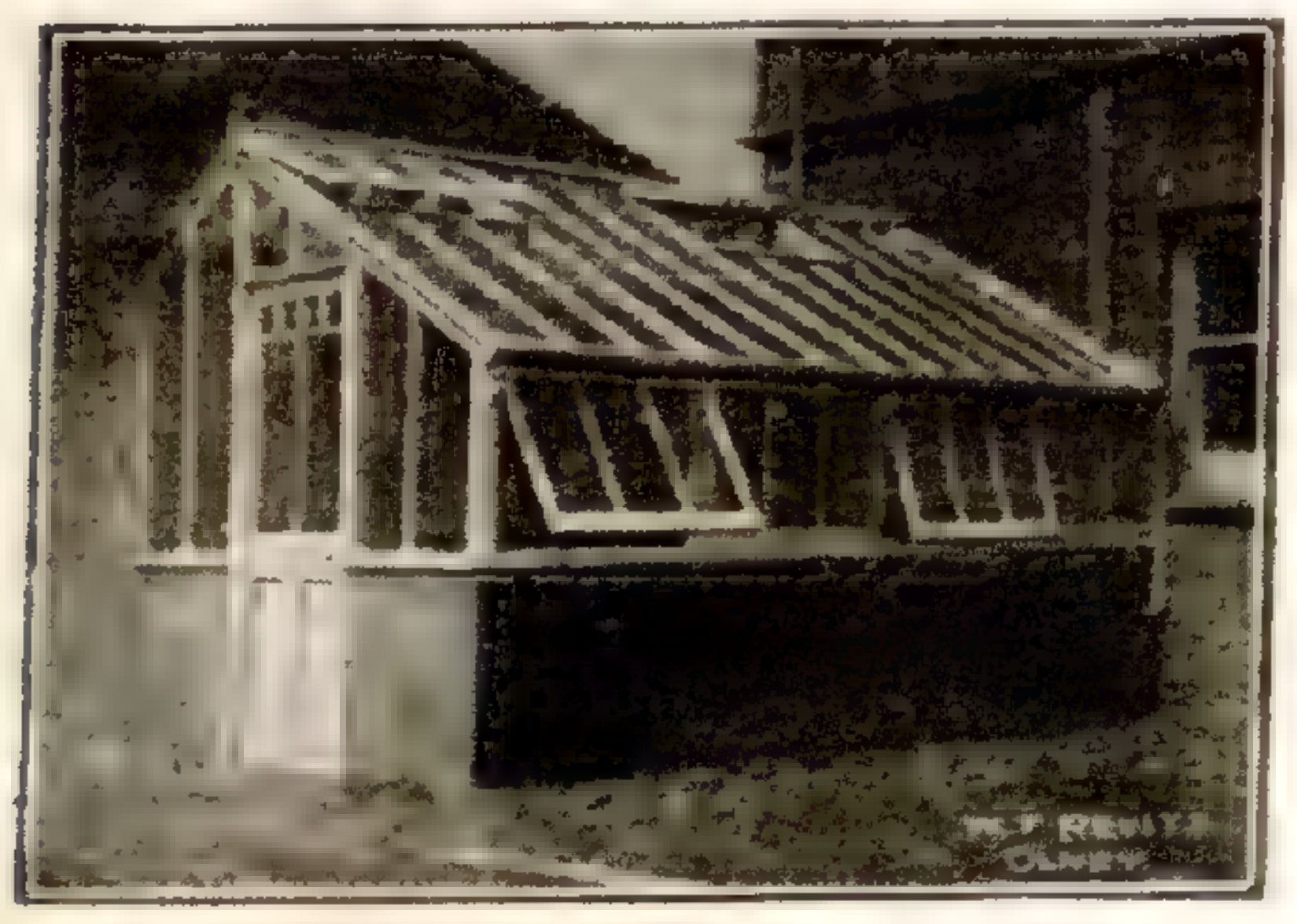

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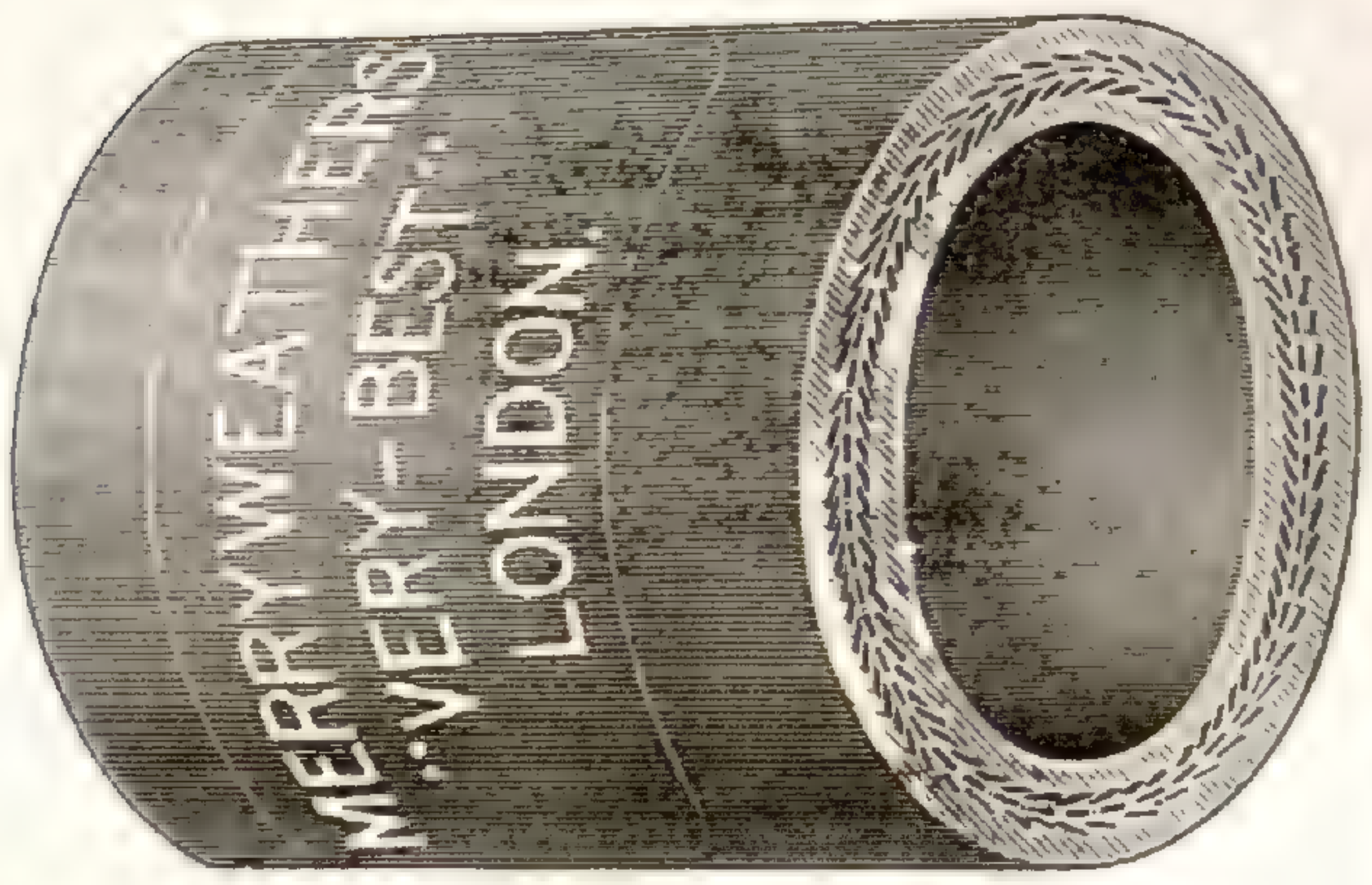

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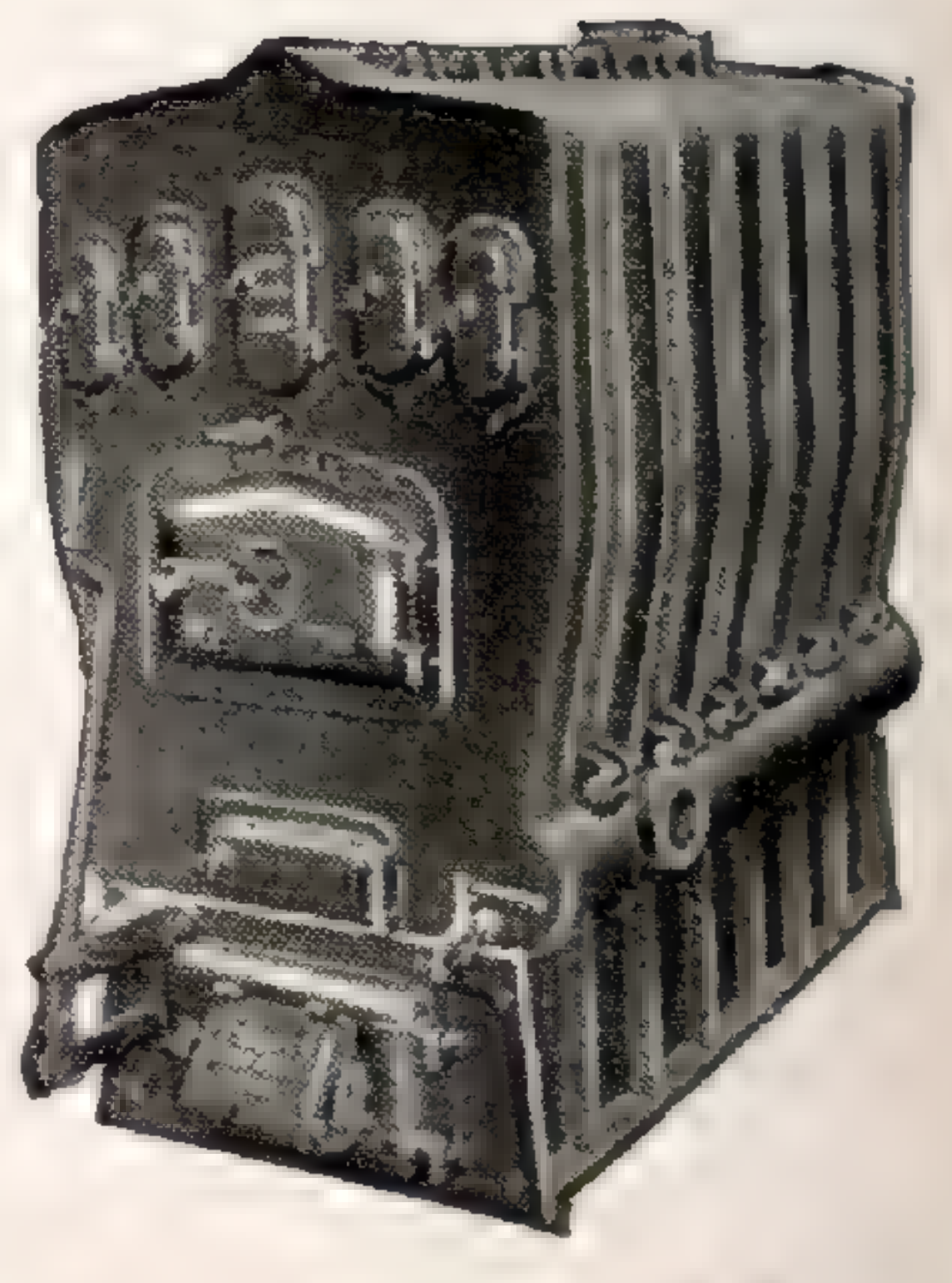

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VOL. LV.—No. 3,061. SATURDAY, JUNE 29, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

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### Thinning.

Chief among the multifarious details to which both the amateur and professional gardeners have to give their attention is the one commonly known as thinning, and, as will be readily conceded by those who have had the advantage of efficient training that upon the manner in which this detail is dealt with, depends in a large measure, the success achieved in garden management. The thinning may be rendered necessary by the prodigality of Nature in her endeavour to clothe the ground or other space with verdure; or by the too lavish use of seeds or plants by the cultivator in the initial steps that have to be taken both in the production of displays of flowers and of useful crops. There is no occasion to dwell at any length upon the causes of such crowding as have an injurious effect upon the development of the plants, but an endeavour should be made to obtain a clear view with regard to them for the purpose of being in a position to deal more effectively with crowding at an early stage of development than is otherwise possible. To obtain the best results from thinning, the work must be done at an early stage, and, as a rule, be proceeded with in a gradual manner. The cultivator has not only to remove sufficient plants to allow the roots and leaves of those remaining room enough to perform their allotted functions, but to guard against the risk of blank spaces due to snails and other marauders. A careful study of the habit of the various classes of plants raised from seeds sown in the open is the keystone to success, in the thinning of large numbers that in many instances suffer much from overcrowding. No difficulties that are insuperable are associated with this study, and those who devote the attention to it that is so well merited, usually make rapid progress. When for example, it is found as the result of observation that an annual when free from overcrowding will fill an area with a diameter of fifteen inches, it is obvious that twelve or more plants cannot attain their full size in a square foot. By some this may be regarded as self-evident, even to the tyro in gardening, but were it so, we should not be constantly seeing annuals springing from the ground so thickly as to suggest a sowing of small salading. We have another proof in the fact that for a long series of years annual flowers were regarded as ephemeral and unsatisfactory, simply because they were invariably so crowded that they could not do more than produce attenuated growths surmounted by a few flowers at the apex. An immense improvement has been effected within recent years in the culture of annual flowers, but much has yet to be accomplished before they will contribute to the attractions of the garden in proportion to their capabilities. Another form of thinning in the flower garden is not less necessary than the rooting up of superfluous annuals, and that is the removal of the weak and redundant growths of Michaelmas daisies, herbaceous phloxes, and other plants of a similar habit. In not a few instances, the whole of the growths are allowed to remain, and produce dense masses of foliage relieved by a few flowers at the top. Within a few weeks the herbaceous phloxes will be yielding their attractively coloured and fragrant flowers, and those who attach but little importance to the thinning of these and similar plants will do well to compare the examples in their gardens with those in the gardens of friends who consider the removal of all but three or four of the strongest growths an essential part of successful cultivation. Such a comparison as is here suggested, provided it is made with an open mind, will do more to bring about a much-needed reform in the hardy flower border than the strongest arguments that can well be urged in print. Again what delightful plants are Helianthuses Miss Mellish and rigidus, when the growths are thinned to a distance of fifteen and twelve inches respectively, while they are quite indifferent when, as so often happens, the whole of the plants are allowed to remain. They are most generally seen in a crowded state in small gardens, but masses so dense that the plants cannot attain their full development may sometimes be met with in big public gardens that are under skilful management. We might refer to the many indifferent crops of vegetables that are annually met with, more particularly in the gardens of the smaller amateurs, because of a failure to recognise the fact that none of the vegetables, in general cultivation can attain to a high state of development when much crowded. It may indeed be stated as a general proposition that a satisfactory root crop is an impossibility unless the plants are allowed a moderate space, this being determined by the dimensions to which they attain when grown with but little, if any, restriction. If it be necessary to pay increased attention to the thinning of the occupants of the flower and kitchen garden it is certainly essential the growth of fruit trees should not be allowed to suffer from over-crowding. In the case of peach and nectarine trees there is little of which complaint, so far as the number of growths allowed to remain is concerned, but it would be an immense advantage were the number of shoots produced by pears and plums considerably

[Photo: Russell and Sons.

PROFESSOR J. B. FARMER, D.Sc., F.R.S.

reduced. The practice which is sometimes adopted of allowing all the shoots to remain and then cut them back when summer pruning is in progress is not one that can be recommended. The best method of procedure is to thin the shoots where crowded at a quite early stage by rubbing off those which are weakly and ill-placed. If this was not done when the surplus shoots could be removed with the finger and thumb, it should be done now with the aid of a sharp knife, the removal being effected by cutting them off close to the base. This reduction will more fully expose the base of the remaining shoots and the short spurs to the beneficial influence of light and air, and thereby assist in fruit production.

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**Professor J. B. Farmer, D.Sc., F.R.S.,** who has for some years past occupied the important position of professor of botany at the Royal College of Science, London, evinced quite early in life a strong taste for botanical pursuits and natural science. He had a distinguished career at Magdalen College, Oxford, and was First Class Final Honour School Natural Science in 1887. He was demonstrator of botany at Oxford University from 1887 to 1892, elected a Fellow of his college in 1889, and was assistant professor of biology at Oxford from 1892 to 1895, when he was appointed to the position he now occupies. Professor Farmer was a member of the Science and Education Committee of the Royal International Horticultural Exhibition, and contributed in no small degree to the success of the exhibition of scientific objects. He is a member of the R.H.S. Scientific Committee, and with a taste for gardening, he appreciates the importance of a close association of practice with science.

**A Minister for Horticulture** has yet to come, but we must be thankful for small mercies, and for Mr. Runciman's assurance that under the Board of Agriculture and Fisheries there will be a distinct Horticultural Branch. In answer to a question put in the House of Commons last week, Mr. Runciman stated that this new horticultural branch would embrace all sections of horticultural industry, and would have as its head Mr. A. G. L. Rogers, who would be assisted by nine experts and an adequate clerical staff.

**Gold Medal Sweet Peas.**—We understand that Mr. C. W. Breadmore, of Winchester, obtained a gold medal for his exhibit of sweet peas at the York Gala, whereas, owing to a clerical error, we credited him with a silver-gilt one.

**The Ontario Fruit Crop.**—According to the official report on the fruit crop that we have just received from the Ontario Department of Agriculture, the severity of the winter told upon some orchards in a very marked manner, while many others were practically unscathed. In the more western counties of the Lake Erie group, and in Lambton, a number of peach trees were more or less frozen in the bud, and many were at first thought to be destroyed; but later examination showed that the damage was not so bad as had been feared, as the deep snow had in most cases prevented root-killing. On the other hand, in what is known as the Niagara district—the leading commercial fruit section of the Province—peaches came through the winter with but little harm, and the frost of May was not heavy enough to injure the fruit buds. Plums and cherries give promise of good yields, and apples are also likely to give a good crop. Complaints are made of injury to various classes of fruit trees from the San José scale, more especially in the Lake Erie counties, and of the caterpillar threatening apples in some of the Lake Ontario counties east of Toronto; but spraying operations have been more active than ever this season. Raspberries, blackberries, and other bush fruits were considerably broken down or frozen back as a result of the deep snow and the severe cold, but, as a rule, they have been merely checked and not killed. Strawberries also suffered, but more from the drought of last summer than from the winter. However, taking fruit prospects generally, the outlook is encouraging, considering the unusual severity of the past season.

**Rainfall at Cardiff.**—The Cardiff Naturalists' Society have issued a report of the meteorological observations made in that district for 1911. From this we learn that the total rainfall for the year was 50.95in., for July 0.39in., and December 12.35in. The highest mean during the past ten years was 67.9in. in 1903, and lowest 39.98in. in 1905. With readings above 80 deg. on seventeen days, and above 90 deg. on two days, the residents of the district had good cause for thankfulness that so large a proportion of the rainfall was registered in December, and that the period of torrid heat was accompanied, as in July, by a light fall of rain, for, while a high temperature and heavy rainfall may have a stimulative effect upon plant life, it is not particularly pleasant to the ordinary individual.

**Cuscuta Gronowi.**—The biology and physiology of this species of dodder, which is parasitic on willows, has been investigated by Dr. K. Spisar, and the report thereon has been published in a recent bulletin issued by the International Academy of Science, Prague. It was found in the course of the investigations that seedlings would wind round organic or inorganic supports of varying thickness, the contact stimulus being so strong that contact with a thread was sufficient to bring about a reaction. During the formation of haustoria, which is not dependent either on light or the want of food, growth ceases, and the circumnutation movements are lost, but reappear after a few days. The tissues in the haustorial zone when the rest of the dodder has been torn off, give rise to adventitious buds, and thus regenerate the parasite, which is not very fastidious about its host, and may be parasitic on itself.

**Horticultural Science and Education.**—At the Conference on Legislation in connection with Plant Diseases, held recently at Chelsea, a resolution was passed asking the Science and Education Committee of the Royal International Horticultural Exhibition to continue its work with the object of furthering international action if possible. The need for combined international action appeared to be the keynote of the conference. In view of the fact that this committee virtually came to an end on the completion of the conference proceedings the Royal Horticultural Society has agreed to appoint a committee to carry on the work suggested above.

**Synthetic Rubber.**—Remembering what a large amount of capital has been expended, and how much labour employed in the production of Para and other forms of rubber, and that planting is still being vigorously conducted in many tropical countries, it is something of a shock to know that Professor W. H. Perkin has discovered a means of making rubber from fusel oil produced from starch. It is said that synthetic rubber can be produced cheaply and abundantly from such bases as cereals, maize, potatoes, etc. Two points of interest have arisen in connection with this discovery; the German chemists have made a similar discovery, but along diff lines, and at a later date than the Bri one; and during the process a wa producing acetone cheaply has been f and this is important because of the p acetone plays in the manufacture of a munition. In future, therefore, our po toes, for instance, may serve for food, or i the chemists' hands become peaceful rubbe or death-dealing ammunition.

**Postponement of Saltaire Rose Show.**—In consequence of th National Rose and National Sweet Pe Societies having fixed the date of thei respective exhibitions for July 9, the Sal taire Rose Society have altered the date o their exhibition from July 9 to Wedn day, July 17

**The National Chrysanthemum Society's Outing** will take place on Monday, July 15. A visit will be paid to the gardens of F. G. Gledstanes, Esq., at Berry Hill, Taplow. The train will leave Paddington at 9.15 a.m., and arrive at Staines at 10.13. From Staines the party will proceed by steam-launch to Maidenhead, lunch at the Dumb Bell Hotel, visit Berry Hill gardens, and return to the hotel for tea. At 5.30 p.m. the party will go by the steam launch to Marlow, returning in time to catch the 8.35 p.m. train from Taplow to Paddington. This trip will include six hours on the most lovely part of the river Thames, and, given fine weather, the outing should be a most enjoyable one. Tickets may be obtained from Mr. R. A. Witty, not later than July 8.

**Gardeners' Visit to Hillingdon Court.**—A party of about thirty members of the Hanwell and Greenford Horticultural Society visited Lord Hillingdon's beautiful gardens at Hillingdon Court, Uxbridge, a few days ago. The visit proved most interesting and instructive under the guidance of Mr. A. R Allan, the head gardener. The blue walk, with its borders of delphiniums and anchusas, and the red walk, with its abundance of roses, attracted special attention, while the choice conifers, flower garden, and fruits indoors and out were all greatly admired.

**Protection of Flowers in Bavaria.**—In a contribution to "Nature" on the protection of plants in South Bavaria, Mr. C. C. Hosseus gives some interesting particulars of what is being done in the district of which the health resort of Berchtesgaden in the Bavarian Alps, with a view to protect a large number of wild flowers and a few trees and shrubs from the vandals. From this communication we learn that the Government has ordered that all wild plants of commerce, as well as rare specimens, are to be protected. Without special permission nobody may remove the following plants: Leontopodium alpinum, Rhododendron hirsutum, R. intermedium, R. ferrugineum, Rhodothamnus chamæcistus, Loiseleuria procumbens, Helleborus niger, Cypripedium calceolus, Primula auricula, Gentiana pannonica, G. purpurea, Nigritella suaveolens, Orchis ustulata, Chamæorchis alpina, Ophrys muscifera, Gentiana acaulis, Lilium martagon, Platanthera bifolia, Scolopendrium vulgare, Cyclamen europæum, Achillea clavennæ, Imperatoria ostruthium, Nymphæa alba, Ilex aquifolium, Taxus baccata, Pinus cembra, etc. When the names of these plants are examined, it is seen that many of them are remarkable for a limestone flora. Tables with coloured flowers show the exact form of specimen under consideration, and the waiting-rooms in railway stations, as well as the foyers in the big hotels, have excellently painted illustrations of the protected plants. This system, however, is not sufficient alone; large mountain areas are also protected, and are called "Pflanzen-Schonbezirk." This applies to nearly all the great mountains which border the Königsee near Berchtesgaden, the pearl of the German lakes. No one has the right to collect here any plant, except a few men of science with special permission of the Government.

**Holland House Show.** — The Royal Horticultural Society's summer show at Holland House, Kensington, for July 2, 3, and 4, promises to be an unusually important function. Last year the summer show was held at Olympia, but the Council have now come to an arrangement which promises to retain Holland Park as a permanent site for the summer show for some years to come. New spacious tents, with a special patent ventilation, are to be erected for the exhibits, and so an improvement will be effected on past crowded and stuffy conditions. High Street, Kensington, is the nearest railway station but Addison Road is also quite near.

**The Rose Harvest in the Balkans.**—The valley of Kezanlik, in Southern Bulgaria, is yielding its annual harvest of rose blooms. For mile after mile the plantations of roses, chiefly Damask varieties, extend, the bushes being about 7ft. apart. About fifteen tons of half-opened flowers go to produce a pound of rose-oil or attar, and this amount of fragrant essence is worth from £14 to £20. Some idea of the extent of the rose harvest will be gathered from the statement that the Kezanlik Valley produces annually about fifteen tons of rose attar.

**The Devon Daffodil Society** has, notwithstanding a decline of £22 15s. 6d. in subscriptions, slightly increased its credit balance as a result of the past year's working. We regret to learn that Captain Parlby is resigning the secretaryship, owing to his anticipated absence from Plymouth during the coming season. Captain Parlby has been an enthusiastic and capable secretary, and Mr. Coryndon Matthews is to be his successor in that office. At the recent annual meeting it was agreed that the society's spring show of 1913 should be held at Barnstaple, in North Devon.

**Soil Fertility.**—In the course of his lecture on "The Fertility of the Soil," before the Royal Institution, Mr. A. D. Hall stated that experiments at Rothamsted had shown that the addition of carbonaceous matter in the form of sugar to a Rothamsted plot poor in nitrogen had greatly increased the yield in barley. It was possible, he went on to show, that a production of over four quarters per acre of wheat could be maintained indefinitely by natural agencies alone, provided that the small annual losses of phosphoric acid and potash were replaced. The prospect of reducing the waste of highly intensive culture was not entirely hopeless. The losses were due to bacteria, which attacked nitrogen compounds and liberated nitrogen, but the researches of Drs. Russell and Hutchinson had shown that by putting the soil through various processes of partial sterilisation, such as heating or treatment with antiseptics like chloroform or toluene, certain organisms which checked the useful bacteria of the soil could be eliminated. Heating the soil to the temperature of boiling water for ten hours would double its productivity, and the process had been found commercially profitable in the case of greenhouse soils. The market growers of cucumbers and tomatoes made up an exceptionally rich soil of virgin loam and stable manure, but in a few years such a soil, while still enormously rich on analysis, became incapable of growing a profitable crop. Partial sterilisation enhanced the fertility of this soil by eliminating the injurious organisms. At present these processes had not been extended to the open field, but progress was being made in that direction, and gave some promise of a method by which ultimately the unseen fauna and flora of the soil would be domesticated, the useful races encouraged, and the noxious repressed, just as the larger flora and fauna had been reduced to the service of man since primitive man first turned from hunting to the cultivation of useful crops.

**Manurial Requirements of Carrots.**—During the year 1911 the Midland Agricultural College, Kingston-on-Soar, carried out some experiments in the manuring of carrots that were of much interest. According to the report, the carrots were less affected by the drought than swedes and turnips, and the yield varied from 10 to 16 tons per acre. Farmyard manure was found the best foundation dressing for land to be cropped with carrots, and the best return was obtained when the animal manure was applied to the previous crop. Supplementary applications of chemical fertilisers usually give a profitable increase—salt, potash, and phosphates being the most effective materials. The advantage of salt is that it mitigates the influences of drought by retaining the moisture in the land, while probably it also aids the liberation of potash from its compounds in the soil. A potash manure should, it is stated, always be included and is necessary when dung is not used in large quantity and phosphates are more effective than a nitrogenous substance. The manurial treatment recommended is 3cwt. of salt worked into land before sowing or planting, 5cwt. superphosphate, and 1¼cwt. sulphate of potash mixed together, and applied at the time of cropping, and 1cwt. sulphate of ammonia as a top dressing when the plants are about 4in. high. When no farmyard manure is used the quantities of artificials should be slightly increased.

**Growth of Douglas Fir.**—The West of Scotland Agricultural College, Glasgow, has published a report on an investigation into the current annual increment in girth of a Douglas fir plantation on the Ben More Estate, Kilmun, during 1911. The trees were planted in 1879, and in order to ascertain the rate of growth they were measured five feet from the ground on May 1, 1911, and on February 17 this year. The 93 trees under observation showed an average girth increment of 0.86in. each, while 40 of the stronger trees gave an average of 1.09in. The details showing the height growth are not considered so trustworthy, but the few trees measured gave an average rate of about 3ft. a year.

**Fugosia hakeæfolia.**—This is a very uncommon member of the mallow family, and as regards the foliage a most distinct one. It forms a rather upright-growing shrub, clothed with long, narrow, fleshy, almost cylindrical-shaped leaves, bearing in this respect a certain amount of resemblance to some of the Hakeas, an Australian genus of proteaceous plants. The flowers of the fugosia are hibiscus-like, being from three to four inches across, and in colour purplish-lilac, with a central cluster of darker-coloured stamens. Though now uncommon, it is quite an old plant in gardens, having been introduced from South Australia by Messrs. Lucombe and Pince, of Exeter, in 1846. Its propagation and culture presents no difficulties; that is, if it is given ordinary greenhouse treatment.

## THE R.H.S. AND THE ROYAL INTERNATIONAL EXHIBITION.

The following correspondence has taken place between Sir Trevor Lawrence, President of the Royal Horticultural Society, and Mr. J. Gurney Fowler, Chairman of the Board of Directors of the International Exhibition:—

Royal Horticultural Society,
Vincent Square, Westminster, S.W.,
June 5, 1912.

Dear Mr. Gurney Fowler,—The Council of this Society, at their meeting yesterday, requested me to convey to you and your colleagues on the direction of the Royal International Horticultural Exhibition their hearty congratulations on the signal success with which the exhibition has been carried out. The Council's own experience makes them fully aware of the long-continued and unremitting labours attending exhibitions on even a much smaller scale; and the success which has crowned your efforts cannot fail to be most gratifying to all concerned, and to reflect great credit on them. It is the universal opinion that a more complete and comprehensive, a better-arranged, and more beautiful and instructive exhibition has never been seen in any country. No wonder, then, that it has received the fullest and most unstinted praise and admiration from their Majesties the King and Queen downwards.

The Council, moreover, are glad to understand that the financial results will probably show a satisfactory surplus, and relieve the guarantors from all liability.—I am, yours very truly,

TREVOR LAWRENCE, President.

J. Gurney Fowler, Esq.

Glebelands, S. Woodford, Essex,
June 7, 1912.

Dear Sir Trevor Lawrence,—Your letter of the 5th inst. has been received by me with the very greatest pleasure, and this pleasure will also, I am sure, be felt by all my colleagues on the board when I communicate its contents to them.

For some two years now we have been, as you know, preparing for this exhibition, and it has caused to many of us much work, trouble, and, above all, anxiety. Now that it is a thing of the past, a great load of responsibility, both financial and otherwise, has been lifted from us, and we are able to return to our ordinary work with the satisfactory feeling that our efforts have met with your Society's appreciation, also with that of their Majesties the King and Queen, and of the general public, and have resulted also, as you say, in a signal success.

This fact is an all-sufficient recompense for our many labours, and I hope most sincerely that the exhibition will result in the advancement of horticulture in all its branches. This has been, and is, my constant endeavour.

It is early yet to talk about the financial results, but, so far as we can see, there is little likelihood of any call upon the guarantors, by whose generous support we were so greatly encouraged and assisted. We look forward to having eventually a considerable sum in hand to distribute to gardening charities or otherwise, as we may be advised.

Thanking you for your letter, believe me to remain, yours most sincerely,

J. GURNEY FOWLER, Chairman.

Sir Trevor Lawrence, Bart.

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**Cytisus elegans.**—For greenhouse decoration this cytisus affords a pleasing variation to Cytisus racemosus—the genista of the market grower. From this last, elegans differs in its looser habit, more silky foliage, and lighter yellow flowers. According to the "Kew Handlist," it is but a variety of Cytisus fragrans, which is regarded as the correct name of Cytisus racemosus of gardens.—W.

# NATIONAL ROSE SOCIETY.

This being the Jubilee year of the Southampton Horticultural Society, the National Rose Society decided to hold an early provincial show in the famous Southern seaport. This exhibition filled the pavilion and two tents on the Royal Pier on June 26. The weather was gloriously fine, and breezy, and the roses were plentiful, splendid in size and colour, and the competition was very keen.

## OPEN CLASSES.

For four dozen blooms, distinct, the premier award in the open class was secured by Messrs. D. Prior and Son, Colchester, with a goodly set, in which a few of the best were Victor Hugo, Bessie Brown, Mdme. Jules Gravereaux, Mamie, Mdme. Constant Soupert, Horace Vernet, Mildred Grant, Florence Pemberton, His Majesty, Dean Hole, White Lady, Caroline Testout, Juliet, Boadicea, Her Majesty, and Lady Helen Vincent. There were seven competitors and second award fell to Messrs. B. R. Cant and Sons, for a bright set that included Souv. de Pierre Notting, Victor Hugo, Horace Vernet, Mabel Drew, W. R. Smith, Mdme. Jules Gravereaux, and Mdme. Hoste; Messrs. Alex. Dickson and Sons came third.

The class for a dozen trebles brought out six competitors, and here Messrs. D. Prior and Son led with His Majesty Mrs. Myles Kennedy, Rosamane Gravereaux, J. B. Clark, Mdme. Jules Gravereaux, Mildred Grant, etc.; Messrs. B. R. Cant and Sons were placed second, and Messrs. A. Dickson and Sons third, the latter showing a fine set rather over-dressed, as it seemed to us.

The Southampton Cup for a dozen tea or noisette roses was secured by Messrs. D. Prior and Son, Colchester, with exquisite examples of Molly Sharman Crawford, White Maman Cochet, Mdme. Vermorel, W. R. Smith, Souv. de Pierre Notting; Mrs. Foley Hobbs, Mdme. Constant Soupert, Mrs. Myles Kennedy, Mdme. Jules Gravereaux, Boadicea, Nita Weldon, and Mrs. E. Mawley; eight entries. Messrs. B. R. Cant and Sons second.

## NURSERYMEN.

Messrs. J. Burnett and Co., Howe House Nurseries, Cambridge, led for twenty-four blooms, distinct, with a clean set of fair-sized flowers; Mr. G. Prince, Longworth, came second; and Messrs. Perkins and Son, Coventry, third. Fifteen entries. The finest set of eighteen tea or noisette roses came from Mr. George Prince, Longworth, who displayed charming flowers of W. R. Smith, Mrs. Foley Hobbs, and Comtesse de Nadaillac; Mr. Henry Drew, Longworth, second; Messrs. J. Burrell and Co., third; eight entries.

There were eight competitors in the class for eight roses, distinct, three blooms of each, and first prize was won by Messrs. J. Burrell and Co., Cambridge, with very clean blooms of Bessie Brown, William Shean, G. C. Waud, Dean Hole, Hugh Dickson, Lady Barham, Mildred Grant, and Mdme. Jules Gravereaux; Mr. George Prince second; and Mr. Henry Drew third. Messrs. D. Prior and Son scored for a dozen new roses with Mrs. Arthur Coxhead, Nita Weldon, Mrs. Foley Hobbs, Margaret, George Arends, Cynthia, etc.; Mr. G. Prince second, and Messrs. A. Dickson and Sons third; nine entries.

Gloire de Chedane Guinoisseau, finely shown, won first prize for twelve blooms of an H.P., for Messrs. D. Prior and Son, Colchester; there were eight entries, and Messrs. S. Bide and Sons, Farnham, came second with Frau Karl Druschki; a similar variety won third place, but the class card was not in position. There were fifteen entries in the class for a dozen blooms of any H.T. rose, and here Messrs. Alex. Dickson and Sons, Newtownards, came to the front with a beautiful set of Mrs. Cornwallis West; Messrs. Perkins and Sons, Coventry, second with Dean Hole; equal third prizes were given, and Mrs. Stewart Clark won one of these for an unknown competitor, and Messrs. B. R. Cant and Sons, Colchester, secured the other with Mildred Grant.

Messrs. Frank Cant and Co., led for a dozen blooms of any tea or noisette rose with delightful flowers of Mrs. Foley Hobbs; Messrs. D. Prior and Son, second, with Mdme. Jules Gravereaux, and The King's Acre Nurseries, Lim., Hereford, third with Mrs. Edward Mawley; ten competitors.

The best representative group of cut roses, filling a space of 60 square feet, was a fine one, well staged by Mr. Elish J. Hicks, Hurst, Twyford, whose columns of Pharisaer, American Pillar, Mdme. Abel Chatenay, Lady Hillingdon, Richmond, and Blush Rambler were especially good; Mr. Henry Drew, Longworth, second. Premier award for a collection of two dozen roses, distinct, in bunches of not more than twelve trusses each, was nobly won by Mr. J. Mattock, Headington, Oxford, who had lovely flowers of Richmond, Lady Pirrie, Gen. McArthur, Marquise de Sinety, Mrs. Stevens, and Lady Curzon. There were six competitors, and these made a grand show; other prizes fell, in order, to Messrs. Frank Cant and Co., Braiswick, Colchester; Messrs. W. Spooner and Son, Woking; and Messrs. Paul and Son, Cheshunt.

In the class for seven baskets of roses, distinct, Mr. E. J. Hicks, Hurst, Berks, was awarded first prize for a grand set of flowers of Rayon d'Or, Countess of Gosford, Gen. McArthur, Duchess of Wellington, Mdme. Jules Grolez, Comtesse du Cayla, and Lady Hillingdon; Mr. John Mattock second, and Messrs. S. Bide and Sons third among four competitors. Messrs. W. Spooner and Son led for three baskets of roses, and made a beautiful show with Marquise de Sinety, Lady Pirrie, and Mdme. Melanie Soupert; Mr. G. Prince second, and Messrs. G. and W. H. Burch, Peterborough, third.

## AMATEURS.

The Munt Cup and first prize in the amateurs' section for eighteen blooms distinct was won by Dr. C. Lamplough, Kirkstall, Alverstoke, with a choice set of Mdme. Jules Gravereaux, Gloire de Chedane Guinnoisseau, A. K. Williams, Queen of Spain, Bessie Brown, Florence Pemberton, etc.; Mr. G. N. Hammond, Burgess Hill, second; and Mr. E. M. Eversfield, Denne Park, Horsham, third; twelve entries.

Mr. H. L. Wettern, Waratah, Sanderstead, Surrey, led for six blooms of any H.P., with the inevitable Frau Karl Druschki; Dr. Lamplough second with the same variety, and Mr. F. Slaughter, third, also with the Frau.

Mr. E. F. Brown, Lynton, Slough, scored for six blooms of an H.T. rose with lovely examples of Dean Hole; Dr. Lamplough second with Mildred Grant, and Mr. Wettern third with Avoca. Dr. Lamplough had also the best half dozen blooms of any tea rose.

Mr. Alexander Hill Gray, Beaulieu, Bath, was a capital first for a dozen tea or noisette roses with finely-coloured Harry Kirk, Mdme. Constant Soupert, White Maman Cochet, Mrs. E. Mawley, and Dr. F. Guyon; Rev. R. Powley, Upton Scudamore, second, and Mr. Eversfield third; six entries.

Among the growers of fewer than 2,000 plants of exhibition roses, Mrs. E. Croft Murray, Perivale, Ryde, led for a dozen blooms distinct, and Mr. F. G. Slaughter was second. Mr. J. Hart, Potters Bar, and Mr. C. C. Williamson, Canterbury, were first and second respectively for six trebles, while Rev. R. Powley, Upton Scudamore, beat Mr. Slaughter in this section for nine teas and noisettes.

In the division for growers of fewer than 1,000 plants, Dr. Lamplough, Mr. R. Escofet, and Mr. H. L. Wettern annexed the chief awards. Growers of fewer than 500 plants turned up in fine force, and the principal prize-winners were Mr. Raymond Escofet, Kingsley Dene, Dulwich; Mr. T. H. Gillett, Elven House, Andover, who had a fine Mrs. Roosevelt in his set of twelve blooms; Mr. E. W. Morris, Uckfield; and Mr. E. L. Brown.

Mr. Alan Searle, Bassett, scored in a lower division, and was successful in the local classes.

The Rev. J. H. Pemberton, Havering, Romford, won the first prize for twelve bunches of garden roses, and, among others, showed The Garland, Seagull, Claire Jacquier; Mrs. A. M. Wightman, Bengeo, second; and Mr. Conway Jones, Hucclecote, Gloucester, third.

## LADIES' CLASSES.

Mrs. Colston Hale, Virginia Lodge, Warminster, led in the class for table decoration with a pretty arrangement of Irish Elegance; Mrs. G. A. Hammond, Cambrian Road, Burgess Hill, second; and Miss K. Vokes, Birch Lawn, Sholing, third.

Mrs. Colston Hale led for a bowl of roses with Mdme. Abel Chatenay, Mr. Charles Williamson, Canterbury, coming second with Lady Hillingdon. Mrs. Hammond scored for a vase of roses, and Mrs. Colston Hale came second. First prize for a basket of roses fell to Mrs. E. M. Burnett, Westwood Road, Southampton, who used Irish Elegance, and Gottfried Keller; Messrs. C. Hale second.

## SILVER MEDAL ROSES.

As usual, silver medals were awarded to the best blooms. In the trade division the best H.P. rose was Victor Hugo, shown by Messrs. D. Prior and Son, Colchester; the best H.T. was St. Helena, shown by Messrs. B. R. Cant and Sons, Colchester; and the best T. rose was Mrs. Foley Hobbs, from Mr. G. Prince.

In the amateur classes the best H.P. rose was A. K. Williams, exhibited by the Rev. J. H. Pemberton; the best H.T. was Mrs. Theodore Roosevelt, staged by Mr. E. L. Brown, Slough; and the best T. rose was W. R. Smith, shown by Mr. E. W. Morris, Uckfield.

## GOLD MEDAL ROSES.

A number of new roses were staged, and Messrs. Alex. Dickson and Sons, Newtownards, were awarded a gold medal for a lovely single rose named Irish Flame, which is a deeper yellow than Irish Elegance, with a ruddy bronze flushing on the outside of the petals. A gold medal was awarded to Messrs. B. R. Cant and Sons, Colchester, for St. Helena, a lovely large, shapely, deep cream-coloured H.T. rose of great substance, and one that should prove fine for exhibition.

## OTHER EXHIBITS.

Messrs. B. Ladhams, Shirley, Southampton, displayed hardy flowers finely, and made a splendid show with gaillardias, pinks, and the new Salvia Ladhamsi, the latter a hybrid between S. turkestanica and S. sclarea. Messrs. W. H. Rogers and Son, Bassett, contributed cut roses and roses in pots; Messrs. Toogood and Sons displayed sweet peas well, and so did Mr. Longster, Southampton, while Mr. Wootten exhibited carnations.

There were two classes for sweet peas, each for six bunches; in one of these Mr. F. G. Bealing was first; Mr. H. H. Lees, Havant, second; and Mr. A. E. Usher, Ranston Gardens, Blandford, third. In the other class Mr. F. Green, The Beeches, Southampton, was first, Mr. Lees second; and Mr. H. J. Hood, Thornaby Avenue, Southampton, third.

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**Alexandra Day.** — On Wednesday last some ten thousand ladies in white were busily engaged in selling wild roses in London, in honour of Queen Alexandra, and for the benefit of the hospitals and charitable institutions in which her Majesty is specially interested. It was an excellent idea to honour Queen Alexandra, who for many years has been the patroness of the National Rose Society, in this manner, and it made so strong an appeal to the sympathies of all classes of the community that its success was at once assured. From within a very short time of the scheme being made known promises of support were forthcoming, and the arrangements were so quickly completed that everything was in readiness for the great army of flower-sellers to commence operations on Wednesday morning. Favoured by fine weather, the sale of the roses proceeded so briskly that before the day had far advanced there were but few members of the community who were not wearing the English emblem, and before the day closed the sales must have amounted to several millions of blossoms, need it be said the blooms had not been plucked from the English hedgerows, but were the product of the deft fingers of crippled children, who had been taught the art of flower-making.

# NOTES FROM KEW.

### Greenhouse Flowers.

While the greenhouse is remarkably gay with blossoms, the bulk of the occupants of that structure are such as are usually employed for decorative purposes at this season of the year. Still, there are a few uncommon subjects or combinations and one such is furnished by a number of the distinct red-flowered Alonsoa incisifolia, in the shape of dwarf bushy plants in full bloom, and dotted over with Canna Van der Schoot, a variety whose golden-yellow flowers are marked with red. Another group is made up of dwarf plants of Jacobinia magnifica, carrying good heads of bloom, and overtopped by finely-flowered examples of the double-flowered Marguerite Mrs. F. Sander. This marguerite is the finest of those forms in which the centre of the flower is filled up with a large anemone-like disc, while in foliage and general appearance, it bears a greater resemblance to the typical Chrysanthemum frutescens than to the other garden varieties. Another pleasing combination is a number of the white-flowered Begonia nitida and the scarlet Clerodendron fallax, mixed. A double white feverfew is also very pretty, while that annual species of statice from Turkestan, which bears the awkward name of Statice Suworowi, is so pleasing when in a mass that it might with advantage be more often grown for conservatory and greenhouse decoration than it is. A group of Rehmannia angulata, and another of the new Rehmannia kewensis, to which I referred in the GARDENERS' MAGAZINE of May 11 (see p. 382), are also very attractive.

### Flowering Cannas.

These are so extensively grown for greenhouse decoration or for bedding out during the summer months that their culture in any other manner is seldom considered. The way, however, that they thrive under more tropical conditions in the old Lily House is an eye opener; for, grown in large pots and stood in the lily tank in such a manner that the base of the pot just touches the warm water, they attain a development to which we are quite unaccustomed. In this way both foliage and flowers are magnificent, and, taken altogether, anyone with such a structure at command might do worse than try a few of these cannas therein. A good light position is, of course, necessary to their well-doing.

### Hibiscuses.

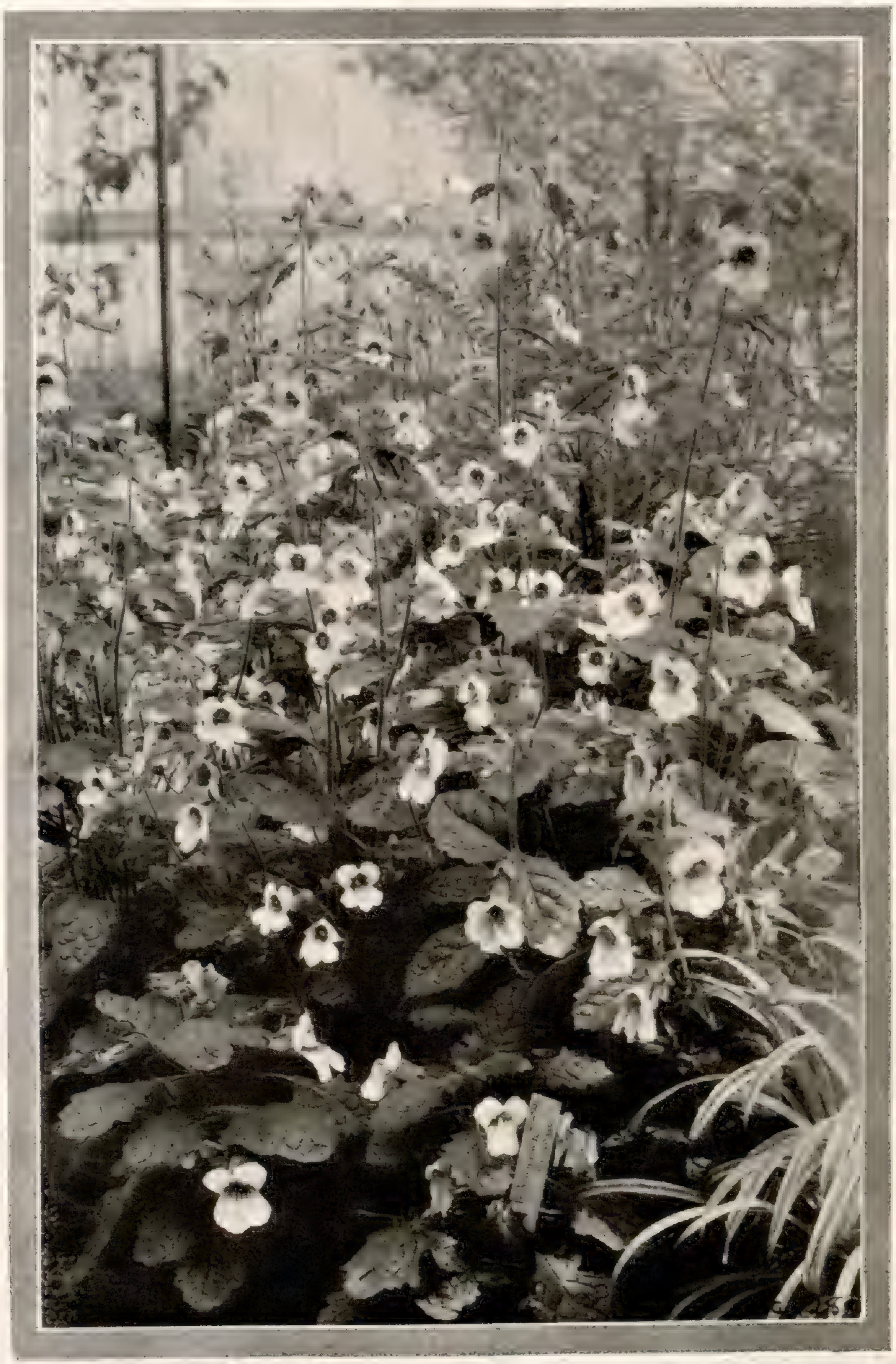
Planted out in the bed situated in the porch of the old Lily House are some very striking forms of the shrubby members of the hibiscus family, with large and showy blossoms. Notable among them are Hibiscus Cameroni, a native of Madagascar, with large single blooms of a bright carmine-red colour, and a single form of Hibiscus rosa-sinensis, with flowers of a more rosy tint. This last-named species is widely spread throughout the tropics, and there are now a great many forms in cultivation, some with double and others with single flowers, while in one variety, namely, Cooperi, the leaves are marked with a pretty tricolor variegation. As Hibiscus rosa-sinensis both grows and flowers freely, it is useful for good-sized structures where showy flowers are welcomed.

### Juanulloa aurantiaca.

A specimen of this uncommon Peruvian shrub is now flowering freely in the Succulent House. It belongs to the order Solanaceæ, and is nearly related to the daturas or brugmansias; indeed, it is sometimes known as Brugmansia floribunda and Brugmansia parviflora, as well as Juanulloa parasitica. The flowers, which are of a deep orange colour, protrude from a large calyx of the same tint. Compared with the Brugmansias, the flowers are small, being only about three inches in length.

### Ixora congesta.

There are a great number of garden varieties of ixora in bloom in the intermediate portion of the T range, but, although some of them may be more floriferous in a small state than this species, there are none with more attractive blossoms, which are of a brilliant reddish-orange colour. It is said to have been introduced in 1845, but at the present day it is rarely met with in gardens.



REHMANNIA KEWENSIS.
A fine greenhouse plant produced by crossing R. Henryi with R. chinensis. Flowers yellowish with a large crimson blotch on the upper segments. Raised at Kew.

### Clerodendron speciosum.

This very showy climbing clerodendron which is flowering with great freedom on the roof of the T range, is of hybrid origin, the parents being the tropical African Clerodendron splendens, which is rather more particular in its cultural requirements than most of the others; and C. Thomsonæ, which is more usually met with as Clerodendron Balfouri, a garden name. The flowers of C. speciosum, which are borne in large, spreading panicles are of a rich crimson colour, and afford a pleasing contrast to the lighter-tinted ones of C. Thomsonæ. Both are of easy culture, and quickly attain an effective size.

### Aristolochia elegans.

Though this was introduced over a quarter of a century ago, and has proved to be a very desirable plant in many ways, its merits are even now too often overlooked. Over most of the tender species of aristolochia it possesses several advantages, as in the first place it is of less rampant growth than most of them, which feature renders it of use for comparatively small structures, under which conditions, being brought near the eye, the pretty cream-coloured flowers, with their intricate markings of purplish-chocolate, can be fully appreciated. They are also without the unpleasant odour common to some of the aristolochias. The species is now flowering freely in the T range.

K.

# NEW PLANTS, ETC.

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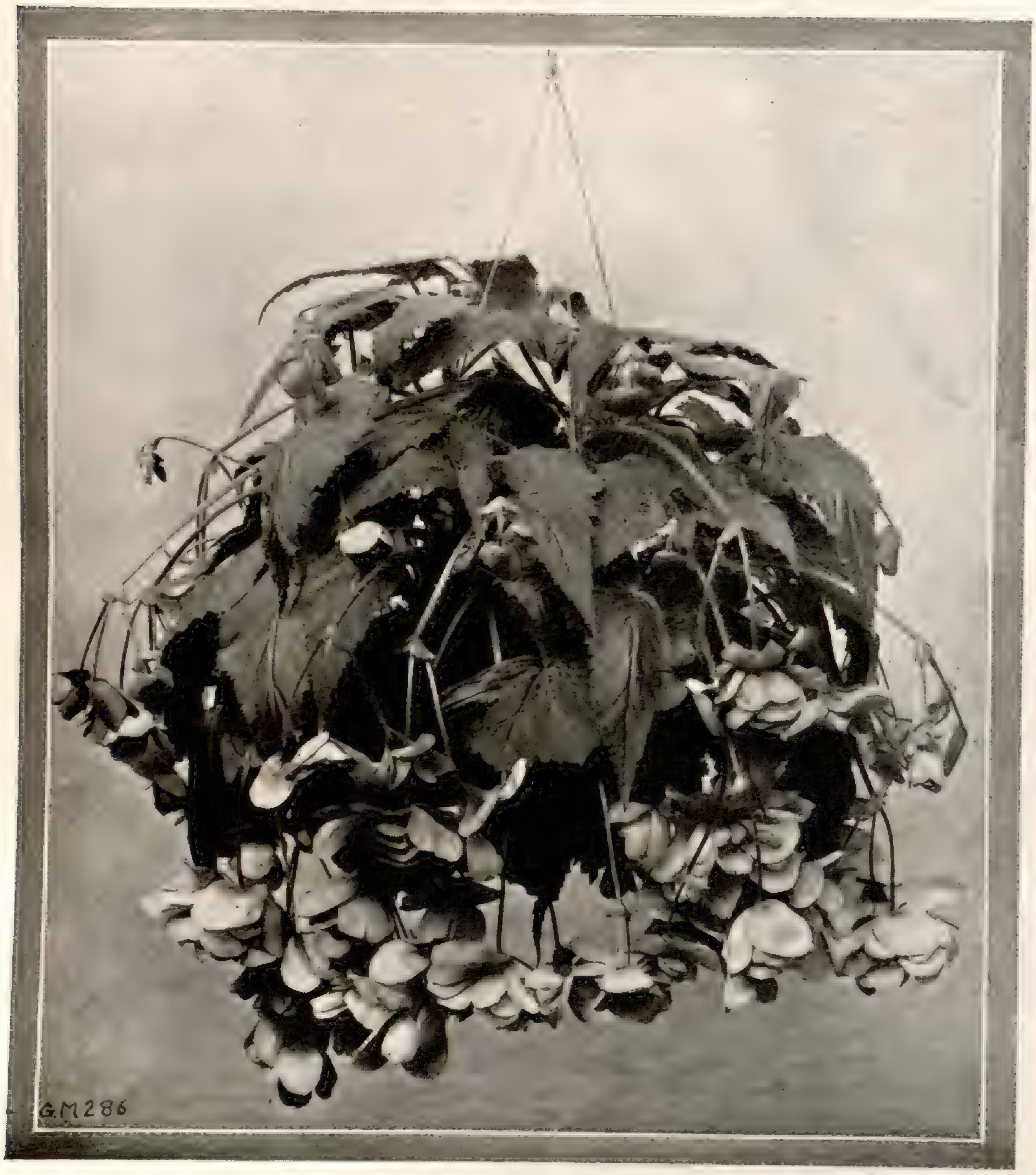
### ODONTIODA COOKSONIÆ FOWLER'S VAR.

An exceedingly beautiful hybrid (Odontoglossum ardentissimum × Cochlioda Noezliana), and one that stands right in the front rank of odontiodas. The large, shapely flowers are deep crimson-scarlet with rosy tips of the sepals and petals. The lip is white, with a yellow crest, and has a central deep crimson-scarlet blotch. F.C.C., R.H.S., June 18. Messrs. Charlesworth and Co., Haywards Heath.

### LÆLIO-CATTLEYA BARONESS EMMA.

A gloriously handsome hybrid between Lælio-cattleya eximia and Cattleya Hardyana. The flowers are large, well-formed, and stand up finely. Sepals and petals are rosy blush, while the large and wide lip is white at the base, with a yellow dark-veined throat, and a spreading crimson-purple apex. F.C.C., R.H.S., June 18. Baron Bruno Schroder (grower, Mr. Shill), The Dell, Egham.



BEGONIA GOLDEN SHOWER.

A pendulous, tuberous-rooted begonia with yellow, darker centred, flowers. A.M., R.H.S., June 18. Messrs. Blackmore and Langdon, Bath.

### MILTONIA BLEUANA RISING SUN.

A charming miltonia with large white flowers, each having a bright orange-tinted disk with radiating brown lines. A.M., R.H.S., June 18. Baron Bruno Schroder, The Dell, Egham.

### ODONTONIA ST. ALBAN.

A pretty and distinct hybrid obtained by crossing Miltonia Warscewiczi with Odontoglossum Pescatorei. Evidence of the latter parent was seen distinctly in the branching spike and the shape of the flowers, while the red shading on the white lip was a sure indication of the miltonia parent. The white sepals and petals are marked with red purple. A.M., R.H.S., June 18. Messrs. Sander and Sons, St. Albans.

### LÆLIO-CATTLEYA GANYMEDE SOUTHFIELD'S VAR.

A small but very pretty hybrid derived from Lælia Latona and Cattleya Schroderæ. The sepals and petals are yellow, and the lip is yellow at the base, but bright ruby-crimson over the wavy apex. A.M., R.H.S., June 18. W. Walters Butler, Esq. (gardener, Mr. Jones), Southfields, Edgbaston, Birmingham.

### LAVATERA OLBIA.

An old plant that has somehow or other missed general recognition. It is a shrubby species hailing from Provence, and, as it has become naturalised in some parts of the British Isles, there is no doubt about its hardiness. The soft downy leaves are deeply three or five-lobed, though the highest ones may sometimes be entire. The short-stalked axillary flowers are about two inches across, and a very pretty shade of silvery rose or pale silvery-purple. The plant flowers freely, grows from 3ft. to 6ft. high, and is an elegant subject for a sunny position. A.M., R.H.S., June 18. Mr. Maurice Prichard, Christchurch.

### CARNATIONS.

Mrs. Husan Morris. A large variety with waved petals, and coloured deep pink on a paler pink ground. A.M., R.H.S., June 18. S. Morris, Esq. (gardener, Mr. G. Henley), Wretham Hall, Thetford.

Charles Blick.—A noble pure white Malmaison carnation; a seedling from Nell Gwynne. A.M., R.H.S., June 18. Mr. Chas. Blick, Hayes, Kent.

Cyclops.—A showy border variety with rich crimson markings on a deep orange-yellow ground. A.M., R.H.S., June 18. Mr. Chas. Blick, Hayes, Kent.

### EREMURUS LEMON QUEEN.

A bright and sturdy variety, raised by crossing E. Warei with E. Bungei. The stately spikes rise about 4ft. high, and carry a very large number of lemon-yellow flowers that are made the more attractive by the deep orange-coloured anthers. A.M., R.H.S., June 18. Messrs. Jas. Veitch and Sons, Chelsea.

### BEGONIAS.

Golden Shower. — A very free-flowering pendulous variety, with bright yellow, darker-centred, blooms. As a basket plant, this is a capital begonia. A.M., R.H.S., June 18. Messrs. Blackmore and Langdon, Twerton-on-Avon, Bath.

James Braid.—A large, very double and shapely begonia of brightest crimson hue. A.M., R.H.S., June 18. Messrs. Blackmore and Langdon, Bath.

F. W. Walker.— A rich scarlet double begonia, of fine size and shape. A.M., R.H.S., June 18. Messrs. Blackmore and Langdon, Bath.

### ROSES.

Effective.—An aptly named pillar rose of great beauty. It has very large flowers, each with two or three rows of broad carmine-crimson petals. We understand that General McArthur and Carmine Pillar are the parents. A.M., R.H.S., June 18. Messrs. Hobbies, Lim., Dereham.

Pink Pearl.—A very beautiful, large, and substantial single rose of the most delightful shade of pink, with a central cluster of golden stamens and anthers. The parents are Una and Irish Elegance. A.M., R.H.S., June 18. Messrs. Hobbies, Lim., Dereham.

### DELPHINIUMS.

Harry Smeatham.—The rounded flowers of this sturdy variety are very effective. The colour is a pleasing shade of blue, with a deep purple line down the centre of each segment. A.M., R.H.S., June 18. Messrs. Blackmore and Langdon, Bath.

Lavanda.—A very distinct and beautiful variety, with large shapely flowers of a pretty mauve shade. A.M., R.H.S., June 18; A.M., N.H.P.S., June 19. G. Ferguson, Esq. (gardener, Mr. F. W. Smith), Weybridge.

Drake.—This is an effective light blue variety, with a white centre to each bloom. A.M., R.H.S., June 18. Messrs. J. Kelway and Son, Langport, Somerset.

Tagalie.—In this fine blue variety the white centre almost disappears as the semi-double blooms advance in age. A.M., R.H.S., June 18. Messrs. J. Kelway and Son, Langport.

Dusky Monarch.—Already described and figured in these columns. A.M., N.H.P.S., June 19. Messrs. J. Kelway and Son, Langport.

Lovely.—The colouring in this fine form is a combination of deep blue and purple. The spike is particularly sturdy and shapely. A.M., R.H.S., June 18. Messrs. J. Kelway and Son, Langport.

### PHILADELPHUS.

Bouquet Blanc.—This semi-double white variety is especially free-flowering, the branches being thickly studded with blooms. A.M., R.H.S., June 18. Messrs. James Veitch and Sons, Chelsea.

Voie Lactée.—An elegant single-flowered variety, the blooms flatter than in many kinds, and of milky whiteness. A.M., R.H.S., June 18. Messrs. Paul and Son, Cheshunt, and Messrs. James Veitch and Sons, Chelsea.

### GLADIOLI.

Innocence.—This fine pure white early-flowering gladiolus surpasses the well-known form of Colvillei named The Bride, and it should soon become a favourite. A.M., National Gladiolus Society, June 18. Mr. T. W. Le Page, Guernsey.

Cardinal.—Another fine early variety, with large, salmon-red flowers, marked with white. The buds are quite red. A.M., National Gladiolus Society, June 18. Messrs. E. H. Wheadon and Sons, Le Couture, Guernsey.

Queen Mary.—A large-flowered early gladiolus, with rich pink, white-blotched flowers of great beauty. A.M., N.H.P.S., June 19. Messrs. Barr and Sons, Covent Garden.

### WAHLENBERGIA VINCÆFLORA.

A low-growing hardy perennial, suitable for the rock garden. It bears its campanulate flowers very freely, on slender stems; the colour is bright cœrulean blue. F.C.C., N.H.P.S., June 19. Mr. Reg. Prichard, West Moors, Wimborne.

### LITHOSPERMUM FROEBELLI.

A compact little plant, less than a foot high, clothed with neat leaves and furnished with deep blue blossoms. A.M., N.H.P.S., June 19. Mr. Reg. Prichard, Wimborne.

### RODGERSIA TABULARIS.

This Chinese plant has large peltate leaves and heads of rather small whitish flowers that are fragrant. A.M., N.H.P.S. June 19. Mr. Amos Perry, Enfield.

## SOME UNCOMMON RHODODENDRONS.

The rhododendrons have surpassed themselves in freedom of flowering this season, and never do I remember having noted a more glorious display.

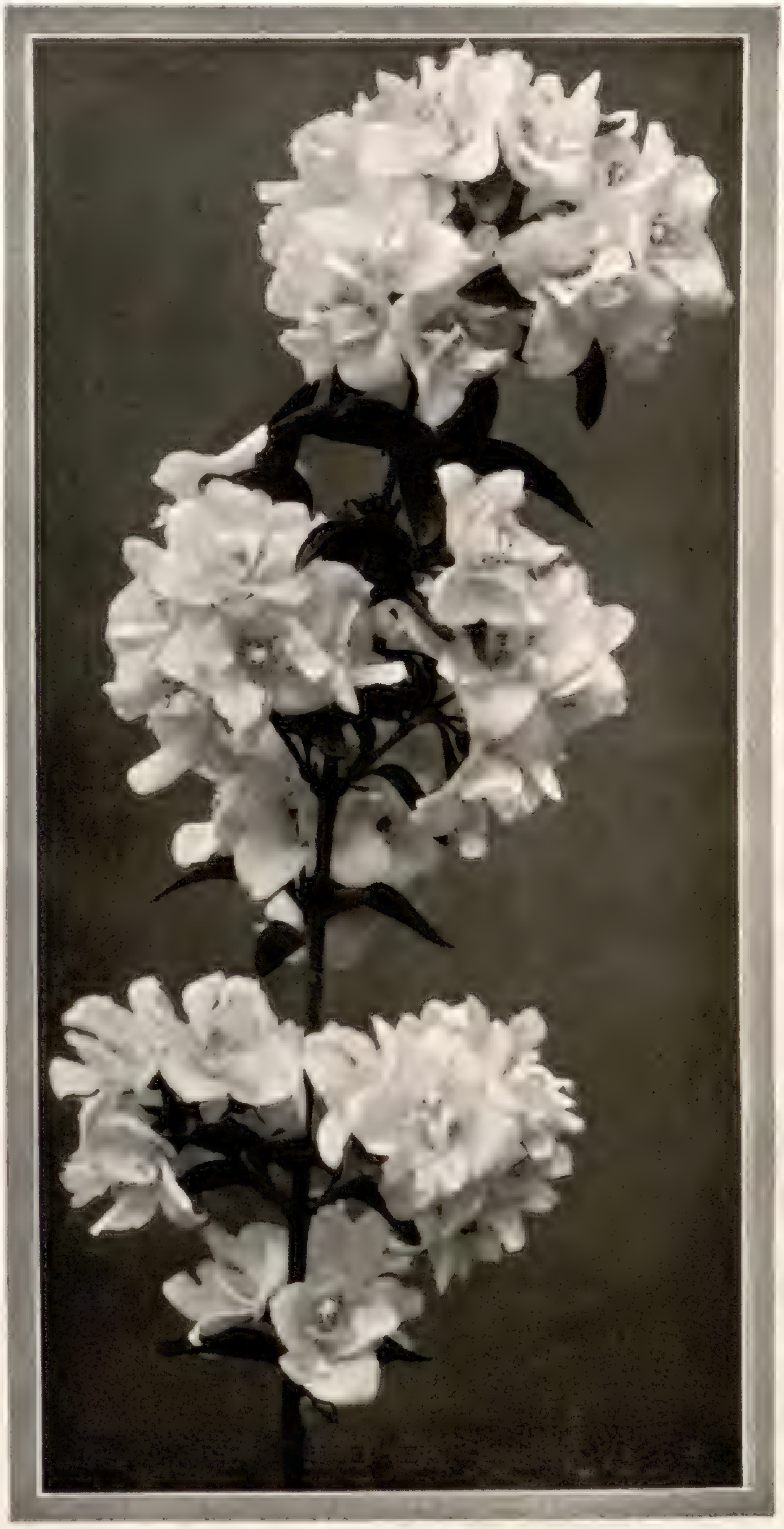
It is true that their season of beauty was cut short by the prolonged drought, at least where artificial watering was not resorted to, and, incidentally, it should have received attention. Happily, the big rainfall we have experienced will bring about strong and vigorous growth, which will be responsible for another season's display.

The object of this note is to call attention to a few uncommon rhododendrons that are apt to be lost sight of amidst the galaxy of beauty included in the aggressively handsome garden varieties which have resulted from the intercrossing of R. arboreum, R. caucasicum, R. ponticum, R. catawbiense, etc. From the Himalayas we have R. lepidotum, which produces its small and flat flowers in the latter part of April. I am told by a Kew colleague that this species affords a sprinkling of flowers at intervals throughout the summer in a western garden, but, as far as my experience and observation goes, the flowers produced after the normal flowering period are scarcely worth speaking about. With the advent of June, R. Broughtoni aureum*, a hybrid created by intercrossing Azalea mollis and an evergreen rhododendron, displays its charms, the flowers being of yellow colouring, as the name indicates. Then there is also R. Smithi aureum, of similar hue. R. Kæmpferi hails from Japan, and makes a brave show in late spring, more especially when a dozen plants are brought together in a group, bed, or colony.

Then we have a number of quite petite species, several of which cannot boast a stature exceeding two inches, but, notwithstanding, are veritable gems of this great family of plants.

R. serpyllifolium bears flowers of a purple hue, the leaves being very small, while R. racemosum is a very desirable species, with rose and white blooms. R. punctatum, R. Wilsoni, R. yunnanese, R. afgleanicum, and R. myrtifolium extend the list, not forgetting R. kamtchaticum, which luxuriates in a very damp or boggy situation, and speedily resolves itself into a wide-spreading mass. R. Roglei, which, I believe, is synonymous with R. cinnabarinum, is a great beauty, and so are the alpine species, R. hirsutum and R. ferrugineum, which create a blaze of colour in their season.

There is much to recommend in a fully representative collection of these uncommon forms, and certainly it would constitute one of the most interesting features in the garden. WALTER H. AGGETT.



PHILADELPHUS BOUQUET BLANC.

A beautiful hardy shrub with an abundance of semi-double white flowers. A.M., R.H.S., June 18. Messrs. Jas. Veitch and Sons, Chelsea.

**The Bottle Brush Flower.**—Few hard-wooded plants have made the same amount of headway in popular favour within the last few years as this, and at recent Temple Shows it has been well represented. All previous displays were, however, left behind at the International Show, for both as standards and as bush plants magnificent examples were shown. In the competitive classes prizes were awarded for the best specimens, while in several non-competitive groups very fine examples were shown. It is known generally as Metrosideros floribunda, but by botanists it is referred to as Callistemon salignus.—S. W.

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[* This yellow-flowered rhododendron is no way related to R. Broughtoni illustrated in our issue of June 15.—ED., "G.M."]

## ROSE NOTES.

The present June has been more a month of roses than usual, and wherever the plants have been persistently syringed they are clean and promising. The great difference between roses receiving this attention and those neglected is very evident this season. While we had considerable young growth upon our plants late in April and early in May, we were visited by dry winds, and oftentimes very cold nights. Such conditions naturally caused distress to young growth; in addition to which they were more than usually affected by insect pests. Indeed, I think most of us have noticed how much worse and prevalent insects are during weather of the character mentioned, especially at a time when the plants are unable to advance freely.

SINGLE ROSE PINK PEARL.

A large, thick-petalled single variety; rich pink with golden stamens. A.M., R.H.S., June 18. Messrs. Hobbies, Lim., Dereham.

I have seldom seen our old-fashioned climbers and climbing polyanthas more beautiful than this June, where the syringe has been freely used. On the other hand, plants both in cold and sheltered aspects have been almost denuded of foliage from attacks of aphides and red spider during the spell of dry and uncongenial weather. This is almost invariably the case where syringing was neglected. Even clear water alone would have done much good, and there can be little excuse for this when one considers the great benefits from a judicious use of the syringe and a weak insecticide.

Since the welcome showers early in June our maiden plants are coming on rapidly, and will soon be well in flower should the same conditions continue. At the middle of the month we have a good display upon maidens of Lady Battersea, Madame Ravary, Viscountess Folkestone, and Gustave Regis. Some maidens of Sunburst are looking well, but this is evidently a somewhat changeable rose, more particularly as regards its first blossoms. We have quite a number of roses that vary considerably during the changeable days of early summer and late autumn. Mrs. Aaron Ward and Prince de Bulgarie are notable examples; in fact, one can often cut quite distinct blooms from the same plant. We find the same in Lady Roberts and William Allen Richardson. So much is this the case that I have more than once been asked to name a variety because the grower was convinced his plants were not true, the misconception occurring from this variableness.

It is long since a climbing or pillar rose has pleased me so much as Sarah Bernhardt, a hybrid tea from Dubreuil in 1907. This is a most brilliant scarlet-crimson, with velvety purple shadings, and quite an acquisition among our pillar roses. It is described by some as semi-double, but I have it much in advance of that form, almost as full as Prince Camille de Rohan. It is also very fragrant, and an exceptionally free and early bloomer. An old introduction from Ducher in 1870, named Tour Bertrand, has surpassed itself also. This is seldom met with or even catalogued; yet it is fuller and a freer grower than either Safrano or Madame Falcot, being between those two varieties in colour. Good for any purpose, but especially as standards, and fairly high walls. It is a reputed seedling from Gloire de Dijon, but has no resemblance whatever to that variety, either in shape of flower or habit of growth. It is very sweet-scented, flowering in terminal trusses upon all growths, but never producing the long shoots associated with climbers of the Dijon race. This and Madame de Tartas are sadly overlooked, and by some means they escaped public notice at the first. Yet if Tour Bertrand was introduced now it would be in favour as a deep saffron and yellow pillar rose, while its perfume is surpassed by very few.

The budding season is near at hand, and soon the budding of briers and other stocks will be the most important work to be done in the rose garden, except the constant attention to keeping the foliage clean and the application of suitable fertilisers and stirring the surface at every favourable opportunity. Budding needs much care in selecting the most suitable condition of both stock and bud. The choosing of rose buds is another matter that does not receive enough consideration. The healthier the plant and the more typical the flowers from it, the better chance have we of perpetuating these desirable qualities in the future rose.

You cannot bud too closely upon the base of roots in the case of dwarf stocks, nor too near the stem of standards. Almost all the future trouble from stock suckers can be avoided by careful insertion of the buds. In many cases the buds are not tied in firmly enough. This must be done, and the tie slightly released as the stock swells in the process of growth. Let there be no hesitation or bungling in the work, and have everything ready so that delay does not cause drying of opened stock or prepared bud. Any suspicion of bruising must also be avoided, and in both stock and bud the flow of sap should be sufficiently active to allow of easy preparation.

Plenty of water will be needed for most strong-growing roses against buildings and walls; and weak liquid manures should be applied freely. Water that barely percolates more than a foot or nine inches is almost useless. Indeed, I often consider it harmful, by reason of its exciting top roots that so soon fail when the soil is allowed to become dry once more.

ROSARIAN.

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**Dracæna Deremensis Bausei.**—Last summer, at the Olympia Show, an Award of Merit was given to a very distinct dracæna, under the name of Dracæna Deremensis variegata. A drawback in this variety is that the white variegation is not very clearly defined, in which respect it is surpassed by the variety Bausei, which has white markings that are much clearer than those of the other, while it also extends to the leaf-stalks. —T.

# GARDENS OF UNCOMMON PLANTS.

Certain plants are unfamiliar in different localities, or perhaps it is more correct to say that a plant which is uncommon in six counties may be a household favourite throughout a seventh, in which its merits have become lauded by first one grower, then another. To make a garden of rare plants is far more simple than it seems, just by reason of the prevalence of certain plants in a neighbourhood to the exclusion of others of equal, possibly superior value.

The sites are most important. One bed should be filled with Tunica Saxifraga, a profuse blooming, dainty, peach-pink trailer, with foliage so similar to grass that it is often weeded up from a border. An excellent plant to associate with it is the one-foot-tall Salvia porphyrantha, which has crimson flowers. Another bed may have rings of Pyrethrum Tchihatchewi in it, a foot apart, the inner spaces being filled with the yellow and the vermilion Flora's Paintbrush, respectively Cacalia coccinea and Cacalia aurea, both annuals that grow rapidly from seed.

A bed of mixed Primula obconica proves exceedingly beautiful; a sunny position is essential, and a good deal of sand and crushed brick rubble should be mixed with the soil. The best effect is gained from a bed that slopes gently to the middle, as the plants then can be set only seven inches from row to row, and the vivid green foliage will meet and overlap, leaving no vestige of ground by the end of summer. The lavender, crimson, nearly white, or rose varieties can be used separately if preferred, but all shades harmonise.

Then a bed of the yellow dwarf variety of the biennial Sweet Scabious makes a charming novelty. If an accompanying plant is desired, crimson or bronze foliage, either for carpet or centrepiece, will be found most satisfactory. Calceolaria rugosa Queen of the North delighted every grower last year. The habit is dwarf, the foliage a rich dark green, which especially well contrasts with the yellow blossom. The Spider Plant, Cleome gigantea, proved another favourite, suitable for fine beds or borders. It is a three-foot grower with immense leaves and branching habit.

A simple plant, just a hardy annual, capable of filling a lawn bed excellently, is Chrysanthemum carinatum Silver Queen. The odd feature of the flower is that the disk is silvery, set among white petals with pale yellow ring. In one most successful bed it was given a centre mass of Streptosolon Jamesoni. There are several kinds of hibiscus that are exceedingly valuable as rare bedding plants, but probably the most suitable and attractive is Hibiscus Sabdariffa, which seldom exceeds fifteen inches in height, is yellow with deep maroon eye, a half-hardy annual that only requires plenty of sunshine and a fairly light soil.

White Plumbago can be put out during summer against southern house walls, its long branches securely tied up to trelliswork or nails. The blue variety is, perhaps, more charming. Another good scheme is to locate these a foot or two away from Ampelopsis Veitchi, and tie the one climber to the other, or associate them with a background of the orange and red Tropæolum tuberosum.

Eccremocarpus scaber, the Chilian Glory Flower, will thrive out during summer. One original way to use it is a plant to each bamboo cane, set half a yard apart at the back of some prominent border. For a remarkable colour show Lobelia Royal Purple may form the ground-work, or the deep blue variety of Convolvulus minor. A remarkable climbing convolvulus is C. althæoides, which has rosy blossom among silver-marked leaves.

For rockery adornment profuse sowings should be made of the Blue Woodruff, Asperula setosa azurea; Argemone mexicana, a one-foot, silvery, thistle-like plant, with poppy-shaped cream blooms; Platystemon californicum, a low trailer, with grey leaves and primrose-coloured flowers, shaped like Celandines; Collomia coccinea, coral-red, 1ft.; and the brilliant magenta, star-shaped, little Kaulfussia kermesina.

LAVATERA OLBIA.

A hardy, shrubby perennial with elegant leafage and large, silvery-rose flowers.
A.M., R.H.S., June 18. Mr. Maurice Prichard, Christchurch.

There are many places where the beauty of the coloured-leaved kales are unknown. The biennial cerise-crimson Gilia coronopifolia invariably attracts attention, while Gypsophila elegans carminea is a delight when alternated with cream begonias.

Arbours, pergolas, or porches should be clothed with the pinky-white Polygonum Baldschuanicum; the curious-shaped Scyphanthus elegans, a half-hardy annual; and double Convolvulus major.

M. H.

# ENGLISH LEGISLATION AND PLANT DISEASES.

Chief among the most important of the papers read at the conference held in conjunction with the Royal International Horticultural Exhibition was that by Mr. A. G. L. Rogers, of the Intelligence Division, Board of Agriculture and Fisheries, who dealt with the aim of English legislation in connection with plant diseases. He said:

Although the importance of extirpating contagious diseases of animals has long been recognised in England, and the State has taken an active part in preserving the health of English cattle for many years past, legislation on the subject of diseases of plants is of comparatively recent date. Many other countries have been earlier in the field, and have perhaps advanced further than it has been found possible to do here. Greater powers have been given to the Government, the service of inspectors is larger, and the regulations more drastic and sweeping. But this need cause no surprise, nor lead anyone to suppose that the interests of horticulture have been overlooked or neglected.

Those countries which have led the way in legislating on the subject of the pests and diseases of plants have generally had public attention roused to the necessity of taking action by some sudden and almost dramatic disaster. Some new pest, whose life history has been unknown, has appeared in their midst and swept like an epidemic across the country, destroying the crops and ruining the cultivators of the soil. In England, with one notable exception, we have have been spared that experience.

### Freedom from Serious Pests.

This freedom from serious pests that we have so long enjoyed is due not to any accidental good fortune, but in a great measure to the geographical position and climatic conditions of these islands. The destructive insects, which have spread across the Continent of Europe, without regard for national boundaries, have been checked by the sea from invading England. The prevailing south-west wind reaches this country from the Atlantic, where there are no insect pests that attack crops. It is true that, owing to the large quantities of fruit and agricultural produce imported every year some foreign pests may be, and are, introduced, but most of them are parasites on tropical or semi-tropical plants which can with difficulty survive a year of English weather. In other countries whose area is larger their acclimatisation and subsequent spread is rendered easier by the gradual transition of the climate from semi-tropical to temperate conditions without any natural barriers to check their progress.

The small size of England, and the fact that the climate varies but little from one end of the island to the other makes such a risk improbable. And even if any such pest were introduced and established itself it would not find the conditions favourable for rapid breeding during the summer, so that a second winter would find only a slight increase. But there are other circumstances which have contributed to keep England free from any overwhelming incursion of insect pests.

Agriculture has been practised here for many centuries, and the crops that are now raised differ very little from those that were raised a hundred years ago. Farmers and fruit-growers are therefore not likely to be exposed to the risks which beset pioneers in a new country, where the insects that formerly lived on native weeds attack their cultivated crops, or to which pests may be imported from abroad without the parasites that keep them down in the country from which they were brought. It is true that the foregoing remarks apply chiefly to insect pests, and are not equally applicable to those more insidious diseases caused by microscopic fungi, to which the constant rainfall and the muggy weather that so often prevail during the growing season render the crops particularly liable. But with the one exception of the potato disease, caused by Phytophthora infestans, already referred to, the fungus diseases that have been introduced into this country have not spread with great rapidity, or caused serious loss in the first few years after they have made their first appearance. Even the American Gooseberry Mildew (Sphaerotheca mors-uvae) which was first detected in 1906, and had certainly been in the country for some years previously, did not reach certain important fruit-growing districts for some years, in spite of the favourable seasons for the spread of such diseases that prevailed, and has not yet established itself in the south-western counties.

### Danger of the Introduction of New Pests.

The real danger to be feared in this country is of a very different order from that which besets more extensive countries, especially those which are still thinly populated, where farms are large, and means of communication still imperfect. In an old and densely-populated country there are few localities which are not under cultivation of some kind. The area classed as mountain and heath in England is very small, and though the districts covered by towns are large and numerous, there are gardens attached to the houses among the mountains and in the towns, where fruit and vegetables are grown which might harbour diseases and pests, and render the task of extermination correspondingly difficult. Even in the districts that can properly be described as agricultural there are no natural boundaries which would check the spread of disease, while the means of communication by human as well as natural agencies are rapid and easy. The maps that have been hung in the Exhibition show how few fruit-growing areas there are which are at all isolated.

The danger, therefore, which lies before the fruit-growers of this country is the introduction, as it were by stealth, of some new pest, its gradual spread until it is firmly established before it is discovered and identified, and the difficulty of exterminating the pest to which such circumstances give rise. In order to meet this danger it is essential that a constant watch should be kept not merely among English fields and gardens to discover and control any new dangerous pest that may be reported as attacking English crops, but also through foreign publications, whether official, scientific, or popular, on the appearance of such pests in the countries that lie on the other side of the Channel, or with which we have constant intercourse by trade. It is for this reason that the plant diseases service of the Board of Agriculture and Fisheries has arisen in the Intelligence Division, and it is this circumstance which has influenced and moulded the whole character of English legislation and administration on the subject of diseases of plants.

### Legislative Enactments.

The Destructive Insects and Pests Acts of 1877 and 1907 by virtue of which the phytopathalogical service of this country is conducted, had their origin in the agitation created by the introduction of the Colorado Beetle (Doryphora decemlineata) in 1877, and their completion in the alarm due to the discovery in an English fruit garden of the American Gooseberry Mildew (Spaerotheca mors-uvae), both of them pests from the New World. The Acts contemplate the issue by the Board of Orders to prevent the introduction of destructive insects and pests from abroad, and their control and, if possible, their eradication after they have been introduced. The duty of administrating these Orders is placed on the Local Authorities, though a large part of the work is carried out by the Board's officers, so that there is a double system of inspectors, those appointed by the Local Authorities, who have a special knowledge of local conditions, and those appointed by the Board, whose object is to secure uniformity of administration throughout the country. But both classes of inspectors send in their reports to the Board, so that the Central Authority is in constant communication with all the districts in which disease prevails or where inspectors are at work.

Before describing the method by which the reports are prepared and submitted, it will be necessary to give some account of the principles on which the Orders of the Board are drawn up, and the procedure which they require to be carried out. This had to be settled while the Act of 1907 was being drafted, and a memorandum was prepared in which attenion was drawn to the fact that all destructive insects and pests with which agriculturists in England are likely to be troubled may be classified under three heads. First, there are those pests which are indigenous or have at least been prevalent so long in this country that they are distributed more or less evenly throughout the land. These pests, though they frequently cause serious injury, seldom, if ever, take the form of an epidemic. Their virulence is scarcely affected by any abnormally wet or dry season. They often yield to simple treatment, and at any rate there is not the slightest hope that they can be exterminated by any State or municipal interference. The number of such pests is large, and their names will readily occur to any farmer or fruit-grower. They include the Winter Moth (Cheimatobia brumata), the Wireworms (Elateridae), the Woolly Aphis (Schizoneura lanigera), Apple Canker (Nectria ditissima), and Potato Disease (Phytophthora infestans). These pests are described in the Board's leaflets, thousands of which are distributed every year free of cost, or at a nominal charge, and they must be left to the individual growers to contend with. Those who cannot identify them are invited to send specimens to the Board for determination and advice as to treatment.

The second class includes those pests which have only recently been introduced, or which are only to be found in certain counties. These pests, if likely to prove dangerous to to spread to districts hitherto unaffected, can be made the subject of a special Order, if there is any prospect that they can be controlled by such means. The two diseases that have been treated in this way are American Gooseberry Mildew (Sphaerotheca mors-uvae) and Wart Disease of Potatoes (Synchytrium endobioticum), but others might be mentioned. It is these pests, of course, which claim the chief attention of the Board and the Local Authorities.

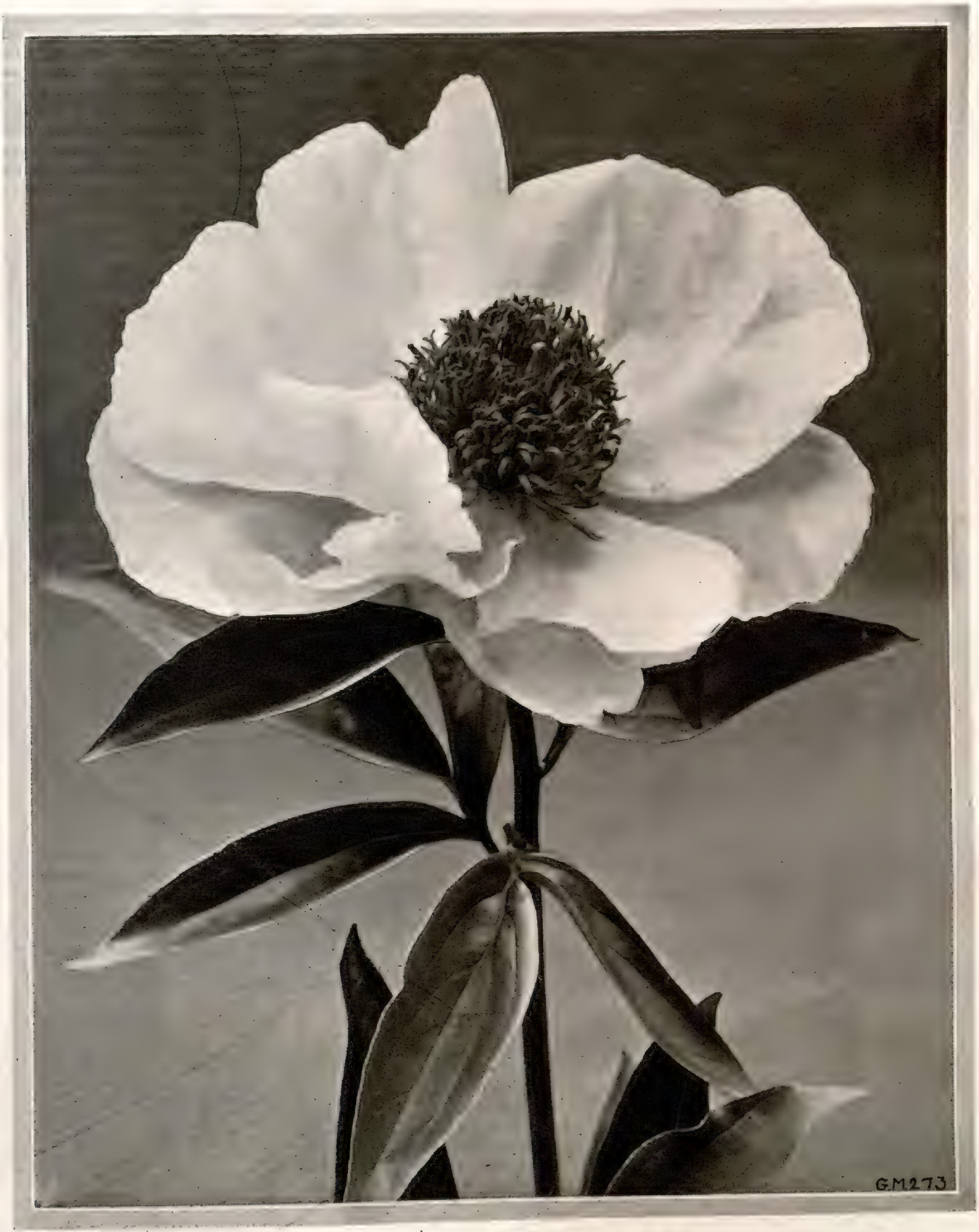
The third class includes those pests which have not yet been found in England, but whose introduction is to be feared, and those which have been reported sporadically for which no adequate treatment has yet been found. Among these are to be numbered the San José Scale (Aspidiotus perniciosus), the Potato Moth (Phthorimaea operculella), the Japanese Fruit Scale (Diaspis pentagona), or the Large Larch Sawfly (Nematus erichsoni), which, however, has perhaps been longer in this country than was at one time supposed, and the Tomato Canker (Mycosphaerella citrullina). Though it is of the utmost importance that these should be kept out of the country, or dealt with adequately, where they are found nothing can be done in advance. Preparations can be made for dealing with them promptly when they appear, or investigations carried out as to the best and most effective treatment of those already with us. As they assume more dangerous proportions or a suitable method of control is found, they should be removed from the third category to the second. A fourth class was subsequently added to which reference will be made later on.

The lines laid down in this memorandum have generally been followed in the preparation of the Board's Orders in connection with Destructive Insects and Pests. Certain other distinctions have also been drawn between the pests in the second and third classes which have led to a variation in the procedure for dealing with each. Thus although it is considered a cardinal principle that the occupier of any premises on which any scheduled pest may exist or have recently existed is bound under a penalty to report the fact to the proper authority, the pests in the second class are considered to be so well known that the plea of ignorance of the pest is not considered a good defence. Those in the third class might easily fail to be detected, and in this case a fine can only be imposed if the occupier can be convicted of "knowingly" failing to report. Again, when one of the pests on the second list is discovered a notice is served on the occupier declaring his premises "infected premises," and prohibiting the movement from them of any plant which might convey the disease to other premises, except by licence. Those parts of the plant which are used for human food are exempt from this rule if they are fit for consumption. The pests of the third class are treated differently, and no attempt is made to define the infected place. The reports refer merely to the parish in which the premises lie.

(To be continued.)

## PÆONY HEART'S DESIRE.

The beautiful single-flowered pæony that we have the pleasure of illustrating herewith is of special interest to both cultivators and raisers of pæonies, and should receive the attention it so well merits. To the cultivator it is of value for the production of bold masses of flowers and foliage in the hardy flower border, and to the raiser it should prove of a high degree of utility as an exceptionally fine type of the single-flowered race. One of its marked characteristics is its freedom from looseness of habit or roughness in the development of the flowers, and its consequent effectiveness in the garden. The flowers, as will be seen from the accompanying illustration, while distinctly regular in outline, have broad, gracefully curved petals that are so arranged as to remove any trace of formality. Not less noteworthy is the variety for the excellence of its habit, the growth being erect, the foliage light and elegant, and the flowers are borne on rigid stems that carry them well above the foliage when upon the plants, and also admit of their being readily arranged to produce bold and distinct effects when in a cut state. In colour the flowers are brilliant rose, and their charm is greatly enhanced by the central mass of rich golden anthers. Heart's Desire is one of the many beautiful single pæonies that have been raised by Messrs. Kelway and Son, of Langport, who, as so well known to cultivators of hardy flowers, have done so much to improve both double and single-flowered pæonies.



SINGLE-FLOWERED PÆONY HEART'S DESIRE.
A beautiful variety with rose-coloured flowers, introduced by Messrs. Kelway and Son, Langport.

**Pyrus floribunda atrosanguinea.**—The typical Pyrus floribunda, which is also known frequently by the name of Malus floribunda, is from its limited size and exceedingly graceful habit, a general favourite, especially for small gardens. To its many admirers who may be acquainted with the variety atrosanguinea this can be thoroughly recommended, for the flowers are very much richer in colour than those of the typical kind.—S. W.

## PEARS.

From what can be seen at present, this promises to be one of the most fruitful pear years we have had for a considerable period. True, there are some varieties that are not carrying full crops of fruit, but this is not difficult to account for, seeing that all kinds do not bloom at the same time, and under the same conditions. As there were several degrees of frost, with cold winds prevailing, when some of the trees were in bloom, failure of these to fruit can in a measure be accounted for. Many of the more choice kinds are doing well, particularly where the trees received due attention in the way of spraying, so as to rid them of insect and other pests, and protection from frost.

Cordons, whether on walls or in the open, look very promising, and there can be no doubt where only a small quantity of each variety is required, this is the most economical way of growing pears, as a greater number of the choicest kinds can be grown than is the case where trees of larger dimensions occupy the limited space at command.

I notice, however, with some of the more tender varieties growing in exposed places, especially those having tough, hard skins, that the fruits are affected more or less by the late spring frosts, so much so with some kinds that it has caused many of them to present quite a rusty appearance. Some would, no doubt, attribute this to the ravages of insects, but as there could be no red spider, thrips, and the like in cold weather, when the plants are in bloom, one may dismiss that idea without comment; others would have us believe that a parasite of some kind has been at work, and could be got rid of by the application of some wash, but from very close observations, I have come to the conclusion that this contraction of the skin is caused by frost and cold winds when the fruits are very small, and in some instances when the trees were in bloom, and there was no foliage to give protection. On many occasions I have looked over the trees in an evening and noticed the fruit quite clear and free from these specks, but, on examining them the following morning, after a frost, they have been affected. Where there are many fruits of this class, it is well not to commence thinning too early, as in all probability many of them will fail to swell.

While on this subject of thinning, due consideration should be given to the condition of the trees, the variety under cultivation, and the kind of stock on which the tree is grafted. Some varieties of pears grow very large, but when the trees are in a vigorous condition, such should be allowed to carry more fruit than those in indifferent health. Pears do not need much support until they commence to form their pips, therefore it is not advisable to commence thinning too soon, and when this operation is performed, reduce the number in the first instance, if the fruit be overcrowded, to one on each truss; if it be found afterwards that a further reduction is needed, go over the trees again, and remove the small ill-placed fruits.

Now, as to the number of fruit a tree should carry. Much depends on the variety. If the tree is vigorous, then three fruit of the largest varieties may be allowed to each foot of stem—that is, supposing a cordon to be twelve feet in length, it should be capable of carrying three dozen fruits of the largest size, averaging, say, a pound each, or four dozen of a smaller size, while at least five dozen may be allowed to remain of such kinds as Winter Nelis and others of a like class. As the later varieties swell more rapidly when the days become shorter, and there is more moisture, both in the soil and in the atmosphere, trees do not become so exhausted in maturing their crops as is the case of such varieties as Clapp's Favourite and others that ripen at that period; therefore, the crop should be regulated according to the variety and the season of ripening.

There are other things to be taken into consideration in addition to thinning and regulating the fruit, if we are desirous of obtaining the finest results, for not only must the specimens be of large size, but they must possess good colour, and be of the finest flavour. As neither of these things can be obtained unless during growth the fruit is exposed to all the light and air possible, it is evident that the young shoots overshadowing them must be removed early in the summer. It should be the aim of the cultivator to keep his trees in a healthy flourishing condition, and at the same time produce the finest specimens possible. As this cannot be accomplished unless constant attention be paid to the tree's requirements, and one has a knowledge of essential conditions, it is necessary to observe closely the difference in the habit of each separate variety, as no general rule can be laid down to show how every kind should be treated. Some varieties make strong, rampant growth, which bloom but sparingly unless checked, while others are of a more slender habit and flower most profusely each season. Now to treat all alike would simply be courting failure, whereas by paying close attention and observing how the numerous varieties respond to different treatment, one is able to judge the best and most suitable time to perform the various operations necessary to attain the desired end. Slender growing varieties may be summer pruned much earlier than the strong growing ones without fear of their permanent buds bursting; therefore, it is well to take this into consideration at the time of summer pruning.

As pears ripen at different seasons, their fruit is of considerable value to those in private establishments, both for dessert and culinary use, and as many of the varieties are in season when other kinds of fruit are scarce, it is well worth considering, not only how good crops can be secured, but how they can be preserved to the best advantage. In large gardens where ample room is at command, there is no reason why a good quantity of the best late-keeping varieties should not be grown. It is seldom now that we see large well-trained trees carrying two or three bushels of fruit each, neither is it desirable to have such a large quantity of those kinds that only remain in condition for a short period. It would be far preferable to grow more of some of the best late varieties that come into use from December onwards than to have so many of one kind that ripens in October and are so soon spoiled.

Many of the finest flavoured mid-season pears do not remain in good condition more than a day or two, especially if placed in a warm room. There is an inclination nowadays to go in for size in preference to flavour. I know from experience that appearance goes a long way in commanding favour, but good looks are not everything. Some of our finest flavoured pears have not the most showy appearance, and are discarded on that account, and, though it is possible to improve the flavour of many things by superior cultivation, it would be better to discard inferior varieties and grow only those of proved sterling merit, especially as trees can now be made to produce fruit in the course of a few years.

H. C. Prinsep.

## DELPHINIUMS.

Delphiniums have always enjoyed a position of prominence in decorative gardening, and their many sterling qualities undoubtedly account for this, for unlike some other flowers, they have maintained their position chiefly on account of that great diversity of habit that admits their inclusion in gardens of any size, while the colour range is a positive safeguard against the evil of changeful fashion, that at times so adversely affects flowers upon which the florist has expended much time and expense.

Few hardy border flowers are distinguished by greater natural grace, elegance, and a certain stateliness of character, consequently there are few positions in a garden wherein delphiniums may not be employed to advantage; in borders the extreme range of height and colour is readily shown, and when the latter is displayed in distinct shades, they are particularly impressive provided the varieties are arranged in rather bold groups and the growth is vigorous.

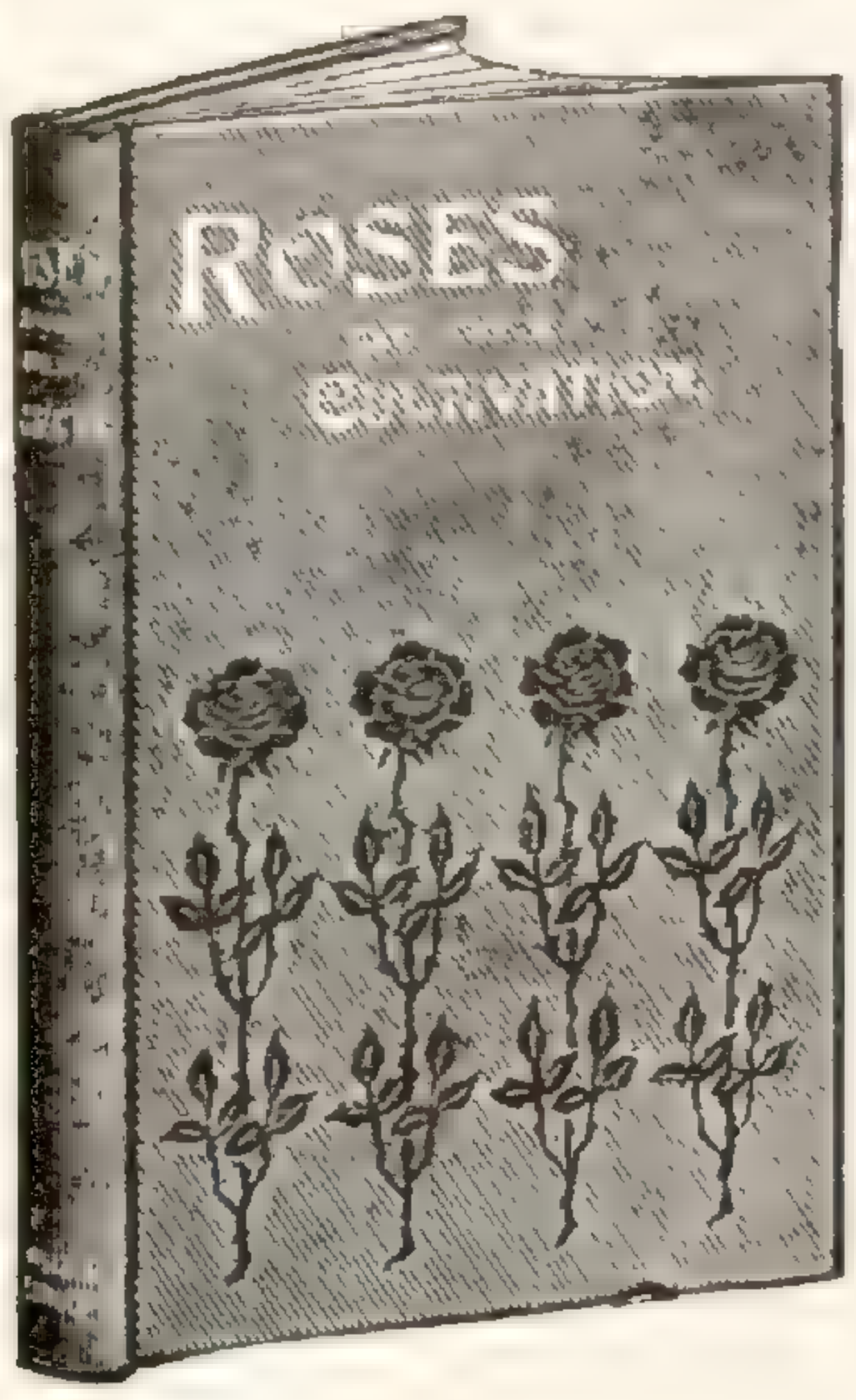
Wherever space permits, most telling effects are produced by planting whole beds in masses or groups of distinct shades, an arrangement that scarcely admits of improvement, as in this way the variety in modern delphiniums is disclosed in all its wondrous beauty.

The cultivation of delphiniums is by no means difficult, as they succeed in any ordinary garden soil that has been deeply trenched and liberally manured previous to planting. The best results are obtained on deep, friable loam, while on heavy soils some material to lighten and render them warmer should be added at time of planting. On light soils the necessity of liberal supplies of manure is very evident, as otherwise the plants soon deteriorate; this stimulus may be applied to the plants in spring, digging, or better, forking, it in among the roots, to be followed by a heavy mulching of short manure in April, while during periods of drought, the application of some liquid manure will greatly assist perfect development.

The varieties that have originated in gardens are most popular at the present time, as they surpass the species in general vigour, and, being more refined in colour, they appeal to a much wider circle of plant lovers. The varieties of these are innumerable, and it is only possible here to name a few that are generally recognised as of standard merit:

King of Delphiniums, gentian blue and purple, with white centre, spike narrow, flowers double; Francis F. Fox, deep blue, flushed purple, and eye white; Persimmon, bright azure-blue, sulphur centre, large flowers on branching spikes; True Blue, intense blue, with black eye, a very telling border flower; Rev. E. Lascelles, dark blue, white centre, narrow spike; Mrs. J. S. Brunton, bright blue, white eye, spike loose; Bandolero, violet-mauve and blue, with white eye, double; Moerheimi, the best of the white varieties; Rev W. Wilks, rich purple-plum colour, black eye; M. Porion, sky-blue flowers of ranunculus form; Mrs. Creighton, semi-double, deep blue, with rose-violet centre; and Queen Wilhelmina, the colour a charming combination of soft blue and rose, with white centre.

Of dwarf varieties all the forms of grandiflorum are admirable border plants, their low stature and continuous flowering properties rendering them particularly valuable in all planting of a composite nature, while in some instances the shades of blue are almost unique. The type grandiflorum



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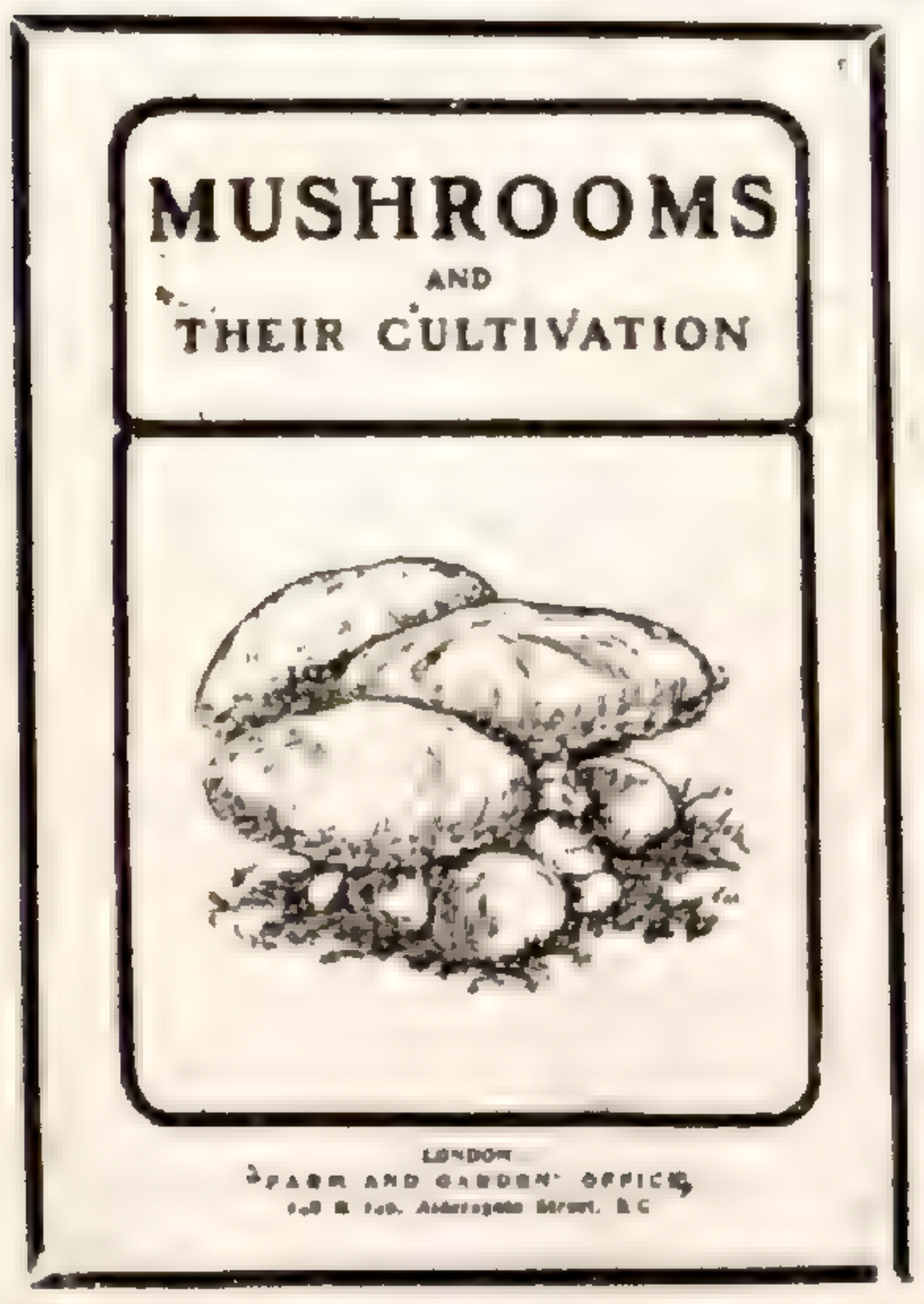

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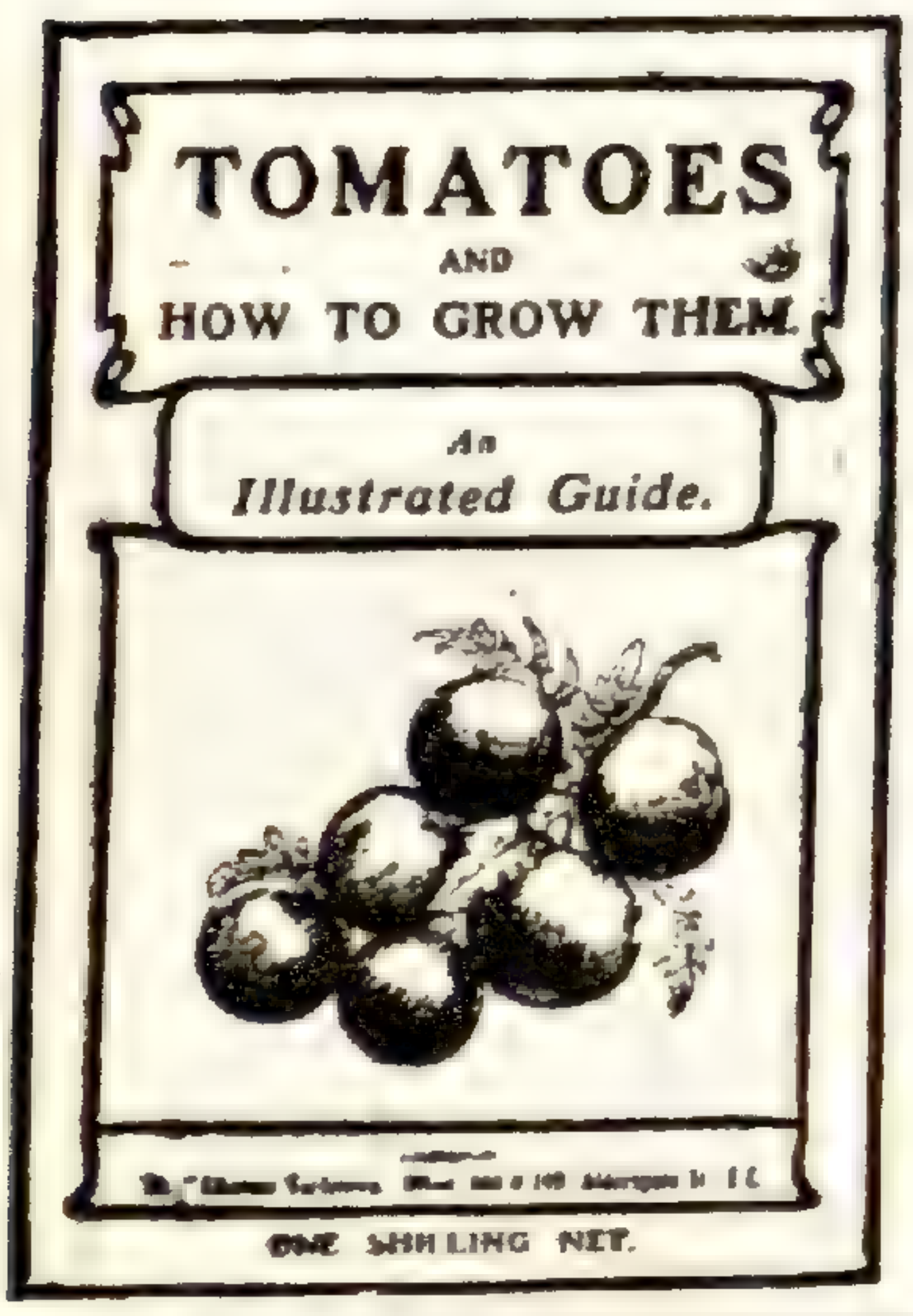
# TOMATOES



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(chinense) is a slender branched border species, with gentian blue flowers on stems that attain a height of 2½ to 3ft.; album is somewhat similar with white flowers. Belladonna, with lovely sky-blue flowers, on 3ft. stems, is indispensable in the border, and fortunately it comes true from seed; the colour is perfect. Belladonna semiplena, a form of the last-named, has flowers similar in colour, with the addition of a rose-lavender flush. Lamartine, one of the finest of all dwarf delphiniums, flowers rich turquoise blue, with snow-white centre, on branching stems, some 3ft. high, a beautiful flower in itself and effective in contrast with Belladonna.

Delphiniums are readily propagated by seeds, which should always be selected from the best flowers. Sowing may be performed in the open during May, the seedlings being subsequently transplanted to nursery beds, and planted permanently the following spring. Seeds may also be sown under glass in January or February, and if grown on rapidly and transplanted to a prepared bed in May or June, flowering plants will be obtained the same season. Delphiniums vary greatly from seeds, particularly those having double flowers; hence, in order to propagate a particular variety, resource must be had to cuttings and division of the crowns. Where the latter method is adopted, the plants are cut over immediately the flowers fade, when fresh growth is produced, and if carefully lifted and divided at this time, they readily produce roots on replanting and become well-established before winter. Single shoots taken in spring or autumn, and formed into cuttings, root readily if inserted in sandy soil, and placed in a close frame; this latter method is generally practised to perpetuate new or rare varieties of merit, and indeed is the one that can be the most strongly recommended. Thomas Smith.

Coombe Court Gardens.

A DOUBLE BORDER OF DELPHINIUMS AT COOMBE COURT, KINGSTON HILL, SURREY.

## ECHEVERIAS.

These plants are extensively used in carpet beds and to form edgings to borders generally. They should, however, only be employed thus where they will be in keeping with the plants with which they are associated. Where it is necessary to plant them so as to form a face-edging, many persons find it a difficult matter to place them so that they will retain their positions throughout the summer months, as ordinary soil will crumble away.

Use one part of cow-manure and two parts of ordinary soil; add water, and mix the ingredients in a wheelbarrow or on some boards, until they are of the consistency of stiff mortar. Then place a board of the required depth, or two if needed, which have been soaked with water, to the edge of the bed. With a trowel press the mixture of cow-manure and soil to the moist boards, leaving a level surface at the top, and then slide away the board from the edge. The echeverias must be at once planted, their stiff stems and roots being pressed into the soft mixture. One, two, or more rows of plants may be soon put in. If the edge is one to a round bed, then use three damp boards on end, and 9in. wide, thus making a neat curve as the boards are moved forward as required. The plants do well so treated.

Geo. Garner.

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**Hydrangea arborescens grandiflora.**—This hydrangea, which came to us across the Atlantic a few years ago, is now extensively grown, and it begins to figure in the principal florists' shops of London. It is a form of the North American Hydrangea arborescens, in which the rounded head consists almost entirely of large, white, sterile flowers, whereas in the typical form, these are limited to a scattered few.—T.

# WORK FOR THE WEEK.

### THE ORCHID HOUSES.

TRICHOPILIAS.—Some of the trichopilias are now in bloom, and others are over, such as the lovely T. suavis and its white variety alba. The white-flowering forms of this interesting family of plants comprise some of the most chaste, and beautiful of flowers, and deserve to be grown wherever white flowers are appreciated. In the intermediate or cattleya house T. suavis will now be forming new growths, and when these are two to three inches long, and about to push new roots, is the best time to repot them, should it be necessary. They are best grown in pans suspended from the roof, where the flowers, being short-stemmed and drooping, are seen to great advantage hanging just over the sides of the pans. They will succeed in a compost similar to that used for cattleyas. Excess of moisture must be avoided for over-supplies at the roots, or in the atmosphere, will often cause the pseudo-bulbs to become spotted, and entail the loss of the plant. T. Backhousiana, T. tortilis, T. marginata, T. lepida, and T. crispa are all good and worth growing. T. (Pilumna) fragrans and T. nobilis are both lovely plants, similar in habit to the above, and require exactly the same treatment. The plants whilst in full growth should be grown in a fairly moist position, but when at rest drier conditions and only sufficient water to keep the bulbs and leaves plump should be given them. Many of these inexpensive orchids would be much more sought after, and be very much more grown if they were not so easily obtainable.

PLATYCLINIS FILIFORMIS, the Golden Chain orchid, will now be in flower, the spikes springing up from the half-made growths, and the plants must not be allowed to suffer for want of water. This species, and P. glumacea, should be grown in a well-shaded part of the intermediate or cattleya house and placed in a position where the foliage can be conveniently sprayed over several times a day. Repotting is best performed immediately after the flowers are faded, using a compost as for cattleyas, and the plants should not be potted too firmly.

EPIDENDRUM PRISMATOCARPUM.—This useful and handsome species succeeds under the same conditions as the preceding, and is therefore best accommodated in the intermediate or cattleya house. The flowers possess lasting properties, in addition to their beauty, and is therefore a suitable subject for exhibition purposes. This also is in flower at this season, and when the flowers are over, should it be advisable to disturb the plant from any reason, the work should be taken in hand. The pots, or pans, in which the plants are to be grown should at first be filled two-thirds full of clean crocks for drainage, as it is most essential that the drainage should be perfect, and the water pass readily away from the roots. During the early stages of the growth water must be sparingly given, sufficient only to keep the rooting material nicely moist being necessary. This dry treatment must be continued until the new pseudo-bulbs commence to form, and new roots are freely moving through the compost, after which an abundant supply of water may be given until the growths are fully developed. This plant also succeeds in a similar compost as that advised for cattleyas, and should be given a position where it may enjoy plenty of light, but must be shaded from direct sunshine; it also appreciates an abundant supply of fresh air on all favourable occasions.—J. T. **Barker**, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

AMARYLLIS OR HIPPEASTRUMS.—By this time the flowering of these fine subjects is practically over, and the plants are in full growth. They should be placed in a position where they will have a fair amount of light, but must be shaded from direct sunshine. Where it is possible to give up a house to their culture, a low span-roofed structure is the best. It should be provided with an efficient heating apparatus, so that a brisk heat may be maintained when forcing is necessary. If this is not required, the plants will come on naturally with very little heat. They should be removed from the conservatory directly they have finished flowering, and if a house cannot be given up to them, a good position for the plants will be on the back stages of late vineries, where they are slightly shaded by the leaves of the vines. They then have plenty of moisture, and a certain amount of heat. Amaryllis are gross feeders, and the better they are treated whilst making their growth the better will be the quality and strength of the flower spikes. They should be given water whenever required with liquid manure alternately. Sheep droppings placed in a tub makes a capital liquid manure for them. Grow them on in this way until about the first week in August—the exact time can be determined when the centre leaves have attained the same length as the older ones. The plants should then be moved outside and stood on an ashbed, and allowed to go to rest. Water will only be needed if the weather is very dry and hot. As the bulbs ripen, the foliage will gradually die off. At the end of October the plants should be placed on a shelf, where they will not be subjected to frost, and kept perfectly dry until the flower spikes begin to appear in spring. I am perfectly sure the reason so many gardeners fail to grow and flower amaryllis satisfactorily is because the bulbs are not ripened and rested properly.

CHRYSANTHEMUMS.—These will need plenty of attention now. All plants required for big blooms have become established in their flowering pots, and are growing freely. Stakes should be placed to the growths selected, and all other growths should be rubbed out, three to four to each plant being quite sufficient according to their strength. The plants should be stood in their summer quarters at once. Where there is plenty of room in the frame ground chrysanthemums are best stood in single rows 4ft. apart on an ash base. A stout pole should be fixed firmly in the ground at each end of the row, and two wires strained one above the other, to secure the plants, to prevent the wind blowing them about. Often for lack of space the plants have to be stood each side of the kitchen garden paths, and they do quite well there providing the walk is a wide one and not overhung with trees. Plants intended for bushes should be pinched frequently. Chrysanthemums when growing freely should not be allowed to suffer from dryness at the root.

SALVIAS.—Salvia splendens, S. Pitcheri, and S. rutilans all need attention now, and if shifted on into 10in. pots and treated precisely as chrysanthemums, and in company with them they will be found to do well. Red spider is often very troublesome in hot weather, and if not checked will cause all the leaves to drop off. If the plants are watered overhead every evening this will easily prevent it.

EUPATORIUMS.—These are very useful greenhouse plants for the winter, and if attended to now will make fine plants by then. Young plants which were rooted in April will now be ready for their shift into 5in. pots. The compost best suited to their needs is fibrous loam two parts, decayed manure one part, with coarse silver sand. When potted the plants should be stood outside on an ash bed. The strong-growing varieties, Purpusi and Petiolaire, will need a further shift into 10in. pots directly they are ready for it. Eupatoriums are gross feeders; they like plenty of liquid manure when well established.—**Lewis Smith**, Shotesham Park Gardens.

## HARDY FRUITS.

SUMMER PRUNING.—Pyramids, bushes, and espaliers of apples, pears, and plums may now be summer pruned; probably in the late and colder portions of the country, where growth is more backward, it may be advisable to defer the operation for another fortnight. The summer pruning of established trees consists in cutting back to five or six leaves all young side shoots, leaving those at the end of the branch from one-third to nearly full length, according to the space available. Where a dense growth proceeds from the spurs the weaker ones should be removed. There are certain varieties of apples which form their principal fruit buds on the tips of the young growths, and in this case an exception to the above treatment should be made. These growths should be left intact until they have borne fruit, when they may be shortened back. On young trees a sufficient number of shoots to form the main branches should be retained, extra vigorous growths, after attaining the desired length of growth, should be stopped by pinching out the tips of the shoot. Summer pruning when carried out on common-sense principles has a beneficial effect, both on the tree and the crop of fruit; each individual tree has its own particular characteristics, and should be treated accordingly. Unfruitful trees making a quantity of gross growth will receive no benefit by hard pruning; on the contrary, the harder they are pruned the more will they persist in making new shoots. Such trees must be treated to drastic root-pruning during the early autumn, and to small use of the knife during the growing season.

WALL TREES.—Pears, apples, and plums growing on walls should have similar treatment to that afforded bushes, etc. The training of young trees should receive careful consideration; sufficient young growths should be laid in to build up a shapely and well-balanced tree. If the trees are fan-trained build up the wings first, and there will be no difficulty in filling up the centre in a satisfactory manner. The principal trouble in horizontal training is to secure growths at the required distance apart. If the leader fails to break satisfactorily it must be stopped to bring about the desired growths.

GRAFTED FRUIT TREES.—Trees grafted this spring will by this time have formed a perfect union. The clay and ligatures should be removed before injury occurs to the expanding union. Where the grafts have failed to join, a well placed growth may be detained for summer budding, or for grafting in due season. Well established and vigorous trees headed back for grafting form a considerable amount of spray growth. This should be removed to throw the whole energy of the tree into the desired channel. The new grafts should each have a stake and tie as a safeguard against strong winds. Where a considerable number of large trees have been grafted and it is not possible to afford the time for applying the stakes, the risk of loss by wind may be largely diminished by stopping the leading shoots. Every effort, however, should be made to give the necessary support to the new growth.—W. **Messenger**, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

CARROTS.—It is very advisable to make another sowing now of the Shorthorn forms of carrots, to maintain a regular supply of nice small tender roots, appreciated so much on the dining-room table. Take special care with the drills, drawing them rather deeper than usual, to receive a good supply of old potting soil previous to sowing the seeds. Cover the seeds with similar material, making it nice and firm if at all dry. This little care will contribute much to the success, particularly in dry weather.

RUNNER BEANS.—Where a good demand has to be met, a sowing should now be made. Sow in a shallow trench similar to a miniature celery trench. Where pickling this delicious vegetable is practised this sowing will be found to yield young, succulent pods in profusion at the right time. Gather them quite young and dry. Cut them up as for immediate cooking, place in layers in earthenware jars, and cover each layer with ordinary salt. Repeat this practice till the jar is full; tie down, and store in a cool place.

PEAS.—There is still good time to sow these if care is taken in the preparation of the ground. Sow early varieties, as well as late ones, the former often being fit to gather from seven to eight weeks hence. We have found Sutton's Early Giant excellent for a quick late crop. Peas will, of course, need mulching and spraying during dry autumn weather. Sow also Sturdy, Gladstone, and Autocrat.

SPINACH.—Sow the ordinary summer spinach every ten days in various parts of the garden. Sow also the spinach beet if a sure and plentiful supply is required. This variety raised from seed sown now will not run to seed till late spring next year. It bears transplanting with impunity when thinning out.

LETTUCE.—Make regular sowing of both cos and cabbage varieties, and guard against slugs when the plants are quite small. A sowing of new lime, broadcast, deters these pests.

ENDIVE.—Good breadths of this should now be sown, as from this sowing fine, fully-developed plants will be ready for blanching when good lettuce are becoming scarce during the late autumn. Sow both Batavian and curled varieties. Draw drills one foot apart and an inch in depth. Keep a sharp look out for slugs when germination is taking place. When large enough to handle plant out on good ground, fifteen inches apart. Ground previously occupied by potatoes forms an excellent site.

CELERY.—The earliest batch will now need a little soil drawn up to commence the blanching process. Previous to this carefully pull off all small leaves and side shoots from around the base. Give a dressing of soot, and water in if dry; then proceed to mould up after the stems have dried.—**Geo. Ellwood**, Swanmore Park Gardens.

## GARDENERS AND THE NATIONAL INSURANCE ACT.

The United Horticultural Benefit and Provident Society, in the institution of which Mr. William Marshall, V.M.H., and the late Mr. Shirley Hibberd, took a prominent part, has carried on its good work under the Friendly Societies Act, for a long number of years, and has been repeatedly referred to as one of the most successful societies in the United Kingdom. The wonder is that so few (comparatively) gardeners have joined the U.H.B.P.S. Probably the chief reason is that so many join the juvenile branches of such societies as the Oddfellows and the Foresters, and eventually join the adult lodges. With £41,000 invested and a membership of about 1,400, the Society is in a financial position of unusual strength. These funds will not be affected at all by the National Insurance Act, but it may be at once stated that individual balances (some old members have over £100 to their credit) are not likely to accumulate so rapidly under the new regime as they have done in the past.

At a special general meeting of members, held at the Royal Horticultural Hall on Monday, June 17, it was decided by a majority of 81 to 2, that the Society should seek the approval of the Commissioners, and be thus enabled to do business under the National Insurance Act, which comes into force on July 15. Previous to the meeting, a copy of the old rules, slightly revised, and a copy of the new rules for the working of the Insurance Act, were sent to every member. These rules were approved, and the Committee of Management was empowered to make the few necessary additions required by the Commissioners.

Gardeners who are exempt from the provisions of the Act may still join under the old rules, as the business of the Society will be conducted under two sections. Every employed gardener whose income does not exceed £160 a year must pay 4d. a week under the Government scheme of national health insurance, and his employer must pay 3d. a week, after the Act comes into force. To this total of 7d. a week, the Government does not pay 2d., but it will contribute 2d. towards every 9d. worth of benefits administered under the Act. No one is compelled to join a friendly society, but the advantages of joining an approved society, as against becoming a deposit member through the medium of the Post Office, are so obvious that even the National Health Commission urges attachment to an approved society.

Considering that gardeners have, on the whole, excellent health, and the profession occupies a very high position on the Actuarial Tables, it surely does not need much argument to show that if gardeners band together for the purposes of the new Act they are likely to get far greater benefits for the amounts contributed than would be the case if they joined other societies to which varied trades are admitted. Under the old rules a member of the United Horticultural Benefit and Provident Society received 18s. per week for 26 weeks if ill, and 9s. per week for a further 26 weeks in case of continued illness, while if the illness proved chronic he then received 6s. per week as long as illness lasted. And all this for 3s. per month, plus 3s. per annum to the Benevolent Fund, and 2s. 6d. per annum to the Management Fund. Supposing such a member now comes under the provisions of the National Health Insurance Act. In the past he has paid, roundly, 10d. per week. In the future he must pay 4d. a week, and for that sum, plus his employer's and the State contribution, he will obtain all the benefits the State scheme provides. He prefers to secure these benefits through the medium of the U.H.B.P.S., and it is anticipated that this society will be able to increase the benefits as a result of good management and the good health of its members. So far, this member pays 4d. a week, but he may see no good reason why, for benefits receivable, he should not still pay 10d. a week, as aforetime. He may do one of three things: Pay 2s. per month, plus 3s. and 2s. 6d. per annum to the Benevolent and Management Funds, and receive 12s. per week for six months, 6s. per week for a further six months in case of illness, and 4s. per week if chronically ill. This would mean 10s. in cash per week under the Insurance Act, and 12s. per week under the Society's own business, thus making 22s. per week, in addition to the other benefits of the Act, during six months of illness. Secondly, pay 1s. 4d. per month in addition to the State requirements, plus 3s. and 1s. 3d. per annum respectively to Benevolent and Management Funds, and receive 8s. per week during the first six months' illness; 4s. per week for a further six months, and afterwards 2s. 8d. per week if chronically sick; this making 18s. per week for the first six months of illness. Thirdly, he may pay his 4d. to the State scheme, and 8d. per month, plus 3s. and 1s. 3d. per annum, under the old rules, and receive during the first six months of illness 10s. per week and other benefits under the Act, and 4s. per week under the Society's old rules.

The Society will only admit as members those belonging to the gardening profession. New members must conform to the old rules as to age, etc., if they contribute to that part of the Society's business outside the Act, but age alone will not disqualify a gardener who desires to join and obtain the benefits of the Act through the medium of the U.H.B.P.S.

Head gardeners, nurserymen, and seedsmen, and market gardeners would be doing their men a kindness by securing and placing before them the Society's rules, etc.

C. H. CURTIS.

## ROYAL GARDENERS' BENEVOLENT INSTITUTION.

This fine, old, and useful charity held its annual festival dinner at the beautiful hall of the Grocers' Company on Tuesday evening, June 25, under the presidency of Sir Jeremiah Colman, Bart., V.M.H. There were about 230 ladies and gentlemen present, and the hall was beautifully decorated.

After an excellent dinner, in a few charming words Sir Jeremiah gave "The King," and followed with "Her Majesty the Queen, Queen Alexandra, the Prince of Wales, and other Members of the Royal Family," and he took advantage of this opportunity of pointing out how the institution had been honoured for long years with Royal patronage.

In proposing "Continued Prosperity to the Gardeners' Royal Benevolent Fund," the Chairman said that the love of gardening was either hereditary or instinctive in himself; in his childhood, when his pocket money was 1d. per week, he set aside a fair sum for seeds for his garden, but little thought he would have the honour of presiding in later years over such a representative gathering of gardeners as was present. Horticulture was progressing, and he was glad to say that the Royal International Horticultural Exhibition had proved a huge success. The recent honours list showed that horticulture was receiving due recognition, while the Minister of Agriculture had already signified his intention of making horticulture a distinct branch of his board. Lastly, the honour conferred upon Sir Harry J. Veitch recently had met with universal approval and pleasure (the meeting enthusiastically endorsed the chairman's remarks). Gardening was the most elevating of pursuits, and the purest of human pleasures. To be orthodox he should string out a long list of figures and facts relative to the working of the institution they had all met to assist. But he would not do so, and simply refer to the annuities granted to 253 beneficiaries, the Victorian Era Fund, assiting 49 poor gardeners awaiting election; and the Good Samaritan Fund to help the extremely necessitous. The institution has distributed £140,000 in assistance to gardeners, and needed £5,000 a year to meet its liabilities, only £1,000 a year being assured. Sir Jeremiah concluded with a reference to the distinguished company present, and his gratitude to those who had come to assist the charity; in a stately hall of an ancient and honourable company—to whom he tendered thanks—and surrounded by portraits of kings, queens, and nobles, and with tables ornamented by wonderful plate, and decorated with charming flowers by Mr. Leopold de Rothschild's able gardeners, Mr. Hudson and Mr. Bedford, and with the lady friends of horticulture present, he felt that everything was conducive to benevolence and practical sympathy. Contrast, said he, these surroundings with those of a disabled breadwinner, or of a gardener's widow, and before the picture fades, please fill up your forms with the amounts you feel able to afford for a deserving cause. With the toast and his appeal, the Chairman coupled the name of the treasurer, Sir Harry J. Veitch, and asked that the result of the evening might prove a record.

Sir Harry J. Veitch, who was enthusiastically received, said he found it difficult to say anything different to what he had said during the five-and-twenty years he had had to respond to the toast. First he thanked the chairman for his presence and advocacy of the claim of the charity, and tendered thanks to the Grocers' Company for the use of the hall. Sir Harry said the oldest pensioner was a widow of 98 years of age, and her husband enjoyed the pension for eight years after contributing £25 6s.; the couple had received over £400. One widow had received £450 from the Institution, and her husband had contributed £10 to the funds. Seven pensioners were over 90 years of age. After a word of praise to Mr. G. J. Ingram, the capable secretary of the Institution, Sir Harry read several pathetically thankful letters from pensioners. Although need was the only qualification for candidature, those candidates who had subscribed received some advantage because they were credited with votes in accordance with their contributions. Sir Harry concluded with a strong and feeling appeal for funds, and thanks for the reception given him; he felt that the honour he had received was an honour to horticulture in general, and not merely a personal manner.

Colonel the Hon. Mark Lockwood, M.P., proposed "The Ladies and Visitors" in a delightful and humorous speech that was much appreciated. Lord Southwark responded to this toast in a very pleasant fashion.

"Our Chairman," ably given by Mr. N. N. Sherwood, V.M.H., was accorded full musical honours, and Sir Jeremiah Colman and Lady Colman were heartily cheered. Sir Jeremiah responded in a few simple and feeling words, and with pleasing reference to the generosity of Sir Harry J. Veitch and Mr. N. N. Sherwood.

The subscription list for the evening, read by Mr. Ingram, amounted to £3.250: a splendid sum. This sum included £500 from the Chairman, 100 guineas from Messrs. Sutton and Sons; Messrs. de Rothschild, 100 guineas; Mr. J. Gurney Fowler, 50 guineas; Mr. L. Salomon, 30 guineas; Mr. A. W. Sutton, £20; Messrs. J. Veitch and Sons, 25 guineas; Thames Bank Iron Company, 25 guineas; and Sir H. Waechter, £50. The Covent Garden table (per Mr. J. Rochford), £188 10s., and the second Covent Garden table (per Mr. D. Ingamells), 50 guineas; Mr. N. N. Sherwood, to celebrate his jubilee with Messrs. Hurst and Sons, contributed the munificent sum of £500; and in acknowledgement of the great honour conferred upon horticulture through them, Sir Harry and Lady Veitch gave £300, and it need hardly be said that the notification of these magnificent donations were cheered to the echo. With the exception of the year when there was a special collection, this was a record subscription at a festival dinner. At the Chairman's request, Mr. G. J. Ingram was accorded hearty thanks for his untiring and successful work as secretary of the Institution.

An edition of "SWEET PEAS AND THEIR CULTIVATION," by C. H. Curtis, has been issued for 1912, and consequently this is an up-to-date work on the subject. The price, by post, is 1s. 2d. (cloth, 1s. 9d.) from the Publishers, 148-9, Aldersgate Street, London, E.C.

ROYAL SHOW

PRACTICE WITH SCIENCE

DONCASTER,
July 2nd to 6th, 1912.

£10,900 in PRIZES.

LIVE STOCK, POULTRY, MACHINERY, JUMPING, RIDING, DRIVING, PIT PONIES, FORESTRY, DAIRYING, HORSE SHOEING, SHEEP DOG TRIALS, DOG SHOW, FLOWER SHOW.
*For particulars SEE DAILY PROGRAMME.*

Band of The Queen's Own Yorkshire Dragoons.

**Prices of Admission:** Tuesday, July 2nd, 5/-; Wednesday and Thursday, July 3rd and 4th, 2/6; Friday and Saturday, July 5th and 6th, 1/-.
THOMAS McROW, Secretary.
Royal Agricultural Society of England,
16, Bedford Square, London, W.C.

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BATH GRAND ROSE SHOW
and
GENERAL SUMMER EXHIBITION,
WEDNESDAY and THURSDAY, JULY 10th and 11th.

Classes for Roses (Nurserymen and Amateurs), Bouquets, Cut Flowers, Sweet Peas, Strawberries, Plants, and Tuberous Begonias.
Entries close Friday, July 5th.
For Prize Schedules, etc., apply,
B. R. F. PEARSON, Secretary.
Office: 17, Argyle Street, Bath.

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BECKENHAM HORTICULTURAL SOCIETY.

GRAND SUMMER SHOW.

WEDNESDAY, JULY 10, 1912.

OPEN CLASSES, ROSES, Etc.

MILITARY BANDS, SPORTS, ETC.,
J. A. BENNETT,
CLOCK HOUSE, Hon. Sec.

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The NEXT Great Horticultural Event is the
**GREAT BIRMINGHAM FLORAL AND FRUIT EXHIBITION.**
Note the Date of this GREAT SHOW of the MIDLANDS
Friday and Saturday, July 19th and 20th.
**The Opening Ceremony will be performed by The Right Honourable the Countess of Warwick, on Friday, July 19th. at 12 o'clock mid-day.**
William G. Carradine, F.R.H.S., Secretary,
Hamstead Road, Birmingham.

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**Cardiff & County Horticultural Society.**
**24th GRAND ANNUAL SHOW**
SOPHIA GARDENS, CARDIFF,
**Wednesday & Thursday, July 17 & 18, 1912.**
Specially good prizes in every Section, amounting in Money and Plate to nearly **£500.**
Tents lighted by electricity by Messrs. Fred Price and Co., Ltd.
POPULAR PRICES.
Schedules from the Secretary,
Mr. A. MAURICE BAILEY, 24, Duke Street, Cardiff

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CHESTERFIELD FLOWER SHOW,
WEDNESDAY, 31st July, 1912.
Affiliated with the National Rose Society.
Special large Marquee for staging Roses.
Schedules on application.
CHAS. WM. HADFIELD, Secretary.

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HANLEY PARK, STAFFORDSHIRE.
JULY 3rd and 4th, 1912.
SIXTEENTH
GREAT ANNUAL FLORAL FETE.

£500 in Prizes, Silver Cups, Gold and Silver Medals, Silver Challenge Cup, value £10 10s., offered for "Trade Exhibit" (for particulars see page 7 in Schedule).
Valuable Special Prizes offered by the Principal Firms in England.
Schedules post free on application to
WM. POULSON, Secretary.
Town Hall, Hanley.

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LEICESTER.—ABBEY PARK FLOWER SHOW, 6th and 7th August next. Open Class. Group of Plants, £20, £15, £10, £6. Liberal prizes for Collections of Fruit, Displays of Roses; Silver Cup, Gold and Silver Medals for non-competitive exhibits. Schedules from JOSEPH BURTON, Supt.

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HEREFORD AND WEST OF ENGLAND ROSE SOCIETY.
THE 45th ANNUAL EXHIBITION OF ROSES
(open to the United Kingdom)
Will be held in the SHIRE HALL, HEREFORD,
On WEDNESDAY, JULY 10, 1912.
£120 in Prizes, and Four National Rose Society's Medals.
Prize Schedules, Entry Forms, and further particulars may be obtained from the Hon. Sec., Mr. F. A. SPEER, Street Court, Kingsland, Herefordshire; or from Messrs. Jakeman and Carver, Booksellers, Hereford.

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NATIONAL SWEET PEA SOCIETY.—Great Exhibition at Royal Horticultural Hall, Westminster, July 9 and 10. Entries close July 3. Minimum annual subscription, 5s. Schedules on application. "Sweet Pea Annual" free to members; 2s., post free, to non-members. List of Sweet Pea names free to new members. CHARLES H. CURTIS, Hon. Sec., Adelaide Road, Brentford, Middlesex.

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WOLVERHAMPTON GREAT FLORAL FETE,
JULY 9th, 10th, and 11th, 1912.
£900 in Prizes.
Entries close July 1st.
Schedules on application to the Secretary.

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HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

# EXHIBITIONS AND MEETINGS.

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## York Floral Fete and Gala.

The following notes of York Show were unavoidably held over from our issue of June 22:

### GROUPS AND PLANTS.

For the best collection of flowering and foliage plants, arranged for effect on a table space 12ft. by 6ft., and 2ft. from the ground, Messrs. J. Cypher and Sons, Cheltenham, scored with a very bright display of ferns, bright crotons, carnations, liliums, cattleyas, odontoglossums, and lælio-cattleyas; Mr. W. A. Holmes, Chesterfield, was a good second, and he made carnations and liliums a feature. Mr. G. W. Richardson, gardener to Mrs. Whitehead, Deighton Grove, Yorks, third, and Mr. T. M. Ward fourth. This was an especially good class, and the competition was very keen.

The class for a group of carnations was a good one. The space allowed was 12ft. by 6ft., and here Mr. S. Barker, gardener to the Duke of Newcastle, Clumber, Worksop, led with a grand lot of Souv. de la Malmaison, finely grown, with a backing of scarlet flowers, and crimsons in front. Mr. J. Donoghue was a very close second with Malmaisons backed and flanked by tree and border varieties, Cecilia being prominent; Mr. W. Langstaffe third.

At York a considerable number of classes are provided for greenhouse plants, and the competition is usually keen, this year especially so. Mr. H. W. Clark, gardener to Captain Walker, Mill Mount House, York, led for gloxinias with a handsome exhibit of well-grown plants; Mr. F. Dean, gardener to J. Rowntree, Esq., Clifton Lodge, second. Mr. T. Winn, Burton Lane, led in the open class for gloxinias, and was also a capital first-prize winner for a group of begonias with fine double varieties. Mr. F. Dean scored in the strong class for a group of calceolarias, and was followed by Captain Walker. Messrs. W. Seagrave and Co.; Mr. Skill, gardener to H. E. Leetham, Esq., Elm Bank, York; and Messrs. W. J. Godfrey and Son, Exmouth, won prizes as placed, for a group of show pelargoniums.

Mr. Wm. Todd, Vyner Street, York, gained first prize for a group of roses in pots. Standards, arches, and pillars of Dorothy Perkins and Hiawatha were freely used, with dwarfs of Frau Karl Druschki, Capt. Hayward, etc., beneath. Mr. W. Langstaffe, Garth Terrace, York, second, with a good lot of roses, but not well displayed. In another class for a group of roses, decorative plants admissable, Mr. Langstaffe was the leading prize winner, and his centrepiece was a standard of Philadelphia Rambler; Mr. W. H. Todd second.

There were but two entries in the class for a table of roses, 6ft. by 4ft., and here Mr. E. J. Hicks won first place with an excellent exhibit containing masses of Richmond, Frau Karl Druschki, Lady Hillingdon, Mdme. Abel Chatenay, and Mdme. Ravary; Mr. Henry Drew, Longworth, was a good second.

For a specimen greenhouse plant in flower Messrs. J. Cypher and Sons set up a very large and freely-flowered Erica ventricosa magnifica, and this won them the leading award; Mr. W. Vause second. The Messrs. Cypher scored easily for six specimen foliage plants with large examples of kentias and crotons; Mr. Vause and Messrs. R. Simpson and Sons followed in order. The latter firm staged the three best crotons.

Mr. Barker scored for six orchids in the amateur section, and in the same division led for three orchids and for a single specimen, the latter being a lovely Cattleya Mossiæ alba. Mr. A. Sunley, South Milford, was also a prize winner in the orchid classes, and Mrs. Whitehead scored with a fine Vanda suavis.

### PELARGONIUMS.

Specimen pelargoniums do not occupy the large position they once did at York, but nevertheless they make a fine show. For six specimens, zonal or nosegay varieties, Mr. Henry Pybus, Monkton Moor, won first prize with Mrs. W. Paul, Lady Reid, Mrs. Kelly, Doris Clark, Dr. Kotch, and Mrs. Newdigate; Mr. Jas. Sunley second, and Mr. J. W. Clarke, third. For a dozen specimens Mr H. Pybus scored, but we have seen him show in better form; Doris Clark, Mary Pelton, H. Jacoby, and Mrs. Kelly were his best specimens; Mr. J. W. Clarke, Clifton, York, came a capital second with smaller but finely-flowered specimens, and Mr. J. Sunley came third.

Mr. J. W. Clarke scored for half a dozen specimens of double varieties with good examples of Ernest Louth, R. W. Sayers, Royal Star, Mdme. Thibaut, F. V. Raspail, and King of Denmark; Mr. H. Pybus second, and Mr. R. Madgett, Clifton, York, third. Mr. H. Pybus led for three zonal varieties, and here his selection was Lady Reid, Mrs. Turner, and Mrs. D'Ombrain; Mr. Sunley second, and Mr. J. W. Clarke third.

### FLORAL DESIGNS.

In the classes for floral decorations there was a goodly display. Messrs. J. Backhouse and Son led for two bridal bouquets, and these were composed chiefly of white odontoglossums; Mr. A. A. Gatley second. The Messrs. Backhouse also came first for a pair of ball bouquets, with designs in gorgeous orchids; Mr. A. A. Gatley second. The Messrs. Backhouse also led for a pair of hand bouquets, and here they used golden oncidiums and cypripediums advantageously. In other classes the York firm scored for a basket of cut flowers and for a basket of roses, the latter being a fine exhibit of Mdme. Abel Chatenay.

### HARDY FLOWERS.

A very interesting class was one for twenty alpine and herbaceous plants in pots. There were three exhibits, all staged outside, and first prize was awarded to Mr. Walter Pybus, Monkton Moor, Leeds, whose leading specimens, all in excellent form, were Nepeta Musseni, Saxifraga pyramidalis, Mimulus Tillingi, Delphinium nudicaule, Achillea The Pearl, and Pyrethrum Nero. Mr. S. Pickering came second with Geranium sanguineum, Cerastium tomentosum, Phlox canadensis, funkias, sedums, and sempervivums Mr. G. W. Pinkney, Stockton, third.

### FRUITS AND VEGETABLES.

Mr. N. F. Barnes scored for a dish of peaches with large examples of Royal George; Mr. Thomas, gardener to the Marquis of Ripon, Studley Royal, second, with Hale's Early. In the nectarine class Mr. C. Lawton, gardener to Colonel Harrison Broadley, M.P., Welton House, E. Yorks, scored well with Lord Napier, and was followed by

Mr. Edmonds with the same variety. In the well-contested melon classes, Mr. S. Barker led for a green-fleshed variety with Lord Derby; Mr. A. Nicholson, gardener to A. S. Lawson, Esq., Aldborough Manor, Boroughbridge, scored for a scarlet-fleshed variety with Emerald Gem, and Mr. H. Drew, gardener to Lieut.-Gen. Pakenham, Langford Lodge, Crumlin, co. Antrim, led for a white-fleshed variety with an unnamed specimen. Mr. Edmonds scored for a pineapple with a Queen. Mr. Searle, gardener to the Marquis of Northampton, Castle Ashby, led for figs and also for strawberries.

Mr. Searle, Castle Ashby, won first prize in Messrs. Sutton and Sons' class for a collection of six kinds of vegetables, and a similar award in Messrs. E. Webb and Sons' class for six kinds. In these classes Mr. W. N. Hague, Leeds, took second place.

### Horticultural Club.

On Tuesday, the 18th instant, after the usual monthly dinner of this club, at the Hotel Windsor, Mr. G. Bunyard, V.M.H., in the chair, a very interesting lecture, under the title of "Pictures from a London Garden," was delivered by Mr. Horace J. Wright, illustrated by a number of lantern slides in natural colours. The lecture derived much of its interest from the fact that a very small suburban garden, about forty by thirty feet, and surrounded by the most commonplace conditions, was alone concerned, and yet by intelligent and painstaking arrangements and culture, was proved capable of yielding an abundance of beautiful effect. The slides themselves were from photos taken and coloured by the owner of the garden, Mr. Morton, of Harringay, and the lecturer dilated in each case on the best modes of selection, arrangement, and cultivation. The various plants which formed the chief attraction of the numerous slides were made the means of considerable instruction for those whose restricted conditions as regards space and environment might otherwise lead to the belief that a "garden beautiful" was altogether out of the question.

It was shown how the scope of a small area could be enlarged by means of arches, suspended baskets, and even by commonplace butter tubs which, when painted, raised on supports and filled with bulbs, trailing and other plants, on judicious lines; and, above all, carefully attended to as regards watering, became really things of beauty and replete with interest. Monotony was avoided also by the shifting from time to time of the materials employed, and careful selection of suitable plants. A corner, for instance, which, backed by the high wall of a neighbour's house, and limited by an ordinary wooden fence, must at the outset have appeared a hopeless case, formed the basis of one of the most beautiful slides of all, being over-arched by a splendid specimen of the Dorothy Perkins rose, beneath which was a tall, robust group of Lilium candidum, both in full flower. The lecturer pointed out that even a paved and cemented backyard could, by similar care and attention, be made a source of inexhaustible interest, and that under the most adverse conditions "where there is a will there is a way."

After the lecture an animated discussion took place, in which Messrs. C. Pearson, W. Bilney, A. Worsley, C. T. Druery, W. Hales, and G. Bunyard participated, Mr. Wright eventually responding. The close planting of bulbs for better effect was advocated, and approved all round, little or even no space being left between them, the result being a far finer massed effect of blossom without any detriment but the contrary, to their individual health and robustness. Mr. Druery suggested for such confined conditions the publication of a black list of ineligibles, owing to their monopolising tendencies, instancing the Harpaliums, Michaelmas daisies, and others which tended to become absolute pests if once granted a foothold. Another point elicited was the terribly absorptive power of bricks, which so robbed the soil of its water that plants trained against walls were frequently starved to death in consequence of this drain, despite apparently copious supplies to the surface. A very hearty vote of thanks was accorded to Mr. Wright.

## CIMICIFUGAS.

The genera Cimicifuga embraces some of the most distinct of hardy border flowers. For the most part natives of North America, they succeed in any good loamy soil, but they attain to their greatest luxuriance when given a moist position, such as may readily be found in the bog, and when the growth is so developed the floral display is also correspondingly great. Cimicifugas do not reach their full development until they have been planted several seasons; for this reason it is a good policy to recognise them as permanent occupants, and to select their position accordingly. The flowers are usually white or cream-coloured, and are produced well above the leaves in the form of slender panicles. The leaves are large, but are generally broken up into smaller leaflets or lobes, which mostly incline to be cordate in shape.

The decorative effect of cimicifugas, particularly when in flower, is, in substance, what some of the larger spiræas give earlier in the season; for, as a rule, they follow these in flowering, so that they may readily be given full play when arranging beds or borders where a display is required to extend well into autumn. Cimicifugas vary in height from three to six feet according to the conditions under which they are grown. The best species are C. americana, having thrice pinnate leaves and pure white panicled racemes; C. cordifolia, with twice ternate leaves, the leaflets cordate in shape, and the panicles cream-coloured; japonica has ternate, many-lobed, cordate leaflets and graceful panicles of white flowers; C. racemosa has three ternate leaves and deep-cut leaflets, and the flowers are white in compound racemes. Thomas Smith.

**Melon Barnet Hill Favourite.**—This is an excellent melon of good flavour, constitution, and free-setting qualities, and a variety which is gaining in favour, as it becomes better known. It was shown in Mr. C. Beckett's collection of melons at the International Show. It is grown well and is much in request at Sherfield, where its good qualities are highly esteemed.—Paul T. More.

**Petunia Queen of Roses.**—This petunia, which is one of the specialities of Messrs. James Carter and Co., Raynes Park, is a delightful variety for summer bedding, the flowers being of an exceedingly beautiful shade of rose. They are single, for it has been conclusively proved that the double flowers, striking though they be when protected, are not seen at their best out of doors.

**Ivy-leaved Pelargonium Vicar of Shirley.**—This variety, now being distributed by Messrs. H. Cannell and Sons, is a well-marked sport from Souvenir de Charles Turner, a guarantee that it is a very useful plant. In this new variety the flowers are of a deep cerise-scarlet, with prominent maroon markings in the upper petals. It promises in time to become as popular as its parent, which is grown in such large numbers.

**Specimen Fuchsias.** — Though large specimen fuchsias have long been grown and exhibited in the West of England, they rarely figure at a Metropolitan show. From their uncommon appearance half a dozen plants shown by Mr. Jules Friedlander, White Knights Park, Reading, at the International Exhibition, attracted a very large share of attention. The rarity of the exhibit was not its only claim to recognition, as the plants composing it were magnificent specimens, eight or nine feet in height, and profusely laden with blossoms. Three light-flowered kinds, namely, Jubilee Queen, Amy Lye, and Mrs. Bright; with three dark, Elegance, Brilliant, and Mrs. Jules Friedlander, were shown.—W.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

REVERSION IN SCARLET THORN.—J. C. and S., Aberdeen: We send you a small twig cut from the single scarlet thorn in which you will see a portion has reverted to the original. We have not seen this happen before, but possibly such reversion has come under your notice.—So far as our experience goes it is rarely that the single scarlet thorn reverts to the original white-flowered form, but in double thorns reversion of this character is much more frequent.

ORDER OF FREE GARDENERS.—E. S., Taunton: Can you tell me who is the secretary of the National Order of Free Gardeners?—We do not know. The Registrar of Friendly Societies would probably give you the information. If you are considering the question of joining a friendly society, we commend to your notice the United Horticultural Benefit and Provident Society; the secretary is Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROSE FELICITE ET PERPETUE. — H. A. H., Bournemouth: Would you kindly tell me the right version of the name of the rose, which all the publications of the National Rose Society, two or three recent rose books of authority, and several rose catalogues, unite in calling Félicité et Perpétue? In spite of this frequent agreement in error, I prefer Dean Hole's rendering of "Felicite Perpetrelle." I wrote to one of the officials of the N.R.S. on this subject, but so far have received no answer.—When doctors differ, who shall agree? Félicité Perpétue was the name in common use for many years. The trouble is that no one seems to know the origin or reason for the name, but it is now assumed that Jacques named the variety after two persons, named respectively Félicité and Perpétue. If the title of Félicité was given to the rose as indicating its joyful, or blissful, character, then Dean Hole's rendering would seem to be the correct one, as it signifies perpetual bliss.

FRUIT FARMING IN ONTARIO. — M. E. G., Warwick: Can you give me any information concerning the prospects of fruit farming in Ontario? Is there land still available?—The Chief Agent for the Ontario Government informs us that cheap fruit lands consisting of loams and sands can be had in many districts in Ontario at reasonable prices. These farms, when planted, will increase many times in value, besides giving reasonable returns during the growth of the trees from inter-cropping. Apples, pears, berries, cherries, and plums are staple crops in every section. Peaches and grapes are suitable to particular sections. Early vegetables and tobacco can be grown in the south-western sections, returning from £20 to £220 per acre. Small farms are to be found which are very suitable for incoming settlers with limited capital. The growing season lasts for 200 to 210 days, and the proximity of the Great Lakes make them immune from damaging frosts in spring and fall. The last winter was very severe. The trees are all growing very well; the apples were not affected at all, nor were the smaller fruits. The peaches in the peach districts have shown remarkable endurance. It must be remembered that the last was the severest winter experienced for fifty years. Under such circumstances the future of Ontario as a fruit-growing section is assured.

ROSES NOT EXPANDING.—W. S., Lutterworth: Heavy rains often prevent the proper opening of rose buds. The outer petals becomes so tightly packed that they do not readily separate, and so the growing inner petals either burst the outer ones and so produce a damaged flower, or they force the whole mass of petals from the base or hip. Defective root action is also responsible for buds decaying instead of opening, and this is the trouble in your case, as evidenced by the poor leaves and yellowy flower stems. There is something radically wrong with the plant, and it should be given a better position in the autumn. The soil is probably wet and cold a foot or so below the surface.

GARDENERS AND HEALTH INSURANCE.—M. M., Lincoln: Can you enlighten me as to the manner in which a friendly society, approved by the National Health Insurance Commissioners, will obtain the money paid by an insured person, seeing, as I understand it, the member's contribution is, so to speak, paid into the Post Office for an equivalent in stamps?—The money is paid in the first place into the local post office in exchange for insurance stamps (not postage and revenue stamps) to be placed on the cards of the insured persons. The stamped cards are lodged with the societies at the end of the period of their currency, and the society then forwards them to the Insurance Commissioners and is credited with the amount of the stamps, less a deduction which will be explained later. The money received by the post offices from the sale of stamps has in the meantime been accumulating in the "National Health Insurance Fund" in the same way that money is accumulated in a bank. As the societies are called upon to pay out benefits they draw upon this central fund, as from a bank, for the amounts paid out and for the expenses of administration. The deduction referred to above is a deduction of one penny and five-ninths from every sevenpenny contribution collected and credited to the societies, and it is made for the purpose of providing the money for the reserve values. It is not retained permanently by the Commissioners, but has to be used by them in payment of interest upon the reserve values and in paying off the reserve values themselves. In other words, it is redistributed among the societies in accordance with the ages of the members, and it is itself part of the money upon which societies can draw, as explained in the previous paragraph.

### NAMES OF PLANTS.

J. C., Goodmayes.—Geranium albanium.

C. P., Wolverton.—1, Phacelia campanularia; 2, Erica ciliaris; 3, Taxus baccata glauca.

F. W., Coventry.—Probably a variety of Anthemis tinctoria; send a plant, or some basal growth with a few more flowers.

J. L. S., Bramber.—Alyssum alpestre; 2, Achillea alpina; 3, Dianthus deltoides; 4, poor specimen, probably Artemesia argentea.

M. C., Chippenham.—1, Ginkgo biloba; 2, Prunus Pissardi; 3, Philadelphus Gordonianus; 4, Lonicera sempervirens; 5, Solanum Seaforthianum.

**Coleworts.**—Perhaps the most estimable of all autumn and winter vegetables, and the least grown. Too much value is attached to the old cabbage beds sprouting for a supply at this time, whereas if two sowings of coleworts were made, one at the end of May, and another at the end of June, much worry would be saved, besides having a plentiful supply of delicious cabbage throughout the winter. The last season proved this, where grown in quantity, other winter vegetables being cut badly, and the later coleworts came through the ordeal almost unscathed. Plant one foot apart each way as ground becomes cleared of early peas, potatoes, etc.—G. ELLWOOD.

## OBITUARY.

### MR. WILLIAM FYFE.

With much regret we have to record the death of Mr. William Fyfe, which occurred at Lockinge Park, Wantage, on June 24.

Mr. Fyfe, who had been in rather indifferent health, was appointed to the charge of Lockinge Park gardens by the late Lord Wantage about twenty years ago, and during this period he succeeded, by means of administrative ability and cultural skill of a high order, in greatly enhancing the high reputation these great gardens so long enjoyed, and of obtaining for himself a foremost position among practical horticulturists. It is interesting to recall the fact that Mr. Fyfe occupied a prominent position in the gardens of Lockinge before he assumed charge of them, for previous to his doing excellent work at Ditton and Overstone Park, he was general foreman, and in that position afforded ample evidence of his commanding ability. The fact that Mr. Fyfe was appointed to the position of head of the gardening staff at Lockinge some years after his leaving to fill responsible positions elsewhere, is an unquestionable proof that in the discharge of his duties he favourably impressed his employers during the first period of his being in the gardens of their historic Berkshire estate. During the time Mr. Fyfe was in charge of the gardening establishment the several departments were so well maintained that it would be difficult to mention one as of exceptional excellence in comparison with the others. He was generally regarded, and properly so, as one of the most successful fruit growers of the day, and throughout the time he was in charge of the Lockinge Park gardens the vineries were regarded by those specially interested in fruit culture under glass as one of their chief attractions. Mr. Fyfe was not less successful as an exhibitor than as a cultivator, and many were the prizes that he was successful in winning at the leading exhibitions. Mr. Fyfe was remarkably successful as an exhibitor of vegetables, and took a leading part in the development of the modern methods of presenting vegetables to public notice at the exhibitions. This is not the time to deal at length with his successes as a winner of prizes for vegetables, but it should be mentioned that during the period in which he exhibited them he was a formidable competitor, and obtained the premier position in many a hard-fought contest. It is even more important to place on record the fact that by the tasteful manner in which he staged his collections, he did much to bring about a great and highly beneficial reform in the exhibition of the products of the kitchen garden. Mr. Fyfe also achieved distinction as a cultivator of both hard and soft-wooded plants, and, as a cultivator of Fortune's Yellow rose, had probably no equal. For some years Mr. Fyfe was a regular contributor to the GARDENERS' MAGAZINE, and he was long a member of the Royal Horticultural Society's Fruit Committee, and enjoyed to the full the esteem of those who were associated with him in the work of that body.

THE LATE MR. WILLIAM FYFE.

**Ada Aurantiaca** is another species which is worthy of cultivation on account of its peculiar yoke-of-egg coloured flowers, which, when mixed with the long spikes of odontoglossums and the other inmates of this house, prove most effective. The plants have just passed out of bloom, and, like Trichomosa suavis, the half-formed growths will quickly produce new roots, therefore any plants that require potting should be now attended to. After repotting give but little water for some time, as should the compost be overcharged with moisture there is great danger of the young growths damping off, and the plants receiving a severe check thereby. When thoroughly established and well rooted the plants may receive copious supplies of moisture at the roots. Both this and the preceding are easy plants to cultivate, and should be grown by those who cultivate a few orchids for the love of them, but who do not indulge in an orchid house proper, as these two species may be cultivated amongst ordinary greenhouse plants, provided they are shaded from the sun.—J. T. B.

## NOTES OF OBSERVATION.

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**Cineraria Matador.**—This cineraria, which has been before the public for two or three years, has gained many admirers during the present season, the distinguishing feature being its beautiful colour. It is of sturdy habit, with large flowers; that is to say, it belongs to what are usually termed florists' cinerarias. The colour is difficult to define, but it is of a somewhat light velvety crimson-scarlet.—S. W.

**Propagating the Double Gorse.** — The double-flowered gorse is a very beautiful shrub, and well worthy of a place in the borders of a garden. It will succeed in almost any kind of soil, but especially in one that is light, sandy, or gravelly. In some parts of the New Forest, and in gardens of that part of the county of Hampshire, the double gorse may be seen thriving in very shallow and poor soil. Propagation is easy if the tips of the shoots are inserted in a sandy bed on the north side of a wall at the end of the summer. Plants so raised make pretty little standards about 30in. high.—G. B.

**Scutellaria indica var. japonica.**—Among the choice alpines which have been displayed this spring in the alpine house at Kew is a Japanese variety of the Indian Skull Cap. Its full botanical name is Scutellaria indica var. japonica, and this lengthy appellation is certainly against its popularity. On the other hand, it is a beautiful little plant with neat greyish-green foliage, both pleasing in form and in hue, and giving a good supply of purple flowers. At Kew it was only a few inches in height, and it is evidently a rock plant of no little merit. It is understood to be hardy, and a comparison of notes regarding it would lead to the belief that it is so. It should be cultivated in a dryish and sunny position, and, although not showy, it will be a neat and pretty little plant for the rock garden. Propagation is effected by division or by seed.—S. A.

**The Whitethorn, or Quick, for Hedges.**—Mr. Day, in dealing with this subject a short time ago, advocated double lines as preferable to single ones, but he did not say why. I have had much to do with this form of hedge plant, and think none other is equal to quick where cattle are concerned, and I have always held to the idea that a single row of plants is preferable, as I have many instances here supporting that view; but I am willing to learn, and would be glad to hear the reason that prompted Mr. Day to urge the contrary. We have single-row hedges of quicks that are one hundred years old, not more than 4ft. 6in. high, and perfect cattle fences. My experience of double rows is that, though a hedge can thus be grown quicker than when in single rows, the bottom is less thick. The common fault with the management is that of allowing the hedges to get up too quickly. —E. M.

**Pyrethrums.**—At this season of the year there are no more useful flowers to be found in the garden than pyrethrums. They are excellent subjects for table and room decoration, standing a long time when cut. When planted in the herbaceous borders they brighten them up considerably. To see them at their best, however, they require to be planted in their separate colours. They will succeed in nearly any good garden soil, but they are bad drought resisters, and need liberal waterings in dry weather. Ground intended for pyrethrums should be well manured and trenched in the autumn. There are many excellent varieties on the market, but the following dozen are about the best: Doubles—Duchess of Edinburgh, mauve; Leonard Kelway, rose; Bonamic, sulphur; H. Murger, purple; Dulcina, white; and Eximea, pink. Singles—Albion, white; Emblem, lilac; James Kelway, crimson; A. Kelway, rose; General Gaselee, scarlet; Kimberley, crimson.—D. S. A.

**Turnips** are the better if frequent sowings are made at this season. Choose a site, if possible, on a border facing north. Treat as advised for carrots. If a northern border cannot be spared sow on the shady side of peas and beans. Red Globe is an excellent variety for sowing at this time of the year, and indeed at all times.—G. E.

**Kerria japonica flore plena.**—This is certainly entitled to a place among the most beautiful of our hardy shrubs, for with its charming double rose-like blossoms of a rich golden-yellow colour, there is nothing to which it can be compared. Owing to its early season of blooming, it is seen as a rule to the best advantage when trained to a wall, and thereby protected from spring frosts and cutting winds. Though deciduous the bright green bark renders it during the winter season almost as effective as an evergreen. Apart from its value out of doors, it also readily lends itself to gentle forcing, and, brought on in this way, the flowers are much appreciated in early spring.—K.

**Pelargonium ardens.**—This belongs to the old-fashioned race of pelargoniums; in fact, it is often looked upon as a true species, but the "Dictionary of Gardendening" states it is a hybrid between Pelargonium fulgidum and P. lobatum. It is of a free branching habit of growth, with neat, dark green leafage, and bears its umbels of bright coloured flowers in great profusion. These blossoms are deep scarlet, with an almost black blotch in the centre. There is a tendency in favour of these old-fashioned pelargoniums, many of which have such fragrant leaves that in the nosegays of bygone days were always much appreciated. The nomenclature of these is terribly confusing, but as a collection is to be grown at Wisley this year, that trouble may be, to a certain extent, overcome.—S. W.

**Centropogon Lucyanus.**—This pretty flowering plant, which is seen at its best at the cool end of the stove, or in the intermediate house, at all events during the winter, has a season of blooming which extends over a lengthened period. It is fairly well-known as a rather loose-growing plant, that bears towards the points of the shoots clusters of peculiarly curved bright rosy-carmine coloured flowers. As a pot specimen, from its loose, partially drooping habit, it needs to be secured to a stake, but it may be also grown in a suspended basket, under which conditions the drooping clusters of flowers are seen to considerable advantage. It is readily struck from cuttings of the young growing shoots, taken in the spring, inserted in pots of sandy soil, and placed in a close propagating case with a gentle bottom heat. In the potting compost a liberal supply of good leaf-mould should be mixed.—W. T.

**Streptocarpuses.**—Comparisons between the International Exhibition just past and the one held forty-six years previously, are very generally met with. Among the subjects at that time unrepresented, and one may truthfully say undreamt of as popular garden plants, are the different forms of streptocarpus, which now occupy a foremost position among decorative flowering subjects. It is about twenty-five years since the first hybrid streptocarpuses made their appearance, but it was some time after that before they were generally cultivated. The collection of these beautiful flowers at the International well served to show not only their high decorative value, but also the good habit of the plants, their shapely blooms, and particularly the wide range of colour that now exists among them. Added to this, they are of comparatively easy culture, and can be readily raised from seed. From a purely decorative standpoint, they must be considered to be the equal of the gloxinia, as though the flowers are less in size, they are wonderfully effective, and good flowering examples of these streptocarpuses can be grown in quite small pots, and in this way they are very useful for dropping into the small jardinieres and other receptacles now so much in vogue. W.

## TOMATO-LEAF RUST.

The destructive disease known as tomato-leaf rust, due to the parasitic fungus Cladosporium fulvum (Cooke), was first described by Dr. M. C. Cooke, from specimens received from North Carolina in 1883.

Its occurrence in this country was recorded by Plowright in 1887, when it proved very destructive to tomatoes grown under glass, in two different districts. Curiously enough, the fungus was not observed as a source of injury to tomatoes in the United States until the year 1888. It is now a well-known pest, attacking tomatoes in France and Italy also.

### Description.

The leaves, stem, and occasionally the fruit, are attacked. The fungus usually first appears on the leaves, in the form of small scattered spots, which gradually increase in size and encroach on each other, until almost the entire under surface of the leaf becomes covered with a minutely velvety, dull rust-coloured layer, consisting of the spore-bearing portion of the fungus, the spawn or mycelium being imbedded in the tissues of the leaf. The presence of the fungus is first indicated by the appearance of pale yellowish patches on the upper surface of the leaf, corresponding in position to infected areas on the under surface. These yellowish patches increase in size, in proportion to the spread of the fungus on the under surface, and gradually change through brown to almost black, often with a tinge of purple. The fungus forms long, rust-coloured, afterwards blackish streaks on the stem, and more or less circular, scattered patches on the fruit. When the fungus shows a rusty tinge, the leaves wilt and soon die, and, as a rule, the disease spreads very quickly. This, to a very great extent, is due to the usual method of spraying horizontally, so that the spores are forcibly driven from one plant to another. If by any means the water could be allowed to fall from above, after the manner of a steady rain, numerous spores would be washed on to the soil, where they would germinate and perish, instead of being lodged on the leaves of healthy plants, where they set up new centres of disease.

### Preventive and Remedial Measures.

Spraying with fungicides is, according to a recent leaflet issued by the Board of Agriculture, of very little avail, unless commenced the moment the disease first shows on the foliage. The reason for this is that no fungicide is a curative agent; neither will it kill fungus spores. All that a fungicide can do is to form a film of some substance on healthy leaves, and act as a poison to any germinating fungus spores that happen to alight on the leaf. Success in this direction depends entirely on the method in which spraying is conducted, the object being to cover the entire surface of every plant with the fungicide. To accomplish this object even approximately, repeated sprayings are absolutely necessary.

If the plants are young, half-strength Bordeaux mixture may be employed. When flowers and young fruit are present, a solution of liver of sulphur, 1oz. in four gallons of water, should be used.

→ Spraying ←
The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested "FOUR OAKS"

which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-.** No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 C, SUTTON COLDFIELD.**

# MARKETS.

## COVENT GARDEN.

### Flowers.

The demand is good, and supplies are steady.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 0 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 3 0 | | 6 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Coreopsis | per doz. bun. | 1 0 | | 2 0 |
| Cornflowers | per doz. bun. | 0 9 | | 1 6 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 1 6 | | 2 0 |
| Gardenias | per doz. | 1 6 | | 2 6 |
| Gladiolus Colvillei | per doz. bun. | 4 0 | | 9 0 |
| Gypsophila | per doz. bun. | 3 0 | | 5 0 |
| Iris, Spanish | per doz. bun. | 6 0 | | 8 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per doz. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 6 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 6 | | 3 6 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 2 6 |
| Pæonies | per doz. bun. | 6 0 | | 10 0 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Pinks | per doz. bun. | 1 6 | | 2 0 |
| Poppies | per doz. bun. | 1 0 | | 1 6 |
| Pyrethrums | per doz. bun. | 2 0 | | 3 0 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 3 0 | | 4 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Stocks | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas | per doz. bun. | 2 0 | | 5 0 |
| Tuberoses | per doz. | 0 5 | | 0 9 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

A brisk business continues, and there are excellent supplies of good produce. Peaches and melons are quite plentiful, and strawberries are fine.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, Australian | per box | 7 0 | 12 0 |
| Apricots | per box | 0 9 | 1 0 |
| Bananas | per bun. | 4 0 | 12 0 |
| Cherries | per ½ sieve | 3 0 | 7 0 |
| Currants, Black | per ½ sieve | 6 0 | 8 0 |
| ,, Red | per ½ sieve | 4 0 | 7 0 |
| Figs | per doz. | 2 0 | 6 0 |
| Gooseberries | per ½ bush. | 2 6 | 5 0 |
| Grapes, English | per lb. | 1 0 | 8 0 |
| ,, Almeria | per doz. lbs. | 6 0 | 8 0 |
| ,, Guernsey | per lb. | 1 0 | 2 0 |
| Lemons | per case | 15 0 | 20 0 |
| Melons | each | 0 6 | 2 0 |
| ,, Cantaloupe | each | 2 0 | 6 0 |
| Nectarines | per doz. | 1 6 | 10 0 |
| Oranges | per case | 14 0 | 40 0 |
| Peaches, English | per doz. | 3 0 | 10 0 |
| ,, Belgian | per doz. | 3 0 | 6 0 |
| Pears, Australian | per case | 10 0 | 20 0 |
| Pineapples | each | 2 6 | 4 6 |
| Strawberries | per basket | 1 0 | 2 0 |
| ,, | per peck | 3 0 | 5 0 |

### Vegetables.

Although supplies are good the demand is sufficient to keep prices firm. Peas, tomatoes, and lettuces sell readily.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| Asparagus | per bun. | 1 0 | | 5 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 2 0 | | 3 0 |
| Cabbage | per basket | 3 0 | | 3 6 |
| Carrots | per doz. bun. | 2 6 | | 6 0 |
| Cauliflowers | per doz. | 2 6 | | 4 0 |
| Cucumbers | per doz. | 1 6 | | 2 0 |
| Endive | per doz. | 1 0 | | 2 6 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per tally | 2 0 | | 4 0 |
| Marrows | per doz. | 2 6 | | 4 0 |
| Mint | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms | per doz. lb. | 6 0 | | 10 0 |
| Onions | per case | 6 0 | | 8 0 |
| Parsley | per ½ sieve | 1 6 | | 3 0 |
| Peas, French | per pad | 2 0 | | 4 0 |
| ,, English | per ½ bush. | 2 0 | | 4 0 |
| Radishes | per doz. bun. | 0 6 | | 1 0 |
| Rhubarb | per doz. bun. | 1 0 | | 2 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, Canary | per pack. | 10 0 | | 16 0 |
| ,, Guernsey | per lb. | 0 3 | | 0 4 |
| ,, English | per lb. | 0 4 | | 0 6 |
| Turnips | per doz. bun. | 2 0 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

Old stocks are low, and new ones are only a moderate supply, hence prices are well maintained.

| | | s. d. | s. d. |
|---|---|---|---|
| Jerseys | per cwt. | 10 0 | 11 0 |
| Cherbourg | per cwt. | 8 0 | 10 0 |
| Bedfords | per cwt. | 8 6 | 9 6 |
| Teneriffe | per cwt. | 8 0 | 9 0 |
| Lisbon | per box | 3 0 | 3 6 |

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| 1912. JUNE 16 TO JUNE 22. | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| June 16—Sunday | 6 24 | 59 | 52 | 62 | 50 |
| ,, 17—Monday | 0 36 | 58 | 55 | 64 | 49 |
| ,, 18—Tuesday | 10 12 | 63 | 59 | 74 | 55 |
| ,, 19—Wednesday | 9 30 | 73 | 65 | 80 | 49 |
| ,, 20—Thursday | 5 38 | 61 | 55 | 68 | 52 |
| ,, 21—Friday | 13 30 | 63 | 56 | 72 | 51 |
| ,, 22—Saturday | 14 36 | 72 | 64 | 79 | 43 |
| Means | (total) 60 24 | 64 | 58 | 71 | 51 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| 1912. JUNE 16 TO JUNE 22. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| June 16—Sunday | 0 05 | 60 | 59 | 56 | 50 |
| ,, 17—Monday | 0·01 | 60 | 58 | 57 | 43 |
| ,, 18 Tuesday | — | 60 | 58 | 57 | 55 |
| ,, 19—Wednesday | — | 62 | 59 | 57 | 43 |
| ,, 20—Thursday | 0·01 | 63 | 60 | 57 | 47 |
| ,, 21—Friday | — | 62 | 60 | 57 | 42 |
| ,, 22 Saturday | — | 63 | 60 | 57 | 38 |
| Means | (total) 0 07 | 61 | 59 | 57 | 45 |

# CATALOGUES RECEIVED.

COUNTRY GENTLEMEN'S ASSOCIATION, LETCHWORTH.—A list of insecticides, fungicides, spray fluids, washes, and fumigants.

MAURICE PRICHARD, CHRISTCHURCH, HANTS.—The new and rare alpine and herbaceous plants catalogued by Mr. Prichard are of such importance that the list will be of special interest to lovers of hardy plants.

ACME CHEMICAL COMPANY, LIM., TONBRIDGE, KENT.—All who are interested in insecticides, fungicides, and their means of distribution should obtain this useful catalogue of specialities and spraying appliances.

J. JEFFERIES AND SON, CIRENCESTER.—A handy list chiefly devoted to bedding plants, carnations, dahlias, and chrysanthemums.

C. JENNINGS AND CO., PENNYWELL ROAD, BRISTOL.—A book of some 264 pages, closely printed and abundantly illustrated, makes up the very interesting catalogue from this Bristol firm, devoted to summer-houses, garden seats, greenhouses, timber, fencing, and gates.

HOGG AND ROBERTSON, MARY STREET, DUBLIN.—A little list of hybrid gladioli. A number of Groff's hybrids are described and Lemoinei, Childsi, Nanceianus, and Gandavensis families are listed. Collections of gladioli are a feature.

C. S. DANIELS AND SON, WYMONDHAM.—A handy and useful little list of plants suitable for immediate planting. Annuals are a feature.

GEO. COOLING AND SONS, BATH.—Roses in pots, both new and tried varieties, dahlias, climbing plants, and other subjects for present planting are listed in handy form.

# FORTHCOMING ENGAGEMENTS.

SATURDAY, June 29.—Windsor Rose Show.
Reigate Rose Show.
Sutton Rose Show.
TUESDAY, July 2.—Holland House Show; three days.
Gloucester Rose and Sweet Pea Show.
Baltic Rose and Summer Show.
Epsom Horticultural Society.
WEDNESDAY, July 3.—Newcastle Horticultural Association; three days.
Colchester Rose and Summer Show.
Penarth Rose Society.
Southampton Jubilee Garden Fête.
Doncaster Flower Show in connection with the Royal Agricultural Society's Exhibition.
Weybridge Horticultural Society.
Croydon Horticultural Society.
Cambridge Horticultural Society.
Hanley Floral Fête; two days.
Dover Rose Show.
Ealing Horticultural Society.
Farnham Horticultural Society.
Harrow Rose Show.
Warminster Rose Show.
Cowlinge Horticultural Society.
THURSDAY, July 4.—Ipswich Horticultural Society.
Norwich Horticultural Society.
Hertford Horticultural Society.
FRIDAY, July 5.—Maidstone Horticultural Society.
SATURDAY.—July 6.—Chislehurst Horticultural Society.
Northwood Rose and Sweet Pea Society.
French Horticultural Society of London.
MONDAY, July 8.—United Horticultural Benefit and Provident Society, Committee Meeting.
TUESDAY, July 9.—National Sweet Pea Society, at the Royal Horticultural Hall; two days.
National Rose Society, Royal Botanic Gardens, Regent's Park.
Wolverhampton Floral Fête; three days.
WEDNESDAY, July 10.—Bath Floral Fête; two days.
East Anglian Horticultural Club.
Sevenoaks Horticultural Society.
Formby Horticultural Society.
Torquay Sweet Pea Show.
Hereford Rose Show.
Elstree Horticultural Society.
Woodbridge Horticultural Society.
Hemel Hempstead Summer Show.
Walton-on-Thames Summer Show.
THURSDAY, July 11.—Helensburgh Rose Show.
Barnet Horticultural Society.
Ouseclife Rose and Sweet Pea Show.
Newmarket Summer Show.
Eltham Summer Show.
Malvern Horticultural Society.
Potters Bar Summer Show.

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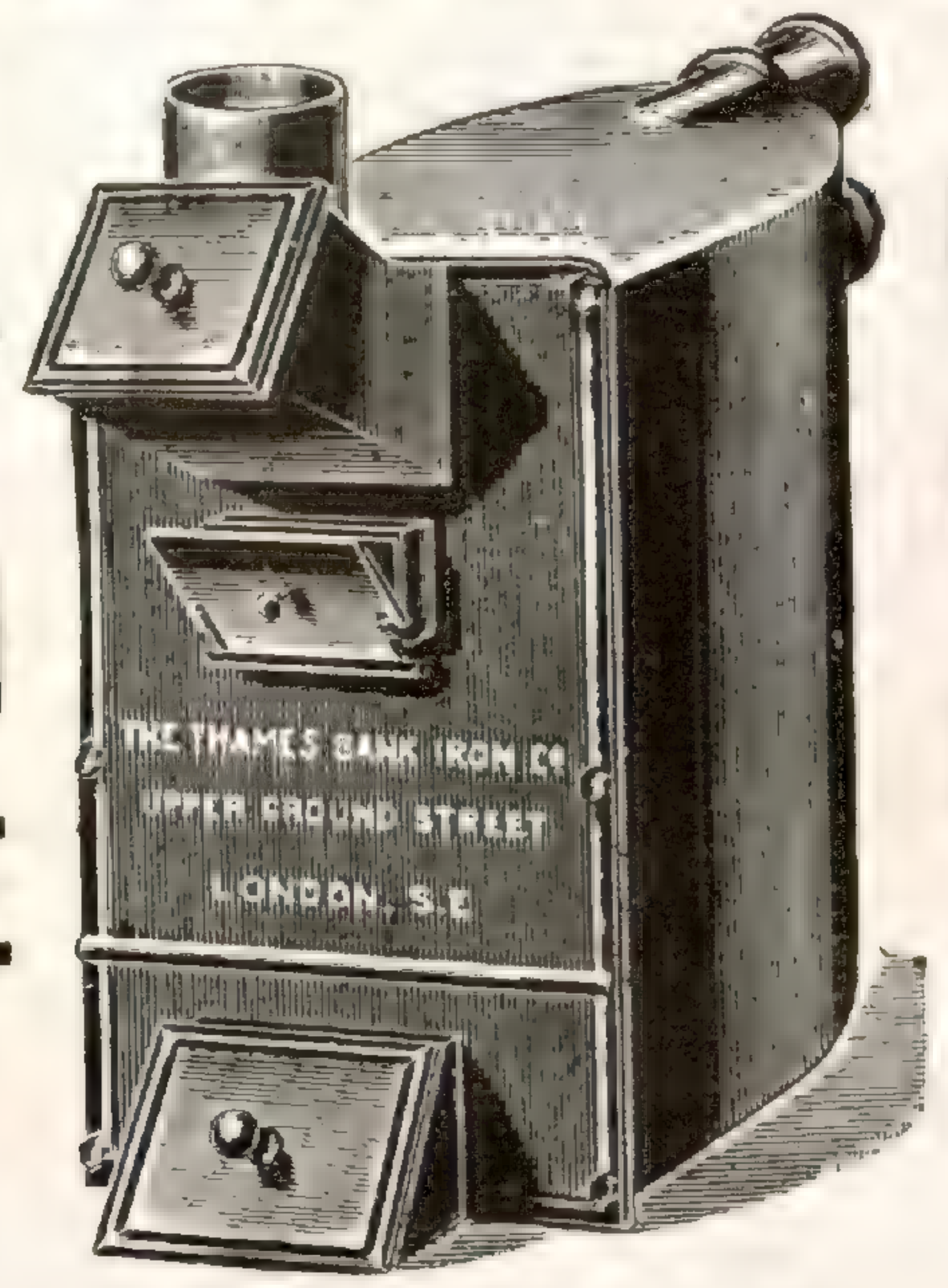

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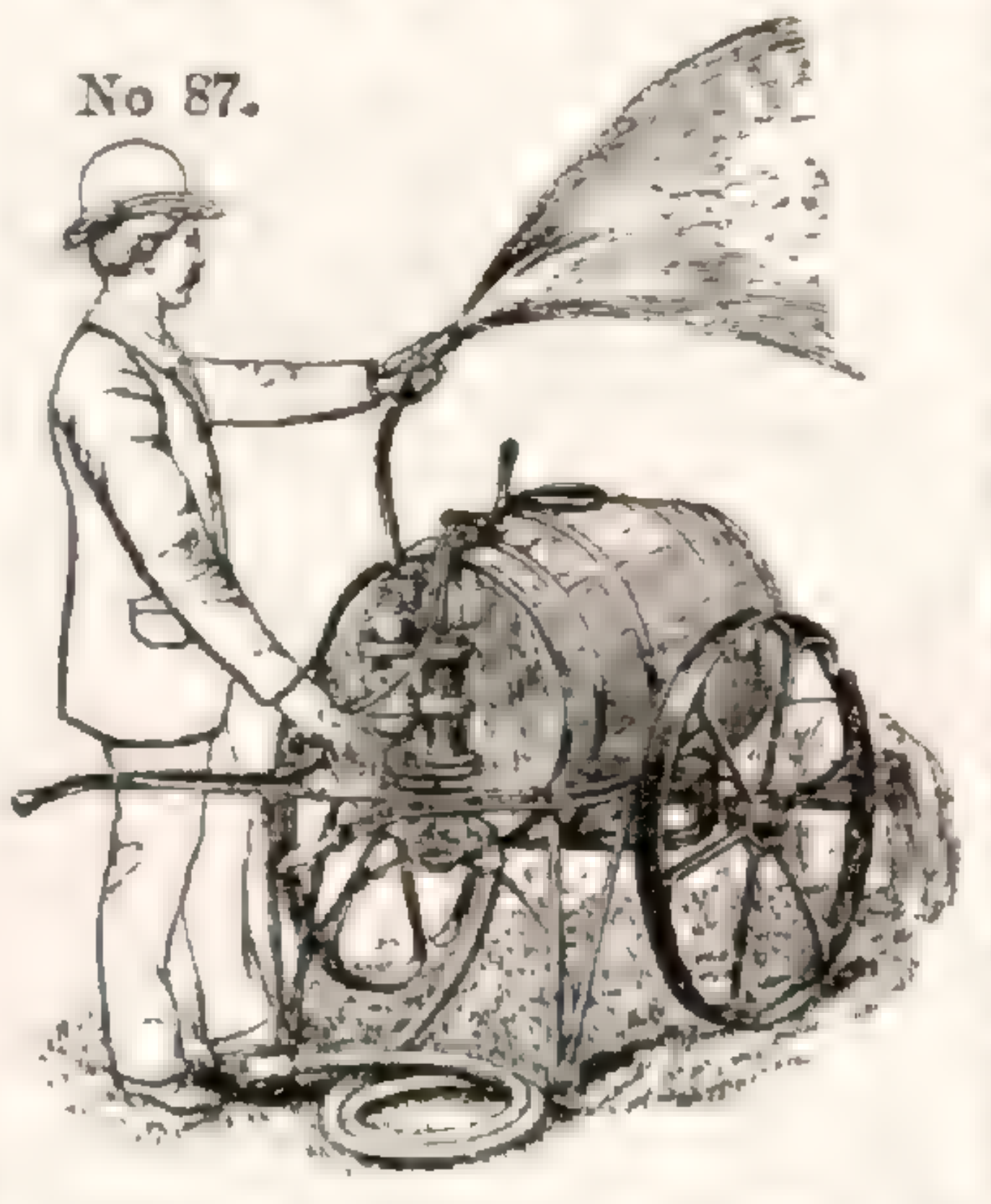

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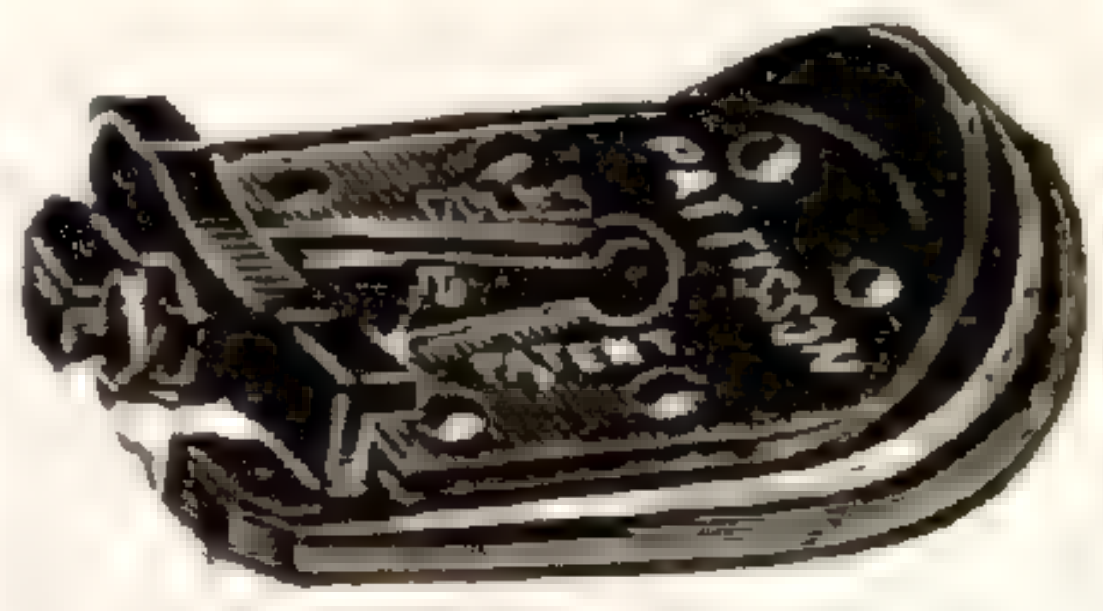

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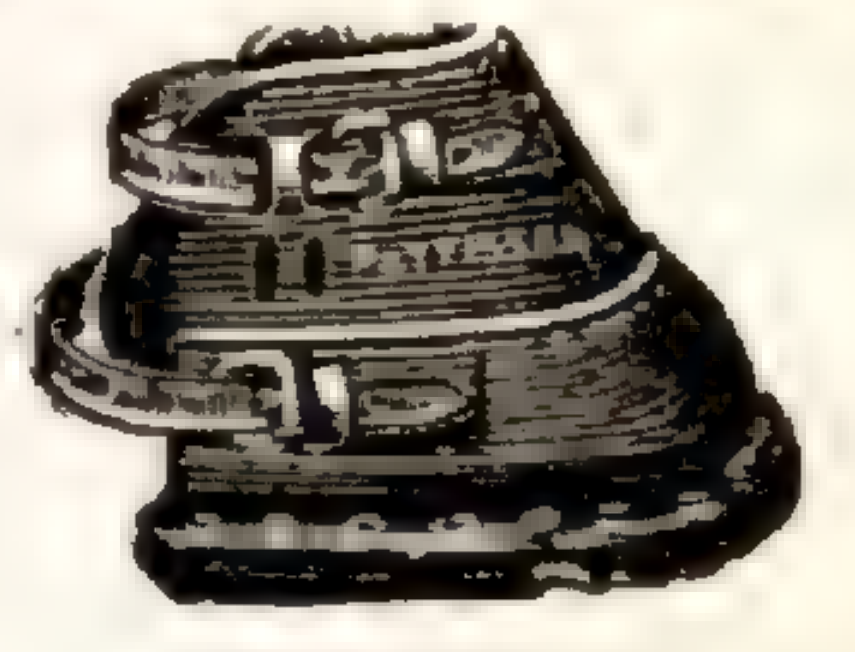

Fig. 2.

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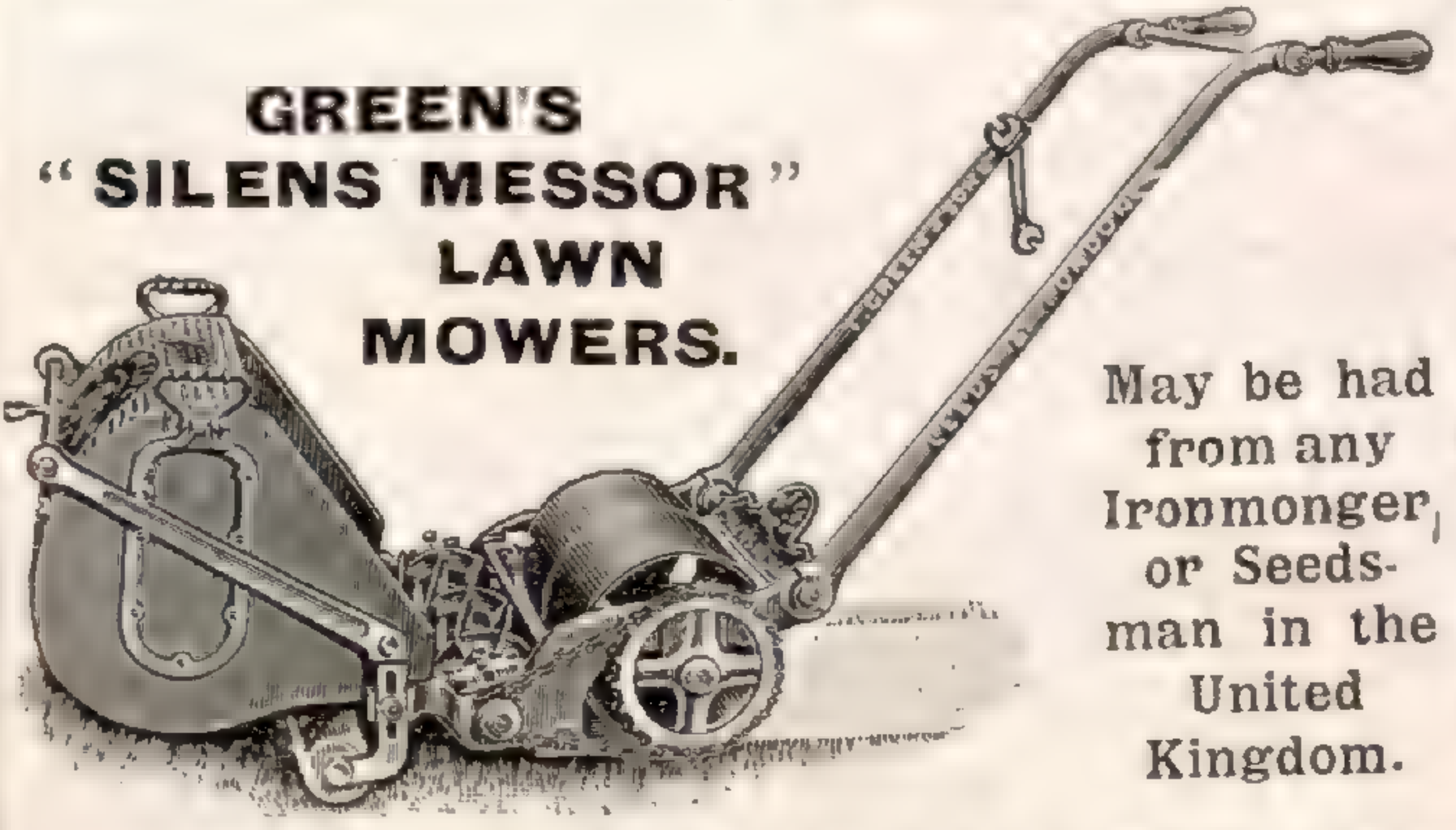

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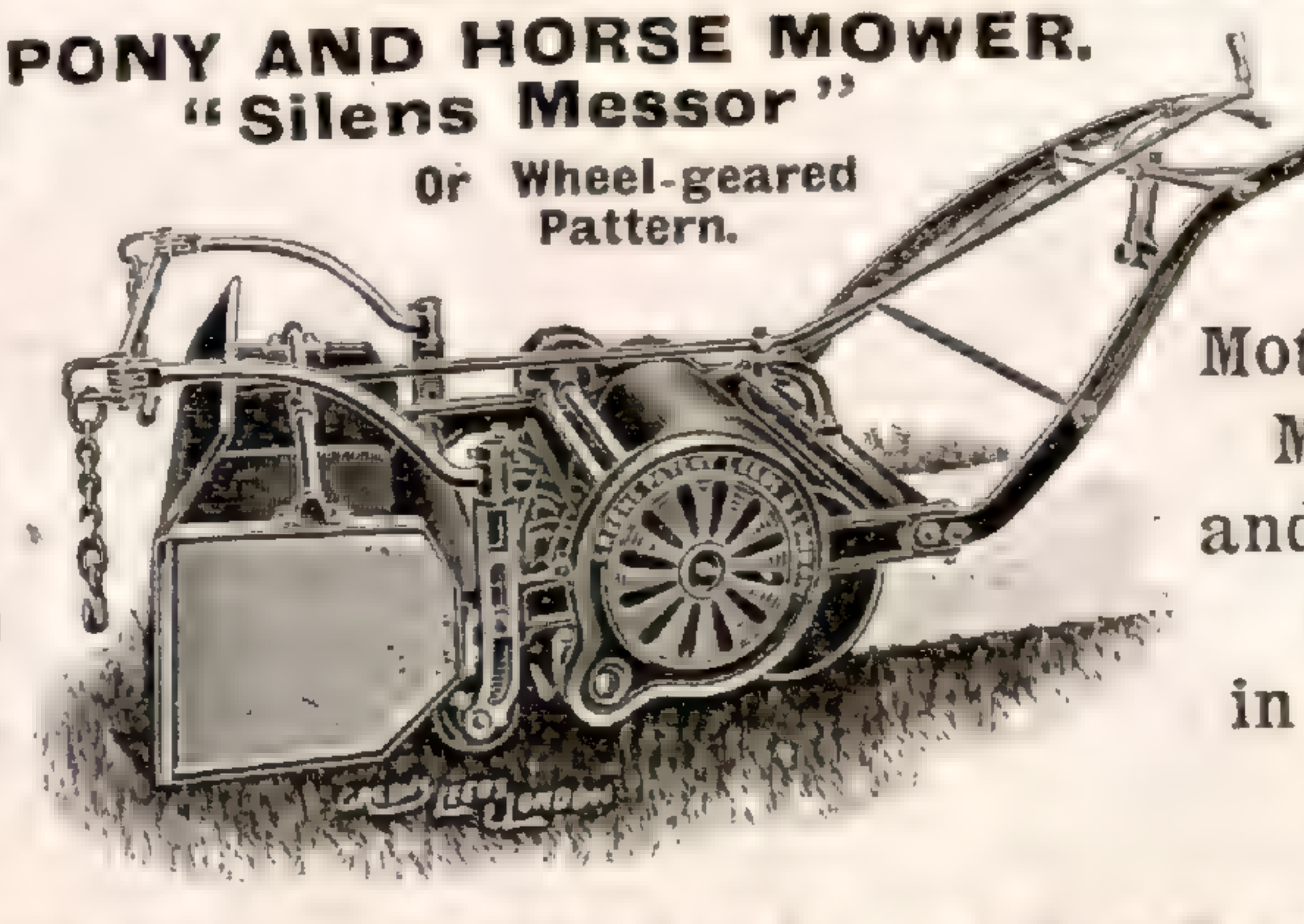

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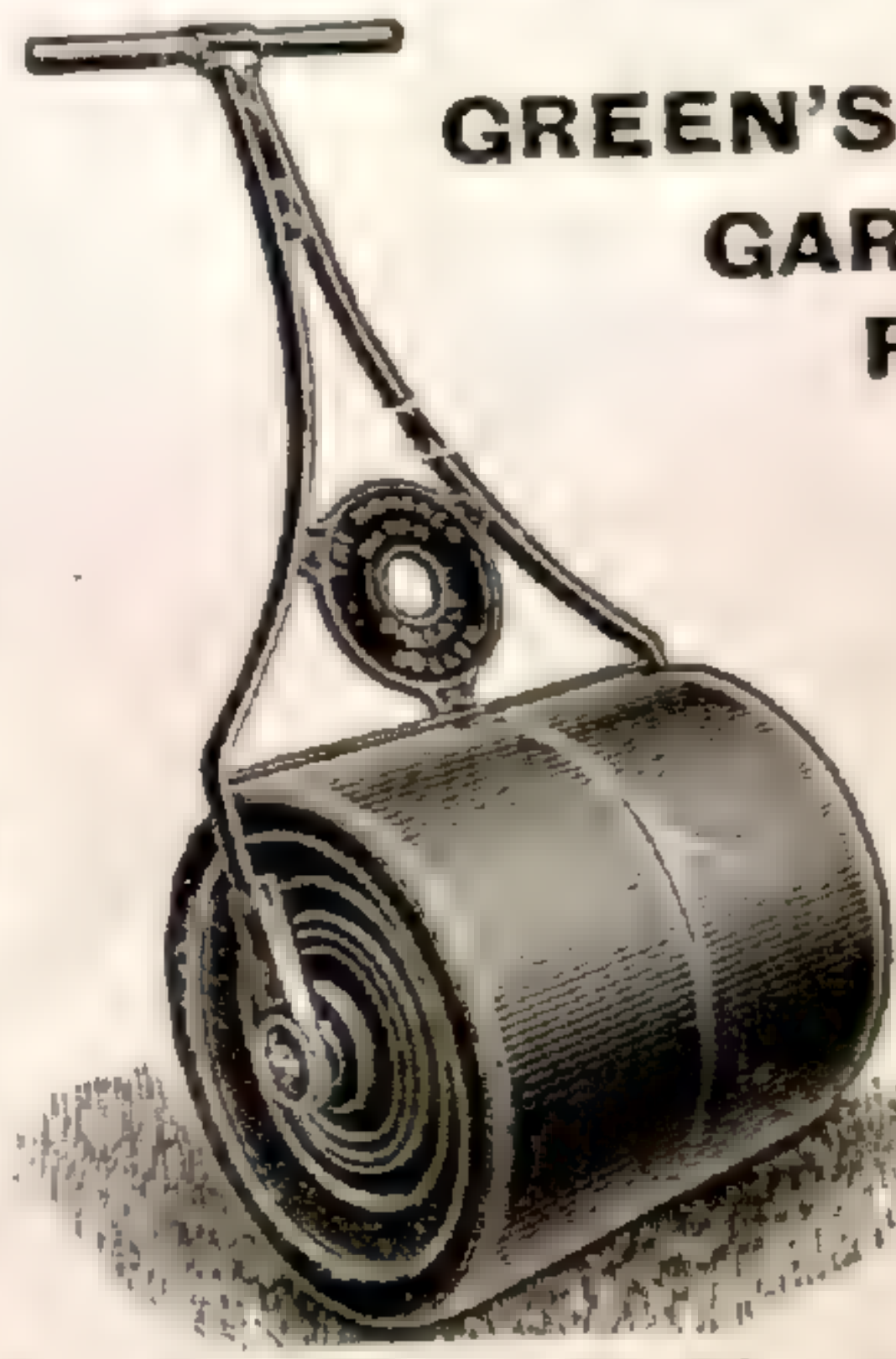

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# THE GARDENERS' MAGAZINE.

No. 3,062.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
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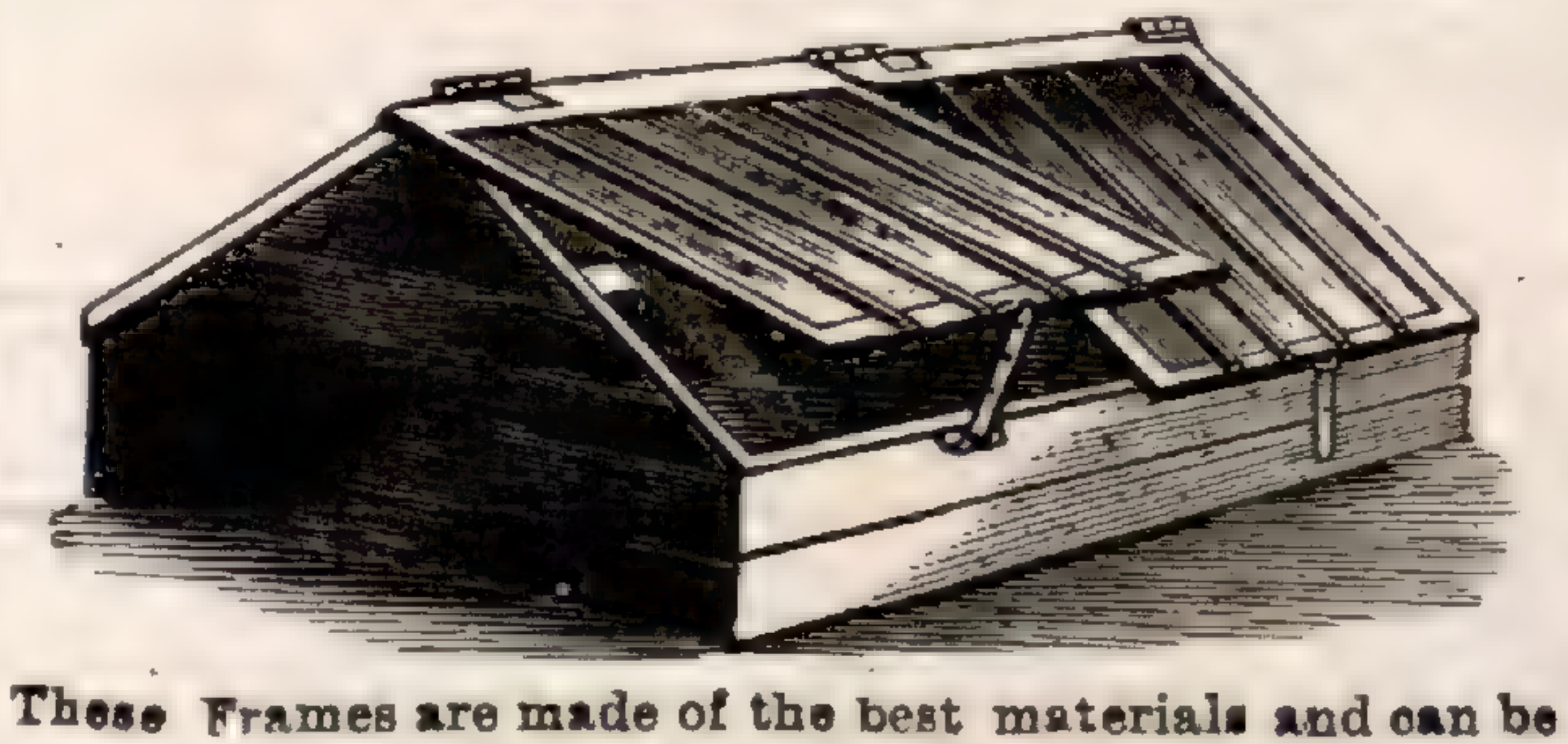

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VOL. LV.—No. 3,062. SATURDAY, JULY 6, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Science and Horticultural Education.

With regard to the recent pronouncement of Mr. Runciman that a grant would be made by the Government for the purposes of horticultural education, there exists some difference of opinion. On inquiry, it would appear that this difference in some cases is based on a doubt as to the really practical application of the money. The professional gardener, who has acquired his knowledge by many years of practical experience, finds himself severely handicapped in the struggle for a comfortable existence by the fact that his profession is not recognised as it merits; his position, too often, being merely that of a sort of outdoor servant, with wages more or less on the scale of a superior labourer. Outside his actual working sphere little or no opportunity is afforded him of education on wider lines, while his sons, if he have any, can only follow him in the same profession with an equal handicap. When, therefore, grants or bequests of the nature cited come into question, experience shows him that instead of him or his deriving any direct benefit therefrom, there is, in his opinion, too great a tendency to appoint as trustees or distributors of such funds, men of purely scientific standing, so that eventually the bulk, or all, of the funds are devoted to scientific research, and the actual working horticulturist or gardener is left out in the cold, and his eminently practical services ignored. Even those who recognise the great value of scientific research as a foundation for its practical application cannot but feel, and recognise also, that we owe the great mass of our horticultural and floricultural acquisitions directly to the practical gardener, rather than to the scientist. The scientist is practically bound to restrict his labours to more or less abstruse research into the inner phenomena of plant life, and in the vast majority of cases is quite unacquainted with those qualities of beauty, colour, make, flavour, etc., etc., which distinguish the flowers and fruit with which the gardener is familiar, and by virtue of which special knowledge he is enabled by selection to improve them more and more. If we take such representative bodies as the judging committees of the Royal Horticultural Society, the Floral, Fruit, Orchid, and allied Committees, formed of men who not only judge, but are themselves largely the originators, so to speak, of the improved products concerned, we shall find that although many, probably most of them, admit the value of science as an ally to horticulture proper, few or none will admit the justice of all grants in aid being absorbed in the scientific direction, or placed in scientific hands alone for distribution. We are quite willing to grant that it is not an easy matter to determine how they may be justly and judiciously apportioned, but it is quite easy to conceive that without such apportionment, the practical gardener is by no means "enthused" when he hears of such pecuniary assistance, ostensibly to horticultural education, but really only to one phase of it, and that, in his mind, by far the least important. On the other hand, it is only fair to consider the immense benefit which the gardener derives from research in the form of chemical manures, experiments in etherization, electricity, and other stimulative factors, insecticides, in the elucidation of bacterial influences in the soil; and last, but by no means least, is the discovery of the Mendelian laws of hybridisation. A knowledge of these first factors certainly enables him to stimulate growth, and to hasten inflorescence, while the last gives him such an insight into the mysteries of complex reproduction, that instead of regarding the apparent identity of the first family raised as a failure, and consigning it to the dust heap, he now knows that on it he may have all the elements of success lying latent, and ready to appear in the next generation in the forms he desires. He also knows that by subsequent crossing on Mendel's lines, he can fix a variety definitely. To these and many other benefits every intelligent gardener should know his indebtedness, but it is quite another matter when the indebtedness to his own particular branch of knowledge and practical experience is ignored, and science given altogether the lion's share of any spoils which may be going. We have ventured to voice these sentiments, as we know that they are very much in the air, but in the absence of any definite organisation of gardeners, fail, perhaps, to find that expression which can reach the powers that be, and so rectify matters.

MR. J. F. McLEOD.

**Mr. J. F. McLeod** has for about a quarter of a century had charge of the gardens of Dover House, Roehampton, the residence of J. Pierpont Morgan, Esq., and throughout that period he has maintained them in such splendid condition that they have come to be regarded by those well versed in garden management as a model of their class, which, it may be said, is a high one. Mr. McLeod has obtained considerable fame as a cultivator of Malmaison and other carnations, of choice fruits that are usually grown under glass, and some other of the subjects that come under the gardener's care, but he is in no sense a specialist. At Dover House every department is maintained in a manner that proves to demonstration that Mr. McLeod is a master of it, and in a walk through the pleasure grounds, the kitchen garden, and the plant and fruit houses those who appreciate high-class cultivation do not trouble about determining whether one is better than the others, but admire all that comes under their notice. Mr. McLeod has duties to perform other than those connected with the gardens, and among these is the management of the live stock, which includes one of the finest herds of Jersey cattle in the kingdom, and serves to show that the training in agriculture, as well as horticulture, which he had early in life has stood him in good stead. As a member of the committee of the Royal Gardeners' Fund Mr. McLeod has done good service in the cause of gardening charity, and in the position he occupies on the Royal Horticultural Society's Floral Committee, he has shown a thorough acquaintance with the various classes of subjects that come before that body, and gained the esteem of his fellow members of that body.

**New Knights.**—On Monday morning, the 1st inst., the King held an investiture at Buckingham Palace. With the other gentlemen who had been selected for similar distinction, Mr. Harry J. Veitch and Lieut.-Colonel Prain were introduced into the King's presence, when His Majesty conferred upon them the honour of knighthood.

**N.R.S. Metropolitan Exhibition.**—With reference to the metropolitan exhibition of the National Rose Society to be held on Tuesday next, Mr. E. Mawley, V.M.H., the hon. secretary, reminds us that "as the present season is the most favourable for roses known for many years, an unusually large and varied display of all types of roses may be anticipated at the society's exhibition in the gardens of the Royal Botanic Society on Tuesday next. Years ago rose shows consisted of long lines of boxes containing 'exhibition' roses and little else, whereas now these long lines of matchless specimen blooms are relieved by tastefully arranged displays of decorative roses—roses which depend for their popularity more on their wealth of colour and elegant habit than on the size, fulness, and regularity of form of the individual bloom. This year these roses will be more freely in evidence than ever before, and, among other ways, staged in round baskets, which allow them to be seen to the greatest advantage. Another special feature will be the number of roses to be seen of that new type, the Pernetianas, with their entrancing shades of mingled yellow, pale rose, fawn, orange, and pink. It is at this exhibition that the finest new seedling roses of the year are generally to be seen, as the award of the gold medal of the society, the highest honour obtainable anywhere, is eagerly sought after by the raisers."

**Bedding Roses at Kew.**—During the past fortnight the roses in the numerous beds around the palm house at Kew have been aglow with colour, and have afforded an object-lesson of much value to those who are interested in the varieties specially adapted to the maintenance of a continuous display of flowers during the summer months. A considerable proportion of the beds have been recently replanted, and many of the newer varieties that are used as bedding varieties are represented. A more comprehensive trial of bedding roses could not well be desired, and certainly no trial could be held amid more pleasant or interesting surroundings. Those who are concerned with the method of utilising strong-growing roses for filling beds by the practice of pegging down the growths made the previous season should not miss the beds of Clio, Frau Karl Druschki, and Gloire de Dijon by the palm house, and the beds of Frau Karl Druschki and William Allen Richardson on the main walk

**Roses and Sweet Peas.**—Two important exhibitions will be held in London next week, and in one sense it is unfortunate that both occur on the same day, though, perchance, some enthusiasts will go to both on Tuesday, July 9. The National Rose Society holds its great exhibition at the Royal Botanic Gardens, Regent's Park, and we understand it could not fix a date other than that already fixed by the National Sweet Pea Society, which holds its London exhibition at the Royal Horticultural Hall, Westminster. The latter society, however, holds a two-days' show, whereas the rose show lasts one day only.

**Manchester and North of England Orchid Society.** — The Rev. J. Crombleholme has been reappointed chairman of this society for the ensuing year, and was presented with a special gold medal, on the occasion of the annual meeting, for his exhibits during 1911-12. Mr. Z. A. Ward is the vice-chairman; Mr. R. Ashworth, treasurer; and Mr. H. Arthur, secretary. The medals and trophies won during the season now ended were distributed at this meeting, and the principal recipients were: Colonel Rutherford and Messrs. W. R. Lee, Z. A. Ward, J. McCartney, G. H. Peace, A. Warburton, W. J. Hargreaves, F. A. Hindley, and H. Arthur. The society's next meeting will take place in the Coal Exchange, Manchester, on July 11.

**Severe Hailstorm in Northumberland.**—The gardens in some parts of Northumberland have suffered considerable damage from a hailstorm that passed over the county on June 25. With reference to the storm, Mr. C. L. Cawkill, Angerton Gardens, Morpeth, writes: "On June 25 we had a severe hailstorm between 4.30 and 5.30 p.m., and considerable damage was done to crops, both in garden and field. Fruit on both garden and orchard trees was badly bruised, while kitchen garden crops are completely spoilt, onions, spinach, Brussels sprouts, and cauliflowers being torn and battered to the ground. Annual flowers, which were promising well, will be of little use, the hardy plants in herbaceous borders are broken down, and the anchusas, verbascums, and delphiniums are torn to shreds. Japanese chrysanthemums are stripped of nearly all their foliage, and a goodly number have their stems broken, and will have to be thrown away. The bush plants of the various varieties of chrysanthemums may break again if we have favourable weather. The storm came from the south, and missed the gardens a mile to the east and west of Angerton. The hailstones were as large as nuts, and on the north side of the buildings they laid until noon of the day following the storm.

**Royal International Horticultural Exhibition.**—On the opening day of the Holland Park Show, Mr. Gurney Fowler, chairman of the Royal International Horticultural Exhibition, presented, on behalf of the exhibitors at Chelsea, a large silver cup of the exhibition with a purse to Mr. Edward White, hon. managing director, Mr. T. G. Henslow, secretary, and Mr. S. T. Wright, superintendent of the ground arrangements of the International Exhibition. The directors have issued a brochure containing a list of the exhibitors and of the prizes awarded, with the members of the jury arranged in the several sections in which they served. The brochure is illustrated with portraits of the directors, and a portrait group of the committee of the International Horticultural Exhibition of 1866.

**York Gala and Floral Fete.**—We are pleased to record the fact that the York Gala was a greater financial success than the gathering of the previous year. The attendance on the first day established a record, the number of visitors being 11,794, and the amount taken at the gate £661 8s. On the second day the visitors numbered 27,455, and the amount received for admission was £844 6s. 6d. These figures represent an increase for the two days of 3,040 visitors, and of £98 4s. 9d. in cash, as compared with 1911.

**Sawdust Manure.** — It is very generally believed by both gardeners and farmers in this country that farmyard or stable manure made with sawdust as litter is not so valuable as that made with straw. The same opinion is held by both classes of cultivators in the United States, and in order to ascertain if there is any real foundation for the belief so general some experiments were begun at the Maryland Experimental Station in 1908, and continued on a large scale for three years with flowering plants grown under glass-houses. Comparisons were made between (1) cow manure made with sawdust as litter; (2) cow manure made with straw or chopped maize stalks as litter; (3) cow manure free from litter of any kind, the cows being kept on a cement floor without bedding. The manure was collected and left in a heap until some fermentation had taken place. This broke down the strawy litter considerably, but the sawdust had quite a fresh appearance when it was applied. The same amounts of the different manures were used, and they were all thoroughly worked into the soil. The plants tested were roses, carnations, chrysanthemums, and sweet peas. In no case could any harmful effect of the sawdust be detected, and, in fact, taking the average of the three years, the manure containing it gave slightly the largest number of blooms. For other reasons, however, it was concluded that for the particular circumstances manure without litter of any kind was the best.

**Memorial to an Apple Tree.**—A ceremony unique in the history of fruit-growing took place at Dundela, near Morrisburg, Ontario, a short time since. A monument was unveiled to an apple tree. The farmers of Dundas County by popular subscription have placed a marble stone close to the spot where stood the original McIntosh red apple tree that succumbed only recently after braving the storms and its enemies for over 100 years. About 115 years ago, John McIntosh, who went to Canada with the United Empire Loyalists and settled in Matilda township, found a number of apple trees while clearing a place for a home. One of them produced fruit of such superior colour and quality that he named it the McIntosh Red. It soon attracted attention, and his son Allan propagated it and commenced to disseminate the variety. In recent years it has been widely circulated, and now is planted in all parts of the American continent where apples flourish. In 1896 the old tree was partly injured by fire, but continued to bear on one side until 1908, when it failed altogether.

# THE CHARM OF THE ROCK GARDEN.

A deep interest pervades all that pertains to the rock garden of to-day. No phase of gardening is more popular with garden lovers, and the high standard of excellence attained in the art of rock garden making is illustrative of the progress made in natural gardening. The idea of growing mountain and moorland plants in a free manner, amid a natural setting of rocks, and treated as nearly as possible according to their requirements, has been so enlarged upon, and so popularised that few gardens of any size are without a rock garden, or a place where rock plants are grown and treated in a natural way.

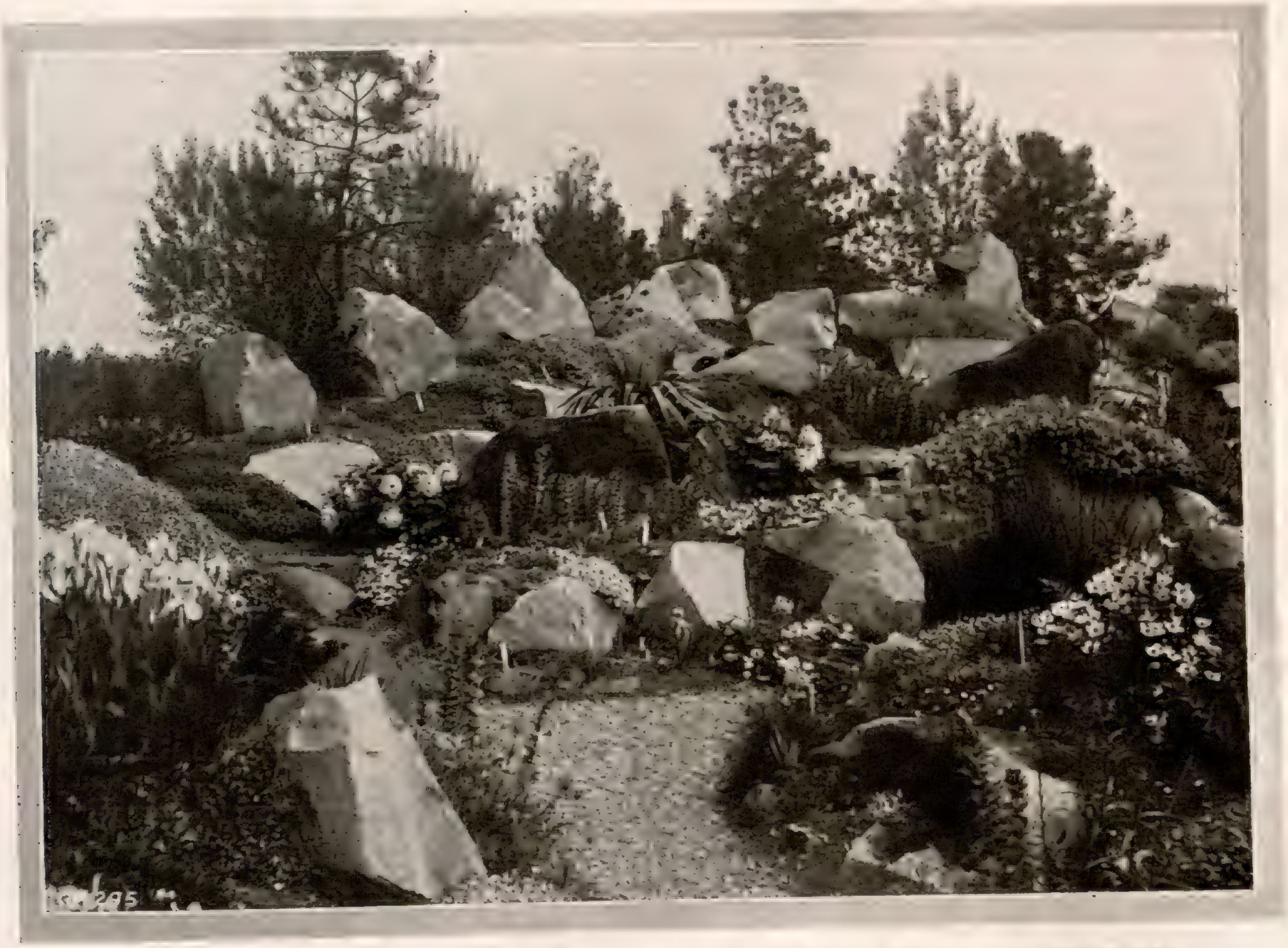
The pioneer work connected with the rock garden has long since been accomplished, and now we are reaping the harvest of good ideas, which were largely promulgated some forty years ago, by those who were engaged in combating the formalism and incongruities largely found in the gardens of that period. The majority of my readers will have had ample opportunity of noting for themselves the possibilities of the rock garden. It is capable of the greatest diversity. No two rock gardens need be alike, there being ample scope for the formation of a landscape which shall differ from every other landscape.

I do not wish to infer that it is always an unwise thing to copy some idea, or to elaborate some detail; on the contrary, some of the most delightful garden features are but the outcome of an idea arising in another garden. Apart from this consideration, there is no reason why every rock garden should not be distinctive, and quite different from its fellows.

The matter of the construction of a rock garden is full of interest. The question of the contour of mounds and slopes, the making of valleys and drifts, the formation of streamlets, pools, rock pathways, stepping stones, and rock groupings, all provide matter for the closest attention, and the keenest interest and thought. Geometry is out of place here. Instead you let your mind wander back to scenes green in the memory. A memory picture of a rocky gorge o'erhung with ferns and light tree growth, with a streamlet tossed from rock to rock in a shower of white spray; another of a winding track between huge boulders, and along the cliff face in a mountain region; a hillside broken by outcrops of grey rock, o'erclad with wild thymes, helianthemums, sedums, etc., with its silence broken only by the song of the lark or the droning of humble-bees among the scented thyme blossoms; or a delightful valley of gentle slopes, with a silent stream-fed pool at the base, a vale of flowers, of luxuriant shrubby growth, of decorative reeds, and sub-aquatics nodding to every movement of the breeze. These memory pictures give inspiration.

The gentle stream, the rocky gorge, the calm sweet valley, must live again in the rock garden you are making. You may not copy them, as a Japanese landscape artist would. You add something here, delete something there, as fancy dictates, but your memory picture is not erased. It gives the main idea, the keynote, and you play upon it, evolving from it a refreshing bit of garden scenery. Thus you go on. The charm of making the rock garden remains as long as the task lasts. Then comes the soiling up, and the planting. The selection of the plants which are to inhabit the new home. You range through crowds of subjects (popular, novelties, rarities), exercising a choice which is guided by a love of the rock dwellers and their beauties. Plants may be purchased or gathered from hillsides and mountain ranges at home and abroad, and carefully transferred to the new rock garden. Slopes are clothed; nooks, crannies, and drifts between the rocks are planted up. Time speeds on, and you add to the collection from time to time.

It may be said that the true rock garden is never twice alike. Every time you view it there is something fresh. Some new rarity is blossoming, or some hitherto unnoted feature presents itself to the eye. There is no monotony. Growth is practically continuous. From earliest spring to the autumn days you obtain an unparalleled profusion of blossom, and in the winter you have the charming range of foliage colourings rendered by plants and shrubs, mounds of grey-green, silver, and bronze. Dwarf pines and shrubs cluster over the rock-face. There is movement, life, and colour, always apparent. It is the one phase of the garden which does not disappoint in the shortest days.



A BEAUTIFUL ROCK GARDEN SCENE AT HOLLAND HOUSE, SOUTHCLIFF.

Illustrative of the diversity of the rock garden is appended a view of a corner of the rock garden at Holland House, Southcliff, in May. Just at this time irises, helianthemums, anemones, Pæony Moutan, pæonies, alpine phloxes, etc., are aiding violas, aubrietias, saxifrages, etc., in the making of many pictures.

Added to the general charm of the rock garden there is a rich mine of interest in the raising of seedling plants. The crossing of specific forms of saxifrages, and many other subjects, will give the greatest delight, for in batches of seedlings one hails new colours, new forms, new varieties. Something that will give new tones of colour among the rocks, or contrasts with existing varieties. Something that will charm your visitors, and prove a fount of interest to all who are versed in mountain plants.

One has only to witness the interest now taken in hybrid saxifrages to realise how it may just as readily be extended to other plants.

P. S. Hayward.

## ROSE LINA SCHMIDT MICHEL.

It is a curious fact that some good roses never become so well known as they deserve to be, while others that are in many respects inferior, are to be found in almost every rose garden. In most gardens whose owners are interested in pillar roses, the H. T. Dawn has been tried, and, although its bright pink semi-double flowers are very attractive and are freely produced, and its shoots are very vigorous, yet I think most growers would complain of its leggy habit—unless it is bent right down very early in the spring, the shoots are almost certain to get bare at the base, and there are few more unsightly objects in the garden than a pillar rose bare and leggy at the base with a bushy top-heavy bunch of leaves and flowers at the top.

We had almost decided to give up trying to grow Dawn until we are told by friends that this leggy habit could be overcome by taking down the long rods in early spring and leaving them for some weeks in a horizontal position, and so getting the buds to break all the way along before fastening them again to the pillar. This plan has been quite successful, but it is not always convenient to do this, as the plants take up a lot of room when tied down in this way, and I would advise all who admire the flowers of Dawn, and yet do not want to have to treat their pillars in the way described, to grow the H.T. Lina Schmidt Michel in its place. I saw this rose at the Temple Show about four years ago, and was very much taken with the lovely shades of pink in its large, loose blossoms. The big, shell-like petals are of a soft creamy-pink on the inside and very bright glowing rose-pink on the outside, while the buds are almost vermilion red; altogether it is a brighter and fuller plant than Dawn. The foliage is dark green, tinged with bronze, and rather leathery. The flowers are generally produced singly or at most two on a stem (at any rate, in the first blooming), and are on long stalks, so that it is a more useful rose for cutting than Dawn, which grows in rather tight, uncomfortable bunches of three or four blooms unless it is disbudded. The first summer we had Lina Schmidt Michel we were afraid we had discovered two reasons which might justify its absence from so many rose gardens; the first was that it seemed to be a shy flowerer, and the second that it was in no hurry to climb up its 10ft. pillar. However, last summer—its second in our garden—it overcame one of our fears, and reached the top of its pillar, and would evidently have liked to go higher still, while this—its third summer with us—it has entirely vindicated itself in the matter of freedom of flowering, and is a most shapely pillar plant, clothed from base to summit with it fine big foliage, and its glowing pink blossoms, which seem happy alike in sunshine or in rain. The flowers have a very pleasant scent, and it is not given to mildew. I have just been examining (June 18) our plants of Dawn and Lina Schmidt Michel to see which is the best in this respect, and find that Dawn has already a considerable amount of mildew on the flower-stems, while Lina has none. It is a good autumn bloomer, and the fact I have just noticed that its flowers are not spoilt by rain makes it specially useful at that time of year. I find, on referring to the N.R.S. catalogue, that this rose was only introduced by Mr. Peter Lambert in 1905, so possibly it has not yet had time to find its way into the many gardens which, I am sure, would be the brighter for its presence; perhaps, too, it suffers from its rather cumbersome name. Dawn is certainly much happier in this respect. Unfortunately, we cannot drop the surname, as we should be interfering with the rights of that charming little apricot Tea rose which goes by the name of Lena.

White Lady.

## THE POSSIBILITIES OF A SCHOOL GARDEN—I.

### Its Objects.

Some years have now passed since horticulture was added to the curriculum of elementary schools, and school gardens were established. To be quite correct about the commencement, however, I should have said many years, for long before school gardens were recognised by education authorities, certain far-seeing persons in villages here and there, saw the possibilities of school gardening, realised its usefulness, and introduced the subject on their own initiative and very often at their own expense. The introduction of gardening, as a recognised subject, however, was the result of a conviction that our education system was wrong inasmuch as it was not practical enough. Whereas the brain of the boy was utilised, his hands were mostly allowed to remain idle, and he left school with an idea at the back of his mind, and for which his school training was largely responsible, that it was infra dig to do manual work.

He acquired a certain amount of knowledge, but had no capacity for applying it; he knew something, but could do nothing, and the inborn intelligence which the average boy possesses was not appealed to by the mode of teaching. In other words, he was an institution for the reception of certain facts; the process was one of driving in, but the drawing out and development of latent intelligence is, after all, the keynote of successful teaching. In looking round for material in teaching with the object of altering the existing order of things, and making boys more handy, useful, skilful, intelligent, and self-reliant, the authorities found it at the very door of the school, in the workshop where the lad can make something, and in the garden where he can grow something and see, in the course of a few months, the result of his labour. This, after all, was only a matter of history repeating itself, and the hall-mark of official authority was given to ideas that solitary teachers and isolated educationists believed in long years ago, and were, to some extent, practised in the village dame's school in times gone by.

School gardening then was not a spontaneous growth, its beginning, as we know it, was only a continuation, in the form of an experiment, but, unlike some other experiments in education, it has grown and developed, and is still increasing. A good deal of the credit for this must be given to enterprising teachers, who saw the possibilities of a school garden as a means of education, and in face of criticism and a good deal of local scepticism, went ahead and showed the way, with the result that others have followed, and gardening is gradually becoming an essential part of every elementary school in rural Britain. A strong point about the movement is that it has been voluntary; gardening is a special subject, though, perhaps, this is one of the weaknesses about the system, and the majority of the teachers who have taken it up have done so of their own free will, believing that it would be useful to the children and invaluable for giving life and reality to lessons of a more literary type. As evidence of its helpfulness in the latter direction a teacher informed me recently that the gardening was the most "living" subject in his school.

In some quarters even now there seem to be hazy ideas as to the objects of school gardening, and apparently certain individuals still retain the impression that the object is to make professional gardeners of the boys. No idea than this could be so mistaken or so mischievous, and it only goes so far as this, that a teacher in his gardening class can detect the boys who have a taste and capacity for gardening, and he may be able to find a way for them to follow the craft after they leave school. This is quite as it should be, and I know of several promising youths who are making their way in horticulture whose capacity for gardening was discovered in the school garden. In my opinion, one of the greatest drawbacks in our system, or rather lack of system, in making gardeners to-day, is the want of discrimination in first finding out whether the individual is possessed of the natural taste and inclination that are essential to the making of a good gardener.

The object, then, of the school garden, is not primarily to make professional gardeners, but there is one phase of the teaching that I would emphasise. Scattered about over the face of this country there are thousands of men, and women, too, who make gardening a hobby. In the course of their daily occupation they toil on the land, down mines, in factories, workshops, offices, and elsewhere, and in their spare time they find pleasure, and sometimes profit, in the pursuit of gardening. That this hobby is healthy everybody will agree; that it is uplifting must also be admitted when it is realised that those who pursue it are, for the most part, respected members of the community to which they belong. In face of this evidence, it is very desirable that there should be an increase rather than a decline in this national taste for gardening, and it is the school garden that will help to bring it about. Hundreds of that section of gardeners whom we call amateurs have had no opportunity of learning, and what they know about gardening they have had to pick up as they went along. In the school garden, however, the boys have an opportunity of learning the principles of the thing, the foundation is laid, and they go from school with something upon which they can build, and in their young minds are placed ideas that can hardly be put there at a later age.

Another object of school gardening, and a highly important one, is that boys are taught to use their hands; in other words, to work, to be handy and inventive. The dignity of manual labour is a thing that this country must uphold, and surely the place to teach the boy that it is not infra dig to use his hands in honest labour, is the school. It has been urged in the past that our education system has failed in this particular, hence the desirability of introducing manual processes into the curriculum. It is not claimed for school gardening that it will solve the question of back to the land, but surely, by making use of local environment in teaching, boys in the country will be induced to take more interest in their surroundings, and in after life find pleasures there that life in the town can never offer them. Whether the objects of school gardening are ever fully accomplished or not, it is claimed for them that they are good, and in subsequent issues I propose to deal with different phases of the subject as they appear to me.

H.

DAHLIAS TO PERFECTION.—A thorough guide to the successful culture of those popular flowers is "Dahlias and their Cultivation," by J. B. Wroe, price 1s. net, by post 1s. 2d., bound in cloth 1s. 6d., by post, 1s. 8d., from W. H. and L. Collingridge, 148, Aldersgate Street, London.

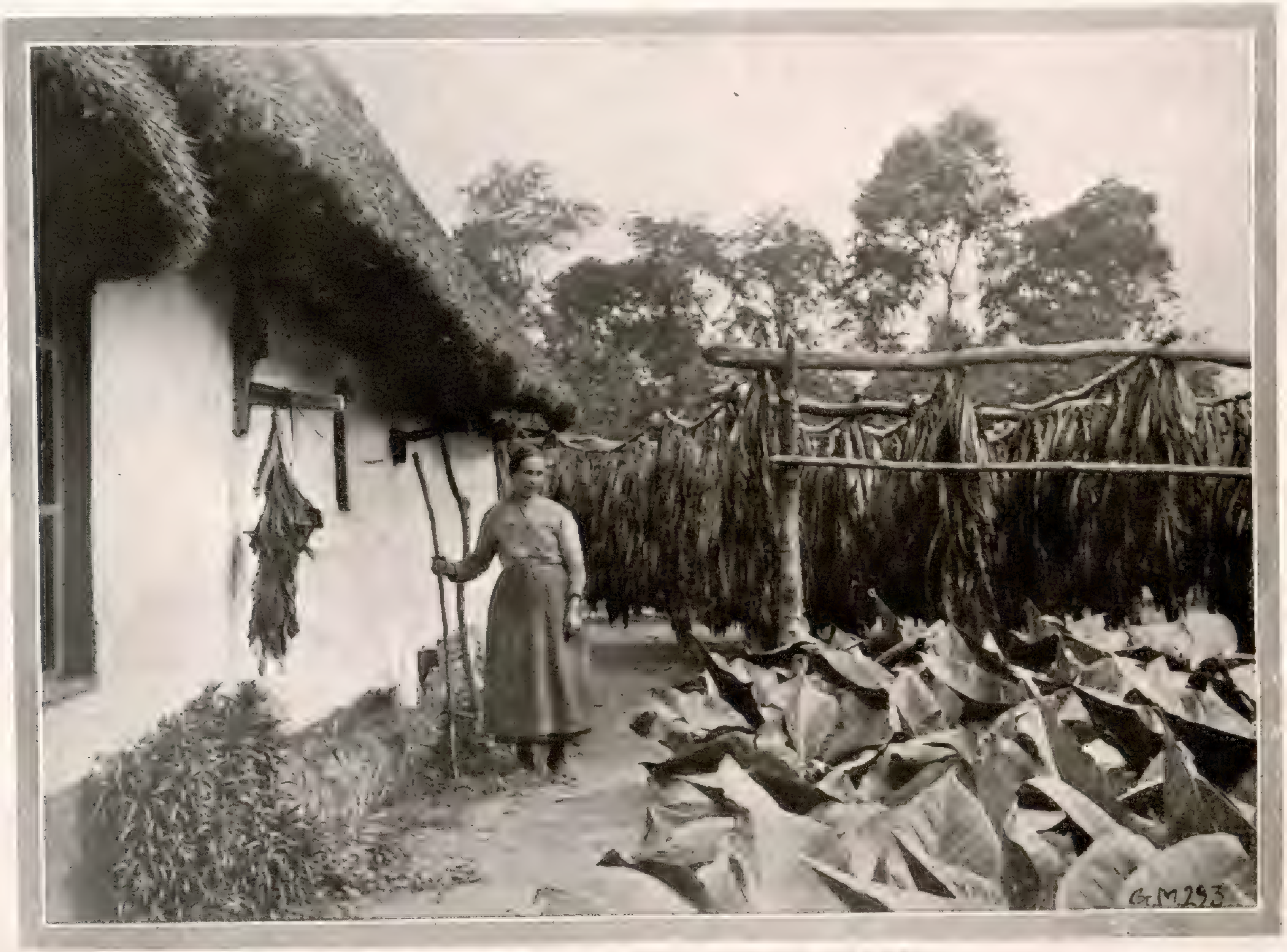
## TOBACCO CULTURE BY FRENCH PEASANTS.

In these days, when the cry, "Back to the land," comes from our over-populated towns and cities, any fresh incentive is a valuable asset, especially if applicable to small holdings and cottage gardens. We have learnt so much of systematic gardening from our French allies that we may go a step further, and enquire how they contrive to make the cultivation of tobacco in a quite small way, and under conditions almost precisely similar to our own, a success financially as well as regards the quality of the leaf

In the Pas de Calais, principally in the villages of Bréscent, La Calotérie, and Essocq, and the neighbourhood of Montreuil and Hesdin—the latter barely an hour from Boulogne—nearly every cottage garden has its plot of strong, healthy tobacco plants. No expensive apparatus is necessary, nor any very heavy work incurred, except what can be done by the man of the house in his off-hours, with the assistance of his wife and family. All the plant necessary is a frame of rough poles on which to suspend the ropes of leaves for drying, and this can be readily roofed in should the season be a wet one; also an outhouse or granary in which to continue the gradual drying process through the winter until delivered to the factory in the month of February.

The tobacco seed is sown in frames in March, and the young plants put out in May. After planting the earth should be kept well stirred and free from weeds and the flower-head cut out directly the flower buds are seen. At the end of August the leaves are cut close down to the crowns, and are threaded on to cords and hung up to dry on the wooden frames until the end of September when they are suspended under cover until the following February. Should the sun be excessively hot it is advisable to slightly shelter the drying leaves during the hottest hours of the day; otherwise they become brittle and powdery.

F. Mordaunt.



TOBACCO PATCH WITH DRYING FRAMES.

## SUMMER PRUNING.

The question of pruning fruit trees is one which is often confounded with that of training. The latter practice has for its sole object the regulation of the growth of the tree in any desired manner, so that it may develop along certain specified lines, and form a certain shape or conformation which appears most desirable to the cultivator. Pruning, on the other hand, achieves a much more important object. It produces, or tends to produce, a well-balanced growth; it represses undesirable or over-vigorous development in any part of the tree, and encourages growth that may be weak in another part. The main object is precisely the encouragement of the fruiting proclivities of the tree.

In the summer time the growing shoots of fruit trees are apt to develop more vigorously than is good for the tree as a whole. They therefore need some sort of artificial repression, and summer pruning is the practice we adopt in order to secure this restraint. Where trees are trained in some formal fashion, quite distinct from Nature's own habit, and also, in the case of dwarf fruit trees, summer pruning must not on any account be neglected; otherwise the flow of sap will be uneven, and generally at the expense of those parts which are provided for the elaboration of fruit. Therefore, it is clearly evident that if the stronger-growing shoots at the upper part of the tree are stopped at the proper stage, the flow of sap will be diverted and equalised, and there will be uniform action throughout. The purpose of the leaves, it may be remarked, is to elaborate the flow of sap which comes from the roots, afterwards returning it to the stem to form woody fibre. In this manner, the judicious stopping of the more vigorous growing shoots will assist in the formation of fruit buds.

Generally, the reason offered by most gardeners for summer pruning is that it induces the formation of fruit buds for another season. Others hold that it prevents the tree from becoming over-crowded in the centre, and so admits air and sunlight to the fruiting spurs. Both these reasons are sound ones, but it does not follow that the grower who summer prunes his fruit trees will always find the practical application of such theories of any use. Many have found it extremely disappointing, and, as there is no hard-and-fast rule to be observed in this connection, we can only fall back on the assumption that they summer pruned their fruit trees because it appeared to be the custom to do so, without paying any attention to seasonable conditions, habit of growth, soil conditions, or actual development of the trees.

One of the commonest mistakes is to commence the work too early. The lower buds, which ought to remain in a dormant state until the next season, are then excited into premature growth, which, of course, is the very opposite effect to that which it was intended to achieve. As a general rule—and a very general one, too, with many exceptions to prove it—summer pruning may be performed quite safely at the end of July or the beginning of August. The spring growth of a normally vigorous tree is usually completed about the middle of July, always providing the season is a normal one, of course, and it may then be noticed that subsequent growth is checked for a time. Meanwhile, the wood becomes firmer, and the buds assimilate nourishment. To summer prune the longest shoots at this stage is certainly apt to divert a great deal of sap energy to the assistance of these two processes.

In order to secure the most beneficial results from summer pruning, it is best to practise it "little and often." Small, undersized fruits are generally developed if a fruit tree is permitted to carry its whole natural free growth. Also, these small fruits are only borne on the outer extensions of the tree, and it will usually be noticed that the centre is crowded with a mass of useless light and air-resisting foliage, so that the main extensions of the branches carry few, if any, fruit buds. The gradual thinning out of these shoots, and their subsequent shortening to four or five leaves, is the proper method of summer pruning. Each day, a little of the work should be done, so as not to disturb the normal growth. Wholesale thinning at this stage is likely to have very injurious effects indeed. Bush, espalier, pyramidal, and wall trees all come under this category.

In the case of pears and apples, the chief object should be to encourage flower buds and restrict the development of side shoots. In the latter case, one must commence the work at the top of the tree, and continue about one-third of the way down. The middle of the tree will then require attention. Severe summer pruning cannot be recommended under any circumstances, for it is always the better plan to have too much wood rather than too little. Wall fruits, such as plums, cherries, and also apricots, should be pruned in such a manner as to leave an adequate number of shoots between the branches to fill the spaces without any over-crowding. Any excess of wood over and above this amount should be stopped at the third or fourth leaf, and laterals must also be immediately pinched beyond the first leaf. In the case of wall pears, all the strongest shoots must be reduced to five or six leaves, always excepting those required for the extension of the tree, of course.

Summer pruning is, to a large extent, simply a corollary to disbudding, and therefore it is obvious that if the tree is already bearing more buds than it is properly able to mature, the weaker and worst-placed buds, and even a whole spur in some cases, must be at once removed. This overloading of a fruit tree with spurs and potential fruit buds is of much more frequent occurrence than many growers would imagine, and it may safely be said to be the cause of a great deal of unfruitfulness amongst fruit trees.

Old Basing. J. C. NEWSHAM.

## ROSES UNDER GLASS.

How very unhappy many rose trees appear to be during the summer months when grown under glass. I have seen the plants half eaten up with red spider, and shedding their leaves daily, and the excresence from green aphides sadly disfiguring the pot plants grown under the climbing roses.

Few plants are more carefully attended to early in the year when they are yielding their first crop of blossoms, and few plants from under glass are more neglected in the summer time. When the autumn crop comes more attention is given, of course, but it is too late to do much good.

At the present time the small, wiry shoots should be entirely cut out, and others, which cause undue crowding, shortened considerably. Then the garden engine or hand syringe should be freely used to cleanse the branches retained. If air be freely admitted also, the cultivator will be well pleased with the crop of blossoms in the autumn. G. B.

## FLOWERING CANNAS.

Very few classes of plants have made so much headway in popular favour within the last few years as the cannas. Five-and-twenty years ago the present-day race was practically unknown. True, two or three years before that time a few of the then new section had been distributed, but it was not until the summer of 1888 that some of them were brought prominently forward. In that year no less than seven varieties were given first-class certificates by the Royal Horticultural Society, but in later times only awards of merit have been bestowed upon the new varieties. As an illustration of the rapid advance of the canna it may be mentioned that in the years from 1859 to 1888 only five varieties had been honoured by the R.H.S. Floral Committee, whereas since then 75 awards have been given.

Previous to the advent of these large-flowered forms, cannas were chiefly regarded as fine foliage plants for summer bedding, the floral features being considered of but minor account. For the commencement of the race of large-flowering cannas, which at first were called "gladiolus-flowered," we are indebted to M. Crozy, then of Lyons, and afterwards of Hyères. He devoted a good deal of time to the improvement of the canna, aiming at a dwarfer habit, greater freedom of flowering, and larger blossoms. As little was heard of his work until the new varieties were put into commerce their advent caused a considerable stir in the horticultural world. Since then numerous varieties have been obtained by different raisers, and the improvement in them has steadily continued, so that the best varieties of to-day are as far in advance of those of 1888 as these latter were superior to the old Canna indica. It may be as well to recall the names of the seven varieties which in 1888 gained such high honours, though they are now long since superseded. They are Amiral Courbet, Capricieuse, Francisque Morel, Geoffrey St. Hilaire, Madame Just, Paul Bert, and Ulrich Brunner.

The varieties popular at the present day can be, and are, put to a great variety of uses, though they are more generally grown in pots for greenhouse decoration than for any other purpose. For single stems pots from 6in. to 7in. in diameter are very suitable, and grand heads of bloom can be obtained, whereas if cramped in smaller pots the display of bloom is lessened. Plants grown in this way are not only of considerable value for the embellishment of the greenhouse, but they are also largely employed for grouping purposes at the various exhibitions held during the summer months. Owing to their handsome leafage they harmonise well with the various foliage plants which go to make up the major portion of the groups seen at many of the shows, and then, in addition, their gorgeously coloured blossoms serve to brighten up what might otherwise be a somewhat sombre display.

Again, they can be grown as bold masses in large pots or tubs, and so treated there are many places where they may with advantage be placed during the summer months. In this way, with an occasional supply of liquid manure, they will continue to grow and flower throughout the season.

Lastly, these cannas can be highly recommended for summer bedding, both foliage and flowers being very fine if they are liberally treated. This last item is most essential. It was brought home forcibly to me during the trying weather of last summer, when beds of cannas, and some of them in noted gardens, presented a most unhappy appearance. The main cause of the trouble was that the soil was heaped up in such an unnatural fashion that even when artificially watered the major portion of the liquid flowed on to the neighbouring grass, instead of moistening the soil around the roots of the cannas. After these examples of how not to do it, I was agreeably surprised to find some magnificent beds in an establishment of much lesser pretensions. The soil had been deeply dug and well manured, and the surface of the bed made saucer fashion, so that not a drop of water was wasted. Given a very wet summer, the results might not be so markedly superior to the others, but last year at least this mode of treatment paid.

Among other items in favour of these large-flowered cannas is the fact that they pass the winter in a dormant state, and consequently they may at that season be kept under the stage of the greenhouse, provided they are free from drip, or, in fact, anywhere safe from frost. On this point it is as well to bear in mind that the rhizomes of the yellow-flowered varieties are more delicate than those with red blossoms, so that the best place should in winter be assigned to the yellow forms. These cannas are all readily increased by division, as in spring the rhizomes may be cut up into as many pieces as there are buds, and if these are put into 5in. pots, and placed in a gentle heat, they will form good-sized plants by bedding-out time.

The list of varieties is at the present day very extensive, and, although the question of a selection is one on which there are sure to be differences of opinion, the following are all thoroughly good and reliable: A. Ortmann, dark purple; Baron de Richter, bright apricot, lighter edge; Black Prince, deep maroon; Bronze Poitevine, bright orange, rosy centre; Ernst H. Krelage, cherry-carmine; Evolution, golden-yellow, pink centre; Feuermeer, brilliant scarlet; Frau E. Kracht, rosy-salmon; Furst Weid, intense crimson; J. B. Van der Schoot, yellow, freely dotted red; J. Lochner, scarlet and orange; King Humbert, reddish-orange; Konigen Charlotte, deep scarlet, edged yellow, dwarf; Meteore, bright orange-red; Niagara, intense scarlet, gold margin; Oscar Dannecker, orange-yellow; Papa Crozy, vermilion; Rosea gigantea, rose; R. Wallace, canary-yellow; Schwabenland, cherry-crimson; Stuttgartia, scarlet and orange, light yellow edge; Venus, pink, yellow border; William Saunders, rosy-scarlet; and William Watson, deep salmon. S. W.

**Campanula pyramidalis** and its white variety, although quite hardy, is of immense value for the conservatory or greenhouse. It has to be treated as a biennial, and when well grown, the fine spikes of bloom reaching five to six feet in height, produce a fine effect. Seed should now be sown for next year's display in a pan filled with a sandy compost. Sow thinly and evenly over the surface, and just cover it with fine soil. Place the pan in an unheated frame, when the seed will soon germinate. When large enough for handling put the seedlings into 3in. pots, and shift them on as they require more root space until they reach 10in. pots. During the winter they should remain in the unheated frame, but be protected from frost. They will at this stage lose most of their leaves. In February they should be moved to a frame where they will have the assistance of a little heat, to which they will readily respond. Fresh leaves will appear, and the flower spikes may be seen developing from the centre; when this takes place the supply of stimulants should commence, first once a week, but after a few weeks every time they need water.—LEWIS SMITH, Shotesham Park Gardens.

# ENGLISH LEGISLATION AND PLANT DISEASES.

(Concluded from page 490.)

## Survey of Plant Diseases.

Now it is laid down in the American Gooseberry Mildew Order and in the Wart Disease of Potatoes Order, that in defining the limits of the infected premises only that part of any garden or other holding is to be included on which disease exists or has recently existed. The areas, therefore, are small, seldom exceeding three acres, and in most cases much less. One large fruit farmer, therefore, may have several infected premises in his occupation, and, as a matter of fact, there are sometimes ten or twelve such places registered under the name of one occupier. I have laid what may seem to some undue stress upon this point, which appears at first sight a trivial one, because it is here that the foundation-stone is laid of the whole structure of the Survey of Plant Diseases in England which the Board have been trying to build up. The system on which this survey has been planned has already been fully described in the annual reports of the Intelligence Division of the Board of Agriculture and Fisheries, Part II., but as it is intimately bound up with the subject of this paper, it may perhaps be outlined again. In the first place, it is obvious that the first step to be taken in making a study of any plant pest which it is proposed to eradicate is to ascertain the area over which the pest has spread. Without an adequate knowledge of the "extent" of the attack in every county, and in every garden, no progress can be made. But it is equally important to ascertain what is the "intensity" of the attack in each place, since this alone can give any true conception of the amount of injury done. Every report, therefore, that is sent in to the Board respecting an outbreak of American Gooseberry Mildew must contain a record of the extent of the infected premises that are affected by disease, and an expression measuring the intensity of the attack throughout the garden. But if this report is to be of any use it must be based upon an agreed scale of degrees, and must not be merely the personal impression of the inspector.

DRYING TOBACCO LEAVES AFTER GATHERING.

## Scheduling Diseases.

The measure of the extent of the disease is a comparatively simple affair. Given that the infected premises cover three acres or one acre of gooseberry bushes—and each report must in the first instance give the approximate area scheduled—the inspector has merely to ascertain the proportion affected. A scale of five degrees is taken, and the words "very many," "many," "common," "few," "very few," are used to signify the number of bushes attacked. Thus if less than 10 per cent. of the bushes are mildewed, the report says "very few"; if between 10 per cent. and 30 per cent., "few." "Common" implies between 30 per cent. and 60 per cent.; "many," 60 per cent. to 80 per cent.; "very many," 80 per cent. to 100 per cent.

The measure of the intensity of the disease is a much more difficult affair, and implies a study of the development of the disease from the moment when it first becomes apparent on the plant to the state when the bush is either dead or of so little economic value that it is uprooted and destroyed by the occupier. The number of degrees in the scale of intensity is, however, the same as in the scale of extent, the words selected being "very slight," "slight," "general," "bad," and "very bad." The symptoms which justify the inclusion of any case in each degree vary with the disease under consideration, and are, of course, selected in an arbitrary manner. They have been fully described in the annual reports already referred to, and need not be explained again, especially as a short explanation is attached to the Maps of Disease shown in the Exhibition. It is sufficient to point out that by collecting a series of reports, each of which records two dimensions of disease, viz., the extent and the intensity, it is possible to calculate with some accuracy the amount of disease present over any given area, from a parish to the kingdom, to compare one district with another, and one year with another. It is the best, if not the only, way of estimating the effect of widespread influences, such as the weather and the character of soil on the spread of disease, and it is a very useful method of studying the general effect of any remedial measures that may be adopted over large districts. Finally, it is the only accurate way of exhibiting to foreign Governments or private traders who wish to ascertain the sources from which nursery stock or other produce, for purposes of propagation, can be obtained with a reasonable assurance of escaping infection. The system is as yet only in its infancy, and it is anticipated that as it is applied to new diseases and continued for a longer period it will be found useful in drawing attention to facts that would otherwise be overlooked, and materially assist in drawing conclusions as to the progress of epidemics.

So far only those Orders of the Board have been described which deal with diseases that are more or less firmly established in this country, and that will require a long and patient course of treatment to stamp out, if indeed that can ever be accomplished. Such diseases are, of course, chiefly a matter of interest to the Government of the country concerned, and the farmers and fruit-growers that are affected.

## Insects to Guard Against.

Orders that relate to the third class of pests are of a wider interest, and affect not only the home grower but the foreign trader who wishes to place his goods on the English market, and to a certain extent the English nurseryman who wishes to dispose of his stock abroad. It has already been explained that the pests referred to are those which are either non-existent in England, or have only recently been introduced. But, as stated, it was quickly found that there is a fourth class of pests, namely, those which, though present in England, are of very slight economic importance here, but which are regarded as serious by other countries. It is considered that the Board should arm themselves with powers to deal with pests of this order for two reasons; first, that they may have power to act promptly should any of these pests assume undue proportions, and, secondly, that they may be in a position to give an official certificate of freedom from disease to those nurserymen who wish to trade abroad. These pests may, therefore, be classified under two heads, those which we wish to keep out of this country, and those which other Governments wish to keep out of their countries.

The pests which comes under the first heading include several which are well known to all horticulturists who have studied foreign and colonial writings, though they may possibly be unfamiliar with the appearance of the devastation they cause. They are, first, the San José Scale (Aspidiotus perniciosus), a dangerous parasite which attacks many kinds of deciduous trees, but is specially injurious to fruit trees. It is supposed to be a native of Eastern Asia, but it has caused untold damage in Western America, and has spread to the Eastern States, and Canada, through the introduction of nursery stock. It prevails in Australia, and has recently been discovered in South Africa, though it is supposed to have been present there for about six years. It is not infrequently found on imported fruit in the market, but as inquiry has failed to reveal any case of infestation from that source in any country where it has established itself, no real danger is apprehended from that quarter. Another pest is the Mediterranean Fruit Fly (Ceratitis capitata), possibly a native of Northern Africa, which now causes considerable injury on both shores of the Mediterranean, and has been reported as near to England as Paris. It is known in Australia and in South Africa, and might very well cause much damage in the South of England. A third is the Colorado Beetle (Dodyphora decemlineata), an American pest, which has twice been introduced into England, and was only stamped out with some difficulty and expense. As already stated, it was the discovery of this beetle in England that led to the passing of the Destructive Insects Act of 1877, but the danger of a fresh importation is less probable now since the United States have become a purchaser of potatoes in England instead of a seller. Another parasite of the potato, the Potato Moth (Phthorimaea operculella), is also scheduled. This pest, which rivals the Phylloxera and the pernicious scale in the amount of damage it can and does cause, is believed to have originated in Northern Africa. It has been recorded from Spain, Portugal, Italy, and more recently from France, where it appears to be spreading, and is known to have caused considerable loss in Algiers. It was introduced into India from Italy, and spread so fast that it became impossible to control it. It exists in South Africa, and throughout Australia from Victoria to Tasmania. It is well known in New Zealand. In America it attacks not only potatoes but tobacco plants, and, in view of the ease and rapidity with which it spreads, and the difficulty in combating it, it may be said to be the most dangerous foreign pest that we have to fear. A fourth pest is the Cherry Fly (Rhagoletis cerasi), which abounds in France and Germany, and probably elsewhere. The larval form is familiar to all purchasers of the first cherries that come on the English market, for it is imported in great numbers every year in foreign fruit. Careful inquiry however, has failed to detect a single case of infestation in English orchards, though it is impossible to say how long this immunity will last. One fungus disease has been included, viz., Black Knot, caused by Plowrightia morbosa, which is known to be a serious pest in America, and one bacterial disease, American pear blight. Both of these are pests of fruit trees, and are known to cause much damage.

## Other Insect Pests.

Two insect pests have been scheduled which are found in England occasionally, namely, the Vine Louse (Phylloxera vastatrix), and the Large Larch Sawfly (Nematus erichsoni). The former pest is known over the whole world wherever vines are grown, and is perhaps the most notorious of all destructive insects. The second is a parasite on larch trees, and has caused the death of thousands of trees in Cumberland and in Wales. Some years ago it nearly destroyed the larch forests in Denmark, and it is now devastating the woods of Canada. The importance of both of these pests is increased by the fact that they are regarded as serious by foreign countries, and in the case of the former stringest regulations have been passed to prevent its importation by the Government of every vine-growing State.

The remaining pests dealt with in the Order, viz., the Gipsy Moth, the Brown Tail Moth, the Nun Moth, and the Narcissus Fly, have all been scheduled for the same reason. As is well known, the first two insects have proved to be very destructive in the United States and in Canada. The third moth is occasionally very troublesome on the Continent of Europe, and the last has proved injurious in British Columbia, and is much feared in New Zealand, to which country large quantities of bulbs are sent from England. In no case do they cause any great injury in England. The Brown Tail Moth is rare, and is getting scarcer. The Gipsy Moth is almost extinct. Only two cases of injury from the former have been reported to the Board during the last six years, one of which was complicated by the presence of the Lackey Moth in large numbers, and no case of damage by the latter has been reported at all. The Nun Moth is not known as an injurious pest. The Narcissus Fly, though abundant, has not caused widespread injury. But the fact that all these pests are regarded as serious in countries with which English nurserymen trade is one which the Board are bound to take into consideration. In recent years British colonies and foreign countries have imposed regulations dealing with the importation of plants which rival in number and hardness the rules called the Pie, and it is to be feared that in some cases nurserymen have abandoned their overseas connections on the ground that the trade is not worth the trouble involved.

## Assistance from Government.

Now it will probably not be contended by anyone that it is the duty of the Government to push the business of any particular trader, or even the business of any class of traders, except in a general way. Those who make private profits must depend on their own exertions, and the reputation which the high quality of the goods they offer brings them. But it may reasonably be urged that it is the duty of every Government to smooth away the difficulties which other Governments lay in the path, and that the Board should help exporters to surmount the barriers imposed on importation when they can properly do so. With this object, therefore, the Board have been at same pains to collect, and publish as complete a collection as possible of all the regulations in force in other countries dealing with the importation of plants. A study of these regulations shows that they may roughly be divided under three heads, namely, those which require that the actual plants to be imported have been inspected by an officer of the Board and are certified to be healthy, those which require that the plant shall come from a nursery which has been inspected by an officer of the Board and declared to be free from disease; and those which require a certificate that no case of certain specified diseases has occurred within a certain distance of the place where the plants were grown. There are, of course, other cases where a quarantine or an inspection is imposed on arrival, but these affect the foreign purchaser rather than the English exporter.

The utmost the Board can do is to ascertain the nature of the regulations, and offer the nurserymen facilities for complying with those that require some inspection or report as regards the freedom from disease of that part of England from which they come. Arrangements have accordingly been made for such inspection, and the issue of such certificates and a memorandum setting out what the Board are prepared to undertake has been circulated to all the principal nurserymen in England. It is in order that the Board's inspectors may be in a position to enter on premises where disease may exist and search all places where it may be found that the pests recently referred to have been scheduled, for in some cases at any rate it is necessary to examine not only the premises or the plants in respect of which an application for a certificate has been made, but the adjoining premises as well. It is in this connection also that the system described above for obtaining a survey of diseases is of general benefit. Certain countries require a certificate with each consignment of potatoes which reaches their shores to the effect that no case of wart disease (Synchytrium endobioticum) has occurred in the neighbourhood where the potatoes were grown. Under the present organisation it is possible, except in a few cases, to issue the certificate or to report the Board's inability to do so on receipt of the application. By this means a very real security is given to the importing country against the introduction of disease, without imposing any undue delay or hindrance on trade. It is possible that the system might be extended with advantage. In England we do not believe in quarantine stations for imported plants. Such imports as do reach this country from abroad generally arrive at a season when nearly all insect and fungus pests are in a dormant condition. If the plants are to be examined at the port or at a quarantine station they would have to be unpacked, often to the great danger of the life of the plant, and examined under a microscope by a highly skilled expert, who would have to be familiar with the eggs and young stages of many foreign pests, and the appearance of the damage caused by many invisible fungi. He would have to identify in their immature state many diseases which many experts cannot always determine when mature, and he would be haunted by a constant fear of overlooking some dangerous pest.

If the Government of the importing country can only be satisfied by the reports based on such a system as has been described that the plants proceed from a district free from certain diseases, or from a nursery kept under constant supervision and declared to be clean, the plants could be taken direct to the premises where they are to be planted permanently and there examined by duly-qualified inspectors at a season when the pests that are feared resume their activity, and show by the injury to the plant or by their visible presence that they have been introduced. There are few, if any, pests that can be introduced from or into countries with a temperate climate that would breed or spread to neighbouring plants so rapidly that they could not be readily stamped out on such a system as has been described. In the case of the few pests to which this does not apply the introduction of the host plant should be prohibited altogether.

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**Semi-double Pelargonium The Speaker.**—Since the advent of the sturdy growing semi-double, salmon-coloured variety King of Denmark in the middle of the 'nineties many members of this class have been brought forward. This comparatively old kind still maintains its place as one of the best in its colour, which is just now very popular. A variety recently shown by Messrs. Cannell and Sons, of Swanley, under the name of The Speaker promises, when better known, to be extensively grown. It is of stout growth, while the semi-double flowers, borne in bold erect trusses, are of a brilliant fiery salmon colour. With so many varieties it may by some be thought that we have enough, but there is always room for such as this, the new pink Ambrosia or the salmon form of Paul Crampel.—S. W.

## NEW PLANTS, ETC.

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### ROSES.

St. Helena.—This is a very fine hybrid tea rose, large-petalled, shapely, full sized, and attractive. The colour is deep cream, with a suggestion of pink and a yellowish base to each petal. Should prove a useful rose for exhibition purposes. Gold Medal, N.R.S., Southampton, June 26. Messrs. B. R. Cant and Sons, Colchester.

Irish Flame.—Another of the strong-growing, elegant, single varieties, of which Irish Elegance may be taken as a type. It resembles the latter variety, but is wholly yellow, with deep ruddy-bronze shading on the outside of the petals. Dark stems and foliage. Gold Medal, N.R.S., Southampton, June 26. Messrs. Alex. Dickson and Sons, Newtownards, Co. Down.

### MAGNOLIA KOBUS.

A shapely, pyramidal, deciduous tree from Japan. It is perfectly hardy, and usually flowers in April. The flowers are about four inches across, and the six petals are white with a central purple line along the outside. Bot. Mag., t. 8,428.

### SCHOMBURGKIA LUEDDEMANI.

This Venezuelan orchid is a strong-growing species, allied to S. undulata. The spike is 1½ to 2ft. long, and carries a head of many flowers, each about three inches across, undulate, and brown, with a purple lip. Under cultivation this requires tropical treatment, and a distinct period of rest after completion of growth. Bot. Mag., t. 8,427.

### AGAVE PROTUBERANS.

This is a stemless, tuberous-rooted, Mexican species, with linear-lanceloate leaves about eight inches long, green, with numerous brown-purple blotches. The flowers are numerous, and borne at the head of a scape two feet high; they are shortly-tubed, with recurving greenish-red segments. Bot. Mag., t. 8,429.

### DAPHNE RETUSA.

A low-growing shrub that promises to be a useful one. It grows from 2ft. to 3ft. high, and comes from a high altitude in Western Szechuan. The neat, oblong leaves are deep green above, and pale green beneath; the flowers are white, tinted with rose or violet, especially on the outside, and they are borne in terminal umbellate clusters. To considerable beauty is added the charm of fragrance. Bot. Mag., t. 8,430.

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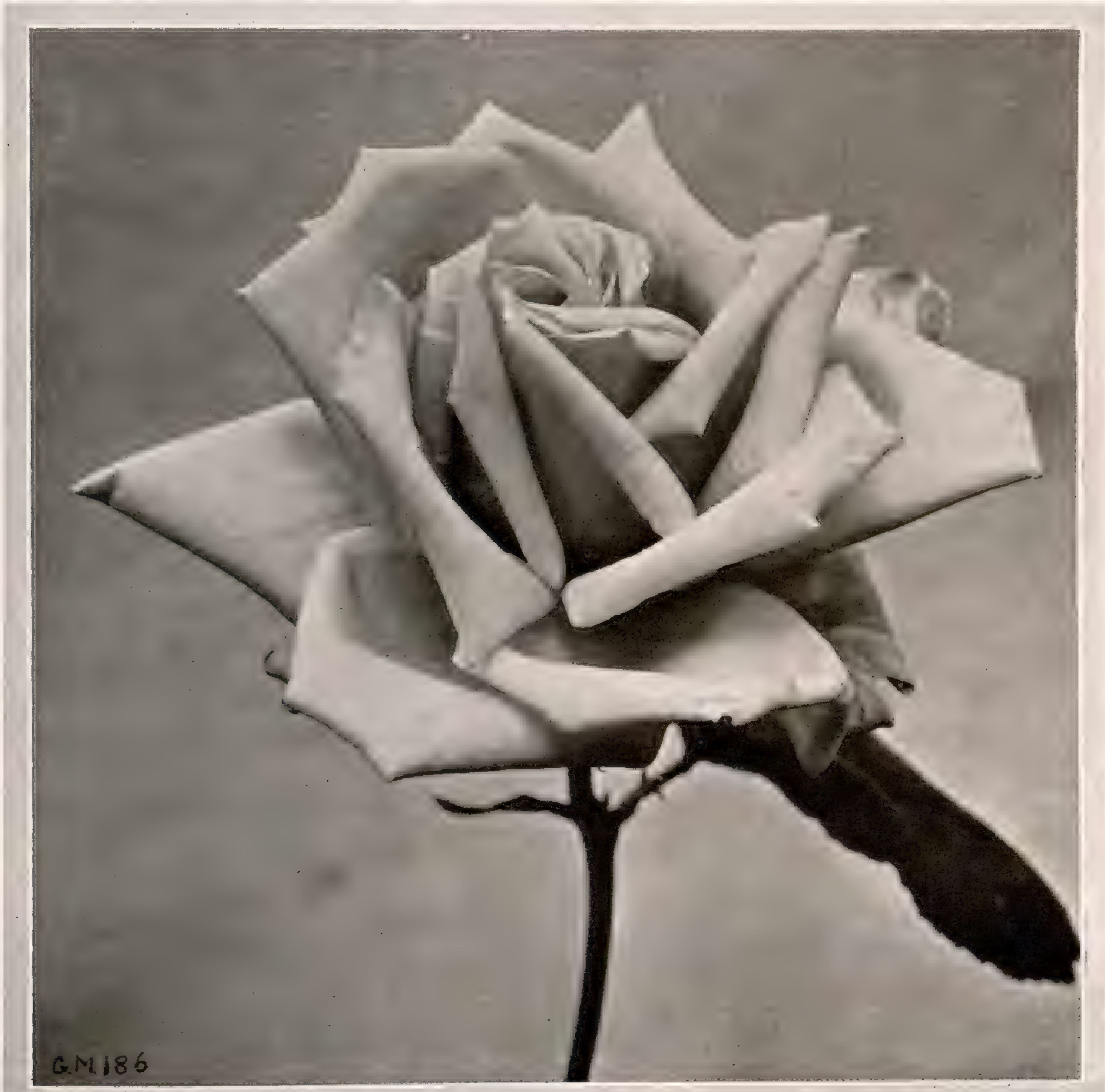
PROFITABLE FRUIT GROWING for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## POTENTILLA DAVURICA.

The usefulness of the common Potentilla fruticosa is such that it warrants a good trial with any other hardy shrubby kinds which may be obtained. P. davurica, a native of China, resembles the commoner species in habit, but differs by bearing white flowers. Growing to a height of 1½ or 2ft., it forms a compact bush, with small three-parted leaves and showy flowers three-quarters of an inch across. Shrubby potentillas are excellent subjects for planting in large masses on moderately dry banks, where the soil is fairly good; they are, however, inferior to such plants as double-flowered gorse, cistuses, and helianthemums, for positions where the natural soil is poor and gravelly. They may be increased from seeds, which germinate well if sown soon after they are gathered. Young plants grow rather slowly for the first two or three years, without they have been planted under exceptionally favourable conditions. A second white-flowered species may be obtained in P. Salesoviana from Siberia. It is, however, rather more difficult to cultivate than the common kind.

W. DALLIMORE.



H.T. ROSE ST. HELENA.

A fine new variety, deep cream-coloured, with a yellow base to each broad petal. Gold Medal, N.R.S., at Southampton, June 26. Messrs. B. R. Cant and Sons, Colchester.

## AMONG THE ALPINE FLOWERS.

> "The lanes are full of roses,
> The fields are grassy deep;
> The leafiness and floweriness
> Make one abundant heap."
> —Leigh Hunt.

With the country full of delights, and the borders gay with summer flowers, the rock garden has a stiff task in its endeavour to attract us by its charms. As we roam through the country lanes or up and down some flowery glens, we see so much to entice us that the more modest beauties of the alpine flowers might well seem tame and insipid; while if we seek the paths which lead among the garden's borders we shall find beauties of the most glowing order, and visions of grace difficult to surpass.

Yet the alpine lover is not inclined to swerve from the objects of his affections, and will find among them many treasures dear to him, even when many others have veiled themselves in modest green garments and no longer shine in bright colouring or fascinate us with their charming blossoms. Let us look among those which welcome the summer sun, and see their graces and their points of beauty and discourse awhile upon their ways!

### Campanula Stansfieldi.

Of all the race of alpine flowers, we have none, I think, so valuable for summer bloom as the campanulas, a varied and beautiful race, indeed, and one we never seem to tire of. We look for their coming with eagerness; we delight in them while they are in bloom, and we mourn unfeignedly when their season is over, and our gardens are bereft of their graces for the season. To the keen cultivator, too, they present an almost Protean variety, both in their characters and their ways. The one who is content with "easy" plants will find among them many beauties which will not tax his skill too greatly. On the other hand, the one who takes a pride in conquering cultural difficulties will discover among these little harebells, or bell-flowers many rarities which will tax his skill to the utmost. The true lover of alpines comes in midway between the two. He likes an "easy plant," but he thinks that a good one of any class is worth some trouble, and so he seeks to cultivate the best of these charming flowers. Surely Campanula Stansfieldi appeals to the last-mentioned in the highest degree! As we gaze upon it now we must rejoice in its beauty, and seek to give to others an inspiration to add Stansfield's bellflower to their rock gardens.

Picture a little bush, only a few inches high, of yellowish, hairy-looking, small leaves, above which are borne many of the dainty soft lilac flowers, with their petals arranged like a tapering, shallow, and open bell. It is a picture of beauty, and is a little alpine which should rank among the indispensables. I suppose we owe it to that redoubtable alpinist of Southport whose name it bears, and we must consider him a happy man in having his patrynomic immortalised in this lovely plant. That it is easy to grow would appear from the somewhat conflicting advice respecting its cultural needs. We are advised to plant it in a cool, shady spot; we are also recommended to set it on a flat part of the rockery in sun. That it does in either sun or shade appears evident, and the writer has it in both, and each plant is doing equally well.

### Silene Saxifraga.

To the ardent enthusiasts in alpine plants there is always something wanting in the descriptions we receive of some of our pet plants. A botanical one must, of necessity, be deficient in anything but the baldest detail, and sometimes it is most unsatisfying indeed. Take, for example, Silene Saxifraga the Saxifrage Catchfly. Its colour is said to be "yellowish on the upper surface, reddish-brown beneath." This reminds one of the herbarium rather than the rock garden, and we feel that the human element is absent; yet how difficult is it to give a better account! As growing on the rock garden this alpine catchfly makes a charming carpet of nice little green leaves, almost grass-like in their tenuity. Above these are sightly raised some, but not a crowd of, pretty, nicely-formed, roundish, notched flowers, which it is somewhat of a libel to call "yellowish," so nearly pure or creamy-white are they. The underside of the petals is of a nice shade of almost pale red-brown. The whole plant is not more than about six inches high—in poor soil not more than three or four inches. An impressionist writer has spoken of this as a "spidery-looking plant, interesting but not brilliant, with creamy flowers, brownish on the outside." It is not easy to see where the term "spidery-looking" comes in, but otherwise the account of the flower is good, and the recital of these different views will assist the reader in considering whether to covet the plant or not. It gives little trouble on a level terrace, and seems to appreciate a part of the rock garden rather near the base.

### Dianthus sylvestris.

There are many lovely and dainty flowers among the alpine pinks, or dianthuses, and he is indeed happy who has a good collection of these charming flowers. The student of what to purchase could hardly do better than visit the rock garden at Kew, where he will see many beautiful species admirably grown if at all possible to do so. A lovely species, hardly ever seen in the rock garden of the time, is Dianthus sylvestris, now in bloom here on a sunny southwest ledge. There are alpine pinks with larger flowers, but that does not detract from the fact that this is a gem among the race, and a plant we should all attempt to grow well. But, alas! it has its own ways, and cultivators agree that it is by no means such an obliging plant as it looks. Even the most ardent and experienced growers evidently learn that it dies off without apparent cause, so that it is a comfort to be able to say that it is flourishing well here, and that it has had already a fair lease of life. From a good turf of narrow, deep, glaucous green, grass-like leaves it sends up lovely single flowers of a warm and charming rose. Why one of its synonyms seems to be Dianthus "frigidus" it is difficult to conceive, seeing that its colouring at least is by no means "cold." Nowhere has the writer seen it thriving so well as on an artificial moraine, save, perhaps, in his own garden, where it is on a south-west ledge in poor, hard soil, well mixed with grit and surfaced with whinstone chips, such as are used for surfacing tar-painted roads. These seem as a breath of life to many alpines, preserving them from decaying at the neck in rainy places, especially in winter.

### Silene maritima plena.

Yet our gardens should not only possess the newer flowers, but also the old favourites, and one of these which looks as if it might pass out of cultivation, so little is it seen now, is Silene maritima plena, the double variety of a common seaside plant which covers many gravelly sea beaches with thin carpets of glaucous leaves and single white flowers, and is occasionally represented in rock gardens by a rose-coloured form. This little wilding has long ago blossomed out into a double-flowered variety, with big white flowers almost like those of, say, Pink Mrs. Sinkins, quite double, nicely fringed, and altogether a desirable plant, when hanging over a stone, and a great success in stony and gravelly soil. I grew it years ago—more years than I care to tell of now—and lost it when family illnesses made plant growing a burden which could not be fully borne. It likes some top-dressing, and without this may die off at the neck. But it thrives in the poorest soil, and is a good old plant worth keeping in remembrance, though it has not the fragrance of the pink it so much resembles.

### Other Flowers.

There is the usual bewildering choice of other subjects, such as helianthemums, with their fugacious but brilliant flowers; dianthuses, or alpine pinks, in almost endless choice; gypsophilas, trailing over the stones with lace-like flowers; poppies, from the dainty little Papaver alpinum, in variety, to the Iceland and other taller flowers of Lethe; while anthemises and achilleas yet give some of their white or yellow flowers. There are, as usual, violas and violets in the utmost variety of colouring and markings, little and taller lychnises, silenes, or catchflies in other forms than S. Saxifraga; thrifts and acantholimons, yet full of flower; an almost endless choice of dwarf bellflowers; cerastiums, still in sheets of white; and a perfect galaxy of other flowers, telling us that though midsummer has come and gone, the alpine garden yet holds its beauties and its delights to all who love it and give it the needed care.

S. Arnott.

## THE PROPHET FLOWER.

This is one of the most delightful early-flowering subjects for the herbaceous border or rock garden, and, although it has been in cultivation for a great many years, it does not appear to have received the recognition that it deserves. The flowers, which are freely produced from early in April onwards, are a bright primrose-yellow, and when they first open have several dark brown spots on the corolla, but these marks gradually fade away and disappear. The plants do not exceed a foot in height, but when fully developed the flowers are so profuse that they almost entirely hide the foliage.

The species succeed in any good garden soil, either in the open or in partial shade, but a fairly light rooting medium that can be kept uniformly moist suits it the best. When planted in masses in contrast to Viola gracilis, it is very telling, and each helps to display the other to advantage. The Prophet Flower, which is known botanically as Arnebia echioides, is a native of the Caucasus and Northern Persia, and is perfectly hardy in our climate. It possesses narrow, veined leaves that die back in early winter, but the plant is quick to commence new growth with the first sign of spring. The Prophet Flower can be most readily propagated by division of the roots either in spring or autumn, but if this is done in September, and the young plants are kept in a cold frame during the winter neat specimens are obtained for flowering the following spring.

J. Gardner.

"CARNATIONS, PICOTEES, AND PINKS" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## IN THE DEESIDE WOODS.

The 35th annual excursion, and what practically entailed a week's tour of the beautiful Valley of the Dee, Aberdeenshire, was commenced on Monday, June 24, by the members of the Royal Scottish Arboricultural Society. Headed by Sir John Stirling-Maxwell, president of the society, upwards of a hundred members assembled at Aberdeen Station, where motor cars were awaiting. Entering these, the party proceeded to Braemar, the extreme end of the area under inspection. From thence, day by day, they worked down the valley until Aberdeen was again reached on Friday, June 28. Twenty-five years have elapsed since the society last visited this district.

The suitability of the Deeside Valley for an arboricultural excursion is due to there being a happy combination of the old and the new, of the original irregular forests with those in which the intensive system of culture has been adopted, and of the woods where trees native to the soil have been allowed to flourish at will without much attention from either forester or gamekeeper. Here, also, are to be found extensive plantations where successful experiments have been made in introducing the trees of other lands. Striking examples of the latter are the Douglas firs on the Durris Estate, and the Japanese larches there, in which great interest was taken by Mr. John D. Crozier, for a number of years chief forester, and now holding an important appointment in the Government Forestry Department of Ireland. Moreover, great encouragement has been given by Royal owners of the Balmoral Estates, where Pinus nobilis, with its strikingly large cones, is a feature of special interest in the avenue to the Castle, and where numerous ornamental trees in the Royal demesne commemorate Royal family and national events of importance.

### ROYAL FOREST OF BALLOCHBINE.

Tuesday morning saw the arboriculturists early astir, and they commenced the serious work of the week by paying a visit to the Royal Forest of Ballochbine, on the Balmoral estates. Here they were met by Mr. John Michie, who personally conducted them round. The winding path along which Mr. Michie directed the party, enabled everyone to view to the best advantage and utmost ease the vast area of timber and the beautiful scenery. On every side were fine specimens of the Scots fir, which in themselves fully account for the eminent position which Balochbine has attained in regard to the quality of the timber grown on the estate. The trees are about 200 years old, and many of them contain timber up to the extent of one hundred and fifty cubic feet. The party proceeded by way of Glenbeg and over the "Eagle's Nest" to the Findallachar burn. On the lower levels the trees are tall and taper slightly. From a wood-merchant's point of view they are regarded as all that can be desired. At various parts of the journey discussions were raised regarding the cubic contents of some of the larger trees. Several of the trees were carefully measured, and it was found that the general views were more or less correct. Mr. Michie throughout the tour of inspection enlightened the party on many interesting points. He showed the visitors the highest point at which it is possible to grow trees for timber. The trees which he pointed out at an altitude of 1,400 or 1,500 feet took a longer time to reach a marketable size than those on the lower ground. He said the fact was that they required almost two rotations, thus reducing to a certain extent their commercial value. Turning to the left the party returned by the Garrawalt Falls, and viewed the fine specimens of natural Scots pine growing between that spot and the Dee. It was unnecessary to inform the company that the noble specimens were grown in strict accordance with the principles of sylviculture. They had not been thinned out beyond what was necessary, and from the present appearance of the trees it was evident that in bygone days the rules of forestry had been adhered to. It was of interest that in the Braemar and Balmoral districts there are woods producing commercial timber at elevations up to 1,700 feet, a fact which is remarkable, seeing that the general "timber line" is considered to be from 800 to 1,000 feet. On the lower ground much interest was evinced in the growth of Japanese larch. Discussions arose as to the merits of trees grown from seed collected in the Tyrol, the native home of larch, and the general opinion expressed was in favour of Tyrolese seed. Comment was made as to the interesting features connected with the whole neighbourhood, and especially as to the extraordinary growth of timber and the high elevation at which the trees grew.

The afternoon was devoted to a visit to Invercauld, the property of Mr. Farquharson. Here some capital specimens of Scots pines and spruce were seen, and also a number of fine weeping beeches. Mr. Andrew Smith, factor on the estate, then conducted the party through several young plantations of Scots fir, larch, and spruce, which were much admired. Surprise was shown at the luxuriance at such a high altitude. Through the kindness of Mr. Farquharson the company were entertained at tea at Invercauld House. From thence the foresters proceeded through Braemar, past Mar Lodge, and through the finely wooded country now owned by the Duchess of Fife, on to the Linn of Dee. Here the party were loud in their admiration of the view of the torrent of the Dee as it forces its way between the linn or gorge. Tired, but thoroughly delighted with the day's work, the company returned to the Fife Arms Hotel, Braemar, where the night was again spent.

### GARMADDIE WOODS, ETC.

The programme for Wednesday included visits to the eastern portion of the Ballochbine Forest, Garmaddie Wood, Invergelder, and Craig-gowan, Balmoral Grounds, Abergeldie, Birkhall, and Lynn Wood. The route lay along the low drive, over the Garrawalt, and on to Craig Deign, where the twenty motor cars stopped, and the excursionists ascended the Craig for the purpose of seeing clearly the timber line of the district. This Craig, is, perhaps, the highest point in the locality at which timber can grow, and it was pointed out that not far above an altitude of 1,500ft. could even the native pine be expected to produce commercial timber. This, it was stated, showed there was danger in these days of fashionable forestry of spending national money in a manner in which no return in timber of actual value could be expected, and no better criterion of that could be obtained than the height at which the indigenous trees of the country would grow. The monument on the top of Craigdeign interested the visitors to a great extent. The story was told of how Ballochbine Forest was sold, according to ancient tradition, to Farquharson of Invercauld for a tartan plaid, said to be the prettiest in Scotland, by McGregor, the last laird of Ballochbine. The monument was erected by the late Queen Victoria in allusion to this circumstance. The inscription on the monument read: "Queen Victoria entered into possession of the Ballochbine, May 15, 1878. The Bonniest Plaid in Scotland."

Descending from the Craig, the party proceeded eastwards at a much lower level to view the fine timber in the Garmaddie Wood. A visit was paid to the sawmills at Invergelder, and thereafter the journey eastwards to Balmoral Castle was continued. Prior to visiting the Castle, however, an ascent of Craig-Gowan was made in order to see a great variety of exotic and home trees, all in vigorous, healthy growth. Conspicuous amongst them are the Douglas fir, growing luxuriantly at a higher altitude than can be found, perhaps, anywhere else in Scotland. There, too, are very fine clumps of Pinus Cembra, P. monticola, and P. Strobus. Besides those, there were seen a good sprinkling of the native and Tyrolese larches, and a couple of specimens of the Japanese larch (Larix leptolepis), the last-mentioned having been among the first brought to this country. It has been thought by many that this larch would supersede the European species, but, although it grows rapidly for the first ten years or so of its life, the tree gradually loses its vigorous character.

### BALMORAL WOODS.

The visitors then proceeded to the lawn at Balmoral Castle, where a large marquee was erected. Here lunch was served, which his Majesty the King had been pleased to provide for the party. The weather was bright and warm, and the whole setting of the function was memorable. Mr. John Michie, M.V.O., the King's factor, presided, and was supported by Sir John Stirling-Maxwell, Sir John Fleming, of Dalmuinzie; Sir Leonard Lyell, of Kinnordy; Mr. H. J. Elwes, of Colesborne; Colonel James Ogston, of Kildrummy; Mr. Wilson, forester on the Balmoral estates, etc.

After lunch, Sir John Stirling-Maxwell, in proposing "The Health of the King," said they had been going about the Balmoral estates for the last two days, and what they had seen everywhere was good judgment and good taste, which showed the personal supervision which had been bestowed upon it by its owner. It might be surprising to find in a department of estate management which was so little understood in Scotland, that the King's woods afforded a model to other proprietors. They had been spending a great deal of their time in Ballochbine, where there were the old natural pines, which did not now form a subject of practical forestry, but his Majesty has been well advised in preserving this relic of the past. It may not be many generations before it is the only wood of the kind left in Scotland.

The grounds and gardens around the Castle were then inspected, and no little admiration was expressed for the admirable work done here by Mr. Troup, head gardener to his Majesty.

Late in the afternoon two trees were planted on the lawn to the east of the Castle by Sir John Stirling-Maxwell, to commemorate the visit of the society.

In the afternoon and evening an inspection was made of the Abergeldie, Birkhall, and Lynn Woods, and then the party proceeded down the valley to Banchory, which for the concluding two days of the tour became the headquarters of the society.

(To be continued.)

**Some Effects of Last Year's Sunshine.**—Your correspondent, "H.," in dealing with the above subject on page 356, strikes such an optimistic note that one is forced to the conclusion that he hails from an unusually favoured district. While vegetation of all kinds is this year particularly early, and the floral display of trees and shrubs unprecedented, yet, within the London area at least, vegetables are so scarce that were your correspondent obliged to purchase his own, he would, I think, soon look upon the matter in a different light, for I never remember them so dear as they are now. With cabbages realising from fifteen to eighteenpence a dozen, sprouting broccoli from four to six shillings a bag, and spinach four to six shillings a bushel at Covent Garden (as given in the GARDENERS' MAGAZINE for April 27), the scarcity of vegetables must be apparent to all. The condition of the grass, too, may in some cases fully apply, but, on the other hands, there are many districts where the grass has already suffered terribly from the drought. At Kew, a few days ago, it was very noticeable that in some parts the condition of the grass was more suggestive of the month of August than the beginning of May. Such a state of things is readily understood, for in this locality, not far to the south-west of London, we only had about a quarter of an inch of rain throughout the entire month of April, while the unusual amount of bright sunshine was accompanied by very drying winds.—S. W.

# GREAT EXHIBITION AT HOLLAND PARK.

## JULY 2 to 4.

After a year's absence, the Royal Horticultural Society was able once more to hold its summer exhibition at Holland House, Kensington. This year the exhibition was arranged for three days instead of the usual two. The site is an excellent one, as it is surrounded by fine trees and the old and historically interesting Holland House forms a stately background. The gardens immediately surrounding the house afford ample evidence of the taste in gardening which the owner, Mary, Countess of Ilchester, possesses, and their upkeep reflects great credit upon the veteran gardener, Mr. C. Dixon. These grounds were once more open to visitors at a small charge, the proceeds being devoted to charities.

CATTLEYA GIGAS, LOUIS VAR.

A finely-flowered specimen exhibited by Sir George Holford at Holland Park.

It was, perhaps, because there was no Temple Show this year that this Holland House Show was the largest yet held, no fewer than ten large tents being required to accommodate the exhibits; while, in addition, the outdoor displays far exceeded anything hitherto arranged at this summer function. The light canvas used and the ventilation of the tents were items tending to make matters better, both for exhibitors and visitors.

Orchids and horticultural sundries, usually such important sections of this show, were by no means largely represented; it was suggested that the International Exhibition had proved a great tax upon the orchid exhibitors, and it was whispered that high charges for space kept many sundriesmen away. Stove and greenhouse plants and ferns were splendidly arranged, and there were enough pot fruit trees, well cropped, to fill a good-sized orchard. Naturally, hardy flowers were much in evidence, but their arrangement was such as to prove that, given a fair space, the old method of setting up bunches, rank above rank, is practically over. Water and rock gardens, terrace and Japanese gardens, and flower borders, all of good design and well furnished with suitable plants and flowers, formed no mean feature of this fine show. Topiary work and garden furniture were presented in some quantity. Roses were largely shown, white sweet peas occupied an unusually prominent place throughout the shows. Carnations were of outstanding merit, and begonias provided a grand display of glorious colour.

In one or two of the tents the bare backing of some of the displays was unsightly; exhibits having a high background of wood and baize, etc., might well have been placed back to back, and no doubt this would have been done had the exhibitors notified their intention of erecting such high stands. We remember something similar at the Festival of Empire Rose Show last year, and, to say the least of it, the result is not pretty.

We tender our congratulations to all the society's officers, whose hard work and courtesy make such a big show a pleasing success. We learn with pleasure that for a period of five years the society's summer show will be held at Holland House, the society and the Countess of Ilchester having come to an arrangement in this matter.

The weather might have been kinder. Heavy rains on Monday and Tuesday did not add to the comfort of exhibitors, especially those with outdoor exhibits. On the opening day the council, as usual, entertained the members of its standing committees at lunch.

### ORCHIDS.

Mr. J. Collier, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, filled a considerable space with choice orchids, and gave his plants a setting of ferns, asparagus, and nepenthes. Sobralias, Oncidium macranthum, odontiodas, and Odontoglossum Phœbe were used as a background, and in the centre were good examples of Odontoglossum armainvilliersense xanthotes, a lovely Odontioda Bradshawiæ, Lælio-cattleya Sunrise, L.-c. Phœbe, Cattleya Rex, good forms of Odontoglossum crispum, and the wonderful Bulbophyllum grandiflorum, and Cirrhopetalum pulchrum. Notable flanking specimens were of Miltonia vexillaria radiata, Odontioda papilio Gattonense, Angræcum Eickleri-anum, Brassia Lawrenceana, and Anguloa uniflora.

Mr. Harry Dixon, Spencer Park Nursery, Wandsworth, presented a small group of orchids wherein Odontoglossum Fascinator, O. Jasper, and the bright Lælio-cattleya Cowani were leading features. From Mrs. W. J. Briggs, Enfield, came a fine flower of Cattleya Mossiæ Wagneri, some good examples of C. gigas, Odontioda Diana, etc. Mr. E. H. Davidson, Borlases, Twyford, put up a pleasing display of orchids set prettily in maidenhair ferns; Cattleya Mossiæ Wagneri, C. Mendeli, the handsome C. Thurgoodiana, C. Gaskelliana, and Odontioda Charlesworthi, were especially good.

Messrs. Sander and Sons, St. Albans, had a few fine and rare plants in Miltonia vexillaria Lambeauiana, with four spikes of lovely white flowers, Dendrobium Regium, the splendid Odontioda Bradshawiæ var. Ruby, with large, orange-scarlet flowers; Catasetum tenebrosum, Bollea Lalindei, and the beautiful Lælio-cattleya Ceres var. Emblem.

From Westonbirt Mr. Alexander, grower to Lieut.-Colonel Sir George Holford, brought up Cattleya gigas Louis var., with six spikes, and a total of twenty-two flowers; C. Warscewiczi Frau Melanie Beyrodt, with two white-petalled blooms; the lovely orange-centred Cattleya Artemis, and C. Warscewiczi var. Othello. Mr. Jules Hye brought over Miltonia Hyeana var. La Conquerant, from Ghent. Mr. Shill, gardener to Baron Bruno Schroder, The Dell, Egham, showed Cattleya Dupreana, with three enormous purple flowers. Magnificent spikes of Odontoglossum percultum var. King George V., Odontioda Lambeauena and Odontonia Lairessiæ with over fifty blooms, came from Mr. F. Menteith Ogilvie, The Shrubbery, Oxford.

A large and very beautiful exhibit was admirably staged by Messrs. Mansell and Hatcher, Rawdon, Leeds. Odontoglossums and Renanthera Imschootiana were freely used in the background among the palms. Throughout the group there were first-rate specimens of Lælio-cattleya Pacavia superba, L.-c. Martinetti, L.-c. Canhamiana, and L.-c. Canhamiana alba, Cattleya Mossiæ, C. Dupreana (very fine), C. gigas, and C. Mossiæ. Miltonia vexillaria was well displayed, as also were M. Bleuana Laekenense, M. vexillaria Lambeaueana, Odontoglossum crispo-Harryanum, the brilliant O. Queen Alexandra, Cœlogyne Dayana, odontiodas in variety, Dendrobium Lowi, Saccolabium Blumei, with two long spikes, Cœlogyne pandurata, and Odontoglossum Williamseanum—altogether a fine exhibit. The contribution from Mr. E. V. Low, Hayward's Heath, included Cœlogyne pandurata, Cattleya Mossiæ Peetersi, C. Mossiæ Wagneri Vale Bridge var., C. Dietriechiana, etc.

A large and charming exhibit of orchids, delightfully staged, from Messrs. Charlesworth and Co., Haywards Heath, attracted a large amount of attention. The bold central feature consisted of about sixty-five spikes of Rimistadiana set over a mound of Epidendrum vitellinum majus. At either end were flanking groups of splendid spikes of Odontoglossum ardentissimum, O. crispum, O. Jasper, O. armainvilliersense, O. percultum, O. Lambeauianum, O. hibernicum, etc. With these were associated Odontioda Bradshawiæ, and O. Charlesworthi. In other parts of this handsome exhibit, we noticed Oncidioda Cybele, the new white and yellow Odontonia Edna, Gramangis Ellisi, the fine old Epidendrum prismatocarpum, Peristeria elata, the quaint Cryptophoranthus Dayana, a number of examples of the fringed Brassavola Digbyana, Lælio-cattleya Ceres Princess Mary, gold and crimson; a fine Cattleya Mossiæ Wagneri, L.-c. aphrodite, C. Germania, and the long-spiked Oncidium Claesianum.

The group from Mr. H. A. Tracy, Twickenham, included a good batch of Cypripedium Curtisi, C. niveum, Cattleya Mendeli, C. Mossiæ. Mr. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, had a double-sized group of large dimensions, composed of orchids set pleasingly in a beautiful collection of selaginellas, each plant a large specimen. Both orchids and selaginellas were admirable. Odontoglossum ardentissimum, O. percultum, O. armainvilliersense xanthotes, forms of O. crispum, O. amabile, Cattleya Mossiæ, and C. gigas, were the leading orchids.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, were large exhibitors of orchids. Their high central feature was composed of Renanthera Imschootiana, Cœlogyne asperata, and Acineta Humboldti. Oncidiums were freely used to give grace and colour to the ends and back of the group. Vanda teres was well shown, and Cattleya gigas, C. Mossiæ Reineckiana, C. Thurgoodiana Apollo, C. gigas Meteor, with a fine ruby lip, Miltonia Bleuana, Lælia tenebrosa Walton Grange var., and Oncidium pulchellum were a few of the leading subjects in the foreground.

### CARNATIONS.

A bold and pretty display of carnations came from Messrs. S. Low and Co., Enfield. The flowers were put up in vases of varying shape and size, in hanging baskets, in bowls, and in bouquet-like bunches; Malmaison varieties were largely shown with such perpetual varieties as Mikado, Baroness de Brienin, Scarlet Glow, Lady Alington, and Princess Juliana.

Mr. Jas. Douglas, Edenside, Great Bookham, displayed some delightful carnations, border varieties of fine form and colour. There were about thirty vases of blooms, and some of the best varieties were Trojan, Cardinal, Elizabeth, Schiffner, Mrs. R. Gordon, Mrs. Elliott Douglas, Lord Nelson, the pink Cupid, and the white Kate Nickleby.

Perpetual carnations were largely shown by Mr. C. Engelmann, Saffron Walden, whose exhibit was composed chiefly of large sheaves of Carola, Sunstar, Harlequin, Rex, White Perfection, Enchantress, Salome, and other good sorts. Mr. H. Burnett, Guernsey, displayed splendid perpetual carnations in tall glass vases, and the fine blooms were well set up. We noted Mikado, Niagara (white), Mrs. H. Burnett, Mrs. Totton, R. F. Felton, Scarlet Glow, White Wonder, Rose Dore, and Rose Pink Enchantress as especially good in a fine set.

Mr. Hillman, gardener to W. M. Gott, Esq., Frenython, Par Station, Cornwall, was a large exhibitor of cut carnations, the malmaison variety Princess of Wales being the variety best displayed. Mr. Bertie E. Bell contributed a lovely lot of carnations, and set up the flowers lightly and artistically in vases of various heights. Some of the leading varieties were Mikado, Rose Dove, Mrs. C. W. Ward, Beacon, Winsor, Coronation, and Britannia.

Border carnations from Mr. H. Lakeman, Thornton Heath, were well set up in vases and bamboo stands; The King, Miss Willmott, Linkman, Lady Hermione, and Amy Robsart were best shown. Mr. C. Blick, The Warren Nurseries, Hayes, Kent, put up a few splendid carnations, and again showed his new malmaison variety Charles Blick; of border varieties he showed good blooms of Pater, San Remo, Queen Mary, R. Morton, very fine; May Day, Linkman, Skirmisher, a fine fancy; and Medusa.

Mr. C. Lange, Hampton, was also an exhibitor of fine carnations, and he confined his attention to perpetual varieties such as O. P. Bassett, Enchantress, Mrs. C. W. Ward, fine salmon-pink; Scarlet Glow, Cardinal, and Afterglow. Messrs. J. Peed and Sons, West Norwood, had a semi-circular group of carnations, and showed growing plants as well as cut blooms of perpetual and malmaison varieties.

LILIUM WARLEYENSE.

Flowers rich orange-scarlet. F.C.C., R.H.S., July 2. Miss Willmott, Warley Place.

## ROSES.

Mr. George Prince, Longworth, Berks, presented a splendid display of roses arranged in most tasteful style. The background was formed with three huge arches, on which were trained Hiawatha, Lady Gay, and Dorothy Perkins, while splendid pyramids of Rayon d'Or, Lyon, Juliet, Mrs. A. R. Waddell (in splendid colour), Mrs. W. J. Grant, Beaute de Lyon (a wonderful colour), Mildred Blackburne, Lady Pirrie, and Lady Hillingdon contributed their quota to a splendid exhibit.

Messrs. F. Cant and Co., Braiswick Nurseries, Colchester, contributed a splendid exhibit of roses. The best features were the tall bamboos filled with the rambler and decorative sections. Especially notable were Helene, Leontine Gervais, Debutante (in splendid condition), Frau Marie Weinbach, Minnehaha, and Sweetheart. Large vases were filled with splendid examples of Rayon d'Or, Lyon Rose, Lady Pirrie, Mrs. W. J. Grant, Joseph Hill, Mrs. Wakefield, Christie Miller, Mrs. E. J. Holland, Gloire de Chedane Guinneseau, Hugh Dickson, and Killarney; while the boxes of exhibition flowers arrested attention by their size and colour. Especially good were Mrs. T. Roosevelt, Florence Pemberton, J. B. Clark, Ethel Malcolm, Berthe Ganlis, Juliet, Avoca, and Madame Jules Gravereaux.

A REMARKABLY BEAUTIFUL ARRANGEMENT OF ROSES.
Exhibited by Messrs. W. Paul and Son at Holland Park Show, and awarded a Gold Medal.

PAUL
WALTHAM CROSS
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Messrs. Stuart Low and Co., Bush Hill Park, Enfield, presented a display of roses which were truly remarkable for their huge size. Columns of Richmond arranged in moss were truly remarkable; Mildred Grant was simply immense; while other fine stands were Lady Pirrie, Molly Sharman Crawford, Miss A. de Rothschild, Rayon d'Or, Joseph Lowe, White Killarney, and Chateau de Clos Vougeot. A really fine exhibit. Messrs. Paul and Son, Cheshunt, occupied a corner in the large tent with a fine arrangement of roses. The background was formed with fine weeping climbers, all in splendid condition. The finest examples were Hiawatha, Dorothy Perkins, American Pillar, Lady Gay, and Trier. On the floor were baskets and other receptacles filled with splendid examples of Lyon Rose, Victor Hugo, Horace Vernet, the latter being remarkably fine; while other fine examples were George C. Waud, Prince de Rohan, Cheshunt Scarlet, Mrs. T. Roosevelt, and Harry Kirk, the whole being beautifully arranged.

Messrs. W. Paul and Son, Lim., Waltham Cross, had an exquisite group of roses, which were most effectively arranged. Tall ramblers were to be seen in the background, while specimen weepers were used as dot plants throughout, while the floor was a veritable bed of roses. The most effective of the ramblers were White Dorothy, Hiawatha, Blush Rambler, Delight, and Dorothy Perkins. It was difficult to pick out the best of the baskets, but a few of the most striking were Juliet, Lyon Rose, Nerissa—in splendid form, Rayon d'Or—a splendid colour, Mrs. Herbert Stevens, Pharisaer, Betty, Bianca, George C. Waud, Margaret, and Warrior.

Messrs. W. Cutbush and Son, Highgate, confined their efforts in roses to a group of the polyantha and Wichuriana types. These were represented by groups of Jessie, in five-inch pots, with miniature standards, Maman Levasseuer covered with flowers, Orleans Rose, Mrs. F. W. Flight, Mrs. W. H. Cutbush, and Hiawatha. All the plants bore the hall-mark of excellent culture. From Mr. Chas. Turner, Slough, came a glorious group of roses. The tall standard trees were truly remarkable for size and colour, some of the best being Sweetheart, Ethel, White Dorothy Perkins, Blush Rambler, and Lady Gay; while the huge pillars of Ethel and Coronation were a source of attraction to everyone. Other fine examples were Geoffrey Henslow, Lyon Rose, Juliet, and Mrs. S. Crawford; a really fine exhibit.

Messrs. G. Jackman and Sons, Woking, exhibited roses extensively, both in tall bamboo stands and vases, while others occupied the orthodox boxes. Some of the leading features were Lady Hillingdon, Liberty, Lyon Rose, Le Progres, Joseph Lowe, Mrs. E. Mawley, Mrs. A. R. Waddell, in fine colour, as were also Harry Kirk, Warrior, Irish Elegance, and Ed. Meyer.

The Wigan Challenge Cup for roses was won by Mr. John Mattock, New Headington, Oxford, with a splendid exhibit, the background being carried about ten feet high with arches and columns. These were formed with Blush Rambler, Treir, and Helene; the columns were Richmond, His Majesty, Irish Elegance, Lady Curzon, and Madame Melanie Soupert; while the baskets contained masses of Lady Ashtown, Mrs. E. G. Hill, General McArthur, Lady Pirrie, Geo. C. Waud, Marquise de Sinety, and Mrs. W. C. Miller; the front being formed with a variety of roses in small receptacles.

From Messrs. D. Russell and Son, Essex Nurseries, Brentwood, came a nice collection of specimen blooms in boxes, backed with bamboo stands, filled with decorative varieties. In the former the finest flowers were Frau Karl Druschki, Molly S. Crawford, Lady Ashtown, Lyon Rose, and Mrs. Miles Kennedy. A pretty table of roses came from the Rev. L. C. Chalmers Hunt, Willian Rectory, Hitchin, the vases of Mrs. W. J. Grant, Alice Lindsell, Joseph Lowe, and Lyon Rose being very fine. The same exhibitor also staged a nice exhibit of sweet peas.

One expects to see a fine display of new roses from the firm of Messrs. Hugh Dickson, Lim., Belfast, and on this occasion they were not disappointed. The fine single varieties, Simplicity and Sir Hugo, were much admired. Lady Pirrie, Leslie Holland, Archie Gray—a grand colour, Miss Cynthia Forde, Mrs. Sam Ross, Mr. W. Sargent, Mrs. Chas. S. Hinking—a glorious colour, and Sir Edward Carson were certainly some of the finest varieties. Mr. P. Le Cornu, Jersey, exhibited his new seedling roses, Duchess of Normandy in fine form; also Mrs. P. Le Cornu, both of which appear to be promising varieties.

Mr. R. C. Notcutt, Woodbridge, also presented a nice exhibit of roses. The rambler varieties were lightly arranged at the back, while in the vases excellent examples of Juliet, Mrs. J. Holland, Pharisaer, Mons. Jos. Hill, and the Lyon Rose were to be seen. Messrs. G. Boltón and Son, The Nurseries, Buntingford, had a goodly exhibit of roses. Dawn was particularly bright, while other good varieties were Dorothy Page Roberts, Dean Hole, Avoca, and Juliet.

From Messrs. W. and J. Brown, Stamford,

came a nice display of decorative roses, which were beautifully fresh and bright, especially so were Lady Ashtown, Madame A. Chatenay, Pharisaer, Mrs. Peter Blair, and Dorothy Page Roberts. Mr. W. Gaslea, Danecroft Nursery, Eastwood, Essex, also exhibited a nice collection of roses, the most prominent being Lady Hillingdon, Leutchflur, Harry Kirk, Juliet, Mrs. A. Tate, Duchess of Wellington, Jessie, and Little Dorrit, a nice pink polyantha rose.

One looks for new roses in the exhibits from Messrs. Alexander Dickson and Sons, Newtownards, co. Down, and is not disappointed; on this occasion good things were Irish Fireflame, Queen Mary, salmon and yellow; Theresa, fawn-pink; Lady Pirrie, Mr. Fred Straker, pink; G. C. Waud, and Melody, a lovely yellow fragrant variety, free and beautiful. Messrs. B. R. Cant and Sons, Colchester, contributed a glorious lot of roses, and arranged their flowers on boards, in stands, and in vases. Blush Rambler, Richmond, Madame Melanie Soupert, St. Helena, Rose du Barri, and Lady Waterlow were freely used at the back, while in the foreground of a grand display we noticed good specimens of Pharisaer, Lyon, Nita Weldon, Lady Hillingdon, Rayon d'Or, Edu Meyer, Bent Cant, and Victor Hugo. Messrs. George Bunyard and Co., Maidstone, exhibited roses in quantity, and presented dozens of fine flowers of Frau Karl Druschki, Juliet, Lyon, General McArthur, Marquis of Salisbury, Edu Meyer, Papillon, etc.

A large and comprehensive collection of roses from Messrs. Hobbies, Lim., filled a large space in the tent usually devoted to sundries. Put up in their usual artistic fashion, this firm displayed quantities of Rayon d'Or, Mildred Grant, Juliet, Richmond, Mdme. Abel Chatenay, their new Pink Pearl and Effective, Mdme. Melanie Soupert, General McArthur, Lady Ashtown, Ecarlate, Harry Kirk, and various showy rambling varieties.

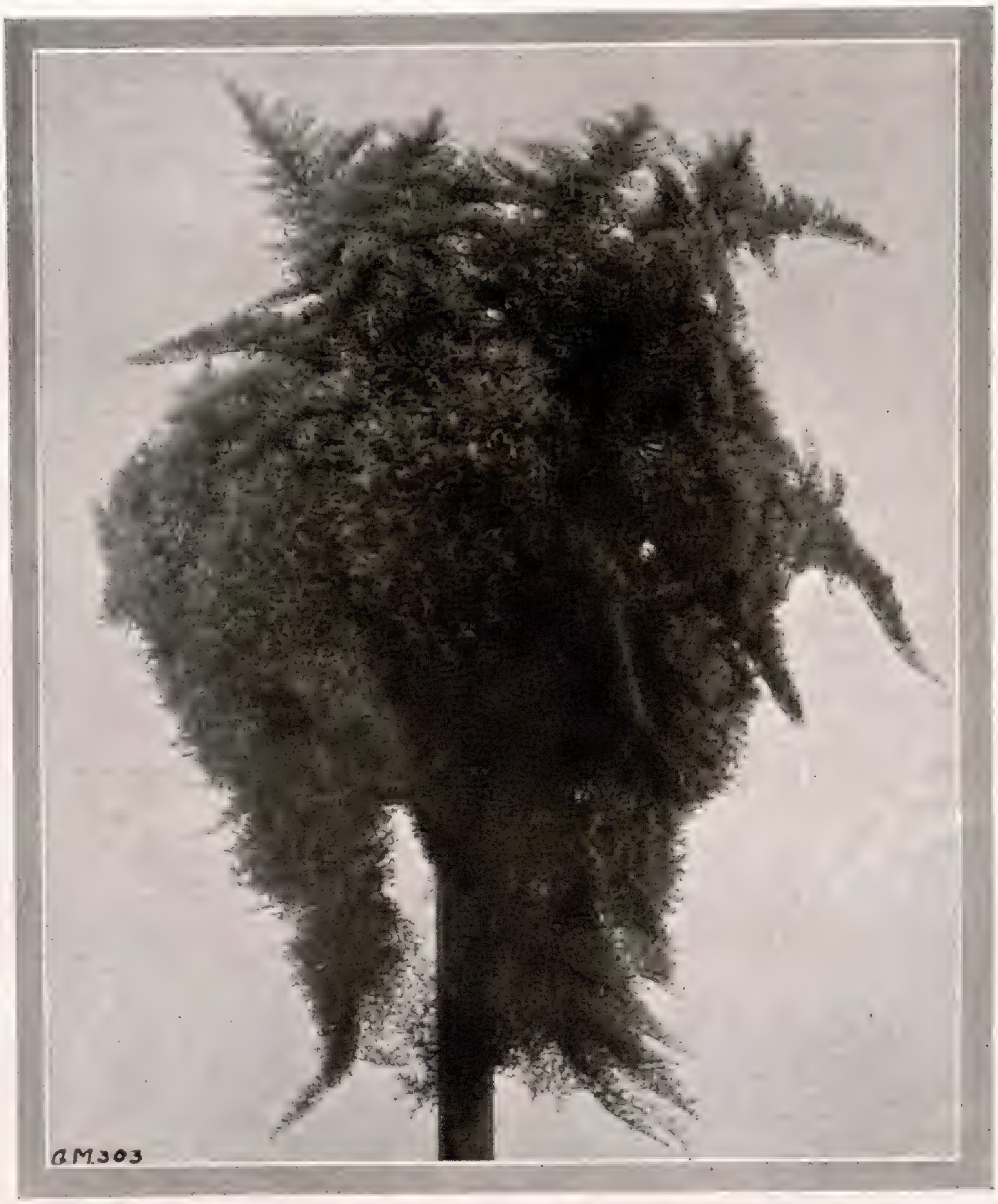
## SWEET PEAS.

Messrs. Sutton and Sons, Reading, had an enormous exhibit of sweet peas that made a striking picture. The flowers were displayed in huge masses, both columns and vases being represented; graceful arches of asparagus and smilax trails relieved the brilliant colours. The most striking varieties were Doris Usher, Brilliant Scarlet, Old Rose, Princess Victoria, Lady Althorpe, Mrs. W. J. Unwin, Elsie, and Helen Lewis, the whole being most effectively arranged. In the same tent were Messrs. Dobbie and Co., Edinburgh, whose display was not only unique for its brilliant colouring, but also for the tasteful way in which the flowers were arranged. Thos. Stevenson was in great form, as were also Lady Miller, Elfrida Pearson, Mrs. Cuthbertson, Queen of Norway, Dobbie's Scarlet, Stirling Stent, Marks Tey, Melba, Edrom Beauty, and Brunette. The quality throughout was remarkable.

Mr. C. W. Breadmore, Winchester, filled out a long length of tabling with well-grown sweet peas, staged in goodly bunches and tall stands. A few striking varieties among a few score were Mrs. Routzahn, Melba, Princess Mary, King Alfred, Mrs. C. W. Breadmore, Stirling Stent, Doris Usher, Aggie Elder, and Etta Dyke. Messrs. G. Stark and Son, Great Ryburgh, staged a large display of sweet peas, which were in fine form. The most conspicuous being White Queen, a very fine white, Stark's Salmon, Hercules, Mrs. W. R Pitt, Maggie Stark, Margaret Cook, and Helen Lewis, the whole forming a most creditable exhibit. Mr. J. D. Webster, Nurseries, Chichester, also exhibited sweet peas, in vases and bamboo stands. The best examples were Elfrida Pearson, Senator Spencer, Barbara, Marjorie Willis, Mrs. W. J. Unwin, and Scarlet Monarch.

Sweet peas from Messrs. E. W. King and Co., Coggeshall, were beautifully arranged. The arches, columns, and vases were all linked together with trails of smilax and asparagus. The flowers were lightly arranged, the whole being most effective. The most striking varieties were Anglican Cerise, Anglican Cream, Gladys Burt, Blue Jacket, Anglican Pink—a glorious colour, Hercules, and Rosabelle. From Messrs. J. King and Sons, Coggeshall, came a more formally-arranged display, but the flowers were really splendid. A series of arches formed the front, Florence Nightingale in the centre being especially bright in colour, flanked on either side with Etta Dyke and Paradise Ivory, while Prince Edward of Wales bids fair to make a fine pink variety. Needless to add, the exhibit comprised a fine collection.

Mr. James Box, Lindfield, had a dazzling display of sweet peas, and produced a fine effect by setting up masses of James Box, Orange Perfection, Thos. Stevenson, Mrs. Gibbs Box, Chas. Foster, Barbara, and a lavender seedling. Messrs. S. Bide and Sons, Farnham, Surrey, had a most artistic exhibit of sweet peas, arranged in large baskets on tall pedestals; while vases were grouped underneath. The most prominent varieties were Eric Harvey, Mrs. Stewart Champion, Edna Harland, Queen of Norway, Lancashire, Dorothy, Melba, and Stirling Stent. The flowers were all beautifully bright and fresh.



NEPHROLEPIS EXALTATA ROCHFORDI.
A.M., R.H.S., July 2. Messrs. T. Rochford, Lim., Broxbourne.

Mr. Marshall Y. Green, The Lodge, Eynsford, Kent, had a really fine exhibit of sweet peas that bore evidence not only of skill in cultivation, but also in the art of displaying them, for the vases were most lightly arranged.

A good exhibit of sweet peas came from Sir Randolph L. Baker, Bart., M.P., Ranston, Blandford (gardener, Mr. E. A. Usher). It is hardly necessary to say the exhibit was a very fine one, but on this occasion he certainly surpassed himself. The flowers were very large, and the colours bright and vivid, Lavender, George Herbert, Barbara, May Campbell, Mrs. W. J. Unwin, Thos. Stevenson, Tennant Spencer, Edrom Beauty, and Eric Harvey being the brightest and best. The arrangement was weak.

Messrs. R. Sydenham, Lim., Tenby Street, Birmingham, had an effective display of sweet peas, which were grouped in colours, and produced a nice effect. Some of the most prominent were Thos. Stevenson, Clara Curtis, Elfrida Pearson, Barbara, Lilian, Iris, and Lady Evelyn Eyre. The arrangement here was decidedly good. Messrs. Jas. Carter and Co., Raynes Park, exhibited a fine trophy of sweet peas; the exhibit was in the form of a huge crown, the different varieties being built up in the centre, from which a huge basket was hanging. Smilax was lavishly used and with good effect. A few of the most prominent varieties were Mrs. C. W. Breadmore, Elfrida Pearson, Mrs. Cuthbertson, Loyalty, R. F. Felton, George Herbert, Queen of Norway, Clara Curtis, and Edrom Beauty; the colours were beautifully blended, and the general effect very fine.

Sweet peas were beautifully shown by Mr. W. E. Alsen, Denmead, Hants, whose flowers were very clean and very brilliantly coloured. Very fine were the bunches of Sterling Stent, Melba, Colonel S. Clarke, Annabel Lee, Marjorie Willis, Mrs. H. Dickson, Edrom Beauty, Mrs. W. J. Unwin, Maud Holmes, A. A. Fabius, and May Campbell.

## BEGONIAS.

A bold display of begonias from Messrs. T. S. Ware, Lim., Feltham, was a centre of attraction. Some suspended baskets of Gladys showed its scarlet blooms to advantage. Underneath were glorious examples of the lovely pink Lady Cromer, the new orange Maurice Glyn, Laura Ashdown, the yellow

Captain Lambton, the salmon King George V., the scarlet Lord Dalmeny, and the new large pink P. W. Jameson, a fine new variety.

Messrs. Blackmore and Langdon, Twerton-on-Avon, exhibited finely-grown begonias, chiefly double varieties and frilled single forms, the latter very pretty and now finely developed. Among large-flowered doubles some of the finest were Wm. Marshall, Mrs. Robert Morton (A.M.), soft yellow; Florence Nightingale (A.M.), white; Mrs. James Douglas, Lady Dorrington, the lovely pink Princess Victoria Louise, the golden Mrs. W. L. Ainslie, and the free-flowering white Empress Marie.

Double begonias is a great variety of colours formed the chief feature of Messrs. J. Carter and Co.'s exhibit; with these were associated a fine strain of streptocarpuses and four corner groups of arums. Another fine exhibit of begonias was staged by Mr. A. L. Gwillim, Sidcup, who universally shows well. His Mrs. J. E. Gwillim, Sea Shell, Mrs. H. Harris, Primrose, and Miss Monet Edwardson were fine.

## FRUIT AND VEGETABLES.

Messrs. G. Bunyard and Co., Lim., Maidstone, had a very fine exhibit of fruit trees in pots. Peaches and nectarines, trained in fan fashion at the back of the group, were covered with brightly-coloured fruits, while in the front were to be seen splendid examples of apples, plums, pears, figs, and peaches, the apples James Grieve, Lady Sudeley, and Ribston Pippin, being fine both in size and colour; while the plums included well-cropped specimens of Jefferson, Old Greengage, Early Normandy, and Sultan. The peaches, too, were well cropped, especially Sea Eagle and Prince of Wales.

Messrs. James Veitch and Sons, Lim., Chelsea, presented a grand exhibit of fruit trees in pots, the display extending over one thousand square feet. Peaches, nectarines, plums, and gooseberries were all well represented. The gooseberries were quite an attraction, for every plant was trained, and loaded with fruit. The peaches were ripe, and included well-coloured fruits of Peregrine, Early Alfred, and Duke of York. Mention should also be made of the plums, for the trees, though only growing in small pots, carried very heavy crops, especially Oullin's Golden Gage, Brandy Gage, Early Transparent Gage, and Blue Rock. The whole exhibit gave evidence of the highest cultural skill.

Messrs. Laxton Bros., Bedford, delighted fruit growers with their exhibit of strawberries, which were displayed in baskets, with greenery lightly placed between them. Laxton's Latest were most tempting, fine in size, with the Waterloo colour. Rival was also great; The Earl, Maincrop, Utility, and Givon's Late Prolific were also remarkably fine, while Red Currant Laxton's Perfection attracted much attention for its huge size. Messrs. Stuart Low and Co., Bush Hill Park, exhibited figs in pots, vines, and Phenomenal berry. The figs were well cropped with ripe and green fruit. The varieties Brown Turkey, Violet Sepore, White Tschia, and Bourjasotte Eriol were excellent. The grapes were Appley Towers and Muscat of Hungary.

The King's Acre Nurseries, Lim., Hereford, again displayed their ability to put up a fine exhibit of fruit trees. The apples, pears, figs, and peaches were carrying good crops of luscious fruit. Some of the best specimens were nectarine Cardinal, Belgian Purple plum, Souv. du Congrès pear, with splendid examples of apples Alexander, Norfolk Beauty, and Worcester Pearmain. The black currants, too, were excellent. A collection of strawberries in twelve varieties came from the Duke of Rutland, Belvoir Castle, Grantham; gardener, Mr. W. H. Divers. The best were Ewan's Late Prolific, Dr. Hogg, Epicure, President, and Gunton Park.

A fine exhibit of fruit trees in pots came from Mr. S. Heilbut, Holyport, Maidenhead; gardener, Mr. G. Camp. These were trees ten to twelve feet high, and were fine examples of cherries and nectarines. The latter were Early Rivers, and the plants were splendidly cropped, as were also the cherries, the varieties Emperor Francis and Late Black Bigarreau being in fine condition.

The Halliford French Garden, Shepperton, staged a nice display of the products from such gardens. The radishes were in the pink of condition, and represented by about four varieties. Cauliflowers were fine, and in excellent condition, as were also the lettuces, both cos and cabbage. Marrows, carrots, kidney beans, and melons were also well cultivated, the whole forming a pleasing exhibit.

## FERNS.

Messrs. H. B. May and Sons, Upper Edmonton, arranged a magnificent bank of ferns, in quite a new style. The group was well displayed, coming from the ground to the eaves of the roof. Nephrolepis in variety formed the background, while huge specimens of Polypodium Knightæ, P. Vidgeni, Nephrolepis Whitmanni, Adiantum farleyensis glorisum, Nephrolepis Neuberti, and Lycopodium japonicum were all in fine condition, while almost every plant was in perfect condition, and the gold medal awarded was worthily won. Messrs. H. B. May and Sons, Edmonton, also exhibited an interesting collection of good varieties of hardy ferns; Lastrea pseudo-mas Doddsi, L. p.-m. Mapalebecki, Anthurium felix-fœmina plumosa divaricata, A. f. f. gemmatum, Adiantum pedatum, Osmunda palustris crispato congesta, and Athyrium Goringianum especially attracted our attention.

A splendid group of ferns, grandly set up by Messrs. J. Hill and Son, Edmonton, contained giant specimens of Dicksonia antarctica, Gleichenia rupestris glaucescens, Asplenium nidus, Cyathea dealbata, the graceful Polypodium Knightæ, Platycereum Veitchi, P. grande, Osmunda javanica, Polypodium quercifolium, P. giganteum, and smaller examples of Nephrolepis Marshalli, Gymogramma elegantissima, Davallia retusa, and D. tenuifolia Veitchi. It was a large group, facing either way in the centre of the big tent, and it was greatly admired. Mr. W. A. Manda, St. Albans, Herts, had a nice group of ferns and foliage plants. In the former were fine examples of Polypodium Mandaianum, a very distinct form, with Nephrolepis Whitmanni, N. Gratresi, and N. Roosevelt.

## ROCK, WATER, AND ALPINE GARDENS.

One of the most-talked-of exhibits in the whole show was the three-fold one arranged by Messrs. R. Wallace and Co., Colchester, who are past masters at the elegant and tasteful display of hardy flowers. One end consisted of a set of flower borders behind a low plant-filled wall. The centre was a terraced garden reached by easy old steps, and bounded by a box hedge. The other end was a big water garden, and one that was not overdone. There was a pool of water lilies spanned by a few rough stones; at the back above the grassy banks were fine masses of spiræas, Astilbe ceres, and bamboos; while in front were pretty groups of Japanese irises. Along the terraced garden the borders were filled with Erigeron speciosa, and pentstemons of the "Gem" type, while below the wall a few liliums rose from a border of choice varieties of hardy ferns. In the lower garden, the low wall was crowned with small œnotheras, campanulas, the scarlet Verbena chamædrioides, sedums, hypericums, etc. On the inner side a narrow border of Nepeta Musseni separated the grass plot from the flagstone path that led alongside a bold flower border where Pentstemon Southgate Gem was associated with Lilium candidum, and where delphiniums and golden verbascums towered close by masses of Lilium auratum vittatum, Eremurus Sir Michael, E. Olgæ, E. Olga Rosy Morn, and E. Peach Blossom, made a show of themselves; but Lilium elegans, L. excelsum, L. longiflorum, delphiniums, cineraria, and Anthemis Kelwayi were pressed into service, and the whole was a delightful garden of rare and beautiful plants, delightfully displayed.

A little wild garden, with nymphæas afloat on the water, and the margin beautiful with Japanese irises, funkias, hardy ferns, Primula involucrata, and spiræas formed part of a large exhibit from Messrs. Thos. S. Ware, Feltham. An alpine garden came next with colonies of Œnothera riparia, Œ. taraxifolia alba, Campanula pumila, the sweet Thymus coccineus, Conadendron amondioides, Edelweiss, the double form of Tunica saxifraga, and the yellow Sedum origanum. Next followed a fine collection of hardy border flowers in goodly bunches, and here phloxes, Campanula macrantha, Linaria dalmatica, Alstrœmeria aurea, Lychnis chalcedonica, and Isatis glauca were particularly effective. Mr. H. Hemsley, Crawley, put up an alpine garden thoroughly well furnished with very bright colonies of Coronilla cappadocica, Silene armeria, Campanula pusilla Miss Willmott, Gentiana septemfida latifolia, Ruta patavina, Erigeron speciosa, Inula Roylei, Campanula valdensis. Mr. Leslie Greening, Richmond, exhibited a tiny rock and water garden.

The rock garden put up by Messrs. Wm. Fells and Son, Hitchin, Herts, was a very pretty one, and flowering plants were pleasingly associated with hardy ferns. Primula involucrata, Calceolaria polyrhiza, Œnothera speciosa, Campanula pusilla, C. p. Miss Willmott, Delphinium nudicaule, and Dianthus Napoleon III. Messrs. Phillips and Taylor, Bracknell, had a raised flower border made gay with border carnations, a selection of delphiniums, Galega Her Majesty, and Anchusa italica Dropmore, the whole fronted by small campanulas, sedum, nepetas, etc.; the same firm had a water garden in which Nymphæa Gladstoniana was particularly fine in a surrounding of reeds, alisma, the double sagittaria, etc.

Messrs. Whitelegg and Page, Chislehurst, were extensive exhibitors of hardy flowers, and put up large masses of delphiniums, Galega Her Majesty, their fine Geum Mrs. Bradshaw, Phygelius capensis, Pentstemon Southgate Gem, Scabiosa caucasica, Lilium candidum, and Leucheras. In the centre of their group they had a delightful lot of water lilies in a pool surrounded by water lilies and bamboos. The "Newberry" was also shown by this firm. A garden of beautiful flowers was arranged in the big tent by Mr. Maurice Prichard, Christchurch. One end was a border of herbaceous plants, such as Isatis glauca, delphiniums, eremuri, Hemerocallis aurauticea major, phloxes, the blue-based Campanula latifolia Mrs. Prichard, Salvia turkestanica, and œnotheras. At the other end a rock and bog garden combination merited attention because of the pleasing arrangement of the little colonies of Dianthus E. T. Anderton, Acantholimon venustum, Cytisus shiphænsis, Campanula G. F. Wilson, Hypericum enpetrifolium, Œnothera speciosa rosea, and Nierumbergia rivularis backed by astilbes, thalictrums, bamboos. A circular bed set in the curve of the flower border was filled with Lavatera Olbia and the blue Delphinium Cineraria.

Messrs. J. Cheal and Sons, Lim., Lowfield Nurseries, Crawley, presented a fine exhibit of rock and alpine plants, arranged in a most natural way. Some of the best plants were Fuchsia procumbens, Cistus algarvense, campanulas in good variety, sedums, Genista tinctoria plena, with a large variety of suitable conifers and acers suited for such positions; the entire arrangement being well carried out. The Guildford Hardy Plant Company, Guildford, were represented by a fine display of hardy flowers, which included some choice alpines. The campanulas and delphiniums were very good here. The Misses Hopkins, Mere Gardens, Shepperton-on-Thames, also displayed a natural garden.

Mr. Amos Perry, Hardy Plant Farm, Enfield, produced an enormous exhibit of hardy flowers, which occupied about 250 feet run. Delphiniums were grouped in large masses at either end, while rock work was mounded up most naturally; here were to be seen masses of Prunella Webbiana rosea, Erigeron hybrida, verbascums in variety, a fine group of Amaryllis formisissima and astilbes. The hardy ferns made a delightfully cool-looking spot. The plants were beautifully developed, and most tastefully arranged. Tanks of nymphæas were splendid, the deeper tanks employed gave them quite a natural appearance; while the edge of the pools were surrounded with ferns, irises, and water grasses. Iris Kæmpferi in variety were much admired, as were also the liliums, which included Lilium elegans semi plena, L. elegans aureum, L. Parryi, L. Pardalinum, L. Krameri, and a number of others. Pinks in variety, phloxes, and monardias all helped to swell this truly magnificent display of hardy plants and ferns.

Messrs. Pulhams, Elsenham, Essex, had a pleasing exhibit of rock and alpine plants on which were to be seen campanulas, Dianthus Elsenham Seedling, Orchis maculata, and Chrysogonum virginicum; the same firm also displayed hardy plants. Messrs. Thompson and Charman, Bushey, Herts, set up a nice rockery garden of hardy and herbaceous flowers, and showed Lychnis Haageana, and the new Lilium myriophyllum in good form, with numerous other subjects.

### HARDY FLOWERS.

A long, narrow, wavy border of flowers from Messrs. Kelway and Son, Langport, was filled chiefly with the delphiniums for which the firm is famous; there were hundreds upon hundreds of spikes of single and double varieties in every shade of blue from palest hue to deepest purple-violet. Sweet peas were also used, and so were gaillardias, pyrethrums, and gladioli. Dusky Monarch, Chandelier, Mrs. Tree, Prince Charming, F. Carr, Zinfandel, Queen of Spain, and Lord Elgin were a few of the best of the delphiniums on view.

Delphiniums were well displayed by Messrs. R. H. Bath, Wisbech, their fine spikes making a good setting for border carnations, cluster roses, coreopsis, Chrysanthemum maximum Mrs. Daniels, and other good hardy subjects. Campanula humosa, a semi-double form with large blue flowers, was a conspicuous subject in a modest group of hardy flowers from Messrs. G. Bolton and Sons, Buntingford, Herts. Conspicuous in the display of hardy flowers from Messrs. W. and J. Brown, Peterborough, were Gaillardia Lady Rolleston, G. Lady Exeter, G. The King, very brilliant; and Ostrowskia magnifica. Mr. Howard Crane, Highgate, brought up a sweetly-fragrant exhibit of violas and violettas, and arranged the dainty flowers in low pans. Butterfly, Forget-me-Not, Rock Yellow, Eileen, and Reggie were delightful violettas suitable for border or rock garden.

Herbaceous phloxes were uncommonly well exhibited by Messrs. H. J. Jones, Ryecroft Nursery, Lewisham. A long, gently-sloping bank of these grand border flowers was arranged, all the plants being in pots. In many cases the heads of fragrant flowers rose 5ft. high. A few striking varieties were Frau Ant Buchner, Boule de Feu, Meteore, G. A. Strohlin, General Von Hentsz, Dr. Charcot, Sheriff Ivory, Mons. Kind, Frau Von Lansberg, Elizabeth Campbell, the lovely white Fiancee, Iris, the rosy coloured Atalia, and the rosy-eyed Selma. A very fine contribution. A beautiful lot of delphiniums from Messrs. Blackmore and Langdon, Bath, included splendid spikes of Rev. E. Lascelles, Chantry Queen, Conspicua, Statuaire Rude—a superb, large-flowered lavender-blue variety with long massive spikes; Sergeant Beranger, the vivid violet Novelty, and the dark violet-purple Henry Moissan. The lovely Viola cornuta purpurea was finely represented by Messrs. Gunn and Sons, Olton, with V. cornuta alba and a backing of spikes of Lilium auratum.

Messrs. Gunn and Sons, Olton, invariably show phloxes well, and on this occasion they staged bold masses of good spikes of Elizabeth Campbell, Border Beacon, the bright salmon-red Baron von Dedem, Wilbur Wright, Flora, Selma, the splendid purple Le Mahdi, Josephine Gerbeaux, Frau Von Lassberg, and the brilliant George A. Stroehlin. Messrs. F. Smith and Co., Woodbridge, provided a bright exhibit of hardy flowers, Anthemis Kelwayi, phloxes, and scabious being the chief features.

A fine display of hardy flowers from Mr. James Box, Lindfield, had a brilliant centre composed of stately spikes of deep blue delphinium and Eremurus Shelfordi and E. Bungei. Gladiolas were pleasantly displayed with gaillardias, phloxes, œnotheras, erigerons, and a few alpines. Messrs. G. and A. Clark, Dover, made a great show with fine groupings of Gilia coronopifolia, Iris ochroleuca aurea, alstrœmerias, the lovely old Lilium candidum, Asperula tinctoria, delphiniums, Eremurus Bungei, Salvia turkestanica, Scabiosa caucasica, Helenium Bolanderi Golden Gem, and the rosy-pink pyrethrum John Malcolm. The firm had also a little pool of water lilies and Japanese irises. The very handsome strain of large cup-and-saucer Canterbury bells Messrs. W. J. Godfrey and Sons, Exmouth, have raised was finely represented on this occasion by giant spikes and massive blooms in many charming shades of colour. Messrs. Jarman and Co., Chard, were involved in the stage smash, and so their fine sweet peas, roses, sweet sultans, and pelargoniums suffered considerably, but the latter were the best survivors.

Messrs. Gibson and Co., Leeming Bar, Yorks, were exhibitors of choice hardy flowers, and they set up lovely forms of delphiniums, Verbascum Ivanhoe, V. Caledonia, and V. A. M. Bourne, all very fine things. Messrs. Rich and Co., Bath, were represented by phloxes, pentstemons, the handsome Verbascum Weidmaniana, and a collection of violas. Gladioli were very pleasingly shown by Mr. Frank Lilley, Guernsey, and, as the spikes of red, rose, pink, and white flowers were set up with grassy foliage, they made a pretty effect.

Gaillardias were gaily shown by Messrs. B. Ladhams and Sons, Shirley, Southampton, and fine varieties were Superb, Aurora, Sulphur Gem, Gloria, and Brilliant; the new Salvia Ladhamsi was staged, and also a collection of hardy border flowers. Mr. R. C. Notcutt was represented by a collection of hardy flowers, wherein Verbascum Chauxi alba, Salvia turkestanica, Lilium elegans, and Anthemis Kelwayi were commanding subjects.

Messrs. Bees, Lim., Liverpool, displayed choice alpines, and a selection of the best delphiniums, eremuri, irises, spiræas, and Primula cortusoides.

Messrs. W. Wells and Co., Lim., Merstham, presented a fine exhibit of hardy flowers, which included fine masses of phloxes, campanulas, gaillardias, and scabiouses, also some fine carnations, both in pots and a cut state. Messrs. G. Mallett and Co., Cheddar, had a pleasing exhibit of hardy flowers, where large clusters of Lilium candidum, L. longiflorum, and L. excelsum were to be seen. Dianthus, campanulas, and early phloxes were also quite a feature here.

Messrs. W. Cutbush and Sons presented a most natural exhibit of hardy plants. The water garden was furnished with nymphæas in variety, with water grasses, and other subjects, while masses of Iris Kæmpferi were grouped on the banks. Around were phloxes, gladioli, delphiniums, gaillardias, and similar plants, the whole forming a charming picture. Mention should be made of Lilium giganteum also in this group. A nice table of cut shrubs came from Mary Countess of Ilchester, Abbotsbury Castle; gardener, Mr. Kempshall. There were to be seen fine examples of Lonicera Hildebrandi, Eucalyptus ficifolia, Phormium alpinum, philadelphus in variety, and many other flowering shrubs.

Messrs. G. Jackman and Son, Woking, had a very fine group of clematises flanked with hardy flowers. The former were all trained specimen plants, and the brightest appeared to be Lady Betty Balfour, Miss Crawshay, Star of India, Mrs. Geo. Jackman, Otto Froebel, and Lady Northcliffe. The best features of the hardy flowers were the delphiniums, Betonica rosea, and richly-coloured gaillardias. Mr. Eames, Floral Nurseries, Frome, presented a nice collection of hardy flowers. The scabiouses were particularly fine, especially the variety Mrs. R. F. Felton, a lighter variety than the species. The delphiniums, too, were in fine condition, as were also a good variety of gaillardias.

Messrs. Barr and Sons, Covent Garden, had a splendid bank of hardy flowers, in which were noted the new hybrid lupins with their quaint shades of colour, the summer flowering gladioli, irises, gaillardias, and liliums. A pleasing water garden was also admirably arranged; the spiræas here were quite a feature, while the nymphæas were tastefully placed in a cool-looking pool of water, while other attractive subjects were Campanula pusilla, delphiniums in fine variety, a huge mass of Salvia variegata nemorosa, and a large clump of a hardy orchid named Gymnadenia conopæi, with tall spikes of purple flowers. The exhibit occupied the entire side of one tent.

Messrs. Carter Page and Co., 52, London Wall, London, made a fine display of hardy flowers. The violas were arranged in pans, and gave a very good idea of their appearance in a bed. The same firm also had a fine exhibit of pæony and cactus dahlias, also a number of the new collarette varieties, with a number of brilliant zonal pelargoniums tastefully displayed in vases. Mr. J. MacDonald, Harpenden, had a splendid exhibit of grasses suited to all purposes. The species were exhibited in sterilised and unsterilised soil, and the results were remarkable. Quite a feature of the exhibit was the grasses grown for decorative work, which were grown on matting, and would certainly produce a highly decorative effect.

Messrs. G. Bunyard and Co., Lim., Maidstone, made a fine effort with their hardy flowers, the whole bank making a pleasing display. The chief features were the delphiniums, which were clean and bright, liliums in variety, eremuri, Pentstemons Southgate Gem and Thos. Shaw, astilbes in pink and rose, a fine selection of nymphæas, erigerons, English irises, and a small alpine garden with excellent campanulas growing. A large table of hardy flowers came from Mr. G. Reuthe, Hardy Plant Nursery, Keston. Here were to be seen Bahia cornuta, Erica cinerea rosea, a beautiful colour, the early flowering gladioli, magnolias, eremuri, and liliums in large variety, the whole forming a fine exhibit.

Messrs. Paul and Son, The Old Nurseries, Cheshunt, sent a most interesting collection of cut shrubs, both foliage and flowering subjects being used; especially noticeable were Weigelia Eva Rathke, Spiræa Aitchinsoni, S. Anthony Waterer, Ligustrum multiflorum, Fagus tricolour, and a large number of phloxes, which were in splendid form. Messrs. R. Veitch and Son, Exeter, exhibited some splendid plants of Calceolaria Veitchi, and the Bronze Age, also Golden Glory, which created much interest; with a few vases of choice flowering shrubs.

### STOVE AND GREENHOUSE PLANTS.

Messrs. Jas. Veitch and Sons, Lim., Chelsea, contributed a very fine bank of choice stove and greenhouse plants, backed with tall cocos palms and tree ferns. The dracænas, crotons, and caladiums were all in fine colour, while the anthuriums in variety found many admirers. The nepenthes, too, were a fine feature, while masses of ixoras, cannas, and Solanum Wendlandi were a fine, effective piece of colour amongst the foliage plants. One also noted well-coloured plants of the new Araucaria Silver Star, and a group of orchids in the centre, which included cattleyas in variety, cypripediums, oncidiums, Odontioda Lambeauiana, and O. Bradshawiæ. The whole exhibit was remarkable for the high culture displayed, and the free style in which they were arranged. Messrs. Jas. Veitch and Sons, Chelsea, were (in another tent) involved in a disaster; the whole of the staging in one part of the tent gave way, and the whole of the plants fell over and many were smashed up. After rearrangement the exhibit consisted of a fine strain of streptocarpuses, standard fuchsias, cannas, Solanum Wendlandi, greenhouse rhododendrons, malmaison and perpetual carnations, and the fine Begonia Lucerna. Messrs. J. Peed and Sons, Norwood, had a very fine lot of beautiful gloxinias and streptocarpuses bedded in ferns, but many of these came to grief in the breakdown. Mr. Vincent Slade, Taunton, afforded a bright bit of colouring with zonal pelargoniums in goodly bunches. Messrs. J. Piper and Sons, Barnes, exhibited a group of fuchsias. The tall pyramids in the background were well clothed in flower, while the groundwork was composed of dwarfer plants. It was rather a pity that the varieties were not named, for the exhibit suffered in educational value.

Messrs. H. J. Jones, Lim., Lewisham, had a splendid exhibit of zonal and ivy-leaved pelargoniums. In the former were the Crampel seedlings in wonderful colours, a few of the brightest being Alfred Simpson, A. Lovett, Germania, Harry Jones, and E. Newman. These, backed by a long vista of colour from the phloxes behind them, produced a gorgeous mass of colour. A quaint exhibit was that from Mr. H. N. Ellison, West Bromwich, who exhibited a large collection of cacti for Mr. F. A. Haage. One would think the whole horticultural world was interested in cacti judging from the number of people who were crowded around the exhibit, which certainly embraced a most comprehensive collection.

From Messrs. Thos. Rochford and Sons, Lim., Turnford, came a fine group of the new Araucaria excelsa Silver Star. The plants were most effective, arranged in a group, and it will doubtless prove a boon in this class of plant. The same firm also exhibited plants of the new fern Nephrolepis exaltata var. Rochfordi, a very dense-growing form. A rare splash of colour was provided by Mr. L. R. Russell, Richmond, who exhibited a long, even bank of the useful and glowing scarlet Salvia Pride of Zurich, backed by the silvery Abutilon Sawitzi.

Messrs. W. Cutbush and Son, Highgate, N., presented a delightful exhibit of carnations, border, Malmaison and perpetual varieties, arranged in mounds and valleys amid ferns and palms, and some polyantha roses. Very fine were the carnations Mrs. Trelawney, King Arthur, Lady Coventry, Lord Rothschild, Enchantress, and The Queen. Tall crotons, the new Silver Star araucaria, and new hydrangeas were associated with the carnations, the whole forming a large and beautiful display. Colour in foliage alone comes as a relief from the vivid shades of the flowers, hence the large exhibit of caladiums, with their large leaves of soft rose, pale-green, silver, carmine, buff, and rose, formed a pleasing display. The plants were well grown and well arranged with ferns.

Mr. Philip Ladds, Swanley, was represented by the new zonal pelargoniums Ambrosia, White Queen, and Champion, the latter a very free and attractive pink variety. Stove foliage plants from Mr. J. Bruckhaus, Twickenham, made a brave show; giant palms and growing caladiums and crotons were associated with aspidistras, pandanus, acers, etc. Show and fancy pelargoniums from Mr. W. Treseder, Cardiff, included the new deep maroon, red-edged Lord Bute, a striking variety.

The reviving interest in scented pelargoniums was evidenced by a large and very interesting collection of species and varieties, represented by neat specimens, from Mr. Edwin Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree. Some striking sorts were P. crispum maximus, P. Moore's Victory, P. Purple Unique, the quaint little P. grossularioides variegata, P. aspera, P. abrotanifolium, the glowing P. ardens, P. Blandfordianum with grey leaves and white flowers; P. echinatum, with fairly large, white, red-blotched flowers; P. artemesioides, and the large-leaved P. tomentosum. A new ivy-leaved pelargonium named Queen Mary, deep salmon, with deep red edge and marks, was sent by Mr. H. Hemsley, Crawley; it is free-flowering, and a promising plant for window-boxes, etc.

Succulent plants are not often shown nowadays, therefore a fairly representative collection is of special interest. Such a collection was staged by Mr. C. Dixon, gardener to Mary Countess of Ilchester, Holland House. The leading subjects were Aloe macrocarpa, Mamillaria sanguinea, M. pusilla, M. Gasteria verrucosa, G. latifolia, Dyckia marifolia, Pilocereas senilis, and Agave filamentosa. It was said that the plants had all been raised at home from seed. Cannas were finely shown by Messrs. H. Cannell and Sons, Swanley; the large heads of glorious blooms were very effective. The salmon Paul Crampel pelargonium, gloxinias, and tuberous begonias completed a gay exhibit.

Messrs. Godfrey and Son, Exmouth, sent a large display of hardy flowers, Cape pelargoniums, in large variety, also a fine exhibit of decorative pelargoniums such as Andre Lauret, Lady Mildred Cooke, Bystock, Lady Doreen Long, and a bright orange-red zonale named Captivation. The same exhibitor also staged some fine sweet peas. Mr. L. R. Russell, Richmond, exhibited some very fine examples of Anthurium crystallinum, the bold Cyanophyllum magnificum, alocasias, caladiums, and crotons, these making up a handsome exhibit.

### OUTDOOR EXHIBITS.

The heavy rains during the day and the consequent unpleasant conditions out of doors, prevented a proper inspection and full appreciation of the many fine displays that had not the shelter of canvas.

Foremost among these was the Japanese garden designed and planted by Messrs. J. Carter and Co., Raynes Park. Here was a large nymphæa-studded pool, bridged by a low, artistic bridge that led to a Japanese tea house, embowered in roses, and set about by conifers, bamboos, hydrangeas, and liliums. A little valley was bordered by low rockwork pleasingly planted, and led to large plantations of lovely Japanese irises that made a rare show of delicate colouring. Japanese maples, pigmy trees, stone lanterns, bronze storks, and other beautiful things occupied points of vantage, and gave character to the whole. The whole design was most attractive, and a fine opening day would have seen the garden crowded with enthusiastic visitors.

Messrs. Pipers, Barnes, arranged a pleasing garden out of doors. Rocky mounds were tastefully planted with the choicest of alpines, and against a background of conifers, liliums, and hydrangeas they planted an iris swamp with stepping stones along the little stream among the fine varieties of Iris Kæmpferi, planted in considerable quantities. Here, too, was a garden that under brighter skies would have been a centre of attraction on the opening day. This firm's Dutch garden, with its wealth of clipped trees—even a wheelbarrow in clipped box—and its neat railed fence in clipped box, was vastly interesting. The collection of Japanese maples arranged to form a large and well-designed group by Messrs. Fromow and Sons, Chiswick, was a fine demonstration of the grace, beauty, colour, and usefulness of this charming set of hardy shrubs.

Mr. L. R. Russell, Richmond, arranged one of the finest collections of golden, silver-leaved and green tree ivies, in pots, dwarfs, and standards, and pyramids that we have ever seen. This exhibitor also presented a water garden, a fine collection of bamboos, and some giant freely-flowered specimens of Hydrangea hortensia. Large and magnificent specimens of golden and green yews, of perfect outline, and altogether finely grown, were exhibited in great tubs by Messrs. John Waterer and Sons, Bagshot. Mr. Reg. Prichard, West Moors, Wimborne, filled a long table with dwarf alpine plants, but his position beneath the dripping trees was not a happy one. He had a very fine colony of the pretty Wahlenbergia saxicola.

Messrs. J. Forbes and Co., Lim., Hawick, arranged a group of phloxes, pyrethrums, and pentstemons in the open air. The latter were particularly fine, especially F. Forbes, R. H. Thompson, Sandringham, Marquis of Linlithgow, and Crimson Gem, while the phloxes were extra fine. From Mr. Clarence Elliott, Six Hills Nursery, Stevenage, came a tasteful rock garden in the open air. Here the variegated thyme, Campanula Miss Willmott, Nepetas, œnotheras, and Orchis foliosa were most conspicuous in a nicely-arranged exhibit. Messrs. W. Cutbush and Son, Highgate, sent a large collection of clipped box and yew trees, which attracted much attention, for they were in splendid trim. Mr. Carlton White, New Bond Street, also had a collection of clipped trees in most fantastic forms, varying from mere pigmies to huge specimens.

### HORTICULTURAL SUNDRIES.

Messrs. H. Hartjen and Co., Noble House, Noble Street, E.C., exhibited a large collection of the Holder Pneumatic Sprayers, which attracted much attention from the growers present. The Three C.'s Company, 67, Dale Street, Liverpool, had an exhibit of their continuous cloche system, which is undoubtedly the last word in the cheap protection of plants and vegetables. Messrs. Jeyes, Lim., 64, Cannon Street, London, exhibited their horticultural sprays and washes, while Mr. M. Johnston, New Park, Cranleigh, Surrey, had a good exhibit of his fibrous yellow loam that would delight the hearts of all plant lovers. Messrs. E. A. White, Lim., Paddock Wood, Kent, had a display of their syringes and sprayers, also their well-known insecticide.

Messrs. W. Cooper and Nephews, Berkhampsted, displayed their various washes and fumigating compounds, also a force pump suitable for spraying purposes, while Messrs. Wakeley Bros., Honduras Wharf, Bankside, S.E., exhibited their hop manure surrounded with flowers and foliage plants. Messrs. R. Sydenham, Limited, Tenby Street, Birmingham, had a good exhibit of rustic table decoration devices.

Messrs. Liberty and Co., Regent Street, W., exhibited Japanese garden ornaments in large variety; also garden seats, copings, and a number of sundials. From Messrs. G. Trollope and Sons, Belgrave Square, came a quaint well-head in stone, with an ornamental beaten-iron top frame, surrounded by plants; while Messrs. J. Cheal and Sons had a tea-house, with trellises, fencing, gates, seats, and so on in most artistic style.

Some fine wrought-iron gates came from Messrs. J. Crowther and Son, North End Road, Fulham; also ornamental sundials and a variety of garden ornaments. The Leyton Timber Company, New Cross, displayed summer-houses, low fences, garden seats, arbours, etc.

The Potters' Art Guild, Compton, Guildford, sent examples of their art in the shape of vases, sundials, and other artistic pottery. Messrs. H. Freeman, Lim., Mulgrave Road, Sutton, had examples of greenhouses, seats, lights, and garden frames; while Messrs. Castles, Millbank, Westminster, had a fine display of garden seats and various other garden appurtenances in teak and oak from old ships' timber.

### MEDALS AND CUPS.

Gold Medal.—To Messrs. Charlesworth and Co., Haywards Heath, for orchids; to Sir Jeremiah Colman, Bart., V.M.H., Gatton Park, for orchids; to Messrs. Wm. Cutbush and Son, Highgate, for carnations; to Messrs. Wm. Cutbush and Son, Highgate, for group of flowering plants, etc.; to Messrs. Paul and Son, Cheshunt, for roses; to Messrs. James Veitch and Sons, Chelsea, for fruit trees in pots; to Messrs. James Veitch and Sons, Chelsea, for stove, foliage plants, and orchids; to Messrs. R. Wallace and Co., Colchester, for an Old English flower garden; to Messrs. James Carter and Co., Raynes Park, for Japanese garden and sweet peas; to Messrs. Dobbie and Co., Edinburgh, for sweet peas; to Messrs. J. Hill and Son, Lower Edmonton, for ferns; to Messrs. Wm. Paul and Son, Waltham Cross, for roses; to Mr. Amos Perry, Enfield, for herbaceous plants, ferns, etc.; to Messrs. H. B. May and Sons, Upper Edmonton, for ferns; to J. Gurney Fowler, Esq., South Woodford (gardener, Mr. J. Davis), for selaginellas and orchids; and to Mr. Maurice Prichard, Christchurch, for herbaceous plants and water garden.

Coronation Challenge Cup. — To Messrs. James Veitch and Sons, Chelsea, for fruit trees in pots and stove plants.

Wigan Challenge Cup.—To Mr. John Mattock, Oxford, for roses.

Silver Cup.—To E. H. L. Davidson, Esq., 9, Oxford Square, W., for orchids; to Messrs. Mansell and Hatcher, Rawdon, for orchids; to Messrs. Blackmore and Langdon, Bath, for begonias and delphiniums; to Messrs. G.

and A. Clark, Dover, for herbaceous flowers; to Messrs. L. R. Russell, Richmond, for stove and ornamental plants, etc.; to Sir Randolph Baker, Bart. (gardener, Mr. Usher), for sweet peas; to Messrs. Sutton and Sons, Reading, for sweet peas; to Messrs. E. W. King and Co., Coggeshall, for sweet peas; to Messrs. C. Turner, Slough, for roses; to Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. F. Cant and Co., Colchester, for roses; to Messrs. A. Dickson and Sons, Newtownards, for roses; to Messrs. Hugh Dickson, Belfast, for roses; to Messrs. H. Burnett, Guernsey, for carnations; to Messrs. Thos. S. Ware, Lim., Feltham, for begonias and hardy plants; to S. Heilbut Esq. (gardener, G. Camp), for fruit trees in pots; to Messrs. G. Bunyard and Co., Maidstone, for alpines, roses, fruit trees, and herbaceous plants; to Messrs. H. J. Jones, Lewisham, for phloxes and pelargoniums; to Mr. G. Reuthe, Keston, for herbaceous, shrubs, and alpines; to Messrs. J. Piper and Son, Bayswater, for Dutch and water garden; to Messrs. J. Veitch and Son, Chelsea, for flowering plants and bay trees; to Messrs. Hobbies, Lim., Dereham, for roses; to Messrs. Jackman and Son, Woking, for clematis and herbaceous; to Mr. J. MacDonald, Harpenden, for grasses, showing methods of cultivation; and to Messrs. J. Peed and Sons, West Norwood, for caladiums and flowering plants.

Silver-gilt Hogg Medal. — To Messrs. Laxton Bros., Bedford, for strawberries.

Silver-gilt Knightian.—To King's Acre Nurseries, Hereford, for fruit trees in pots; and to the Duke of Rutland (gardener, Mr. W. H. Divers), for fruits.

Silver-gilt Flora.—To Messrs. S. Low and Co., Enfield, for orchids; to Mr. F. A. Haage, jun., Erfurt, for cacti; to Messrs. W. Wells and Co., Merstham, for herbaceous plants; to Mr. W. E. Alsen, Denmead, for sweet peas; to Mr. B. E. Bell, Guernsey, for carnations; to Mr. C. Engelmann, Saffron Walden, for carnations; to Messrs. Gunn and Sons, Olton, for herbaceous plants; to Messrs. Barr and Sons, Covent Garden, for herbaceous plants and pigmy trees; to Messrs. S. Low and Co., for roses; to Mr. C. Elliott, Stevenage, for alpines; to Mr. G. Prince, Oxford. for roses; to Messrs. H. Cannell and Sons, Swanley, for miscellaneous group; to Messrs. J. Cheal and Sons, Crawley, for garden and herbaceous plants; to Mr. F. Lilley, Guernsey, for gladioli; to Mr. R. C. Notcutt, Woodbridge, for herbaceous plants; and to Messrs. Carter Page and Co., London Wall, for flowering plants.

Silver-gilt Banksian.—To Mr. C. W. Breadmore, Winchester, for sweet peas; to Messrs. S. Bide and Sons, Farnham, for sweet peas; to Messrs. R. Sydenham, Lim., Birmingham, for sweet peas; to Mr. J. Douglas, Great Bookham, for carnations; to W. W. Gott, Esq., Cornwall, for carnations; to Mr. G. Lange, Hampton, for carnations; to Messrs. James Carter and Co., Raynes Park, for begonias; to Messrs. W. Fromow and Sons, Chiswick, for maples; to the Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham, for pelargoniums; and to the Countess of Ilchester (gardener, Mr. C. Dixon), Holland House, for cacti, etc.

Silver Knightian.—To Messrs. S. Low and Co., Enfield, for figs; to the Rev. C. Chalmers-Hunt, Hitchin, for sweet peas, vegetables, and roses; to Halliford French Garden Company, for vegetables.

Silver Flora.—To Mr. S. W. Flory Tracey's Nursery, Twickenham, for orchids; to Messrs. H. Dixon, Wandsworth, for orchids; to Messrs. J. K. King and Sons, Coggeshall, for sweet peas; to Messrs. G. Stark and Son, Great Ryburgh, for sweet peas; to Mr. J. Box, Lindfield, for herbaceous flowers, etc.; to Mr. H. Pakeman, Thornton Heath, for carnations; to Mr. C. Blick, Hayes, for carnations; to Messrs. R. H. Bath, Lim., Wisbech, for herbaceous plants; to Messrs. Godfrey and Son, Exmouth, for herbaceous plants; to Mr. H. Hemsley, Crawley, for alpines; to Messrs. C. Ladhams, Lim., Shirley, for hardy herbaceous; to Messrs. S. Low and Co., Enfield, for carnations; to Messrs. Phillips and Taylor, Bracknell, for herbaceous plants; to Mr. R. Prichard, West Moors, for alpines; to Mr. C. Rassell, for rock garden, etc.; to Messrs. Whitelegg and Page, Chislehurst, for herbaceous plants, etc.; to Mr. J. D. Webster, Chichester, for sweet peas, roses, and carnations; to Messrs. J. Forbes, Hawick, Lim., for phloxes and herbaceous; to Messrs. G. Gibson and Co., Bedale, for delphiniums; to M. G. Green, Esq. (gardener, Mr. W. White), for sweet peas; to Mr. A. L. Gwillim, Sidcup, for begonias; to Messrs. J. Kelway and Son, Langport, for delphiniums; to Mr. W. A. Manda, St. Albans, for foliage plants; to Messrs. T. Rochford and Sons, Broxbourne, for araucarias; to Messrs. F. Smith and Co., Woodbridge, for phloxes and herbaceous; to Messrs. J. Waterer and Sons, Bagshot, for yews; to Messrs. Castles' Shipbreaking Company, Millbank, for garden seats; to Mr. T. Crowther, Fulham, for garden ornaments; to Messrs. Liberty and Co., Regent Street, for garden pottery; and to Lieut.-Colonel Sir George Holford (gardener, Mr. H. Alexander), Westonbirt, for orchids.

Silver Banksian.—To Mons. Vacherst, France, for new carnations; to Mr. J. Bruckhaus, Twickenham, for aspidistras, palms, etc.; to Mr. H. H. Crane, Highgate, for violas and violettas; to Messrs. G. Mallett and Co., Cheddar, for lilies, spiræas, etc.; to Mr. H. C. Pulham, Elsenham, for herbaceous and alpine; to Messrs. H. Freeman, Lim., Sutton, for rustic work; and to the Leyton Timber Company, Lim., Leyton, for rustic work; to the Countess of Ilchester (gardener, Mr. Kempshall), for cut shrubs; to Guildford Hardy Plant Company, for alpine and herbaceous plants; and to Messrs. Jarman and Co., for centaureas, sweet peas, and pelargoniums.

Bronze Flora.—To Messrs Bees, Lim., Liverpool, for hardy flowers; to Mr. Carlton White, New Bond Street, for box trees; to Messrs. W. Fells and Son, Hitchin, for rock plants; to the Misses Hopkins, Shepperton, for miscellaneous plants; to Messrs. Rich and Co., Bath, for hardy flowers; to Mr. V. Slade, Taunton, for cut blooms and plants; and to Messrs. Thompson and Charman, Bushey, for perennials.

### CERTIFICATES AND AWARDS.

First-class Certificates. — To Miltonia Hyeana Le Conquerant, from M. Jules Hye de Crom, Ghent; to Cattleya Artemis, from Lieut.-Colonel Sir George Holford, Westonbirt; to Cattleya Dupreana, The Dell var., from Baron Bruno Schroder; to Polypodium Mandaianum, from W. A. Manda, St. Albans; to Lilium Warleyense, from Miss Willmott, V.M.H., Great Warley; to Lastrea patens Mayi, from Messrs. H. B. May and Sons.

Award of Merit.—To border carnations Jean Douglas and John Ridd, from Mr. J. Douglas, Great Bookham; to Clematis Lady Betty Balfour, from Messrs. Jackman and Son, Woking; to Astilbe Avalanche, from Messrs. Van Waveren, Haarlem; to Nephrolepis exaltata Rochfordii, from Messrs. T. Rochford and Sons, Broxbourne; to begonias Mrs. Robert Martin and Florence Nightingale, from Messrs. Blackmore and Langdon, Bath; to climbing rose Ethel, from Mr. C. Turner, Slough; to rose Mrs. Charles S. Hunting, from Messrs. Hugh Dickson, Belfast; to strain of Phlox Arendsi, from M. G. Arends, Ronsdorf; to Brasso-cattleya Marion, from Messrs. J. Veitch and Sons, Chelsea; to Lælio-cattleya rubens The Kaiser, from Mr. E. H. Davidson, Twyford; and to Cattleya Thurgoodiana Apollo, from Messrs. Stuart Low, and Co., Enfield.

**Begonia nitida.** — Interesting as being the first begonia to flower in this country, and withal a very pretty plant, this species merits at least a passing notice. It forms an erect woody stem, and may be treated as a climbing plant, but at the same time is more useful when grown in a loose, bushy form. The bright green leaves are particularly glossy, and the flowers, either white or pink, are borne freely in good sized panicles. It is a very pretty subject for the greenhouse in the summer, and in an intermediate temperature will flower throughout the greater part of the winter. A native of Jamaica.—K.

THE
GREAT ROSE SHOW
OF THE YEAR
Will be held by the
NATIONAL ROSE SOCIETY
in the
ROYAL BOTANIC GARDENS,
Regent's Pk., N.W., on Tuesday, July 9th.

The two Champion Challenge Trophies will be competed for, also numerous other Cups and Pieces of Plate and Money Prizes to the value of over £400.

New Seedling Roses in a separate tent.

Bands of the ROYAL HORSE GUARDS (THE BLUES) and SCOTS GUARDS.

Luncheons, Teas, and other Light Refreshments.

ADMISSION—
Noon to 3 p.m., 5s.; 3 to 5 p.m., 2s. 6d.;
5 to 7 p.m., 1s.

E. MAWLEY,
Hon. Secretary, Rosebank, Berkhamsted.

Cardiff & County Horticultural Society.
24th GRAND ANNUAL SHOW
SOPHIA GARDENS, CARDIFF,
Wednesday & Thursday, July 17 & 18, 1912.
Specially good prizes in every Section, amounting in Money and Plate to nearly £500.
Tents lighted by electricity by Messrs. Fred Price and Co., Ltd.
POPULAR PRICES.
Schedules from the Secretary,
Mr. A. MAURICE BAILEY, 24, Duke Street, Cardiff.

MALVERN ROSE AND SWEET PEA SHOW.
THURSDAY, JULY 11th, 1912.
Open Classes in Roses and Sweet Peas.
Nearly £100 in Prizes.
Entries close July 8th.
For Schedules and Entry Forms apply to A. D. MELVIN, Secretary, The Poplars, Malvern Link.

ROYAL LANCASHIRE AGRICULTURAL SOCIETY.
GREAT HORTICULTURAL EXHIBITION will be held in connection with the above at Preston, August 1st, 2nd, 3rd, and 5th. Entries close July 15th. Schedules on application to PETER BLAIR, Trentham Gardens, Stoke-on-Trent.

TAUNTON FLOWER SHOW.
THURSDAY, AUGUST 1st.
Entries close Friday, July 26th.
R. A. GOODMAN, Secretary,
3, HAMMET STREET, TAUNTON.

WOLVERHAMPTON.
GREAT FLORAL FETE.
JULY 9th, 10th, and 11th, 1912.
NEXT WEEK.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

SASH BARS.—Special lines in certain lengths only, 1½ x 1, 2/6 100ft.; 3 x 1½, 5/9 100ft.; quotations for special lengths or for any kind of timber, garden lights, greenhouses, and woodwork. Send 5d. for the most up-to-date illustrated list of Builders' Woodwork and Timber in the World; or 1/- for list and rule—worth 2/6.
C. JENNINGS and CO., Timber Merchants, General Woodworkers, 916, Pennywell Road, Bristol.

PROTECT YOUR GARDENS —I DO NOT REQUIRE PAYMENT UNTIL YOU HAVE SEEN AND APPROVED OF THE NETTING. —Netting, good strong, stout, small mesh, will not rot, THE VERY BEST, as supplied to the ROYAL GARDENS by ME, 25yds. by 1yd., 1s.; by 2yds., 2s.; by 3yds., 3s., and so on; any length or width supplied. Orders over 5s. car. paid. List and samples free. Commoner and tender netting, as sold by others, 60 sq. yds. for 1s. — H. J. GASSON, Net Works, Rye. Est. 126 years.

When answering Advertisements please mention "Gardeners' Magazine."

# WORK FOR THE WEEK.

## STOVE PLANTS.

THYRSACANTHUS RUTILANS. — This stove plant is worthy of a place in collections for the beauty of its long racemes of bright crimson flowers, which are borne in winter and spring. Propagation is readily effected by cuttings taken from the old plants when they have finished flowering in spring. Assuming that sufficient numbers were rooted at that time, they will now be ready for their flowering pots. If single plants are grown, 6in. or 7in. pots will answer for the final shift. A compost of two parts fibrous loam, one of leaf soil, and one made up of dried cow manure, crushed charcoal, and a sprinkling of sand and bonemeal, will answer well. Pot firmly, and pinch out the leading points to induce branching. This thyrsacanthus does not branch out freely, even when pinched, therefore I adopt the plan of growing two or three in a pot. If these do well they may be flowered in 32's or 24's. Grow on freely in a heated pit or house for a few weeks, and when thoroughly established, afford cooler treatment for the remainder of the summer, to ensure well-ripened wood, on which free flowering depends. When in full growth, give plenty of air, and shade only from the hottest sun.

COLEUS THYRSOIDEUS. — This is another useful winter-flowering plant, now immensely popular. Its bright blue flowers are borne in profusion on long, erect panicles. The habit of growth is very similar to the foregoing, and precisely the same treatment will give good results.

POINSETTIA PULCHERRIMA. — Note should be made of the number of plants of poinsettias that have already been rooted; if there is any deficiency, insert more cuttings without delay. These late-struck cuttings make useful material if well looked after, and grown on freely, yet sturdily. A heated pit, not too deep, is an excellent place to grow them in, as they can be kept near the roof-glass, and lowered occasionally as growth advances. A close atmosphere must be maintained, accompanied by abundance of moisture for a few days after each repotting, taking care not to overwater at the roots. One good application immediately after potting will suffice for some days, provided frequent syringings are afforded daily. When it is seen that they have become re-established in the new compost inure gradually to full air and light, in order to ensure robust, short-jointed growth. Plants grown in strong heat, and given but little ventilation, give poor results.—H. T. MARTIN, Warren Wood Gardens.

## THE ORCHID HOUSES.

CYPRIPEDIUMS.—The members of this genus, which require a warm treatment, are not so extensively cultivated as the cooler-growing species; nevertheless, there are many very beautiful and attractive plants which produce their flowers at this season of the year. C. Stonei, C. Rothschildianum, C. Curtisi, C. ciliolare, C. barbatum, C. callosum, C. Lawrenceanum, with their varieties C. c. Sanderæ and C. L. Hyeanum, and various others, are amongst them. There are several hybrids which also bloom during the summer months. The majority of these plants require stove heat, and a liberal treatment generally, and are easy to cultivate. C. Lawrenceanum, with its varieties, also C. callosum and its varieties, with C. barbatum and C. superbiens are best grown at the warm end of the intermediate house. As they pass out of flower, they should be thoroughly examined, and any that require repotting must have attention, potting them in the same manner, and using a compost, as advised early in the year for winter-flowering cypripediums. The more simple we can make our practice, undoubtedly the more easy is it to follow, and the greater success shall we achieve. The whole of these plants are propagated easily, and may be divided again and again, provided care be taken in the operation. I do not advise division into the scraps we often see, as in the first place they do not produce flowers in the same proportion as fair-sized plants, neither are the flowers of the same quality, and as the plants are cultivated for their flowers it should be the aim to produce them in their best form. After repotting a watering should be given to settle the compost around them, and be set where they may be shaded from strong sunshine, and be sprayed overhead from time to time, especially on hot days. There must be no lack of moisture at the root, or in the atmosphere, but the usual caution must be used in watering until the plants are re-established. Insect pests rarely attack healthy plants of this genus. Should any plant become a prey to any abnormal attack of any insect pest, we can rely upon it that the conditions under which it is growing is not according to its liking or requirements.

THE SELENIPEDIUM GROUP, such as C. Schroderi, C. grande, C. Sedeni, and others may be treated in the same manner when they have finished flowering; the whole of this group thrives in the intermediate house at all seasons.

C. NIVEUM AND C. BELLATULUM, and others of the same section, which many have a difficulty in cultivating, may have attention soon after the flowers have faded. They have thick, fleshy roots, differing in character from either of the preceding, and they require a different compost and treatment. When repotting this section, great care must be taken to preserve the roots and leaves from injury. The leaves, being of a thick, succulent nature, can withstand drought much better than most. These cypripediums should be grown well up to the light at all times, in a stove temperature, where they can be protected from strong sunshine, and they must not be sprayed or syringed overhead. They will thrive in a compost of equal portions of peat, osmunda, and loam fibre, and sphagnum moss, from which all the fine particles have been taken. A few pieces of broken limestone may be added, and will be beneficial, especially where the water is deficient in lime. The plants may be potted much in the manner as an ordinary plant, leaving sufficient space between the surface of the compost, and the rim of the pot for sufficient water to thoroughly soak the whole.—J. T. BARKER. The West Hill Gardens.

## FRUITS UNDER GLASS.

LAYERING STRAWBERRIES.—Push on with this work, and finish without delay. No doubt where plants have to be grown for very early forcing this work has been accomplished; but, if necessary, layering can still be done, and good strong plants will result by the autumn. Great care must be exercised to select good strong runners that are just beginning to emit roots, and confine them to one plant on each runner; these should be securely pegged down, into three-inch pots, which have been previously filled with a good rich loam made moderately firm, the pots should be plunged nearly up to their rims in the soil between the rows, and this will materially assist the new compost to remain in a moist condition without the aid of frequent waterings. Damp over the plants occasionally during bright, sunny weather, in a few weeks' time they will have become well established in the small pots, when they should be detached from the old plants, and placed in ashes on a border facing west until they can be placed in their fruiting pots.

YOUNG POT VINES.—The young canes should be at least from ten to twelve feet in length; pinch out the growing points, and rigidly stop all laterals to one leaf; admit air by the top and side ventilators during bright weather, and maintain a day temperature of from 70 to 75 degrees, allowing a night temperature of 65 to 70 degrees. Syringe the plants early in the afternoon, and allow the temperature to rise to 90 or 95 degrees with sun-heat. The vines should be full of vigour, and the pots well filled with roots. Make every effort to induce the plants to build up good strong canes during this month; judicious feeding with chemical and artificial manures should be given. We find it necessary to administer some stimulating manure at least three or four times a week if the best results are to be attained. Keep a sharp look-out for red-spider and thrips, and, if discovered, immediate steps must be taken for their eradication. Mildew sometimes makes its appearance upon the young lateral leaves, which, if neglected, will soon ruin the foliage; a dusting with flowers of sulphur should be given, and the top ventilator left open a little for a few nights.

LATE VINES.—These will be making a large quantity of lateral growths, which must not be allowed to develop a great length before being pinched; it is a serious mistake to allow laterals to develop fully before removing them. This work should always be done gradually. Give the border a good soaking with weak lime water, examine the outside borders, and, if required, give sufficient water to thoroughly moisten the soil down to the drainage, and place a good mulching of stable manure upon the surface immediately after the watering has been done.—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

THE MIXED BORDER.—This requires a good deal of attention to keep it smart and tidy, but no pains should be spared to give the different subjects necessary attention. Remove all dead flower stems, and continue to attend to the support of all plants in active growth. Do not allow any of the subjects to suffer for want of water at the roots, but give liberal soakings whenever the first signs of drought appear. Dahlias, Lobelia cardinalis, and any large-leaved foliaged plants that are employed will derive especial benefit from thorough waterings, without which they will not attain their full development. Various subjects will be greatly benefited by a good mulching after water has been applied, as this keeps the roots cool and moist. Keep the spaces between the plants regularly stirred with the Dutch hoe, while hand weeding must be practised where the hoe cannot be used. Sweet williams should be removed as soon as they have done flowering, and their places filled with early-flowering chrysanthemums, which will need to be well supplied with water until established.

ROSES.—It is desirable to give attention to the climbing varieties at the present time, cutting out any old flowering shoots, and making room for the young growths. Take care not to injure the strong basal shoots, as these will form the flowering growths next season. Beds of roses should have the dead blooms picked off every week, and the surface soil carefully raked over. When water has to be given at the roots liquid stimulants can be applied with advantage, and when extra fine blooms are required disbudding must be judiciously carried out. Upon the first appearance of mildew, spray the plants with some reliable specific. Flowers of sulphur mixed with a little soft soap, and dissolved in warm water, forms a simple and effective remedy.

SEEDLINGS.—These need careful handling when they are pricked out, and those subjects required for next season's spring display are ready to be transferred to nursery beds. Most of these do very well with a space of eight inches between them each way. Give them an open position, and damp over during the evening after bright sunny days.

GENERAL WORK.—Azaleas and rhododendrons should have their seed pods removed. The various hedges can now be trimmed, and formally trained shrubs should be clipped. A further sowing of mignonette may be made on a shady border, and any other late-sown annuals should be thinned. Formal flower beds require frequent attention, as the various subjects, like fuchsias and heliotropes, must be neatly tied from time to time. Dwarf plants employed for carpeting require to be carefully pegged down.—J. GARDNER, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## Windsor.

Held in beautiful surroundings, on The Slopes, Windsor Castle, the Windsor Society's exhibition on Saturday, June 29, was a splendid success. The roses were wonderfully fine, and the competition was splendid throughout. The arrangements are so excellent at Windsor, and everyone receives such a hearty and hospitable welcome, that we feel sure the committee will be pleased to consider two suggestions for even further improvement. One is that the addresses of exhibitors be written on the class cards; and the other, that a larger tent be provided for fruits and vegetables.

### OPEN ROSE CLASSES.

In the great class for forty-eight blooms, distinct, the King's challenge cup brought out eight competitors. The cup was won outright by Messrs. D. Prior and Son, Colchester, with a champion lot, in which Horace Vernet, Victor Hugo (a marvellous flower), Comte Raimbaud, Frau Karl Druschki, Her Majesty, Lady Moyra Beauclerk, Mrs. T. Roosevelt, Mdmes. Jules Gravereaux, Juliet, and Nita Weldon were superb; Messrs. Alex. Dickson and Sons, Newtownards, second; and Messrs. B. R. Cant and Sons, Colchester, third. Mr. J. Prince annexed the premier award for eighteen tea or noisette roses, with a beautiful set of flowers, his Mrs. Foley Hobbs and Mrs. E. Mawley being excellent; Messrs. Alex. Dickson and Sons, a good second; and Messrs. D. Prior and Son, third.

For a dozen trebles, Messrs. Alex. Dickson and Son, Newtownards, secured the first prize among seven competitors, and their best blooms were Mdme. Chédane Guinoisseau, Frau Karl Druschki, Mrs. T. Roosevelt, George Dickson, and Lyon; Messrs. D. Prior and Sons, Colchester, second; and Messrs. B. R. Cant and Sons third. With Mildred Grant, Messrs. D. Prior and Son scored for a dozen blooms of any H.P. or H.T. rose; Mr. G. Prince came second with Frau Karl Druschki; and Mr. H. Drew, Longworth, third with Mildred Grant. Seventeen entries.

Mr. Prince led for a dozen blooms of any tea or noisette rose with a delightfully even set of Mrs. Foley Hobbs; Messrs. B. R. Cant and Sons second with Muriel Grahame; and Mr. H. Drew third with Mrs. Foley Hobbs. The class for eighteen bunches of decorative roses brought out five competitors, and here Messrs. Frank Cant and Co., Colchester, scored for a finely staged lot of lovely flowers, Irish Elegance, Zephyrine Drouhin, Lady White, Alister Stella Gray, and Papillon being especially good; Mr. Chas. Turner, Slough, second; and Mr. G. Prince, Longworth, third.

Messrs. B. R. Cant and Sons were to the front in the class for twelve blooms, each of a white and a red rose, and they won with Horace Vernet and Bessie Brown in fine form; Messrs. D. Prior and Sons second with J. B. Clark and Frau Karl Druschki; and Messrs. Harkness and Co., Hitchin, third. Ten competitors.

### AMATEURS.

The Windsor Chellenge Cup in the amateurs' section for the best twenty-four blooms was won by Mr. E. B. Lindsell, Hitchin, with a capital set, in which Mildred Grant, Comte Raimbaud, Mdme. Jules Gravereaux, Horace Vernet, Ulster, Frau Karl Druschki, A. K. Williams, Mrs. T. Roosevelt, and Comtesse de Nadaillac were very fine; Mr. G. A. Hammond second; and Mr. Conway Jones, Hucclecote, Gloucester, third. The cup presented by Princess Alexis Dolgorouki for eight trebles was also won by Mr. E. B. Lindsell with a superb set of Mdme. Jules Gravereaux, Bessie Brown, Wm. Shearn, Frau Karl Druschki, Mildred Grant, Her Majesty, Florence Pemberton, and Dean Hole; Rev. J. H. Burnside second, and Mr. G. A. Hammond third. Mr. Conway Jones scored for a dozen teas or noisettes, Maman Cochet and Mdme. Jules Gravereaux being especially good; Rev. F. R. Burnside second, and Rev. J. A. Fellows third. In another section Mr. W. O. Times, Windsor, scored for two dozen blooms, his Comte Raimbaud being a lovely bloom; Mr. L. S. Pawle, Beaconsfield, second; and Rev. J. A. Fellows third. The Rev. F. R. Burnside and Mr. R. Pryor secured the awards for twelve blooms.

### LOCAL CLASSES.

Mr. J. B. Fortescue, Dropmore, won the Lady Arkwright Cup in the local class for two dozen blooms, distinct, but was very closely followed by Mr. T. Stevenson, with Mr. A. F. Govett third. Mr. Stevenson won the cup presented by Mrs. B. Fortescue for the best eighteen H.T.'s or T.'s; Mdme. Constance Soupert, Mildred Grant, and Mdme Melanie Soupert were finely shown in this stand; Mr. E. F. Brown second; and Mr. D H. Davies, J.P., third.

Mr. T. Stevenson, gardener to E. Mocatta, Esq., Addlestone, won the first prize for six bunches of decorative roses, with capital bunches of Mrs. Peter Blair, Edu Meyer, Mdme. Abel Chatenay, Rayon d'Or, Crimson Rambler, and Irish Elegance; Mr. C. Page, gardener to J. B. Fortescue, Esq., Dropmore, second; and Mrs. P. Pope third. In another class for six bunches the Rev. J. B. Shackle, Dropmore, won the cup presented by Lady Evelyn Mason, and he showed Irish Elegance and Maharajah finely; Mr. R. Arkwright second, and Mr. A. L. Cook third.

The Rev. J. B. Shackle scored for nine teas or noisettes, and also for six blooms of a tea or noisette rose with Mdme. Jules Gravereaux. Mr. Colin Romaine had the best six blooms of an H.P. or H.T. rose, and won with Bessie Brown.

In the smaller growers' sections, Mr. E. F. Brown, Mr. A. Gilliatt, Mr. R. Arkwright, Mr. A. H. D. Fraser, and Mr. Randall secured the chief awards.

Mrs. J. B. Shackle had the best basket of roses, and showed a fine exhibit of Lady Curzon. Mrs. J. Bide, Farnham, led for a table decoration, and used Lady Hillingdon rose admirably; Mrs. Maslin came second with pink sweet peas; and Mrs. Redcliffe Sergeant third with pink carnations and blue sweet peas.

### PLANTS AND FLOWERS.

Mr. Phillips, gardener to E. Wagg, Esq., The Islet, Maidenhead, won outright the cup presented by the Marchioness of Normanby for a group of plants; this is the eighth time Mr. Phillips has been first prizewinner in the group class, and he has now won the cup three years in succession; he used palms, clarkias, carnations, and Francoa ramosa effectively with other suitable plants.

Mr. E. Clifton Brown led for six bunches of hardy border flowers, and Mr. C. Page, Dropmore, was second. Mr. E. Clifton Brown scored for a dozen bunches of sweet peas with a good clean set; Mr. A. L. F. Cook second, with blooms scarcely their best; Mr. F. A. Bishop, third. Miss Langworthy scored for nine bunches, with Lady Tress Barry, Windsor, second.

### FRUITS AND VEGETABLES.

In the fruit classes Mr. E. Jennings, gardener to W. L. Jackson, Esq., scored for white grapes, and Mr. R. Brown, gardener to Lady Tress Barry had the best black grapes. Mr. Jennings was ahead for four dishes of dessert fruits, and Mr. J. Orton, gardener to Colonel F. Cox, second. Mr. Stevenson led for nectarines with River's Early, and Mr. Jennings for peaches with Crimson Galande. Mr. C. Page scored for strawberries with fine dishes of Royal Sovereign and Bedfordshire Champion.

Mr. E. Johnson, gardener to A. Gilliat, Esq., scored for a collection of vegetables in the class provided by Messrs. J. Veitch and Sons; his Autumn Giant cauliflowers were excellent. Messrs. J. Carter and Co.'s prizes for six kinds of vegetables were won by Mr. W. Holden, gardener to Mrs. Adair, and Mr. T. Stevenson. In the class for six kinds, provided by Messrs. Sutton and Sons, Mr. Stevenson was first, Mr. Jennings second, and Mr. Burt third. Messrs. E. Webb and Sons also offered prizes for vegetables, and their premier award was secured by Mr. T. H. Bolton, gardener to the Earl of Devon, Powderham Castle, Devon.

### NON-COMPETITIVE.

Trade exhibits were very good, and notable displays were made by Mr. Charles Turner, Slough; Messrs. Jas. Veitch and Sons, Chelsea; Messrs. S. Bide and Sons, Farnham; Mr. W. Alsen, Waterlooville; Messrs. Fletcher Bros., Ottershaw; Mr. W. E. Tidy, Ascot; the King's Acre Nurseries, Hereford; Messrs. Jackman and Son, Woking; Mr. T. Tubb, Slough; and the Cherry Nurseries.

## The Royal Show at Doncaster.

JULY 3 to JULY 6.

A horticultural exhibition was as usual held in conjunction with the Royal Agricultural Society's show, and was held in fine weather despite the downpour of the previous day. The show was held in three huge tents, which were admirably arranged under the direction of Mr. Peter Blair.

The competitive classes were not supported as one would expect them to be, but the trade made up a splendid show. The groups of plants were undoubtedly the finest feature of the show. The premier class was for a group of plants occupying 350 square feet. Here there were four competitors, Messrs. J. Cypher and Son, Cheltenham, winning the first prize of £30 with one of their well-known groups. The arrangement, while being bold, was exquisitely light and graceful. The crotons stood out as a leading feature, the background being formed with palms, with an arch just behind filled with crotons and orchids. Cattleyas were massed with ferns, caladiums, and Rex begonias, while oncidiums were scattered throughout the group, the bright Clerodendron fallax lending colour to the general scheme, the whole forming one of Messrs. Cypher's best efforts.

The second prize of £25 was awarded Mr. W. A. Holmes, West End Nurseries, Chesterfield, who made a fine display with crotons, especially C. Warreni, Cocos Weddelliana, carnations, dracænas, and Humea elegans, the whole group being lightly arranged with considerable skill. Mr. J. S. Sharp, Valley Nurseries, Banksford, Almondbury, was placed third with a very bright group, the dracænas, crotons, and caladiums being assisted with bright red crassulas. Mr. W. Vause, Leamington, was fourth with some splendid plants.

For a collection of orchids, arranged for effect on a stage one hundred feet square, Messrs. J. Cypher and Son were the only exhibitors, and deservedly gained the first prize. The group was well arranged with the aid of suitable foliage plants. The chief subjects employed were Cattleya gigas, C. Mendelli, Odontoglossums percultum and Pescatorei, with fine miltonias and oncidiums.

The group of begonias that secured the first prize for Messrs. Blackmore and Langdon, Twerton Hill Nursery, Bath, was remarkably fine; one could not pick out a really weak plant. They were chiefly large double varieties, the most prominent being Florence Nightingale, Mrs. R. Moreton, W. H. Fry, and the Hon. J. R. C. Boscawen, while the baskets of Golden Shower, Fleur de Chrysanthemiste, Gladys, and Lena were greatly admired.

Mr. B. H. Brooksbank, Sandrock, Rotherham, was third, but somewhat overpowered by the first-prize group.

Messrs. J. Cypher and Son were the only exhibitors for a collection of stove and greenhouse plants in flower. These secured the first prize, and worthily so; the chief subjects were Statice profusa, Ixora Fraseri, Erica ventricosa Bothwelliana, Clerodendron fallax, Allamanda nobilis, and Clerodendron Balfouri.

For a display of herbaceous flowers, bamboos, liliums, and foliage, Messrs. James Backhouse and Son, Lim., York, were the first-prize exhibitors. They fully maintained their reputation, making a fine show with an artistic arrangement, in which were noted Orchis foliosa, Viola cornuta purpurea, sarracenias, and a nice collection of hardy ferns. In the pools were to be seen nymphæas and similar subjects. Messrs. W. and J. Brown, Stamford, were third with a bright and attractive group, in which were seen fine clumps of Gaillardia Lady Exeter, Dianthus Napoleon III., with liliums in large variety, Verbascum Miss Willmott, and Thalictrum Delevayi—a capital exhibit.

The prizes for collections of hardy perennials brought out a keen competition. Messrs. Harkness and Son, Bedale, however, proved the victors in a tight tussle. They displayed large vases of Verbascum Caledonia, Gaillardia Ideal, liliums, Delphinium Corsair Gladioli delicatissima, English irises and campanulas, the whole being admirably displayed. Messrs. Artindale and Sons, Sheffield, were second, staging some fine vases of Gladioli Blushing Bride, Lilium croceum, irises, delphiniums, and anchusas.

For a collection of cut roses, Mr. F. M. Bradley, Peterborough, was placed first with a highly decorative exhibit. Tall ramblers made a good background, while the bamboo stands contained splendid examples of Edward Mawley, Irish Elegance, Mrs. Peter Blair, and Lady Wellington. Messrs. W. and J. Brown were second with a very meritorious exhibit. They had excellent examples of Lyon Rose, Duchess of Wellington, Arthur E. Coxhead, and Harry Kirk, while Messrs. R. W. Proctor and Sons, Chesterfield, were third.

The class for a collection of carnations was left to Mr. C. Englemann, Saffron Walden, to maintain its reputation, and he did it well, too, staging in a light and attractive manner superb blooms of Carola, Lady Northcliffe, Beacon, Elecktra, Sunstar, and Harlequin, with several others.

For eight kinds of vegetables the only competitor was the Duke of Portland; gardener, Mr. J. Gibson, Welbeck Abbey, Worksop, who was deservedly awarded the first prize for a really fine collection. The best dishes were Carrot Sutton's Favourite, Cauliflower Magnum Bonum, really perfect; Onion White Leviathan, Centenary peas, Tomato Satisfaction, and Potato Gadiator.

Mr. J. Gibson was practically the only exhibitor in the fruit classes, and he certainly deserved the number of firsts he obtained. For four bunches of grapes, distinct, he won first with nice examples of Black Hamburgh, Muscat of Alexandria, Black Alicante, and Buckland Sweetwater. Mr. Chas. Thelhussen was second with Chasselas Napoleon, and Madresfield Court as his best examples.

Mr. J. Gibson was the only competitor for two bunches of Muscat of Alexandria, and obtained first prize. The same exhibitor also was awarded first for Black Hamburgh, receiving the same award for Madresfield Court; while the first prize for two dishes of peaches was awarded him for fine examples of Dymond and Goshawk. The class for nectarines was also undisputed, Mr. J. Gibson again winning first prize.

The strawberry class for four varieties, went to Mr. C. Thelhussen, who had nice nice boxes of Royal Sovereign, Leader, and Givon's Late.

Mr. J. Gibson was the only exhibitor of a collection of thirty dishes of ripe fruits, decorated with flowers and foliage. Although left to himself, Mr. Gibson produced a fine effect, using vases of Malmaison carnation Princess of Wales as a background, with other suitable flowers and foliage. The best dishes were Dryden nectarine, Brown Turkey figs, splendid examples of James Grieve apples, Governor Wood cherries, Early Transparent gages, Muscat of Alexandria grapes, and a fine dish of Waterloo strawberries.

### NON-COMPETITIVE EXHIBITS.

These certainly comprised the bulk of the show, most of the leading firms of the North and Midlands being represented, while some from the South, though busy at the Holland House Show, managed to put in a good appearance.

Messrs. Alex. Dickson and Son, Lim., Newtownards, staged a splendid exhibit of roses, which attracted so much attention that it was difficult to get near the exhibit. A few of the most attractive features were Irish Fireflame, G. C. Waud, Mrs. H. Brocklebank, Betty, and Lyon Rose. Messrs. Young and Co., Cheltenham, staged a fine collection of carnations, which were admirably arranged in tall vases.

Mr. H. L. Ellison, West Bromwich, had a pleasing group of ferns, in which good examples of Pteris Parkeri, Cibotium Schiedi, Platycerium grande, and Nephrolepis Whitmanni were noted, also a large collection of cacti. Near by Mr. Thos. Davis, Syderstone Nurseries, Norfolk, exhibited his Challenge rhubarb in great style, also a number of other varieties.

A choice collection of vegetables came from the Hon. Vicary Gibbs (gardener, Mr. E. Beckett), Aldenham House, Elstree. These were arranged in Mr. Beckett's well-known style.

Messrs. W. J. Godfrey and Son, Exmouth, staged some splendid examples of Campanula calycanthema, with border carnations, decorative pelargoniums, zonals and ivy-leaved varieties; mention should also be made of some fine pentstemons, and plants of Solanum Wendelli.

Carnations from Mr. A. F. Dutton, Iver, Bucks, attracted quite a crowd. He staged a fine table, containing good vases of Mrs. A. F. Dutton and Duchess of Westminster.

From Mr. H. Morse, Westfield Nurseries, Eaton, Norwich, came some charming roses that were worthy of a little more time in staging. He had, however, splendid vases of Madame Ravary, Harry Kirk, General McArthur, Marquise de Sinety, and Duchess of Wellington. Messrs. Stuart Low and Co., Bush Hill Park, fully maintained their reputation in roses, carnations, and orchids, which they staged in distinct groups. The roses were in fine form and well staged, as were also the carnations and orchids. The roses were particularly attractive, being large, of good colour, and delightfully fresh.

Hardy flowers from Messrs. G. Gibson and Co., Leeming Bar, were much admired for their freshness and good arrangement.

From Messrs. R. H. Bath, Lim., Wisbech, came a pleasing display of hardy flowers. which included fine delphiniums, roses, and carnations; while their exhibit of sweet peas was very fresh and bright.

Mr. W. Sydenham, Melbourne, Derbyshire, exhibited violas and hardy flowers in good form, the violas being most attractive.

Sweet peas from Mr. R. Bolton, Warton, Carnforth, attracted much attention for they possessed wonderful colouring, especially the varieties Agricola, R. F. Felton, Charles Foster, and Sterling Stent. Messrs. Jarman and Co., Chard, had a capital collection of roses, sweet peas, carnations, and their well-known hybrid centaureas.

Messrs. Broadhead and Son, Huddersfield, were represented by a tasteful rock garden on which all the plants seemed quite at home.

Messrs. J. King and Sons, Coggeshall, had an exhibit of sweet peas, also a fine collection of vegetables, which were put up in an attractive manner.

Messrs. G. Massey and Sons, Spalding, were represented by a collection of hardy flowers, and some capital vegetables, but the two do not go well together. The vegetables were worthy of a table to themselves.

Messrs. Whitelegg and Page, Chislehurst, had an exhibit of their Newberry, which appeared to attract considerable attention.

Messrs. E. W. King and Co., Coggeshall, displayed sweet peas in their well-known style; while the roses from Messrs. B. R. Cant and Sons, Colchester, came in for much admiration, the fine columns of Warrior, St. Helena, Sunbeam, and Ed. Mawley being excellent. Messrs. Burrell and Co., Cambridge, also sent a fine collection of roses.

Messrs. Dickson and Robinson, Manchester, had a large group of hardy flowers most tastefully arranged, while a group of retarded Azalea mollis in fine condition appeared to be popular with the visitors.

Messrs. Sutton and Sons, Reading, had a magnificent collection of gloxinias and nemesias in the tents; needless to add, this was admirably arranged, and greatly admired.

From Messrs. Bakers, Wolverhampton, came a choice group of hardy flowers, in conjunction with a water garden. The English irises and nymphæas were the chief features here.

The King's Acre Nurseries, Lim., Hereford, had a fine group of fruit trees in pots that created a small sensation, for the apples, pears, peaches, and plums were well fruited and in a ripe condition; they were also arranged in an attractive manner.

### AWARDS.

Large gold medals were awarded to Messrs. J. Gibson, Young and Co., R. Bolton, Bakers, and J. Cypher and Sons.

Gold medals to Messrs. E. W. King and Co., Blackmore and Langdon, Pennell and Sons, H. B. May and Sons, A. W. Dutton, Stuart Low and Co., J. Waterer and Sons, Alex. Dickson and Sons, Lim., and C. Thelhussen.

Silver-gilt medals to Messrs. Kent and Brydon, Godfrey and Son, R. H. Bath, Lim., King's Acre Nursery Co., Dickson and Robinson, Sutton and Sons, Toogood and Sons.

Silver medals to Messrs. H. J. Ellison, H. Morse, Jarman and Co., B. R. Cant and Sons, Seagrave and Co., W. and J. Brown, C. Waters, Broadhead and Co., Burrell and Co., W. Sydenham, E. J. Batchelor and Son, W. Artindale and Son, Clibrans.

## Cambridge Horticultural Society.

This old society, established in 1824, held its exhibition in the delightful grounds of St. John's College on Wednesday, July 3. The early morning proved threatening, with occasional showers, but from midday onward warm, bright weather prevailed. The society has had a varied experience, but probably never has it had a finer show than this year, and those competent to judge considered that the roses were particularly fine, both in numbers and quality, and a great advance upon the roses of recent years. Hardy flowers, sweet peas, and pelargoniums were other excellent features, and small fruits were very fine. Altogether Mr. Rupert Fuller and his committee have good reason to congratulate themselves upon the success of this exhibition.

There were several important classes for roses, and three of these were open to all. Lord Peckover presented the first prize for forty-eight blooms, distinct, and this was won by Messrs. J. Burrell and Co., Cambridge, with a heavy, bright set of blooms that included fine examples of Mrs. T. Roosevelt, Lady Barham, Her Majesty, Mildred Grant, Mdme. Jules Gravereaux, Lady H. Vincent, Souv. de Pierre Notting, and Hugh Dickson; Mr. John Pigg, Royston, second; and Messrs. G. and W. H. Burch, Peterborough, third.

For three dozen blooms, distinct varieties, the prizes fell in order of mention to Mr. J. Pigg, Royston, whose blooms were particularly bright and fresh; Messrs. J. Burrell and Co., Cambridge, who had some very weighty blooms; and Messrs. G. and W. H. Burch. Twelve tea or noisette roses is usually a good class. On this occasion there were five competitors, and first prize was awarded to Messrs. J. Burrell and Co., who had a fine box of Mdme. Constant Soupert, White Maman Cochet, Souv. de Elise Vardon, Mr. Dudley, W. R. Smith, and A. Hill Grey; Mr. J. Pigg second, and Rev. J. A. Fellowes third.

Five rose classes were provided for members only. In the leading one, for twelve blooms, Mr. Hinckly, gardener to Rev. J. A. Fellowes, scored with a fine lot of blooms, his Mildred Grant, F. K. Druschki and Helen Keller being very fine; Mr. C. E. Inglis second, and Mr. M. Coulson third. Mr. R. N. Biffen led for six roses with a lovely even set, in which Mr. David McKee and Mr. T. Roosevelt were a trifle the best; Mr. W. Dunn second, and Mr. M. Coulson third. For six teas the prizes went in order to Mr. E. W. Miller, Mr. W. Dunn, and Mr. A. Colin Lunn; while Mr. R. M. Biffen was an easy first for three tea roses; and Mr. M. Coulson scored for three other than tea roses in a keen competition.

Mr. Ridgewell, gardener to R. J. Fuller, Esq., St. Andrews Street, led for a dozen varieties of pelargoniums, three trusses of each; Mr. Andrews, gardener to J. M. Linton, Esq., second, but neither labelled their varieties. Mrs. Routh had the best set of six varieties, Mr. Ridgewell coming second in this class. Mr. C. Smith scored for a dozen vases of delphiniums with a capital exhibit, and Dr. Dalton led for six bunches of hardy flowers. Mr. C. Smith led for a dozen bunches of hardy flowers in a very keen competition, his bunches of scabious, Lilium candidum, L. elegans, and potentillas being excellent; Mr. J. Hall second, and Mr. R. Burn third.

The premier set of eighteen bunches of sweet peas was won by Mr. F. Hian with a grand lot of Mrs. R. Hallan, Douglas Unwin, King Edward Spencer, Arthur Unwin, Clara Curtis, etc.; Mr. A. Murrell second, and Rev. J. A. Fellowes third. Mr. Hian was a capital first for a dozen bunches of sweet peas, and he showed grand spikes of leading varieties; Mr. P. Hawkes second, and Mr. W. P. Neal third. Dr. Keynes led for six bunches of sweet peas, with Mr. Hian, Mr. Hawkes, and Mr. Murrell taking other awards.

First prize for a decorated table was won by Mrs. A. E. Warren with a beautiful design in pink and pale blue sweet peas and gypsophila; Mrs. Edwards second, and Mrs. J. Hall third. For a table with roses as decorative subjects, Mrs. R. M. Biffen scored with a bold display of Mdme. Abel Chatenay, Mrs. Tate, etc.; Dr. Keynes second, and Mr. Edwards third.

The premier award for a large group was won by Mr. W. P. Neal with a bright contribution, in which crotons, variegated abutilon, anthuriums, begonias, and Statice Suworowi were well arranged; Mr. R. S. Hudson second. Mr. Hudson annexed the chief prize for six specimen ornamental foliage plants, a giant Kentia being his chief plant. Sir John Sandys had the best fuchsias, and Mr. W. A. Harding second.

Mr. R. S. Hudson led for ten orchids with good Vanda cærulea, Thunia Marshalliana, Cypripedium barbatum, etc.; Mr. W. A. Harding second. The latter had the best specimen fern, and also the finest three ferns, one of these being a grand Adiantum cuneatum. Mr. Hudson beat Sir John Sandys for six exotic ferns, and each showed well, the latter winning for six hardy ferns. Mr. R. J. Fuller had the best dozen single zonal pelargoniums, staging freely-flowered specimens in 6in. pots, and carrying fine trusses; Mrs. Routh second. For six double-flowered plants these competitors had positions reversed, and for six singles Mr. P. Hall led.

Strawberries were grandly shown, and the first prize fell to Mr. A. Lelliott for superb berries of Givon's Late Prolific; Messrs. R. M. Jones and Son second. In the flavour class Dr. Dalton scored with British Queen. Mr. Lelliott scored for raspberries, Mr. Dann for gooseberries, Mr. Dobbs for black currants with enormous berries, and Mr. Lelliott for red currants.

Mr. W. A. Briscoe had the best eight dishes of vegetables, and his French beans, tomatoes, marrows, and potatoes were capital. Mr. Routh had a splendid bunch of carrots, a perfect set, and won first prize. Mr. C. E. Englis led for peas, Mr. R. J. Hall for potatoes, and Mr. C. Forbes for tomatoes.

Messrs. Wood and Ingram, Huntingdon, contributed a very fine non-competitive collection of roses, their Rayon d'Or, Marquise de Sinety, Gen. MacArthur, Molly Sharman Crawford, and Lady Pirrie being excellent. Messrs. J. Burrell and Co. also exhibited roses in goodly numbers and of good quality.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. June 23 to June 29. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| June 23—Sunday ...... | 11 54 | 65 | 58 | 71 | 59 |
| ,, 24—Monday ...... | 9 36 | 62 | 58 | 70 | 54 |
| ,, 25—Tuesday...... | 3 24 | 58 | 55 | 62 | 54 |
| ,, 26—Wednesday.. | 10 30 | 60 | 56 | 69 | 53 |
| ,, 27—Thursday.... | 5 40 | 59 | 54 | 65 | 51 |
| ,, 28—Friday........ | 8 24 | 58 | 57 | 69 | 54 |
| ,, 29—Saturday..... | 4 45 | 60 | 59 | 65 | 52 |
| Means | (total) 54 13 | 60 | 56 | 67 | 53 |

| Date. 1912. June 23 to June 29. | Rain. | Temperature of the Soil At 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| June 23—Sunday ...... | — | 66 | 62 | 58 | 53 |
| ,, 24—Monday ...... | 0·05 | 65 | 62 | 58 | 47 |
| ,, 25—Tuesday...... | 0·18 | 64 | 62 | 58 | 49 |
| ,, 26—Wednesday.. | — | 62 | 61 | 58 | 48 |
| ,, 27—Thursday.... | 0·06 | 62 | 61 | 58 | 43 |
| ,, 28—Friday........ | 0·07 | 62 | 61 | 58 | 46 |
| ,, 29—Saturday .... | 0·13 | 62 | 61 | 58 | 44 |
| Means | (total) 0·49 | 63 | 61 | 58 | 47 |

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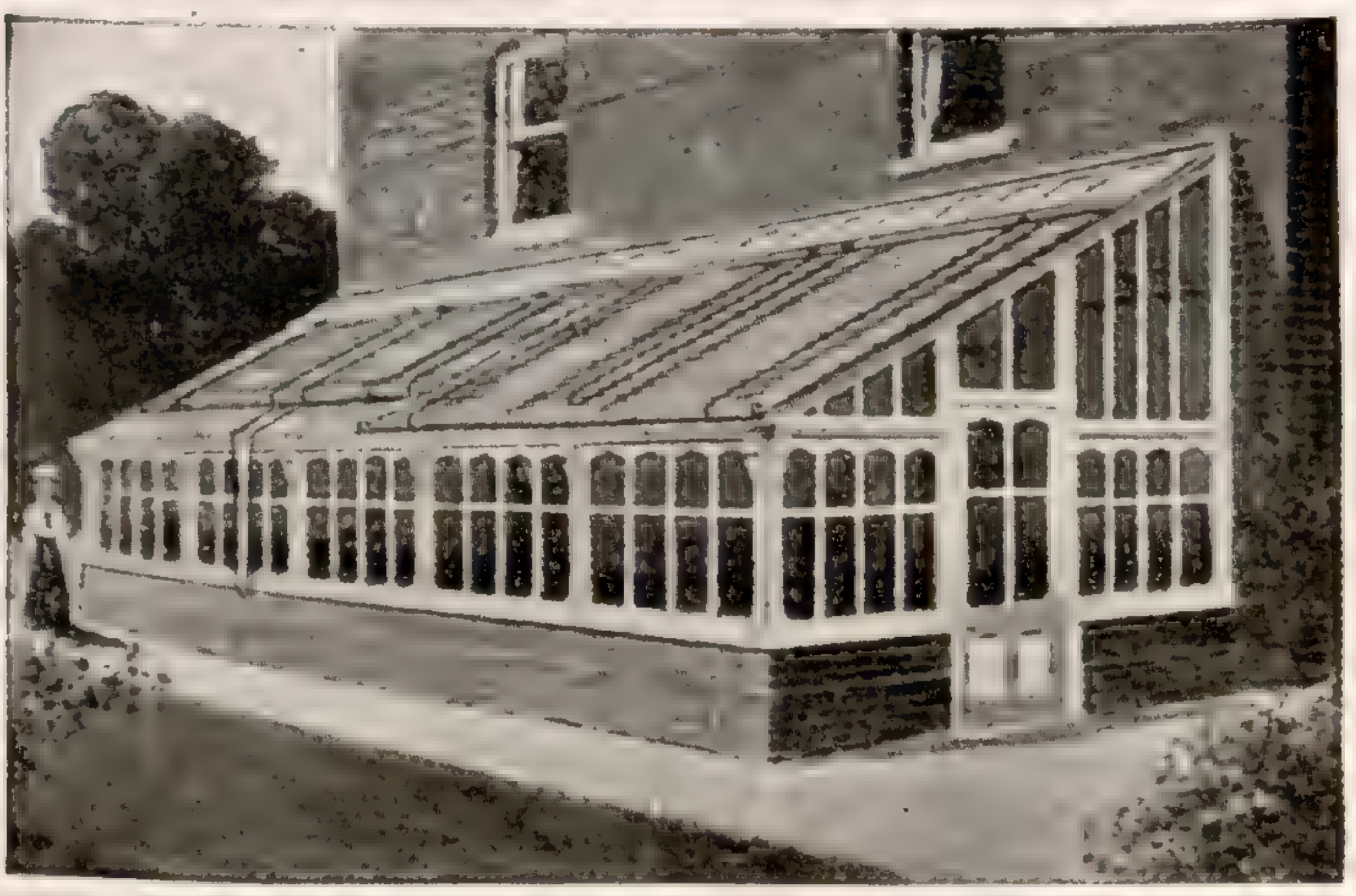

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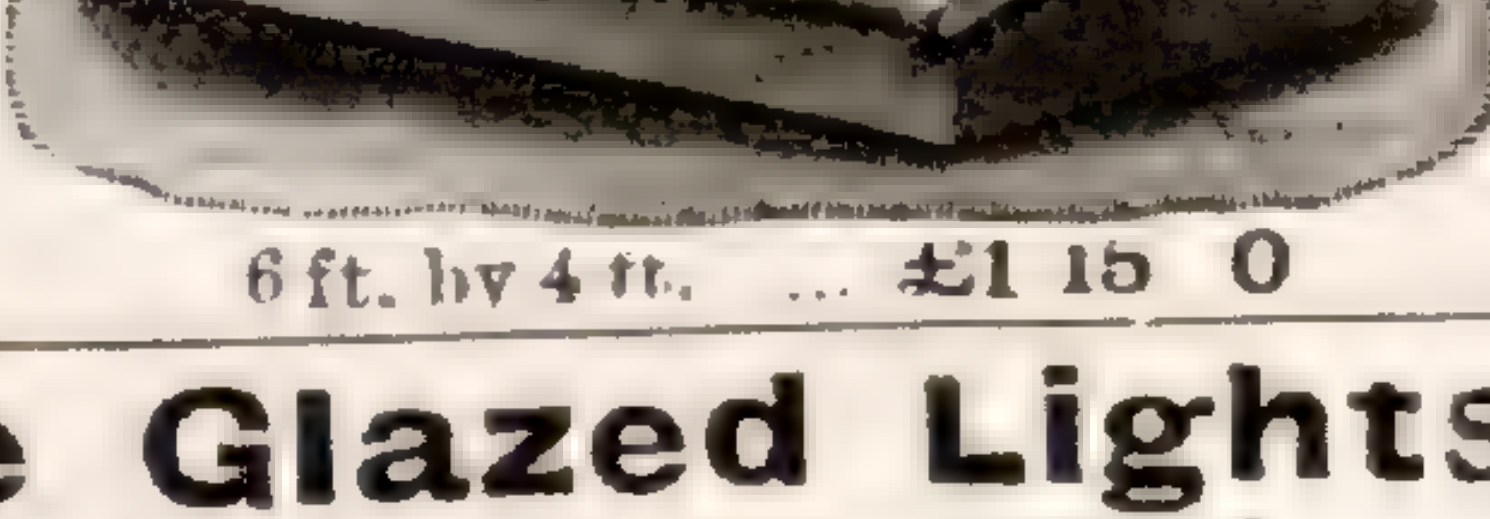

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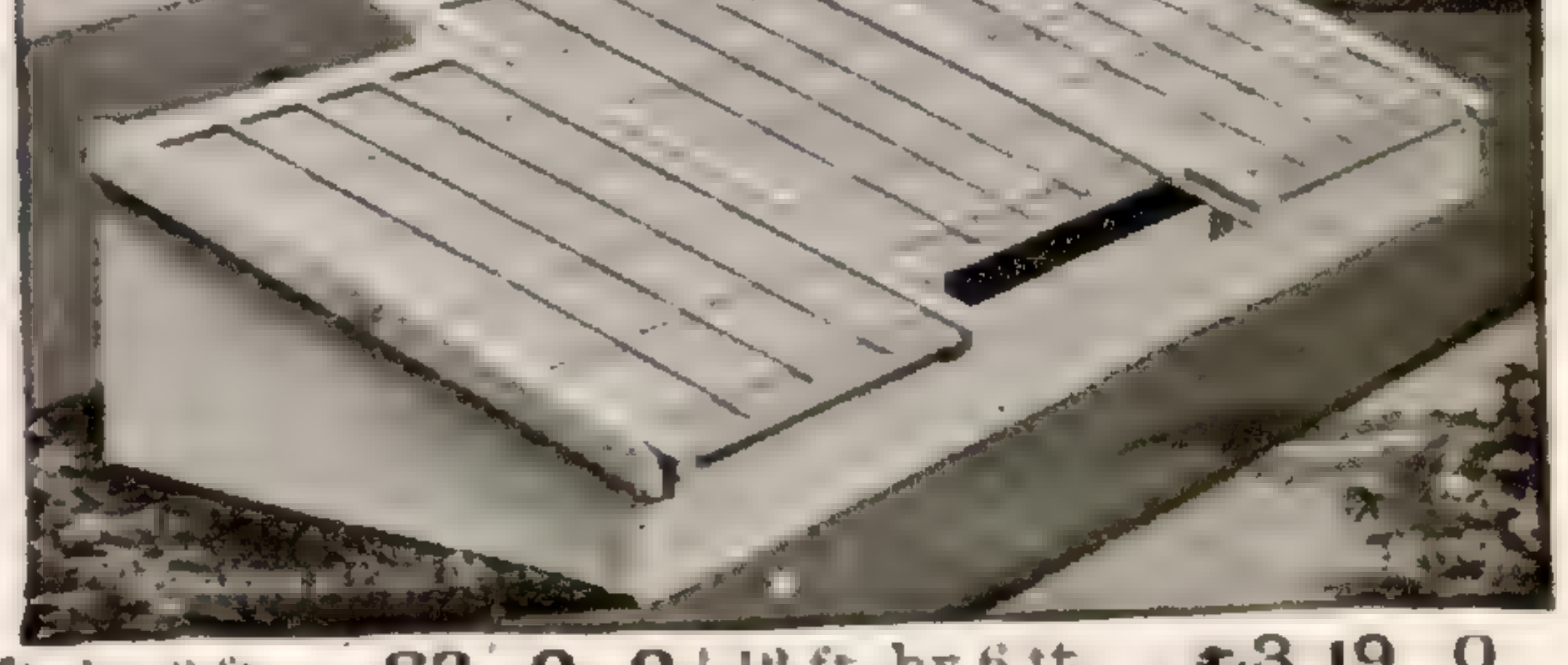

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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, trees, fruits, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Prior Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

GALLS ON RHODODENDRON LEAVES.—L. F., Newark: Please tell me the cause of the galls on enclosed rhododendron leaves, and cure, if possible.—The galls are due to the presence of a fungus named Exobasidium rhododendri, and all infested leaves should be at once removed and burned, so that they do not produce their spore-bearing organs and spread the disease.

DISEASED TOMATOES.—B. S., Devon: A number of my tomatoes have black patches on the fruits (specimens enclosed), and I shall be glad if you will tell me how to stop the trouble.—The black patches are ample evidence of Black Rot (Macrosporium tomato), a disease that is fairly common in tomatoes. A moist, stagnant atmosphere always encourages fungus troubles, hence great care should be taken with watering and ventilation. It is said that the black rot disease is a wound parasite, and can only find entrance by means of wounds or cracks in the fruit. This, again, points to the need of more care than is frequently exercised in tying and training the plants. Remove and burn all affected fruits, and spray the plants with a potassium sulphide solution (1oz. to 2½ gallons of water) at intervals of about a week.

URSINEA PULCHRA.—L. C., Seaford: During the winter we received some seeds from South Africa, and were told that they came from a very pretty yellow-flowered annual. We treated the seeds as for half-hardy annuals, and have now a considerable batch just in bloom. I enclose a few blooms, which are very showy, the blackish zone setting off the yellow colouring finely. There is something familiar about the plants, but no one here can tell me the name. Perhaps you will help me.—The flowers are those of Ursinea pulchra, a South African species that is occasionally catalogued as Sphenogyne speciosa. It is a showy annual, best treated as half-hardy, and it is one that suggests great possibilities in the hands of some clever and patient grower. There is a form with wholly yellow flowers. Careful selection should make sturdier plants, and give variety in colour.

SEDUM SIEBOLDI.—D. R. P., Chelmsford: I enclose a small piece of a plant which I understand is Sedum Sieboldi. I have seen it cultivated as a pot plant, and should be glad if you will kindly give me some particulars concerning its management.—Sedum Sieboldi is a trailing Japanese species that is not quite hardy in all parts of the country, but is a capital greenhouse plant, and one especially suitable for cultivation in hanging baskets, or in pots for the decoration of bench margins. The specimen sent is S. Sieboldi variegatum, and this is more effective than the type, as it has a bright creamy blotch on each leaf, whereas in the type the leaves are wholly blue-green. S. Sieboldi has pink flowers, each petal with a green spot, and these appear about August. Early spring is a good time to divide and repot old plants; the soil should be sound loam, with some old mortar rubbish and sand. An ordinary greenhouse will suit the plant very well at such season, but before potting and after re-establishment a minimum temperature of 40 degrees will suffice if a light position is provided. In some districts Sedum Sieboldi and its variegated form are largely grown by cottagers, who suspend their plants inside the front-room window throughout the winter, and hang them over the doorway or window, outside, during the summer.

LARGEST-BERRIED WHITE GRAPE.—M. M., Worthing: Will you please tell me which is the largest-berried white grape?—Duke of Buccleuch is regarded as the largest-berried white grape in cultivation. When well grown the berries are of wonderful size, and, as they seldom have more than two seeds, their useful content is large. This variety was raised by Mr. Wm. Thomson, when at Dalkeith, and gained a first-class certificate from the Royal Horticultural Society in 1872.

HARDY FLOWER BORDER. — A. S., Chelsfield: What would you suggest to make an effective border 5ft. wide and 20ft. long, backed by a creeper-covered wall? I have been using antirrhinums, mallows, ageratums, and stocks. The border has a box edging.—In the early autumn clear the border, and trench the ground, working in plenty of well-decayed manure. As soon as the soil has settled plant a selection of Michaelmas daisies, delphiniums, and helianthuses towards the back, with erigerons, pyrethrums, varieties of Chrysanthemum maximum, heleniums, rudbeckias, achilleas, geums, etc., along the centre and towards the front. Leave room for a few antirrhinums, and early-flowering chrysanthemums, coreopsis, and gaillardias, to be planted in the spring. Two or three pillar roses might be added; while, in flowing groups along the front, pinks and violas should be provided, as these flower so freely. This is a mere outline of what you could do. Bulbs should be planted for spring effects among the other subjects. We suggest that you pay special attention to our numerous articles on hardy plants; look round gardens and flower shows in your neighbourhood, and make notes of plants that appeal to you, and then, later on, write us again, and we will be pleased to give you all the help we can.

### NAMES OF PLANTS.

L. C., Seaford.—Ursinea pulchra.

A. S., Chelsfield.—A poor specimen, probably Chelone Lyoni.

F. F., Upminster.—1, Geranium armenum; 2, Lychnis alpina; 3, Phlox ovata.

G. W. P., Bromborough.—1, Thalictrum odoratum; 2, Campanula glomerata; 3, Coronilla iberica.

W. K. H., Wivelsfield.—Campanula garganica; 2, Alyssum argenteum; 3, Lychnis chalcedonica; 4, Silene saxifraga.

S. B., Church Stretton.—1, Gypsophila prostrata; 2, Ligustrum chinense; 3, Achillea Clavennæ; 4, Campanula Van Houttei.

R. B., Bramshott. — 1, Deutzia crenata fl.-pl.; 2, Deutzia crenata; 3, Philadelphus Gordonianus; 4, Cistus ladaniferus; 5, Kalmia latifolia; 6, Spiræa confusa.

H. M., Wareham.—1, Kalmia latifolia; 2, Platystemon californicus; 3, Diplopappus chrysophyllus; 4, Silene maritima; 5, Hemerocallis fulva; 6, Allium Moly.

### GARDENING ENGAGEMENT.

Mr. E. Harriss, fruit foreman at the Royal Gardens, Windsor, has been appointed head gardener to Lady Wantage, Lockinge Park, Wantage, Berks, in succession to the late Mr. W. Fyfe.

**Primula obconica.**—With the improvement in the flowers of this now well-known and popular primula, it seems—at least, as far as my limited experience goes—that the leaves are less poisonous than was at one time the case; at all events, we do not hear as many complaints as we formerly used to. Personally, however much I handled them, I was never affected thereby. —K.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Flowers are abundant, and prices show a downward tendency notwithstanding a good demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 6 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 3 0 | | 6 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Coreopsis | per doz. bun. | 1 0 | | 1 6 |
| Cornflowers | per doz. bun. | 0 9 | | 1 6 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 6 0 | | 8 0 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 1 0 | | 2 0 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 3 0 | | 9 0 |
| Gypsophila | per doz. bun. | 3 0 | | 5 0 |
| Iris, English | per doz. bun. | 4 0 | | 5 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 6 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 6 | | 3 6 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 2 6 |
| Pæonies | per doz. bun. | 6 0 | | 10 0 |
| Pelargoniums | per doz. bun. | 4 0 | | 6 0 |
| Pinks | per doz. bun. | 1 6 | | 2 0 |
| Poppies | per doz. bun. | 1 0 | | 1 6 |
| Pyrethrums | per doz. bun. | 2 0 | | 3 0 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 3 0 | | 4 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Stocks | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas | per doz. bun. | 1 0 | | 3 0 |
| Tuberoses | per doz. | 0 4 | | 0 6 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

There is a good steady demand, and prices are fairly firm. Strawberries are a short supply.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, Australian | per box | 7 0 | 10 0 |
| Apricots | per box | 2 0 | 3 0 |
| Bananas | per bun. | 8 0 | 18 0 |
| Cherries | per ½-sieve | 3 0 | 8 0 |
| Currants, Black | per ½-bush. | 7 0 | 9 0 |
| ,, Red | per ½-bush. | 4 0 | 6 0 |
| Figs | per doz. | 2 0 | 6 0 |
| Gooseberries | per ½-bush. | 2 0 | 5 0 |
| Grapes, English | per lb. | 1 0 | 5 6 |
| ,, Almeria | per doz. lbs. | 6 0 | 8 0 |
| ,, Guernsey | per lb. | 1 0 | 2 0 |
| Greengages | per box | 1 6 | 2 6 |
| Lemons | per case | 15 0 | 20 0 |
| Melons | each | 0 6 | 2 0 |
| ,, Cantaloupe | each | 2 0 | 6 0 |
| Nectarines | per doz. | 1 6 | 10 0 |
| Raspberries | per doz. bun. | 4 0 | 6 0 |

### Vegetables.

Excellent supplies are on offer, and the demand is brisk for all kinds of produce.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| Asparagus | per bun. | 1 0 | | 10 0 |
| Aubergines | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey | per lb. | 0 6 | | 1 0 |
| Beet | per bush. | 1 6 | | 2 0 |
| Cabbage | per basket | 1 6 | | 2 0 |
| Carrots | per doz. bun. | 1 0 | | 3 0 |
| Cauliflowers | per doz. | 2 0 | | 4 0 |
| Cucumbers | per doz. | 1 6 | | 2 0 |
| Endive | per doz. | 1 6 | | 2 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per tally | 2 0 | | 3 0 |
| Marrows | per doz. | 2 0 | | 3 0 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |

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## FORTHCOMING ENGAGEMENTS.

MONDAY, July 8.—United Horticultural Benefit and Provident Society, Committee Meeting.

TUESDAY, July 9.—National Sweet Pea Society, at the Royal Horticultural Hall; two days.
National Rose Society, Royal Botanic Gardens, Regent's Park.
Wolverhampton Floral Fête; three days.

WEDNESDAY, July 10.—Bath Floral Fête; two days.
East Anglian Horticultural Club.
Sevenoaks Horticultural Society.
Formby Horticultural Society.
Torquay Sweet Pea Show.
Hereford Rose Show.
Elstree Horticultural Society.
Woodbridge Horticultural Society.
Hemel Hempstead Summer Show.
Walton-on-Thames Summer Show.

THURSDAY, July 11.—Helensburgh Rose Show.
Barnet Horticultural Society.
Ousecliffe Rose and Sweet Pea Show.
Newmarket Summer Show.
Eltham Summer Show.
Malvern Horticultural Society.
Potters Bar Summer Show.

FRIDAY, July 12.—North Lonsdale Rose and Sweet Pea Show, at Ulverston.
Manchester Rose Show at Old Trafford.

SATURDAY, July 13.—American Sweet Pea Society's Exhibition; two days.
Congleton Summer Show.
Edgware Horticultural Society.
Purley Summer Show.
Thornton Heath Summer Show.

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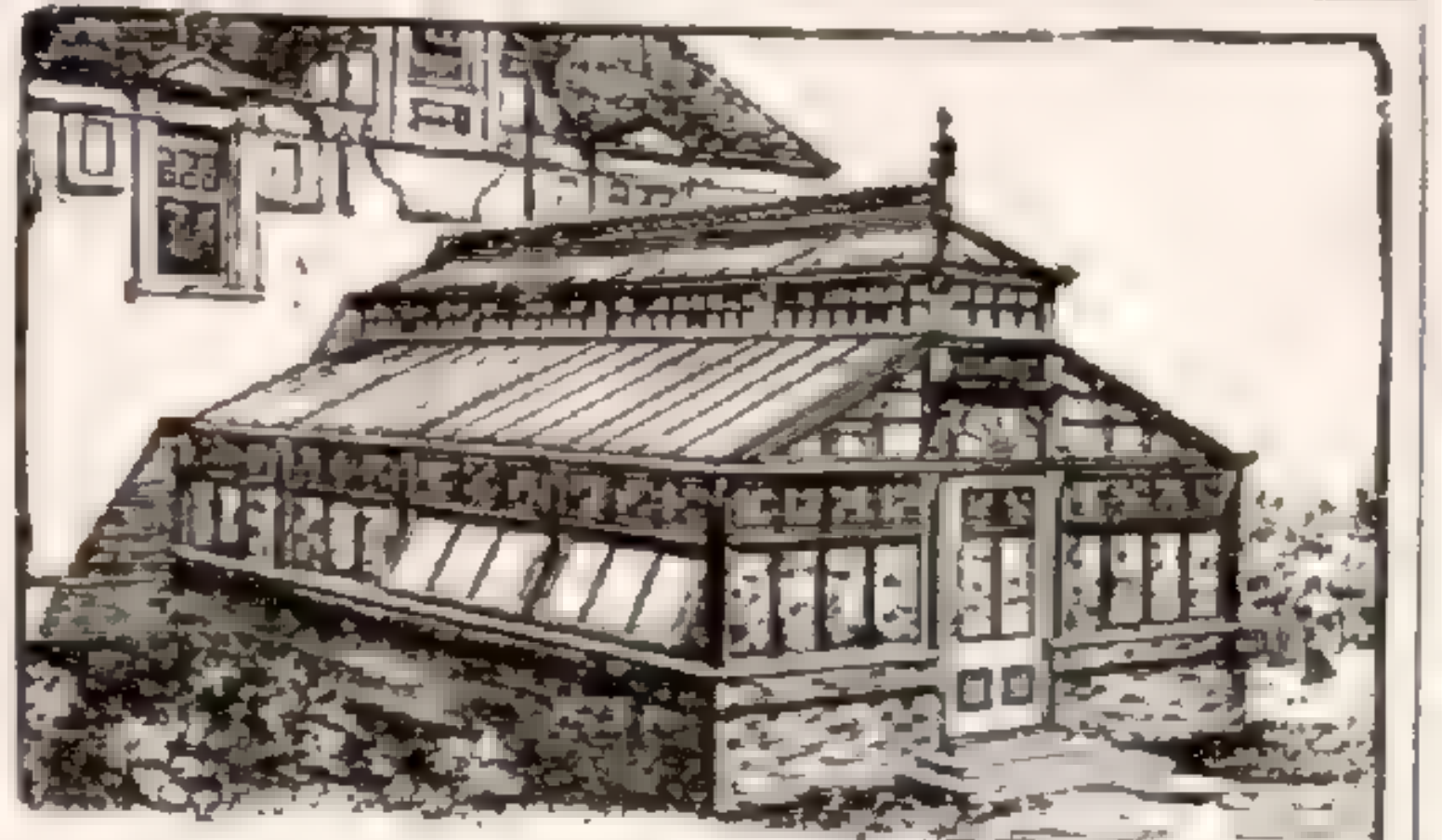

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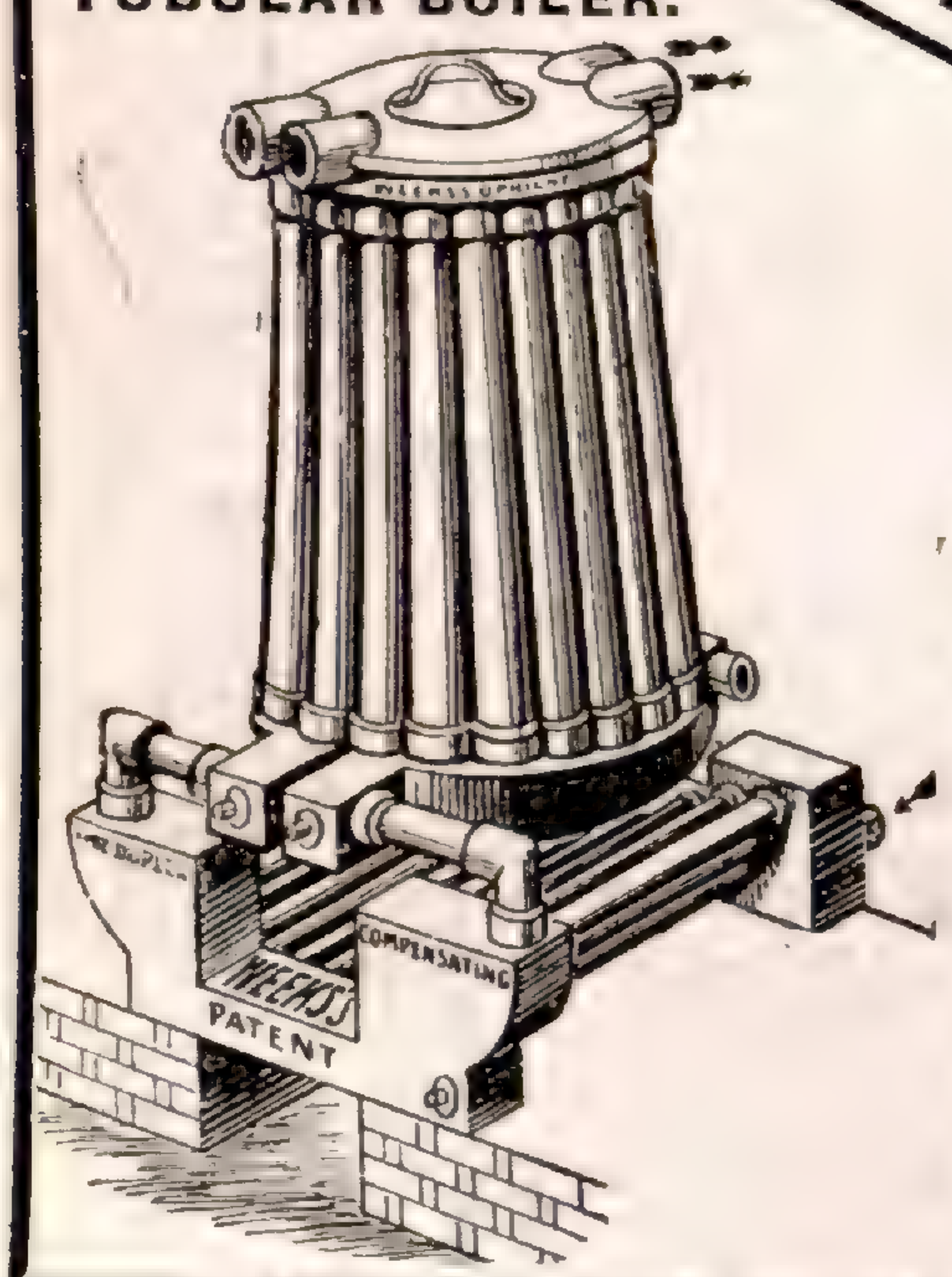

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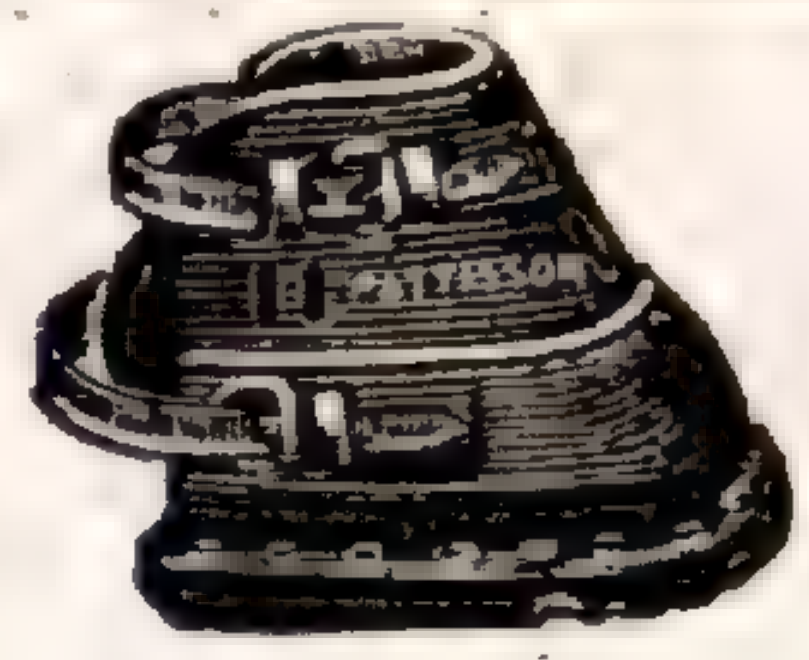

FIG. 2.

*Illustrated Price List from*—
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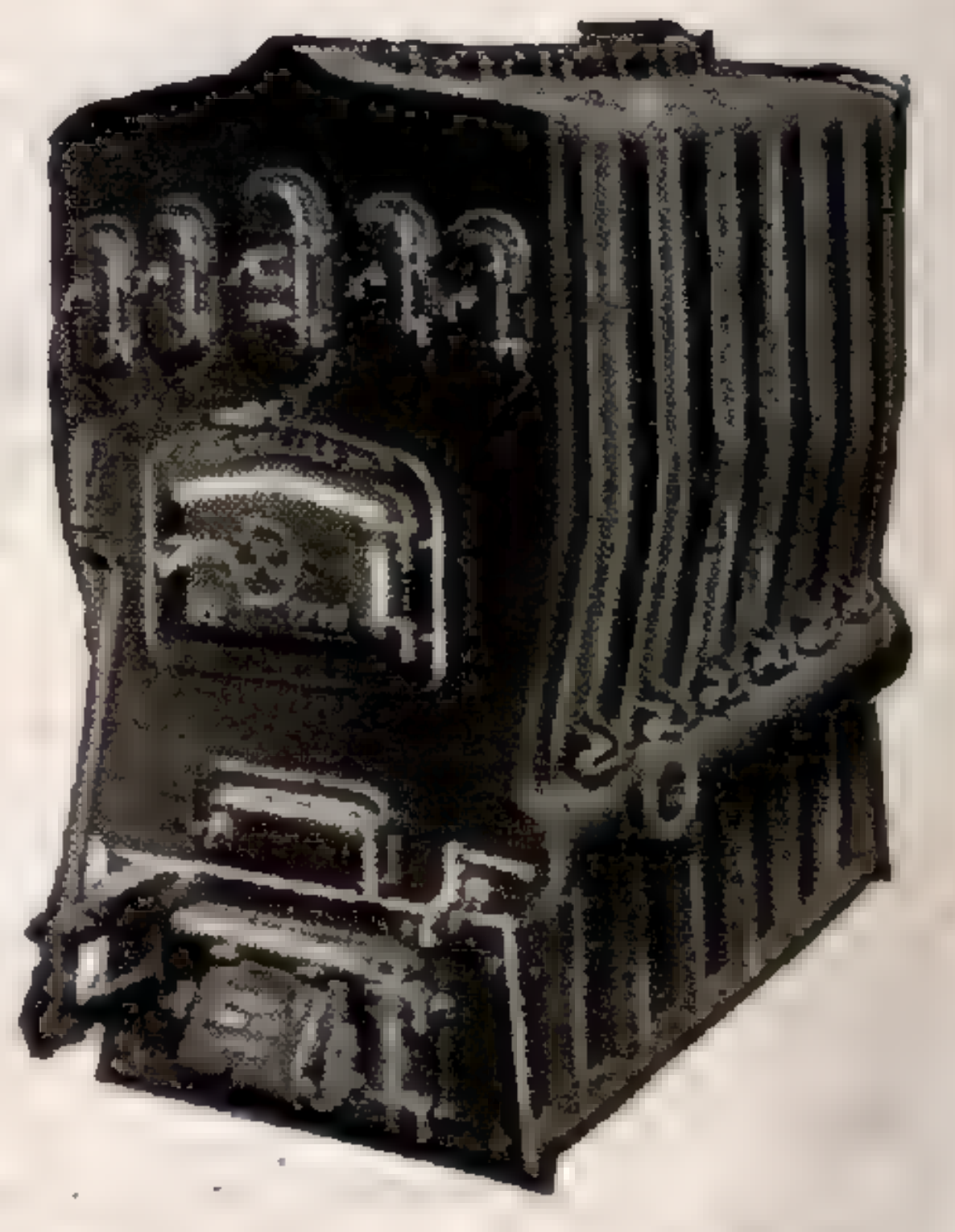

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# THE GARDENERS' MAGAZINE.

No. 3,063.
Vol. LV.
(Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)
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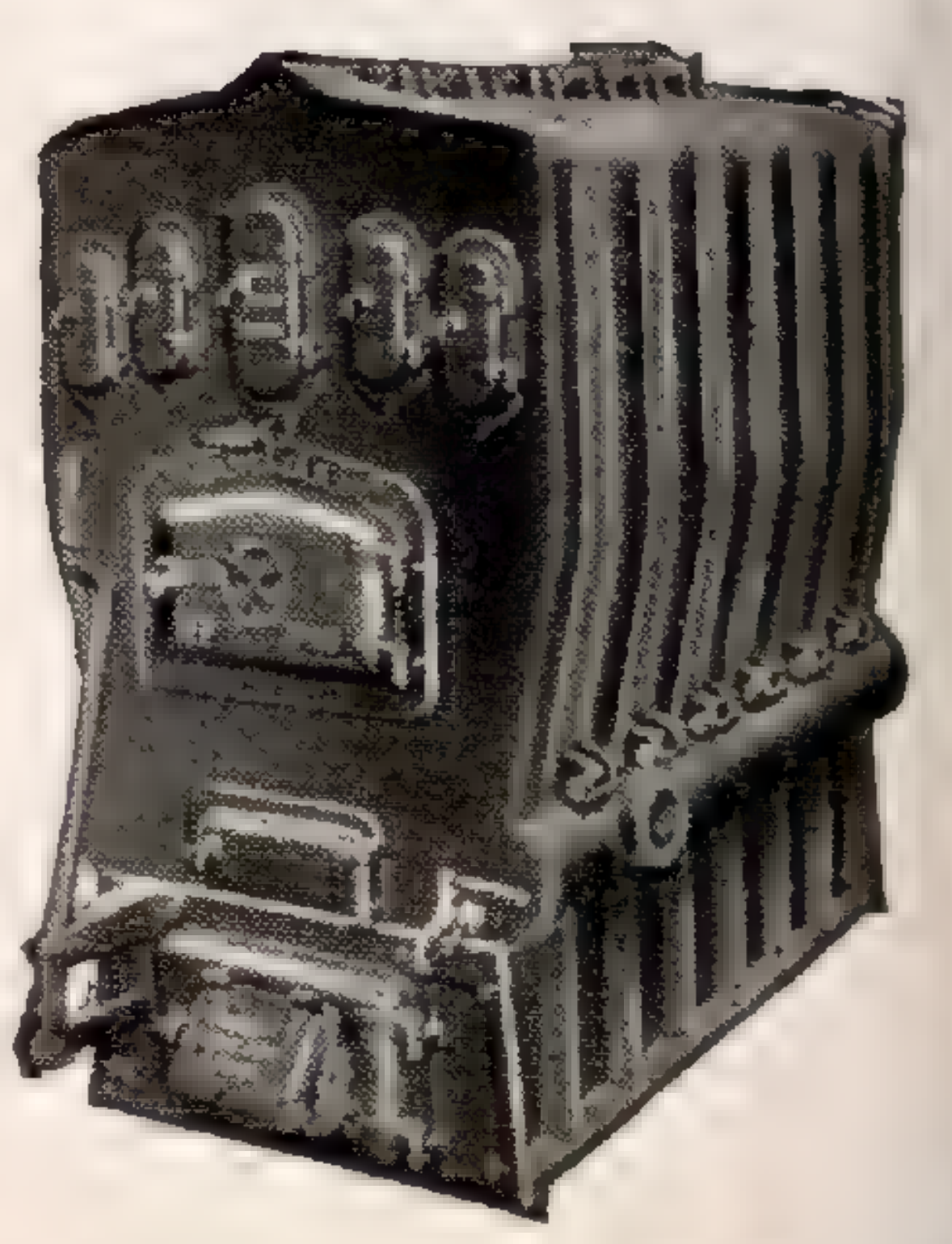

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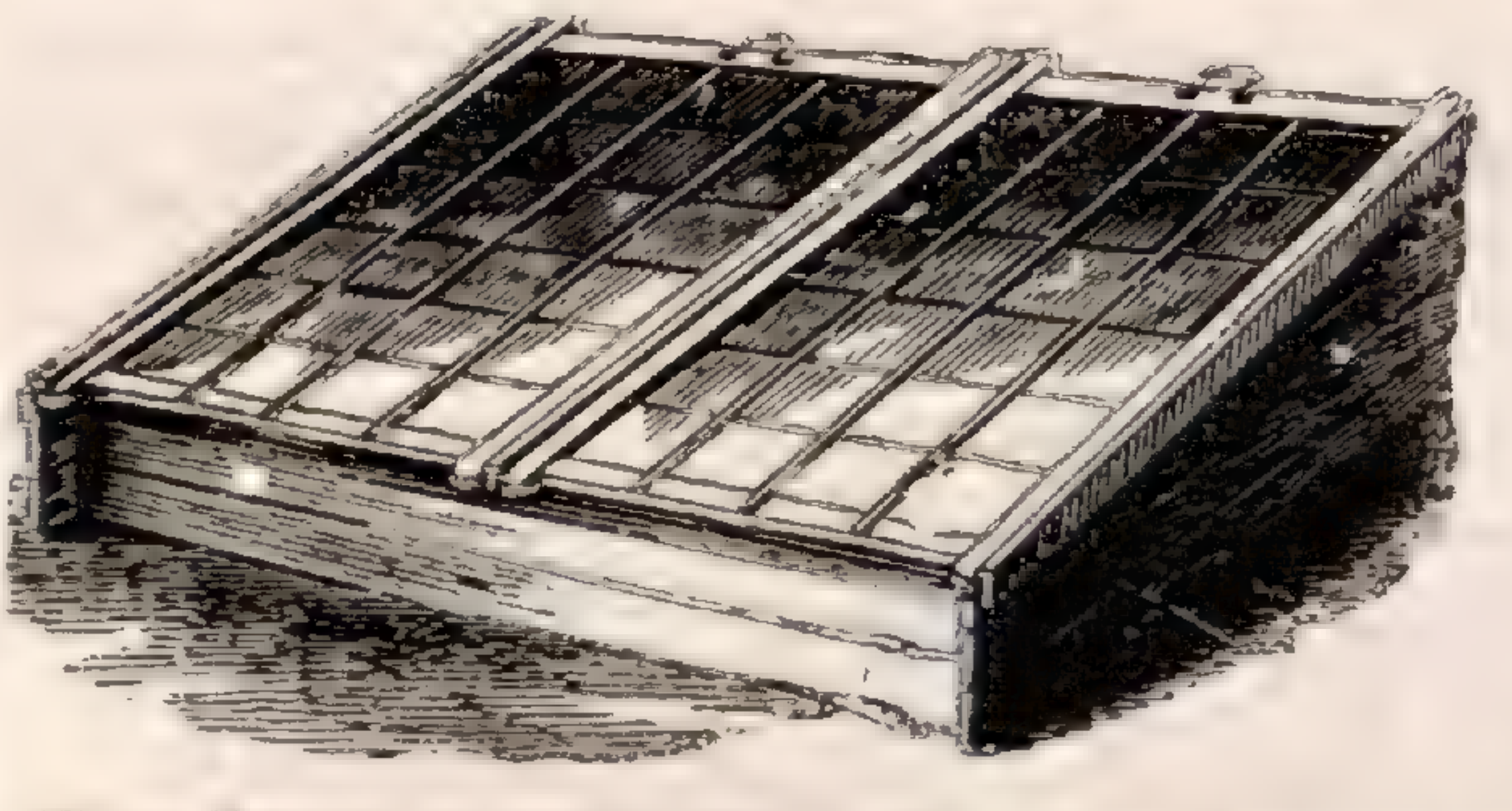

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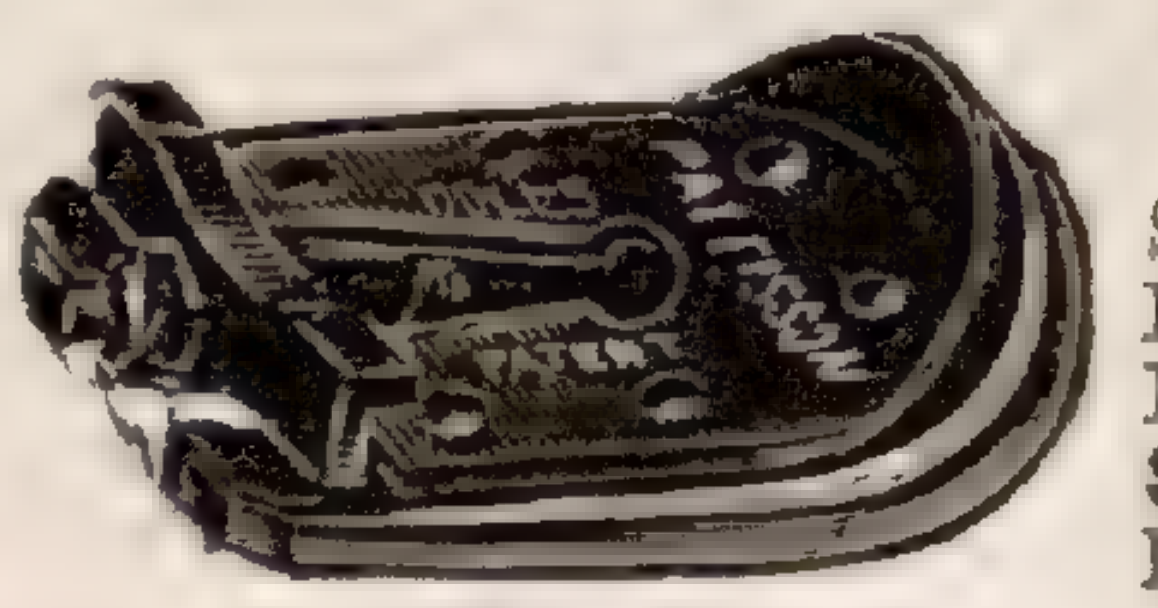

FIG. 1.

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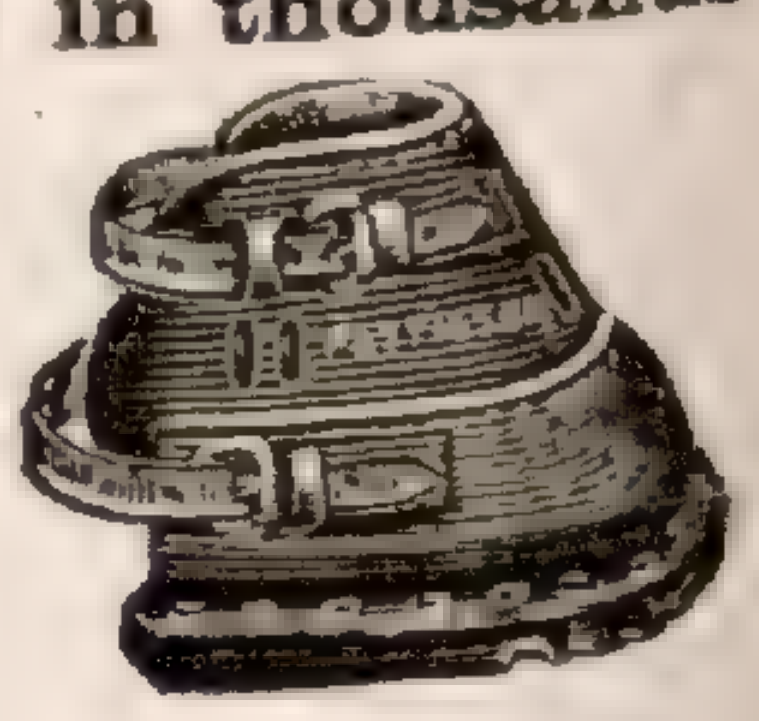

FIG. 2.

**H. PATTISSON & CO., 4, GREYHOUND LANE, STREATHAM, S.W.**

VOL. LV.—No. 3,063. SATURDAY, JULY 13, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Bedding Roses.

Chief among the more important of the many changes that have been made within recent years in connection with roses and their cultivation, are the general recognition of the great value of the dwarf-growing and continuous-flowering varieties for beautifying the flower garden throughout the summer, and the appreciation of the desirability of arranging them in beds and masses of one variety. It will be remembered by those who have taken an active interest in roses for any considerable period that it was long the practice to proceed on much the same lines in the purchase and planting of roses as were followed by those who gave attention to fruit growing. Until about a quarter of a century ago it was a quite common practice for those who were desirous of forming new fruit plantations, or adding to the fruit trees already established, to visit an exhibition of fruit, and select therefrom varieties that were remarkable for the attractive appearance of their fruits, and in some instances as many varieties were selected as the number of trees required. The result of this unfortunate practice was to fill the garden with fruit trees that varied much in productiveness and in the quality of their fruits, and the supplies suffered in consequence. In following the same lines the amateur rosarian visited the principal rose shows, and with pencil and note-book in hand, jotted down such of the roses that, by reason of their large size, shapely form, or beautiful colouring attracted his or her attention. The varieties were in due course purchased and planted, and, as shown by the results later on, the beds and borders were filled with roses of varying degrees of merit. Amateur rosarians are not wholly to blame for the mistakes that were made in the past, for writers on roses, both in books and periodic literature, devoted the greater proportion of their space to dealing with the details associated with the production of blooms for exhibition, and, with but few exceptions, appear to have failed to recognise the fact that some of the beautiful varieties which were essential to those desirous of obtaining honours at the exhibitions were not sufficiently vigorous in growth to be of value for garden decoration. This was one weak point in the old practice, which happily has given way to the new, and another point certainly not free from weakness was the planting in the same beds a multiplicity of varieties evincing a wide divergence in habit. The diversities in habit, in the size and form of the flowers, and in the colours afforded by any considerable number of roses, possess so much interest to those who are keenly alive to the varied charms of the rose that it would not be difficult to defend the planting of large selections representative of the more important classes. No objection could well be raised to the planting of a large number of varieties for the purpose of studying their individual characteristics, provided they are not planted where they will form a prominent part of the decorative aspects of the garden. Arranged in a spacious border, or indeed in a series of beds in a remote part of the garden, they would, throughout the season, give an immense amount of pleasure to those who are so keenly interested in roses as to derive enjoyment from a study of the individualities of varieties. When, on the other hand, roses are intended for the production of colour effects in the flower garden, and especially those parts which, by reason of their contiguity to the residence are constantly under observation, such collections as these are wholly inadmissible. It is, indeed, essential that varieties should be selected that are neat in habit, free and continuous in flowering, and attractive in colour. In other words, those who would have their gardens beautiful with roses from early in June until the autumn is well advanced, must plant the varieties that are commonly known as bedding roses, and devote each bed to one variety. The best rose for bedding is one that is between eighteen and thirty inches in height, is free-branching, and blooms freely and continuously throughout the season. Some varieties, as in the case of Dupuy Jamain, are very attractive early in the season, but as the summer progresses they produce willow-like growths that rise above the blooms, and hide a considerable proportion of them from view. What is needed in bedding roses is not so much a mixture of flowers and foliage as an abundance of flowers rising to a fairly uniform height above the growths, and free from formalism as in the case of Caroline Testout, which still maintains a foremost position among bedding roses. There are many others that are of immense value, as for example, Augustine Guinoisseau, popularly known as the white La France; Comtesse du Cayla, a bright red China; Ecarlate, a semi-double variety with bright scarlet flowers; Gustave Grunerwald, a charming pink rose; Joseph Hill, salmon-pink, with copper-yellow centre; Lady Ashtown, deep pink, a specially fine variety for bedding that produces a glorious display of colour throughout the season; Madame Abel Chatenay, a rich rose-pink flower, so largely grown for the production of flowers for market; Madame Leon Pain, the flowers white, tinted with pink-fawn; Mrs. E. G. Hill, pale pink; Madame Jules Grolez, silvery-rose; Madame Ravary, yellow, with orange centre; Pharisaer, pale salmon; and Prince de Bulgarie, rose, suffused apricot. These comprise but a few of the good bedding roses, and they are mentioned here for the purpose of suggesting to those who are interested in this aspect of rose culture to study their habit, their flower production, and their colours during the season, a thorough acquaintance with them being of assistance in determining their adaptability to special positions, and also the merits of other varieties of promise for bedding purposes. Some of the newer varieties, with yellow and orange-tinted flowers, have promise of proving useful for bedding purposes, such as Rayon d'Or, James Coey, Lady Pirrie, Melody, and Mrs. C. E. Allen, and, giving quite new shades of colour in the bedding class, they should have a full share of attention. Last year the weather was so unfavourable to the full development of roses that a proper estimate could not be formed of the suitability of the newer forms for the production of continuous displays of flowers. It is only by limiting each bed to one variety that a tasteful and otherwise satisfactory effect can be obtained, and it will be in every way better to multiply the number and reduce the size of the beds than to have a few large beds and use a number of varieties in furnishing them. In the utilisation of roses for bedding purposes it is essential to success that the beds be prepared on generous lines previous to their being planted, and that the fertility of the soil be maintained by manurial applications annually. Even when this is done, the roses will not retain their full vigour for an indefinite period. Some varieties will grow freely, and bloom profusely for a longer period than others, and the cultivator should keep a close watch on the beds, and as soon as there are signs of deterioration, and not before, the old plants should be taken up, and the beds, after undergoing the necessary preparation, be replanted with young plants, early in November being the best time for effecting the change.

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**Roses by the Waterside.**—Those who are in any way interested in the question of beautifying the margin of water with roses should, as far as is practicable, visit the Royal Gardens, Kew, within the next few days, and see what has been accomplished there in this phase of decorative rose culture. The majority of our readers will have seen at some time or other the large lake between the principal museum and the palm-house, and they will remember that it has a stone balustrade on the south, north, and western sides. On the northern and southern sides there is an expanse of turf and alongside the balustrade a narrow border was formed a few years since, and planted with Dorothy Perkins and Lady Gay, the first-named being on the northern and the other on the southern side. In both cases the growth is trained over the balustrade, and the effect produced is most attractive throughout the season of growth, for the elegant sprays of glossy green leaves present a very pleasing contrast to the grey-white stone-work. Had the roses no other attraction than the glistening green leafage their use in this manner would be amply justified. But when, as is at present the case, the leaves form a setting to some tens of thousands of bloom, the effect is startling in its great beauty. Two years since the display produced at Kew by the two ramblers mentioned was very fine, and we illustrated a portion of the rose-covered balaustrade on the northern side of the lake. In the summer of 1911 the great heat so seriously affected the colour and duration of the flowers that they were very pale, and soon lost their freshness and beauty. At the present time the flowers are abundant, of full size, and brilliant in colour, and may be expected to retain their freshness for a considerable period.

**Gardeners and National Insurance.**—We are glad to learn that the United Horticultural Benefit and Provident Society has been approved under the National Insurance Act, and at its monthly meeting on Monday, July 8, no fewer than eighty-two new members were elected. This is a great record for one meeting, and we hear that applications are coming in so fast that the committee proposes to meet once a fortnight for a short time to come. Our reference to this splendid society, in the issue of June 29, has, we are pleased to learn, helped materially to swell the number of applications for membership.

**Presentation to Mr. J. Gurney Fowler.**—On Friday evening, the 5th inst., the directors of the Royal International Horticultural Exhibition celebrated the completion of the most important of their duties by dining together at the Hotel Cecil, with the president, the Duke of Portland, in the chair. The after-dinner proceedings were of an informal character, the only toasts being "The King" and "The Directors." In the course of the proceedings, the Duke of Portland, on behalf of the directors, presented Mr. J. Gurney Fowler, chairman of the board, with a handsome silver cigar-box. In making the presentation, he said that the directors so highly appreciated both the ability and the courtesy shown by Mr. Gurney Fowler in the discharge of the arduous duties associated with the important position he occupies, that they felt they should like to ask his acceptance of some token of their esteem that would remind him of their pleasant association during the long period over which the preparatory work of the exhibition extended. The silver cigar-box that was presented to Mr. Gurney Fowler is remarkable for its handsome design, and is large enough to hold three or more boxes of cigars.

**Lancashire Experimental Station.**—A few days since the members of the Preston Gardeners' Association, to the number of about sixty, visited the horticultural experimental station, which has recently been established at Hulton by the Lancashire County Council. Mr. A. G. Sowman, the horticultural instructor for the county, met the members and conducted them over the station, and explained the experiments that are being made. He was so successful as a guide that the visitors were so interested in the work that is being done that they expressed a wish that they might have an opportunity of seeing the plots when the work has reached a more advanced stage. At the close of the inspection Mr. Philip Park, the vice-chairman of the Lancashire County Council, expressed the pleasure he had in meeting so representative a body of practical horticulturists, and hoped they had been interested in what is being done at Hulton. The work that had been undertaken was in its infancy; its object was purely educational, and the committee would be ready to give full consideration to any suggestions the members of the society may make at any time. Votes of thanks were accorded the committee and the staff, and the members returned homewards fully satisfied with what they had seen at the experimental station.

**Excursion of the Horticultural Club.**—The annual excursion of this club has been arranged for Thursday, July 18, when Burnham Beeches, Cliveden, and East Burnham Park will be visited. The members and their friends will meet at Paddington Station, G.W.R., and proceed by the 10.40 a.m. train to Slough, whence the party will proceed by the conveyances waiting in readiness to Burnham Beeches, calling on the way at Stoke Poges church. After luncheon the party will drive to Cliveden, the residence of W. W. Astor, Esq., and make a tour of the gardens. The members will then proceed to East Burnham Park, where they will be entertained at tea by Sir Harry and Lady Veitch.

**Presentation at Holland Park.**—In our issue of the 6th inst. we recorded the fact that exhibition cups were, on the first day of the Holland Park Show, presented by Mr. J. Gurney Fowler on behalf of the exhibitors at the Royal International Horticultural Exhibition, to Mr. E. White, Mr. G. T. Henslow, and Mr. S. T. Wright. We now wish to say that Mr. White was also presented with a handsome rose bowl for Mrs. White. Purses of gold were presented to Mr. Henslow, and Mr. Henslow only. It is much to be regretted that those who had charge of this matter did not take the trouble to notify the time of the presentation that we might have arranged for a representative to be present.

**Pentstemons and Phloxes.**—Prominent among the many attractive features at the recent exhibition held by the Royal Horticultural Society at Holland Park, was the large and finely-grown collection of herbaceous phloxes and pentstemons contributed by Messrs. J. Forbes, Lim., of Hawick. Additional interest was given to this exhibit from the fact that the firm has for a long period devoted much attention to the improvement of these beautiful classes of flowers, and introduced a considerable number of varieties possessing much merit. The collection included many of the fine pentstemons of Messrs. Forbes' introduction, and the visitors had an opportunity of seeing these beautiful border flowers at their best. With the finest of the florist's varieties of these flowers were several of the elegant "Gem" pentstemons, which have within recent years attained to a high degree of popularity, both for bedding purposes and for contributing to the attraction of the mixed border.

**"Botanical Magazine."** — The plants figured in the issue of this publication for the current month comprise Agave marmorata, a handsome species collected by Rozel in the Province of Tehuacan, Mexico, and comparatively rare in gardens. Erica ciliaris is a beautiful species indigenous to this and some other countries, and in Portugal there is besides the ordinary form, one that is far superior to it for garden planting. This fine geographical form was described in 1882 under the name of Erica Maweana, and of late years has been largely propagated and planted at Kew, where it produces a fine display of flowers from July to October. Styrax Wilsoni, a compact-growing shrub, bearing rather small white flowers, which was discovered by Mr. E. H. Wilson when collecting for the Arnold Arboretum in 1908; Cotyledon subrigida, a distinct and handsome succulent, bearing large flowers, with orange-tinted corolla, and Pseuderanthemum lilacinum, a handsome stove plant, producing spikes of lilac-coloured flowers, and rather closely related to Eranthemum Teijsmanni, under which name it was received at Kew from the Singapore Botanic Garden three years since.

**Mr. and Mrs. Orpen** have exhibited at the metropolitan exhibitions of the National Rose Society for so long a period without a break that their absence from the society's exhibition on Tuesday gave rise to many enquiries from the rosarians present. Their absence was not in any way due to any decrease in their interest in roses, but we regret to say that Mr. Orpen has during the past two months been suffering from a nervous breakdown. He is now much better, and, in common with ourselves, his many friends will be glad to hear of his speedy restoration to health.

**Flower Show in a City Bank.** To encourage the married members of their staff to cultivate beautiful flowers at home, the directors and manager of the British Linen Bank have assisted in the institution of an annual flower show, and this is held at the offices of the bank, 38, Threadneedle Street, E.C. The second exhibition was held on Saturday afternoon last, and all the members of the staff, with wives and children, were present to see who were the most successful competitors. Exhibitors are usually cleared out of the hall or tent when horticultural exhibits are being judged, but on this occasion the judge performed his duties under the keen eyes of the whole staff. The chief classes were for six roses, a vase of roses, a vase of garden flowers, a vase of sweet peas, six bunches of sweet peas, and six varieties of violas. The flowers were well shown, and did great credit to the cultivators. Mr. Andrew Kingsmill, of Harrow, has taken a great interest in this bank flower show, and it would be a capital thing if other bank officials would foster an interest in gardening on similar lines.

**Regulations Relating to the Importation of Plants.**—The summary of the regulations relating to the importation of plants, weeds, insects, etc., from Great Britain into certain other countries that has been issued by the Board of Agriculture, should prove of much use to nurserymen and seedsmen who have business transactions with the colonies and foreign countries. This publication is intended for the use of nurserymen and others in Great Britain who wish to export vegetable produce, and only those regulations have, as a rule, been printed which affect importation from this country. As, however, those clauses would often be unintelligible by themselves in many cases, much matter has been printed which is not directly relevant to the subject, but which appears to be necessary for the context. In order to guide readers as to the nature of the regulations, and to help in a comparison between the laws of different countries, a brief abstract has been added under the name of each country describing very shortly which plants are refused admission, which are accepted, and under what conditions. The reader should, however, always consult the text for details, as the abstract is not intended to be exhaustive, and only gives a general indication of the nature of the regulations and the more important plants affected. The summary, which extends over upwards of 100 pages, has been prepared from authoritative sources, and is published at one penny.

# NATIONAL ROSE SOCIETY'S EXHIBITION.

## JULY 9.

Although the season of roses is this year exceptionally early, and the date of the National Rose Society's Metropolitan show later than usual, the exhibition which drew many thousands of rose lovers to the gardens of the Royal Botanic Society on Tuesday was one of the most successful of the gatherings the society has held in London. The society had not, on this occasion, the advantage of the huge ballroom that was available last year, but several huge tents were provided for the accommodation of the roses, all of which were in competition, and every foot of staging space was fully occupied. There were no vacant spaces either from the cold wet weather as in some previous years that will be readily called to mind, or from excessive heat and brilliant sunshine, as was the case at the corresponding exhibition of last year. All the space provided was fully utilised for the accommodation of roses possessing more or less merit.

There was a strong competition in the classes in which the premier award included a challenge trophy or cup, and in the leading class open to nurserymen the competition was of the keenest, and the challenge trophy was carried off with one of the finest collections of which we have recollection, the blooms being equally remarkable for their size, form, and colour. There was a manifest improvement in the nurserymen's classes for representative collections of roses, and the contributions to the several classes filled one end and the side of the largest of the marquees and produced the finest display of its class that has yet been seen in this or any other part of the world. Goodly numbers of large blooms were to be met with in a critical inspection of the roses, but the majority were, as a whole, more remarkable for fine form and perfect development of their colours than for exceptional size. The crimsons were remarkable for their intensity, the reds for their brightness, the pinks and rose shades for their freshness and clearness, and the yellows for their richness. Rosarians have before now had opportunities for seeing excellent blooms of the Lyon Rose and Juliet, but on no occasion has there been so good a display of these two roses as on this occasion. Rayon d'Or, Lady Hillingdon, and other of the yellow and orange-tinted roses that have been introduced within recent years were finely shown, and formed a distinct and pleasing contrast to the shades of red, rose, and pink, in which the rose garden is so rich.

Table decorations and other arrangements of roses were plentiful and good, and, as in former years, formed a distinct and delightful feature, and received a full share of attention from the visitors. A goodly number of new roses were submitted for awards, and among them were several that, by reason of their large size and perfection of form or for rich and distinct shades of colour, promise to attain to a high degree of popularity. Especially noteworthy among these were Messrs. J. Cocker and Son's Mrs. Andrew Carnegie, which might be described as a lemon-coloured Frau Karl Druschki; Messrs. McGredy's Old Gold, the most richly-coloured of all the yellow and orange roses; and Messrs. Alex. Dickson and Sons' Queen Mary, which may be regarded as a veritable triumph in colour development in the rose.

The exhibition was in the forenoon visited by Queen Alexandra, who was received by Miss Willmott, the Rev. J. H. Pemberton, the president, Mr. E. Mawley, V.M.H., and several members of Council, and under their guidance devoted an hour or more to the inspection of the several sections of the exhibition.

### NURSERYMEN.

### DIVISION A.

The Nurserymen's champion class for seventy-two blooms, distinct varieties, is always an attractive one, and on this occasion there were five entries for the challenge trophy and gold medal. The successful winners were Messrs. Alex. Dickson and Son, Lim., Newtownards, who staged in magnificent style. The boxes were very level, while the whole of the flowers were clean, fresh, and bright. Some of the finest blooms were those of Dr. O. Donel Browne, Chas. J. Grahame, Brilliant, Juliet, Mrs. Cornwallis West, Mildred Grant, Leslie Holland, grand colour, Geo. C. Waud, Lyon Rose, H. V. Machin, Horace Vernet, Mrs. W. J. Grant, Duchess of Westminster, Mrs. E. Mawley, Mabel Drew, the deep crimson, George Dickson, in grand form, and Conway Jones. Messrs. R. Harkness and Co., Hitchin, came a capital second. Their best flowers were Ben Cant, Gladys Harkness, Ellen Drew, Edward Mawley, Lyon Rose, Madame Jules Gravereaux, Mildred Grant, Horace Vernet, Earl Dufferin, and Chas. Darwin. Messrs. D. Prior and Son, Colchester, were a close third, some of their best varieties being Mrs. W. J. Grant, Mrs. J. Laing, Chas. J. Grahame, J. B. Clark, Beauty of Waltham, Victor Hugo, and Bessie Brown. Messrs. B. R. Cant and Son, Colchester, were fourth.

H.T. ROSE MRS. ANDREW CARNEGIE.

Soft lemon-white. Gold Medal, N.R.S., July 9. Messrs. J. Cocker and Son, Aberdeen.

The class for forty trebles was a splendid one, the winner holding the challenge cup. This fell to Messrs. B. R. Cant and Sons, Colchester, who won in fine style. They staged large, clean flowers, with good leathery petals. The best varieties were Her Majesty, O. Terks, Cynthia, A. K. Williams, St. Helena, Lieut. Chaure, Pharisaer, Chas. J. Grahame, Lyon Rose, and Wm. Shean. Messrs. Alex. Dickson and Sons, Lim., were a good second, with some fine examples of Geo. C. Waud, Mrs. Foley Hobbs, Mabel Drew, Helen Keller, Horace Vernet, and Medea. Messrs. D. Prior and Sons, Colchester, were a capital third, the colours of the dark varieties being especially good.

### DIVISION B.

For forty-eight, distinct varieties, Mr. G. Prince won first prize, and secured the China Challenge Trophy with a very fine display. Perhaps the finest examples were Ethel Malcolm, Dean Hole, Mrs. David McKee, Leslie Holland, Edward Mawley, Juliet, Lady Ursula, Mrs. Amy Hammond, and White Maman Cochet. Messrs. G. and W. H. Burch, Peterborough, followed closely for second place with fine flowers of Mildred Grant, Mrs. T. Roosevelt, Molly Sharman Crawford, Mrs. Armitage Moore, Alice Lindsell. Mr. F. Woollard, Lewes Road, Brighton, was a good third.

### TEAS AND NOISETTES.

The D'Ombrain Cup was offered in the class for twenty-four distinct varieties, and there were three entrants. Mr. G. Prince, Longworth, was placed first with a nice level box, the finest examples being Molly Sharman Crawford, Mrs. Ed. Mawley, Maman Cochet, White Maman Cochet, Mdme. Cusin, and Mdme. Vermoral. Messrs. D. Prior and Son, Colchester, were second, with smaller flowers; while Mr. John Pigg, Royston, was placed third, with blooms that were clean and bright.

H.T. ROSE OLD GOLD.

Old gold and copper-red. Gold Medal, N.R.S., July 9. Messrs. McGredy and Sons, Portadown.

In the class for twelve the competition was keen, there being no less than eight entries. Messrs. Burrell and Co., Cambridge, won first prize with a beautiful board. The most prominent flowers were Muriel Grahame, Mrs. Miles Kennedy, Catherine Mermet, Comtesse de Nadaillac, and Mrs. Dudley Cross. Mr. J. Mattock was second with fine examples of Mrs. E. Mawley, Mdme. C. Soupert, Harry Kirk, and W. R. Smith. Mr. W. R. Chaplin, Waltham Cross, was a good third.

In the class for sixteen trebles, teas and noisettes, there were three competitors, the first prize falling to Mr. Geo. Prince, who had a beautiful exhibit. Conspicuous were Molly Sharman Crawford, Mdme. C. Soupert, Marechal Niel, Comtesse de Nadaillac, Mrs. E. Mawley, Souvenir de Pierre Notting, and Mdme. Jules Gravereaux. Mr. H. Drew, Longworth, was second, with Maman Cochet, White Maman Cochet, Muriel Grahame, and Mrs. E. Mawley as his best flowers; while Messrs. W. Crisp and Sons, Fordham Heath, were third.

### ROSES IN VASES.

For twelve vases of teas or noisettes, to include not more than six blooms, there was a good entry. Messrs. Alex. Dickson and Sons, Lim., won first prize for handsome blooms, which were well staged. The best were Duchess of Westminster, Lyon Rose, A. K. Williams, Earl of Warwick, Gloire de Chedane Guinnesseau, and Mrs. E. Mawley. Messrs. D. Prior and Sons, Colchester, were a capital second, showing fine Avoca, Richmond, and Mrs. T. Roosevelt. The King's Acre Nurseries, Lim., were third, with blooms of much merit. In a smaller class for nine vases, seven blooms each, there were three entries. Mr. G. Prince lead off with fine fresh examples of White Maman Cochet, Molly Sharman Crawford, Mrs. E. Mawley, and Madame C. Soupert. Mr. H. Drew was second and Mr. J. Mattock third, both having excellent exhibits.

### DECORATIVE ROSES.

The President's prize was offered for nine baskets of roses, distinct varieties. These basket classes certainly formed one of the finest features of the show. The entries in this particular class occupied nearly the whole side of a tent. Mr. W. Easlea, Danecroft Nursery, Eastcroft, won the premier award with some glorious baskets, which included Joseph Hill, Mrs. A. Tate, Prince de Bulgarie, Madame A. Chatenay, and Marquise de Sinety. Messrs. Hugh Dickson, Lim., Belfast, followed closely for second place with excellent baskets of blooms that were particularly good in colour. Mr. J. Mattock was placed third. There were eight competitors. While for five baskets there were six entries, Mr. W. R. Chaplin winning with superb baskets of Harry Kirk, Lyon Rose, good in colour, Betty, Pharisaer, and Madame A. Chatenay. The second award went to Messrs. W. Spooner and Son, Woking. Mr. E. J. Hicks, Hurst, was third with capital baskets.

The class for eighteen vases of seven sprays each was well filled, the entries being numerous, and the quality high. Mr. J. Pigg secured the first prize with a bright collection of flowers, but they were unnamed. Mr. J. Mattock was second, having some capital decorative vases, which included Mrs. Massey, Gottfried Keller, Trier, La Tosca, and Lady Waterloo, while Messrs. W. Spooner and Son were third.

For nine vases Mr. E. J. Hicks led off with fine examples of Ecarlate, Lyon Rose, Richmond, Harry Kirk, and Countess of Gosford. Mr. Will Taylor, Hampton, came second, having Madame Ravary, Edu Meyer, and Madame P. Ducher in good form. Messrs. H. Lane and Son, Berkhampstead, were third. In the class for sixteen varieties, staged in the regulation boxes in vertical lines we had another keen competition. The first prize went to Mr. W. R. Chaplin, who had a very bright exhibit. Some of the best were Duchess of Wellington, Mrs. A. Tate, Countess of Derby, Liberty, Lyon, and Lady Hillingdon. Mr. E. J. Hicks was second, having Rayon d'Or, Lyon Rose, and Harry Kirk good. Mr. J. Mattock was third.

### DECORATIVE ROSES, GENERAL.

The Turner Challenge Cup for thirty-six varieties, not over twelve trusses of each variety, produced a glorious display. Messrs. F. Cant and Co., Colchester, secured the

(Continued on page 544.)

## FOXGLOVES.

These handsome flowers are among the most effective hardy perennials for naturalising on the outskirts of shrubberies, in rhododendron beds, or in various places in the wild garden. If planted in large masses they form especially picturesque objects during the early months of summer, and in a number of cases they seed freely, and many plants spring up year after year. They are not at all particular as regards position and cultural management, as they succeed well in full sunshine or in partial shade, and self-sown seedlings flourish on uncultivated ground almost as vigorously as those growing in prepared borders. Foxgloves can be obtained in a variety of colours, including white, cream, rose, red, purple, and other shades. One of their greatest charms, however, lies in their throat markings, the spots and blotches of deep purple and maroon rendering them very beautiful. It is well to sow seeds in a cold frame early in the summer, and afterwards to transplant them to their permanent quarters. Many of the cultivated forms obtainable are very charming, and some lovely colours can be had from a packet of seed. After the main flower-spike has done flowering, it should be cut off, as this will encourage the side shoots to make more growth and produce a good display of bloom later on. J. Gardner.

AN ARRANGEMENT OF FOXGLOVES AND IRIS IN THE GRASS AT BATSFORD PARK.

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**Cereus flagelliformis.** — In a window of a local dairy there is a fine plant of this old-fashioned rat's-tail cactus, which is growing in a suspended pot. The branches hang down for a considerable distance, and are studded with beautiful rose-coloured blossoms. This used to be a favourite plant in cottager's windows, but I do not think it is met with as much now as formerly.—S. W.

## WHITETHORN, OR QUICK, FOR HEDGES.

On page 499, date, June 20, "E. M." asks for information respecting my advocacy for planting thorn hedges in double lines in preference to one single line of plants. My explanation of this is that, when planted in double lines, and the plants placed alternately with each other, more can, without undue crowding, be inserted within a given length or space; furthermore, should any fail to grow the vacancy thus created is less noticeable than would probably be the case where the single row system is practised. Secondly, and this is most important, with a double line of plants it is obvious that a broader base for the future hedge prevails from the start, and, providing the after-treatment is carried out timeously and judiciously, I can see no reason why the plants should not retain their lowermost shoots equally as well as others placed in single line. That a single line of plants, under proper after-treatment, could be made to answer every purpose, and eventually form a dense and, for larger animals, an impenetrable barrier, I entertain no doubt. On this estate, both systems have long been practised, and other things being equal, there is but a very slight margin for choice between them.

"E. M." admits that a hedge can be formed more quickly by means of double lines of plants. This, I consider, the best argument in favour of the system, as rapidity in arriving at a serviceable state is, in this case, of very great importance. I may state that my experience and remarks relate principally to results in Scotland, where climatic and soil conditions may not be so conducive to growth and rigidity as is the case in the sunny south. Here, eight years, as a rule, must necessarily elapse from the time of planting a thorn hedge to that when it may be relied on as an effective barrier to cattle without any extraneous aids. The latter usually take the form of post and wire, or post and bar erections, which, for the division of agricultural land, must be erected on both sides of the young hedge. Guards of this sort, made with uncreosoted material, remain fairly strong and sound for the time specified, but if required longer repairs are generally necessary. If by double line planting a year is gained in the growth, and more particularly in the impregnability of the hedge, whereby post and wire fences may be dispensed with while yet in fair order, thus avoiding secondary expense, it must be considered good economy in estate management, and also shows an advantage over the single row system of planting.

"E. M." concludes by referring to the common faults in the care of hedges in general, particularly that of allowing almost unrestricted growth in their earlier stages. With this I quite agree, and would endeavour to impress upon the mind and consideration of the person responsible the necessity of severely checking the progress of the upper growths until a substantial base is formed, after which freer extension may be allowed, until the requisite height and form is attained. Coupled with this may be given the equally important advice to keep the hedge-row clear of weeds and rank grasses for at least two seasons after planting. This is a matter which seems much neglected at the present time, but it is one which, if consistently carried out, exercises a great influence for good upon the stability and appearance of the hedge or hedges. James Day.

Garlieston, Scotland.

## IN THE DEESIDE WOODS.

(Concluded from page 511.)

### BALLOGIE WOODS.

Thursday's programme proved interesting, for on that day there was inspected Scots pines, which one and all declared they had not seen their equal. Before breakfast many of the visitors had a ramble around Banchory, one of the prettiest, and certainly the most popular, villages on Deeside. After breakfast a start was made for Ballogie Woods, owned by Mr. W. E. Nicol. At Ballnacraig the party were welcomed by Mr. George Wyllie, manager of the Ballogie estates. Attention was here drawn to a number of very fine ornamental trees, including a grand old ash of huge dimensions. Five feet from the ground it measured 15ft. 8in. in circumference. Potarch Woods were then visited, and a plantation of 200 acres, growing about 2,500 trees to the acre, was gone through. The former crop was of old Scots pine and larch cut out in blocks of 50 acres. Before planting this plantation a thin turf was removed for the purpose of giving the trees more vigour, and thus enabling them to resist the attack of pine weevil. This purpose has been evidently attained, for the trees showed excellent growth. Several other woods having been traversed, all showing capital growth, a halt was made at a very fine wood of Scots fir and larch, ninety years old. It grows 200 trees to the acre, and gives 4,000 cubic feet. It was much admired, and the opinion was unanimous that no better is to be found in this country. Altogether the impression made on the minds of the visitors concerning this part of the country was that the tree growth was splendid. Nearer to the mansion house of Ballogie some exceedingly fine conifers were viewed. Among those measured were: Abies nobilis, height 77ft., circumference 6ft. 11in.; A. nordmanniana, height 79ft. 6in., circumference 9ft.; A. lasiocarpa, height 74ft., circumference 5ft. 10in. Lunch was here served, after which the party proceeded by Ennochie, where the remarkable phenomenon of twin firs was seen. It was the subject of much discussion among the company, and there was a considerable difference of opinion.

### FINTZEAN WOODS.

At Powlair the party entered upon the estate of Fintzean, owned by the Right Hon. Robert Farquharson. Here they were met by Mr. F. J. Cochrane, of Balfour, factor for Dr. Farquharson, and Mr. George Donaldson, ground officer. These gentlemen led the way to Easter Clune, which stands on the south side of the river Feugh. This ancient estate of the Bishops of Aberdeen is 200 acres in extent, where grows natural larch about 40 years old. The trees are exceptionally well developed, and their number to the acre is perfect. A sample area measured brought out 1,800 cubic feet per acre. Were it sold at present it was considered the wood would command a considerable sum. The party now drew near to Fintzean House, a fine old mansion, part of which dates from 1686. Here the most interesting feature so far as forestry was concerned was the avenue of superb Scots pine, called in the district "Dr. Farquharson's walking-sticks," or "The Laird's walking-sticks." The trees are so closely grown that they show a clear bole of about 60 feet, the total number of cubic feet being far ahead of what is generally expected to be produced from ground under Scots pine. They extorted general admiration, one and all declaring that they had not seen anything to compare with them.

Tea was served at Fintzean, on the invitation of Dr. Farquharson, whose enforced absence was greatly regretted, and to whom the warmest thanks of the society Sir John Stirling-Maxwell asked Mr. Cochrane to convey for his kindness to them that afternoon. The cars were then re-entered just as heavy rain began to fall, and Banchory was soon reached.

### CRATHES CASTLE WOODS.

The weather on Friday, the concluding day of the excursion, broke rather dull and disagreeable, but, with the exception of one or two showers, the weather kept up wonderfully well. The day's programme opened with a visit to Messrs. A. and G. Paterson's sawmills, a short distance from Banchory, where Mr. Donald Munro, the chief partner, acted as guide. Keen interest was manifested in the various processes shown, especially in the number of squirrel-eaten boards which Mr. Munro had exhibited for examination. After partaking of Mr. Munro's hospitality, Mr. Elwes, in returning thanks, said he had never seen a better equipped sawmill, nor had he in all his excursions in England obtained so much practical information about the trees they grew as that given them by Mr. Munro.

Crathes Castle, the seat of Sir Thomas Burnett, Bart., of Leys, was the next halting place, and here the party was met by Mr. J. C. F. Dunbar, factor on the estate. Attention was first directed to some remarkably fine trees in the avenue, including specimens of Thuia gigantea, Cupressus Lawsoniana, cedars, and Douglas firs, all of which evoked much admiration. Great interest was shown in the close avenues of tall lime trees in splendid condition, and in the wonderful yew hedges, with arched passages through them. Ornamental turrets, formed of no fewer than five trees geometrically arranged, are placed at certain points. Those yew hedges were planted more than three centuries ago—in 1596, the date of the erection of the Castle. The gardens were next visited, and here the fine work of Mr. Andrew Petrie, head gardener, was greatly admired, all departments being found in capital order. The lakes, too, created much interest, and undoubtedly proved one of the best instances of landscape gardening seen in the course of the excursion. At the visit the islands presented one mass of rhododendrons in blossom, and the bright pink and crimson reflected in the waters had a very picturesque effect.

### DURRIS WOODS AND PLANTATIONS.

Durris, the extensive estate of Mr. Baird, was the last, and certainly not the least interesting place of call. Here the party found ample demonstration of what practical sylviculture can be brought to. Much of the work viewed here was done under the supervision of Mr. John D. Crozier. The work is being ably continued by Mr. Ernest Lees, factor, and Mr. Charles Steward, head forester. An outstanding feature of the day was a visit to a couple of plantations of Picea sitchensis (P. Menziesi), growing at an elevation of from 700 to 900ft. above sea level, on boggy ground, surrounded by moorland. The plantations are 34 years old, and are said to be unique—at least so said the late Professor Mayer, of Munich, the eminent forest expert, when he visited this country two years ago. The first of the plantations visited was somewhat mixed, the picea mentioned having been planted along with common spruce, Scots fir, and a few larch. It was self-evident that the picea had practically suppressed the other trees. But the most interesting block visited was that solely devoted to P. sitchensis, at an elevation of 900ft. Closely planted, the trees have grown up tall and straight, almost excluding the light from the lower portion of the wood. Thirty-four years of age, and in fine, healthy condition, there is no other wood to equal it in this country, and even in America there is no record of any artificially planted wood of this tree approaching it, although in the original forests a different state of matters may prevail. This is undoubtedly a wood which provides, and will continue to provide, a most useful object lesson on a question regarded by arboriculturists as of considerable importance—the place of this picea among commercial trees. It was little wonder that the general consensus of opinion expressed was that the wood amply and right well repaid the visit. After lunch a pleasant hour was spent in walking through the extensive gardens and hothouses, under the guidance of Mr. Andrew Reid, head gardener, whose work was greatly admired, and the horticulturists of the party were high in their praises of all they saw. The ornamental trees in the policies also claimed much attention, some especially handsome specimens of Cupressus macrocarpa, Abies grandis, Thuia gigantea, fine old yews, eagle-claw maple, and Douglas firs being greatly admired. The "den" was then visited, where were found many fine old oaks and larches, said to have been planted during the Duke of Gordon's proprietorship of the estate. Some of the larches were over 100 feet in height and from 8 to 10¼ feet in circumference five feet from the ground. A specially fine old Douglas fir noted here, now about 80 years old, measured 112 feet in height and 12 feet 6 inches in circumference at five feet from the ground.

One of the most memorable and most successful excursions under the auspices of the Society was now concluded, and the party returned to Aberdeen delighted with the lovely scenery and the extensive additional knowledge they had gained by their visit to Royal Deeside. Of all the party none were better pleased at the success of the excursion than the worthy president, Sir John Stirling-Maxwell, and the secretary and treasurer, Mr. Robert Galloway, S.S.C., Edinburgh, to whose admirable arrangements and wise counsel great praise is due.

We understand that Switzerland has been chosen for next year's excursion.

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## DESSERT CHERRIES.

The excellent examples of dessert cherries recently exhibited at the metropolitan shows should demonstrate to lovers of gardens the adaptability of these fruits for pot culture, and their excellence for inclusion in a dessert.

Where there is not a suitable soil in gardens for cultivating cherry trees in the open quarters, they can always be grown in pots, and, failing a house for ripening the fruits in, there is often a place in moderate gardens where the trees may pass through the flowering period, and later ripen outside, with some protection from birds.

Even when the soil is not suitable for outside culture, considering the small quantity of soil which, of the right sort, will keep a tree in pot in a fruitful condition, it does not require much outlay to provide the same for outside fruiting.

One may frequently meet with fair examples of cherries fruiting in pots, but the finest and most prolific trees I remember having seen are trees of Black Tartarian in the gardens at Hurstbourne Park. This variety is known to be an abundant bearer, and I had the pleasure of seeing some trees in fruit, and a good idea of the crop may be realised when it is stated that from a tree which had ripened its crop 60lb. of fruit was taken. One can easily understand that quantity when looking at the crops on the trees not gathered

I am told the trees, which are growing in pots in a lean-to house, are some fifty years old. They have been under the care of Mr. Perry for more than twenty years, and bear testimony of his success in cherry culture. A younger tree of another variety, Noir de Schmidt, was also carrying a heavy crop. This is a fine black cherry of sweet and excellent flavour, with much firmer flesh than Black Tartarian. An enquiry as to their treatment elicited a smiling remark, which, to those who know, signifies much.

Other fruits are well grown at Hurstbourne, and these do not form all the interesting things seen in the gardens. The short time spent with Mr. Perry was an interesting one, and one had evidence of his capability as a gardener.

PAUL T. MORE.

## LILIES IN THE GARDEN.

The lily planting season begins in August, as soon as the stems of Lilium candidum have yellowed. We should all realise what a magnificent plant this is, from the decorative point of view, how easy of cultivation also, and attractive in foliage long before blossoming time. Owing probably to its stately growth it is usually employed in borders, but for bedding purposes it is not only highly ornamental, but actually supplies a want. The best method is to alternate it all over the middle of a bed of some bulbous flower, such as the tulip or hyacinth, to be followed by some bushy bedding subject of considerable height, such as well-developed pelargoniums, heliotropes, marguerites, or fuchsias, the leaves of which will cover the lily stems when these at last become unsightly. Either pink or vermilion geraniums make a fine show with the snow-white lily spikes rising at even intervals between them. If a permanent bed is the object the most satisfactory companion will be a dwarf Polyantha rose, such as the pink Mignonette, which can be trusted to bloom early and continue late; in this case crocuses may form an edging belt, and also be dotted about in groups between the lilies and roses so as to give early colour.

Sweet peas, having no colour beauty for the first eighteen inches of their stems, can well be associated with a foreground row of the Madonna lily; the rich soil treatment that the sweet pea demands will suit its neighbour excellently, yet lilies never succeed so well, never exhibit the perfection of thick velvety petal texture, unless given a trench of special compost consisting of six to nine inches of old cow manure well below the bulbs, and a filling of mingled parts of peat, loam, leaf-mould, and coarse sand.

The flower garden can be splendidly enriched by a border in the open, in which scarlet and salmon sweet peas are grown between rows of white lilies. White sweet peas similarly give a delightful display if introduced in autumn or spring between lines of the rose or the crimson variety of Lilium speciosum. This Japanese lily should be planted in September or October, so that it may have its best chance for the following season. None of the varieties are really costly, the most expensive, L. speciosum album novum, an immense white, with effective yellow anthers and broad foliage, being obtainable for eighteen shillings a dozen. Melpomene is one of the most handsome, as the crimson petals are spotted with purple and edged with white. L. speciosum album Krætzeri, a giant white with orange anthers, and L. s. Schrymakersi, rose-spotted maroon, can be cordially recommended.

The St. Joseph's lily, Lilium longiflorum, should be planted at the end of summer; the long white trumpet blooms may be slightly less effective than the sturdier blossoms of the Madonna lily, but they are more elegant in appearance. A fine lawn bed might be partly made up with the silver-variegated kind, the leaves of which are handsomely striped. Then we may make lavish use of the well-known Lilium Harrisi, a member of the same family, and the taller strong-growing Lilium longiflorum robustum, which flowers rather late.

A consideration of lilies in the garden would be incomplete indeed without a mention of the noble Swamp lily, Lilium giganteum, which reaches a height of twelve feet, and has large heart-shaped leaves. Many a damp low-level lawn could contain beds of this King of Lilies, or shrubbery clearings might have groups of it planted. The safest method is to pot the bulbs and grow them on in frames for putting out permanently late in spring.

The later lily planting season will enable us to place vivid-hued beauties where colour is especially required, beside dull walls or dark shrubs, for example. Lilium elegans may be had in apricot, lemon, orange, blood-crimson, and gold, the Scarlet Turk's Cap lily, the carmine-spotted Oregon lily, even the common Lilium croceum, or Cottager's Orange lily, will supply splendid masses anywhere in sunshine. Dark hues, exceedingly effective by white buildings or silver shrubs, are offered by the varieties of Martagon lily; vermilion, orange, gold, and crimson appear in the different Liliums pardalinum.

Lilies by the waterside are especially lovely, and the bulbs can be safeguarded from excess of moisture by planting them on low hillocks of suitable soil; the rock garden, too, can have its suitable lilies, such as the scarlet Lilium pomponium, L. concolor, the purple-spotted lemon L. coridion, and the pink L. Krameri. M H.

A FINE GROUP OF PHLOXES AND PENTSTEMONS.

Exhibited by Messrs. J. Forbes, Lim., Hawick, at the Holland Park Show, and described in the report which appeared in our issue of the 6th inst.

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**Begonia Golden Shower.**—Considerable advances have within recent years taken place in the varieties of tuberous-rooted begonias suitable for hanging baskets, and that at the head of this note is one of the finest of all for such a purpose. It was given an award of merit on June 18 by the Royal Horticultural Society, and is well illustrated in the Gardeners' Magazine for June 29. In colour the large, semi-double blossoms suggest a good form of Rose W. A. Richardson.—K.

## GARDENERS AND GARDENING.

It would be interesting to know how many of the vast crowd who visited the Royal International Horticultural Exhibition and admired the many forms of floral beauty thereat displayed, had any idea of the amount of skill and forethought that had been expended on their production. It is only on occasions such as these that it is possible to realise the time needed for a gardener to become master of so vast a field of knowledge, and the labour expended in studying the requirements of such a number of subjects. Here we had plants from all parts of the globe, extending from the Tropics to remote parts of the Northern and Southern Hemispheres; from high altitudes, and from swamps and jungles.

The proficient gardener has not only to make himself acquainted with the names of numerous genera and species of plants, but he must know the kinds of soil suited to the several species, the position most adapted to their well-being, the proper temperature needed to produce a healthy growth, the various diseases to which they are subject, and the various insect pests that attack them, and also the best and most effectual means of preventing or destroying such pests.

He must be well versed in entomology, ornithology, geology, chemistry, etc. He must be able to draw plans and give estimates for the erection of various buildings; know the value of various kinds of timber, and how to measure the same, and have many other varied qualifications ere he can attain to that exalted position of a head gardener, and receive for all his ability and skill the handsome remuneration, may be, of £80 or so per annum!

One often wonders now there is so much talk about "raising the status" of the gardener, how this is to be brought about. It is, unfortunately, too true that many gardeners are not so well educated as they might be, but what inducement is there held out to them to study? The bothy, though, no doubt, much improved of late, is not even now all that could be desired, and the social life in the country is far different to what it is in towns. Gardeners for the most part are brought up in the rural districts, and the schooling many of them receive in their early days is scant. They are taught to order themselves lowly and reverently to all their betters, and to go to church on Sundays, and all the amusement they get is in the school playground. There are few, if any, night schools at these out-of-the-way places, and when a lad becomes old enough to go to work he must put in full time, working from six in the morning until the same hour in the evening, and he is then too tired to do much studying. Few know this better than the writer, who, in his early days, spent weeks together in one of the most dreary bothies in the kingdom. Even in these days when bicycles are so cheap, it requires a great amount of courage and energy for a young fellow to ride from fifteen to twenty miles on a winter's evening in order that he may attend the nearest night school—which is the distance in many parts. How are we then to improve the education and raise the status of the gardener?

It is quite useless to think that a man will ever make a good gardener who is brought up in a horticultural college. He cannot obtain the necessary qualifications in such institutions, so that the time and money spent on them are wasted. I admit it is possible for such students to learn the rudiments of gardening, but unless brought up in a private establishment, and taught the requirements of such places, they will never be able to give satisfaction. The gardener has not only his employer to please, but there is the cook, the butler, and a host of others to be considered. There is a vast difference between gardening in a private establishment and at a horticultural college or other public institution. To be a good gardener one must be qualified in every branch, whether it be in the cultivation of orchids, plants and flowers, fruit and vegetables, or the care of lawns, roads, and woods. So vast a field of work requires much study, one must admit, but unless this can be combined with practical instruction it avails but little.

Where is there one of our horticultural institutions that contains a collection of orchids, or one whose instructor is well versed in their cultivation? It is very amusing to find people setting themselves up as experts in horticulture. I noticed one or two such at the Royal International Horticultural Exhibition. One would be interested to learn where they were trained, who were their instructors, and what their success. Writing of gardeners being educated reminds me of William Cobbett, who once said he did not consider a farm labourer an ignorant person if he was able to find the nearest way across a field, thus signifying that though in book learning he might not be very proficient, he was a master in the art of ploughing. It is not always the man who is well versed in classics that is the most practical person. What is the use of Greek, Latin, and French to a sailor in an open boat on the sea with a hole a foot square in the boat, and only one piece of board to repair the damage with, and this pieces sixteen by nine inches? It would be far more to his advantage if he could see, at a glance, how he could cut his board to fill the hole. A knowledge of French and Latin does not assuage the wrath of the cook if there be an inadequate supply of fruit and vegetables at a particular season, neither does it bring a valuable plant back to life that has been lost through a want of knowledge of its requirements.

It has on several occasions been my misfortune to have to deal with young men who have been instructed in some of these horticultural colleges. Not a very long time ago one, who had a certificate from the R.H.S., applied for a situation under a friend of mine; though furnished with these credentials, he was hardly sufficiently advanced either in education or practical knowledge to commence an apprenticeship. We cannot all be Paxtons and Flemings, neither can be all fill places like Trentham and Chatsworth, but we can all strive, and if by chance one should be "facile princeps," he need not look down on his less fortunate fellows, who, though quite his equal in every respect, have not had good fortune to smile on them when seeking to improve their position.

Gardening cannot be learned in a year or two, and it is impossible for those who have not gone through a proper training themselves to teach others, therefore one should dismiss at once the idea of employing horticultural experts who even, though they are versed in all the sciences, yet lack the rudimentary training so essential in a sound, practical, business-like profession. Professors there are many. Thoroughly practical men are like stars on a stormy night—few and far between.

H. C. P.

## THE SMALLER MOCK ORANGES.

When the bulk of spring-flowering shrubs are over the mock oranges come in with a rush, and in the month of June, extending some seasons partially through July, they form one of the most attractive outdoor features of our garden. In many cases, at least, the mock oranges have been this year particularly fine, and I have been greatly struck with the beauty of the large-flowered Philadelphus grandiflorus, in many unfavourable spots in the gardens and courtyards of London, where, in some cases, cribbed and confined, it has proved independent of all its surroundings. For limited spaces, however, and, in fact, for massing in large gardens, the various hybrid kinds that have made their appearance within recent years are particularly desirable. The comparatively dwarf habit is caused by the influence of the twiggy growing Philadelphus microphyllus, introduced from New Mexico about thirty years ago. By crossing with some of the original species and the hybrids raised therefrom, a great number of varieties have been obtained and distributed by MM. Lemoine et Fils, of Nancy, France. The first was the variety Lemoinei, followed by Lemoinei erectus, which last I still consider to be one of the best. A double-flowered form of this group, Virginal, was given a first-class certificate this year, and during the present season two varieties, namely, Bouquet Blanc, and Voie Lactée, have received awards of merit. W.

## ROMNEYA COULTERI.

Few plants are more beautiful than Romneya Coulteri (Californian Poppy) when well grown, as its silvery-grey foliage is quite as attractive as its large white sweet-scented flowers. I send a photograph—[Unfortunately not suitable for reproduction.—ED.]—taken last year, which shows a plant over ten feet high, growing in a warm position, sheltered from the north-west, in a rather heavy loam, rich in potash. Unfortunately, the background detracts from the effect, and prevents the boldness of the plant and its handsome appearance being seen to full advantage.

Although not hardy in many parts, yet much might be done in some of the more inland and colder localities of the country to secure such a desirable ornamental subject, by planting it in cosy corners, and giving it a certain amount of protection during the winter and spring months. Along the Welsh coast, the south of England, and most of Ireland, this plant should luxuriate and multiply without the assistance of shelter, provided it has a fairly strong well-drained loam to grow in. The composition of the soil in which the plant mentioned thrives is rich in potash, but deficient in phosphates and lime. I have seen some good examples doing well in peat containing a little sand, but their strength of stem, size of flower, and broadness of foliage fell short of those of this specimen. PEDESTRIAN.

**Begonia Sutherlandi.**—This is a tuberous-rooted begonia, native of Natal, and quite distinct from the various South American species. Forming as it does a large irregularly-shaped tuber of a rather firm texture, B. Sutherlandi pushes up therefrom slender reddish stems clothed with pointed leaves of a bright green colour with red veins. The flowers, which are freely borne towards the upper parts of the arching stems, are not large, but conspicuous by reason of their bright salmon-red colour. This species has not been much employed by the hybridist, but it is one of the parents of B. Weltoniensis, a favourite of days gone by.—S. W.

## ROSE GOSSIP.

Writing these notes at the end of June, I must say it is long since I saw so many and thoroughly representative a show of roses by this early date. Even many of our later blooming ramblers, such as Crimson and Blush Ramblers, also Felicité Perpetué, with several others that seldom come into flower until the first weeks of July, are already quite showy. Indeed, there would appear to be a record season for us among these later flowering climbers and ramblers.

Queen Alexandra, Goldfinch, Thalia, Waltham Bride, Wedding Bells, Tausendschon, Tea Rambler, Leuchtstern, Psyche, Helene, Gardenia, and many others have already given us their best display for this season. Among the most charming of all with me is American Pillar. I do not remember it so bright, even among the beautiful examples seen in pots from time to time. Doubtless the cooler and fairly moist atmosphere has much to do with the intensity of colour in many roses, and this is very noticeable among the yellows with the charming orange and metallic copper shades now prevalent among a number of Teas and their hybrids; many of which have quite surpassed themselves during the past two or three weeks.

The glorious blendings found in Theresa, Souvenir de Stella Gray, Theresa Bevan, Souvenir de Catherine Guillot, Marquise de Sinety, Arthur R. Goodwin, Mrs. A. R. Waddell, Canarienvogel, Lyon Rose, Duchess of Wellington, Hugo Roller, Jacques Vincent, Lady Pirrie, Mrs. Aaron Ward, Prince de Bulgarie, and Sunburst will long remain in my memory. The deep yellows of Harry Kirk, Miss Alice de Rothschild (a yellow that has risen as high in my estimation as any of recent years; instead of paling, this is intensified as the blossoms age), Senateur Mascurand, Billiard et Barri, Le Progress, Jean Coey, and Madame Pol Varin-Bernier have been more than usually clear.

Our maidens, both upon dwarfs and standards, have greatly intensified these shades, which are seen to the best advantage by reason of clean bronzy foliage that has been made since the cold snap that caught much of the earlier growths upon cut-backs. I have seldom seen the maidens looking better, and in the case of most varieties they promise to continue good for a long time.

With the advent of so many good-habited and constitutioned Teas and their crosses, we have many maidens that simply improve as the season advances, both in size of plants and production of flower. So many of the older roses gave us one or two good spurts of blossom, and only a scanty show between, not even that in several instances; and the continuity of flowering is a strong point in favour of what I may perhaps be allowed to call our modern roses. We seem to have reached the height of perfection in this class, and among the dwarf polyanthas; so much so that anything must indeed be good to surpass three or four dozen varieties that will readily occur to all rose lovers.

A. Piper.

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**Desfontainea spinosa.**—To the uninitiated a flowering example of this is always an object of wonder, as the leaves bear a marked resemblance to those of the holly, and the blossoms are decidedly showy, being tubular in shape, of a thick wax-like texture, and in colour yellow, tipped with scarlet. It is a native of Chili, and, like many subjects from that region, it thrives best in a fairly humid atmosphere, such as in the extreme west, and in some parts of Ireland. Where it will thrive it is a decidedly handsome shrub.—W.

## THE WATER GARDEN.

A rock garden is hardly complete without water in some form or other. Of course, it is not an essential feature, although it must be admitted that a suitable pool, enriched with choice water lilies, or a bog-bed bedecked with aquatics, or a leaping, rushing torrent of water dancing fantastically from rock to rock like a cascade of diamonds, lends adornment to Nature's scenes. There are many of these water gardens in different parts of the country, and the riotous growth of the different species of aquatics is a delightful aspect to every garden lover. They form a part of almost every wild garden, whether the water be obtained by artificial or natural means. The smallest streamlet may be diverted or otherwise adapted so as to supply water for the garden scheme, or it may be lead in some simple manner through a hollowed trunk, to fall into a pool near the pathway.

If the side of a wide stream is available where the water is always changing, little difficulty will be experienced in forming a most pleasing water garden; but apart from such situations, there are numberless ornamental aquatic plants that will thrive where the water is perfectly still. Even where it has to be introduced artificially, and is laid on in pipes, but a small supply can be adapted to many different purposes. Speaking practically, the water supply in the majority of gardens is introduced by artificial means, and in this form it is certainly under better control than where a natural spring or streamlet is the only available source. Its course can be shaped according to any particular scheme, whereas a natural stream must remain unchanged, and the scheme adapted to it.

Natural or artificial ponds are excellent subjects for adornment. They may be planted at the sides with suitable aquatics, the most pleasing effects being gained by planting thickly the promontories or those portions of the bank which protrude into the water, and leaving comparatively bare the bays or concave portions of the bank. This method has the effect of creating an artificial perspective, which causes the pond to appear larger than it actually is. Many beautiful subjects can be introduced into such situations, notably the waterside irises, spiræas, etc. The former are invariably stronger, healthier, and freer in bloom when the roots are submerged below water. The sides and bottoms of such ponds or streams must necessarily be made permanent or secure in some manner, and the best material to use is cement concrete, this being in turn entirely covered by river gravel and pebbles at the bottom and rocks or grassy banks at the sides.

In planting water lilies and all species of nymphæas or other aquatics in such situations, the usual plan is to build small plateaus of loose stones, filling up with soil to a depth of about fifteen inches below the water level. Sometimes the lilies are sunk in baskets to the same level. The waterside plantings must not approach anything of the nature of garden order or system, where rows or borders are set out with the particular subjects in almost mathematical precision. If such an effect is created, even to the slightest semblance of a flower border, it should be immediately destroyed by planting quite close to the edge, and between the perennial undergrowth. One striking example of waterside beauty is a mass of self-sown Primula rosea; another can be secured by surfacing a bog-bed or space by the side of a pool with the feathery spiræas, or yellow and purple irises.

Now, as regards the fall of water, one needs to exercise a considerable amount of care to avoid anything approaching artificial construction. There must be higher ground beyond the cleft in the rocks whence the water apparently emerges, so as to give the effect of a natural supply at a higher elevation. Otherwise, if the water is introduced by means of a pipe placed at the highest part of the rockwork, an unnatural and ugly effect will be created.

For planting in ponds, where the water is comparatively deep, the hardy water lilies in white, crimson, pink, and yellow are the most suitable. The Cape Pond Weed (Aponogeton distachyon) is also a useful subject, and among others are the Water Soldier (Stratiotes aloides), Villarsia Humboldtiana, and V. nymphoides. Suitable aquatics for shallow waters include Acorus Calamus, Typha minima, and T. dealbata (bullrushes), Calla palustris, Thalia dealbata, Butomus umbellatus, scirpus in variety, Arum italicum, Sagittaris sagittifolia, Menyanthes trifoliata, Typha augustifolia, and Pontederia cordata.

The most suitable aquatics for bog-beds or for the waterside are the Japanese irises, especially varieties of I. Kæmpferi; the American irises might also be used with advantage, and of this type many charming colour gradations are to be found in I. virginica, I. keresina, I. Hansoni, and I. Fosteri. Apart from these we have the Siberica group of irises, I. orientalis, I. Blue King, I. Snow Queen, and I. Baxteri; I. setosa, I. aurea, and I. pseud-acorus (Bastard Acorus). Carex pendula and C. riparia, Juncus effusus spiralis, and J. zebrinus, dodecatheon in variety, Funkia Sieboldiana, Caltha palustris, fl. pl.—all these are suitable for bog-beds, and especially for sunny positions. In the shady spots, the following may be planted: Primula japonica and P. sikkimensis, Mertensia virginica, Saxifrage peltata, Podophyllium Emodi, Bergenia cordifolia, Cypripedium spectabile, and C. pubescens, Orchis foliosa, and Saxifrage Fortunei.

Further, to create a bold appearance by the waterside, Gunnera manicata, with its large parasol-shaped leaves, is useful, as also is G. scabra, with huge rhubarb-like leaves. Rheum Emodi and other sorts are also valuable, and among others well adapted for similar purposes are Arundo Donax (ribbon grass, painted grass, or ladies' laces), Chelone barbata (scarlet, bearded), C. glabra (white, smooth), C. Lyoni (purple), Inula Helenium (or Elecampane, which furnishes the Vin d'Aulnée of the French), Liatris pycnostachya (dense-spiked), Meconopsis Wallichi, Osmunda regalis (the Royal Fern), Senecio japonicus, Spiræa gigantea, S. lobata, S. venusta, and Struthiopteris germanica.

Very dwarf plants for bog beds or for the waterside include Cardamine trifolia, Dondia epipactis, Dryas Drummondi, D. Lanta, Primula rosea grandiflora, Lysimachia nummularia; while for shady spots the following are preferable: Epigæa repens, Galax aphylla, Gentiana bavarica, Linnæa borealis, Polyala Chamæbuxus, Spiræa filipendula, and Silene virginica.

J. C. N.

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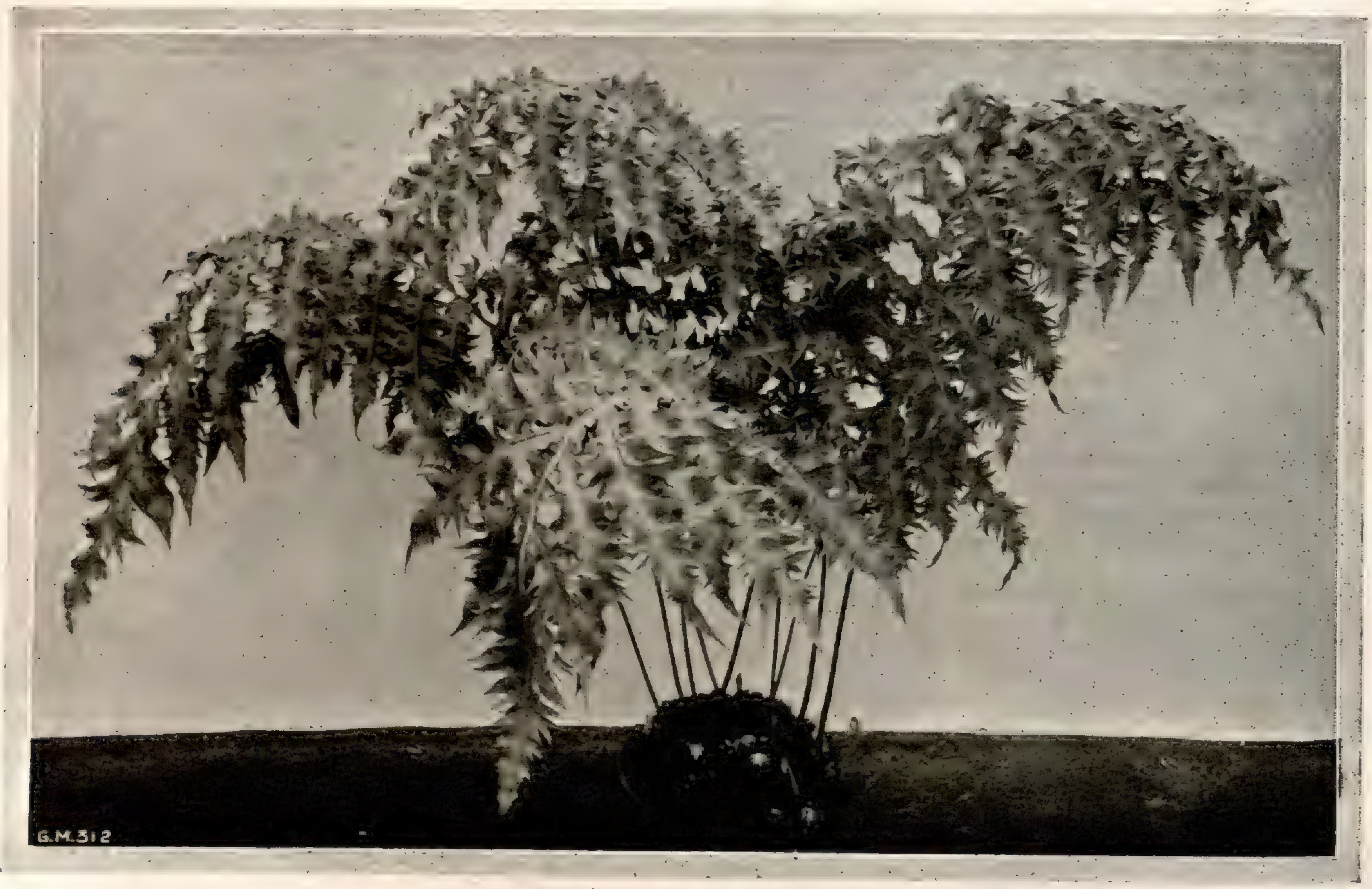
**Heuchera sanguinea Walkeri.**—While all the heucheras are very pretty, there are, to my mind at least, too many with flowers of an undecided tint, while in some cases at least they do not bloom as freely as one would like. The variety at the head of this note (Walkeri) I take to be one of the best of all, the blossoms being large, and of an intense rich crimson colour, while they are borne in considerable profusion.—W.

## NEW PLANTS, ETC.

◆

### POLYPODIUM MANDAIANUM.

A giant polypodium that appears to be a form of P. aureum. It bears splendid green, glaucous-tinted fronds that are deeply divided and are lightly crested. For specimens and for use in large floral arrangements this promises to become a fine subject. F.C.C., R.H.S., July 2. Mr. W. A. Manda, St. Albans.



POLYPODIUM MANDAIANUM.
F.C.C., R.H.S., July 2. Mr. W. A. Manda, St. Albans.

### CATTLEYA ARTEMIS.

This beautiful cattleya, obtained by crossing C. Iris with C. Gaskelliana, has large flowers and fine form. The pink sepals and petals form a pretty setting for the large crimson-purple lip. The latter is rendered particularly effective by reason of its large orange-yellow base. F.C.C., R.H.S., July 2. Lieut.-Colonel Sir George Holford (gardener, Mr. H. Alexander, Westonbirt, Tetbury.

### CATTLEYA DUPREANA, DELL VAR.

A magnificent cattleya, with enormous and substantial flowers that have much in common with C. Warscewiczi with the rounder form and refinement of C. Warneri. The sepals and petals are rose-purple, the lip deep crimson-purple, with a brilliant yellow base and throat. F.C.C., R.H.S., July 2. Baron Bruno Schroder (gardener, Mr. Shill), The Dell, Egham.

### CATTLEYA THURGOODIANA APOLLO.

An effective form, with large, vivid rose-red sepals and petals, and a large dark purple-crimson apex to the lip. A.M., R.H.S., July 2. Messrs. Stuart Low and Co., Bush Hill Park, Enfield.

### LÆLIO-CATTLEYA RUBENS THE KAISER.

This is one of the hybrids from Lælia pumila, and its large flowers seem all the larger by comparison with the lowly stature of the plant producing them. Not only are the flowers large but they are shapely; the sepals and petals deep purplish-rose; lip deep purple with a yellow base and throat. A.M., R.H.S., E. H. Davidson, Esq. (gardener, Mr. Cooper), Borlases, Twyford.

### MILTONIA HYEANA LE CONQUERANT.

A handsome variety, with large and beautiful white flowers, and a large butterfly-like, red-purple disk at the base of the lip. F.C.C., R.H.S., July 2. M. Jules Hye de Crom, Ghent.

### BRASSO-CATTLEYA MARION.

Of unrecorded parentage this orchid is not less beautiful without a pedigree. It is an effective form with large fringed lip. The colouring is white and rose-pink with purple veining on the lip. A.M., R.H.S., July 2. Messrs. James Veitch and Sons, Chelsea.

### ODONTOGLOSSUM PERCULTUM KING GEORGE.

A showy variety, the large flowers having a white ground and numerous large bright purple blotches. A.M., R.H.S., July 2. F. Menteith Ogilvie, Esq. (gardener, Mr. Balmforth), The Shrubbery, Oxford.

### ODONTONIA EDNA.

A charming little orchid derived from Miltonia Warscewiczi and Odontoglossum Wilckeanum. The branched flower spike carried a number of pretty, white flowers, each blotched with yellow. Certificate of Appreciation, July 2. Messrs. Charlesworth and Co., Haywards Heath.

### LASTREA PATENS MAYI.

This beautiful fern we have previously described, as it gained an A.M. at the Royal International Horticultural Exhibition. Shown in fine condition now it has received the higher award. F.C.C., R.H.S., July 2. Messrs. H. B. May and Sons, Edmonton.

### LILIUM WARLEYENSE.

A superb lily that promises to be an immense success in garden decoration if it can be freely propagated or imported in quantity. It is a Chinese plant, and its spikes rise four feet high, bearing about a score of pendant blooms of great beauty. The flowers are on slender pedicels that stand well out from the spike. The flowers are about three inches across, and the segments recurve as in the Turk's Cap lily. The colour is vivid orange-red, and from this ground colour numerous brown spots stand out conspicuously. The leaves are slender, numerous, and graceful, so that altogether this lily has much to recommend it. (See fig., page 513.) F.C.C., R.H.S., July 2. Miss Willmott, V.M.H. (gardener, Mr. C. Fielder), Warley Place, Great Warley, Essex.

### CARNATIONS.

**John Ridd.**—A handsome border variety belonging to the yellow-ground fancy section. The ground colour is bright and freely splashed and marked with bright rose. A.M., R.H.S., July 2. Mr. Jas. Douglas, Great Bookham.

**Jean Douglas.**—A beautiful scarlet self variety of excellent form and bright colouring. A.M., R.H.S., July 2. Mr. Jas. Douglas, Great Bookham.

### BEGONIAS.

**Mrs. Robert Morton.**—A glorious begonia with large beautifully-formed double flowers of a deep, soft yellow shade, tinted with salmon. A.M., R.H.S., July 2. Messrs. Blackmore and Langdon, Twerton, Bath.

**Florence Nightingale.**—A lovely white, double begonia, of moderate size and exquisite form, a free bloomer. A.M., R.H.S., July 2. Messrs. Blackmore and Langdon, Twerton, Bath.

### PHLOX ARENDSI.

Under this name an award was granted to a strain of dwarf phloxes with flowers ranging from palest lavender to violet. About 2ft. high, and bearing heads of bloom on stiff wiry stems, these hybrid phloxes are full of promise. The parentage is said to be P. canadensis and P. decussata. A.M., R.H.S., July 2. Mr. G. Arends, Rousdorf, Germany.

### ROSES.

**Ethel.**—A semi-double Wichuraiana variety with flowers of fair size, rich pink, with white centre. It is a fine-growing, free-flowering rose, and was well shown at Windsor on June 29. A.M., R.H.S., July 2. Mr. Chas. Turner, Slough.

**Mrs. Chas. S. Hunting.**—A lovely hybrid tea rose of good form and size. It has broad, rounded petals that make up a fine bloom. Colour, deep apricot-yellow. A.M., R.H.S., Messrs. Hugh Dickson, Lim., Royal Nurseries, Belfast.

### CLEMATIS LADY BETTY BALFOUR.

A strikingly beautiful variety that cannot fail to become popular. It is very free flowering, belongs to the Viticella group, and has rich violet-purple flowers of rounded form and with stout segments. In the centre of each bloom is a cluster of whitish stamens. A very fine addition to flowering climbers. A.M., R.H.S., July 2, Messrs. G. Jackman and Son, Woking.

### ASTILBE AVALANCHE.

A beautiful variety with fine plumes of pure white flowers, these latter being larger than those of most kinds. The plant grows and flowers freely, and should be valuable in a warm bog garden as well as first-rate for forcing. A.M., R.H.S., July 2. Messrs. Van Waveren and Kruyff, Sassenheim, Holland.

### NEPHROLEPIS EXALTATA ROCHFORDI.

The variations of Nephrolepis exaltata seem to be endless, and several of the forms are very nearly alike. This new-comer has much in common with N. Marshalli compacta, but has longer fronds, exquisitely moss-like in their division and of a lovely shade of green. A.M., R.H.S., July 2. Messrs. Thos. Rochford and Sons, Lim., Broxbourne.

CLEMATIS LADY BETTY BALFOUR.
Flowers rich violet-blue. A.M., R.H.S., July 2. Messrs. Jackman and Son, Woking.

**The Common Jasmine.**—A general favourite is this, the jessamine of older writers. The spotless purity of its flowers and their delicious fragrance are great points in its favour. Though good examples are often to be seen in cottage gardens, and even in unlikely spots in London, yet for some reason or other its merits as a beautiful climbing shrub are apt to be overlooked. True, its blossoms are not so large as some of those subjects now so popular for the purpose, but they possess a quiet beauty of their own, their production extends over a long period, and they are very sweet-scented. The nearly allied Jaminum affine, whose young leaves are reddish and flower buds tinged with colour, is not so good a plant as the common kind.—S. W.

## HYNING, LANCASHIRE.

A short distance from the town of Carnforth, and in a beautiful district, lies the mansion of Hyning, the residence of John Platt, Esq., who has done much to develop and improve the gardens, and through whose kindness the writer has twice had the privilege of visiting Hyning, the last time towards the end of June.

In the period which has elapsed between the two visits, Mr. Platt has made many improvements, which have been ably carried out by Mr. W. G. Watson, his gardener, who, with an augmented staff, continues to keep everything in the most perfect condition. The gardens are of considerable size, and include flower gardens, rock garden, rose garden, orchard, and vegetable garden, with a considerable amount of glass.

In front of the mansion is a beautifully-kept lawn, a little circumscribed in size by some noble old trees, whose removal, however, would be unwelcome and undesirable. Here are some fine beds and borders, filled with flowering and other shrubs, and bedding plants, such as begonias, etc. The conservatory here is kept well supplied with flowers in bloom, and with the adjoining fernery is highly attractive. Here are some fine fuchsias, begonias, Primula obconica—an excellent strain—pelargoniums, spiræas, and astilbes, and other good plants for the house. Since my former visit a good collection of cypripediums, including many of the new varieties, have been introduced, and these are thriving excellently. In the fernery there are some extremely good adiantums, plants of A. gracillimum being especially good.

Near this, and still in front of the mansion is a corner devoted to a small rock garden, this being the one originally erected. Here are a number of good alpines, now of considerable size, but as the majority of the plants here are also represented in the other rock gardens, they may be named in the notes relating to the latter.

The rock garden consists of a series of rockwork pockets, against one of the garden walls, and is both well arranged and supplied with many good alpines. The walls at this part are low, and are planted with flowers, and some interesting points of culture arise. For example, we have Polygonum affine (or Brunonis), growing on the top of a dry wall with little soil beneath. The aspect is about N.N.W. Other plants on the walls here are such subjects as Saxifraga Wallacei, on the top, and Androsaces lanuginosa, sarmentosa, and Chumbyi. Sheets of thymes are also pretty. In the rock garden is an exceptionally well-grown plant of Gentiana verna, growing and flowering with unusual freedom. G. acaulis is also flowering well. Campanulas are represented by the best of the dwarf species and varieties, such as C rotundifolia pallida, very fine on the wall; C. portenschlagiana, C. pulla, C. pumila pallida, and a number of others. The dianthus family is strongly favoured, and we find, for example, Dianthus frigidus, very well done; D. aridus, very pretty; D. glacialis, D. neglectus, and others. The pretty Morisia hypogæa is doing well, and a choice collection of saxifrages of all sections is to be seen. I noted S. Grisebachi as in very good condition, and here mention may be made of a fine rosette of S. longifolia in another wall. This has been for eight years on this dry wall, and it is now some eleven inches in diameter. Oxalis enneaphylla, very fine; oxytropises, aubrietias, sedums, Buxton's variety of Geranium Wallichianum, Veronica cinerea, and many shrubby species of veronica were also seen, while a special note must be made of the splendid way in which Iris gracillipes was doing in the rock garden. Other subjects must be left unnoticed, but it may be said that the plants are numerous, well-chosen, and, as a rule, in excellent order.

Close by are the beds of hardy heaths, the best of the early, mid-season, and late species and varieties being selected, so as to have bloom over many months. Two tanks also contain a capital collection of the new nymphæas. Some of these had become too large, and were broken up this season, but all are doing well.

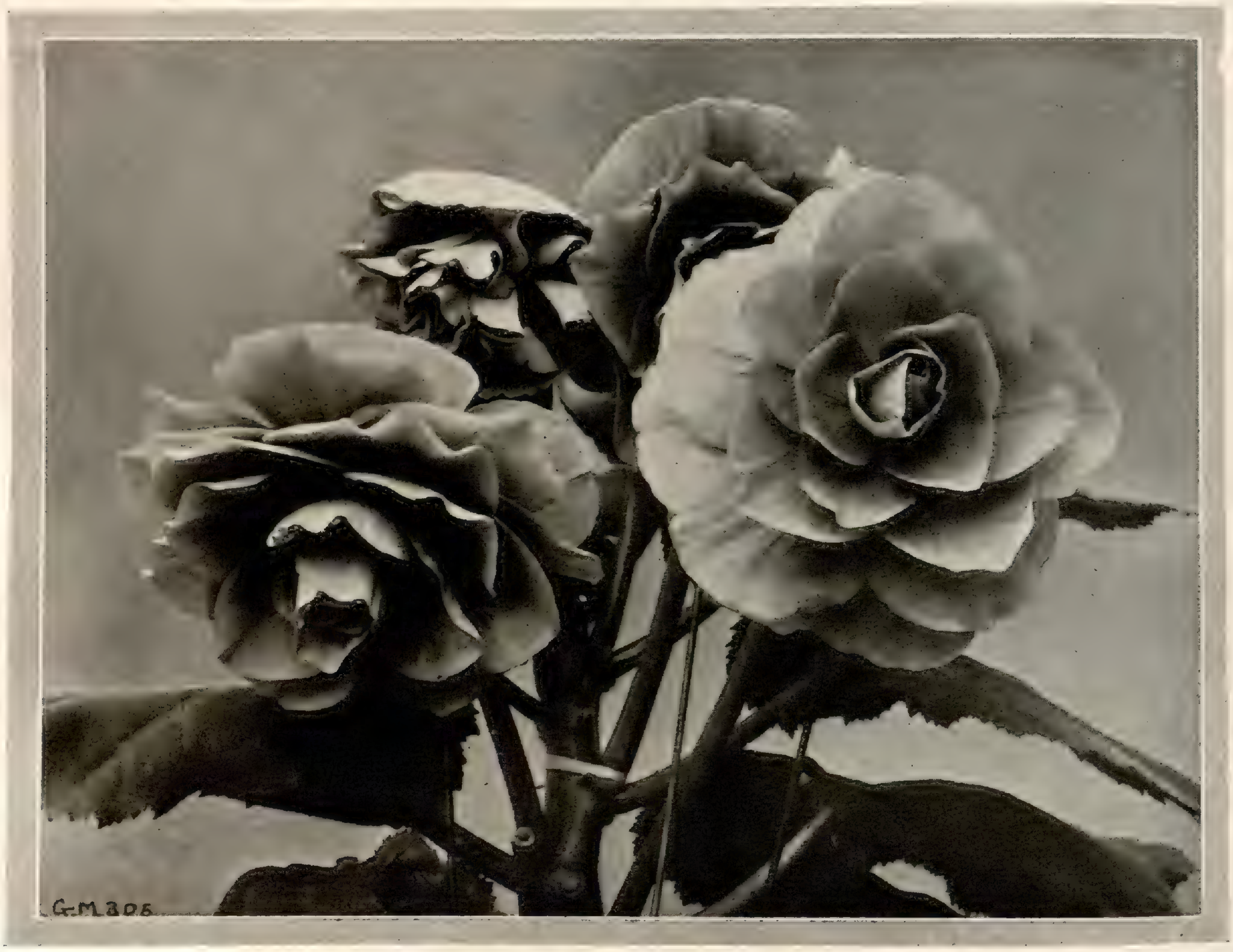
From this rock garden we pass into a rose garden, where are beds of roses in the grass, with Wichuraiana and other climbing roses on pillars and in the form of standards. A bed of the Lyon Rose was extremely fine, and among other roses observed were Evangeline, Dorothy Perkins, Lady Gay, Climbing Caroline Testout. Auguste Barbier, Elise Robichon, and François Guillot.

Thence we pass into the orchard, where the trees are now in good bearing condition. Apples, pears, plums, etc., are giving excellent crops, and fine crops of raspberries, and other small fruits, including the Japanese wineberry and the loganberry are secured. A collection of the newer sweet peas is grown on wire supports in circles cut in the grass. Among them we observed Lancashire (R. Bolton), a fine pink variety; and another fine new pink one, Mrs. Watson, another of Mr. Bolton's raising and named in honour of the wife of Mr. Watson. Others observed were Mrs. C. Foster, Charles Foster, Nancy Perkin, Mrs. A. Malcolm, Sterling Stent, Marchioness of Tweeddale, very good; Mrs. George Charles, Mrs. Alec Ware, Evelyn Hemus, and many others. In another part of the garden rows of other sweet peas are also cultivated. Mr. Watson is a highly successful cultivator and exhibitor of the flower. Here, also, is a new vinery and a tomato house, the vines having been planted about three years ago. The principal variety is Black Hamburgh, and Mr. Watson is securing a fine crop from his vines. Tomatoes are also well done. A carnation house contains a splendid selection of these popular flowers.

The flower garden behind the house is a pretty one, and a good variety is maintained. Some tastefully planted herbaceous borders are furnished with a first-class choice of the best border flowers. Roses are a strong feature here also, and the best of the H.T.'s and the H.P.'s are cultivated in the highest way. Ferns are great favourites, and many choice varieties of the best species were in this and other parts of the grounds.

In the vegetable garden the same high cultivation prevails, and peas, carrots, potatoes, onions, celery, and, in brief, the usual standard vegetables, are excellent and of the highest quality. Strawberries in beds here were very fine, and a leading variety at Hyning is Laxton's Fillbasket, which was bearing literally enormous crops. Among the other varieties we observed the new strawberry George Monro. Here, also, are beds of flowers for cutting.

Many interesting points have been left unnoticed, but a reference must be made to the garden at Mr. Watson's picturesque cottage, where, among other subjects, a bed of rare and choice hardy ferns was particularly fine. The whole place shows what may be done when in the hands of a gentleman who is both willing and able to expend money on his garden, and who is supported by a gardener of ability and skill. Both of these are happily associated at Hyning—hence the high condition of the place and the interest it has for lovers of horticulture in all its branches. S. Arnott.



BEGONIA MRS. ROBERT MORTON.
Colour soft yellow. A.M., R.H.S., July 2. Messrs. Blackmore and Langdon, Bath.

## CLEMATIS MONTANA.

Though one of the smallest-flowered, this clematis is one of the most useful of the whole family for general purposes. Its rapidity of growth, profuseness of flowering, hardiness, and adaptability to almost any purpose for which climbing plants can be used, combine to render it one of the indispensable plants of the garden. It is generally said that all clematis prefer a chalky soil, but this one seems to do equally well in any soil if it is well fed. The main thing to be considered in planting is to give it a good start in the way of deep cultivation and manuring, when it will soon get established, and after the first year grow with amazing rapidity.

Its natural method of growth is to throw out long slender streamers, which are covered the following May with its white anemone-like flowers. If these long wiry shoots are trained in any way it is apt to spoil the natural character of the plant. It is a capital subject for arbours and pergolas, or for running over unsightly outbuildings, walls, fences, etc., but one of the best ways of growing it is to let it run into, and over, some thin, bare, or unsightly tree, planting it some little distance from the stem, and giving it a good start. Grown in this way it may be left to itself year after year, and even when accessible it needs no pruning beyond the thinning out of crowded growth, and the removal of weak and exhausted vines. Immediately after flowering is as good a time as any to do this. It should never on any account be cut down after the manner of the Jackmanni section.

When the flowers are nearly past their best they give off a sweet scent, not unlike vanilla. Alger Petts.

## CHRYSANTHEMUMS.

### Taking Buds of Late Varieties.

Last year, owing to the great heat mainly, the buds of many late chrysanthemums that showed at the end of July were very hard. In some instances the buds were so full of petals that they had not room to develop. In normal seasons the first crown buds are splendid, and the present one will be, I think, a good one for early crowns.

The experienced cultivator treats the plants of a number of varieties in two or three ways, that is, he has plants bearing first natural crowns, others bearing first crowns from early stopping, and, again, some bearing second crowns.

If he knew beforehand what the summer season was going to be like he would know exactly how to treat, practically, every variety; but he does not know, and so he acts accordingly to his judgment.

Many growers will be anxiously watching the progress of that splendid white-flowered Japanese, Mrs. Gilbert Drabble. Of course, it is a very late variety, and needed early stopping. The resultant shoots soon appeared as if they were going to bear premature buds, and any cultivator who may have noticed their condition, and, taking alarm, pinched the shoots again, did a wrong thing, as the bud has not appeared, and will not do so before the proper time—early in August

Last year the variety Frances Jolliffe came almost pure straw-yellow from early crowns, the pink in the petals being very faint indeed. One large grower exhibited some exquisitely coloured blooms from first crowns taken rather late; the pink in them rather predominated. Mary Poulton was persistent in showing buds, and only good blooms resulted from those "taken" rather late. Very early ones had many centres.

I saw blooms of Evangeline last autumn as pink as the old variety Belle Poule when at its best, and in the same stand were pure white blooms resulting from early buds. It seems to be wrong to describe this variety as white, and it would be risky to exhibit it in a class as such, as nearly all the blooms that I have seen were tinted with rosy-pink.

I feel quite such that the colours from the first crown buds this year will be much richer than they were last year, simply on account of the cooler season.

I learn that some growers have put their plants in their flowering pots several weeks earlier than usual, and that, so far, the specimens are far more promising than they have been in previous years. I can quite understand this; too often the young plants are retained too long in the 32's.

### Feeding and Top-dressing.

I am a firm believer in the top-dressing of the plants in the month of July. Many cultivators do not top-dress before the buds are "taken," but this, I consider, is too late, especially in the case of plants finally potted on June 1. If a surface mulch be put on in July another one can be added at the end of August, and there will be many more roots than if only one surface dressing was given after bud-taking. I also believe in feeding according to the condition of the plants. The latter should be kept steadily progressing, and I would feed at any time if it be necessary. I strongly advise beginners to be careful in the use of nitrate of soda. This year I have seen the bad effects of strong doses. The cuttings from the old stools did not make satisfactory progress in the propagating frame, and the plants have not grown out of their sickly condition.

Geo. Garner.

## MENDELISM.

The following is the text of the important lecture on "Mendelism" delivered by J. M. Hector, Esq., B.Sc., before the members of the North of England Horticultural Society at Leeds, and is reproduced by the courtesy of the executive. In this lecture, all reference to animals has been omitted. It should be noted, however, that Mendelism applies to animals as well as plants.

Every new theory challenges criticism. If it be found of general application, it becomes, sooner or later, part of the intellectual currency of the age. In the case of Mendel's theory, however, this acceptance was strangely slow. For the paper was published in 1866, and practically ignored until 1900, when interest in its matter was once more aroused through the re-discovery of the facts by three independent investigators.

How to account for these years of silence is somewhat difficult. They were not due to lack of interest in the subject; nor were they altogether due to chance oversight. The leading authority on hybridisation in Mendel's time, not only read the paper, but corresponded with its author. Yet the theory left no impression on his mind, for Mendel lived before his age. His standpoint was totally different from that of his contemporaries, and it required the progress of thirty-five years to enable scientists to grasp the scope of the theory.

### Mendel's Standpoint.

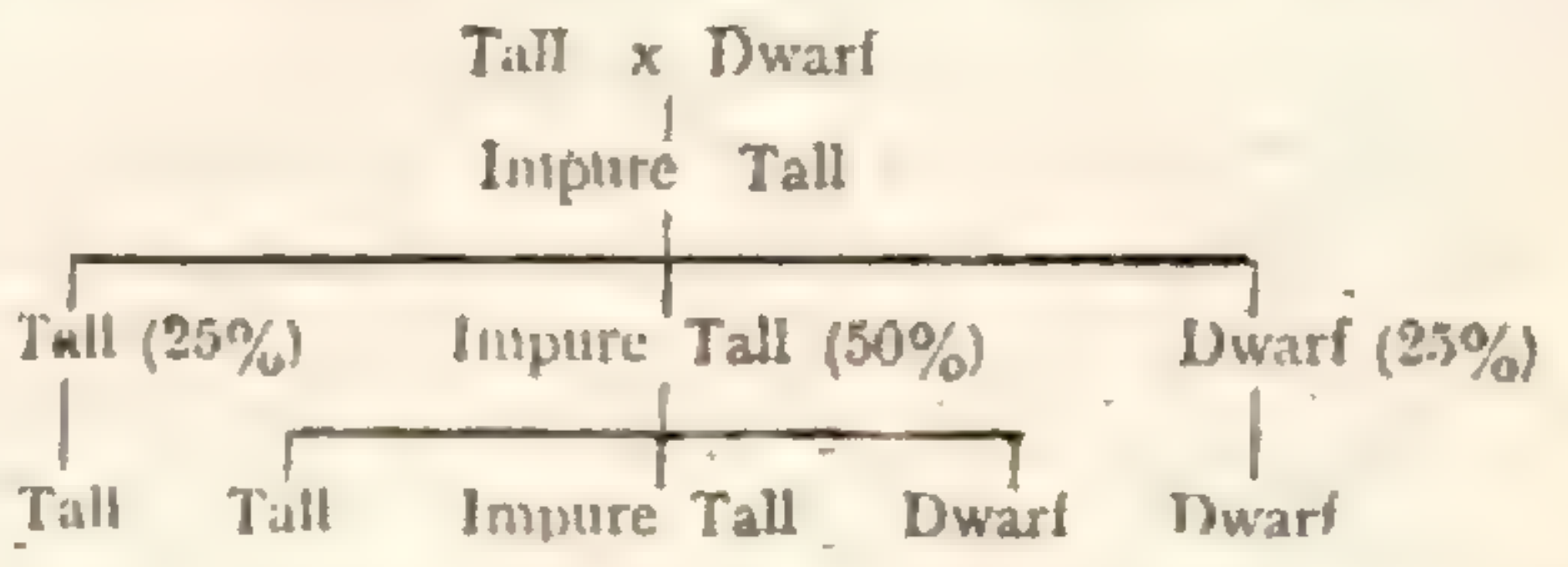
What then was Mendel's standpoint? When we describe a plant (or animal), we do so character by character. When we say that a child resembles one parent in one feature, the other parent in another feature, we are unconscious Mendelists. For if our statement means anything, it assumes that these features have been separately inherited. This was Mendel's position. He looked on plants not as individual units, but as aggregates of characters, each character capable of separate inheritance.

To demonstrate this, Mendel crossed varieties of peas which differed in one or more pairs of characters. Thus, tall peas were crossed with dwarf; green-seeded peas with yellow-seeded; smooth-seeded peas with wrinkled; peas with white-coated seeds and grey-coated seeds. Altogether, the inheritance of seven pairs of characters was thus tested for several generations. All other characters were for the time being ignored.

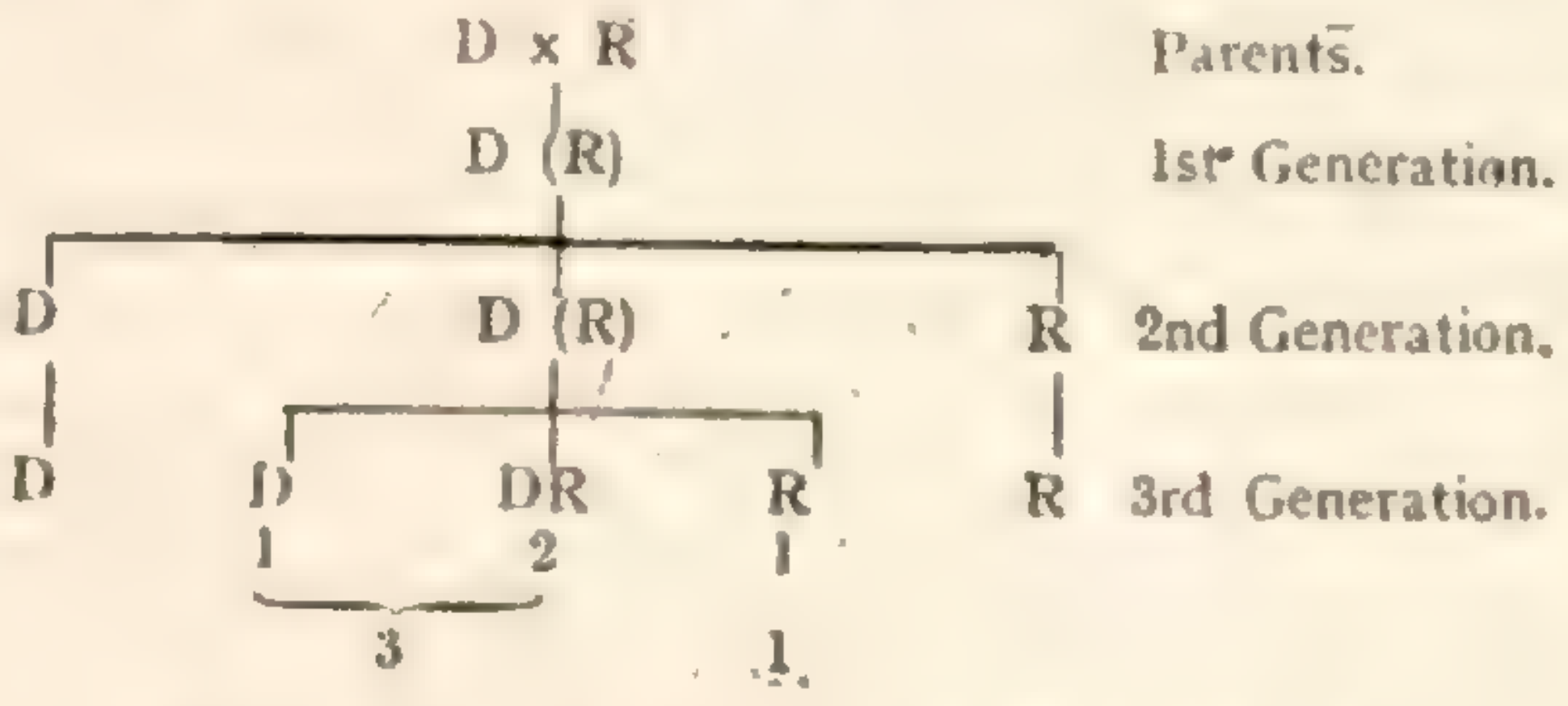
On crossing a tall pea with a dwarf, the hybrids of the first generation were all tall plants, no matter which plant was the seed parent. This tall character was termed the dominant character; the alternative character, dwarfness, which had (outwardly) no expression, he named the recessive. Mendel then asked himself if the dwarf character had actually disappeared; or whether it was still present, but latent, in the constitution of the hybrids. To solve this, he sowed seed from the self fertilised hybrids, and examined all the resulting plants. He found that the dwarf character must have been present in the first generation for the second generation gave both tall and dwarf plants. Further, there were three times as many tall plants as there were dwarf.

Again the question as to the purity of these two sets of plants presented itself. Were the tall and dwarf plants "pure" talls and dwarfs or not (i.e., were they capable of transmitting the alternative characters "dwarfness" and "tallness")? The seed of these plants was accordingly sown, and the plants of the third generation examined individually. Dwarf plants were found to give rise to dwarfs, and to dwarfs only. Not so with the talls. Some gave rise to talls, but from the seed of the others, tall and dwarfs resulted in the proportion of 3: 1. It was also found that the tall plants which gave rise to tall plants were only half as numerous as those which gave rise to tall and dwarf. That is to say, the tall plants of the second generation were not identical. Some were pure tall (minus the dwarf character), and others, twice as numerous, were impure tall (containing the recessive character, dwarfness). In the fourth generation the same phenomena were found.

Summarising these results, we find



Having established the mode of inheritance in one pair of characters, Mendel extended the principle to the other pairs already mentioned, and found it to hold good for all. Letting D stand for dominant, R for recessive, and D (R) for impure or hybrid dominant, we can tabulate the results thus:



### Explanation of Ratios.

Mendel then attempted to explain the ratio of 3: 1, and succeeded in formulating a theory which fits the facts with great accuracy. He supposed that each character would be represented in the pollen grain and the ovule (the future seed) by a single factor, which for simplicity we may postulate as an actual physical substance. Further, he stated that a pollen grain or ovule could contain either the one factor or the other of a pair, but never both. Also, there would be an approximately equal number of each kind of pollen grain and ovule. In other words, the factors would segregate when the reproductive cells form.

Thus, a tall plant would produce pollen grains and ovules, both carrying the factor for tallness. Similarly the dwarf plants would have pollen grains and ovules containing the factor for dwarfness. On crossing these two varieties a hybrid results with only the one character expressed, the other latent. But when this hybrid produces its reproductive cells the two factors segregate, and pollen grains and ovules form, one half of each carrying the factor for tallness, the other half carrying the factor for dwarfness. We have, therefore, two sets of pollen grains and two sets of ovules, approximately equal in number; e.g., 50 pollen grains with the tall factor, and 50 pollen grains with the dwarf factor; similarly with the ovules. These pollen grains fertilise the ovules. The possible combinations are three in number, i.e., Tall x Tall, Dwarf x Dwarf, and Tall x Dwarf. According to Quetelet's "Law of Chance," the combination Tall x Dwarf must occur twice as often as either of the other two, provided we are dealing with a sufficient number of individuals. Hence we get the proportion 1 : 2 : 1.

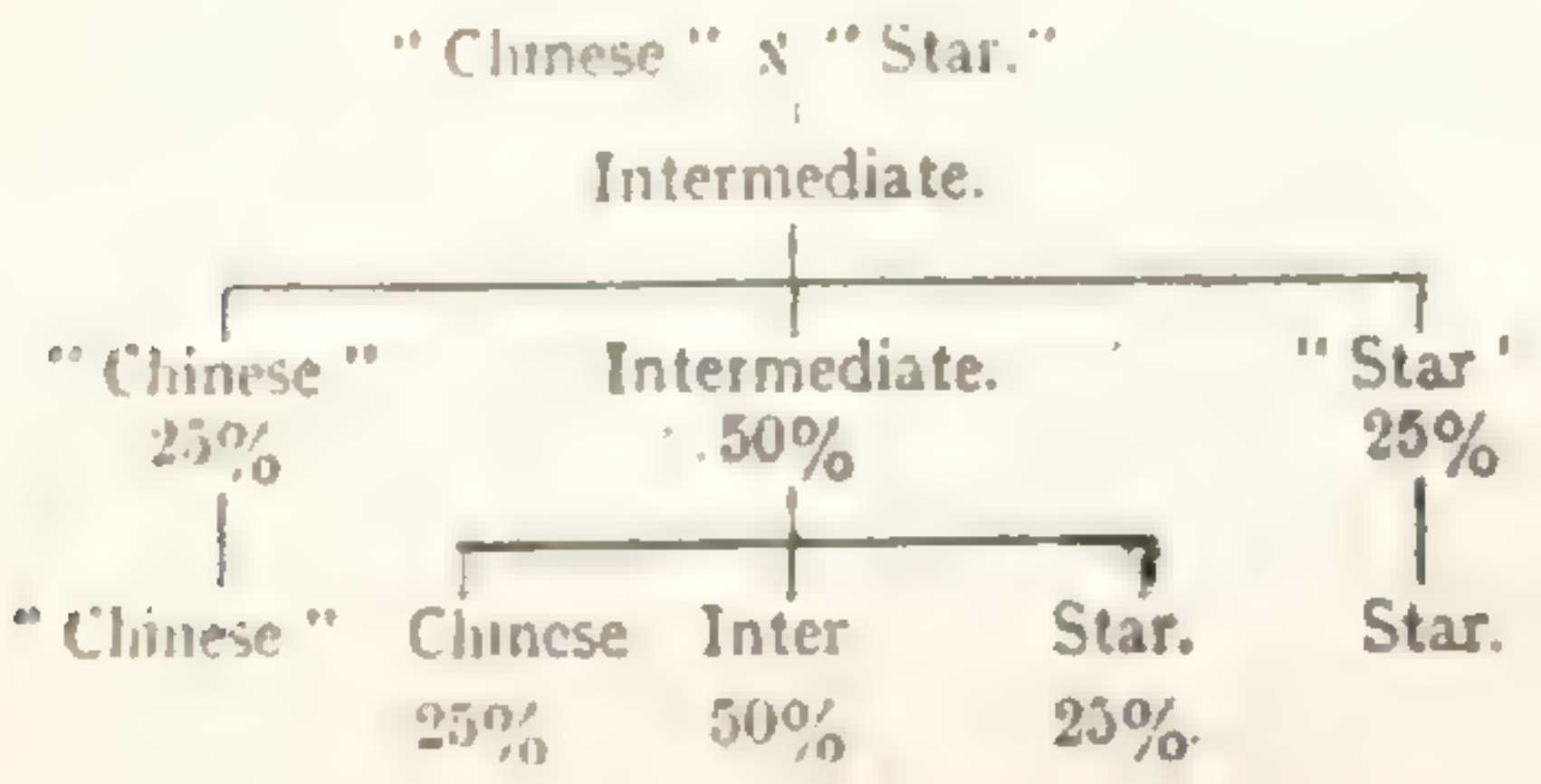
If we toss two pennies simultaneously we get one of the three following combinations, head and head, head and tail, or tail and tail. If we do this a sufficient number of times, we shall get the head and tail combination occurring twice as often as either of the others. That is to say, they will fall in the proportion of 1 : 2 : 1. The law of chance again determines the proportion. But in the case of plants, the mating of the tall and dwarf factors results in a plant looking exactly like a pure tall plant, owing to the dominance of the tall character. Hence the proportion appears to be three tall to one dwarf.

### Recent Experiments.

Within recent years Mendel's experiments have been tested on a large number of plants and animals, and no discordant results obtained. Some of the cases have been found to be of greater complexity than was at one time supposed, and in others, the phenomenon of simple dominance is not known. The hybrid of the first generation is intermediate between the two parents. But this does not negative Mendel's results.

If we cross a long-eared wheat with a short-eared, the hybrids are intermediate in length between the two parents. Seed from the hybrids produces three types, long, intermediate, and short. The proportion is as 1 : 2 : 1. It is here impossible to fix the intermediate form as it is and always must be "impure."

A similar instance is to be seen in the cross between the "Chinese" and "Star" varieties of primula. The former has large waved petals with ragged margins, the latter has small flat petals with a single notch on the margin. The hybrid between these two varieties is a "blend" of the two characters—intermediate in size, petals slightly waved, and with 2-3 notches along the margin of each petal. The second generation consists of 25 per cent. "Chinese," 25 per cent. "Star," and 50 per cent. intermediate or "blends."



### Inheritance of Characters.

We must now proceed to consider the inheritance of two pairs of characters. Thus, suppose we cross a variety of pea having round seed and yellow cotyledons (seed leaves), with one having wrinkled seed and green cotyledons, each character will be separately inherited. Since yellow is dominant to green, and round to wrinkled, the hybrids of the first generation will exhibit both dominant characters, i.e., the seeds will be yellow and round. In the second generations the dominant and recessive characters will both be present, each in the proportion of 3 : 1. Out of every sixteen plants, twelve must be yellow and four green (12:4=3:1). The round and wrinkled characters will also appear in the proportion of 3 : 1. Out of every twelve yellow plants, therefore, nine will be also round and three wrinkled. In the case of the four green, three will be round and one wrinkled. We thus find our second generation to consist of nine yellow round, three yellow wrinkled, three green round, and one green wrinkled.

This class deserves further analysis, for it shows how we may produce in limited time new varieties, whose characters will breed true. Let Y and R represent the two dominant characters and g and w represent the two recessive characters, then the constitution of the two parents will be represented by YR and gw, and the cross YR x gw gives a hybrid with the constitution YR (gw).

(To be continued.)

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**Combretum purpureum.**—An old-time stove climber from Madagascar, whose scarlet flowers are borne from midsummer till in many cases autumn is well advanced. The flowers are individually small, and borne in branching panicles, each branch consisting, as it were, of a distinct spike. It is not of particularly vigorous growth hence good flowering examples may be trained round a few sticks, although it is really seen to better advantage when trained to the roof of the stove. This combretum is also known as Poivrea coccinea, and was introduced in 1818. At one time it was regarded as a good test of the propagator's skill, the cuttings being considered extremely difficult to root, but one hears little of it nowadays. However, like Ipomæa Horsfalliæ, young shoots may be readily grafted on to pieces of the roots taken from an established plant.—W. T.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

EPIDENDRUMS.—Besides the one mentioned in the issue of June 29 there are many species of this extensive genus which deserve general cultivation. When strongly grown, they produce large panicles of brilliantly-coloured flowers that open in succession for several months, and are extremely useful for table or other floral decorations. Among the brightly-coloured sorts are the well-known E. radicans, E. fulgens, E. cinnabarinum, E. ibaguense, and E. xanthinum (bright yellow). The distinct hybrids E. Boundi, E. Dellense, E. O'Brienianum, E. elongatum, and E. radico-vitellinum are also useful orchids, and worthy of cultivation. Those which are of semi-scandent habit, like E. radicans and E. Boundi, must be trained to some kind of support; for instance, they may be grown tied up to a wall or pillar, the shoots being fastened to wires, or a wooden trellis. Some growers prefer to grow the stems singly in small pots, using ordinary garden sticks for supports; plants grown in this way are very useful for decorative purposes. Larger plants can be trained round stakes much in the same way as ordinary greenhouse climbers are often grown. The plants of this section produce ærial roots from their stems, and frequent syringings overhead are a necessity whilst in full growth. Now that most of these plants have passed, or are about to pass, their flowering stage, and the old shoots having grown very long, those stems with young shoots on them may be cut down to about 2ft. or so in length, and be repotted or replanted. These epidendrums thrive well in light positions, either in the cattleya or intermediate house; and for convenience they should be placed together; so that they may be syringed overhead throughout their period of growth. They will succeed in the same kind of compost as cattleyas, but must not be potted too firmly; the drainage, as usual, must be ample.

OTHER EPIDENDRUMS that are worth growing, although of quite a different character, are E. fragrans, E. atropurpureum, E. Cooperianum, E. sceptrum, E. odoratissimum, E. aurantiacuno, with such hybrids as Epi-cattleya matutina, E.-c. Nebo, E.-c. radiata-Bowringiana, and others, which for cultivation purposes may all be treated as one section. These and similar plants may also be repotted as soon as growth begins and treated in exactly the same manner. Such kinds as E. Wallisi, E. Endresi, E. Endresio-Wallisi, E. Clarissa, E. elegantulum, and E. vitellinum majus do best when subjected to an even temperature the whole year round, placing them during the summer months in the cool house, and in winter in a cool position in the intermediate house. Now that we have two varieties of E. vitellinum flowering at different seasons of the year, it is obvious that the plants will require attention at different seasons. Careful observation will soon decide the proper time when to repot or disturb any plant. These epidendrums should be supplied with plenty of water at the roots when well established; but too much care cannot be taken in the application of water to a newly-potted plant, as by an overabundant supply the compost is ruined, and in many cases the plant killed. The plants should be cleaned from time to time, as in many localities red spider is persistent in attacking them, and a weak solution of some safe insecticide will keep them clean, and do them no harm.

THE WHITE-FLOWERED E. (Diacrium) BICORNUTUM require a higher temperature, the most suitable position being one quite close to the roof glass, in the lightest position in the East Indian house. Established plants, while at rest, need but very little water to keep them plumb, but when growing they need copious supplies whenever the compost appears to be dry. At this season the plants will begin to grow, and, as the young roots push out from the new growth fresh rooting material should be afforded to those in need of it. This species is best grown in shallow pans, and the compost as advised for the others will meet its requirements. The rare E. nemorale will succeed under the same treatment. — J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

WINTER-FLOWERING BEGONIAS, such as Gloire de Lorraine and its white variety Turnford Hall, Mrs. Heal, Agatha, Patti, L'Ideal, etc., will need constant attention now. Young plants which were rooted early in February, having been potted and kept growing, are now ready for their final shift into 6in. pots; this size is large enough for all general purposes, as these begonias, being fine-rooting subjects, do not need a large amount of root room in comparison to the size the plants attain. If very large specimens are required for exhibition, 8in. pots may eventually be used, but only for the very largest plants. These begonias resent overpotting and over-watering very much. The best compost to grow them in will be two parts fibrous loam, one part peat or leaf-mould, and one part silver sand passed through an ½in. sieve. The soil should be moist and workable, not sticky; it should also be warmed by being placed in the house in which the begonias are growing over night. Make the compost firm, but do not ram it. These begonias like a fair amount of heat when growing, but they cannot be classed as stove plants. A temperature of 60 degrees at night during the summer, with plenty of moisture overhead suits them admirably; they must also be shaded. Plants subjected to a high temperature become drawn and spindly, and during the winter (their flowering season) the flowers are pale and the flowering season short. A temperature of 50 degrees at night and 55 by day when in bloom suits them splendidly, and if the plants are staged in a conservatory or corridor where these conditions obtain they will remain in perfection for months. These begonias are also invaluable for house decoration.

PELARGONIUMS.—Show pelargoniums are now practically over, and the plants should be placed outside on an ash-bed in full sun to ripen the growth. In a fortnight the plants will be ready to be cut down, and the cuttings inserted for next year's stock. In all well-ordered gardens a list of stocks of every class of plants grown in the gardens should be kept, and hung up in the potting shed. This can be referred to at any time, and when batches of plants are being potted it acts as a reminder for all concerned. The cuttings are best placed three in a 3in. pot, in a sandy compost; kept close for a fortnight the cuttings will soon root, and they should be potted up singly directly they are rooted sufficiently. When the old stools show signs of breaking into growth from the hard stems they should be shaken clear of the old soil, have the roots trimmed, and be potted in 3½in. pots. Zonal pelargoniums intended for winter flowering should be potted into 32's at once, using a rich potting compost. These are best placed outside on an ash-bed. The leading shoots should be pinched frequently, and all the flower-spikes must be pinched out.

BOUVARDIAS.—Cuttings which were inserted in April are now making nice plants in 3in. pots and are ready for potting into 48's; the compost best suited to their needs will be loam, peat, sand, with a little mortar rubble and wood ash added. They are best grown in a slightly heated pit, and lightly shaded. When growing they should be pinched occasionally to encourage a bushy habit. Some growers plant their bouvardias in beds in the frames, and get good results also, but the great drawback to this method is that the plants often get a severe check when lifting them for potting. In this case the ball of soil close to the plant should be cut round by degrees a fortnight before potting operations commence.—Lewis Smith, Shotesham Park Gardens.

## THE KITCHEN GARDEN.

TOMATOES.—Spring-raised plants that are now in full bearing will need every attention to keep them in a fruitful condition till the later sown batches are in, and from the early sowing very fine fruits are obtained when six to ten feet of growth is made. Do not allow the plants to become dry or the fruits will crack after watering; and avoid over-feeding, but supply just sufficient nutriment matter to maintain a steady and even balance of fruit and foliage. Rather rely on occasional top-dressings of loam and a little burnt garden refuse added; this will be found to encourage a constant root action through the surface of the new soil. Tomatoes are fond of ordinary liquid manure made by equal parts horse and cow manure, with a little soot added. Place the whole in a bag and immerse in water. Dilute as required for watering. Pot or box later sowings when large enough, give plenty of air, and, wherever possible, place the plants in direct sunlight. Use a compost for these consisting of turfy loam, a little mortar rubble, and a slight addition of bones, particularly if the plants are weak from any cause.

OUTDOOR TOMATOES are growing freely, and will need every care and attention in tying the leads and suppressing the side growths as they appear. Tap the plants briskly when in bloom to disperse the pollen and ensure perfect fertilisation of the fruits. Top-dress as required, use horse droppings later for the same purpose.

AUTUMN-SOWN ONIONS.—These have grown apace, and will almost have finished their growth. When it is observed this is the case, gradually lift them to prevent the bulbs splitting, slowly dry them off, and store in a cool, dry place. Garden lights are perhaps best to use to obtain perfect ripening. Place the bulbs on hurdles, raising the light, with bricks t oallow a free passage of air through them. In dry weather during the day the lights should be removed, taking advantage then by turning the onions over occasionally.

CELERY.—This is not often required till late in September. Still, where a few exhibition heads are required in August, preparation should be made for their production by drawing any basal growth and lesser leaves. Give a top-dressing of nice loamy soil, and commence blanching with brown paper bands five inches in depth. Place fairly firm around the base of each stick, and add similar bands at fortnightly periods till the desired height is attained. Water as required, and keep a sharp look-out for slugs. Dust with soot as a preventive.

CABBAGE.—It will soon be time to make one small sowing of cabbage for an early spring supply. Here we usually make a sowing about the 25th of the present month; these are found so useful for planting on warm borders, independent of the main August sowing. Ofttimes we can cut nice heads in January if required. Sow the seed in a well prepared bed, using a little fresh soil, with burnt garden refuse. Net the bed securely from birds, and plant out as soon as ready in the positions above-mentioned. Excellent varieties are Sutton's April and Harbinger.—G. Ellwood, Swanmore Park Gardens.

## HARDY FRUITS.

PEACHES AND NECTARINES. — The training-in of young necessary shoots should have timely attention, particularly in the case of those varieties which ripen early; if the fruits are not fully exposed to the light before colouring commences there is the danger of scalding taking place, and the fruits will be both lacking in colour and flavour. As in previous notes, I would again emphasize the necessity of allowing ample space for each shoot to develop its foliage, and ensure the ripening of the wood without overlapping. When the laying-in of the shoots is completed any leaves which may obstruct free admission of sun and air to the fruits should be removed. Examine the ties on young and vigorous trees. Much harm occurs if the ties are too tight, and cutting into the young and tender bark. Gumming is the usual result of shoots injured in this manner. During sunny weather thoroughly syringe the trees—daily if possible and late in the afternoon. A cool and moist condition throughout the night is most beneficial to the trees, and materially assists the colouring up of the fruits. In places where the rainfall has been light, water should be freely applied. Soak the borders thoroughly; half and half measures do more harm than good. Trees infested with red spider should be sprayed with a suitable insecticide, and every effort should be made to cleanse the trees of this pest before the fruits commence to ripen. Sulphide of potassium, ½oz to a gallon of water, is an effective remedy. I have, however, found that the effect of sulphide of potassium on certain varieties of peaches and nectarines does more harm to the foliage than red spider. Varieties with leaves having deeply-serrated edges are those chiefly affected; leaves with smooth edges escape injury.

FIGS ON WALLS.—In the warmer parts of the country the young growths are sufficiently advanced to lay them in, and if the shoots are very strong pinching out of the points should be resorted to; as the foliage of the fig covers a considerable area thin training is most essential. Very few insect pests trouble fig trees. White scale is usually the most troublesome pest to deal with, and this calls for drastic winter treatment. Red spider at times shows itself. A thorough syringing will, however, keep the foliage free from this pest.

RED AND WHITE CURRANTS.—Protection from the attack of birds should be given, as they are very partial to the ripening fruits, especially to the white varieties. If growth from the spurs or side growths prevents free admission of light, such lateral growths may be pinched back to three or four leaves. This operation should be performed before the nets are put over the bushes.

GOOSEBERRIES.—These fruits are ripening fast in this district, and no doubt in other parts as well. Protection should likewise be given. Owing to the thorny nature of the bushes, it is not wise to lay netting on them; some form of support must be erected similar to that advised for raspberries in a previous calendar, the height of same to be adjusted in accordance to that of the bushes. Where possible, it is an excellent plan to make a plantation and cover with galvanised wire netting; the mesh must be small enough to exclude such small birds as tomtits and bullfinches. Having had experience of the value of this method of protection I strongly recommend it in every way. W. Messenger, Woolverstone Park Gardens, Ipswich.

**Jasminum Maingayi.**—This comparatively new and little-known species of jasmine from Eastern Asia is a very pretty climbing plant for the roof or rafters of a stove or intermediate house, where it will continue to flower for months together. The glossy foliage is decidedly attractive, and the white, starry, fragrant blossoms are borne freely.—T.

**Spring-sown Onions** are now bulbing beautifully. Every encouragement should be given them during the next six weeks, when practically the growth should be finished. Ply the hoe regularly, and assist them with dressings of artificial manure. At other times apply soot, with copious watering should dry weather prevail. Keep a sharp look-out for mildew; speedily remove the leaves having the slightest trace of the pest, and burn them. I believe that if the first spores were observed in time, no more would trouble us. Anyway, burn every piece, and as a preventive dust with equal parts sulphur and newly crushed lime when the plants are damp with dew. Treat the main sowing similarly as regards the dusting compounds.—G. Ellwood.

# EXHIBITIONS AND MEETINGS.

### Newcastle-on-Tyne Horticultural Society.

JULY 3 to 5.

The eighty-eighth annual show of the Durham, Northumberland, and Newcastle-on-Tyne Botanical and Horticultural Society was held in the Recreation Grounds on July 3, 4, and 5. The opening day being wet, and the following ones anything but seasonable, the society may be congratulated on so large an attendance. As many of the side shows were not included in the charge for admission the Society should be in a better financial position than has been the case of late years. The show generally was not up to the usual standard. There was little competition in the fruit classes, and there was a big falling off in the quality of the large groups, which have previously proved a great attraction to the Society's summer show.

The trade groups also were in many cases below the usual standard, and only locally represented. There can be no doubt that the Royal Show at Doncaster was one of the principal causes of the absence of the trade groups, but the earlier date of the show materially affected local exhibitors who usually competed, in the fruit classes more especially.

In the class for a group of miscellaneous plants, arranged for effect, Mr. H. H. Hillier, Darlington, was first. The arrangement was neatly carried out, the plants consisting principally of finely-coloured crotons, variegated acers, caladiums, alocasias, with roses, orchids, ixoras, and other flowering plants. Messrs. Carnegie and Co., Lim., Newcastle, were second, and Mr. T. Wilkinson, Newcastle, third.

In the class for twelve bunches of sweet peas, distinct varieties, there was a very strong competition, and Mr. W. H. Hardy, Three-Mile-Bridge, was first. The vases of Etta Dyke, Masterpiece, and Helen Lewis being very fine, and the colour and flowers generally were of high quality. Messrs. Castle Bros., Carnforth, second; Mr. T. H. Bolton, Exeter, third; and Sir George Trevelyan, Bart. (gardener, Mr. E. Keith), fourth. In competition for the prizes for three bunches Mr. F. Bell, Whitley Bay, was showing very fine examples of Afterglow, Prince George, and Barbara. Mr. T. H. Bolton, second; and Messrs. Castle Bros., third. In the open classes for roses there were some very fine exhibits. For thirty-six roses, eighteen distinct varieties, Messrs. H. Dixon, Lim., Belfast, was first, Mrs. C. Dixon, Leslie Holland, Mrs. J. Pinkerton, John Cuff, and W. Cooper being particularly fine. Messrs. Gibson and Co., Bedale second, and Mr. T. Park, Bedale, third. For twenty-four roses, twelve distinct, Messrs. Dixon were first, Archie Grey, The Lyon, W. Sergent, and Leslie Holland being particularly fine. Messrs. Gibson and Co., second, and Mr. T. Park third. For twelve roses, eight distinct, the competitors were again placed in the same order. For twelve blooms of any hybrid or hybrid perpetual Mr. T. Park was first.

The amateur and limited classes were well filled, but the quality was not so good as in previous years.

The class for eighteen bunches of flowers of herbaceous plants brought the most meritorious plants exhibit in the show. Messrs. Gibson and Co. were easily first, the most remarkable being delphiniums in varied tints, Verbascum Caledonia, Campanula Mrs. Lawrenson, and gaillardias. Messrs. Harkness and Sons, Bedale, were second, and Messrs. G. Longster and Sons, third. For twelve herbaceous or hardy flowers Earl Grey (gardener, Mr. W. Lambert) was first, and Mr. E. Keith second.

For the best collection of cut carnations Mr. J. E. Hathaway, Baldersby Park, Thirsk, obtained premier honours, and Messrs. W. Lawrenson and Sons, Newcastle-on-Tyne, were second. For a group of carnations in pots Messrs. Lawrenson was first and Mr. D. Marshall, Yarm, second.

In the classes for collections of eight and four dishes, Mr. Hathaway was the only exhibitor, and was deservedly awarded the first prize in each class. Mr. Hathaway was also the only competitor for four bunches of grapes, not less than two varieties, and two bunches of Muscats, and was awarded the first prize in each class. For two bunches of white grapes, any other variety, Mr. Hathaway was again first; Mr. Dodds second. For two bunches Black Hamburgh, Mr. J. Hathaway was again first, Mr. W. Lambert second, and Mr. Dodds third.

The first prize for two bunches of black grapes, any other variety, was awarded to Mr. E. Keith for good clusters.

For a dish of peaches Mr. Hathaway first, Mr. A. Woods, Beamish Park, second, and Mr. Dodds third. For a dish of nectarines Mr. Hathaway first, Mr. Clark, Morpeth, second, and Mr. Woods third. Mr. Hathaway obtained premier honours for a dish of cherries and Mr. W. Lambert was second. For strawberries and tomatoes Mr. Hathaway was first in each class.

The local nurserymen made some meritorious displays. Messrs. Finney and Co., Lim., Granger Street, Newcastle-on-Tyne, were awarded a gold medal for floral designs, decorative foliage and flowering plants. Messrs. W. Lawrenson and Sons were awarded a gold medal for rockwork, carnations, flowering and foliage plants, roses, and hardy flowers. Messrs. Laing and Mather, Kelso, received a gold medal for a very well-designed rockery, hardy flowers, and conifers.

Silver medals were awarded to Mr. F. J. Bell, Whitley Bay, for a fine exhibit of violas, etc., and to Messrs. Ord Bros., North Shields, for tuberous begonias, liliums, and decorative plants, etc.

Messrs. Michie and Co. Alnwick, received a certificate for pink Mrs. Beckett Chayter and Mr. W. J. Sanderson, Warkworth, for delphinium True Blue.

## Bournemouth Gardeners' Association.

### VISIT TO MICHELGROVE HOUSE GARDENS.

About fifty members of the above-named association visited the lovely gardens at Michelgrove House, Boscombe, on the evening of June 28, by the kind invitation of Walter Childs Clark, Esq., F.R.H.S. The members were conducted round the gardens by Mr. Clark, and his son-in-law and daughter, Mr. and Mrs. G. Hamilton. The gardens were in the best possible condition, and roses were to be seen everywhere. Mr. Clark is an enthusiast, and grows about two thousand plants as dwarfs, standards, and climbers. He advocates the growing of the Lyon rose as a standard, and all the red varieties and Lyon in partial shade. There are many pine trees growing all over the gardens, except on a portion of lawn in front of the mansion, and these cast a shade which seems to greatly benefit the roses, as the colours are very rich and last for a long time in a fresh condition. One variety, Lady Waterlow, does not receive any sunshine, and yet its colours were exquisite. That grand rose, Hugh Dickson, was in the best possible condition under some trees, and looked magnificent in the glinting sunlight which came through the branches of the pines overhead. On the trunks of many of these pines climbing roses were trained to a height of nearly 20ft. The golden oak was equally rich in colour, under the pine trees. Hiawatha, Crimson Rambler, Climbing Caroline Testout, and American Pillar were grand as trained on trees. Some of the climbers were growing in front of rhododendrons, and had their shoots trained over the more prominent branches of these evergreen shrubs, and most beautiful the effect was. Mr. Clark believes in hard pruning of the variety Juliet, and certainly his treatment answered, as the resultant blooms were very fine. There is an utter absence of formality in the gardens; they are unique and most charming. New roses are added to this large private collection every year, and only the very best are grown. A few only can be named here. Clematises on trellises and rock pillars for pergolas are other features of these gardens.

After tea the members were invited, by Mr. Hamilton, to look round his gardens at Boscombe Place, which almost adjoins Mr. Clark's garden. Rockery and alpine plants were to be seen in good condition; roses were also very plentiful and good, and, in the wild garden lily of the valley and camellias were growing luxuriantly under pine and other trees. Mr. Hamilton said the camellias had flowered very well owing to the ripening of the wood last year. The kindness extended to the members was greatly appreciated, and very hearty votes of thanks were accorded both Mr. Clark and Mr. and Mrs. Hamilton before the party separated.

## Sweet Pea and Rose Show.

A very successful exhibition of sweet peas and roses was held in the Westover Palace Rink on Wednesday, July 3. The building is an immense one, central, and in every way suited to the arrangement of a fine flower show.

The object of the exhibition was to encourage the cultivation of sweet peas and roses, and to further the interests of the Bournemouth Gardeners' Society. The committee responsible for the arrangement are to be congratulated on the general success of the show, and the visitors were pleasantly surprised at the lovely display which they saw.

### SWEET PEAS.

For the best and most tastefully arranged display of sweet peas with any foliage on a table space 5ft. by 3ft. Mr. Evans, gardener to G. J. Fenwick, Esq., was first; Mr. Weaver, gardener to Major Tinker, Christchurch, being second. Mr. G. Garner, Bournemouth, was first in the class for a dinner table decoration of sweet peas and any foliage; Mr. Evans being second, and Mr. Weaver third. Mr. E. G. Cox was the winner in the class for nine vases of sweet peas with own foliage; Mr. Weaver was second; both of these exhibits were very fine. For three vases, distinct varieties, Messrs. Cox, Weaver, and C. Pearce won in the order named. Mr. Cox was the winner in the class for one vase, mixed varieties, followed by Messrs. Pearce and Weaver. Mr. Cox had the most tastefully arranged epergne of sweet peas with any foliage; Mr. Nippard taking second honours.

### ROSES.

For the best display of roses arranged on a table Mr. Weaver was the winner. Mr. G. Cockman had the best six vases, distinct varieties. Messrs. Cox and Pearce were the winners in the above order for three vases. Messrs. Pearce, Cox, and Evans won in the order named in the class for a bowl of roses with own foliage. Mr. Garner had the best basket of roses, Mr. Evans taking second honours. Mr. Garner also had first for a shower bouquet of roses with any foliage. The best H.P. rose was staged by Mr. Douch; he had a nice bloom of Margaret Dickson. Mr. Cockman had the best H.T.

### NON-COMPETITIVE EXHIBITS.

These made a grand display. Mr. J. Stevenson, Wimborne, Dorset, had sixty vases of sweet peas, occupying a table space of 50ft. run. It was a very beautiful exhibit. The flowers were very large and fresh, the stems being exceptionally long. Messrs. D. Stewart and Sons, Wimborne, had about one hundred vases of roses, and some new climbing varieties in pots. Mr. M. Prichard staged, in his well-known style, a beautiful collection of herbaceous cut flowers. Messrs. G. Watts and Sons, Palace Nurseries, Bournemouth, had cut blooms of sweet peas, roses, and carnations, and a group of stove and greenhouse plants. Groups of flowering and foliage plants were arranged by Mr. Evans, the Park Nurseries Co. (W. Welch, manager), and Mr. T. K. Ingram, Parkstone, Dorset. Mr. Reeves had sweet peas, Mr. Elford border carnations, and the Christchurch French Gardening Company salads and vegetables. Mr. Clark, of Michelgrove House, filled a table with some lovely new and choice roses.

## Parkstone Gardeners.

On Thursday, July 4, a very fine exhibition of rambling roses was held by the members of this association. Although the soil in this district is light and gravelly in many parts, the roses do well, and this year the colours are very rich indeed.

First-class certificates were awarded to Mr. Palmer, the hon. secretary, and head gardener to the Poole Corporation, for roses, and to Mr. E. G. Cox for sweet peas.

There was a good attendance of members —about fifty—and several ladies who are enthusiastic rose growers and supporters of the work of this society. Mr. Holmes occupied the chair.

## Wigtonshire Horticultural Association.

On Wednesday, June 26, about thirty members of this old-established society held their annual outing, which this year was confined to the county. Leaving Stranraer, the headquarters of the society, in the early morning, the party were conveyed in two motor brakes along the beautiful shores of Luce Bay to Monreith, the residence of Sir Herbert Maxwell, Bart. Here they were received by Mr. Gordon, the head gardener, and conducted through the interesting and extensive gardens and policies, and were enabled, owing to the brilliance of the weather, to view the fine collections of herbaceous and rock plants, as well as the grapes and vegetable crops, under the best possible conditions. From here the party journeyed across country to Galloway House, pleasantly situated upon the shores of Wigtown Bay. Here Mr. Day, head gardener, acted as guide, and several hours were happily spent in inspecting the inmates of the glass structures, and the flower and vegetable quarters of the enclosed gardens. Needless to say, fruit is a speciality here, and much interest was evinced in the crops, both under glass and in the open. Vegetables, too, were prominent, and, owing principally to the genial season, Mr. Day was able to show some excellent examples of early potatoes, one root of each variety being raised and exposed upon the ground, that all having an interest in the valuable tuber might leisurely inspect the produce, and be convinced of the general excellence of the earlier crops in Scotland this season. Carter's First Crop, Duke of York, Sharpe's Express, Sharpe's Victor, Sir John Llewellyn, and Midlothian Early were each in turn scrutinised, and as all had an equal advantage as to soil and aspect for development, it was a comparatively easy matter to detect their respective merits. It may be worthy of note that the first-named and the last-named secured the greatest number of admirers—both being in a way distinct—early and second early, and although the number of tubers to each root and the weight of crop was considered well above the average, scarcely any small or unusable tubers were observable. Three lines, having one hundred plants in each, of Carter's Beefheart Cabbage were also much admired for their size, symmetry, and vigorous appearance. The extensive grounds and flower gardens were afterwards visited, where many stately trees, finely flowered and fragrant shrubs were viewed and very favourably commented upon.

On the call of Mr. Belford, hearty cheers were given for Messrs. Gordon and Day (the former having accompanied the party from Monreith), to which both gentlemen replied, and the party left, as the shadows of evening were deepening, upon their forty miles' run back to the starting-point—Stranraer—regretting that no further exploration of the charms of the estates could then be made owing to lack of time.

**Cardiff & County Horticultural Society.**

**24th GRAND ANNUAL SHOW**
SOPHIA GARDENS, CARDIFF,
**Wednesday & Thursday, July 17 & 18, 1912.**
Specially good prizes in every Section, amounting in Money and Plate to nearly **£500.**
Tents lighted by electricity by Messrs. Fred Price and Co., Ltd.
POPULAR PRICES.
Schedules from the Secretary,
Mr. A. MAURICE BAILEY, 24, Duke Street, Cardiff.

THE HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

The TWENTY-FIRST SHOW of the above Society will be held in the CITY HALL, HULL, on WEDNESDAY and THURSDAY, 20th and 21st November next. Send for Schedules to
JAMES DIXON, Hon. Secretary,
County Buildings, Hull.

LEICESTER.—ABBEY PARK FLOWER SHOW, 6th and 7th August next. Open Class, Group of Plants, £20, £15, £10, £6. Liberal prizes for Collections of Fruit, Displays of Roses; Silver Cup, Gold and Silver Medals for non-competitive exhibits. Schedules from JOSEPH BURTON, Supt.

ROYAL LANCASHIRE AGRICULTURAL SOCIETY.
GREAT HORTICULTURAL EXHIBITION will be held in connection with the above at Preston, August 1st, 2nd, 3rd, and 5th. Entries close July 15th. Schedules on application to PETER BLAIR, Trentham Gardens, Stoke-on-Trent.

**HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.**

## National Sweet Pea Society.

The exhibition held by this society at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on July 9 and 10 was the very finest it has ever held. In high quality and in the wide range of colouring exhibited by the fragrant flowers this exhibition has never been exceeded. The hall was well filled, and the table decoration class overflowed into the Lecture Hall upstairs. The show was, perhaps, scarcely so effective as usual because erections of baize-covered staging were placed down the centre of each table, spoiling the show as a spectacle, though perhaps it was to the advantage of some competitors. The gallery was tastefully decorated by Mr. Tigwell and the hon. secretary, and all round the hall were wonderful trade exhibits, all of sweet peas, certainly the finest trade displays the society has attained.

A rule to the effect that double standards would disqualify caused a good deal of trouble, and there were not a few disqualifications as the result of numerous protests against infringement of the rule. In several cases the best flowers were displaced because of double standards.

### GENERAL DIVISION—TRADE EXCLUDED.

In the Sutton Cup class for twenty-one bunches, distinct, Mr. A. Moring, gardener to A. W. Stirling, Esq., Holme Lea, Goring, led, and his best bunches were of Hercules, Thos. Stevenson, Elsie Herbert, Flora Norton Spencer, and J. Ingman. Mr. Humphrey, gardener to C. Hopton, Esq., The Cottage, Greenford, was placed second. The best twenty-four bunches, distinct, found Mr. F. C. Beale, gardener to Mrs. A. Kensington, Haverbrack, Uckfield, to the front with some lovely flowers, those of Helen Grosvenor, Winsome, Mr. W. J. Unwin, Clara Curtis, and Tenant Spencer being especially good; Mr. Moring secured the second prize. Mr. T. Stevenson, gardener to E. G. Mocatta, Esq., Woburn Place, Addlestone, would have led the way in teh Eckford Cup class, but was disqualified, and so Mr. A. E. Usher, gardener to Sir Randolph Baker, Bart., Blandford, won the cup with grand flowers of Barbara, Clara Curtis, Lavender George Herbert, Dora Usher, T. Stevenson, and Evelyn Hemus; Mr. T. Bethell, gardener to Captain Twist, Earley Lodge, Reading, came second. Mr. Cowdy, Greenhall, Longhall, Armagh, won the Dobbie Cup with splendid flowers of Prince George, Mrs. Cuthbertson, W. P. Wright, R. F. Felton, and King Manoel—all other competitors were ruled out of court.

Mr. C. Stapylton, Englefield Lodge, Englefield Green, scored for three bunches of cream-pink varieties with Mary Longdown, Miss Chetwynd Stapylton, and Mrs. R. Hallam. Mr. Beale, gardener to Mrs. Kensington, led for three vases of double standard varieties, and here he showed Audrey, Crier; Orange Perfection, and Scarlet Emperor; Mr. Usher second, and Dr. Phillips, Malpas, was third.

SWEET PEA R. F. FELTON.
Lavender-colour. A.M., N.S.P.S., July 9. Mr. R. Bolton, Carnforth.

### OPEN CLASSES.

Mr. J. Stevenson, Poole Road, Wimborne, scored in the Classification class for twenty-four bunches, and he had Earl Spencer, Thos. Stevenson, and Maud Holmes; Mr. Tigwell second. In the class for a dozen bunches, distinct, everyone was disqualified, but the judges recommended prizes in order of merit to Mr. F. G. Bealing, Burgess Street Nurseries, Bassett; Mr. C. B. Gabriel, Easdale, Horsell; and Mr. Fairbairn, gardener to E. Otter, Esq., Stanhope Park, Greenford, each of whom showed finely.

In the novelty class for three bunches of seedlings, Mr. T. H. Chapman offered a special cup as first prize, and this was won by Mr. R. Bolton, Carnforth, with Andrew Aitken, apricot-pink; Agricola, lilac, mauve edge; Birdbrook, chocolate-marbled on blush; Mr. Moring second, and Mr. R. Wright, Formby, third. The E. W. King Challenge Cup for a dozen bunches was won by Mr. Cordell, gardener to A. F. Bladesby, Rookfields, Reigate; his best vases were of Melba, Hercules, Edrom Beauty, and Flora Norton Spencer; Mr. Prophet, gardener to R. P. Brooks, Esq., Par Station, Cornwall, second; and Mr. Cowland, gardener to R. J. Lemon, Esq., Bransfield, Godstone, third.

Mr. Prophet scored for six bunches of five stems each with good vases of Doris Burt, White Queen, Isobel Malcolm, Mrs. W. King, Dazzler, and Anglian Orange; Mr. Usher third, and Mr. W. Richardson, The Grange, Sutton, third. Mr. Bealing was the only prize-winner in the class for six bunches of spikes with double standards, and led with popular varieties; Messrs. Faulkner and Aitkin, Tarvin, Chester, second; and Mr. T. Cross, Bury St. Edmunds third.

In the Burpee Cup class for a table (8ft. by 4ft.), filled with fine waved varieties, each of the eleven competitors fell under the ban of disqualification, but the judges recommended prizes to Mr. W. E. Alsen, Denmead; Mr. W. Hopkins, gardener to Francis Wellesley, Esq., Westfield, Woking; and Mr. C. W. Breadmore, Winchester, in the order named. This class, set down the centre of the hall, was a great attraction, and added materially to the effect of the show.

### DISTRICT CLASSES.

The district classes, to permit folks resident in a group of counties to compete on more or less equal conditions, formed a novel feature, and in these classes prizes of plate were given by Messrs. Barr and Son, Mr. Robert Bolton, Messrs. E. Webb and Sons, Mr. C. F. Faulkner, Messrs. E. W. King and Co., Mr. A. Hallam, Mr. W. E. Alsen, and Messrs. Dobbie and Co. In these classes there was a poor competition in some groups and a rare close fight in others.

SWEET PEA DECORATOR.
Cherry-red. A.M., N.S.P.S., July 9. Messrs. Dobbie and Co., Edinburgh; Messrs. G. Stark and Son, Great Ryburgh; and Mr. A. Malcolm.

Mr. Grigor, gardener to Mrs. Dunbar, of Dunbar, Seapark, Forres, scored with six bunches of fair quality in the Scottish class. Mr. Cowdy, Loughgall, led in the Irish class with superb blooms of Mrs. W. J. Unwin, Dobbie's Cream, Thos. Stevenson, and Tennant Spencer; Mr. Jas. Hall, Moy, a close second. Mr. Alan Gibbs, Dinas Powis, won the Webb Plate in the Welsh Class for nine bunches, and the colouring of Nancy Perkin, Afterglow, R. E. Felton, and Helen Grosvenor was exceptionally good; Mr. Thos. Jones, Ruabon, second.

Dr. Phillips led for nine bunches in the class for the Northern Counties with Clara Curtis, Flora Norton Spencer, Mrs. Cuthbertson, Hercules, and Thos. Stevenson in grand form; Mr. F. J. Harrison, Ulverston, second. Mr. Prophet was recommended for a first prize in the Western Counties Class for nine bunches, but he had double standards. The Eastern Counties Class for nine bunches brought out a grand competition, and here Mrs. F. E. Hall, Cumberland Cottage, Redbourne, was first prize winner with Hercules, Nubian, Clara Curtis, Edna Unwin, and Flora Norton Spencer in grand form and colour; Mr. A. Humphrey, gardener to Sir M. Turner, Bedfords, Havering, Romford, came second, and Mr. H. Tysoe, The Lodge, Bedford, was placed second.

Mr. Robert Hallam had a lovely set of nine bunches in the Midland Counties Class for nine bunches, and he staged Edna Unwin, Clara Curtis, Nettie Jenkins, Helen Lewis, Rosabelle, and King Manoel grandly. The Southern Counties Class for nine bunches was a strong one, and here Mr. Stevenson was well ahead with Moneymaker, Edith Taylor, Mrs. Routzahn, Edrom Beauty, Evelyn Hemus, etc.; second award fell to Mr. Usher, and third to Mr. A. J. Smith, gardener to A. L. F. Cook, Esq., Iver, Bucks.

### SINGLE-HANDED GARDENERS.

Mr. Cowdy won the Breadmore Plate in the single-handed gardeners' class, with a lovely dozen bunches, his Barbara, Captivation, and Clara Curtis being grand; Mr. White, gardener to M. J. Green, Esq., Eynsford, second. In a smaller class of similar character, for six bunches another Breadmore Plate was won by Mr. W. H. Smith, George Street, Hailsham; Mr. J. A. Newman second, and M. S. Gissing Skelton, Esq., Sudbury Croft, Harrow, third.

### AMATEURS.

The Hawlmark Cup for amateurs, for the best twelve bunches, was awarded to Mr. Thos. Jones, Ruabon, with a grand exhibit of Queen of Norway, Clara Curtis, Thos. Stevenson, Lavender George Herbert, etc. Commander Humphery's plate for six bunches fell to Mr. W. H. Smith, with a brilliantly-coloured set of popular sorts; Dr. Leggett, Harpenden, second. Mr. W. H. Smith also scored for three bunches.

### SMALL GROWERS' SECTION.

The Horace Wright Cup for a dozen bunches, distinct, open only to small growers, was won in a splendid competition by Mr. W. H. Holloway, Percyville, Shrewsbury, with lovely flowers of Mrs. C. Foster, Queen Victoria Spencer, Barbara, Mrs. Routzahn, Tom Bolton, Elfrida Pearson, Elsie Herbert, and Thos. Stevenson, all grandly coloured; he won well, followed by Mr. F. Green, The Beeches, Swaythling, Southampton; with Mr. C. Jaggs, Hertford Heath, third. In the same division, but for six bunches, the premier award—the Walter Voss Cup—was won by Mr. Ernest J. Gee, Broadway, Chesham, with beautiful bunches of May Campbell, Edrom Beauty, Chas. Foster, Flora Norton Spencer, Thos. Stevenson, and Masterpiece; Mr. H. Hesford, Addlestone, second, and Mr. Holloway third. Here, too, there was a famous competition.

In other small growers' classes the leading prize-winner was Mr. E. D. Marshall, Early Rise Arms, Reading.

### DECORATIVE CLASSES.

Mrs. W. Martin scored for a vase of sweet peas with a lovely combination of blue, pink, and cream; Mrs. A. R. Bide second. The best epergne or stand of sweet peas was one put up by Mrs. F. G. Bealing, Jesmond Dene, Bassett, and she had a delightful exhibit; Mrs. A. D. Ruff, Sharnbrook, Beds, second.

There were fifteen entries in the table decoration class, and first prize was awarded to Mrs. W. Fulcher, Moulsham Street, Chelmsford, for cream and pink flowers; Mrs. A. D. Ruff second with Melba and Thos. Stevenson; and Mrs. A. Everett, Fairview, Chappell, Essex, third.

### NEW VARIETIES.

After trial at Sutton Green, and Burbage, Hinckley, five varieties secured Awards of Merit. The cherry-red variety, Decorator, was sent from three sources—Messrs. Dobbie and Co., Edinburgh; Messrs. G. Stark and Son, Great Ryburgh; and Mr. A. Malcolm, Duns; so each gained an Award for it. Agricola, with lilac and mauve flowers, came from Mr. Robt. Bolton, Carnforth, who also sent R. F. Felton, a pretty lavender variety; Lady Miller, a lovely pinkish-cream, from Mr. Malcolm; and Bertrand Deal, a mauve, from Mr. Bertrand Deal, Brooklands, Kelvedon.

### TRADE EXHIBITS.

These were splendid, and we hope to make some further reference to the new varieties shown. The trade was certainly in great form, and the following medals were awarded:

Gold. — Messrs. Dobbie and Co., Rothesay; Mr. R. Bolton, Warton, Carnforth; Mr. W. J. Unwin, Histon; Messrs. S. Bide and Sons, Farnham.

Silver-gilt. — Messrs. Jarman and Co., Chard; Mr. W. E. Alsen, Denmead, Hants; Mr. Jas. Box, Lindfield, Sussex; Messrs. Jas. Carter and Co., Raynes Park; Messrs. E. W. King and Co., Coggeshall; Mr. C. W. Breadmore, Winchester; Messrs. Aldersey and Marsden Jones, Tilston, Malpas; Messrs. G.

Stark and Son, Great Ryburgh; Messrs. Jones and Son, Shrewsbury; and Mr. J. Stevenson, Poole Road, Wimborne.

Silver.—Mr. T. Cross, Bury St. Edmunds; Messrs. J. K. King and Sons, Coggeshall; Mr. W. O. Cantley, Bury St. Edmunds; Messrs. Barr and Sons, Covent Garden; Messrs. W. Voss and Co., Milwall, London; Mr. R. Sydenham, Birmingham.

### THE DINNER.

As is their custom, the judges and committee dined together at the Hotel Windsor in the evening of the first day. Mr. Robert Sydenham, the President, made a capital and genial chairman, and generously provided the drinkables and smokables. The gathering was of a quite international character, as it included Mr. Lester Morse and Mr. Howard Earl from Philadelphia; Mr. and Mrs. Trevethick and Mr. and Mrs. Carey Hill, from New Zealand; Mr. Beetson, from New South Wales; Mrs. Tonge, from the Cape; Mr. Ingram, from Egypt; Mr. Ainsworth, from Germany, and most of the notable British raisers and growers.

The speakers, in addition to the Chairman, were: Mr. L. Morse, Mr. S. B. Dicks, Mr. Trevethick, Mr. Carey Hill, Mr. Beetson, Mr. E. Sherwood, Mr. W. Cuthbertson, Mr. Thos. Stevenson, Dr. Phillips, Mr. C. H. Curtis, and Mr. Horace J. Wright. The President said that, although Mr. Stevenson was disqualified in the Eckford Cup Class, his exhibit there was such a fine one that it deserved some recognition, and so he, the president, would present him with a silver rosebowl for what was the finest amateur display in the show. The meeting was altogether a success, rare good feeling prevailing, and there was considerable humour over double standards.

## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 2nd inst. Mr. Massie, the president, occupied the chair, and there was an attendance of ninety members.

A paper on "Geraniums," contributed by Miss Burton, New Saughton Hall, Polton, was the subject for the evening. After dealing with the historical part of the subject, and explaining that the various kinds of garden geraniums were really pelargoniums, and were derived from such species as P. inquinans, P. zonale, etc., mostly natives of South Africa, Miss Burton dealt with the cultivation of the plant, the uses of the various sections, and their treatment from the decorative point of view both for indoor and outdoor use.

The exhibits were: Collection of pelargoniums (including regal, double and single, sweet scented, variegated, and other forms), also new regal, zonal, and other pelargoniums from Messrs. Dobbie and Co., Edinburgh (the collection was awarded a Cultural Certificate, and a new variegated variety, "Snow Queen," was awarded a Certificate of Merit); collection of pelargoniums, from Mr. R. McAndie, Inveresk Gate, Musselburgh (awarded a Cultural Certificate); collection of pelargoniums, from Miss Burton (to illustrate paper); six new seedling delphiniums, from Mr. John Fraser, The Old Manse, Inverkeithing (highly commended for strain); new sweet-scented pæony, "Wm. Mesman," from Messrs. Dicksons and Co., Edinburgh; viola (seedling from V. cornuta), from Mr. Andrew Ogg, Knockdolian, Ayrshire; six vases of pinks from Mr. C. Comfort, Broomfield, Davidson's Mains; carnation showing reversion, from Mr. R. McAndie; and culinary peas, in pots, showing good results obtained by inoculation with helpful bacteria, after sterilisation of the soil in order to destroy the harmful bacteria, from Mr. Geo. P. Berry, Edinburgh, and East of Scotland College of Agriculture.

At the meeting on August 6 a discussion will take place on the training and education of the young gardener.

## Norfolk and Norwich Rose Show.

This year the society were fortunate in having a decidedly successful time for this fixture on July 4. As an experiment they held it in the principal park of the city, which, under the charge of Mr. J. Ward, the superintendent, and his staff, was looking in a better condition in every way than ever it has done before. Mr. C. E. Pilling, the untiring hon. secretary, spared no pains to work everything smoothly, and when one considers there were 104 entries for roses, 179 for other cut flowers, 68 for fruits, and 130 for vegetables, an idea can be formed of what this meant. The attendance was 5,656, and the gate money £140, exclusive of subscribers.

### ROSES.

The open classes for roses, in which the prizes were contested mainly by the nurserymen of East Anglia, contained the best roses. Messrs. B. R. Cant and Sons were first for forty-eight, with fine deep blooms, and so fresh looking. The collection also took Silver Medal. The same growers had the best eighteen varieties, three blooms of each. Their blooms of Lyon and Juliet caused quite a flutter round the stand. Messrs. G. Burrell and Co., Cambridge, had the best teas, a stand of eighteen winning them first place. In the amateur classes and local growers' classes, the outstanding feature was the abnormal success of the Rev. J. A. L. Fellowes, Bunwell. This enthusiastic rosarian took firsts for thirty-six, distinct; eighteen, distinct, three blooms each; twenty-four, distinct; twelve teas, distinct; and twelve teas, one variety; and in a good number of the classes he had to run up against the keenest and best local rose growers. These other growers had very good roses here and there, as is evidenced by the fact that Miss Penrice had the Medal for the best tea with Maman Cochet, and Mr. R. Steward the one "for other than tea" for a fine Frau Karl Druschki.

### SWEET PEAS AND HARDY FLOWERS.

Sweet peas maintain their popular favour, and this cannot be wondered at when one considers that, from a visitor's standpoint, these long rows of vases of delicate shades certainly appeal to one's taste more than compact show-boards of roses. Rather a keen fight was witnessed in the twenty-four bunch class at Norwich this year. For the two years past Mr. T. Notley, gardener to E. G. Buxton, Esq., Catton, had won this prize, with which goes a silver bowl, and his aim was to win it this year and thus retain it as his property. He was, however, beaten by Mr. W. Quinn, gardener to Lord Stafford, Costessey Hall, who had superb peas, long stems, bold flowers, and with colour that fairly outclassed his rival. The best twelve bunches were well shown by Mr. F. Wilby, gardener to F. A. Bainbridge, Esq., Hethersett. Mr. T. Notley had the best decorative vase, a charming combination of one pink variety with grasses, etc. The spectator who had a love for herbaceous flowers had a rare treat provided by Mr. Lewis Smith, gardener to Robert Fellowes, Esq., Shotesham Park. This well-known gardener had arranged over sixty bunches of the choicest and best subjects from the herbaceous border; in no one case were they puny bunches. The judges granted this the R.H.S. Medal as the best exhibit in the show. Mr. W. Chettleburgh, gardener to Colonel Rous, Worstead, had a nice collection of thirty-six kinds, and there were numerous other exhibitors in this section.

### FRUIT AND VEGETABLES.

Fruit, though not in such large quantities, was of fine quality. The best collection came from Mr. W. Hilson, gardener to Sir Fredk. Adair, grapes, figs, peaches, and nectarines being his primary features. In the grape classes he also had the best white varieties. Black grapes were good from several growers. Mr. W. Cockerell, gardener to G. E. White, Esq., won first for both melon classes, viz., scarlet and white fleshed kinds. Mr. Lewis Smith won first in a keenly contested class for peaches; and the best strawberries in all classes were without doubt the two dishes from Mr. F. J. Endersby, gardener to J. H. Gurney, Esq., Keswick, of The Latest and Givon's Late Prolific.

There were, of course, the many classes for vegetables, and extra good things were noticeable as one surveyed them. A special mention is due to Mr. W. Chettleburgh for his effective staging of his collection of vegetables. They were without doubt the best exhibited, but the arrangement went also a lot further in bringing the quality before the judges and visitors.

### MISCELLANEOUS.

The trade growers did extra well for the society by the large comprehensive groups they put up. Foremost among these were Messrs. Daniel Bros., Lim., Norwich, who had peas, roses in pots, and cut roses, aquatic plants, miscellaneous plants, and other good things, from their own nurseries (Silver Medal). Messrs. A. J. and C. Allen, Earlham, Norwich, had a fine display of roses, quite up-to-date; the pot roses were examples of good culture that one likes to comment upon (Silver Medal). Mr. G. W. Miller, F.R.H.S., Wisbech, had orchids in variety, and a varied collection of herbaceous flowers (Silver Medal). Two local rosarians, Mr. Hy. Morse and Mr. E. Morse, vied with each other with the best new roses for supremacy. We rather liked the stand of the former, with its many types of the newer yellow tints.

## GARDENING ENGAGEMENTS.

Mr. G. E. Bullen, late foreman at North Mymms Park, Herts, has been appointed superintendent of garden and farm to H. F. Harris, Esq., Harston, Chestnut Hill, Pennsylvania.

Mr. T. Cradduck, gardener at Sandling Park, Hythe, has been appointed gardener to the Earl of Jersey, Middleton Park, Oxon.

## TRADE NOTE.

Messrs. Dobbie and Co., Edinburgh, who held appointments as seedsmen and florists to the late Queen Victoria and King Edward VII., have now been honoured with a like appointment to His Majesty King George V.

**Begonia Kewensis.**—A shrubby begonia of garden origin, which, owing to the pendulous nature of its white blossoms, is seen to considerable advantage as a basket plant. Its origin is not stated, but it is very pretty both from a foliage as well as a flowering point of view.—T.

**The Royal Show.**—Mr. E. Beckett, V.M.H., was awarded a large Gold Medal for the collection of vegetables he exhibited at Doncaster on the occasion of the Royal Agricultural Society's Show. This award was accidentally omitted from the official list supplied to our representative.

"**Roses and Their Cultivation**" is a practical grower's guide. In its 193 pages will be found an immense amount of useful information on roses of all classes, ranging from propagation and planting to flower development. It is published by W. H. and L. Collingridge, Aldersgate Street, London, price 2s. 10d., post free.

**Stigmaphyllon ciliatum.**—This is a free-growing, profuse-flowering Brazilian climber that needs a warm house for its successful culture. Popularly it is known as the Golden Vine, a name which I think originated in the States, where all climbers are termed vines. At all events for a stove or intermediate house it is a very desirable climber, the long, rambling shoots being clothed with pretty glaucous leaves, while the floral display is spread over a lengthened period. The flowers are of a rich yellow colour, and in general appearance suggest some of the oncidiums.—W. T.

## NATIONAL ROSE SOCIETY'S EXHIBITION.

Continued from page 528.)

challenge cup, with a beautifully arranged group. The chief varieties were Lady Gay, Lady Hillingdon, Marie Van Houtte, Simplicity, A. K. Goodwin, Mrs. Herbert Stevens, Rayon d'Or, Lady Pirrie, and Jessie. Mr. J. Mattock was second, having fine vases of Duchess of Wellington, Mrs. A. Tate, Lady Pirrie, Simplicity, and Irish Glory; while for eighteen varieties staged in a similar way Mr. Chas. Turner, Slough, secured the first prize, having a well-arranged exhibit. The chief varieties were Lady Godiva, Betty, Madam Ravary, Jessie, Irish Elegance, and Le Progres.

For eighteen distinct varieties of summer-flowering roses in vases, Messrs. W. Spooner and Son were awarded the first prize for a very fine display. The chief varieties were Philadelphia, Dorothy Perkins, American Pillar, Sweetheart, and Delight.

In the class for nine varieties of new decorative roses, Mr. E. J. Hicks won first prize, having good bunches of Jessie, Mrs. W. Christie Miller, Mrs. Waddell, Orleans Rose, Lady Hillingdon, and Theresa Bevan. Mr. G. Prince followed with fine Rayon d'Or and Mrs. Massey; Messrs. W. Spooner and Son were third.

The Wichuraiana roses in twelve sorts made a grand display. Messrs. F. Cant and Co., Colchester, winning first with a charming exhibit. The best varieties were undoubtedly Lady Godiva, Minnehaha, Gardenia, Delight, Lady Gay, and Debutante. Mr. E. J. Hicks was second, and Mr. Chas. Turner, Slough, third, with a very fine exhibit.

For a representative group of roses, to occupy two hundred and fifty square feet, there were two splendid groups staged, the first prize being awarded Messrs. Paul and Son, Cheshunt, who had a lightly arranged group with tall climbers at the back, with tall standards of decorative varieties varying in height in front, while the floor was bedded with fine baskets. In the latter were to be seen fine clusters of Lyon Rose, Hugh Dickson, F. K. Druschki, White Killarney, Com. Felix Faure, C. J. Grahame, Firefly, His Majesty, and Joseph Hill. Messrs. Hobbies, Lim., Dereham, were second with a good exhibit of ramblers growing as tall weepers, while baskets of roses were grouped underneath. Some of the best varieties were Juliet, Rayon d'Or, Lyon Rose, Lemon Queen, and Excelsa.

For a group of cut roses staged on the tabling to occupy a space thirty-three feet long by three wide, the premier award went to Messrs. W. and J. Brown, Stamford, who staged in huge columns, with short ones in front, finishing off with bamboos. Some of the best were Lyon Rose, Liberty, Lady Hillingdon, and White Maman Cochet. The second prize was well won by Mr. F. M. Bradley, Peterborough, who had some splendid flowers, the best being J. B. Clark, Simplicity, Edward Mawley, Mrs. A. Tate, and the Countess of Shaftesbury. Messrs. S. Low and Co. were third, with a fine exhibit, their Rayon d'Or, Lyon Rose, White Killarney, Molly Sharman Crawford, Madame Melanie Soupert, Laurent Carle, and Juliet being very bright.

### OPEN CLASSES.

The first prize for twenty-four varieties was won by Messrs. Chapman and Collins, Thurmaston Road, Leicester, who had fine examples of Mildred Grant, John Cuff, Tom Wood, Countess of Rosebery, Lohengrin, Horace Vernet, Mrs. T. Roosevelt, and Mrs. David McKee. Mr. John Mattock was second with Bessie Brown, Victor Hugo, Lyon Rose, Avoca, Dean Hole, and Mildred Grant. Messrs. W. Crisp and Sons, Colchester, were placed third. Sixteen distinct trebles was the next class, Messrs. G. and W. H. Burch carrying off the first prize with some grand blooms. The most conspicuous were Mildred Grant, Horace Vernet, Mrs. T. Roosevelt, White Maman Cochet, O. Terks, and Wm. Shean. Mr. John Pigg was second, having the following varieties in good form: Mildred Grant, Lyon Rose, Geo. C. Waud, Juliet, and Caroline Testout. Messrs. J. Burrell and Co. were a good third.

For a group of representative roses in a space twenty feet by three, the first prize was won by Messrs. R. Harkness and Co., who had a wonderful display of garden roses. A few of the chief features were the columns of Dean Hole, Irish Elegance, Ecarlate, Harry Kirk, Madame Ravary, with a fine collection of polyantha varieties in the front. Messrs. G. Jackman and Son, Woking, came second with a well-arranged group; while Mr. H. Morse, Eaton, Norwich, was third. For twenty-four blooms in two sorts, arranged alternately, there were five entries, but Mr. W. Bentley, Belgrave, Leicester, proved the victor, using Mrs. Foley Hobbs and J. B. Clark, both being in fine condition. Messrs. D. Prior and Son were placed second with J. B. Clark and Frau Karl Druschki; while Messrs. B. R. Cant and Sons selected Ulrich Brunner and Frau Karl Druschki for third place. The first prize baskets could not be seen at the time of going round. Mr. W. Stevens, Fair Oak, Radlett, came second with fine examples of Frau Karl Druschki, while Mr. G. Prince was third with the same variety. In a similar class for any other varieties, there were fifteen entries. Messrs. H. Dickson, Lim., were placed first with a fine crimson; Mr. W. Bentley was second with beautiful flowers of Mrs. T. Roosevelt; and Mr. W. R. Chaplin third with Lyon Rose. For the baskets of any tea or noisette with a similar number of flowers, Messrs. F. Cant and Co. staged White Maman Cochet in excellent condition, and Messrs. D. Prior and Sons also good blooms of this variety. A special class was provided for Rayon d'Or, and there were eight entries, Messrs. S. Bide and Sons, Lim., Farnham, winning with a splendid basket; the colour was really remarkable. Mr. E. J. Hicks was second, and Mr. G. Prince third. Mrs. A. Bide, Farnham, won first for a bowl of cut roses, using Mrs. A. R. Waddell; Dr. F. H. Cooke, Birch, Colchester, was second, using a pink rambler; while Mr. E. J. Hicks, Hurst, was third with a charming arrangement of Mrs. W. T. Massey.

### AMATEURS.

In the champion class for thirty-six blooms, distinct, the competition was a first-rate one. The trophy fell to Mr. E. M. Eversfield, Dene Park, Horsham, who had a splendid collection. His most striking varieties were Mildred Grant, Alfred Colomb, Caroline Testout, Juliet, Hugh Dickson, Mrs. Ed. Mawley, Her Majesty, Bessie Brown, Lady Alice Stanley, Lyon Rose, J. B. Clark, and Ulrich Brunner. The second prize was awarded to Mr. E. B. Lindsell, Bearton, Hitchin, who had a nice display; especially good were the varieties Duke of Wellington, Dr. O'Donel Brown, Maman Cochet, William Shean, Ulster, Duchess of Bedford, and Her Majesty; while Mr. F. Dennison, Cranford, Leamington, was third with nice fresh blooms.

There were seven competitors in the class for twenty-four blooms, distinct, with the Ben Cant Memorial prizes, Mr. E. B. Lindsell won first position, having excellent flowers of Wm. Shean, Ulster, Dr. O'Donel Brown, Alice Lindsell, Madame Jules Gravereaux, and Hugh Dickson. Mr. F. Dennison was second with a capital board that improved as the heat increased; while Dr. T. E. Pallett, Earl's Colne, was third. For twelve trebles, Mr. E. B. Lindsell repeated his former successes, staging some fine varieties, especially Maman Cochet, Mildred Grant, Mrs. T. Roosevelt, and Madame Jules Gravereaux. Mr. F. Dennison was in capital form for second place with excellent flowers of J. B. Clark, Frau Karl Druschki, Mildred Grant, and Lady Ashtown; while Mr. Conway Jones had to be content with third place.

For nine roses, one variety, Dr. T. E. Pallett scored first with a fine exhibit of Avoca. Mr. G. A. Hammond, Cambrian House, Burgess Hill, was second with neat flowers of Ethel Malcolm.

The Hobbies Challenge Cup was awarded Mr. W. Boyes, Middleton-on-the-Wolds, East Yorks, who had nice flowers of Mildred Grant, Pharisaer, Marquise de Sinety, Mrs. David McKee, and Lyon Rose. The Rev. R. Powley, Warminster, followed with Juliet, Betty, Lady Ashtown, Caroline Testout, and White Maman Cochet as his best flowers; while Mr. H. R. Darlington, Potters Bar, was third.

### TEAS AND NOISETTES.

The trophy class in this section was for eighteen blooms, distinct, and contained five exhibitors. Here the veteran amateur, Mr. Alex. Hill Gray, Newbridge, Bath, again secured the trophy with an excellent board. His most conspicuous varieties were White Maman Cochet, Madame C. Soupert, Mrs. Miles Kennedy, A. Hill Gray, Dr. F. Guyon, R. W. Smith, Mrs. H. Taylor, Mrs. P. Hobbs, and Maman Cochet. Mr. E. M. Eversfield was the second-prize winner, having good flowers of Mrs. E. Mawley, Madame Cusin, The Bride, and Madame Hoste. Mrs. Beville Fortescue, Maidenhead, was third.

In the smaller class for twelve distinct varieties Mr. Alex. Hill Gray was again most successful, his best flowers being White Maman Cochet, Maman Cochet, Souv. de P. Notting, Jeanie Proudfoot, and Mrs. Hubert Taylor. Mr. E. M. Eversfield was a capital second, his flowers of Mrs. E. Mawley, Molly Sharman Crawford, Souv. de Pierre Notting, and Maman Cochet being good. Mr. Conway Jones was third. In the eight trebles Mr. E. M. Eversfield proved the victor, and he had evidently placed his strength in this class. He had fine flowers of Souv. de P. Notting, Souv. de S. A. Prince, White Maman Cochet, and Mrs. E. Mawley. Mr. Alex. Hill Gray was second. Mrs. B. Fortescue was third with clean, bright flowers. For six blooms, one variety, the Rev. F. R. Burnside, Great Stambridge Rectory, Essex, won first prize with splendid flowers of White Maman Cochet, Mr. Alex. H. Gray being second with the same variety, while Mr. E. M. Eversfield was third with Mrs. Ed. Mawley.

There was a good entry for the Prince Memorial Piece of Plate, which was offered for twelve teas or noisettes, confined to growers of fewer than five hundred plants. This was secured by Mr. F. Slaughter, Steyning, who was in a strong position for first place; he had White Maman Cochet, Mrs. E. Mawley, and Mrs. Foley Hobbs in fine style, followed by Dr. F. H. Cooke and the Rev. J. B. Shackle, Dropmore Vicarage, Maidenhead, in the order named.

### PERPETUAL-FLOWERING DECORATIVE ROSES.

For eighteen distinct varieties of decorative roses, the Rev. J. H. Pemberton, Havering-atte-Bower, was placed first for a fine display. The best sprays were American Pillar, Blush Rambler, Danäe, Daphne, Fabvier, and Helene, while Mr. A. Tate, Downside, Leatherhead, was second with fine examples of Rene Andre, Fellenburg, Maharajah, and Moschata Nivea.

A glorious display of decorative varieties was made by Mrs. E. Wightman, Bengeo, Hertford, who won first prize for twelve distinct varieties. The best were American Pillar, Mrs. Cutbush, Gruss an Teplitz, Legion of Honour, and Gardenia. Mr. C. S. Gordon Clark, Fetcham Lodge, Leatherhead, was second, and Lady Sutton, Benham Valence, Newbury, third. In the novice class for twelve blooms Mr. F. A. Govatt, Holiday House, Sunningdale, won first prize with typical flowers of Lyon Rose, Mrs. T. Roosevelt, Florence Pemberton, and Caroline Testout. Mr. W. F. Schafer, Loom Lane, Radlett, was second with a bright exhibit, and Mr. A. Bee, Newark, third.

### LADIES' CLASSES.

There were ten baskets in competition for the lady amateurs, the first prize being won by Mrs. J. Walter Smith, Bushey Heath, Watford, who had a splendid arrangement of Irish Elegance. Mrs. F. H. Cooke, Colchester, was second with pink ramblers and pink hybrid teas; while Miss Jessie Langton, Raymead, Hendon, was third with a fine basket of Mrs. S. Crawford. The competition for a single vase of exhibition roses was most keen, the first prize being awarded Mrs. F. H. Cooke with pink roses and bronzy-rose foliage. Mrs. E. F. Brown, Slough, was second with Lyon Rose, and Miss M. E. West, Reigate, third, with Ulrich Brunner.

In the single rose class Mrs. F. H. Cooke was first with a charming arrangement of Pink Rambler, Mrs. J. W. Smith following with a fine arrangement of Irish Elegance; Miss Jessie Langton was fourth. The bowl of decorative roses was keenly contested, the bowls being well arranged. Mrs. F. H. Cooke led off with a coppery-yellow variety, followed by Mrs. F. A. Tisdall, Woodford Green, with some well-arranged Richmond; Mrs. J. Bide, Cowley Road, Uxbridge, being third with Mrs. G. Shawyer.

For a dinner-table decoration in the open class, Mrs. A. R. Bide, Farnham, was placed first with a nice arrangement of Sunburst. Miss M. Foden, Hemel Hempstead, was second, using Irish Elegance freely, while Mrs. F. M. Bradley, Church Street, Peterborough, was third with Irish Elegance.

The table decoration for amateurs was well patronised, Mrs. A. E. Brown, Reigate, winning first with a bold display of Richmond and Jessie, with suitable selaginella, the second prize going to a very dainty arrangement of Irish Elegance from Mrs. Walter Morrison, Reigate, while the third fell to Countess Olga Pouliatine, Weybridge, who utilised Lady Hillingdon.

The round tables were most artistically arranged. Mrs. Colston Hale, Warminster won first prize with an arrangement of Irish Elegance. Miss Jessie Langton was second with a fine table of Francois Juranville, very lightly built, while Mrs. F. A. Tisdall was third, using Lady Hillingdon to good advantage.

### MEDAL BLOOMS.

In the nurserymen section the Medal blooms were as follows: H.P., A. K. Williams, from Messrs. H. Lane and Son, Great Berkhampstead; T., White Maman Cochet, from Mr. G. Prince, Longworth; and H.T., Geo. Dickson, from Messrs. Alex. Dickson and Sons. In the amateurs' section the Medal blooms were: H.P., Horace Vernet, from Mr. G. Speight; H.T., Avoca, from Dr. T. E. Pallet; and T., White Maman Cochet, from Mr. A. Hill-Gray.

## NEW ROSES.

The new roses were contributed in considerable numbers, and proved a source of much interest to the visitors. Within a short time of the admission of the members to the gardens at noon, and some time before the judging of novelties commenced, a long queue was formed by those who were anxious to see the blooms immediately the tent was opened. A similar queue was maintained throughout the afternoon, notwithstanding the efforts of several policemen to keep the visitors on the move. The following awards were made:

### GOLD MEDALS.

To Mrs. Andrew Carnegie, shown by Messrs. James Cocker and Sons, of Aberdeen, the variety is said to have been raised from a cross effected between Frau Karl Druschki and Niphetos, and has blooms of the largest size, and of a pleasing lemon-white.

To Old Gold, a decorative variety, exhibited by Messrs. McGredy and Son, Portadown; this has small, prettily formed flowers of the richest old gold, with copper-red centre.

### SILVER-GILT MEDALS.

To Queen Mary, a very distinct and attractively coloured variety, shown by Messrs. Alex. Dickson and Sons, Newtownards; the blooms are of average size, the lower half of the petals bright yellow, and the upper half brilliant rose-pink with a suspicion of mauve.

To Mrs. F. W. Vanderbilt, yellow and copper-red; Lady Mary Ward, orange-red; and Mrs. E. Part, brilliant red, from Messrs. McGredy and Son.

To Mrs. C. S. Hunting, a beautiful light variety, and William Cooper, a deep rose-coloured variety, from Mr. Hugh Dickson.

To Mrs. E. Alford and Mrs. C. Reed, two beautiful light flowers, from Messrs. Lowe and Shawyer.

To Sunburst, a deep yellow decorative variety, from M. Pernet-Ducher.

### SILVER MEDAL.

To Moonlight, a distinct variety with small, semi-double white flowers, from the Rev. J. H. Pemberton.

### SUBURBAN ROSES.

Mrs. A. W. Atkinson, Palmer's Green, secured the suburban challenge cup for roses grown within eight miles of Charing Cross, sending fine well-coloured flowers of Mildred Grant, Maman Cochet, Frau Karl Druschki, Lyon Rose, Dean Hole, and White Maman Cochet. Miss B. H. Langton was second, and Mrs. W. E. Martin, Finchley, third.

### MISCELLANEOUS.

In the corridor Messrs. W. H. and L. Collingridge, 148 and 149, Aldersgate Street, E.C., had a tastefully arranged stand of gardening books, including "Roses and Their Cultivation." There were also extensive displays of sweet peas, carnations, hardy flowers, etc.

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## DESTRUCTION OF WATER WEEDS.

In considering the question of the eradication of water-weeds from ponds, it is necessary to draw a distinction between the larger weeds, such as American Water Weed, Water Crowfoot, Duckweed, etc., and the smaller algæ.

The larger weeds are not only the most obnoxious, but are also the most difficult to eradicate, as they can only be kept down by cutting and dragging them out. In small shallow ponds this may be done by men wading in the water and using hand-scythes; or scythe-blades may be attached to ropes, which can be dragged through the weeds from a boat or from opposite banks of the pond. Special weed-cutting saws are also made for this purpose, and several other devices exist for use in large stretches of water. Some of these contrivances are of considerable size, and are very costly.

The smaller algæ are visible chiefly as a green or brown scum, and are commonly seen during the summer and autumn on still or nearly still water. These troublesome growths not only frequently destroy the beauty of ponds entirely for a time, but also have an offensive smell. For the destruction of these small, slimy weeds, copper sulphate has proved to be very effective, especially in fresh water. This material has been used with success in recent years, both for the smaller ponds at Kew Gardens and for the ornamental water in St. James's Park. Previous to the last two summers, it had been a costly and troublesome matter in the latter case to keep the water presentable in hot weather, men in boats being employed to remove the weeds with rakes, etc. As a result of the adoption of the copper sulphate treatment, however, the lake can now be kept practically free from weed at a much less expenditure in money and labour than formerly.

It must, however, be borne in mind that copper sulphate should only be applied with the greatest caution to ponds containing fish, some of which appear to be rather sensitive to copper sulphate. There is at the present time no detailed information as to the resisting power of English fish, and in the absence of such information it would not be advisable to treat any fish pond in this country, even with a very dilute solution, such as 1 part in 5,000,000, without first determining by experiments with one or two fish in a few gallons of water, the susceptibility of each species. It is, however, somewhat reassuring in this connection to learn that copper sulphate applied during the last two summers to the water in St. James's Park was found to be not only harmless, but even beneficial to the fish. In former years many had been found to be badly attacked by a fungus, but at the last cleaning out the fish were found to be quite free from the fungus disease, and remarkably clean and silvery.

If there are no fish in the pond, 1 part (by weight) in 1,000,000 (or 1lb. of copper sulphate to 100,000 gallons of water) may be applied without rendering the water dangerous for drinking purposes.

Ordinary commercial copper sulphate should be used, and, in standing water, may be easily applied, the only important point being that the copper sulphate must be thoroughly and rapidly distributed throughout the pond. In small ponds, the copper sulphate, broken small, and enclosed in a bag of loose texture, may be tied to the end of a pole and drawn backwards and forwards through the water. In large ponds the bag should be towed behind a boat, which should be rowed to and fro in parallel paths not more than from 10 to 20 feet apart. In water with a temperature of about 60 deg. Fahr., something like 100lb. of copper sulphate can be so distributed in an hour. The effectiveness of the treatment is found to depend to some extent on the temperature of the water, and, if this should be much below 60 deg. Fahr., or if the water is very hard, or contains much organic matter, more copper sulphate should be used. It is found that copper sulphate rapidly disappears from water to which it has been applied, presumably because it combines with the algæ which it destroys. Copper sulphate has also proved effective when applied to the surface of the slime in the form of a spray composed of 1½oz. of copper sulphate dissolved in 2 gallons of water; but if water-lilies are present they may be injured by this method of treatment.

It is necessary to calculate the amount of water in a pond in order to determine the amount of copper sulphate which may safely be applied, and this may be done with sufficient accuracy by multiplying together the average length, breadth, and depth of the pond in feet, and multiplying the result by 6¼, the approximate number of gallons in a cubic foot.—"Journal of the Board of Agriculture."

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"**Garden Foes**" is a valuable book for the present season, dealing as it does with insect, animal, and fungoid pests, with all the latest remedies for their eradication. Our publisher will be pleased to supply the volume, post free, for 2s. 10d.

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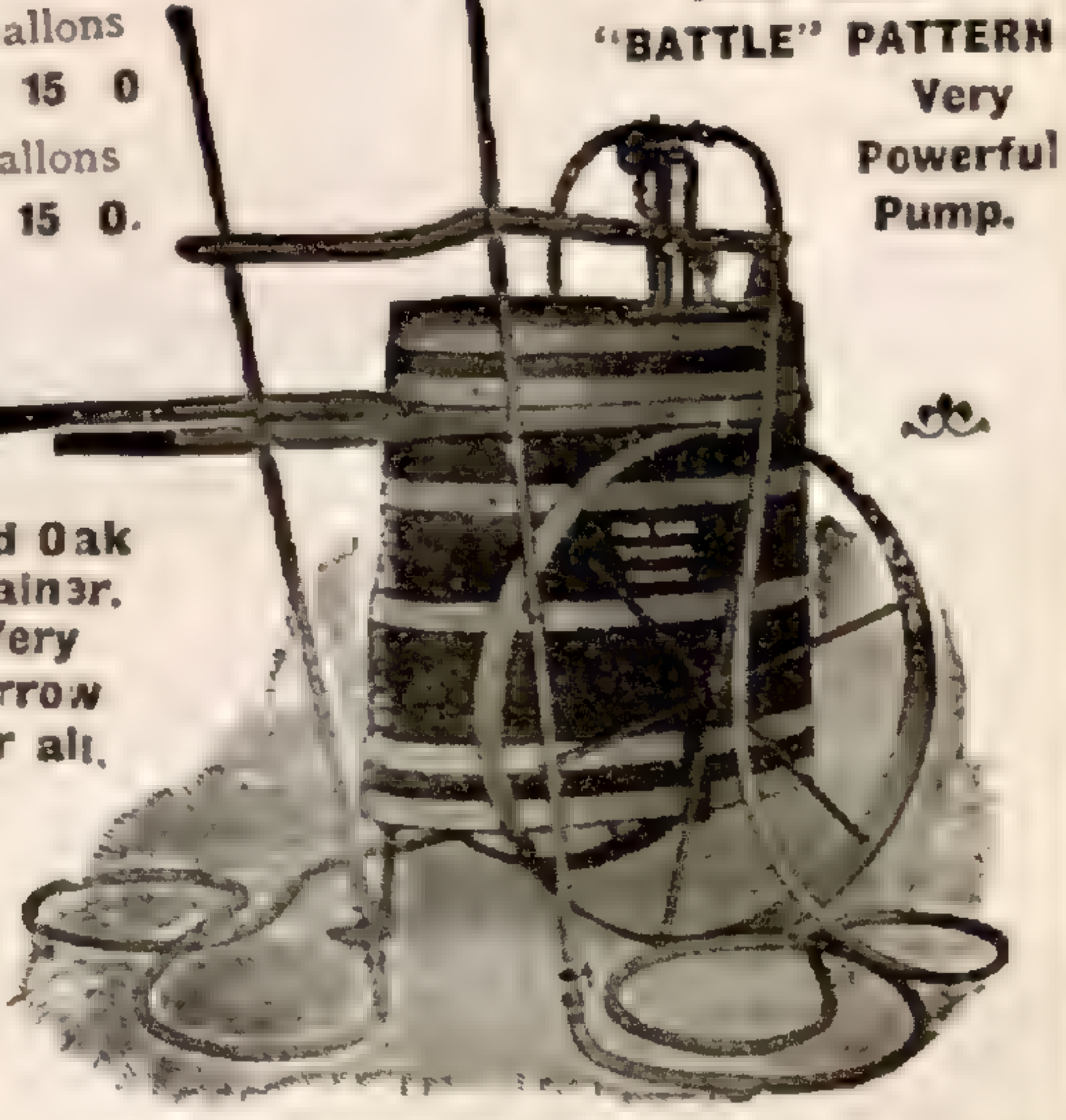

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# ANSWERS TO CORRESPONDENTS.

CLARKIAS IN POTS.—S. W., Leicester: I have some small seedlings of clarkias, and should like to grow them in pots for autumn house decoration. How should I proceed?—Pot each seedling in a small pot, using a fairly rich, free compost. Grow in a cold frame and afford ample light and ventilation, and removing the lights during fine days. A second shift will be needed, and 48 or 32-sized pots will suffice for this, the former for preference. Provide a neat stake as each plant begins to extend, and when the larger pots are full of roots, afford weak liquid cow manure once or twice a week. If you have sufficient plants, divide them into three batches, giving one set the brightest position you can afford, and transferring them to a greenhouse fairly early, affording ordinary frame culture for the second batch, and preserving the smallest seedlings for a cool position. By this means the flowering season will be extended.

FAILING RED CURRANTS.—M. E. H., Cambridge: In my garden there are a number of quite old red currant bushes; apparently they have not received very kindly treatment; consequently the fruits they bear are small, and by no means plentiful. Do you think it would be a good plan to remove the bushes and plant young, healthy trees in their places in the autumn?—As soon as the fruits have been gathered grub up and burn the old, debilitated currant bushes, and at once deeply trench the plot they have occupied, working in a plentiful supply of half-decayed manure and burnt refuse from the garden fire. If this is done at once the ground will be in excellent condition to receive the new plants as early in the autumn as you can secure them. A new site would have been preferable, but with deep trenching and manuring, and an annual free top-dressing of manure, the currants should do well if the side branches are kept spurred back so that each long main branch resembles a cordon.

SLUG WORMS ON ROSES.—H. S., Chelsfield: Can you please tell me of a remedy for the eradication of enclosed pest from my rose trees? The little yellow-green larvæ have not left one green leaf on a rose bed containing fifty plants. I shall feel very grateful for an answer through your columns.—The pest is the rose slug-worm (Eriocampa rosæ), and one that is capable of doing a vast amount of harm in its larval stage. It attacks all kinds of roses, and is a common pest in many European countries, and also in North America. The eggs are laid in May or early June by the adult winged sawfly, but two or more broods may be hatched out in one season, hence the need of great care once there has been an infestation. The best remedy is hellebore wash sprayed over the rose trees, so as to wet every portion; the larvæ only eat out the upper epidermis and tissue of the leaves, rarely eating the lower epidermis, but they drop quickly from leaf to leaf, hence the need for spraying so as to reach every portion of each tree, and consequently every larva. The hellebore wash is made by mixing 1oz. of freshly ground hellebore and 2oz. of flour, with a little water, until a smooth, thin paste is formed, and then adding gradually enough water to make up three gallons of mixture. This wash must be kept well stirred during use, and must also be distributed in the form of a very fine spray.

## NAMES OF PLANTS.

M. H., Shere.—Cistus algarvense.

J. S., Alveston.—Arum Dracunculus, a very fine example.

L. B., Andoversford.—1, Spiræa Douglasi; 2, Anchusa italica; 3, Fuchsia procumbens.

G. B., Luton.—1, Erigeron speciosa; 2, Galega officinalis; 3, Salvia turkestanica; 4, Anthemis Kelwayi.

J. P. S., Frome.—1, Nierembergia rivularis; 2, Isatis glauca; 3, Acantholimon venustum; 4, Delphinium cineraria; 5, Prunella Webbiana; 6, Gentiana septemfida.

W. B., Uckfield.—1, Cistus ladaniferus; 2, Veronica Haasti; 3, Lobelia tenuior; 4, Pulmonaria augustifolia.

S. W. J., Leicester.—1, Chrysogonum virginicum; 2, Campanula pusilla; 3, Eremurus Bungei; 4, Scabiosa caucasica.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. June 30 to July 6. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| June 30—Sunday ...... | 1 48 | 59 | 56 | 65 | 51 |
| July 1—Monday ...... | 1 30 | 59 | 56 | 65 | 53 |
| ,, 2—Tuesday...... | — | 55 | 53 | 61 | 52 |
| ,, 3—Wednesday.. | 0 48 | 56 | 55 | 62 | 52 |
| ,, 4—Thursday.... | 3 6 | 58 | 55 | 65 | 51 |
| ,, 5—Friday........ | 4 12 | 59 | 56 | 68 | 49 |
| ,, 6—Saturday..... | 3 54 | 65 | 61 | 72 | 56 |
| Means ... | (total) 15 18 | 58 | 56 | 65 | 52 |

| Date. 1912. June 30 to July 6. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| June 30—Sunday ...... | 0·01 | 62 | 61 | 59 | 43 |
| July 1—Monday ...... | 0·34 | 62 | 60 | 58 | 44 |
| ,, 2—Tuesday...... | 0·35 | 62 | 60 | 59 | 45 |
| ,, 3—Wednesday.. | 0·01 | 60 | 60 | 59 | 52 |
| ,, 4—Thursday.... | — | 60 | 60 | 58 | 44 |
| ,, 5—Friday........ | — | 60 | 59 | 58 | 40 |
| ,, 6—Saturday .... | — | 61 | 60 | 58 | 48 |
| Means ... | (total) 0 71 | 61 | 60 | 58 | 45 |

# FORTHCOMING ENGAGEMENTS.

TUESDAY, July 16.—Royal Horticultural Society; Fruit, Floral, and Orchid Committees meet at noon. General meeting with lecture by Mr. E. A. Bunyard on "Flowers of Apples as a means of identifying varieties," 3 p.m. Scientific Committee meets, 4 p.m.

Southampton Horticultural Society Jubilee Show.

Uxbridge Horticultural Society.

WEDNESDAY, July 17.—Saltaire Rose Show.

Bishop's Stortford Horticultural Society.

Cardiff Horticultural Society; two days.

Luton Horticultural Society.

Craig-y-don (Llandudno) Horticultural Society.

Caterham Horticultural Society.

THURSDAY, July 18.—Excursion of Horticultural Club.

Dunfermline Horticultural Society; two days.

Walkern Horticultural Society.

Mr. H. Eckford's Sweet Pea Show.

FRIDAY, July 19.—Birmingham Horticultural Society; two days.

National Rose Society at Belfast.

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# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

There is a plentiful supply of flowers, and though the demand continues, good prices are easy.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum ... | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus ... | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri ......... | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia .................. | per doz. bun. | 6 0 | | 7 0 |
| Carnations .......................... | per doz. | 1 6 | | 2 6 |
| ,, ...................... | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison .............. | per doz. | 3 0 | | 8 0 |
| Cattleyas .......................... | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum | per doz. bun. | 2 0 | | 3 0 |
| Coreopsis ........................ | per doz. bun. | 0 9 | | 1 0 |
| Cornflowers ................. | per doz. bun. | 0 9 | | 1 0 |
| Croton leaves ...................... | per bun. | 1 0 | | 1 6 |
| Delphiniums .................. | per doz. bun. | 6 0 | | 8 0 |
| Eucharis .............................. | per doz. | 2 0 | | 3 0 |
| French fern .............. | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias .............. | per doz. bun. | 0 9 | | 1 6 |
| Gardenias .......................... | per doz. | 2 0 | | 3 0 |
| Gladiolus Colvillei ...... | per doz. bun. | 2 6 | | 8 0 |
| Gypsophila .................. | per doz. bun. | 3 0 | | 5 0 |
| Iris, English .............. | per doz. bun. | 4 0 | | 5 0 |
| Lapageria ......................... | per doz. | 1 0 | | 2 0 |
| Lilium auratum .................. | per bun. | 4 0 | | 5 0 |
| ,, speciosum ................ | per doz. | 1 6 | | 2 6 |
| ,, longiflorum ............ | per doz. | 1 0 | | 2 0 |
| Lily of the Valley ...... | per doz. bun. | 8 0 | | 15 0 |
| Marguerites .............. | per doz. bun. | 1 6 | | 3 6 |
| Mignonette .............. | per doz. bun. | 4 0 | | 5 0 |
| Myosotis .................... | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums ......... | per doz. blms. | 1 6 | | 2 6 |
| Pæonies .................... | per doz. bun. | 6 0 | | 10 0 |
| Pelargoniums ............ | per doz. bun. | 4 0 | | 6 0 |
| Pinks ............................ | per doz. bun. | 1 6 | | 2 0 |
| Poppies ...................... | per doz. bun. | 1 0 | | 1 6 |
| Pyrethrums ............... | per doz. bun. | 2 0 | | 3 0 |
| Roses ................................ | per doz. | 0 9 | | 2 6 |
| Scabious .................... | per doz. bun. | 2 0 | | 4 0 |
| Smilax .................. | per doz. trails | 2 0 | | 3 0 |
| Spiræa ...................... | per doz. bun. | 4 0 | | 6 0 |
| Stocks ...................... | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas ................. | per doz. bun. | 1 0 | | 3 0 |
| Sweet Sultanas ............ | per doz. bun. | 3 0 | | 5 0 |
| Tuberoses ............................ | per doz. | 0 4 | | 0 6 |
| Violas ...................... | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

The supplies are good, and there is a keen demand for black currants, cherries, and peaches.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Australian ........... | per box | 6 0 | | 10 6 |
| Apricots ..................... | per ½ sieve | 7 0 | | 8 6 |
| Bananas ........................... | per bun. | 4 6 | | 13 0 |
| Cherries ......................... | per ½-sieve | 3 0 | | 8 0 |
| Currants, Black .............. | per ½-bush. | 7 0 | | 9 0 |
| ,, Red ..................... | per ½-bush. | 4 0 | | 6 6 |
| Figs ..................................... | per doz. | 1 6 | | 6 0 |
| Gooseberries ................. | per ½-bush. | 2 0 | | 5 0 |
| Grapes, English ..................... | per lb. | 1 0 | | 5 6 |
| ,, Almeria ............ | per doz. lbs. | 6 0 | | 8 0 |
| ,, Guernsey ................. | per lb. | 0 10 | | 1 6 |
| Greengages ........................ | per box | 1 6 | | 2 6 |
| Lemons .......................... | per case | 15 0 | | 20 0 |
| Melons ........................................ | each | 0 6 | | 2 0 |
| ,, Cantaloupe .................. | each | 2 0 | | 6 0 |
| Nectarines .......................... | per doz. | 4 0 | | 15 0 |
| Oranges .......................... | per case | 8 0 | | 30 0 |
| Peaches ............................ | per doz. | 4 0 | | 15 0 |
| Plums, French .............. | per ½ sieve | 3 6 | | 6 0 |
| Raspberries .............. | per doz. pun. | 4 0 | | 7 6 |
| Strawberries .............. | per doz. pun. | 3 6 | | 7 6 |

### Vegetables.

Tomatoes, peas, cauliflowers, and salading all meet with a brisk demand at the prices quoted.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe ............ | per doz. | 2 0 | to | 2 6 |
| Asparagus .......................... | per bun. | 1 0 | | 10 0 |
| Aubergines ........................ | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey .................. | per lb. | 0 4 | | 0 10 |
| Beet ....................................... | per bush. | 1 6 | | 2 0 |
| Cabbage ......................... | per basket | 1 6 | | 2 0 |
| Carrots .......................... | per doz. bun. | 1 0 | | 3 0 |
| Cauliflowers ....................... | per doz. | 1 6 | | 4 0 |
| Cucumbers .......................... | per doz. | 1 6 | | 2 0 |
| Endive ................................. | per doz. | 1 6 | | 2 0 |
| Horseradish ............... | per doz. bun. | 10 0 | | 12 0 |
| Lettuce ................................ | per tally | 2 0 | | 3 0 |
| Marrows ............................. | per doz. | 1 6 | | 2 0 |
| Mushrooms .................. | per doz. lbs. | 6 0 | | 10 0 |
| Onions ................................ | per case | 6 0 | | 8 0 |
| Parsley ...................... | per doz. bun. | 2 0 | | 3 0 |
| Peas ..................................... | per bush. | 3 6 | | 5 0 |
| Radishes ...................... | per doz. bun. | 0 9 | | 1 0 |
| Rhubarb ...................... | per doz. bun. | 2 0 | | 3 0 |
| Spinach ................................. | per bush. | 2 0 | | 2 6 |
| Tomatoes, English ...... | per doz. lbs. | 3 0 | | 3 6 |
| ,, Guernsey ......... | per doz. lbs. | 3 0 | | 3 3 |
| Turnips ...................... | per doz. bun. | 2 0 | | 3 0 |
| Watercress .................. | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

Home-grown potatoes are now arriving freely, and the demand is good.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Belfords ................................ | per cwt. | 7 0 | to | 9 0 |
| Teneriffe ................................ | per cwt. | 7 0 | | 8 0 |
| Kents ..................................... | per cwt. | 7 0 | | 8 0 |
| St. Malo ..................................... | per cwt. | 6 0 | | 6 6 |

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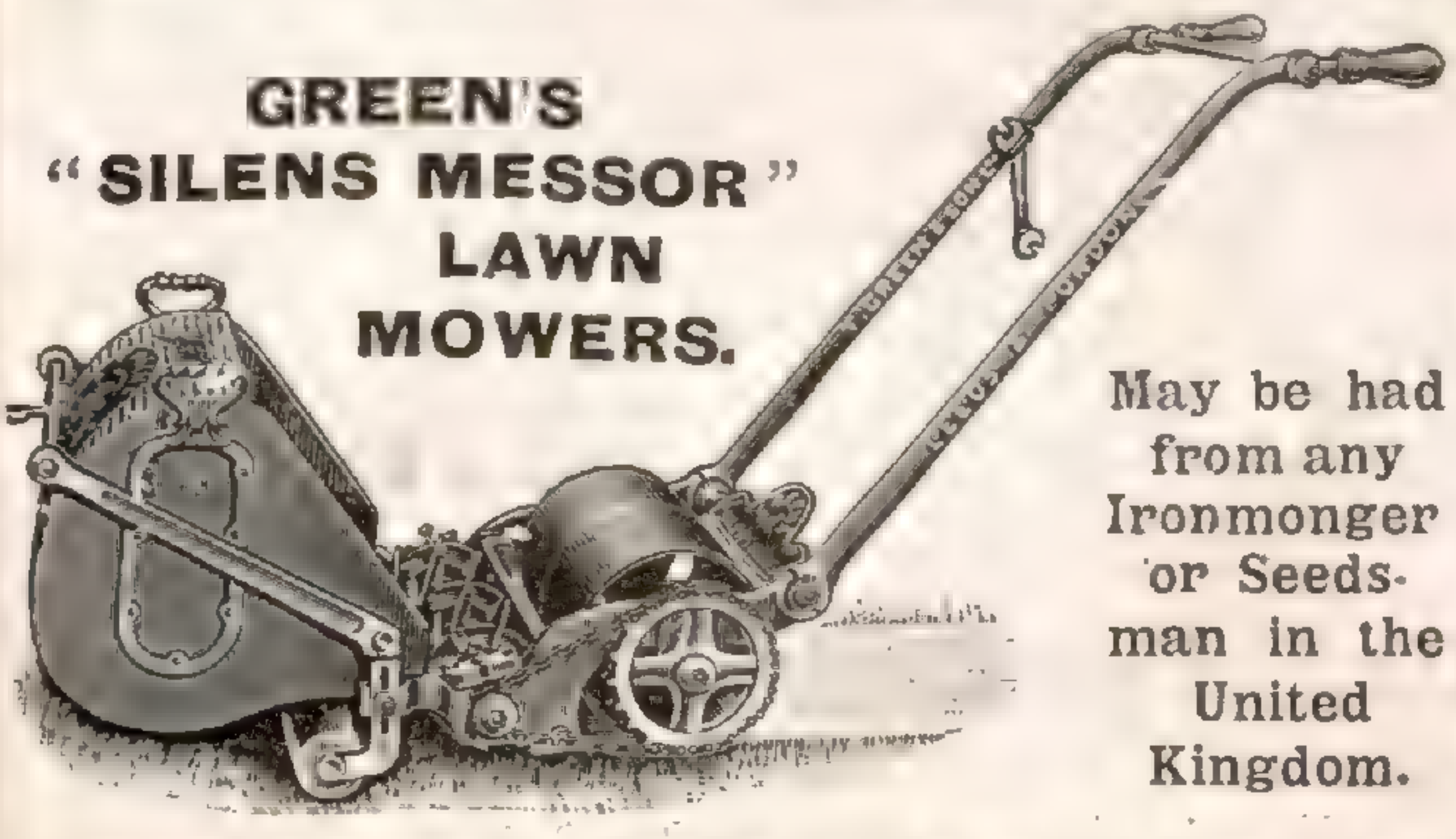

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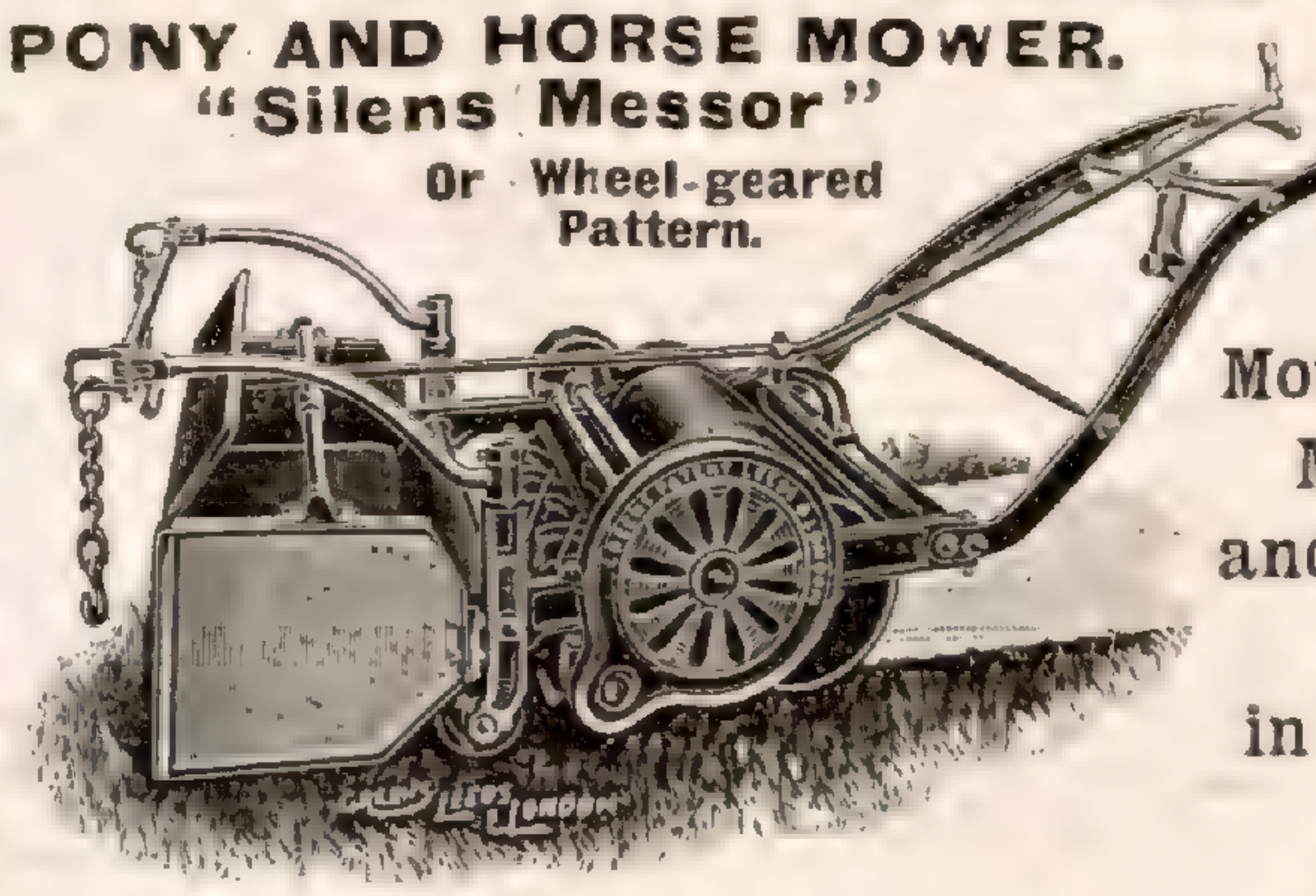

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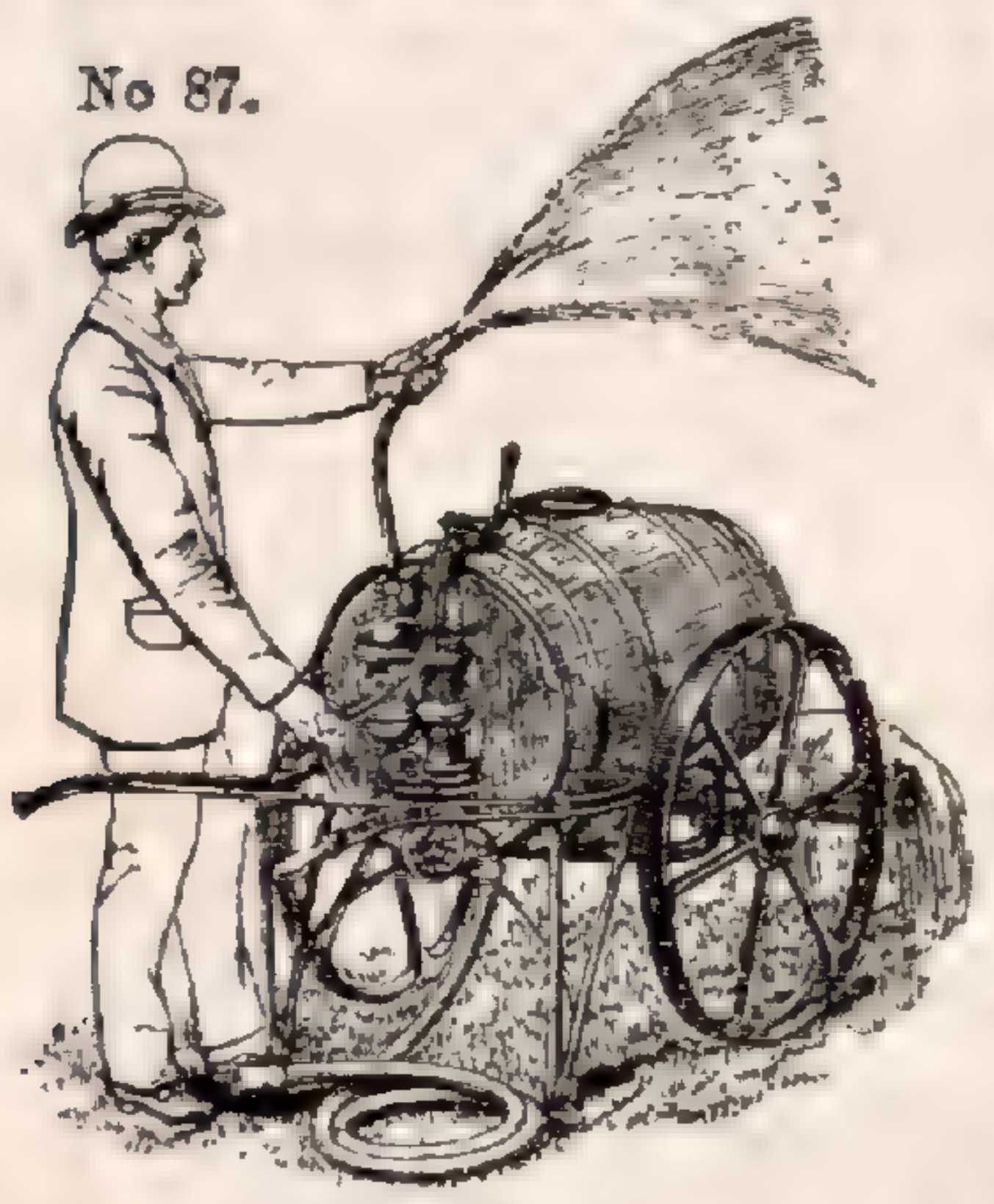

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|---|---|
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| Without Pump ... ... ... ... ... | 4 8 0 |

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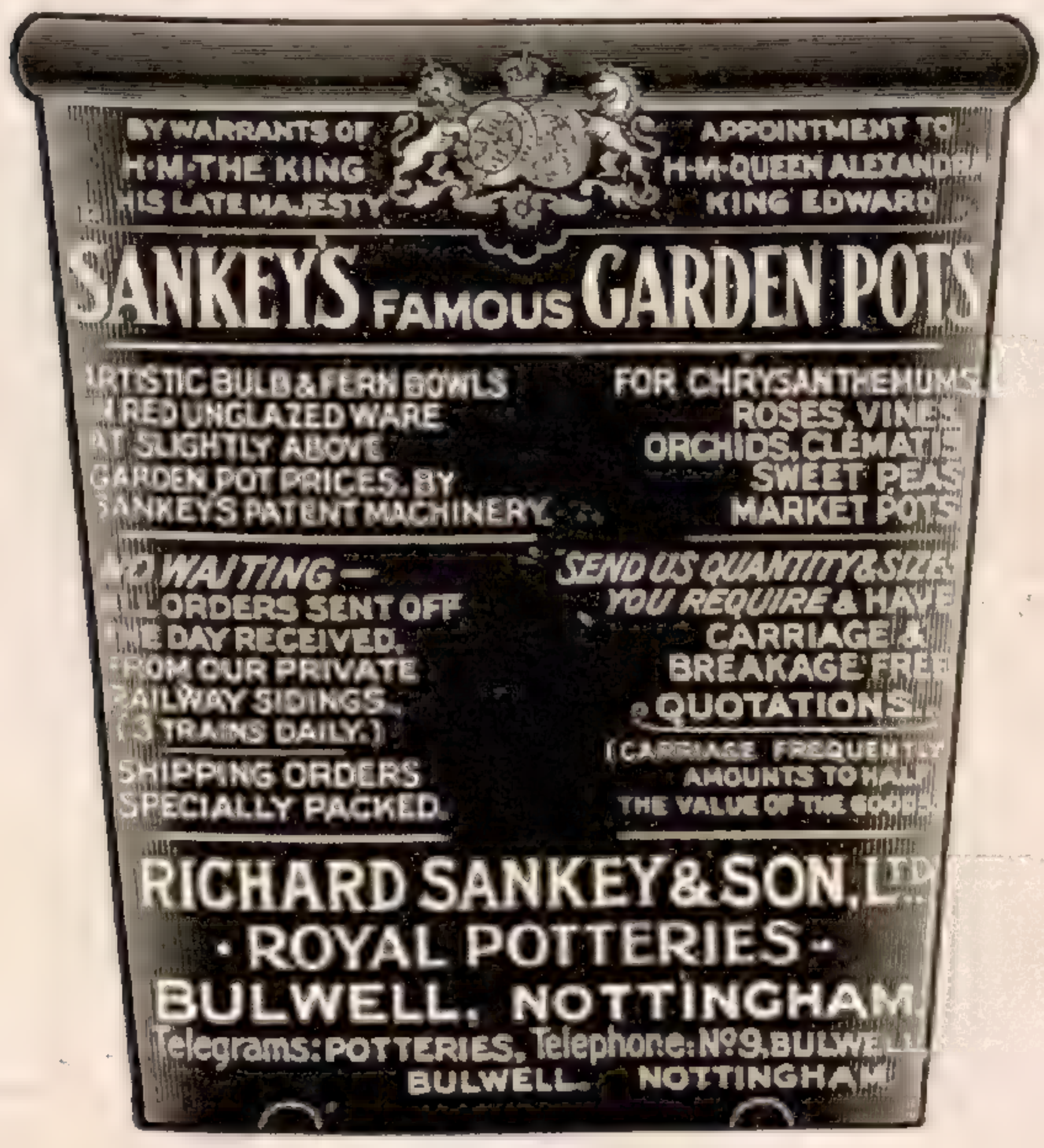

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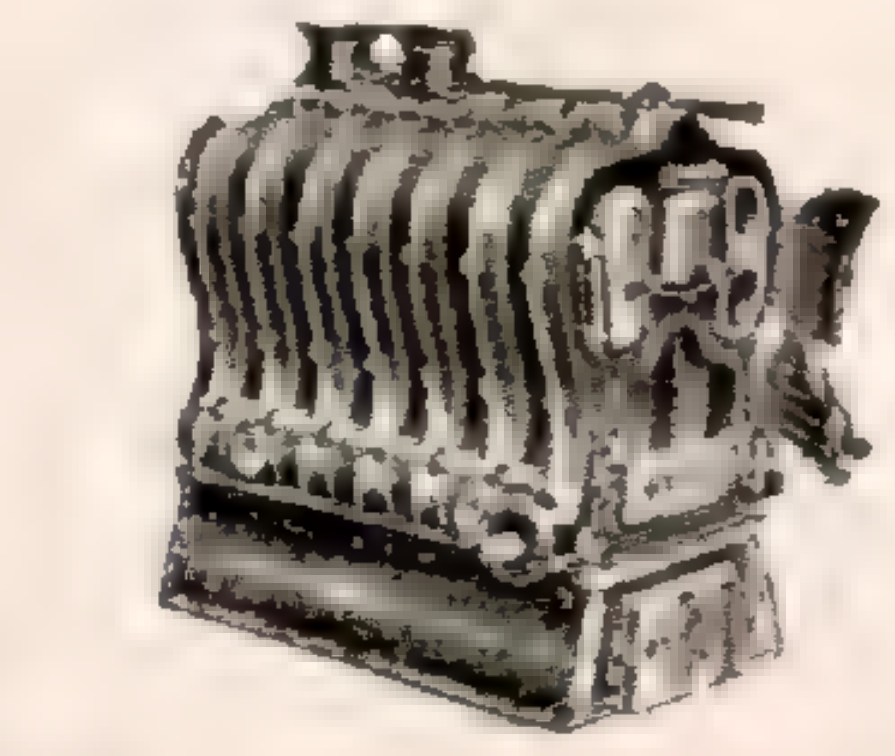

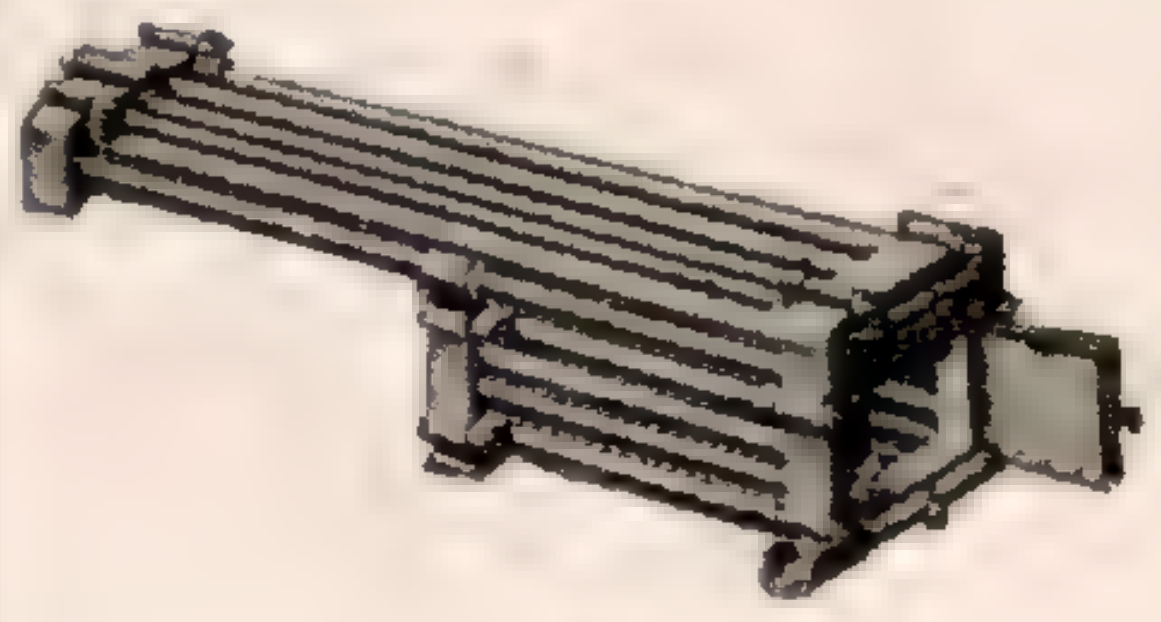

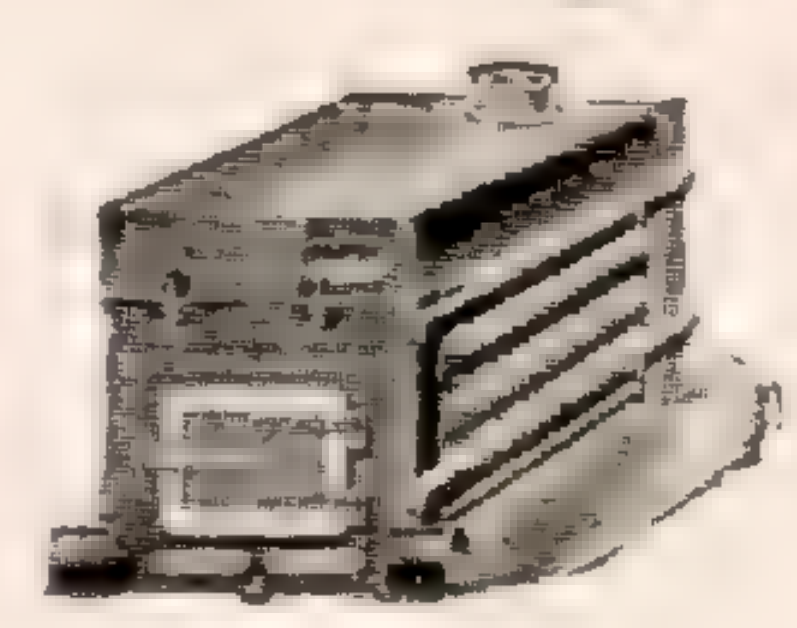

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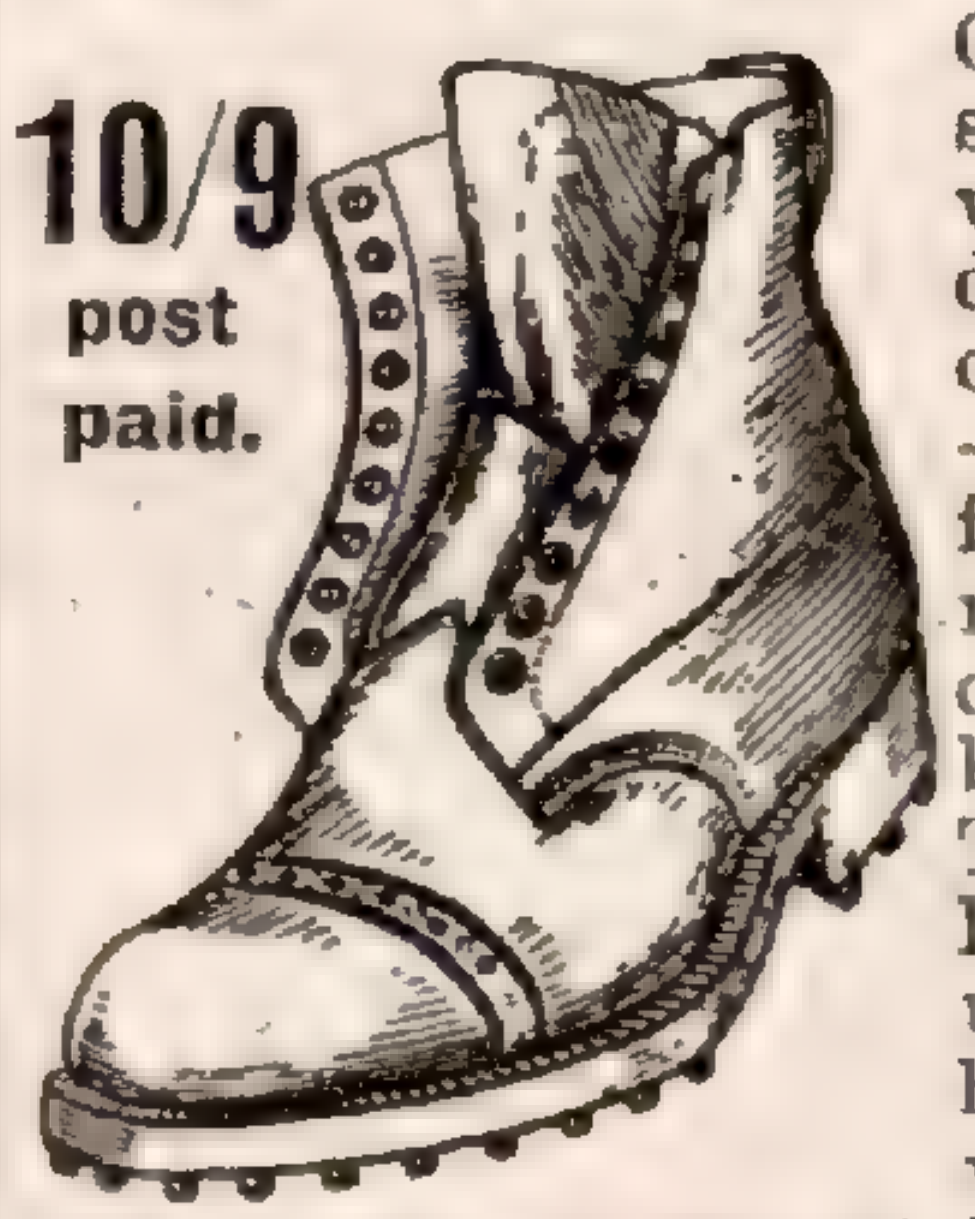

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|---|---|
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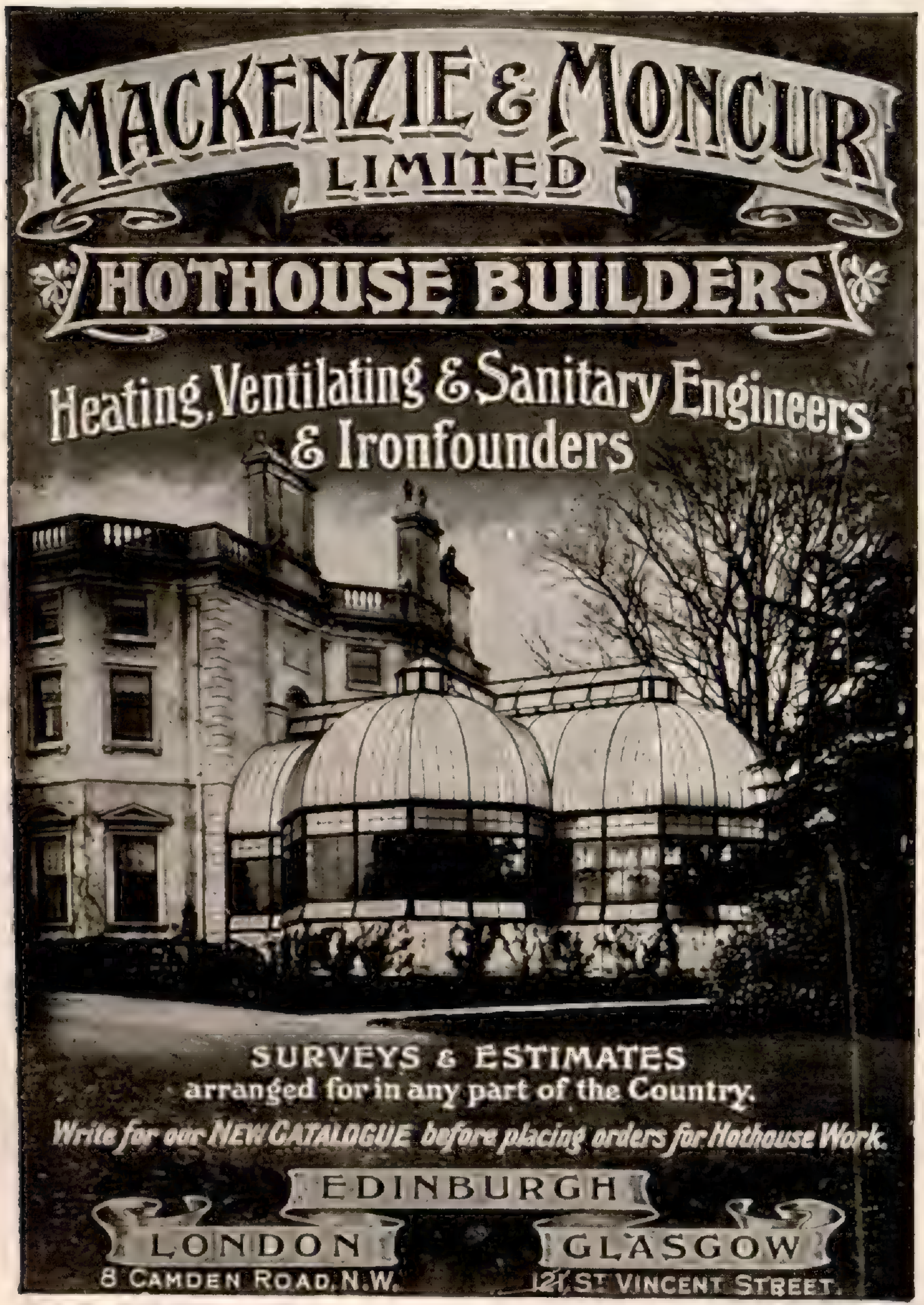

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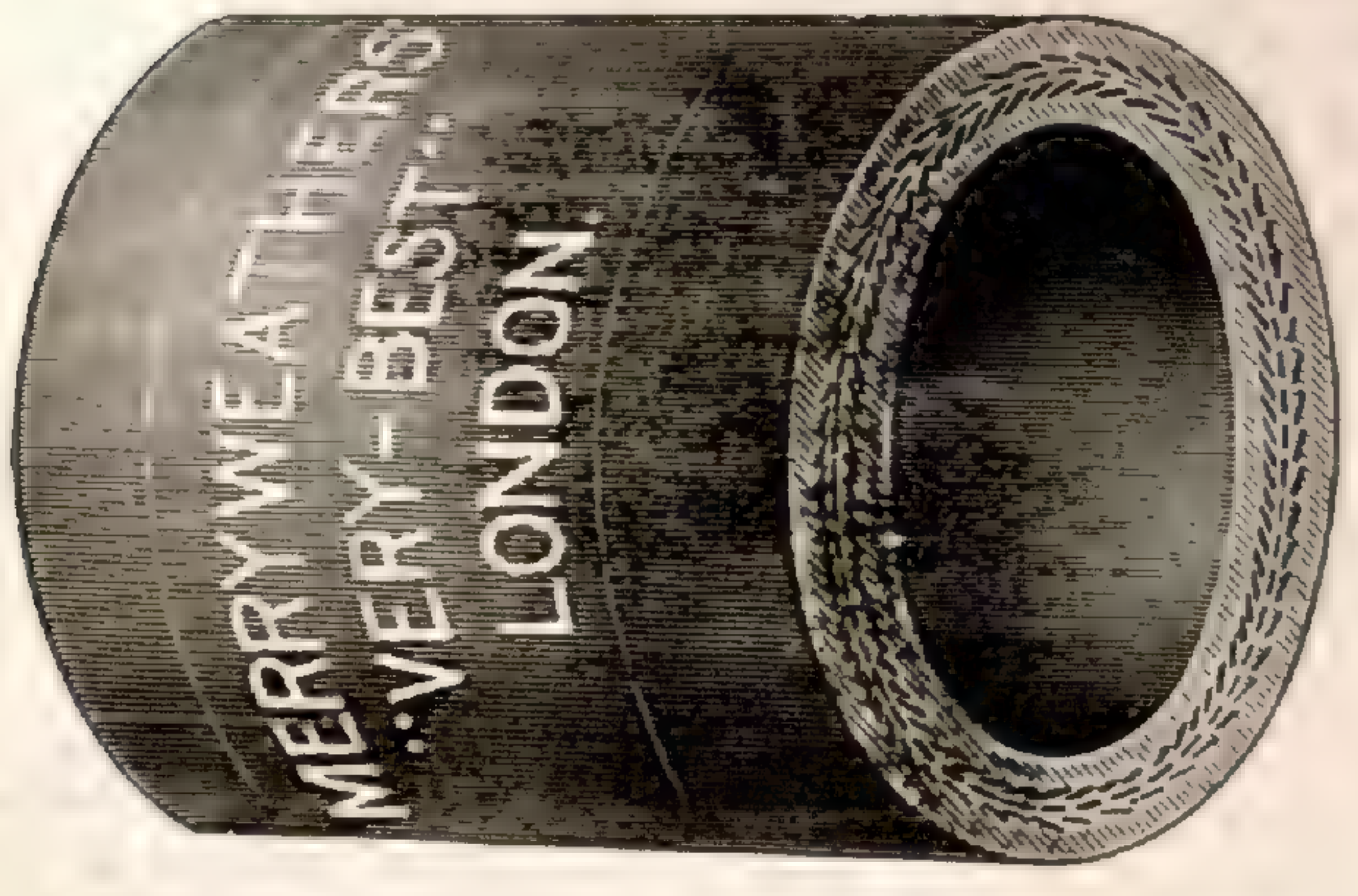

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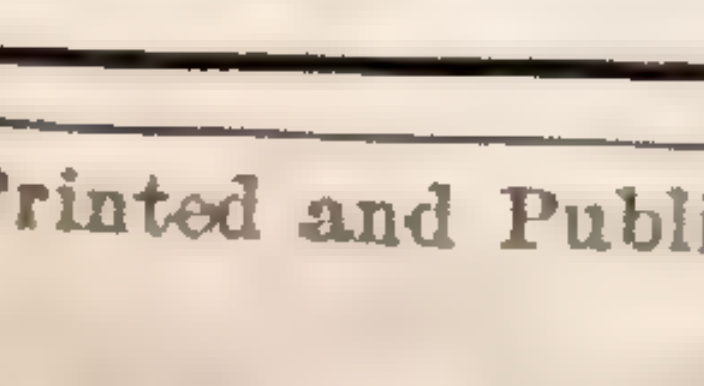

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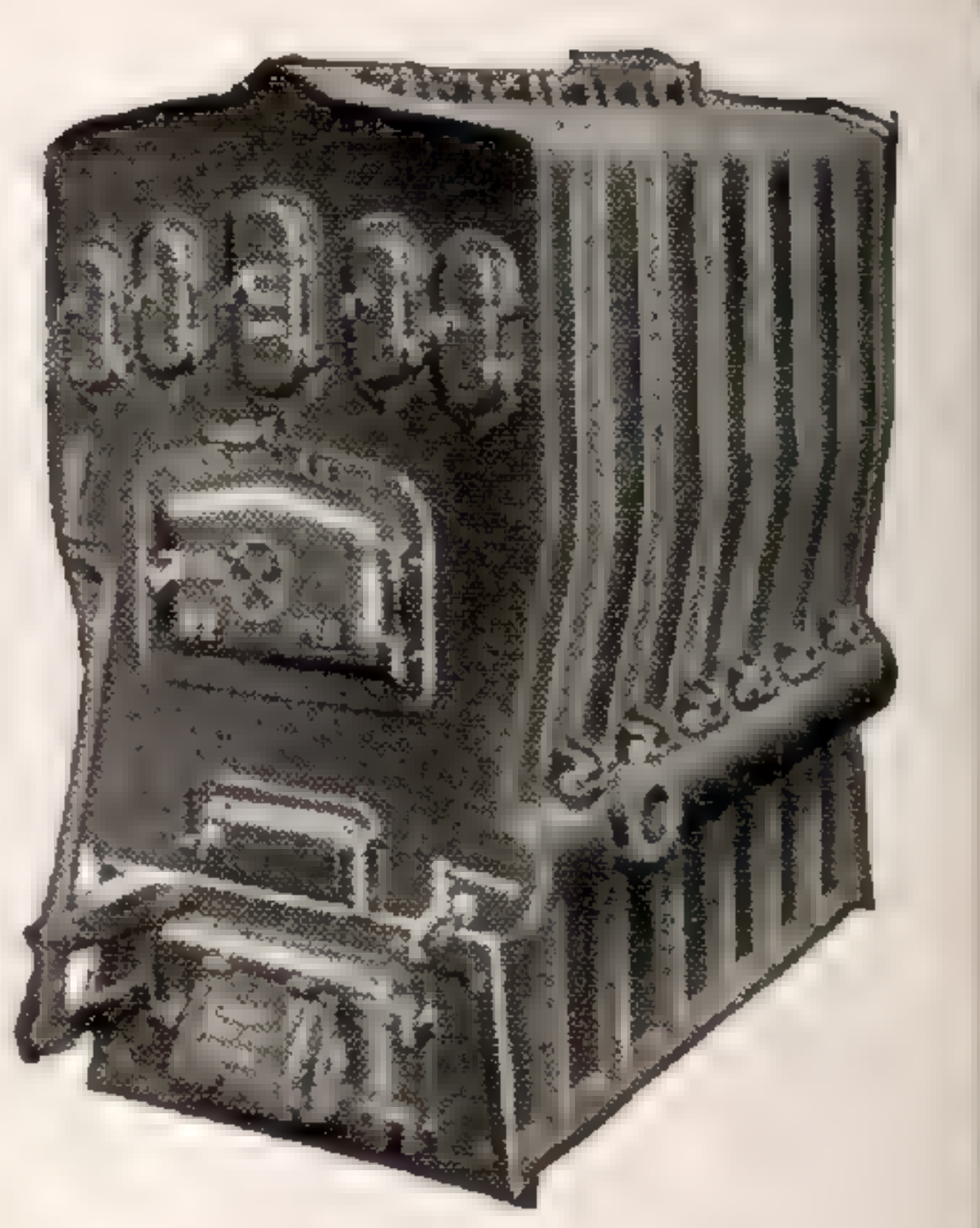

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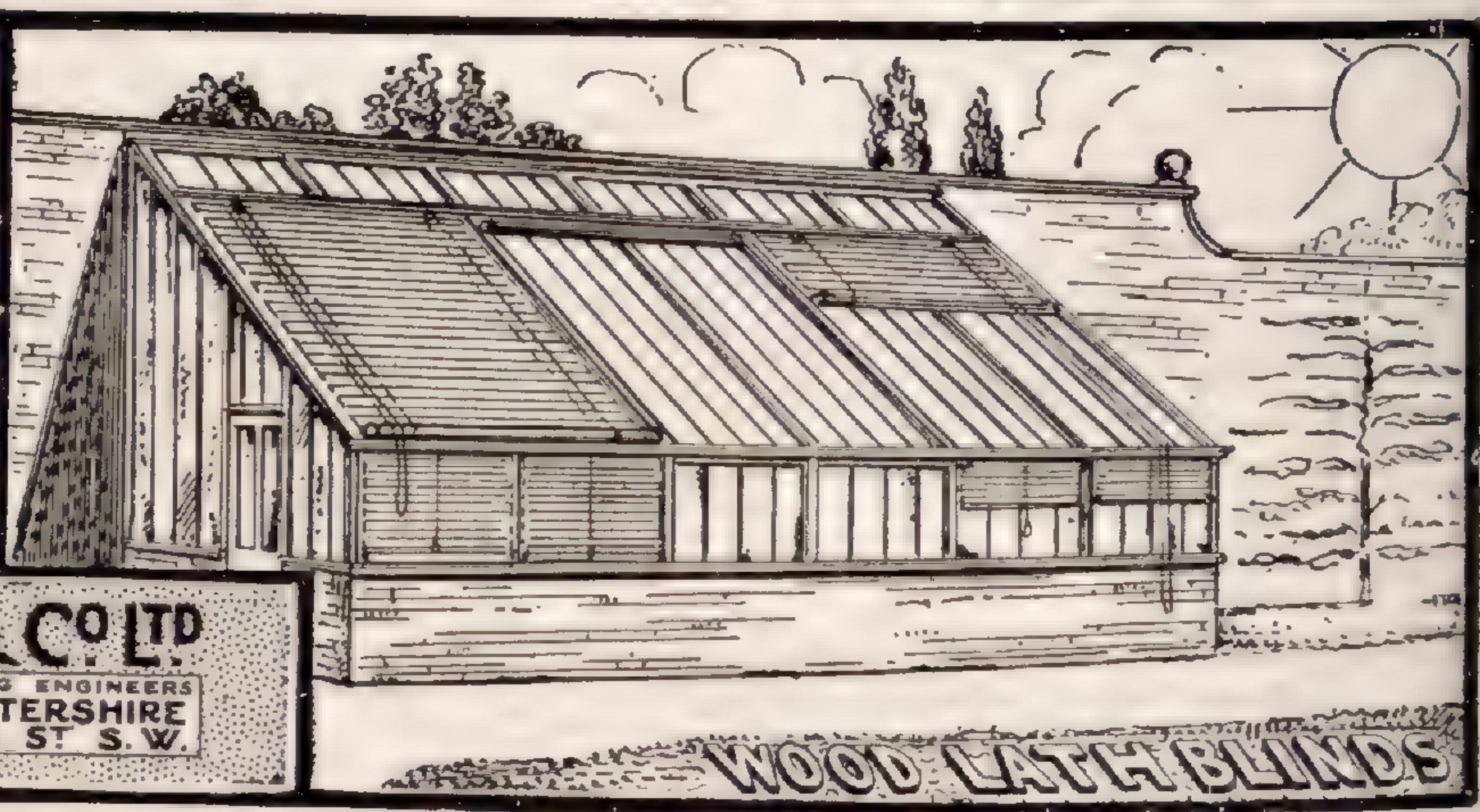

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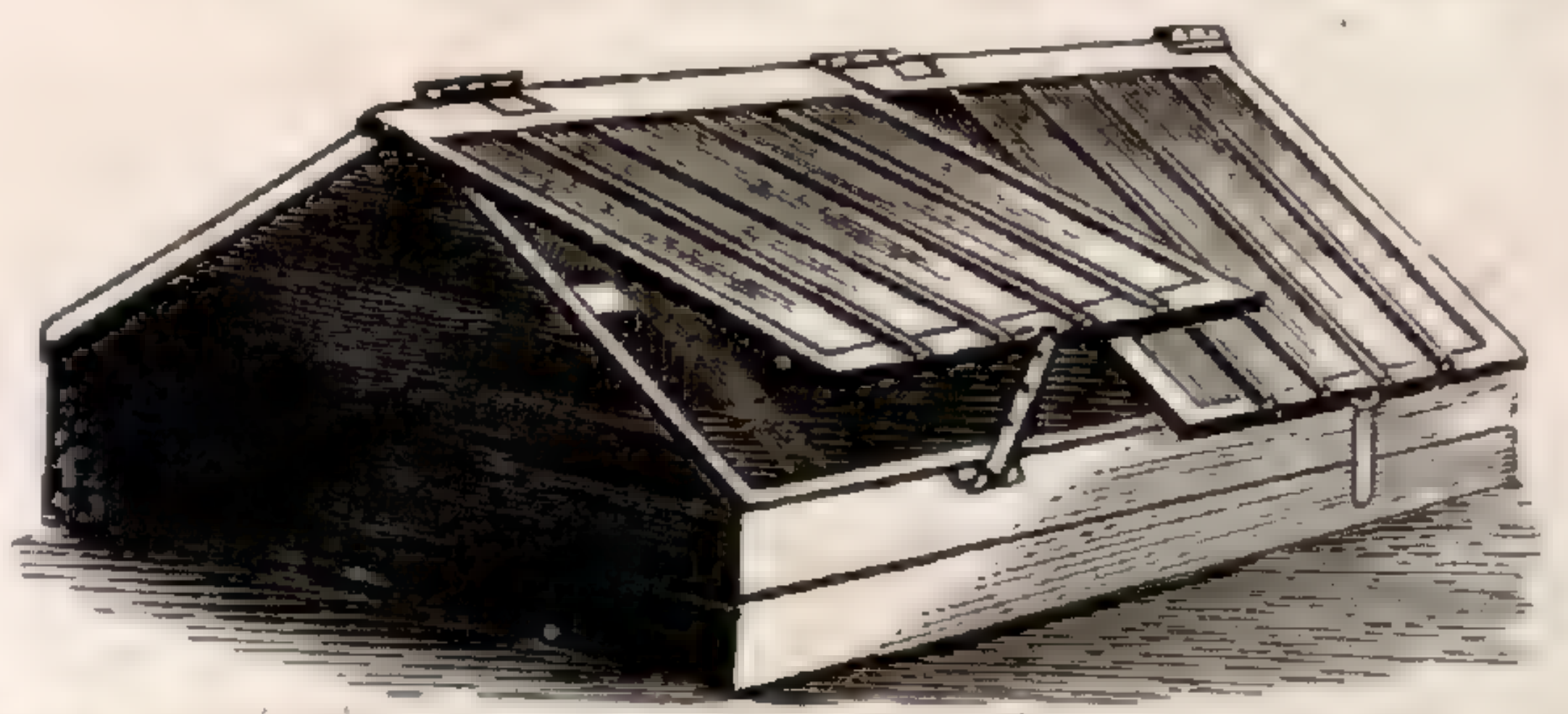

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VOL. LV.—No. 3,064. SATURDAY, JULY 20, 1912.

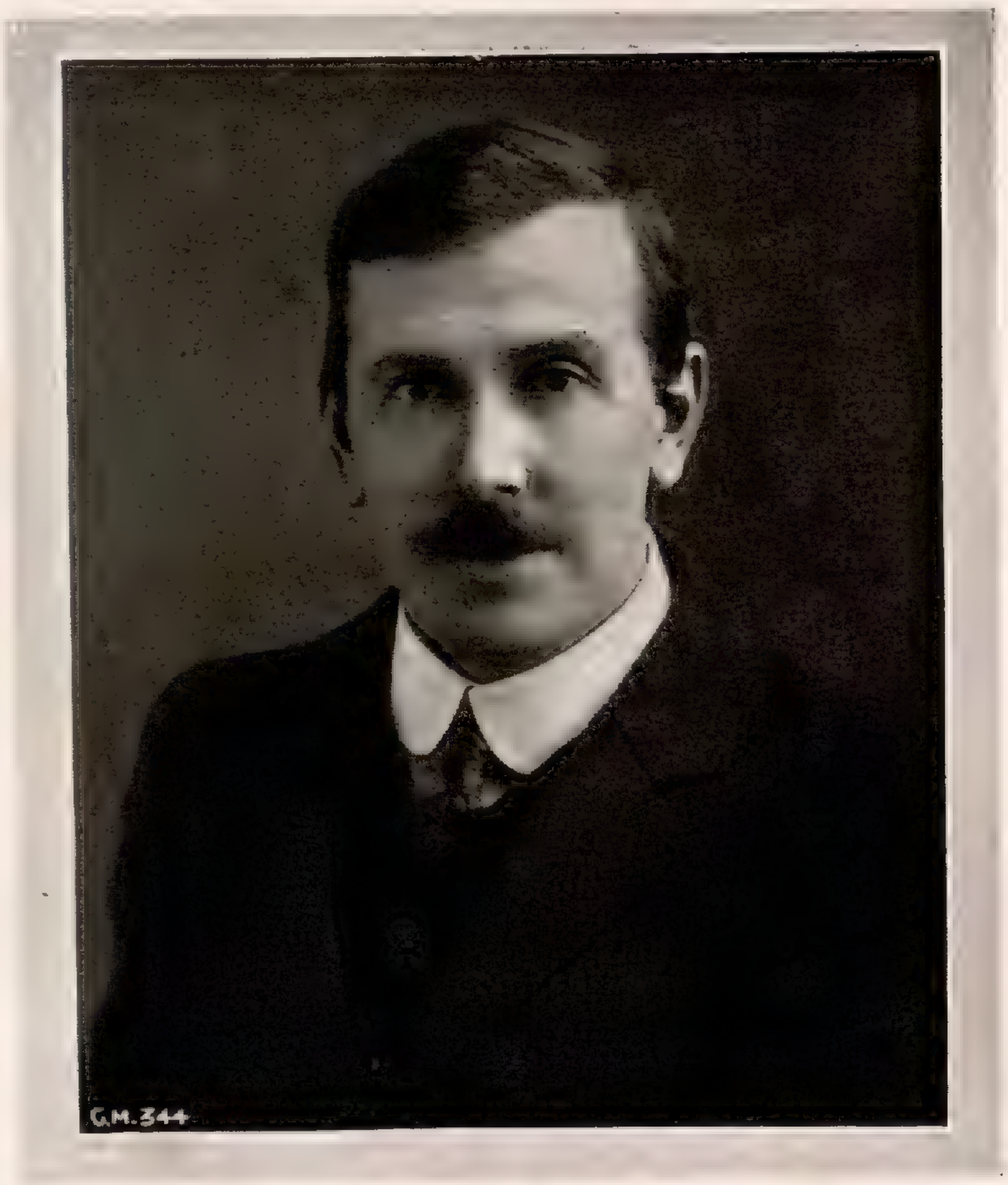
# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Double Flowers.

To the peculiar faculty which many, if not all, flowers possess of departing from their normal single and perfect character and assuming double forms, we certainly owe the majority of our chief horticultural gems, and every tendency evinced by a hitherto single flower to become double is immediately encouraged by selective breeding to, in the cultivator's opinion, improve it by developing the peculiarities. Such a tendency may be evinced at the outset by a simple deformation of the petals, and, in innumerable cases, this has been found to be inherited, with the result that, in a few generations, the whole of the petals have been transformed, and not only that, but the seed-forming apparatus, to which these petals are normally merely attractive adjuncts for reproductive purposes, have assumed the petal form as well, the flowers thus becoming entirely or partially barren. This, however, does not trouble the selective cultivator so long as the plant concerned can be multiplied by other means than seeds, such as by cuttings, grafting, or other methods, but entire barrenness handicaps him to the extent that, without seed, he is, as a rule, barring bud sports, deterred from improvement of the strain by selection from the progeny. From the point of view of Nature, however, a double flower is a mistake, a step in the wrong direction entirely, since it means a departure, on the part of the flower, from its fundamental duty of forming and perfecting as large a number of seeds as possible. Nature, to that end, has, in the course of æons of evolution, transformed the originally green foliage partially into the very different organs which bear the pollen and contain the embryo seed, and, in most cases, has courted the mediation of the insect world as matrimonial agents, by providing nectaries for its delectation and brilliantly-coloured petals, plus nutritious pollen, to indicate their whereabouts, and form an adequate reward for the services rendered. Hence, from the insect point of view, any extra attraction in the way of conspicuous colour associated with multiplied but naturally useless petals, probably devoid of such rewards, is nothing less than a fraud, and, in any case, the flower cannot possibly profit by their visits. In the case of those beautiful double-flowered members of the plum, cherry, and other normally fruit-bearing trees, which nowadays are so resplendent, though transiently so, in the spring, the impossibility of mere seed production is aggravated by the natural consequence that they bear no fruits, i.e., no luscious pulpy adjuncts, which repay the fruit growers for the all too brief enjoyment of their previous inflorescence. Nature, in point of fact, refuses to countenance such outrages to her laws, which are involved in selection of the barren and beautiful instead of her fertile and less pretentious creations. To the true lover of Nature, indeed, despite the splendour of our double roses, chrysanthemums, dahlias, etc., which form the popular attractions of our horticultural shows, the great host of simple or single flowers must always appeal to his sympathies with the greater force. Happily, selection and improvement, so called, is by no means confined to mere multiplication of petal. The small flower can be increased in size and number, and improved in colour, with no sacrifice to the natural charm of the single flower. Compare, for instance, our finest single clematis of to-day with the comparatively few double ones. There are in fact, many flowers whose normal beauty is such that any structural departure is resented by severyone with a "soupçon" of taste. The lily, par excellence, presents a vivid contrast to her rival queen the rose by her strict adherence to her natural simplicity, all the more natural as she has produced her most delightful and largest blooms in her unsophisticated native habitats, eclipsing far and away the selective cultivator's highest aspirations by the production of natural perfection under entirely natural conditions. That ideally perfect flower, the Madonna lily, has indeed produced a double (?) form, but of such a wretched type as to constitute a warning against, rather than encouragement to, any attempt to follow it up. Tastes, however, even good tastes, differ, and in championing the single forms, as we have done, it would ill become us not to recognise the beauty and charm of the host of double ones to which we have alluded, since, after all, barren or not barren, is, in human hands, largely immaterial, though Nature regards the point as of supreme importance, and takes an infinity of trouble to secure fertility in her creations.



MR. J. C. NEWSHAM, F.L.S.

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**Mr. J. C. Newsham, F.L.S.,** head master and manager of the Agricultural and Horticultural School, Old Basing, Basingstoke, was brought up to farming, and then gave some attention to arboriculture. At a later date he underwent a training in landscape gardening with a Continental firm having offices in London. After this he entered Kew, and took full advantage of the opportunities this institution affords during his two years' stay. Like many other young men, he had to encounter some failures, and for many years he greatly regretted his inability to obtain the post of draughtsman and surveyor in the Parks and Open Spaces Department of the London County Council; he was one of the two candidates selected for the appointment, his successful rival being a capable foreigner who had the advantage of age and experience. Youth was also a handicap when Mr. Newsham was placed on the short list for the post of Curator of the Liverpool Botanic Gardens. When the movement for appointing properly trained men as lecturers and teachers of horticulture and agriculture developed Mr. Newsham's opportunity came, and here his early agricultural training stood him in good stead. He secured a position as lecturer under the auspices of the Hants County Council, and a few years later was made principal of the Farm School at Old Basing, a position he holds with great credit to himself and all concerned. Mr. Newsham holds strong views in connection with the education of gardeners. He believes that young men should take up definite courses of study, and so become well equipped scientifically as well as practically, and he is very anxious that the horticultural lecturer may soon occupy a position in every way equal to that of his agricultural confrère.

**Fruit Crops on the Continent.**—We are informed by the Board of Agriculture and Fisheries that reports have been received from His Majesty's Consuls on the condition of the fruit crops in certain districts in Germany, France, Belgium, and Holland. The Consul-General at Frankfort-on-Main, writing on prospects in Germany generally, reports that this year's crop of nearly all kinds of fruit in Germany will presumably be a small one. The fruit trees and bushes suffered heavily through the great drought of 1911, subsequently through the sudden change of temperature from warmth to intense cold in February, and finally through the spring frosts in April and at the beginning of May. In many districts a complete failure of the fruit crops is certain. In the district of Bühl, in Baden, the centre of the early plum cultivation, the loss sustained by the proprietors of vineyards and orchards is estimated at from £50,000 to £100,000. As to France, there is, generally, a great deficiency in every kind of fruit for exportation. There will only be available for export to the United Kingdom this year at most half the ordinary available quantities of pears, cherries, apricots, and apples; but of prunes, peaches, and black currants there will only be one-third, if as much, and their price will probably be about one-third higher than last year. The plum crop will be bad. In Belgium prospects are very poor. Early frosts destroyed the bloom, and the subsequent prolonged period of drought hindered the formation of the fruit. The crop is likely to be poor in quality and restricted in quantity. The fruit crops in Holland are reported to be satisfactory as a whole.

**Messrs. R. Wallace and Co.'s Rock Garden.**—As recorded in the report which appeared in our issue of May 25, Messrs. R. Wallace and Co., of Colchester, arranged at the Royal International Horticultural Exhibition a rock and water garden so remarkable for its taste and beauty as to obtain for the firm the award of the handsome cup offered by Queen Alexandra for the best exhibit in the section. A few days since Messrs. Wallace received from Colonel Streatfield, her Majesty's private secretary, the following letter having reference to their rock and water garden: "I am commanded by Queen Alexandra to thank you very sincerely for the beautiful water colour and photographs of your rock garden at the Royal International Horticultural Exhibition, which you sent to Her Majesty, through Sir George Holford. Her Majesty thinks Miss Du Cane's picture lovely, and is very glad to accept your kind present. Queen Alexandra is very glad to know that you won her cup, and thinks the award most justly made, as she has a pleasing recollection of the beauty of your garden when visiting the exhibition at Chelsea."

**The Potato Crop.**—At the present time potatoes present a very promising appearance, and, provided the climatic conditions continue favourable, the crop will closely approach, if it does not prove equal to, that harvested last year. The early potatoes suffered somewhat from the drought experienced in May, and in a few districts the potato disease made its appearance in June, but the change from the moist conditions that obtained during that month prevented the disease spreading to an injurious extent. Maincrop varieties are especially promising in the North of England and in Scotland.

**The Golden Tulip Tree** (Liriodendron tulipifera aureo-marginata) is remarkable both for its golden flowers and the yellow margin to its somewhat singularly cut leaves, and should prove a useful addition to the trees of special value for the garden. We are reminded of this distinct and beautiful form by several cut specimens that Messrs. Paul and Son, of Cheshunt, have kindly sent us. The flowers of this variety are of a more decidedly yellow hue than are those of the type, and the brown blotches on the petals that are characteristic of the flowers of the latter are replaced by others that are bright orange-yellow. The leaves are irregularly margined with greenish-yellow, the variegation extending in some cases over one-half the leaf.

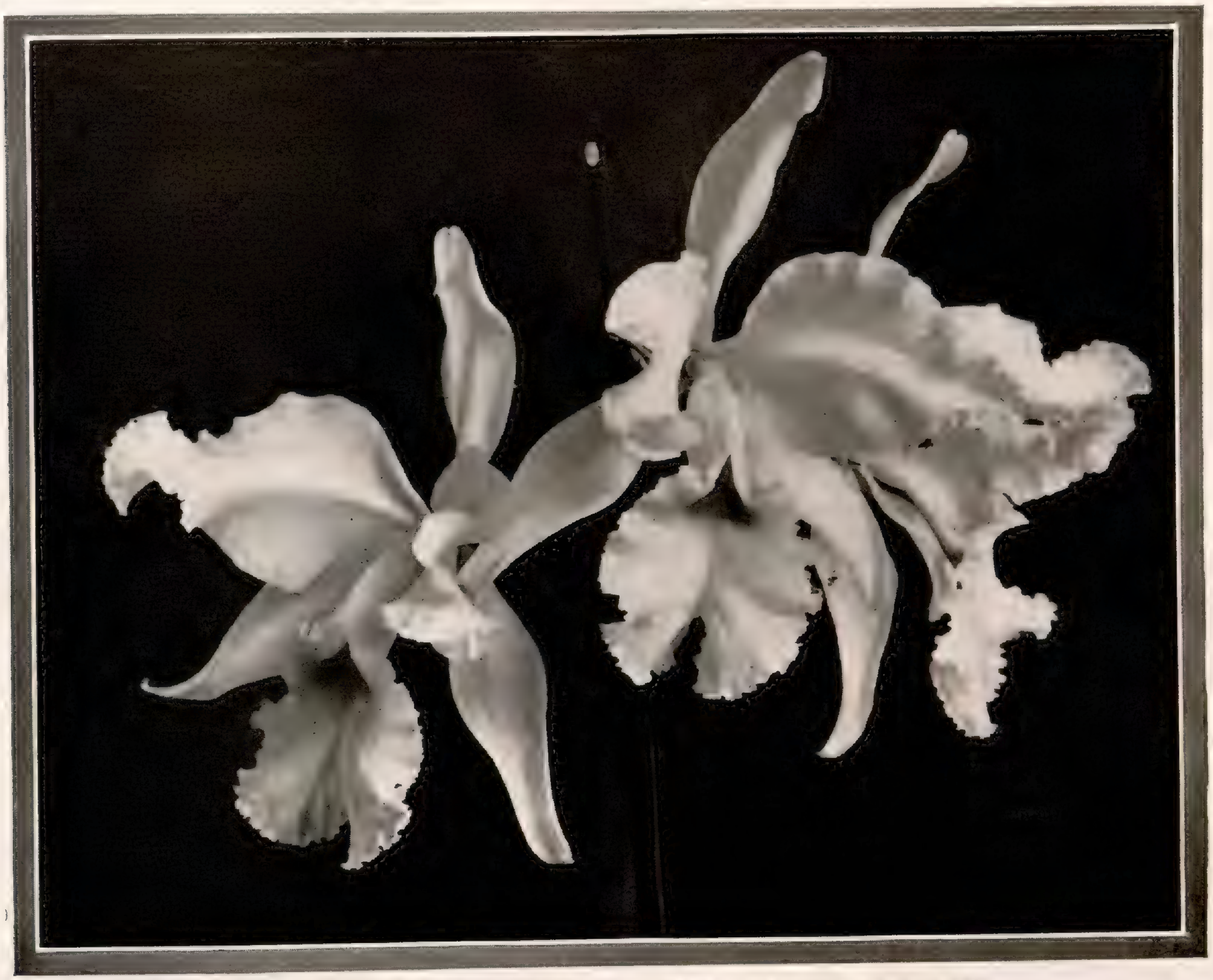
**Proposed Park for Shadwell.**—The Corporation of the City of London have been considering a proposal to sell their Shadwell Market property to the King Edward Memorial Committee, with a view to its preservation as a public park. To assist in bringing the project to a successful conclusion the London County Council, who are lessees of a portion of the site, are prepared to redeem for £14,000 their liability under the lease. The Fish Markets Committee have recommended the Corporation to accept from the Memorial Committee a net payment of £70,000, on condition that the property be converted into a public park, for the use of the public for ever, as a memorial of King Edward, and that due provision be made for laying out the park. The purchase and conversion of the site will cost about £100,000, and as £75,000 has been received by the Memorial Committee in cash or promises, a sum of about £25,000 remains to be collected.

**Presentation to Mr. and Mrs. Barnett.**—Advantage was taken of the opportunity that the judges' luncheon on the occasion of the Wolverhampton Show afforded to make a presentation to the late secretary, Mr. W. E. Barnett, and Mrs. Barnett, for the purpose of giving practical expression to the esteem in which he was held by both judges and exhibitors. The Mayor, who presided, called attention to the fact that those who had been associated with the show since its commencement were desirous of showing their appreciation of Mr. Barnett's ability and courtesy during the long period he occupied the position of secretary. Mr. Owen Thomas then, on behalf of the subscribers, asked Mr. Barnett's acceptance of a silver tea and coffee service, with a set of vases for Mrs. Barnett, together with an address. The address was as follows: "The news of your retirement from the position of secretary of the above great show, after the successful service of 21 years, was received by the exhibitors and judges with very sincere regret. Many of them have been associated with you in the service to the society during the whole of this time. That regret was felt the more keenly by the knowledge that the cause of your giving up your position was due to ill-health. It is earnestly hoped that your strength may soon be restored to you in full measure. The exhibitors and judges feel that they could not let the opportunity pass without offering you, as a mark of their respect and sympathy, some small, tangible token of their appreciation of the extreme courtesy and unostentatious, helpful kindness you had always extended to them during this long time. They ask your acceptance therefore of the accompanying present of a silver tea and coffee service, with four silver vases for Mrs. Barnett, with their sincere wishes that you may both long be spared to enjoy them." Mr. Barnett suitably acknowledged the gift and the many kind things said of him.

**Finchampstead Ridges.** — The committee which was recently appointed, with powers to negotiate with the trustees of the Bear Wood estate for acquiring several acres of Finchampstead Ridges, and to appeal for funds to carry out the scheme, has secured an option of purchase for £3,000 of 60 acres of the most elevated and beautiful part of the property. This will preserve an uninterrupted view over Eversley as far as Highclere Beacon 26 miles away, and to the south or south-east as far as Hindhead; while the pretty valley of the River Blackwater, with the village of Yateley in the foreground, will not be hidden from view if any houses are built upon the intervening ground. Not only have the vendors treated the committee generously in the matter of price, but Mr. John Walter has himself promised a donation of £500, and the committee announce that £2,400 has been promised. On the completion of the purchase, the land acquired will be vested in the National Trust for Places of Historic Interest or Natural Beauty.

**British Association at Dundee.**—As previously announced in these pages, the annual meeting of the British Association will this year be held at Dundee, and it is creating so much interest as to suggest that it will, in every way, be a great success. The dates of the meeting are September 4 to 11, and the president-elect is Professor E. A. Schäffer, F.R.S., who, we understand, will devote his address to a consideration of the nature, origin, and maintenance of life. Professor F. Keeble, D.Sc., will be the president of Section K (Botany), and will take as the subject of his address, "Mendelism as an Aid to Physiological Research." His chief object will be to show that the Mendelian method of plant rearing is an indispensable adjunct to physiological research; and the need for this alliance between Mendelism and physiology will be illustrated by a summary of the results of the researches carried out by Dr. E. F. Armstrong and himself on the mode of pigment formation in plants. It is intended to devote one morning session to papers on genetics and allied subjects, and it is hoped that a semi-popular afternoon lecture will be given by Mr. J. H. Burkill on the botany of the Abor Exhibition illustrated by lantern slides. In the Geological Section Dr. Gordon will read a paper on the Fossil Flora of the Pettycur limestone, Fife, and its bearing on botanical evolution. It is anticipated that the paper will form the basis of a discussion in which several leading palæo-botanists will take part. At a joint meeting with the botanists, fixed for Friday, September 6, several papers arranged by the Chemistry Section will be read and discussed. Dr. J. V. Eyre will deal with the enzymes of flax and the variations of the flax plant with locality; Mr. A. Compton, of the Pasteur Institute, will give an account of some of the recent French work on plants,and Prof. Keeble and Dr. E. F. Armstrong will deal with plant pigmentation. Numerous excursions have, as usual, been arranged, and the botanists will pay a visit to Clova and Glen Esk for the purpose of studying the Alpine flora associated with the name of George Don. Garden parties will be given by Lord Moray at Kinfauns Castle, Lord Strathmore at Glamis Castle, Lord Camperdown, Camperdown House, and Lord Kinnaird at Rossie Priory.

**Mr. Lewis Smith.**—The high position to which hardy flowers have attained, both in the garden and at the exhibition, had further proof at the recent exhibition of the Norwich Horticultural Society, when our able contributor, Mr. Lewis Smith, of Shotesham Park, Norwich, was awarded for his fine collection of hardy flowers the Royal Horticultural Society's silver medal which was offered for the best exhibit in the show. This is not the first time by many that he has obtained distinction, for in 1910 he was awarded at Norwich a similar medal of the R.H.S., also offered for the best exhibit, for hardy flowers. At the spring show at Norwich in April last he obtained the R.H.S. silver medal for the best exhibit for a fine collection of orchids. He has also obtained much distinction as a cultivator and exhibitor of fruits. We learn that Mr. Lewis Smith, who has been head gardener at Shotesham Park Gardens during the past eleven years, has resigned his charge, and will leave early in August. He should not be long in finding further opportunities for the exercise of his abilities.



CATTLEYA WARSCEWICZI ALBA, VAR. FIRMIN LAMBEAU.
Flowers pure white, with lemon-yellow throat to the lip. F.C.C., R.H.S., July 15. M. Firmin Lambeau, Brussels.

## CELL GROWTH.

To anyone who devotes a little study and thought to the matter the fact must appeal with reverential forcefulness that every living thing we see, whether plant or animal, microscopically minute or comparatively gigantically large, not only commences its existence as a tiny little sac, containing a tiny quantity of liquid, which sacs are practically indistinguishable as to form and composition, but is also eventually constructed entirely by a succession of such cells. From the bacterium to the whale or the colossal redwood trees of Colorado is this the case, as well as with all the infinitely diverse forms of life which lie between these dimensional extremes as plants or animals. Furthermore, if we take intelligent stock of our surroundings we shall find that the vast majority of the substances with which we deal are derived from organic sources, and hence have been built up at some period, remote or recent, by the operation of these little constructive sacs or cells.

Probably, to the lay observer, the fern spore presents one of the easiest objects by means of which we may be better enabled to grasp from start to finish the nature of the work of which a simple cell is capable. The spore is merely such a cell protected by a shell, and with a microscope of moderate power it is fairly easy to watch its operations from the moment when, under the influence of moisture and warmth, it swells and bursts this shell and emerges to the light. No sooner does this occur than a very wonderful process begins, to understand which we must for a minute or two consider that no mere sac of jelly could do anything at all, unless within it were contained some impulsive and directing power. Neither the skin or the jelly possesses such power, but within the latter there is always, in a living, active cell, a truly wonderful little body, a bundle of fibres, called the nucleus, and it is in this that the life principle lies which eventually determines, guides, and controls all the future operations which result in the production of a new organism. Such a "nucleus" is in the cell enclosed in the spore husk, and it is this which, on the liberation of the cell, immediately sets to work to perform its functions. The observation of this stage is probably beyond the scope of the lay or unscientific observer, but it may be taken for granted as being of the following nature. The "nucleus" in the primary spore cell consists, as we have said, of a minute fibrous bundle. This unravels itself, so to speak, and its component fibres split up and arrange themselves into two groups. These two groups separate themselves, and between them, by some inconceivably subtle influence a thin wall is formed, dividing the cell into practically two, each one now with a nucleus of its own. The second cell thus engendered increases in size, and again the nucleus divides, another dividing wall is created, and so on, until a little chain of cells is seen with the spore husk at one end.

No building can continue without building materials; and it will soon be seen that from the tiny chain of cells, minute hair-like rootlets have protruded, anchoring the incipient "prothallus" to the soil, and providing it with material from that soil in the shape of water and earthy salts, while the green portion is absorbing the carbonic gas of the air as further material for construction. Under the influence of light, from the issue of the first cell from the spore husk, there has been engendered within the cell walls a number of tiny green bodies, known as "chlorophyll," or leaf green, and it is this chlorophyll which, alone in this world is capable of being so influenced by light that it can break up the earthy salts of the sap provided by the roots, decompose the carbonic acid gas into its components of carbon and oxygen, throw off the oxygen, and utilise the solid carbon to form starchy and innumerable other substances for constructive or other purposes.

With the aid, therefore, of this marvellous substance, the cell-work now goes actively on, and the designing work ordained by the parental influences which have been incorporated from the first in the "nucleus" of the spore cell, now commences to be apparent. The mere chain formation of the first cells is abandoned in favour of lateral multiplication on definite lines, until presently we see a heart-shaped green scale, perhaps a quarter of an inch across when completed. We may now loosen such a scale from the soil, reverse it, and place it on the field of our microscope for further investigation. We now find that it was attached firmly to the soil by a bunch of many hair-like roots, and that where the heart is indented is clearly much thicker than elsewhere, forming a sort of cushion. On this cushion, close to the indentation, is a little cluster of teat-like bodies, the "archegonia" or female parts of the prothallus, at the base of each of which is an embryo seed. Elsewhere, scattered irregularly among the root-hairs, is a number of short, round pimple-like bodies, the antheridia, or male portions, and from these, if water be present, we may see issue little swarms of antherozoids (each one an animated cell) which swim actively about in the water, and eventually reach the "archegonia," penetrate them, and fertilise the embedded seeds beneath them Now to form a fair parallel to all this wonderful cell-work, we must imagine a vitalised brick being laid on a clear space of ground, and, all by itself, breaking up into other bricks which spontaneously arrange themselves, construct laboratories in which complex materials of, other kinds are chemically fabricated, make little chambers, and engender living organisms to occupy them, and in short do an infinity of wonderful things until a colossal edifice is erected (the adult fern), which is endowed with the faculty of scattering broadcast a few millions of equally gifted bricks, each one capable of doing the like if called upon.

All this, and far more, can be partly seen and partly conceived by anyone who will take the trouble to sow a pinch of fern spores, and follow through these performances with the aid of a microscope and an intelligent imagination. Having done this, and thereby gripped to a slight degree a sense of the marvels of cell growth, look around, as suggested at the outset, and study the work accomplished by the cell in other directions. Leaving unsophisticated Nature on one side, study the contents of every shop we see, save those of metal ware, jewellery, and other inorganic products, and a little thought will show us that all such contents are, or have been, primarily the work of busy cells, while the infinite diversity of such work is all determined at the outset by invisible and inconceivably subtle potencies innate in that minute bundle of vital fibres in the cell which we term the nucleus, the absolute embodiment of all vitality. Then we may go a step further, and consider that our own appreciation of all these wonders is solely due to the action of the innumerable brain cells which, as the writer of these lines progresses, are working up his memories, and simultaneously actuating the mechanism which drives his pen and enables him to transfer his intangible ideas into words for his readers.

Chas. T. Druery, V.M.H., F.L.S.

## "THE GARDENERS' MAGAZINE" GOLD MEDAL.

As our readers have been informed we offered a handsome gold medal as a special award for the most meritorious exhibit in the competitive classes at the recent exhibition of the National Hardy Plant Society at the Royal Horticultural Hall. The offer of the medal greatly stimulated competition in the principal classes, and induced the exhibitors to do their best in staging their collections. The judges who combined for the purpose of making the award, did not find it a particularly easy task to determine the relative merits of the several collections that ranked high for the first place. They, however, surmounted any difficulty that was met with, and awarded the medal to Messrs. F. Smith and Co., of Woodbridge, for their collection of hardy flowers arranged in vases. We heartily congratulate the firm on their success.

The Gardeners' Magazine Prize Medal

AWARDED TO
F. SMITH & Co
FOR
BEST EXHIBIT AT
N.H.P.S. SHOW
JUNE 19th 1912

**The River Route to Kew.**—During the hot weather many visitors to Kew take advantage of the river route to the famous gardens, and certainly the journey is more pleasant by water than by road. It is estimated that no fewer than 13,000 people patronised the steamboats from London to Kew during a recent week-end period, while 12,000 travelled by river to Greenwich in the same three days.

## THE CULTURE OF EARLY SMALL CABBAGES.

Every spring demonstrates the value of the cabbage, when it is produced early and of good quality, and, though I have nothing to say against larger and later varieties, for home supplies there is no question whatever but that the small, early forms are of most value. Each year those who have to rely upon market supplies know that there is always a dearth of good early cabbages, and no matter what the season, this want is always felt, and I think those who supply the markets would find the early small cabbages a profitable and valuable crop.

There is little rest for the grower who wishes to secure the best results. It is always difficult to recover lost time, and those who study vegetable culture must be in time to obtain the best returns. July may appear full early for sowing the earliest varieties, but I have, after a long experience, never found it too early; of course, as regards the north and south, ten days or a fortnight difference may be allowed. Much depends upon the season, so it is impossible to give a fixed date for all places and under diverse conditions. In the north I always made it a point of sowing from July 15 to July 20; and in the south from the 20th to 30th of the month. Soils alter conditions, and a heavy clay soil means greater difficulty in germination, though this can be met by improving the surface soil by additions. Again a few weeks' hot weather without moisture makes a considerable difference to the welfare of the seedlings in their early stages of growth, so that, to be successful, the seed-bed should, for a short time, be shaded from hot sunshine, and then moisture given will readily be retained.

Many good growers make two sowings according to locality, one early as advised (a small one), and another two or three weeks later, and where a number of plants are required it is an excellent plan. Years ago, with only the older varieties to rely upon, it was courting failure to sow at an early date, as almost invariably a large percentage of the early sowing bolted, that is, run to seed, and time and labour were lost, but this, so far as my experience goes, does not now apply to the early small forms of which the newer Harbinger is a fine type. For years I grew a small cabbage of my own, a cross between Ellam's Early Dwarf and Sutton's Favourite. This never bolted. I have so much faith in these small early varieties, and frequently, when sown at the early date named, I have been able in a mild winter to cut perfect heads in abundance quite early in February.

A cabbage I grew for many years on a stiff clay soil, though small, was most valuable. This, I should add, was the Imperial; indeed there is no lack of splendid varieties. The newer Harbinger I consider a great acquisition for small gardens, and if sown at the time noted there should be no difficulty in having good heads very early in the year. For large supplies it may be well to make a sowing of an early larger kind, say April or Flower of Spring, but much depends upon the demand, and the supplies must be regulated thereby.

I should say that invariably I planted on land that had given us a main crop of onions; this was well enriched for the onions, and it gave an excellent site for the cabbages. A point that should not be overlooked is that these small, sturdy varieties do not suffer nearly so much in severe weather, being closer to the soil than the larger growers.

G. Wythes.

## MENDELISM.

### Inheritance of Characters.

(Continued from page 538.)

On the formation of the sexual cells, the opposing characters of each pair will separate. Consequently, no pollen grain or ovule will be found containing the factors for yellowness and greenness, nor roundness and wrinkledness. But there is nothing to prevent the association in the same pollen grain or ovule of yellow with either round or wrinkled; or green with round or wrinkled. We thus get in approximately equal numbers four sets of pollen grains, and four sets of ovules, carrying the factors YR, Yw, gR, and gw. The chances that any one pollen grain will mate with one or other of each of the four types of ovule are equal, i.e., the union of YR with YR is just as likely to occur as its union with either Yw, gR, or gw. The constitution of the sixteen plants of the second generation can therefore be found by combining each of the pairs in the series with itself, and the others in turn. The diagram shows the result, the letters at the side and top representing the factors present in the pollen grains and ovules respectively; the letters in each square representing the constitution of each of the sixteen plants.

| Pollen Grains | Ovules YR | YW | GR | GW |
|---|---|---|---|---|
| YR | YY RR 1 | YY RW 2 | YG RR 3 | YG RW 4 |
| YW | YY RW 5 | YY WW 6 | YG RW 7 | YG WW 8 |
| GR | YG RR 9 | YG RW 10 | GG RR 11 | GG.RW 12 |
| GW | YG RW 13 | YG WW 14 | GG.RW 15 | GG WW 16 |

### Dominant and Recessive Characters.

Examination of this table will show that only one plant of each of the four forms obtained will breed true. Thus of the nine plants containing both dominant characters (Nos. 1, 2, 3, 4, 5, 7, 9, 10 and 13), only one, YY.RR, is pure, i.e., both dominants have paired. Of the remainder, four are hybrid in regard to one pair of characters, four hybrid in regard to both pairs. Segregation of these characters must follow in the third generation.

Only one plant has both recessive characters, gg.ww, and this plant will breed true.

Now examine the two types of plants where the characters of the original parents have been rearranged, i.e., the yellow wrinkled and green round.

Taking the yellow wrinkled first, we see that No. 6 has the dominant characters paired and the recessive characters paired. Its constitution is YY. ww. This plant will therefore breed true to these characters. Of the other two, No. 8 is hybrid in regard to colour (Yg), but pure in regard to the outline of the seed (ww). The same is true of No. 14. The yellow and green characters will therefore segregate in the next generation. Similarly in regard to the green round forms. No. 11 is pure in regard to both characters, but Nos. 12 and 15 are hybrid in regard to outline of seed. No. 11 will breed true, Nos. 12 and 15 will segregate.

Now suppose that our original intentions was to obtain a green round form from our cross. In the first generation, the type desired is not present. It appears, however, in the second generation, and further, one out of every three will be pure.

We have then to separate the pure forms from the impure. The older hybridists obtained this end by selection, which if continued for a number of years would probably be successful. The Mendelian, however, can tell his pure type in the following year, for he keeps and sows the seed of each plant separately. All the plants from the seed of the pure types will be identical, the plants from the seed of the impure forms will exhibit segregation.

In any cross, therefore, every possible combination of characters will appear in the second generation, provided we have a sufficient number of individuals. A certain number of these combinations will consist of a rearrangement of the characters of the original parents, and a definite proportion of each of these new forms will be "pure" and give rise in future generations to identical offspring.

### Reversion.

Recent Mendelian work has thrown much light on the puzzling phenomenon known as "throwing back" or reversion. On crossing certain varieties we get a hybrid which shows neither simple "dominance" nor "blending,' but can best be described as exhibiting the characters of the wild "ancestral" form from which the parental varieties are supposed to have descended. The colour of the flower of the culinary pea is an instance.

Three colours are known—white, which is the commonest; pink, which is found in several varieties; and so-called purple, which is almost identical to the colour of the wild ancestral type. On crossing white with pink, purple flowered plants result.

When self-fertilised, the purple flowered plants produce the three forms, purple, pink, and white in the proportion of 9: 3: 4. Now this proportion at once suggests that we are dealing with a case of dihybridism, similar to the cross between a yellow round and a green wrinkled. But in that instance the proportion was as 9:3:3:1. How do we get 4 in place of 3:1?

Each parent must contain two factors, which in this case are supposed to be "blue" (B), and absence of "blue" (b), "pink" (P), and "absence of pink" (p). A pink flower will therefore have the constitution P.b. (i.e., "pink" and "absence of blue.") A white flower has the constitution Bp (i.e., "blue" and "absence of pink.") But why is this flower not blue? For the simple reason that "blueness" only manifests itself when the pink character is also present. That this is so becomes clear when we examine the following generation.

The plants of the first generation are purple. They contain both colour factors, blue and pink, which gives purple. In the second generation we have 9 purple, 3 pink, 4 white. These nine purple, though not identical, all contain the blue and pink factors. Hence all are purple. The three pinks contains the pink factor, but not the blue. Hence all are pink. But of the four white, three contain the blue factor but not the pink, and since blue cannot be seen in the absence of pink, they remain white. The fourth white contains neither colour factor, and is therefore a pure white.

We now understand why reversion takes place when the pink flower is crossed with the white. Each parent possesses one of the necessary factors for the production of the purple colour. In the hybrid, the two factors are once more combined, and purpleness results. The facts also suggests how the pink and white varieties arose. In the course of evolution each of these forms must have lost one of the factors. Thus the pink flower lost the blue factor, and the white flower the pink. It is also probable that the "loss" of these factors was due to imperfect segregation. If this suggestion be correct, both these forms must have appeared suddenly, just as the "Shirley" poppy is known to have done.

### Present and Absent Factors.

A somewhat similar instance is to be found in the sweet pea. The white flowered variety "Emily Henderson" has two forms, which are outwardly indistinguishable. The cross between these, results in a purple, recalling the appearance of the wild species of Europe. Self fertilisation of these hybrids gives 9 coloured to 7 white. The explanation is similar to the previous case. Each form contained certain of the necessary factors for colour, and the cross resulted in a re-combination of these factors. In the following generation segregation in the proportion of 9:3:3:1 took place. The nine plants were coloured because they all contained the colour factors. The remaining seven are white, because they contained either half the factors or none of the factors. The analysis of the nine coloured forms is of special interest to the horticulturist. They were not identical, but consisted of six forms occurring in definite proportions:—

1. Purple bicolor ("Purple Invincible.")
2. Deep purple (colour deeper than No. 1).
3. Dilute purple ("Picotee.")
4. Red bicolor ("Painted Lady.")
5. Deep red (Miss Hunt).
6. Dilute red or Tinged white.

It will be seen at a glance that these forms constitute a series. The purples were to the reds as 3: 1. Purple is therefore dominant to red, and each red differs from the corresponding purple by the absence of the purple factor. Further, each of the series of purples and reds appeared in the proportion of 9: 3: 4. Two factors must therefore be concerned, these factors being stated to be (1) a light wing factor, making bicolor dominant to the dark-winged form; (2) an intense colour factor.

If purple be represented by B, light wing by L, and intense colour by I, the purple bicolor has the constitution BLI. The other forms may be derived from this by the omission of each factor in turn, representing the absence of each factor by the corresponding small letter, we get

| | |
|---|---|
| 1. Purple bicolor | BLI. |
| 2. Deep purple | BlI. |
| 3. Dilute purple | BLi. |
| 4. Red bicolor | bLI. |
| 5. Deep red | blI. |
| 6. Dilute red | bLi. |

This again suggests that the various varieties now in cultivation arose by the loss of one or other of the factors in turn.

Professor Punett has an interesting historical note on the subject. To quote his own words, "The wild sweet pea first reached this country in 1699. . . . Somewhat later we hear of two new varieties, the red bicolor or Painted Lady, and the white, each of which may be regarded as having 'sported' from the wild purple by the omission of the purple factor, or of one of the two colour factors. In 1793 we find a seedsman offering also what he called black and scarlet varieties. It is probable that these were our deep purple and Miss Hunt varieties, and that somewhere about this time the factor for the light wing (L) was dropped out in certain plants. In 1860 we have evidence that the pale purple or Picotee, and with it doubtless the Tinged white, had come into existence. This time it was the factor for intense colour which had dropped out. And so the story goes on until the present day, and it is now possible to express by the same simple method the relation of the modern shades of purples and red, of blues and pinks, of hooded and waved standard, to one another and to the original wild form. The constitution of many of these has now been worked out, and to-day it would be a simple, though perhaps tedious, task to denote all the different varieties by a series of letters indicating the factors which they contain, instead of by the present system of calling them after kings and queens, and famous generals, and ladies more or less well known."

In these cases of "reversion" the factors concerned have been dscribed as "present" or "absent." This idea of "presence and absence" has been formulated to explain the phenomenon of dominance.

The dominant character is believed to be due to the presence of something. The recessive character is due to its absence. Thus the tall pea is tall because it contains the factor for tallness. When this factor is absent the pea is a dwarf. All peas therefore are dwarf, but some are dwarf plus a factor which converts them into tall.

Take the case of the yellow and green seeded plants already dealt with. Yellow is dominant over green. On this theory, the yellow seed must contain something which is absent in the green. But what? It has been shown that in both types there is a yellow and a green pigment. The green pigment at first masks the yellow colour, but as they ripen and dry the green colour disappears in the case of the "yellow" seeds, thus exposing the underlying yellow pigment. In the "green" forms no change takes place, and consequently the underlying yellow pigment remains invisible. The yellow seed must accordingly contain something which causes the green pigment to fade. This "something" is absent in the green pea.

## THE FRAGRANCE OF FLOWERS.

Next to their beauty, one of the greatest charms possessed by flowers is the pleasant scent or fragrance they emit. We speak of the smell of the woods in autumn or spring, especially after rain, but this is rather collective fragrance, due to the characteristic odour of many trees, their bark, etc. Rain, moreover, has a great effect upon vegetation, causing the dried-up herbage to become fragrant again. A meadow, especially in summer, has its own characteristic aroma, and so, too, has a lake, a wood, the sea, or high hills. In each case, the scent is due to an aggregation of plant scents which fill the air, and are disseminated by water vapour and other agencies, in a sort of concentrated essence if one may so term it. It is, to a large extent, this atmospheric perfume that constitutes one of the most beneficial effects of country air, for the essential oils upon which many of the individual scents are based are extremely salubrious. Judging alone from the sturdiness of the Scot and the health-giving character of the Bournemouth district (where the pine walk is especially advocated), we may attribute much of this to the terebinthine odours in the far north disseminated by the pine forests, a remark which applies equally to Norway and Sweden, Canada, and other large tracts where conifers grow on a big scale. Apart from this regional effect, there is the special local influence of the odour of the individual flower. To speak of the numerous kinds would lead one to speak of some five hundred different flowers, and the matter is further complicated by the fact that some flowers possess more than one distinct type of scent.

The scent resides in epidermal cells, which are situate not only in the root, stem, and leaves, in which case the scent is usually unpleasant, or in the flowers, when it is usually delicious and pleasant. It rarely happens, however, that there is, as in the common woodruff, a decided scent residing in every part of the plant. Here it may be that what is perceived in the stem acts as a deterrent to grazing cattle, and that the odour of the flower serves the main object of flower fragrance—to attract insects. The scent of the leaves and flowers is usually different, as in garlic and many umbelliferous plants, where the leaves are malodorous, and the flower smells of honey. More striking cases of the last are those of the coriander, whose root smells of bugs, and the hemlock, which smells like mice, while in each case the flower smells like honey.

The origin of the scents is usually the possession of essential oils, usually volatile, accompanied by resin in some cases.

As is well known, some flowers smell especially at night, e.g., honeysuckle, night-flowering stock, catchfly, evening primrose, a feature connected with the period of flying of the moths that are long-tongued enough to pollinate them. The colour of the flowers of such plants is usually white, as in White Campion, or yellow or brown, tints which are more visible in twilight or dusk of summer when the light is diffused than blue, green, or red. But most flowers emit their scent by day, some at special periods, and this is again often restricted to the time when the two parts of the flower are mature, the scent being emitted just at the time when pollination is about to take place by means of the insects required to bring the pollen of a different flower to the stigma of the one just ready for this act. And, of course, this means that scents are largely given off only when the flower is open. Since insects again play so great a part in pollination to ensure cross fertilisation, it is natural that colour and scent are, to a great extent, connected, and orange-coloured flowers yield much the same scent, e.g., wallflower and orange-yellow flowered chrysanthemum.

As a rule, white flowers give off the most fragrance. But, contrary to the usual notion that the rose order possesses the most fragrant species, the water lily order is the most fragrant order of plants. At the same time roses yield a very large number of different odours, which it is possible for a blind person to distinguish. On the other hand, the same kind of scent occurs in widely different orders, e.g., that of lemon and of camphor. Moreover, the scent of new-mown hay is common to several plants of widely different orders, e.g., sweet-scented vernal grass, woodruff, melilot, and an orchid, and it is especially in evidence when the plants are dry.[*] Amongst orchids, moreover, a great diversity of scents is to be noticed, viz., honey, musk, citron, allspice, cinnamon, noyau, angelica, aniseed, pomatum, violets, wallflower, fresh hay, coco-nut milk. And, as remarked already, flowers may possess more than one odour, e.g., that of honey in the flower, and the characteristic valerian smell also. Plants closely allied may have widely different scents, e.g., orchids (as above), daphnes, limes, elders, roses, and in the same genus you may find some species scentless along with others that smell strongly.

The diversity of scents in allied species and in different orders is correlated with the fact that insects are attracted to special flowers (a fact probably also connected with colouration). Probably their olfactory nerve is specially sensitive to such, and is not like the human olfactory nerve—sensitive to all scents; but often the human apparatus cannot detect an odour insects can. And then certain scents attract certain types of insects, thus indoloid scents attract certain flies and beetles, while aminoid scents attract other beetles and hymenoptera, while honey scents attract butterflies and moths. Hymenoptera with paraffin scent fly to paraffinoid scents in flowers. Some scents are more noticeable at a distance, perhaps, because the oxygen acts on them after diffusion, e.g., lime and vine, chiefly paraffinoids. It is certain that the Humming Bird Hawk Moth can detect honeysuckle 300 yards away, and fly straight up to a plant from that distance in the dark.

Wrapped up with this acute sense of smell of insects is the existence of nauseous smells coupled with warning colours in some poisonous plants, which are poisonous to us and to grazing animals, but not always to insects. Doubtless a smell we can only detect by rubbing the stem, e.g., in Fool's Parsley, is noticed without by animals, as, too, is that of hemlock and henbane by other animals, the nightshade scent of nightshade. Cattle rarely, if ever, touch hemlock or nightshade, but in extreme drought (of 1911) have done so with accompanying signs of madness or vertigo.

Scents have been divided into odorous and malodorous scents. Of the first we may distinguish the camphorous, citronous, myrtilloid, anisoid, rhodoid (rose), anthemisoid (chamomile), volatile oils, and others due to resins, e.g., balsamoid (balm); others, e.g., nardosmoid (Tussilago or Coltsfoot), ambrosoid, moschoid (Stork's Bill), narcissoid (Narcissus Lily), violet (violet, wallflower stock, mignonette), meliosmoid (Lady's Bedstraw, lime), jasminoid (jasmine), amygdaloid (almond), cyamoid (acacia), maloid (apple), tannoid. Of the malodorous group, with strong disagreeable smell due to volatile oils with resin, are terebinthoid (conifers), peganoid (rue); due to sulphurous acids, allioid (garlic) and fetid (Datura, Nicotiana, Solonaceæ), mecanoid opium (poppies), cicutoid (hemlock), hircoid, goat odour (Hypericum hircinum), cuminoid (coriander), pteridosimoid (like fern).

Other modes of distinguishing them are according to the type of essential oil forming the base or the hydro-carbons that supply them. The indoloid group, which contains leucin, tyrosin, skatol, indol, contains aroids; and plants which have a smell like rotten flesh, or excreta, aristolochia, smelling like old tobacco, calycanthus, like fermenting wine; and these flowers have livid spots, red-brown veins, and green background. The aminoid group, which includes those producing amine, in some combination with ammonia, include hawthorn, medlar, mountain ash, dogwood, wayfaring tree, chestnut, elder, Travellers' Joy, barberry, evening primrose, and ivy which has a smell like pickled herring. Then there is the benzoloid group, including scents in which benzole is replaced by alcohol and acid, with the occurrence of eugenol in pinks and cloves, cinnamyl alcohol occurring in hyacinths, salicylic in meadow sweet, corumarin in woodruff, and here we may mention lilac, lily of the valley, mignonette, jessamine, honeysuckle, acacia, violet, etc.

A paraffinoid scent is characteristic of numbers of plants. Valerianic acid occurs in valerian, pelargonic acid in rose scents, oil of rue in rue, œnanthic acid in vine plant, lime scent in limes, nightshade scent in thorn apple, mandrake, elder scent in elder, hircine scent in Lizard orchis, honey scent of beeswax in sloe, apricot, cherry, almond, some orchids, buckthorn, rather different in Bird Cherry, bedstraws, forget-me-nots, phlox, wall fumitory, spurges, willows, some composites, some umbellifers, e.g., angelica, cow parsnip, Burnet saxifrage, crucifers, alyssum, erysimum, tulips, garlics, clovers.

The terpenoids are derived from ethereal oils without oxygen in capitate-like hairs, or on special parts, as in the orange flower, which contains oil of neroli, gardenia, magnolia, and the citron scent, which occurs in citron, thyme, lavender scent in Lavandula.

A study of the scents of wild flowers of the countryside cannot fail to yield many interesting facts, not only connected with the life history of insects and other animals, as well as the connection between soils and scent—an untouched field—but there is a world of interest awaiting exploration regarding the immediate economic value and use of the numerous oils secreted, of which we have mentioned but a few.

A. R. Horwood.

Leicester Museum.

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[*] This is said to cause hay-fever, which may be due rather to the wide dissemination of myriads of minute pollen grains.

## NEW PLANTS, ETC.

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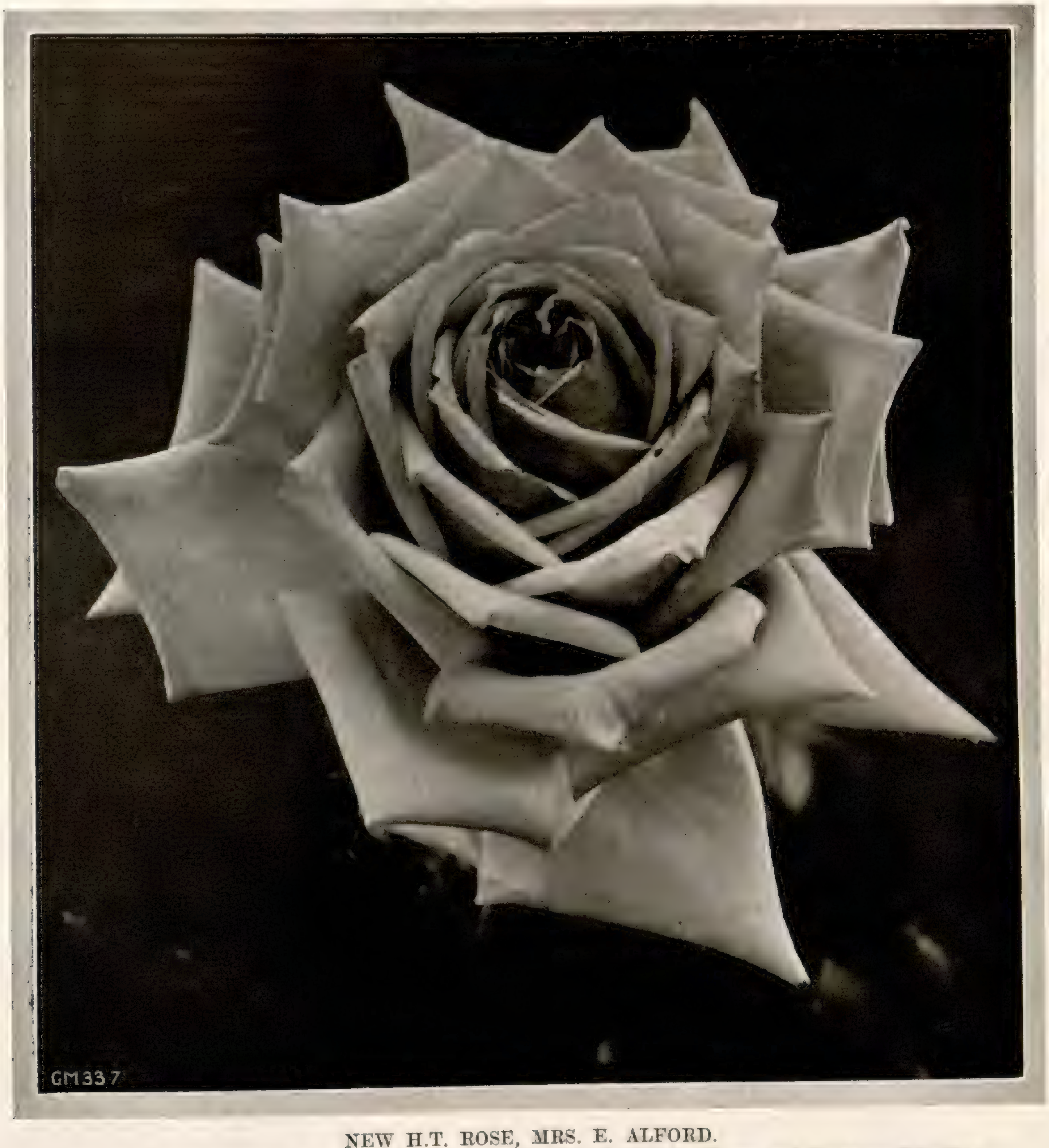
### ROSES.

Mrs. Andrew Carnegie, H.T.—A distinct, beautiful, and fragrant rose that should attain to a high degree of popularity for exhibition, and prove of much value in the garden. The flowers are of large size, and in form suggests Frau Karl Druschki, which is said to have been one of its parents, but they possess greater refinement than the blooms of that variety, and this has been derived from Niphetos, its other parent. The colour is lemon-white, deeper in the centre. In our illustration of this fine variety the bloom is shown considerably below its natural size. Gold medal, National Rose Society, July 9. Messrs. J. Cocker and Son, Aberdeen.



NEW H.T. ROSE, MRS. E. ALFORD.

Flowers bright pink. Silver-gilt Medal, N.R.S., July 9. Messrs. Lowe and Shawyer, Uxbridge.

Old Gold, H.T.—A vigorous-growing and free-blooming decorative rose that marks a great advance in colour development in the yellow orange section. The blooms are rather small, and are of a rich old-gold hue with bright copper-red in the centre, and will be found of much value in a cut state for floral arrangements and button-holes. The leaves are bright bronze-green, and form an effective contrast to the richly-coloured flowers. Gold medal, N.R.S., July 9. Messrs. S. McGredy and Son, Portadown.

Mrs. F. W. Vanderbilt, H.T.—A distinct and attractive variety with medium-sized, large-petalled blooms; the colour bright yellow with orange-red centre. Silver-gilt medal, N.R.S., July 9. Messrs. S. McGredy and Son.

Lady Mary Ward, H.T.—An effective rose that should prove of much value, for in colour it is quite distinct from all the roses that as yet have been presented to public notice. The blooms are of medium size with large petals, and are rich orange, deep orange-red in the centre. Silver-gilt medal, N.R.S., July 9. Messrs. S. McGredy and Son.

Mrs. E. Park, H.T.—A bright and attractive rose of excellent quality for exhibition, and of value in the flower garden. The blooms are rather large, and of a brilliant red hue. Silver-gilt medal, N.R.S., July 9. Messrs. S. McGredy and Son.

Queen Mary, H.T.—A surprisingly beautiful rose that is perfectly distinct in form and colour from all the roses at present known, and should prove of immense value for decorative purposes, both in the garden and in a cut state. The flowers are rather large and quite full, but not closely-packed with petals, the lower half of these being bright clear yellow, and the upper half brilliant rose pink with mauve suffusion. In its style of colouring this variety is quite unique. Silver-gilt medal, N.R.S., July 9. Messrs. Alex. Dickson and Sons, Newtownards, co. Down, Ireland.

Mrs. E. Alford, H.T.—A beautiful rose that will strongly appeal to those who fully appreciated La France in its best days. While reminding one of that fine old rose, this variety is quite distinct from it, both in form and colour, and is a fine addition to the bright pink varieties adapted for exhibition. Silver-gilt medal, N.R.S., July 9. Messrs. Lowe and Shawyer, Uxbridge.

Mrs. Charles S. Hunting, H.T.—A large rose of fine form, and with excellent petal; colour, blush suffused salmon, the centre bright apricot. Silver-gilt medal, N.R.S., July 9. Messrs. Hugh Dickson, Lim., Belfast.

Mrs. C. Reed, H.T.—An attractive flower, rather large in size, and of high quality, the colour light pink, salmon-pink in the centre. Silver-gilt medal, N.R.S., July 9. Messrs. Lowe and Shawyer.

William Cooper, H.T.—A rather large flower, borne on long, stiff stalks, the colour rose-red. Silver-gilt medal, N.R.S., July 9. Messrs. Hugh Dickson, Lim.

Moonlight.—A beautiful decorative variety bearing large clusters of small single white flowers with the fragrance of the musk. Silver medal, Rev. J. H. Pemberton, Havering.

## AGAVE MARMORATA.

A handsome Mexican species collected by Roezl in the Province of Tehuacan many years since, but has long been rare in English gardens. It has glaucous, nearly white leaves, and bears bright yellow flowers, which are borne on erect stems, rising to a height of about twelve feet. "Bot. Mag.," t. 8,442. "Bot. Mag.," t. 8,443.

## STYRAX WILSONI.

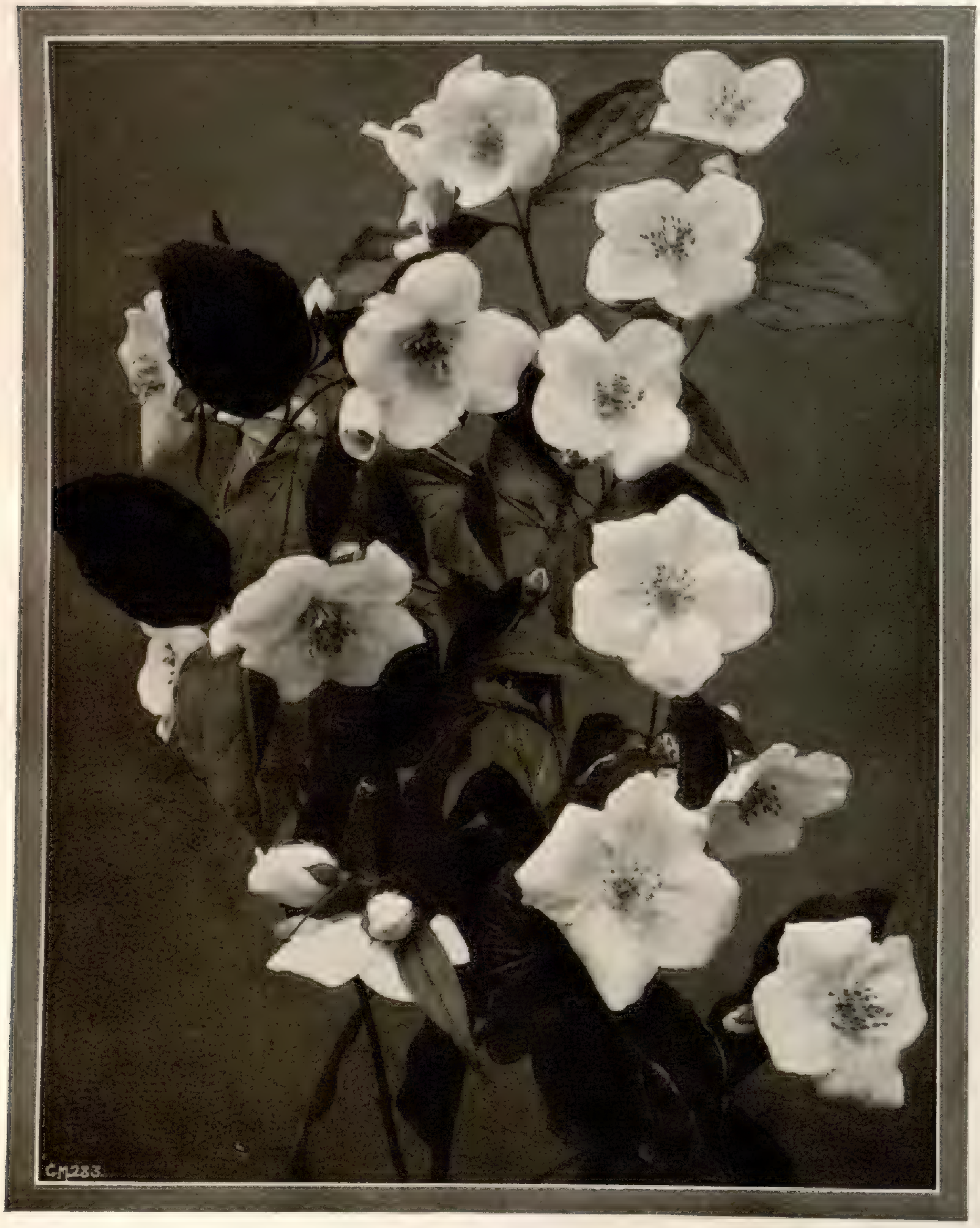
A compact-growing shrub bearing a profusion of small white flowers, which was collected in China by Mr. E. H. Wilson in 1905. Its hardiness in this country is not yet satisfactorily determined, but in the winter of 1911-12, when on one occasion 20 degrees of frost were registered at Kew, only the tips of the shoots were injured. It is, therefore, full of promise as a useful addition to the shrubs remarkable for the beauty of their flowers. "Bot. Mag.," t. 8,444.

## PEROVSKIA ATRIPLICIFOLIA.

A handsome labiate, which is met with on the Karakoram Range in the Western Himalaya at elevations up to 10,000ft. above the sea level, and is described by Dr. Aitchison as plentiful in some parts of the Kuram Valley. It was obtained for Kew from Messrs. Bees, Lim., in 1906. The lavender-blue flowers are produced in large panicles during August and September, and present a very pleasing appearance. Much of the upper part of the growth is soft and dies off during the winter, and it is suggested that the plants should be pruned back to the woody portion of the stem in the spring. "Bot. Mag.," t. 8,441.

## PSEUDERANTHEMUM LILACINUM.

A distinct and handsome species, and bearing erect spikes of comparatively large lilac-coloured flowers. It is a native of Selangoa, and perhaps also of other parts of the Malay Peninsula, and was sent to Kew in 1910 by Mr. H. N. Ridley, who was then director of the Singapore Botanic Garden. This species is a useful addition to the stove plants grown for their flowers, and being closely allied to the eranthemums, may be successfully cultivated under the same conditions. "Bot. Mag.," t. 8,446.



PHILADELPHUS VOIE LACTEE.

A beautiful variety remarkable for its finely-formed milk-white flowers. It received an Award of Merit at the R.H.S. meeting on June 18, when it was exhibited by Messrs. Paul and Son, Cheshunt, and Messrs. J. Veitch and Sons, Chelsea.

## COTYLEDON SUBRIGIDA.

A handsome succulent, which is described as very distinct from any other species of Cotyledon now in cultivation. This species was discovered in Mexico in 1892 by Mr. C. G. Pringle, growing on ledges of cliffs in the Tultenango Cañon. It has glaucous leaves, and bears its flowers in erect racemes that rise to a height of about eighteen inches. The corolla is pink with red lobes. "Bot. Mag.," t. 8,445.

## BRACHYCHITON ACERIFOLIUS.

A handsome species, commonly known a the Flame Tree in Queensland and New South Wales, and attaining in its native forests a height ranging from sixty to one hundred and twenty feet. This species was introduced to this country in 1824, and there is a drawing in the collection at Kew made from a plant growing in the Royal Garden in 1826. At Kew it can only be grown under glass, and in the temperate house there is a specimen about forty feet high. The bright green leaves are palmate, and the bright pink flowers are borne in large panicles. "Bot. Mag.," t. 8,437.

## RUPICOLA SPRENGELIOIDES.

An interesting epacrid, discovered near the southern edge of the King's Tableland in the Blue Mountains of New South Wales in 189, and introduced to this country by Mr. J. H. Maiden, who sent seeds to Kew in 1906. The species forms a neat shrub between two and three feet high, and bears along the slender growths a profusion of white flowers. Rupicola is closely allied to Epacris, and the plants belonging to the same genera thrive under much the same conditions. "Bot. Mag.," t. 8,438.

## IXORA LUTEA.

A handsome yellow-flowered form, which has been in cultivation at Kew about twenty years, it having been originally received from the Royal Botanic Garden, Peradeniya, Ceylon, as Ixora coccinea var. lutea, and it is found in some trade catalogues under that name. The flower trusses are more lax than are those of Ixora coccinea. "Bot. Mag.," t. 8,439.

## LYCIUM PALLIDUM.

A distinct and handsome shrub, which was first discovered by Fremont in 1844 on the Rio Virgen, one of the tributaries of the Colorado river. It has been grown in the open at Kew since 1886, and has flowered annually from about the middle of May until the middle of June, its slender spreading branches being gracefully wreathed from base to tip with pendent pale-greenish, purple-tinged flowers. Although flowering freely annually, none of the shrubs at Kew fruited until 1911, when an abundant crop of berries was produced. These are bright-red, and considerably enhance the attraction of the shrubs during July and August. "Bot. Mag.," t. 8,440.

## ERICA CILIARIS.

The plant figured is the geographical form of Erica ciliaris found in Portugal which, although it cannot be discriminated by any salient morphological character as a variety, is far superior for the garden to the species. This heath produces its comparatively large, bright, rose-coloured flowers in great profusion from July to October, and is highly attractive when grown in large masses. "Bot. Mag.," t. 8.442.

## SWEET PEAS.

R. F. Felton.—A remarkably fine variety, the flowers large, the colour lavender suffused rose. A.M., N.S.P.S., July 9. Mr. Bolton, Warton, Carnforth.

Decorator.—A pleasing variety, the blooms large, the colour cherry-red. A.M., N.S.P.S., July 9. Messrs. Dobbie and Co., Messrs. G. Stark and Son, and Mr. A. Malcolm.

Lady Miller. — An exquisitely beautiful variety; the flowers large, the colour rich cream, suffused with pink. A.M., N.S.P.S., July 9. Mr. A. Malcolm, Duns.

Agricola.—A charming variety, the flowers of large size and of a pleasing lilac-mauve hue. A.M., N.S.P.S., July 9. Mr. R. Bolton.

Bertrand Deal. — A charming mauve-coloured variety with large, finely-formed blooms. A.M., N.S.P.S., July 9. Mr. B. Deal, Brooklands, Kelvedon.

King White.—A large finely-formed white flower. A.M., N.S.P.S., July 9. Messrs. Alex. Dickson and Sons, Newtownards, Ireland.

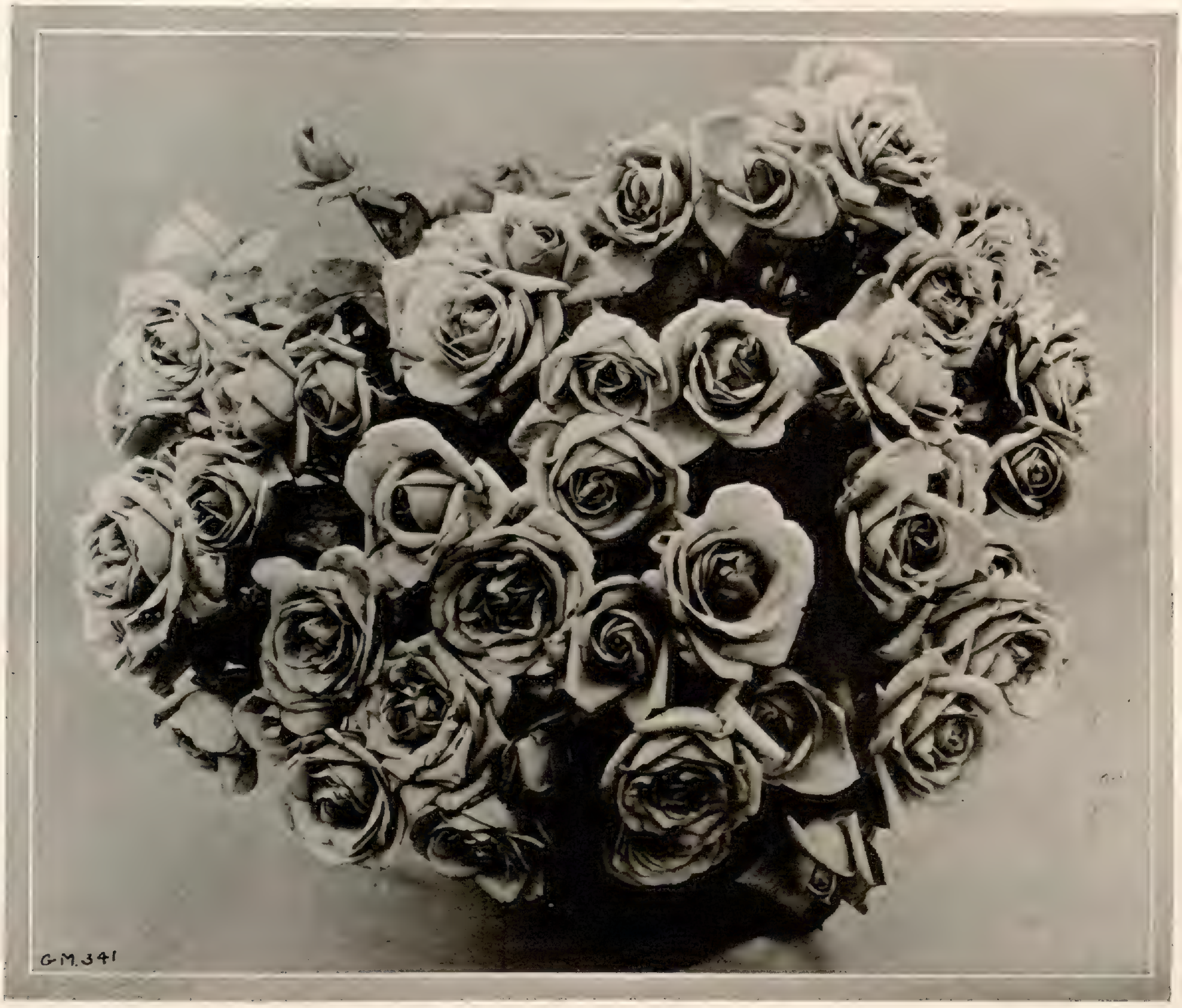
## BASKETS OF ROSES.

Within the past ten years or so the Council of the National Rose Society has, with commendable wisdom, devoted special attention to the introduction of new methods of staging roses with a view to improve the exhibitions, and to ensure the blooms being presented to public notice in as varied and interesting a manner as possible. There has, from the first, been a general agreement among the members of Council that in the case of exhibition blooms there is really no method of staging to surpass the long-existing practice of presenting them to the notice of both judges and visitors in boxes with sloping tops. This manner of exhibiting roses is characterised by a greater degree of formality than some authorities would wish, but it is acknowledged by all who have had experience in competing at exhibitions that in no other way can roses in a high state of development be carried long distances with the same degree of safety, and that the orthodox exhibition boxes afford the fullest possible opportunity for enjoying the distinctive claims of the individual blooms. These facts having been admitted it was seen that the sameness which characterised the older exhibitions should be avoided by breaking up the long lines of tables with arrangements of roses of a quite different style to the exhibition boxes.

Bamboo stands were requisitioned for the twelve blooms shown in distinct colours, and if these were not quite so satisfactory as one could wish they served a most useful purpose. Then came vases of various kinds for both exhibition and decorative roses, and the entries in the classes for roses staged in vases form a pleasant feature, and are of special interest for the diversity of charm they afford. The Council have also greatly developed the decorative side of the society's exhibition, and the large marquee devoted to the decorated dinner tables, ornamental baskets, bowls of roses, and other arrangements, is an endless source of attraction to the visitors.

It is not, however, the ornamental baskets of roses that are to be found on the occasion of the annual exhibitions within the Metropolis in the tent devoted to the various examples of decorative art, that we have now in view, but the plain baskets that have been brought into use within the past few years. The introduction of these baskets has been one of the most praiseworthy changes the Council has yet made in their endeavour to obtain as great a diversity as is practicable in the society's shows. It has proved popular with both exhibitors and visitors. The use of plain round baskets is extending at various exhibitions in the provinces as the result chiefly of the illustrations we have given of the winning baskets at the National Rose Society's shows. Such baskets are light to carry, and really not difficult to arrange, and when placed on the exhibition stage the blooms can be readily seen provided they are not overcrowded.

For the first two or three years the exhibitors of roses in baskets were very careful to avoid overcrowding, but for some reason, not easy to understand, they have not this season shown a full appreciation of so arranging the blooms that they stand quite clear of each other. This year the basket classes were considerably increased, and the competition was keen throughout, but unfortunately, in the classes in which there was no limit to the number of blooms, overcrowding was rather prevalent, and it would be interesting to know the cause. With a view to demonstrate the desirability of moderation in filling baskets of this description we selected one for illustration that contained too many flowers. Finer specimens of the Lyon Rose have not been staged, and the colour effect, as seen from a distance, was such as not to be readily forgotten; but, unfortunately, the blooms were too closely arranged to admit of their individuality being seen, and when close under the eye the basket suffered in consequence. G.



A BASKET OF THE LYON ROSE.
Shown at the National Rose Society's Exhibition. The blooms are finely developed, but too crowded.

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**Euphorbia Jacquiniæflora.**—Like the poinsettias, this euphorbia requires great care in watering, and resents much disturbance at the root. Neither must it be subjected at any time to such cool treatment as the poinsettias. When growing vigorously, however, later on in the summer, a buoyant atmosphere must be maintained in conjunction with warmth in order to ripen the wood before flower buds appear. A light house should be chosen for growing this euphorbia in, and if one can be devoted to it where bottom as well as top ventilation can be given, so much the better. Artificial manures, if used at all, must be applied in a weak state. In my opinion, there is nothing safer, or more beneficial, than liquid sheep or cow manure.—H. T. Martin.

# PHLOXES IN THE ROCK GARDEN.

Few classes of flowering plants can excel a selection of dwarf phloxes in the beautifying of the rock garden during the spring and early summer months. There is a diversity of form and colour, which is indeed charming when viewed among the bronze and grey hues of weathered rocks. There is much to commend this race of plants. Ease of culture, extreme hardiness, a sturdy, effective habit of growth, and a glorious prodigality of blossom are points which testify to the value of the dwarf phloxes in the rock garden.

It is worthy of note that phloxes are very easy of propagation, and readily respond to a little attention on this point. Cuttings may be rooted at any time during the summer months under a handlight, using a sandy loam for the rooting medium, and keeping them shaded from direct sunshine until rooted.

PHLOX CANADENSIS LAPHAMI.

A remarkably beautiful variety, comparatively tall in growth, and bearing bright lavender-blue flowers.

In the matter of planting, I prefer early spring for the operation, as ofttimes, if autumn planting is followed the plants have no chance to establish themselves before the rains early in the winter saturate the soil, and seriously endanger the chances of the alpine phloxes. This danger of root deterioration through damp is greater in a heavy soil than a light one; thus, it is well for the cultivator to make his planting compost as gritty and open as possible. Another point worth noticing is that the close growing forms of the subulata type suffer more than their lighter-foliaged relatives of the stellaria group.

The colours of phloxes (at least those grown in the rock garden forms) are invariably good. Yet there is need of discretion in grouping, lest the "lilac" and "rose-pinks" be placed too near those exquisite slaty and turquoise blues, which are so charming if shown to advantage.

Phlox divaricata and its varieties should be in the garden of every lover of hardy plants. Growing from nine inches to a foot in height, these beautiful forms give a dainty display during the spring months. P. divaricata itself is lavender-blue in colour, while the form canadensis is rather purer and brighter in its colouring. Alba is a good white variety, far too rarely seen en masse, while the newer forms, such as Laphami, a deep, almost indigo, blue, and Perry's variety, a soft plumbago blue, with a good free habit, are delightful in every way. It is a good plan to place these blue-shaded phloxes in close proximity to white-flowered subjects, thereby gaining in colour, tone, and clearness against the surrounding white.

P. ovata, an evergreen, rosy-flowered species, calls for attention. It is dwarf in habit, and attractive when in blossom, though hardly to be compared with its variety Carolina, which is taller in growth and more floriferous.

One of the showiest is P. reptans, a wonderfully free-flowering gem, with a pronounced creeping habit. Its colour is usually described as rose-pink, but there is a distinct shade of pale purple in it.

P. amœna is pleasing, with hosts of rosy blossoms, which last well into summer. P. verna, the Spring Phlox, usually regarded as a natural hybrid form, follows amœna closely in colouring, while procumbens, a dainty little purple gem, lifting its blossoms in numerous panicles above its prostrate growths, is decidedly a plant to secure. It has been regarded as a natural hybrid between amœna and subulata, though it seems unknown in a wild state.

Good though the foregoing phloxes are, they cannot excel in beauty the dainty stellaria group, which, unfortunately, are too often confused with the subulata varieties. The typical form, P. stellaria, I have noted in the past for its light spreading habit of growth and white blossoms with a misty blue shading. It is delightful when spreading forward over the rock face, and is indeed one of the charms of an alpine garden.

Its varieties—Annulata, with bluish-white flowers, having a purple ring; Bridesmaid, a dainty white, shading to lilac at the centre; Eventide, a delicate milky shade of pale blue; Seraph, a white variety with a clear blue centre; Newry Seedling, a delightful starry gem in palest mauve; Lilacina or G. F. Wilson, a beautiful clear mauve-blue, light, yet softening in tone; and Atro-lilacina, its replica in a deeper tone of colouring—embrace a group of ethereal moonlight shades that are charming beyond measure, a galaxy of perfect beauty portrayed in clear, exquisite hues.

Of P. subulata, one need not write in detail, as its rose-pink blossoms crowding over the close, dense growths are a feature in a host of gardens during the days of spring, but many of its varieties are indeed worthy of note. Among the best of them are Nelsoni, an exceedingly fine white, with a sturdy habit of growth; Brightness, a very effective bright rose, with a scarlet eye; Daisy Hill, a rosy-hued, crimson-zoned variety, with blossoms of extra size; Fairy, a pretty rosy-lilac, which is more continuous in blossom than many; grandiflora, a large-flowered pink, of decided value; Nivalis, a charming white of rather lighter habit than Nelsoni; Leila, a distinct rosy-grey; Sprite, a bright rosy-pink, with carmine centre; and Pallida, with attractive mauvy shadings.

Many others are almost equally good, such as Perfection, pink; Model, rose; Mabel, rosy-lilac; Aldboro'ensis, rose and crimson; Atro-purpurea, purplish-rose; and the bright-hued Vivid, which, unfortunately, is not nearly so hardy in constitution as its kindred varieties.

Certain it is that in the hardy phloxes we possess a wealth of decorative material for the rock garden. P. S. Hayward.

# NATIONAL SWEET PEA SOCIETY'S OUTING.

Following the custom of the past few years, the committee of the National Sweet Pea Society arranged for visits of its members to inspect sweet peas. Previously there has been one visit to the Times Experimental Station at Sutton Green, near Guildford, and one to some private or trade establishment where sweet peas are a feature. This season the society has a duplicate set of trials at Burbage Experimental Station, near Hinckley, and so the second visit was to this new and interesting place. The attendance at Sutton Green was scarcely so large as usual, but the attendance at Burbage was well up to, and probably rather above, the average for a distant trip.

Those who are so ready to find fault, and seem never happy unless acting as prophets of evil to come, might urge that the smaller attendance (there were forty-nine at Sutton Green, and forty-three at Burbage), is a sign of decadence; but the truth is the Floral Committee must visit the trials and finish their work before the Outings take place, and until the weather permits the work of the committee to be accomplished, no arrangements can be made for the Outings. This year the notice given was unusually short, and scores of members could not, as a consequence, make their plans fit with the occasion.

It must be said at once that the trials at Sutton Green were never seen to better advantage than on July 11, and Mr. Harry Foster is to be congratulated upon the wonderful display of bloom on each of the two hundred and fifty-six rows. Traders and amateurs were both well represented on this date, and distinguished representatives from overseas were Mr. Lester Morse (C. C. Morse and Co., San Francisco), Mr. Howard Earl (Messrs. Atlee Burpee and Co., Philadelphia), and Mons. Shoetel (Messrs. Vilmorin and Co., Paris). These added their meed of praise, and expressed their satisfaction at the good work the society is doing.

Reference has already been made to the varieties the Floral Committee have given Awards of Merit to, but it may be as well to mention again that these are King White (row No. 2), Messrs. A. Dickson and Sons, Newtownards; Lady Miller (row No. 22), from Mr. A. Malcolm, Duns; Decorator (rows Nos. 60, 61, and 83), respectively from Messrs. Dobbie and Co., Edinburgh; Messrs. G. Stark and Son, Great Ryburgh; and Mr. A. Malcolm; and we understand the name of Decorator will be used in each case—deep cerise or cherry-red about indicates the colour; Agricola (row No. 135), from Mr. Robt. Bolton, Carnforth; Bertrand Deal (row No. 136), from Mr. Bertrand Deal, Brooklands, Kelvedon; and R. F. Felton (row No. 162), from Mr. R. Bolton. No First Class Certificate was awarded this year, and there was certainly no variety of superlative merit or distinction that seemed to warrant such an award.

Unfixed stocks are by no means things of the past, but the work progresses in this direction, and the trials made it quite evident that raisers are striving hard after a white to eclipse Etta Dyke, a large, rich blue, a striking novelty of the Helen Pierce type, and new shades of colour in various directions. Judging from the trials, varieties akin to Edrom Beauty, Elfrida Pearson, Hercules, and King Edward have cropped up in many places. Constance Hinton, white; Scarlet Emperor, red; Edith Taylor, salmon-rose; Orion, a rich cerise-crimson; and Minnie Furnell, shrimp-pink, are varieties of considerable merit. There are others of note, but until senders use provisional names for their stocks it is almost useless to discuss a variety which may have neither title or description in the Trials List. Everybody took copious notes, and nearly all the men-folk worked through the trials from 1 to 256, coatless and perspiring.

Lady Northcliffe very kindly provided tea, but time did not permit of an inspection of the charming gardens at Sutton Place. Mr. R. Sydenham and Mr. T. Stevenson tendered thanks to Lady Northcliffe and Mr. Harry Foster and Mrs. Chas. Foster—thanks well deserved and heartily endorsed by all present.

Burbage is a hundred miles north of Sutton Green, and so the duplicate set of trials conducted there by Major Hurst were not so forward on July 12, as those inspected the day previously. In ten days' time there should be a fine display of bloom on the strong, healthy plants at this station. It was generally agreed, however, that the bright colours were brighter here than further south, and that these trials formed an admirable control to those near Guildford. To this inspection came members from Sheffield, Manchester, Leicester, Birmingham, Coggeshall, Addlestone, Folkestone, and other places widely apart, and the party was severely critical. Major Hurst's own trials, in which he is endeavouring to prove the origin of Countess Spencer, to breed certain unfixed varieties true from single plants on Mendelian lines, to discover the particular rogue that crops up in a given variety, and the reason for it, and to show the range of variation in various stocks of what may be termed standard varieties, proved of unusual interest and great educational value. Major Hurst is doing a great work, and one that sweet pea raisers and seedsmen cannot fail soon to appreciate.

At tea time the very necessary and well-deserved votes of thanks were accorded to Major Hurst and to Mr. Robt. Sydenham. A short but heavy thunderstorm followed close after tea-time, and so cooled the air that the inspection of Major Hurst's trials of poultry, homing pigeons for military use, etc., was carried out in comfort, and the homeward journey was far less trying and tiring than the one to Burbage was in the morning of this most sultry July day.

C. H. Curtis.

PHLOX STELLARIA LAVENDER.

As shown by the specimen, herewith illustrated, in the rock garden at Kew, this variety is free in growth and profuse in flowering, and, as indicated by the varietal name, the flowers are of a lavender colour.

**Cochliostema Jacobianum.**—A large-growing member of the Spider Wort family, with bold, strap-shaped leaves, disposed in a vasiform manner, as in some of the Bromeliads, but in this cochliostema they are soft instead of harsh in texture. The flowers, which are borne in short spikes at the axils of the leaves, are of a pleasing shade of blue and sweetly scented.—W. T.

# HORTICULTURAL EDUCATION.

## Its Advantages and Disadvantages.

At the present day the subject of horticultural education is being very freely discussed by the younger, and, if I may be allowed to say so, the more progressive, generation of gardeners. The latter are, no doubt, distinct, and in a class by themselves. Their progressive tendency must, however, not be misunderstood. If we assume it to mean that they are better cultivators of plants than those gardeners of a former generation, I am afraid we shall be somewhat in the wrong, or at least there will be a considerable element of doubt attached to such an assumption. Nevertheless, the systematic training that was made a compulsory matter in the days of the apprenticeship system, has proved a great boon to many gardeners. No doubt, it has been the means of instilling the tenets of discipline and attention to detail in the minds of many raw youths who, if they had been allowed to take their own course without guidance of any kind, would probably have drifted onwards with no definite object of any kind in view.

In nearly every walk of life, this age we live in is an age of cramming—an age of effect. Everything must be made to move as rapidly as possible, and the culmination of our desires must be attained in the shortest possible space of time; otherwise the desire itself is apt to vanish from our minds altogether. To take a comparison from the work of our friend the farmer, it is well known that present-day competition does not admit of the slow fattening of beasts for the butcher—or of chickens for the poulterer. Early maturity is the watchword here. Similarly, specimen plants, whose extraordinary growth represented the highest skill in the plant cultivator's art, and which were the pride of the mid-Victorian gardener, seem to have disappeared for all time, with only a few exceptions here and there.

The gardener of old was, indeed, ofttimes a patriarchal figure, slow to change, and antagonistic to what we now term modern progress. He paced his ground with measured tread; he observed everything; thought of a multitude of things; and solved all the problems that came his way with a very sound knowledge and sense of understanding. Maybe he was somewhat philosophically inclined, and cultivated a long grey beard and an absent-minded expression—two characteristics which are invariably, and often wrongly, accepted as the hall-marks of ability and power to undertake responsibility.

How customs have changed since those days! Now the youthful and budding gardener is crammed with as much knowledge and theory as he can possibly assimilate in a short space of time. The cramming process completed, more or less satisfactorily, he immediately hies him away to get twelve months' practical experience, first at one establishment and then at another. Finally, when remuneration and other attractions are such as impede his further progress, he comes to a dead stop. It cannot be said that his education is complete. As a matter of fact, it has only just commenced, for he may now have the opportunity to put a few of his own methods or theories to a practical test.

### The Educated Gardener

has existed since the days of Adam, so that it appears unnecessary to quote names from the long list of illustrious men who have done honour to the profession. Many bright intellects have, however, been lost to it. I can recall a number of cases involving men of unquestionable ability, who, through no fault of their own have squandered the best of their lives as foreman or journeyman, and at mature ages have had to confine themselves in that usually undesirable abode known as a bothy, wherein no home comforts are known.

Undoubtedly, the principal reason why so many able men have been disappointed in their attempts to obtain posts of distinction elsewhere, is that they waited for promotions which never came until the best of their lives had been spent in an unhappy existence on twenty or thirty shillings a week. Given the opportunity, it has been proved that the large majority of educated and well-trained foremen or gardeners have experienced little difficulty in rising to positions of great trust. It speaks well for the profession that many of them have ultimately become managers of estates.

Employment for competent gardeners has, however, been somewhat scarce of late, owing no doubt to the breaking up of so many large estates. The younger generation of gardeners must therefore turn their attention to other branches of the profession, especially commercial horticulture. A great many more opportunities exist "in the trade" than in any other branch of horticulture, for a man who possesses exceptional ability. His position is invariably secured as soon as he can demonstrate his worth satisfactorily, and from a commercial point of view; and it is not unimportant to note that remuneration progresses in keeping with achievements or successes.

The educated gardener is, or should be, a comprehensive being—boasting a higher school education than his fellow workmen, possessing a sound commercial knowledge of his work, and endowed by nature with the power of organising and controlling the work of others.

### Horticultural Instructors

are now becoming fairly numerous. Often, one is asked how it is possible to become eligible for the post of County Instructor in Horticulture. It may be said that up to the present no definite qualifications have been required of candidates who aspire to these positions. At the same time, however, the obvious fact remains that few, if any, County Committees would appoint a man who is unable to testify as to his knowledge of the scientific aspect as well as of the practice of horticulture. Unfortunately, of course, this combination of science and practice is difficult to secure, with the result that the scientist makes a pitiable impression when he commences to demonstrate to his class of students how some important operation should be performed.

The life of an average county instructor is by no means an enviable one. He is supposed to be a veritable encyclopædia of horticulture, available for reference by anyone who has the most out-of-the-way question to ask, or the most difficult problem to solve. If he has a home he can only think of it as a blessed memory at most times, for he can seldom enjoy its comforts. The best part of his time is spent in the joys of railway travelling, or in the doubtful delights of cycling along country lanes.

As for remuneration, the average salary paid, say, £150 a year, is altogether inadequate for the position he is called upon to occupy. Anyone who has had travelling experience knows only too well the heavy drain that is made on the pocket in the shape of incidental expenses. One cannot legally charge these expenses as being incurred in the execution of duty, although as a matter of fact, they really are. Consequently a fifty pounds increase in salary actually possesses nothing more but a fictitious value, and I am constrained to mention this fact because so many people are apt to regard it in an entirely different light.

Much comment has been made by so-called authorities on the work of the teachers and lecturers who were created by the County Councils some years ago. Now, these instructors were, for the most part, practical and experienced, and if their knowledge of chemistry, botany, and zoology did not come up to the high standards set by the colleges, it is at least certain that they gained the complete confidence of those people whom they were sent out to teach, by the very reason of their practical experience. It was this which enabled them to advance rural horticultural education more than any other class of worker at that time.

### A National Diploma in Horticulture

is by no means a new idea. I suggested it myself some fifteen years ago, when I realised the advantages yielded by similar diplomas to young men taking up agriculture as a profession, or even dairying. But if the syllabus of the proposed National Diploma of Horticulture is drawn up as it should be, the task of securing such a coveted distinction will be no easy one.

Certificates for proficiency in the theory and practice of horticulture, as now issued, are all too easy to acquire, with the result that they have a very low value as compared with the distinction to be secured in the sister science, namely, the National Diploma of Agriculture. Those who are desirous of entering upon a teaching career should obviously aim at the National Diploma of Horticulture, or it may also serve as a stepping-stone to the agricultural degree of B.Sc.

There are, of course, both advantages and disadvantages connected with any new innovation of this kind. We may, for example's sake, seek a comparison in the agricultural world. Suppose we examine for a moment the careers of many who have succeeded in gaining the National Diploma of Agriculture, it is often found that they are disappointed in not finding suitable openings on leaving college. Posts as instructors in agriculture are very few indeed, and so the college-trained youth has to offer his services to the farmer, who, by the way, has more use for the practically-trained youth than the one who possesses college distinctions. May we not experience something of a similar nature in the case of the National Diploma in Horticulture? Assuming that it will take a youth two years to qualify for his diploma at college, commencing at the age of sixteen, what are his prospects on leaving? Is it to be imagined that he will be perfectly contented to occupy a subordinate position in a garden, perhaps commencing right at the bottom of the ladder, as he must needs do if he is to master the many practical operations connected with gardening? On the other hand, if a youth works for two years in a garden, then goes to college for two years, he will find himself handicapped just in the same way on returning to practice.

That there will be a few good posts here and there cannot be doubted, but I am inclined to question very much whether bona fide gardeners will prove successful in obtaining them. Their position is this: they are in competition with men who assume a practical knowledge of gardening, and who possess a college training. The

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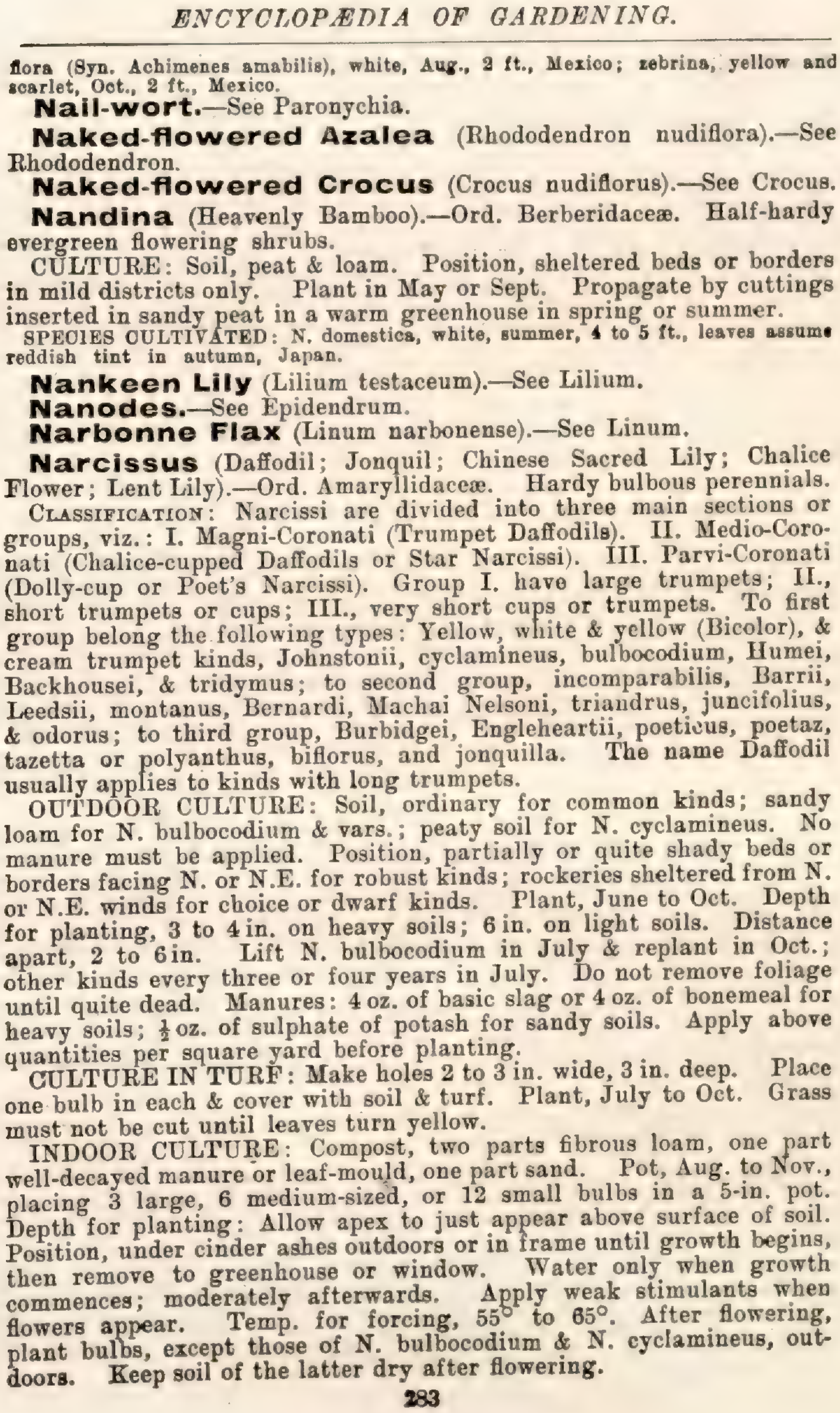
***SPECIMEN PAGE.***



*ENCYCLOPÆDIA OF GARDENING.*

flora (Syn. Achimenes amabilis), white, Aug., 2 ft., Mexico; zebrina, yellow and scarlet, Oct., 2 ft., Mexico.

**Nail-wort.**—See Paronychia.

**Naked-flowered Azalea** (Rhododendron nudiflora).—See Rhododendron.

**Naked-flowered Crocus** (Crocus nudiflorus).—See Crocus.

**Nandina** (Heavenly Bamboo).—Ord. Berberidaceæ. Half-hardy evergreen flowering shrubs.

CULTURE: Soil, peat & loam. Position, sheltered beds or borders in mild districts only. Plant in May or Sept. Propagate by cuttings inserted in sandy peat in a warm greenhouse in spring or summer.

SPECIES CULTIVATED: N. domestica, white, summer, 4 to 5 ft., leaves assume reddish tint in autumn, Japan.

**Nankeen Lily** (Lilium testaceum).—See Lilium.

**Nanodes.**—See Epidendrum.

**Narbonne Flax** (Linum narbonense).—See Linum.

**Narcissus** (Daffodil; Jonquil; Chinese Sacred Lily; Chalice Flower; Lent Lily).—Ord. Amaryllidaceæ. Hardy bulbous perennials.

CLASSIFICATION: Narcissi are divided into three main sections or groups, viz.: I. Magni-Coronati (Trumpet Daffodils). II. Medio-Coronati (Chalice-cupped Daffodils or Star Narcissi). III. Parvi-Coronati (Dolly-cup or Poet's Narcissi). Group I. have large trumpets; II., short trumpets or cups; III., very short cups or trumpets. To first group belong the following types: Yellow, white & yellow (Bicolor), & cream trumpet kinds, Johnstonii, cyclamineus, bulbocodium, Humei, Backhousei, & tridymus; to second group, incomparabilis, Barrii, Leedsii, montanus, Bernardi, Machai Nelsoni, triandrus, juncifolius, & odorus; to third group, Burbidgei, Engleheartii, poeticus, poetaz, tazetta or polyanthus, biflorus, and jonquilla. The name Daffodil usually applies to kinds with long trumpets.

OUTDOOR CULTURE: Soil, ordinary for common kinds; sandy loam for N. bulbocodium & vars.; peaty soil for N. cyclamineus. No manure must be applied. Position, partially or quite shady beds or borders facing N. or N.E. for robust kinds; rockeries sheltered from N. or N.E. winds for choice or dwarf kinds. Plant, June to Oct. Depth for planting, 3 to 4 in. on heavy soils; 6 in. on light soils. Distance apart, 2 to 6 in. Lift N. bulbocodium in July & replant in Oct.; other kinds every three or four years in July. Do not remove foliage until quite dead. Manures: 4 oz. of basic slag or 4 oz. of bonemeal for heavy soils; ½ oz. of sulphate of potash for sandy soils. Apply above quantities per square yard before planting.

CULTURE IN TURF: Make holes 2 to 3 in. wide, 3 in. deep. Place one bulb in each & cover with soil & turf. Plant, July to Oct. Grass must not be cut until leaves turn yellow.

INDOOR CULTURE: Compost, two parts fibrous loam, one part well-decayed manure or leaf-mould, one part sand. Pot, Aug. to Nov., placing 3 large, 6 medium-sized, or 12 small bulbs in a 5-in. pot. Depth for planting: Allow apex to just appear above surface of soil. Position, under cinder ashes outdoors or in frame until growth begins, then remove to greenhouse or window. Water only when growth commences; moderately afterwards. Apply weak stimulants when flowers appear. Temp. for forcing, 55° to 65°. After flowering, plant bulbs, except those of N. bulbocodium & N. cyclamineus, outdoors. Keep soil of the latter dry after flowering.

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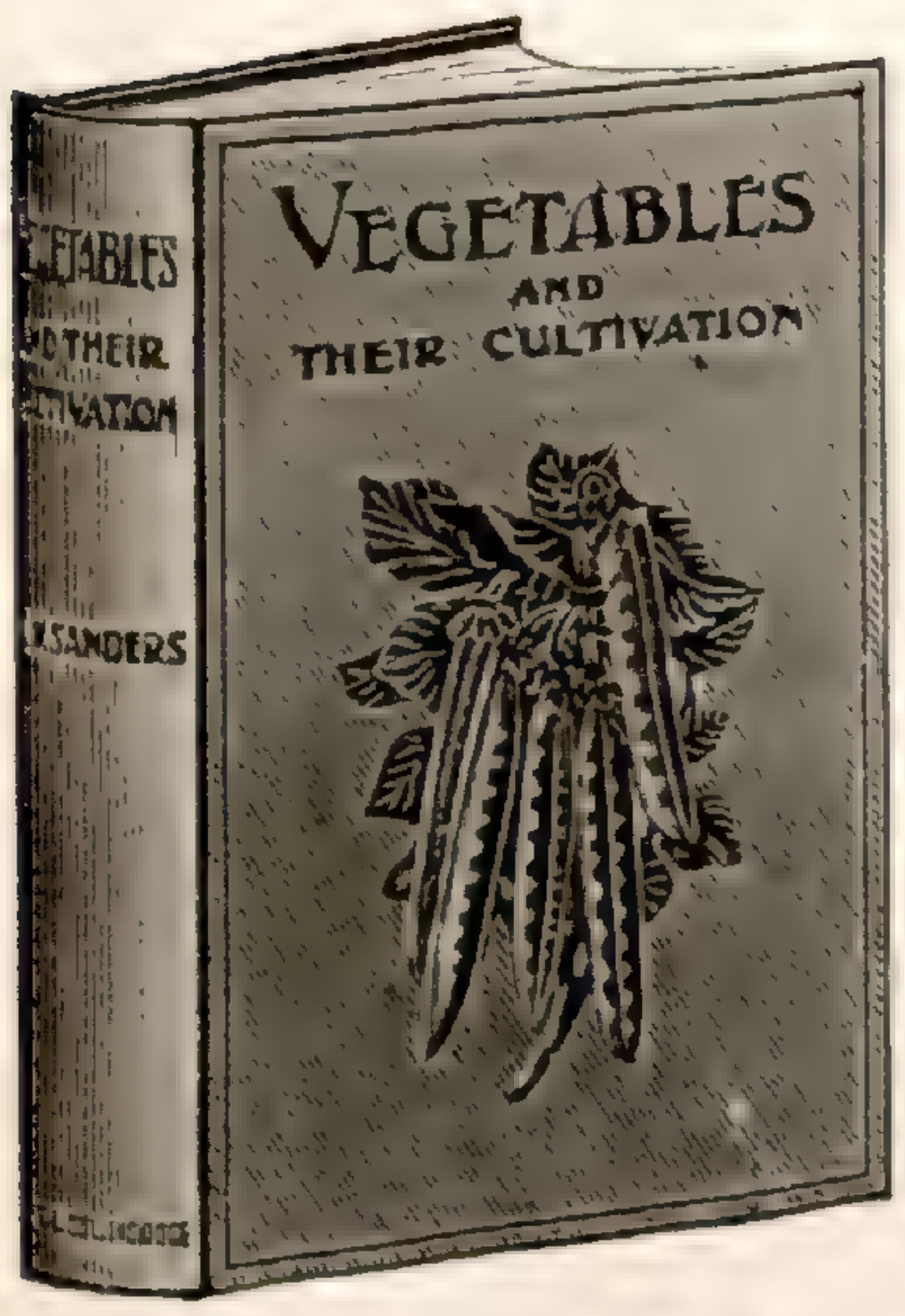

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latter may certainly have "picked up" a few trifles of the practical work of horticulture, but it can safely be said that few of the gardening institutions or colleges in the country teach the art and practice of horticulture as it should be taught. Of course, they demonstrate some of the principal gardening operations, but as for the student ever showing himself or herself a capable worker—this is a matter which, as a rule, is left entirely out of consideration.

Theory is usually a matter well taught at most educational institutions, but, as a rule, the practice is a mere sham. The inevitable result is that when in after life the student becomes engaged under a skilful employer, he quickly proves himself to be, in many cases, an utter failure. Some teachers who possess unquestionable qualifications for imparting knowledge to children in the theory of agriculture and horticulture, also claim to possess a practical acquaintance with one or the other, or even both, of these professions. Hence, we find schoolmasters occupying positions that should properly be filled by bona fide horticulturists. It is a noticeable fact that school gardens, and other forms of purely horticultural work, throughout the country, are in many instances inspected by men of the above class. Consequently, in spite of his qualifications, the gardener is made subordinate to the theorist.

### The Social Status

of the gardener is a vexed question, which many people have been tempted to write upon with much heat and a great deal of altogether unnecessary argument. To my mind, the subject is scarcely worth discussion, for a gardener who rises to the top of his profession and can prove his worth as a citizen and a man amongst men, need never concern himself with class distinctions and the difficult social questions that arise therefrom. Usually it will be found that the loudest complaints on this matter emanate from men who, although aspiring to great heights in their profession, have not the necessary ability or resourcefulness to enable them to attain their desires.

To achieve something great in the domain of horticulture is the aim of every ambitious gardener. Many gardeners, however, can claim to have done nothing beyond growing a few large cabbages, onions, carrots, etc., or maybe they have produced healthy specimens of the common types of barn-door plants under glass. In this they have scarcely even rivalled the performances of many allotment-holders or amateur gardeners. Hundreds of such men are to be found in the rank and file of "single-handed gardeners," and no doubt many of them are very capable cultivators. Exceptions there must, of course, be, but still the fact remains that experienced plant growers can be obtained at anything from £1 to £1 10s. per week, which is the standard rate of pay. No legislation or agitation is ever likely to compel employers to pay more.

The greatest possible ambition must be the premier attribute of any gardener who wishes eventually to manage a large and well-equipped establishment. The attainment of his desires can only be properly secured through the medium of a carefully-thought-out plan of study and preparation, such as will make him an efficient manager when the time arrives for him to put his skill to the test. J. C. Newsham.

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## AUBRIETIAS.

Quite two centuries have elapsed since the now well-known Aubrietia deltoidea was first brought to the notice of horticulturists, and in the interval it has given birth to a numerous progeny, in which the original floriferousness of the type has been accentuated in a marked degree, while the increase in the size of flowers, and the rich, brilliant shades of colour, place the newer varieties among the most exclusive of hardy plants for garden decoration.

It is as spring-flowering subjects that aubrietias become prominent in gardens; the low-growing, trailing stems, when allowed to develop naturally, as in permanent planting, become strikingly modified when grown under what one might call annual treatment; then, growth becomes fairly regular, so that the plants make rounded masses that later, when in bloom, present an aspect of low mounds, all aglow with blossom. It is this distinctive character that renders them, to a great extent, popular in spring gardening. Other factors are also present; for example, they are all easy to propagate, while their cultural requirements are readily understood, and not difficult to comply with. It follows that even a tyro in things horticultural may readily attain a high degree of success with these fine subjects. However tractable aubrietias are in level planting, it is courting certain disaster to allow them to remain in the same position for an indefinite number of years with little or no attention, as, sooner or later, they deteriorate. I believe this is primarily due to the long-continued wet of the winter and spring months that maintains the soil temperature at a low level, whereby the constitution of the plants suffer, and they begin to degenerate. It is certain that similar varieties, planted on a sharp slope, or on a dry wall, awake earlier, and with greater vigour in spring, and are also perennial in the strictest sense, exhibiting no visible sign of deterioration over a great number of years.

The fact has been noted that aubrietias attain to their greatest vigour when planted on dry walls, or upon the rock garden, and this is fortunate, inasmuch as these positions disclose their highest capacity for scenic effect, for whatever degree of beauty this lovely genus attains to in level planting, it suffers in comparison with the splendour exhibited by the various varieties as they fling themselves in wildest riot from depression and promontory, the glowing purples and blues, the rich rose, and intense violet of the flowers, softened and subdued by the soft grey tone of the weathered rock masses.

None of the varieties of aubrietia present any difficulty in cultivation, as, provided the position is well drained, they grow in practically all kinds of ordinary garden soil. Neither are they difficult to propagate, as the majority produce seeds, and if sown either when ripe or in spring, in pans of prepared soil, these germinate freely, the subsequent plants being transplanted into boxes, and either potted up singly or planted in nursery rows in the open, ultimately to take their place in the autumn planting for spring display, or permanently on the rock garden.

The various colour forms that have originated in gardens, in some considerable numbers, during recent years, marking a great advance over the type, are best propagated by means of cuttings, in order to perpetuate the variety true. Cuttings should be taken when the shoots become soft, toward the end of April or May, inserting them in a prepared bed of sandy soil, under a hand-light, and keeping them close until they emit roots freely. When well rooted, the cuttings are potted up singly in small pots, and plunged out of doors, exposing them to the weather, where they make hard, firm growths, and an abundant root system that eminently fits them either for bedding or permanent planting. Those employed for bedding will, if lifted in May, bear dividing at that season, and if replanted in good soil will do service for a number of years.

Aubrietia deltoidea is the type from whence originated the older forms, græca, purpurea, and Campbelli, coloured respectively light purple, purple, and violet; the latter, also known as Hendersoni, is still a plant of great merit, holding its position easily among the new-comers. Dr. Mules is a compact variety with flowers of a rich violet-purple. I have never obtained lustre in the petals of this variety to equal Hendersoni at its best. Prichard's A1 and Mrs. Lloyd Edwards are violets of exceptional merit; while Violet Queen is, to my idea, the last word in violet-coloured aubrietias, the flowers being large, of intense colour, and the plant of exceptional vigour. In pink varieties, Leichtlini is one of the oldest, but when fully open, little, if any, rose colour is left. Moerheimi and Souv. de W. Ingram are both more decided, and retain the colour better in the fully-expanded flowers. Fire King is, however, deepest in colour; the flowers are brilliant in bud, and maintain their colour all through the flowering season.

In addition to the foregoing, the variety Lavender has delightful large flowers of the same shade as the name betokens, and in A. deltoidea variegata aurea the foliage is coloured soft yellow and green; while there is also a form having leaves variegated white and green. The two last-named varieties are much prized subjects in spring and carpet bedding, where their distinctive leaf-colouring renders them specially valuable, in contrast to the richer hues of flowers. Thomas Smith.

Coombe Court Gardens

## COREOPSIS GRANDIFLORA.

Among the various hardy plants suitable for the mixed border this subject is one of the most delightful when planted in large masses, for it commences to bloom in June, and continues throughout the summer. It is also especially valuable used in a cut state, for its large, rich yellow flowers are produced on long, erect stalks. This coreopsis can be treated as an annual by sowing seeds under glass early in the spring and transplanting the seedlings to their flowering quarters later on. But the best results are obtained by treating it as a biennial. For this purpose seeds should be sown in a box at the present time, and placed in a cold frame to germinate. When the seedlings are large enough transfer them separately to 60-sized pots in which they will make sturdy plants, ready to plant in their permanent positions in the autumn. J. Gardner.

**Philesia buxifolia.**—The flowers of this philesia are an exact counterpart, except in size, of the well-known and popular Lapageria rosea. The philesia, however, forms a dense tuft of upright stems, pushed up from suckers, and they never assume a climbing character. Like the lapageria, it needs a peaty soil. A hybrid has been raised between the two, and named Philageria Veitchi, but it has proved difficult to cultivate.—K.

# WORK FOR THE WEEK.

◆

## STOVE PLANTS.

EUPHORBIA JACQUINIÆFLORA.—To be successful in the cultivation of this euphorbia great care must be exercised in potting and watering. The later-struck plants will by now have received their final shift, and should be kept in a genial temperature of about 70 deg. until well established, when a cooler and more airy structure should be accorded them. By this it must not be understood that I recommend a cold unheated structure, for this plant will not thrive in a temperature below 60 deg. A certain amount of warmth should be maintained in the hot-water pipes during spells of dull weather. A stagnant atmosphere will produce soft unripened wood that cannot give long racemes of closely-packed flowers in due season, therefore keep the air moving freely about the plants, closing and damping the floors and stages fairly early in the afternoon, and reopen the top ventilators a couple of hours afterwards for the night if mild weather prevails. High feeding should not be practised, and whatever kind of manure is used should be applied in small quantities, and only when the pots are well filled with healthy roots. Commence with liquid cow manure, to which has been added a little soot, and later on an occasional application of mild artificial manure may be given.

GLORIOSAS.—Few climbing stove plants surpass these when well grown. Attend closely to tying in the growths, as they are rapid growers and quickly become entangled. Not only are gloriosas objects of beauty when seen on the roof or pillars of warm houses, but the flowers are of great use for cutting. A good length of flower stem will be produced if liberal culture is given. Afford frequent applications of liquid manure, alternated with an approved artificial manure from now onwards.

HEXACENTRIS MYSORENSIS. — This twining plant is a good companion to the foregoing, the pendent racemes of rich yellow and red flowers blending well with the orange and yellow of the gloriosas. As the plants are very susceptible to attacks of red-spider and scale, it is well to occasionally sponge the foliage with a weak solution of insecticide to keep it in check. Propagation is readily effected at any time by cuttings of the half-ripe shoots. The plants should be flowered in pots or a restricted border, and see that ample drainage and an open compost is given at all times.—H. T. Martin, Warren Wood Gardens, Hatfield.

## THE ORCHID HOUSES.

THE COOL HOUSE.—At this time of the year it is often a difficult matter, owing to the hot and dry atmosphere out of doors, to keep the temperature of this house as cool and moist as desirable, but with a little care and discretion it can be made suitable for the plants. With the absence of the sun, and the heavy showers of rain which we have lately experienced, no great trouble has been experienced so far this season—a great contrast to that of last year. With an outside temperature of 55 to 60 deg., and a moist, humid atmosphere, such as we experienced for some time, little fear need be entertained of affording too much ventilation, providing there are no high winds. At such times we have both the top and bottom ventilators open on the lee side of the houses, especially so whenever the air is mild. But when the weather becomes hot, and we have an external day temperature, ranging from 70 to 80 deg., as of late, and a bright sun drying the atmosphere and the ground more and more every day, it is a mistake to open the ventilators to such an extent, and thus admit more air than can be kept humid and moist. Should the grower attempt to counteract the dry air thus admitted to the house by frequently damping the stages and floors, and syringing the plants overhead, the plants will soon show by the loss of foliage, and in other ways, how they resent such treatment. The best practice, therefore, is to admit only as much air as can be kept well charged with moisture. By day, no matter how hot the outside temperature may be, keep all the top ventilators closed, leaving the bottom ventilators wide open, but at sunset the top ventilators should be raised two or three inches, and on mild, dewy nights they may be left wide open throughout the night. Early in the morning, when the sun begins to shine on the roof of the house, the top ventilators must again be closed, and the shading employed. The excessive heat must be kept back by the use of shading; in some districts thicker and heavier shading will be necessary than in others. After closing the house it should be thoroughly damped down, syringing well between the pots and under the stages, and, if the sun is bright, the plants may be slightly sprayed overhead, but care must be taken that the water does not run down into the axils of the leaves, and only soft, tepid rain water should be used. Under such treatment it is possible to maintain a temperature even lower than that of the outside air in the shade. Taking the cool house plants generally as a whole, they are at this particular season more or less inactive. The young growths of many are only just pushing from the base of the last-made pseudo-bulbs, so that for a few weeks to come only sufficient water must be afforded to keep the pseudo-bulbs plump and healthy.

THE WARMER HOUSES.—Owing to the cold, sunless weather, it is essential for the well-being of the inmates of the warmer houses that the temperatures, especially at night, be fully maintained. The whole of the plants must be kept thoroughly on the move, and not be allowed to receive a check at this season. Therefore it is wise to carefully heat the pipes at night, so that a genial temperature and moist atmosphere is maintained in each department. Houses in which plants in flower only are staged may be kept dryer than those in which only growing plants are placed, as with a low temperature and a humid atmosphere there is a danger of every flower becoming spotted and spoilt. —J. T. Barker, The West Hill Gardens.

## FRUITS UNDER GLASS.

FRUITING POT VINES.—Probably in the majority of places fruiting vines in pots are grown chiefly for early supplies of ripe grapes, but in many instances they are grown and allowed to fruit for later supplies. We usually grow from eighteen to twenty-four vines in pots to supply ripe grapes at the latter end of this month. We have a twofold object in fruiting these vines late in the season; not only do they help to maintain a quantity of good bunches for the dessert table, but they are also used here for table decoration, trained to a light construction of ironwork made in the shape of an umbrella. Two vines are also fruited in 12-inch pots to cover a large arch made with light ironwork; this is fixed to a board one foot wide, and the fruiting vines in the pots are placed one at either end; the rods and laterals are then trained over the ironwork, and the bunches are allowed to hang through. In the first place the vines are grown in a span, or lean-to, house, and the fruit is allowed to become ripe before they are trained to the umbrella or arch. Great care must be exercised to detach the vines from the wires of the house in which they have been grown; the pot and the vine is then removed bodily, and carefully placed in position upon the arch, or trained to the umbrella. This may seem to the uninitiated a great amount of trouble, but it is surprising how expeditiously it can be done after a little experience. Unquestionably fruiting vines trained in this way always create a great interest, and it is also a novel and pleasing feature to be able to exhibit vines grown in pots in the house.

FRUIT TREES IN POTS.—Exercise judicious care and attention in stopping and regulating the young growths on these trees; expose the fruit to the sun and air as much as possible, and give stimulating manures to trees that are carrying heavy crops; a little top-dressing with a rich loam will be beneficial to the development of good fruits. Do not on any account allow the soil in the pots to become dry at any time, or failure will sure to follow. Keep a sharp look-out for insect pests, and take means at once for their eradication. Trees from which all the fruit has been gathered should be removed from the house, and the pots plunged in ashes in the open quarters to well ripen their wood.

EARLY VINES.—Continue to admit plenty of air at the top and side ventilators night and day; maintain the foliage in a clean, healthy condition with the aid of the garden engine. Keep a sharp look-out for red-spider, and if syringing will not dislodge the pests, sponge the affected leaves with soapy water and sulphur; give plenty of water to the roots as required.—H. R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

THE HERBACEOUS BORDER. — When well arranged and embellished with the more ornamental hardy plants, this is one of the most attractive features in the garden, and at the present time it is unusually bright and gay with bloom. The campanulas contribute very largely to its floral beauty, and among these C. lactiflora, C. latifolia, C. pyramidalis, C. persicifolia, and their varieties are very striking; while C. carpatica and its white variety are charming for the front of the border. Achillea filipendula makes a fine display of yellow when planted in a bold mass. Anchusa italica, Dropmore variety and Opal are very desirable acquisitions, and remain in flower over a long period. The latter is especially free-flowering, and rather a paler-blue than the Dropmore variety. Cimicifuga racemosa is a splendid plant with racemes of white flowers, and C. cordifolia is also effective. Clematis erecta makes a fine bushy specimen, and C. integrifolia is an attractive species with small, deep blue flowers. Dictamnus fraxinella, Francoa ramosa, Heuchera sanguinea, Lychnis chalcedonica, Tradescantia virginica, Œnothera Youngi, Œ. Fraseri, potentillas and phloxes in variety, all form pleasing objects when in flower. Several of the sea hollies are attractive plants, especially Eryngium Oliverianum and E. giganteum; while subjects like gaillardias, gypsophilas, veronicas, heleniums, rudbeckias, helianthuses, and Chrysanthemum maximum in variety, add not a little charm to the border. Plants like pæonies and delphiniums that have passed out of flower must have their flower stems removed, and every encouragement should be given to the later subjects to develop and display their blooms to advantage.

VIOLETS.—The recent showery weather has suited these admirably, and they are already developing into sturdy plants. Remove any runners that may form on them as growth proceeds, and, after sunny days, spray them over with the syringe to keep red-spider in check. It is a good plan to dust a little soot around them occasionally, and to work this in with the Dutch hoe.

PINKS.—These have now passed out of flower, and must have the dead flower stalks removed. The present is a good time to increase the stock of plants by inserting cuttings or layering, but, owing to their thin growths, the former method is recommended. They usually root well on a partially shady border, such as one near a north wall.

PENTSTEMONS.—These are fast developing their flower spikes, and due attention must be given to tying when further support is necessary. Pentstemons are valuable subjects for bedding, and they never fail to repay the cultivator for liberal treatment. Keep the soil between the plants stirred with the Dutch hoe, and upon the least sign of dryness afford liberal soakings of liquid manure at the roots.—J. Gardner, Batsford Park Gardens.

## SUMMER BEDDING AT HAMPTON COURT.

The copious rains that we have experienced of late have greatly assisted in the establishment of the various newly-planted subjects at Hampton Court, while the large limes and yews, as well as the surrounding grass, are, from the same cause, decidedly richer in colour than was the case last year. Beautiful as the flower beds are, they owe not a little to their surroundings, hence the perfect condition of the trees and grass combine to render the entire picture a charming one.

A visitor to Hampton Court during the summer season may be sure of two things, firstly, that he will see many of the old-established favourites at their very best; and, secondly, some marked novelties, either in the plants or their arrangements. The casual observer, while admiring the floral display, can have no idea of the deep thought and study required to maintain the high reputation which Hampton Court Gardens already possess, and, if possible, to surpass it, for the able superintendent, Mr. J. Marlow, is by no means content to let well alone.

A particularly striking feature this season is the somewhat free use of the various coloured forms of astilbe, in the production of which the Chinese Astilbe Davidi has played a part. One of the most successful raisers of these beautiful plants is Mr. George Arends, of Rondsdorf, Germany. Of his varieties represented at Hampton Court I was most struck with Venus, a stately-habited plant with lilac-pink flowers. It plays a very important part in the composition of quite a unique and much admired bed. This has a groundwork of the white variegated Holcus mollis, and dwarf Nigella; above this are well-flowered examples of Verbena Miss Willmott, while overtopping the whole are the feathery plumes of Astilbe Venus. An edging of Echeveria secunda glauca completes this remarkable bed. Another noteworthy for its delicate colouring has quite a carpet of Kœniga maritima; over this are dotted plants of the pretty double pink Begonia Major Hope, with a few tall plants of Leucophyta Browni.

A showy bed is planted with Begonia Triomphe de Lorraine, one of the semperflorens section, with crimson leaves, and double flowers of the same tint. The effect is lightened by a free use of Fuchsia gracilis variegata, Arundo donax variegata, Centaurea candidissima, variegated Pelargonium White Pet, and Kœniga maritima. Particularly pleasing, when viewed from above, is a bed thickly planted with dwarf blue and white lobelia, interspersed with compact plants of a double white lobelia, and dotted over with Centaurea candidissima, Eulalia japonica variegata, flowering examples of Sutherlandia frutescens, and a few Kochia scoparia. One more delightful bed of lowly stature must be mentioned, though it cannot be regarded as a gorgeous one. The groundwork consists of dwarf plants of Leucophyta Browni, overtopped by Major Hope begonia, with a few taller specimens of Phlox Comtesse de Jarnac, and erect plants of Leucophyta Browni. Did space permit, this list of pleasing and unique combinations might be indefinitely extended.

Of course, many of the beds are filled with larger subjects, such as Streptosolen Jamesoni, heliotropes, fuchsias, pelargoniums, swainsonias, calceolarias, and others, all of them being in good condition. The tall-growing Humea elegans, which last year formed such a notable feature of the display in these gardens, is again well represented, a number of stately plants springing from a groundwork of the double marguerite Mrs. F. Sander, forming a much-admired feature. Those to whom a blaze of colour appeals more than anything else will see much to admire in the masses of zonal pelargoniums, which are still "geraniums" to the average visitor. The brilliant scarlet Paul Crampel is still the most prominent of its class, while the old Queen of the Belgians is still one of the best of the white-flowered forms. The comparatively new variety, Maxime Kovalevsky, arrests attention when in a mass, by reason of its peculiar orange tint.

Some of the beds are filled with hardy subjects, among which the roses are, as everywhere else, particularly fine. In some instances such varieties as La France and Richmond occupy an entire bed, with a carpeting of dark and light coloured violas respectively. Some large mixed beds are, however, much admired. They are for the most part planted with dwarf kinds, while weeping standards of the rambler varieties, being full of flower, are very striking, and, overtopping as they do the dwarfer kinds, have a very pleasing effect. Of the newer kinds there were at the time of my visit particularly good flowers of Juliet. Other hardy subjects that occupy entire beds, and must be especially mentioned, are the Canterbury Bells and delphiniums, these last being represented by shafts of blue in a great variety of shades. Beds of sweet peas are also there, a good selection of varieties being represented.

The choice collection of water lilies in the round pond is eminently satisfactory, most of them being flowering with great freedom; while the bright tints of some of them are very striking.

The long herbaceous border, which extends from the Palace to the river, and is for a considerable distance backed up by the wall on which many of the rambling roses are just now in good condition, has already many features of interest, though a greater display may be reasonably anticipated later on. The Dropmore variety of Anchusa italica well maintains the reputation it already possesses of being almost indispensable in any collection of herbaceous plants, while another comparatively new plant, namely, Geum Mrs. Bradshaw, gains many admirers. Besides these other noteworthy herbaceous plants in flower are antirrhinums, Gazania splendens, Salvia pratensis, Salvia virgata, potentillas, Helenium cupreum, campanulas, veronicas, phlox, blue and white galegas, pentstemons, etc.

The corresponding border at the other side of the Palace is, as usual, planted with tender subjects, many good-sized specimens among them, and all disposed in clumps or masses made up of a sufficient number of plants to show the prominent characteristics of each. Especially noteworthy among the different kinds are fuchsias in considerable variety, pelargoniums of many sorts, Cassia corymbosa, lantanas, Calceolarias amplexicaulis and Burbidgei, astilbes, Cuphea ignea, Bougainvillea glabra, Salvia patens, Bouvardia Humbaldti corymbiflora, Salvia Pride of Zurich, Begonia ascotensis, Asclepias curassavica, verbenas, hydrangeas, etc. Annuals of different kinds play such an important part that they well merit a paragraph to themselves. An extensive use is made of Lychnis Cœli-rosea, in its several varieties, which differ in colour from white, or nearly so, to deep crimson. This, which is popularly termed the Rose of Heaven, is more frequently met with in catalogues as Viscaria oculata, while it is also known as Agrostemma Cœli-rosea. Other annuals just now conspicuous are chrysanthemums, coreopsis, nemesias, schizanthus, salpiglossis, and sweet peas.

While the above enumerate many of the more striking features, tastes vary so much that, in the opinion of some, I may have omitted several that should have been included. Such being the case, the best advice to all flower-lovers is to use a slightly modified version of a now well-known saying—go and see.

W. Truelove.

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**Rheum Alexandrae.**—This, one of the many introductions that we have of late years received from China, is a decidedly ornamental member of the Rhubarb family, and a very distinct one. Its main feature is the large leaf-like bracts with which the flower stems are furnished. These bracts are of a pale yellow colour, with a pinkish suffusion.—S. W.

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LEICESTER.—ABBEY PARK FLOWER SHOW, 6th and 7th August next. Open Class, Group of Plants, £20, £15, £10, £6. Liberal prizes for Collections of Fruit, Displays of Roses; Silver Cup, Gold and Silver Medals for non-competitive exhibits. Schedules from JOSEPH BURTON, Supt.

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## EXHIBITIONS AND MEETINGS.

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### Royal Horticultural Society.

In spite of the heat, the conditions prevailing at the Royal Horticultural Hall, Westminster, on Tuesday, July 16, were quite pleasant. The electric fans were in full use, and the doors of each annexe were thrown wide open, consequently there was a pleasant movement in the air, even though the thermometer kept steadily at 87 degrees. The exhibition was a comparatively small one, hence there was ample space for the somewhat few visitors to move about. It seemed as though everyone who could had gone for holiday, and most of those who could not were at home using the water-pot or the hose. Hardy flowers were fairly well shown, orchids were not numerous, but greenhouse plants and fruits were well displayed.

#### FLORAL COMMITTEE.

A display of hardy flowers from Messrs. Barr and Sons had a central mass of the purple Salvia virgata nemorosa, a very effective plant, and masses of phloxes, Malva moschata alba, Lilium testaceum, Galega officinalis compacta, Inula helenium, Helenium autumnale pumilum, Sidalcea Listeri, Iris Kæmpferi, and some new heleniums obtained from H. cupreum. Well-grown phloxes from Messrs. W. Wells and Co., Merstham, were both fragrant and beautiful; we noticed fine heads of Belvedere, Derviche, Dennis Peuch, Flora Horning, Fort du France, Rose Queen, a new, large-flowered seedling, and Tragedy, a rich crimson-scarlet variety of great beauty and effectiveness. The same firm showed the rose-pink perpetual carnation, Dorothy Gordon.

An interesting group of succulent plants from Messrs. H. Cannell and Sons, Swanley, had a backing of tall spikes of Yucca recurvifolia. Opuntia paraguayensis, and the white Phyllocactus Pfersdorfi, were shown in bloom; and, in addition, there were capital plants of Mamillaria Donati, Cereus candicans, Pilocereus senilis, Mamillaria Nicholsoni, Echinocactus Leconti, bristling with spikes, E. Grussoni (very fine), Gasteria verrucosa, and the curious Astrophytum myriostigma.

Handsome spikes of gladioli from Messrs. J. Kelway and Son, Langport, were nicely set up with sprays of common asparagus among them, and the effect was quite good. Lord Curzon, the pink Earl Compton, King of Gladioli, the dark crimson Faust, Miletun, and Hon. R. Guinness were varieties with large flowers and good form. The bluish-purple Lieutenant Hallswell and the Langprim hybrids were also of special interest;

the latter strain (A.M.) were obtained by crossing G. gandavensis and others with G. primulinus. G. primulinus maculatus, deep yellow with red-brown blotches, was very charming, and the race is promising; Ella Kelway, Queen of Fairies, and Wraith were all very pretty.

Mr. Maurice Prichard, Christchurch, was a large exhibitor of hardy flowers, and put up a quantity of perennial phloxes, and goodly bunches of Delphinium cineraria, Carnation Oldown Yellow, Heliopsis scabra excelsa, Crinum Powelli, and C. P. alba. Dainty little plants of Lysimachia Henryi, Campanla pumila alba, C. garganica, Stachys corsica, Campanula Isabel, C. Zoysi, and Primula Monroi were also shown. A bold and effective group of hardy flowers from Messrs. T. S. Ware, Feltham, was a source of interest. Here were fine bunches of good phloxes, coreopsis, campanulas, achilleas, heleniums, delphiniums, etc.

Several score of stately spikes of Eremurus Olgæ, and E. O. alba, staged by the King's Acre Nursery Company, were greatly admired. The spikes of E. Olgæ showed some considerable variation in form and shade, and the plants producing them were collected from 3,000 to 6,000 feet above sea level on the Elbury Range in the Persian province of Khorasan. The deep pink forms were very charming. Messrs. Stuart Low and Co., Enfield, presented stands of such lovely roses as Lyon, Rayon d'Or, Frau Karl Druschki, Molly Sharman Crawford, Pink Liberty, and Dean Hole.

The phloxes from Messrs. Gunn and Sons, Olton, were set up in tall stands, and the varieties Cybele, L'Aiglon, George A. Stroehlin, Elizabeth Campbell, Le Mahdi (gorgeous), Border Beacon, and Duke of Westminster, were among the best. The display from the Guildford Hardy Plant Company included Romneya Coulteri, Spiræa venusta, Buddleia Veitchi, and Campanula grandiflora.

The little water and bog garden arranged by Mr. Amos Perry, Enfield, was delightfully cooling. Nymphæa, Marliacea carnea, N. Jas. Brydon, N. Froebelli, and N. Marliacea albida, were quite plentiful on the water, while in the background were Senecio macrophyllus with a dozen and a-half of its massive golden spikes. In the foreground were Japanese irises, Lilium Humboldti, L. H. magnificum, L. pardalinum, L. canadense, and L. Browni; while spiræas and grasses formed flanking groups. Seedling gloxinias exhibited by Messrs. J. Peed and Son, West Norwood, represented an excellent strain; the netted and spotted varieties were especially good. Streptocarpuses, too, were good, and showed a wide range of colouring.

A bold and showy group of carnations, grouped with palms, bamboos, and ferns, by Messrs. Wm. Cutbush and Son, Highgate, stood opposite the doorway. In tall stands were large sheaves of White Enchantress, R. F. Felton, Mrs. W. Ward, Mrs. L. Mackinnon, Winsor, May Day, Rose Doré, and Beacon. In the centre of the group were pot plants of several popular malmaison and perpetual carnations.

The exhibit from Messrs. Jas. Veitch and Sons, Chelsea, was composed of bright hued rhododendrons of the Javanico-jasminiflorum group, Solanum Wendlandi, the brilliant Clianthus Dampieri, Hibiscus magnificus, carnations, Thalictrum dipterocarpum, and a very fine selection of cannas. Messrs. H. J. Jones, Ryecroft, Lewisham, displayed phloxes, and in the collection submitted we made note of G. A. Stroehlin, Distinction, Frau Ant. Buckner, Antoine Mercier, Gen. Hentz, Dr. Charcot, and Mrs. John Harkness, as being very distinct and beautiful.

Messrs. Phillips and Taylor, Lily Hill, Bracknell, provided a pool of nymphæas with a background of reeds, rushes, bamboos, grasses, and Alisma plantago. In one corner of the pool the double form of Sagittaria japonica plena was shown. This firm also displayed a bank of hardy flowers wherein galegas were well represented. A charming new astilbe named A. Rhenania (A.M.) was exhibited by Mr. W. Profittlich, Twickenham. This is the result of crossing A. Queen Alexandra with A. Arendsi Ceres; it has erect spikes of pink flowers, each flower tipped with purple.

Plagianthus Lyalli (A.C.C.), a white-flowered shrub that succeeds in warm spots, was shown by Messrs. Robert Veitch and Sons, Exeter; this grows well at Kew against a wall; the same firm showed the pretty creamy Rosa Souleiana and Dorycnium hirsutum. Mr. Phillip Ladds, Swanley Junction, brought up some good pelargoniums, notably Salmon Paul Crampel, White Queen, Champion, and double Paul Crampel. Messrs. W. Fells and Son, Hitchin, exhibited a collection of phloxes, and showed all the popular sorts.

Some very fine border carnations were shown in vases by Mr. Chas. Blick, Hayes, Kent; particularly effective and beautiful were Linkman, August, Daffodil, the rich Cyclops, the deep purple edged picotee named Her Majesty, Hercules, Father O'Flynn, Dora Blick, and Herbert Chapman. There were in all thirty-seven varieties, and they made up a most interesting exhibit. Messrs. H. B. May and Sons, Edmonton, brought up the new double marguerite, Mrs. Sander, Campanula Mayi, some examples of Ixora macrothyrsa, and a number of elegant ferns, chiefly the plumose, nephrolepis, and adiantums.

Two beautiful nymphæas, N. Attraction (A.M.), with crimson colouring, and N. Formosa (A.M.), lovely pink with red flushes on the back of the petals; both come from Mr. Jas. Hudson, V.M.H., gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton.

Patrinia palmata, a rare hardy plant with neat palmate leaves clustering near the ground, and branching spikes of small, sweetly-scented and clear yellow flowers, was shown by Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Essex, and gained an A.M.

## ORCHID COMMITTEE.

Orchids were by no means largely staged, but there were several distinct novelties.

Messrs. Stuart Low and Co., Enfield, had a quite good group of orchids, and the chief features of the display were Dendrobium Dalhousianum, Oncidium macranthum, Miltonia Bleuana, Cattleya Mendeli, Odontoglossum Williamsi, Stanhopea tigrina, Odontioda Charlesworthi, and Bulbophyllum Godseffianum.

A fine form of Cattleya Hardyana Dell var., from Mr. Shill, gardener to Baron Bruno Schroder, Egham, was greatly admired; it carried three glorious blooms. Mr. R. G. Thwaites, Streatham, contributed an interesting little colection of odontiodas, O. Charlesworthi and O. Thwaitsi were those mostly represented. Miltonia vaxillaria Queen Alexandra was also included. From Burford Lodge, Dorking, Mr. White, grower to Sir Trevor Lawrence, Bart., brought up Eria rhyncostyloides, with dense arching spikes of pink flowers; and Lælio-cattleya Adolph-Harrisoniæ, with purple-spotted flowers.

M. Firmin Lambeau, Brussels, showed the finest plant of the day, and gained a F.C.C. for his Cattleya Warscewiczi alba var. Firmin Lambeau, which oarried three large, exquisitely beautiful, pure white flowers, each with a soft lemon-yellow throat to the lip. Messrs. Hassall and Co., Southgate, exhibited Cattleya Thurgoodiana and L.-c. rubens. From Messrs. Charlesworth and Co., Haywards Heath, came Zygopetalum Brewi (A.M.), a pretty plant obtained by crossing Z. Perrenondi with Z. rostratum; it has a deep purplish rose area on the lip. Odontoglossum Epicaste (A.M.), also from Haywards Heath, has deep black-purple flowers, with rose-purple edging; this comes from O. Clytie and O. crispum.

## FRUIT AND VEGETABLE COMMITTEE.

A particularly fine exhibit was one entirely of gooseberries, staged in fine style by Messrs. Jas. Veitch and Sons, Chelsea. As a background the firm staged freely cropped standards and cordons of popular varieties, but the chief interest centred in the baskets of one hundred varieties of these useful fruits. All the fruits were ripe, and ranged in colour from white to deepest crimson-red. In size, too, there was a wide difference between the tiny Pitmaston Gage and the big Speedwell, Leveller, and Fearless. In the matter of flavour there is also a wide range, but probably the finest in this respect are Langley Gage, Langley Beauty, Golden Gem, Ironmonger, Warrington, Pitmaston Greengage, Green Gascoyne, Broomgirl, Whitesmith, and Keen's Seedling. Very fine sorts are Whinham's Industry, Ironmonger, May Duke, Trumpeter, Whitesmith, Sulphur, Lancashire Lad, White Champagne, Mount Pleasant, Leveller, Marlborough, Careless, Gipsy Queen, London, Monarch, and Dan's Mistake, and these were splendidly represented in a collection that well deserved the Gold Medal awarded it.

Very fragrant and enticing were the twenty handsome fruits of Queen pineapples, staged by that master of fruit culture, Mr. Thos. Coomber, gardener to Lord Llangattock, The Hendre, Monmouth. Messrs. S. Spooner and Sons, Hounslow, submitted trays of bright fruits of Early Red Margaret and Mr. Gladstone apples.

Collections of peas and lettuces from Messrs. John K. King and Sons, Coggeshall, proved interesting. The lettuces included fourteen cabbage varieties, and of these Yellow Market, Sutton's Favourite, May King, All the Year Round, and the bronze-leaved Eclipse, were the most notable. Over fifty dishes of peas were shown, and here a good selection was Thos. Laxton, Twentieth Century, Essex Star, Pioneer, Telephone, Quite Content, Senator, Gradus, Sutton's Seedling, Pilot, and Telegraph.

Mr. Baines, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, exhibited an old peach named Royal Charlotte (A.M.), which resembles Noblesse in size, form, and flavour, but is very highly coloured instead of being light-skinned. Mr. Hills, gardener to E. M. Kennedy, Esq., Leaves Green, Keston, sent a crop of 286 shallots, obtained from fifteen sets. Fruiting sprays of a small, dark-fruited hybrid between the black currant and gooseberry came from Mr. R. Nicholls, Dunstable; the flavour was not particularly attractive. Mr. Walker, Oak Hill Park Gardens, Enfield, sent some fine samples of red currants.

## CERTIFICATES AND AWARDS.

First-class Certificate.—To Cattleya Warscewiczi alba var. Firmin Lambeau (a Gold Medal was also awarded for this beautiful orchid), from M. Firmin Lambeau, Brussels; to Plagianthus Lyalli, from Messrs. Robert Veitch and Sons, Exeter; to Nephrolepis exaltata muscosa, from Messrs. H. B. May and Sons, Edmonton.

Award of Merit.—To strain of Gladiolus primulinus hybrids, from Messrs. J. Kelway and Sons, Langport; to Patrinia palmata, from Miss Willmott, V.M.H., Warley Place, Great Warley; to Crossandra undulæfolia, from Sir Trevor Lawrence, Bart. (gardener, Mr. Baines), Burford Lodge, Dorking; to Astilbe Rhenania, from Mr. W. Profittlich, Twickenham; to Nymphæas Attraction and Formosa, from Leopold de Rothschild (gardener, Mr. Jas. Hudson, V.M.H.), Gunnersbury House, Acton; to Zygopetalum Brewi, and to Odontoglossum Epicaste, from Messrs. Charlesworth and Co., Haywards Heath; and to Peach Royal Charlotte, from Sir Trevor Lawrence, Bart., Dorking.

## MEDALS.

Gold.—To Mr. T. Coomber, V.M.H., gardener to Lord Llangattock, The Hendre, Monmouth, for pineapples; to Messrs. Jas. Veitch and Sons, Chelsea, for gooseberries; and to M. Firmin Lambeau, Brussels, for a fine white form of Cattleya Warscewiczi.

Silver-gilt Banksian.—To Messrs. H. B. May and Sons, Edmonton, for ferns, etc.; to Messrs. Jas. Veitch and Sons, Chelsea, for flowering plants.

Silver Flora.—To Messrs. H. Cannell and

Sons, Swanley, for succulent plants; to Messrs. J. Kelway and Son, Langport, for gladioli; to Messrs. Carter Page and Co., London Wall, for antirrhinums, etc.; to Messrs. J. Peed and Son, West Norwood, for gloxinias ,etc.; to Messrs. Stuart Low and Co., Enfield, for orchids.

Silver Banksian.—To Mr. R. G. Thwaites, Streatham, for orchids; to Messrs. Wm. Cutbush and Son, Highgate, for carnations; to Messrs. H. J. Jones, Lewisham, for phloxes; to the King's Acre Nurseries, Hereford, for eremuri; to Mr. Amos Perry, Enfield, for water lilies, etc.; to Mr. Chas. Blick, Hayes, for carnations; to Messrs. Gunn and Sons, Olton, for phloxes; to Messrs. John K. King and Sons, Coggeshall, for lettuces and peas.

Bronze Flora.—To Messrs. Stuart Low, and Co., Enfield, for roses; to Mr. M. Prichard, Christchurch, for hardy flowers; to Mr. Reuthe, Keston, for hardy flowers; to Messrs. Thos. S. Ware, Feltham, for hardy flowers.

## Manchester Rose and Sweet Pea Show.

JULY 12 and 13.

After the lapse of a few years it is a pleasure to record the revival of one of the most popular northern exhibitions, but whether the dates were unsuitable, or exhibitors have lost interest in the work of the Royal Botanical and Horticultural Society of Manchester, the entries were not numerous as compared with those made a few years ago, when the chief growers, both amateur and nurserymen, were present in strong force.

### ROSES.

In the class for thirty-six distinct varieties Messrs. W. and J. Brown, of Peterborough, were the only exhibitors. They were awarded the first prize for finely developed, fresh blooms, the best being Avoca, Mildred Grant, Mrs. J. H. Welsh, Ben Cant, Mrs. M. Lenton, Edward Mawley, Mrs. A. C. Coxhead, Dean Hole, Leslie Holland, Horace Vernet, Madame C. Metz, and Claudius.

In competition for the prizes for twelve teas or noisettes Messrs. Brown were again first, and staged good blooms of Maman Cochet, Mrs. E. Mawley, Mrs. M. Kennedy, Souv. de P. Notting, and other good varieties. The same firm also obtained premier honours in the class for twelve trusses of any white or yellow rose, with good blooms of Frau Karl Druschki, and for twelve of any crimson variety with Mrs. A. G. Coxhead.

There was a spirited contest for the prizes in the amateurs' class for twenty-four trusses. Mr. R. Foley Hobbs, of Worcester, occupied the premier position with fine blooms of Frau Karl Druschki, Gloire de Chenedane Guinoisseau, J. B. Clarke, Lady Helen Vincent, Ulster, etc.; Mr. R. Park, of Bedale, was a capital second. For twelve distinct trusses the positions were reversed, Mr. Park having Mrs. Theo. Roosevelt and Hugh Dickson in splendid form.

In the class for eighteen teas or noisettes, Mr. R. Foley Hobbs was first with a box in which were excellent blooms of Mrs. F. Hobbs, Mrs. E. Mawley, Mme. Cusin, Mme. Nadillac, and other varieties of merit; Mr. R. Park was second. In competition for the prizes for twelve teas or noisettes the same order was observed.

For twelve blooms of any white or yellow rose Mr. R. Foley Hobbs won with splendid flowers of Bessie Brown; Mr. R. Park followed for second place, and Mr. J. Holt was third, both staging Mme. Jules Gravereaux in fine form. For twelve blooms of any light rose Mr. Foley Hobbs was first with charming blooms of Her Majesty. For twelve blooms of crimson variety Mr. Park was first with A. K. Williams.

In the class for twenty-four distinct varieties, the blooms to be grown in the Manchester district, Mr. A. G. Hogg, of Altrincham, and Mr. W. Coley were first and second. For twelve trusses the prize-takers were Messrs. J. Holt, A. M. Buxton, and C. E. Marshall. For six trusses Messrs. C. Burgess, P. Wilkinson, and J. Holt were the prizetakers in the order named.

In competition for the prizes for twelve bunches suitable for button-holes Messrs. W. and J. Brown secured premier honours with a pleasing lot, Richmond, Dorothy Page Roberts, and E. Meyer being especially good. For a display of roses the same firm was again first with an arrangement in which the Lyon was most conspicuous.

For a basket of roses the winners were Messrs. O. Robinson, A. Adshead, and A. J. A. Bruce, with pretty exhibits. For three baskets Messrs. A. Adshead and W. and J. Brown were first and second. Mr. R. Foley Hobbs was awarded the Silver Medal for the best H.P. or H.T. with Gloire de Chenedane Guinoisseau; and for the best tea or noisette with Mrs. R. Foley Hobbs.

### SWEET PEAS.

For the best collection, not less than fifty or more than one hundred vases, Mr. F. A. Robinson was a splendid first with finely developed sprays, especially good being Vermilion, Brilliant, Rosabelle, Mrs. W. J. Unwin, Melba, Maud Holmes, Nubian, Edna Unwin; Messrs. Castle Bros., Warton, was second; and Messrs. Faulkner and Aitkin third. In the class for twelve vases Messrs. C. Burgess, J. S. Procter, Altrincham, and S. T. Brittain were the prizetakers, Edna Unwin, Mrs. W. P. Wright, Constance Oliver, being conspicuous in the leading collection.

For twenty-five vases Mr. A. Bieth, Knutsford, was the winner of the first prize, having good sprays of Marjory Villiers, Sunproof, Crimson, Mrs. Hugh Dickson, and others. Mr. O. Robinson had the best bouquet, followed by Mr. Adshead for second place.

### MISCELLANEOUS.

For the best group of miscellaneous plants occupying a space not less than 300 square feet superficial, Messrs. J. Cypher and Son, of Cheltenham, was a capital first with a collection of choice plants arranged in his usual tasteful manner; especially noteworthy were the ixoras, miltonias, cattleyas, and heaths. Mr. J. Sharp, of Huddersfield, was second with an effective arrangement. In the class for a group occupying a space of not less than 100 square feet superficial Mr. J. Kaullmann, of Fallowfield, secured the chief award, his crotons, begonias, and gloxinias being especially meritorious.

The best display of herbaceous cut flowers was contributed by Messrs. Caldwell and Sons, of Knutsford, who staged liliums, spiræas, and phloxes in fine style.

### NON-COMPETITIVE.

Mr. H. Eckford was awarded a Gold Medal for a very fine collection of sweet peas; Mr. A. J. A. Bruce, of Chorlton-cum-Hardy, for a miscellaneous group, including insectivorous plants in variety; and Messrs. Dicksons, of Chester, for cut roses.

The Cowan Nursery Company secured a Silver Medal for a collection of orchids; and the Hopwood Alpine Garden Company for rockery and alpines. Mr. H. Middlehurst, of Liverpool, had a pleasing collection of sweet peas.

## Wolverhampton Floral Fete.

The exhibition held at Wolverhampton on the 9th inst., and two following days, was, from all points of view, one of the most successful of those held in this great centre. There was a strong competition in the leading classes, the exhibits were of high quality, and the arrangements such as to reflect the highest credit upon all concerned. Additional interest was given to the proceedings at the luncheon by the presentation to Mr. W. E. Barnett, on behalf of the exhibitors and judges, of a silver tea and coffee service with an address and a set of vases for Mrs. Barnett. This recognition of Mr. Barnett's services during the twenty years is very pleasant to those who are fully acquainted with the admirable manner in which he performed his duties. It is gratifying to know that in Mr. Councillor Amphlett the committee found an excellent successor to Mr. Barnett in the office of secretary.

As from the earliest days in the history of the floral fêtes at Wolverhampton, groups arranged for effect formed an important and immensely attractive feature. In the display of miscellaneous foliage and flowering plants, Messrs. J. Cypher and Sons, of Cheltenham, were successful in winning the premier award of £40, with an arrangement in their best style. Sir George Kendrick, Edgbaston, Birmingham, followed for second place with a display of rare beauty, and Mr. W. A. Holmes, Chesterfield, and Mr. W. A. Vause, Leamington, who were third and fourth, had displays that were highly meritorious. For a group of ornamental-leaved plants, including palms and ferns, Messrs. J. Cypher and Sons were again first, and Sir G. H. Kendrick second, Mr. W. A. Holmes and Mr. W. Manning being third and fourth. Messrs. J. Cypher and Sons were first also for twenty plants and for six heaths. Mr. R. H. Mander, Tryill, Sir Charles Mander, Mr. T. Mander, and Mr. J. A. Kendrick, Edgbaston, were also successful exhibitors in these classes. In competition for the prizes for a collection of flowering plants (one kind only) Messrs. Blackmore and Langdon, Twerton Hill, Bath, were first with splendidly flowered plants of tuberous begonias.

Cut roses constituted a large and attractive feature. In the open classes Messrs. D. Prior and Sons, Colchester, were first for seventy-two blooms; the King's Acre Nurseries, Hereford, were second, and Messrs. Harkness and Co., Hitchin, third. The King's Acre Nurseries obtained premier honours for thirty-six blooms, with Mr. W. T. Mattock and Mr. W. H. Frettingham, Beeston, Notts., second and third. The last-named scored for nine baskets of roses, staging blooms of high quality. Messrs. Harkness and Co. were first for eighteen perpetual flowering roses, and Mr. W. T. Mattock was first for a similar number of blooms of tea-scented varieties. Hardy flowers were well shown by Messrs. Harkness and Sons, Bedale; Messrs. G. Gibson and Co., Bedale; Messrs. F. Smith and Co., Woodbridge; and Messrs. Blackmore and Langdon. Sweet peas were plentiful and of high quality, and the more successful of the exhibitors of these fragrant flowers were Messrs. Castle.

There was a spirited contest in the majority of the plant classes that were limited to amateurs and gardeners, and in competition for the awards for groups arranged for effect Mr. J. A. Kendrick and Mr. B. Howson, Market Drayton, were first and second with tasteful arrangements. Tuberous-rooted begonias in collections of twelve were splendidly shown by Mr. J. Taylor, Pershore; Mr. B. H. Mander, and Captain Simpson.

Roses formed a distinct feature in the cut flower classes that were limited to private growers, and chief among the competitors were Mr. R. Foley Hobbs, of Worcester, and the Rev. J. A. L. Fellowes, of Attleboro. These exhibitors were first and second in the open classes for thirty-six, six, twenty-four, and twelve blooms, and also for twelve teas. Mr. Edgington, Wolverhampton, and Mr. W. F. Burford, Tettenhall, were the most successful exhibitors in the district classes for roses.

Fruits and vegetables were well shown, and in the leading classes for the former, Mr. Doe, gardener to Lord Saville, Rufford Abbey, and Mr. Barker, gardener to the Duke of Newcastle, Clumber, Worksop, were especially successful. The Earl of Harrington, Elvaston Castle, was also very successful. The premier award for a decorated dinner-table was won by Mr. N. F. Barnes, gardener to the Duke of Westminster, Eaton Hall, Chester, and the second award was made in favour of Mr. J. H. Goodacre.

In the vegetable section the Marquis of

W. H. Smith, Stourbridge, was first in a second class for six kinds.

Miscellaneous collections were, as usual, numerous, and of a high order of merit. The following awards were made to the exhibitors of these:

Gold Medals.—Messrs. Webb and Sons, Wordsley, for miscellaneous flowers and fruit; Messrs. Baker, Codsall, for floral display; Mr. W. Lowe, Beeston, Notts, for roses; and Messrs. Sutton and Sons, Reading, for sweet peas.

Small Gold Medals.—Mr. A. F. Dutton, Iver, Bucks, for carnations; Messrs. Dickson, Lim., Chester, for roses and herbaceous plants; Lady Grey, Enville, for carnations; Messrs. Dobbie and Co., Edinburgh, for roses, dahlias, and violas; and Messrs. Cutbush and Son, London, for examples of topiary.

Silver-gilt Medals.—Messrs. Clibrans, of Altrincham, for sweet peas, etc.; Messrs. W. H. Simpson and Sons, Birmingham, for sweet peas; and Messrs. Hewitt and Co., Lim., of Solihull, for herbaceous plants.

Silver Medals.—Messrs. H. N. Ellison, West Bromwich, for ferns; Mr. F. A. Haage, jun., for cacti; Mr. C. H. Herbert, of Acock's Green, for herbaceous pinks; Messrs. Seagrave and Co., of Sheffield, for violas; Mr. C. F. Waters, Balcombe, for carnations; Messrs. Jarman and Co., of Chard, for roses, centaureas, and carnations; Messrs. B. Ladham's, Lim., Shirley, Southampton, for gaillardias; Messrs. Dickson and Robinson, of Manchester, for annuals; and Messrs. W. Cutbush and Son, London, for carnations.

Bronze Medals.—Messrs. H. Mosters, of Hansdworth, for violas; Messrs. F. Cross, of Arnold, Nottingham, for floral exhibit; and Messrs. A. H. Welham, of Bridgnorth, for miscellaneous flowers.

Award of Merit.—J. Bastock, of Moseley, for the perpetual-flowering free carnation, Mrs. A. F. Dutton.

## Dundee Horticultural Association.

The annual excursion of the members of this association took place on the 6th inst., when Pittercrieff Park, Dunfermline, was visited. Upwards of 50 members availed themselves of the opportunity to inspect the world-famous works of the Carnegie Trust.

The party was met on arrival by the genial park superintendent, Mr. James Dunagan, and conducted to the Central Baths and Gymnasium, which are said to be the best equipped establishments of their kind in Great Britain. After a general survey the members of the party, which was augmented by a considerable number of district horticulturists, sat down to tea, thoughtfully provided by the Carnegie Trust, one of the directors, Mr. Macrea, acting as host.

After a few words of appropriate thanks the party proceeded to inspect a district bowling-green and library, en route to the park, where there was much to interest all, and Mr. Dunagan and his staff spared no effort to make the guests thoroughly enjoy themselves. A splendid range of glass structures, with teak framework and well furnished with healthy-growing foliage and flowering plants, was the admiration of all. A new flower garden of several acres, only recently laid down in grass, was bright with summer bedding and permanent occupants. The rockwork in the glen, representing an outlay of £6,000, is of massive construction, and few gardeners could attempt anything so elaborate, even if they had the unique site afforded in this charming park.

After inspecting the palace ruins the party adjourned to the Royal Hotel, where, under the chairmanship of Mr. Dunagan, they were again hospitably entertained, a pleasant hour being spent in song and sentiment. When the president, Mr. Wm. Christeson, and Mr. Wm. Grant and others had expressed the thanks of the party to all who had contributed to their enjoyment, the meeting broke up with three ringing cheers for Dr. Andrew Carnegie on the call of Mr. James Bethel.

## Elstree and Boreham Wood Horticultural Society.

The summer show of the above society was held on July 10, in the grounds of Aldenham House, and the weather conditions were ideal. The park was placed at the disposal of the society through the kindness of Lord Aldenham, and the President, the Hon. V. Gibbs, kindly allowed the visitors to see the gardens. Consequently, the society owe much to the kindly interest these two gentlemen take in the welfare of the society. The competitive classes were well filled, and the entries exceeded in number those of any previous show. The honorary and trade exhibits were placed in a separate marquee. At one end the Hon. Vicary Gibbs exhibited one of the largest collections ever staged by Mr. E. Beckett, V.M.H., and included a number of varieties of excellent merit, whilst at the extreme end was a model water garden with a winding stream, planted with water lilies and choice aquatics, and a background of typhas, bamboos, etc., and other suitable flowering subjects. These exhibits were awarded a gold medal. E. Greenwood, Esq. (gardener, Mr. G. Capell), was awarded a silver medal for a particularly good group of hydrangeas, coleus, and ferns. The silver rose bowl was won this year by Messrs. Frank Cant and Co., of Colchester, with a grand exhibit, which defeated a very fine collection of roses from Messrs. Harkness, last year's winners.

Mr. R. F. Felton, of Hanover Square, journeyed down, and arranged a table of carnations to practically demonstrate the effect to be obtained without the use of elaborate stands, etc. This non-competitive exhibit was much admired. He also assisted in judging the table decorations and other classes of flowers.

Trade exhibits were staged by Messrs. Cutbush of roses; Messrs. H. Newman and Sons, Watford, sweet peas and violas; Messrs. Gleeson and Co., herbaceous plants; and Messrs. Thomson and Charman, a small rockery, planted with a variety of choice alpines and shrubs.

## The London Vacant Land Cultivation Society.

The fourth annual meeting of the above society was held at the residence of Baron de Forest, M.P., Spencer House, St. James Place, W., on Friday, July 12, Frank Smith, Esq., L.C.C., in the chair. It was stated that the 500 plot-holders have in four years raised over £7,000 worth of vegetables, and in the present season the lines of vegetables reach a total length exceeding 100 miles, while the rows of flowers would be equal to ten miles. Exhibits of the vegetables grown on waste land were much admired by those present. The hon. secretary is Mr. Joseph Fels, and the superintendent Mr. R. L. Castle. More land is urgently needed for 600 applicants.

**Ripe Grapes.** — Up to the present time, in this locality, it has not been necessary to use shade of any kind upon the roof of houses that contain ripe grapes, but no doubt it will be necessary ere long. Abundance of air must be admitted both at night and in the daytime; dispense with artificial heat as much as possible, using only a little at night, and on cold, wet days to maintain a free circulation in the atmosphere of the house. Look over the bunches occasionally, and remove at once all berries that show signs of decay. Stop all laterals as required, although a little more freedom of growth can be allowed at this stage. Where the foliage is very thick, and when Muscats are ripening, the leaves should be carefully tied from immediately over the bunch to allow the sun the shine upon the bunches; this will assist the berries to mature, and give them that deep golden colour so much admired in this particular variety.—Henry Farmer, Cardiff Castle Gardens.

## ANSWERS TO CORRESPONDENTS.

SLUG WORM ON ROSES.—J. G., Ingatestone: Our roses are being eaten up by tiny maggots, and we seem to be unable to find a means of removing the pest. We have not suffered in this way previously, and as our roses have always been considered good, we are, naturally, troubled. If you can help us we shall be very grateful.—We hope you have seen the answer to "H. S., Chelsfield," which appeared in our issue of July 13, and acted upon the advice therein given, because if you have done so a week will have been saved. The pest is the rose slug-worm (Eriocampa rosæ), and it appears to be working a great deal of mischief in various districts this season. You will find full particulars of life history, remedy, and cure on p. 546.

SPECIES OF CHINA ASTER. — N. J., Warminster: Kindly tell me how many species of the China Aster there are?—The China Aster is Callistephus hortensis, and the genus contains but the one species. The specialists and raisers have, however, raised a large number of distinct races or florists' groups, probably from twenty to thirty, notably the Victoria, Quilled, Pæony-flowered, Ostrich Plume, Comet, and Anemone sections. These groups do not represent distinct species, but they show what can be accomplished with a flower, when careful selection and cross-fertilisation are conducted by experts.

SWEET PEAS AND CUPRESSUS.—F. F., Bletchley.—Do you think that if sweet peas were planted upon a site previously occupied by an old cypress hedge, they would prove a failure? We have a row of sweet peas on such a site, and though the soil was dug deeply and old manure was added, the plants have made scarcely any growth, and consequently have produced practically no flowers. My gardener believes the failure is due to the previous crop of cupressus.—We regret you did not see fit to give your name and address. Bletchley was the post mark, but, of course, it does not follow that you live there. By a curious coincidence, we saw three rows of Elfrida Pearson sweet pea at Burbage Experimental Station last week, occupying a site from which cupressus were recently removed; the three rows were failures, and Major Hurst, who owns and manages the station, considers that the failure is due to the influence of the cupressus, which have evidently removed in a very

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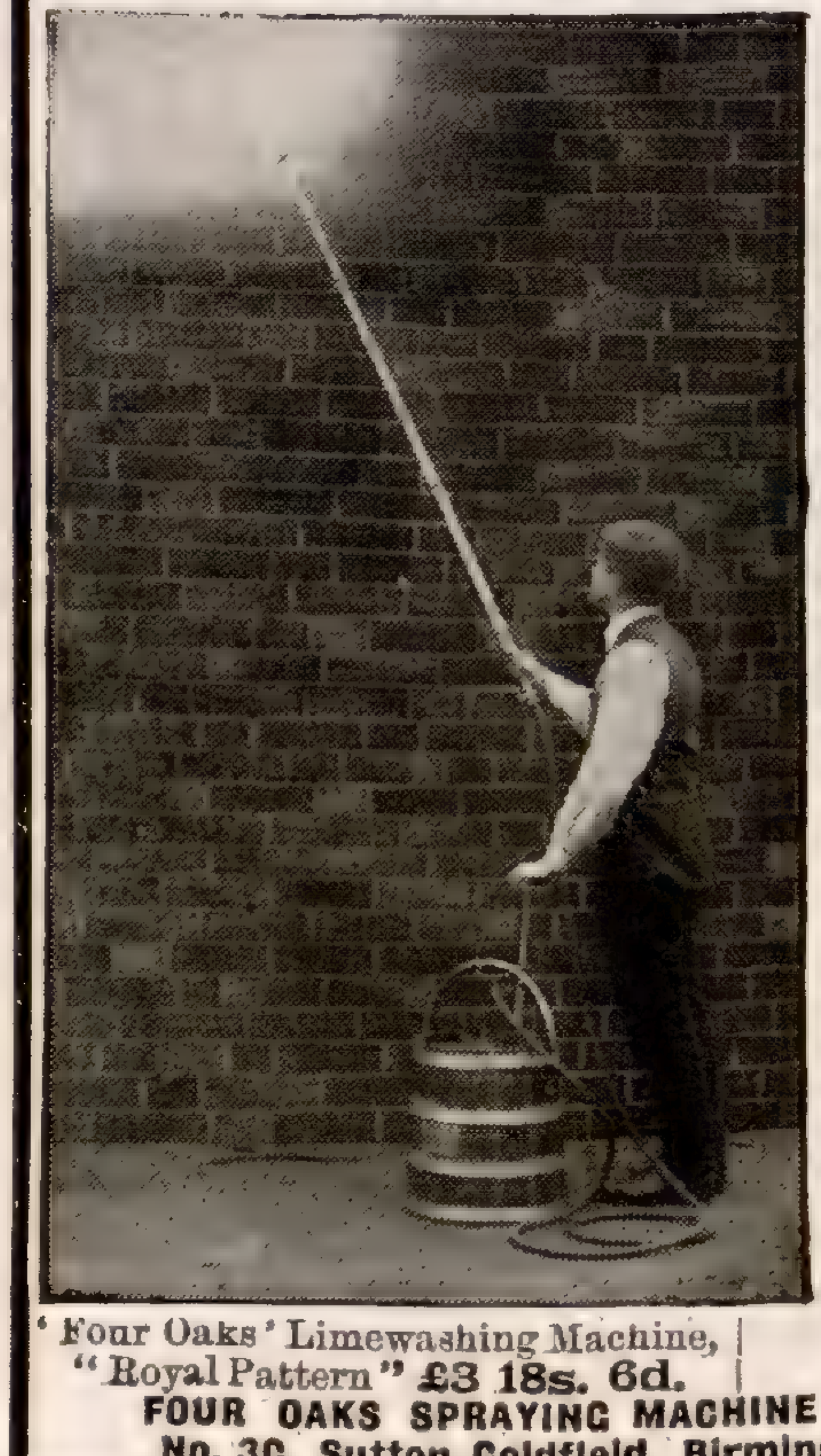

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large degree some soil constituents necessary to sweet peas, or it may be that the roots leave behind them some acid excretion that does not agree with sweet peas.

PROPAGATION OF ROSEMARY. — M. E. J., St. Neots: I wish to work up a little stock of a few dozen plants of rosemary for planting close to the top of a low retaining wall at the end of a terrace. I have one large plant now growing freely. Please tell me the best way to proceed?—Rosemary may be propagated at once from cuttings about six inches long. Select a position on a shady border, and prepare a sufficient quantity of fine sandy soil; place the cuttings firmly in the soil, and cover with a hand light or small frame. The cuttings should root freely and quickly, and, after due exposure, should be ready to plant out in the autumn.

HYBRID CATTLEYA.—C. H. F., Abergavenny: We have in bloom what we consider to be good varieties of both Cattleya Dowiana aurea and C. gigas. We propose to pollinate the former with the latter; what sort of hybrid would result if seeds and seedlings eventuate?—It is refreshing to find so many taking up the cultivation of orchids in a general rather than in a special sense, because we have always contended that orchids should find a place in every well-equipped garden, just as carnations, chrysanthemums, and ferns do. It is evident your experience is not large, so far as orchid hybridisation is concerned, because one of the earliest cattleya hybrids recognised was C. Hardyana; this was imported, and was supposed to be a natural hybrid between C. Dowiana and C. Warscewiczi (gigas), a supposition that was subsequently proved to be correct. C. Hardyana varies considerably, but generally it has the size and form of C. Warscewiczi, with the golden and crimson colouring of C. Dowiana especially noticeable in the lip.

## NAMES OF PLANTS.

L. M. A., Lewes.—Indigofera Gerardiana.

E. M. C., Bicester.—Brachycome iberidifolia.

W. A. R., Hellifield.—1, Rosa bracleata; 2, R. sericea pteracantha.

J. F. W. H., Sunderland.—A species of cratægus, but insufficient for identification.

F. S., Horsley. — 1, Anchusa italica; 2, Hebenstreitia comosa; 3, Ginkgo biloba; 4, Liriodendron tulipifera.

R. P., Devonport.—1, Fuchsia gracilis; 2, Gasteria verrucosa; 3, Kleinia repens; 4, Costus igneus; 5, Nepenthes Burkei.

C. B. M., Northampton. — 1, Ligustrum chinensis; 2, Diplopappus chrysophyllus; 3, Phlomis fruticosus; 4, Erigeron speciosa; 5, Astilbe Davidi.

J. J. C., Manningham.—1, Linum perenne; 2, Scabiosa caucasica; 3, Gilia tricolor; 4, Achillea Ageratum; 5, Santolina incana; 6, Hypericum calycinum.

L. B., Taplow.—1, Spartium junceum; 2, Trifolium repens purpureum; 3, Polemonium cœruleum variegatum; 4, Hemerocallis Thunbergi; 5, Clematis recta.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, July 23. — National Carnation and Picotee Society.
Brighton Rose and Sweet Pea Show; two days.
WEDNESDAY, July 24.—Crawley Horticultural Society.
Leamington Horticultural Society; two days.
Bishop's Waltham Horticultural Society.
Haywards Heath Horticultural Society.
Lyndhurst Horticultural Society.
Ickleton Horticultural Society.
Normanby Horticultural Society.
THURSDAY, July 25.—St. Ives (Hunts) Horticultural Society.
FRIDAY, July 26.—Huddersfield Horticultural Society; two days.
Cheadle Horticultural Society; two days.
SATURDAY, July 27.—Derby Gardeners' Association Summer Show.
Fife and Kinross Horticultural Society.
Gourock Horticultural Society.
TUESDAY, July 30.—Royal Horticultural Society: Floral, Fruit, and Orchid Committees meet at noon. General meeting with lecture by Mr. Cecil Hooper on "Pollination of Fruit Blossoms," 3 p.m. Scientific Committee, 4 p.m.

# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Supplies are ample to meet a fair demand. Roses are a trifle dearer.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Asters, white | per doz. bun. | 3 9 | | 5 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 6 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 3 0 | | 8 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum | per doz. bun. | 2 0 | | 3 0 |
| Coreopsis | per doz. bun. | 0 9 | | 1 0 |
| Cornflowers | per doz. bun. | 0 9 | | 1 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 6 0 | | 8 0 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 0 9 | | 1 6 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 2 6 | | 8 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 6 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 6 | | 3 6 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 2 6 |
| Pelargoniums | per doz. bun. | 3 0 | | 6 0 |
| Poppies | per doz. bun. | 1 0 | | 1 6 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 2 0 | | 3 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Stocks | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas | per doz. bun. | 1 0 | | 3 0 |
| Sweet Sultan | per doz. bun. | 3 0 | | 5 0 |
| Tuberoses | per doz. | 0 4 | | 0 6 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

Business fairly brisk, but supplies are ample for the demand.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, Australian | per box | 6 0 | 10 6 |
| Apricots | per ½-sieve | 6 0 | 7 6 |
| Bananas | per bun. | 4 6 | 13 0 |
| Cherries | per ½-sieve | 3 0 | 10 0 |
| Currants, Black | per ½-bush. | 6 0 | 9 0 |
| ,, Red | per ½-bush. | 4 0 | 6 6 |
| Figs | per doz. | 1 6 | 6 0 |
| Gooseberries | per ½-bush. | 2 0 | 5 0 |
| Grapes, English | per lb. | 1 0 | 5 0 |
| ,, Almeria | per doz. lbs. | 6 0 | 8 0 |
| ,, Guernsey | per lb. | 0 10 | 1 6 |
| Greengages | per box | 0 9 | 2 0 |
| Lemons | per case | 15 0 | 20 0 |
| Melons | each | 0 6 | 3 0 |
| ,, Cantaloupe | each | 2 0 | 6 0 |
| Nectarines | per doz. | 3 0 | 15 0 |
| Oranges | per case | 8 0 | 30 0 |
| Peaches | per doz. | 4 0 | 15 0 |
| Pineapples | | 2 0 | 4 6 |
| Plums, French | per ½-sieve | 3 6 | 7 0 |
| Raspberries | per doz. pun. | 3 6 | 7 0 |
| Strawberries | per doz. pun. | 4 6 | 8 0 |

### Vegetables.

Excellent supplies are offered and the demand is good; salading is in special request.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| Asparagus | per bun. | 2 0 | | 10 0 |
| Aubergines | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey | per lb. | 0 4 | | 0 10 |
| Beet | per bush. | 1 6 | | 3 0 |
| Cabbage | per basket | 1 6 | | 2 0 |
| Carrots | per doz. bun. | 2 0 | | 3 0 |
| Cauliflowers | per doz. | 2 0 | | 4 0 |
| Cucumbers | per doz. | 1 6 | | 3 0 |
| Endive | per doz. | 1 6 | | 3 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per tally | 2 0 | | 3 0 |
| Marrows | per doz. | 2 0 | | 3 0 |
| Mint | per doz. bun. | 2 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per case | 6 0 | | 8 0 |
| Parsley | per doz. bun. | 2 0 | | 3 0 |
| Peas | per bush. | 3 6 | | 9 0 |
| Radishes | per doz. bun. | 0 9 | | 1 6 |
| Rhubarb | per doz. bun. | 2 0 | | 3 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 3 0 | | 3 9 |
| ,, Guernsey | per doz. lbs. | 3 0 | | 3 3 |
| Turnips | per doz. bun. | 2 0 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

The hot weather and the increasing supplies of home-grown new potatoes both tend to keep prices down.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per cwt. | 5 0 | to | 6 0 |
| Teneriffe | per cwt. | 7 0 | | 8 0 |
| Kents | per cwt. | 6 0 | | 7 0 |
| St. Malo | per cwt. | 5 6 | | 6 0 |
| Lincolns | per cwt. | 5 0 | | 6 0 |

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Manufactured by:

The Chemical Union, Ltd.
IPSWICH.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. JULY 7 TO JULY 13. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| July 7—Sunday | 5 24 | 58 | 56 | 74 | 55 |
| ,, 8—Monday | 3 0 | 64 | 59 | 69 | 54 |
| ,, 9—Tuesday | 9 6 | 63 | 56 | 72 | 49 |
| ,, 10—Wednesday | 4 24 | 68 | 64 | 77 | 58 |
| ,, 11—Thursday | 1 0 | 64 | 61 | 79 | 58 |
| ,, 12—Friday | 11 30 | 78 | 70 | 87 | 53 |
| ,, 13—Saturday | 2 42 | 70 | 65 | 74 | 60 |
| Means | (total) 37 6 | 66 | 61 | 76 | 55 |

| DATE. 1912. JULY 7 TO JULY 13. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| July 7—Sunday | 0·03 | 63 | 60 | 58 | 51 |
| ,, 8—Monday | — | 63 | 61 | 58 | 48 |
| ,, 9—Tuesday | trace | 63 | 61 | 58 | 40 |
| ,, 10—Wednesday | — | 65 | 62 | 59 | 55 |
| ,, 11—Thursday | — | 66 | 62 | 59 | 51 |
| ,, 12—Friday | 0·02 | 65 | 63 | 59 | 46 |
| ,, 13—Saturday | — | 68 | 63 | 59 | 55 |
| Means | (total) 0·05 | 64 | 61 | 58 | 49 |

An edition of "SWEET PEAS AND THEIR CULTIVATION," by C. H. Curtis, has been issued for 1912, and consequently this is an up-to-date work on the subject. The price, by post, is 1s. 2d. (cloth, 1s. 9d.) from the Publishers, 148-9, Aldersgate Street, London, E.C.

## OBITUARY.

◆

### REV. F. D. HORNER, M.A., V.M.H.

We regret to record the death of this great florist, which occurred at his residence, Greeta House, Burton-in-Lonsdale, on the 11th inst.

For upwards of forty-five years the Rev. F. D. Horner, V.M.H., occupied a leading position among florists, and during this long period accomplished so much useful work in the improvement of florists' flowers, and in stimulating an interest in their culture, that it would not be easy to make a proper estimate of the services he rendered in the cause of floriculture. Under the guidance, and with the example of his father, the late Dr. Horner, of Hull, who was one of the foremost florists of his day, Mr. Horner began to take an interest in florists' flowers at a very early age, and when Dr. Horner died in 1862 he regarded it as a sacred trust to carry on the work he had laid down. To the work that was taken up in 1862 Mr. Horner devoted himself to within a few years of his death with a zeal that is quite beyond praise. He was so exceptionally successful as a raiser and cultivator of show auriculas that his accomplishments in connection with the tulip did not, perhaps, receive the attention they so fully deserved. Each season for over forty-five years he cross-fertilised the varieties of the tulip and raised seedlings, and throughout he worked with but one object in view, and that was the improvement of the old type in its varied colours. Need it be said that this devotion to a good cause had its full reward. It was with the show auricula, however, that Mr. Horner's name was best known, and as the result of his well-directed efforts in the raising of seedlings he enriched the lists with numerous varieties of the highest class. For some years Mr. Horner, without allowing his interest in florists' flowers to slacken, devoted considerable attention to the cross-fertilisation of maize, with a view to raise a race well suited for culture in this country for culinary purposes. Here also the results fully justified the endeavour. While paying unremitting attention to the flowers so dear to the florist, Mr. Horner fully appreciated the charms of other classes of plants, and in the glass structures in the gardens of Greeta House visitors found many choice orchids, numerous uncommon greenhouse and stove plants, and a collection of succulent plants in robust health. As a writer and speaker, Mr. Horner ranked high among florists, and he was ever welcome at gatherings of florists to whatever rank of life they belonged. Mr. Horner was one of the earliest recipients of the Victorian Medal of Honour in Horticulture.

THE LATE REV. F. D. HORNER, M.A., V.M.H.

---

With reference to the death of this distinguished florist, Mr. Alderman J. W. Bentley writes:

Mr. Horner died at his home, Greeta House, Burton-in-Lonsdale, on Thursday evening, July 11. He had been laid aside by illness for a few years, and most of his older friends have gone before, but there will be grief in the hearts of all who knew him and appreciated his work when they realise their loss. He was the son of Dr. Horner, of Hull, a notable grower of tulips, ranunculuses, and other flowers in his day, and an able writer in the older floricultural papers, such as the "Gossip of the Garden." The latter's love of flowers, and the ability to write about them were transmitted to his son, and well he used both, for his knowledge was great and his writings inimitable.

Whilst he had a catholic love for all flowers, his favourites were auriculas and tulips, and it is by them he will be best remembered. In conjunction with his friend Mr. B. Simonite he did great things for the auricula, and it is largely due to their efforts that our auriculas are so good to-day.

He was the secretary of the Northern Auricula Society from its commencement, for over twenty years, performing similar duty for the Northern Carnation Society for many years, and when the Victorian Medal of Honour in Horticulture was instituted he was worthily chosen as one of the first recipients.

I fain would write of his kindliness of heart, his love for all living things, of his humour and rare power of expressing his thoughts by voice and pen, but for the present these few inadequate lines must suffice as a tribute to the memory of my dead friend.

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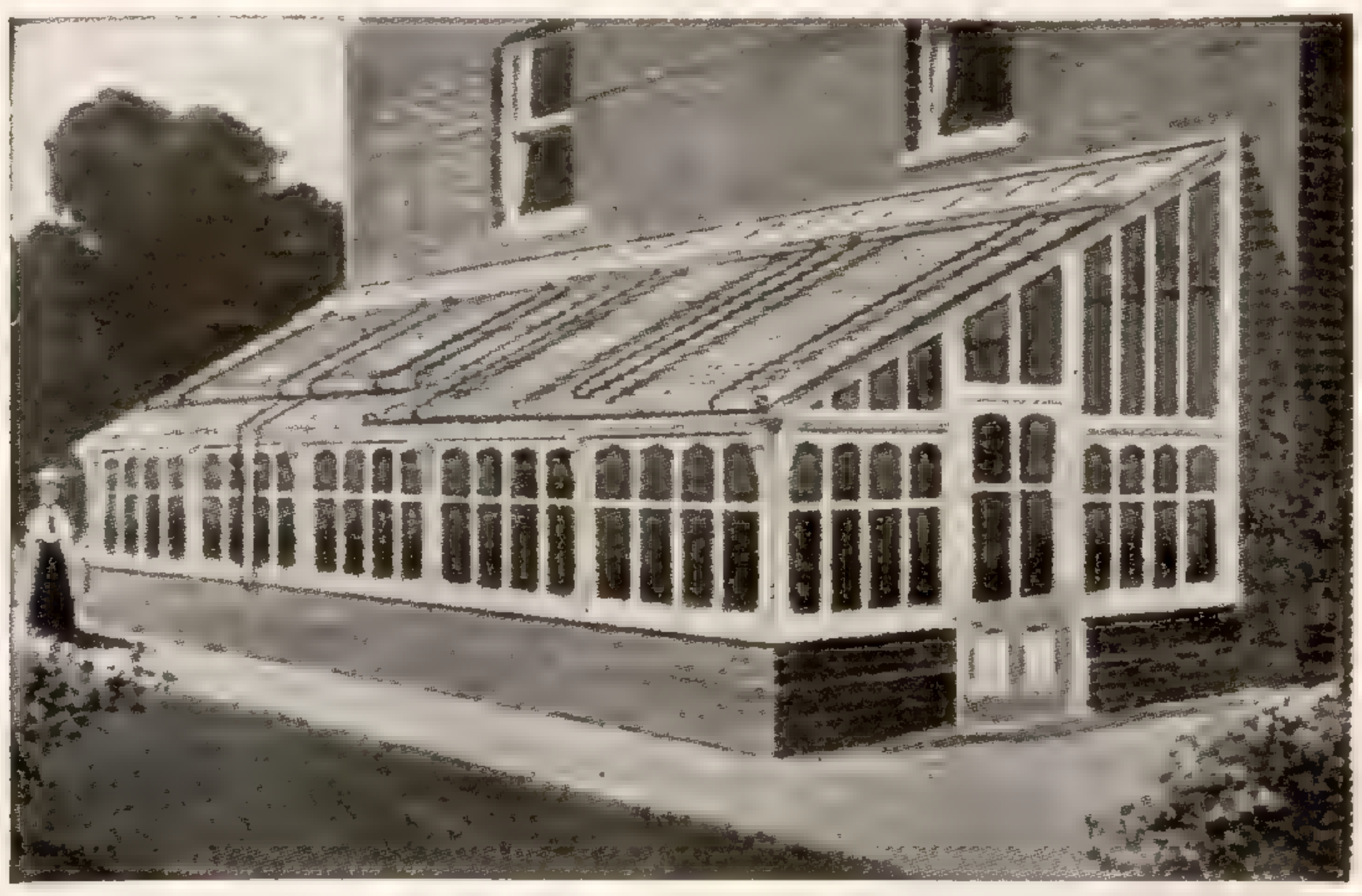

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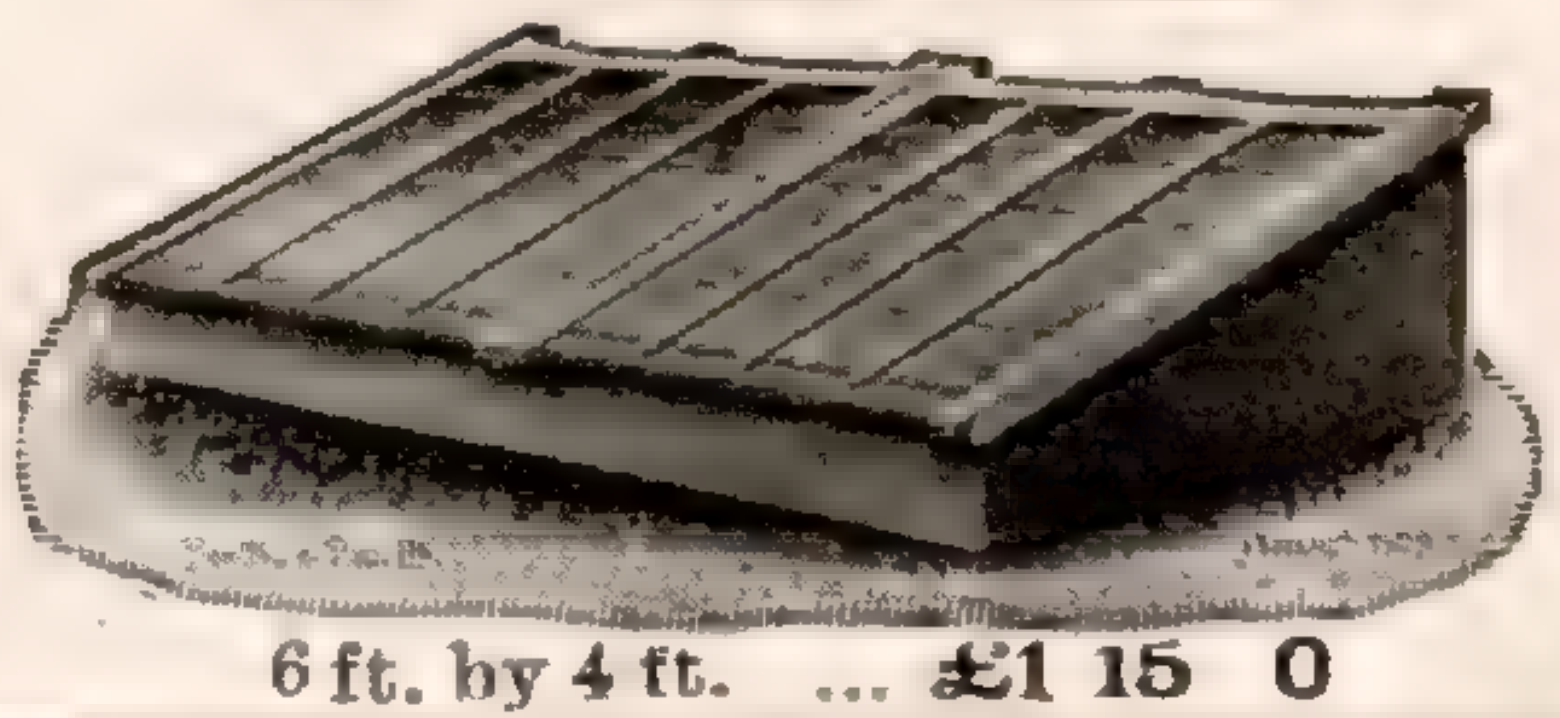

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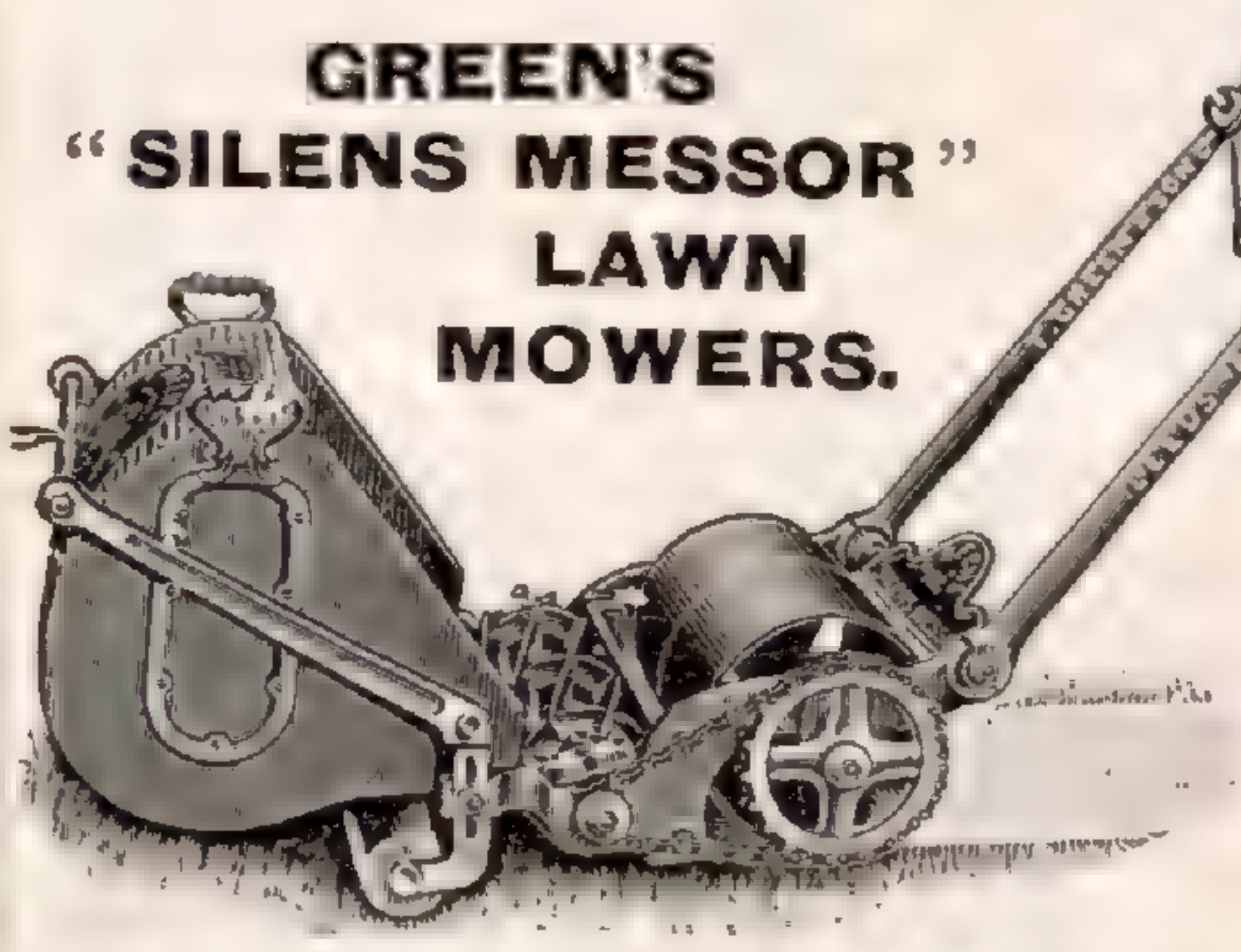

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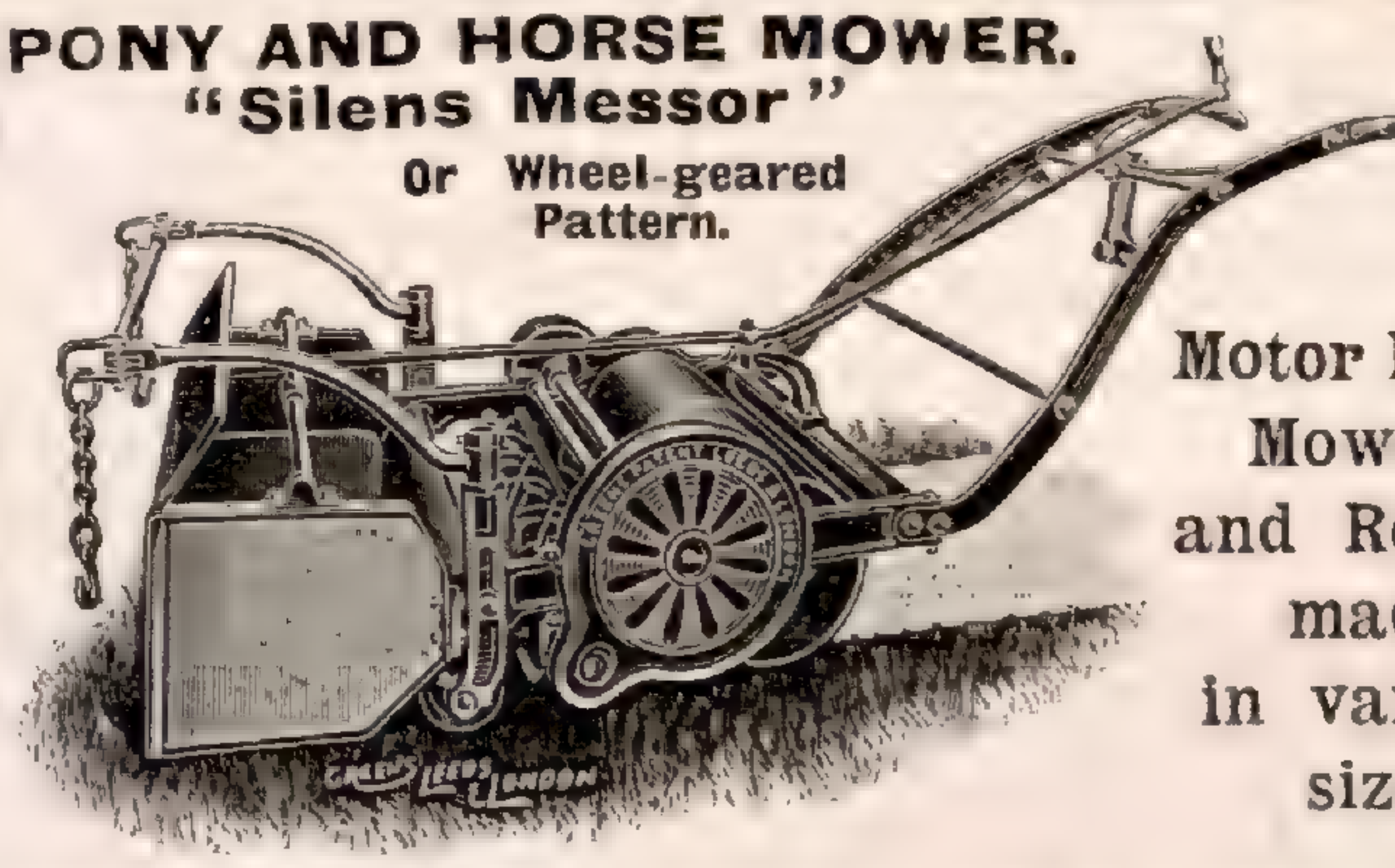

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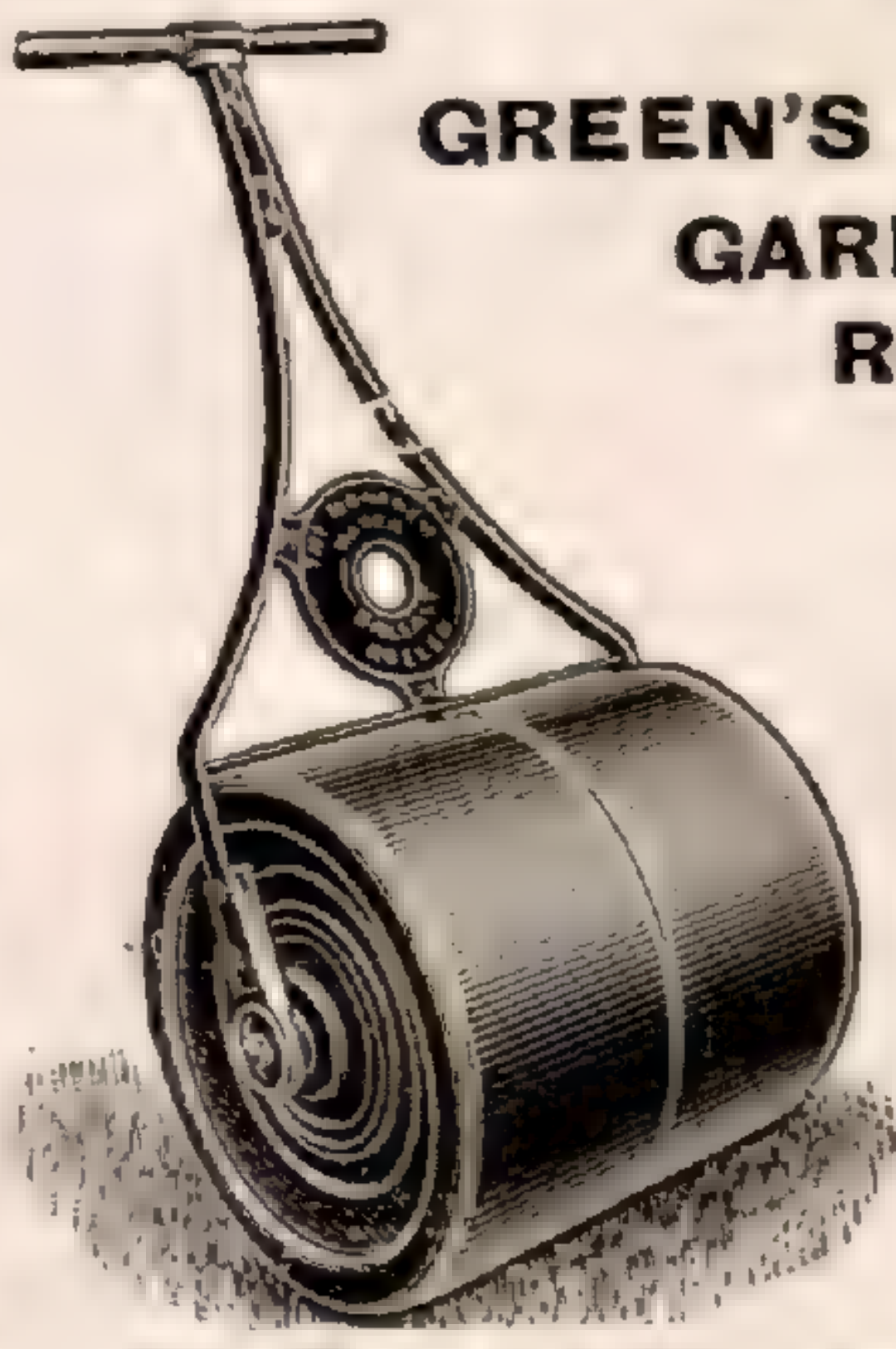

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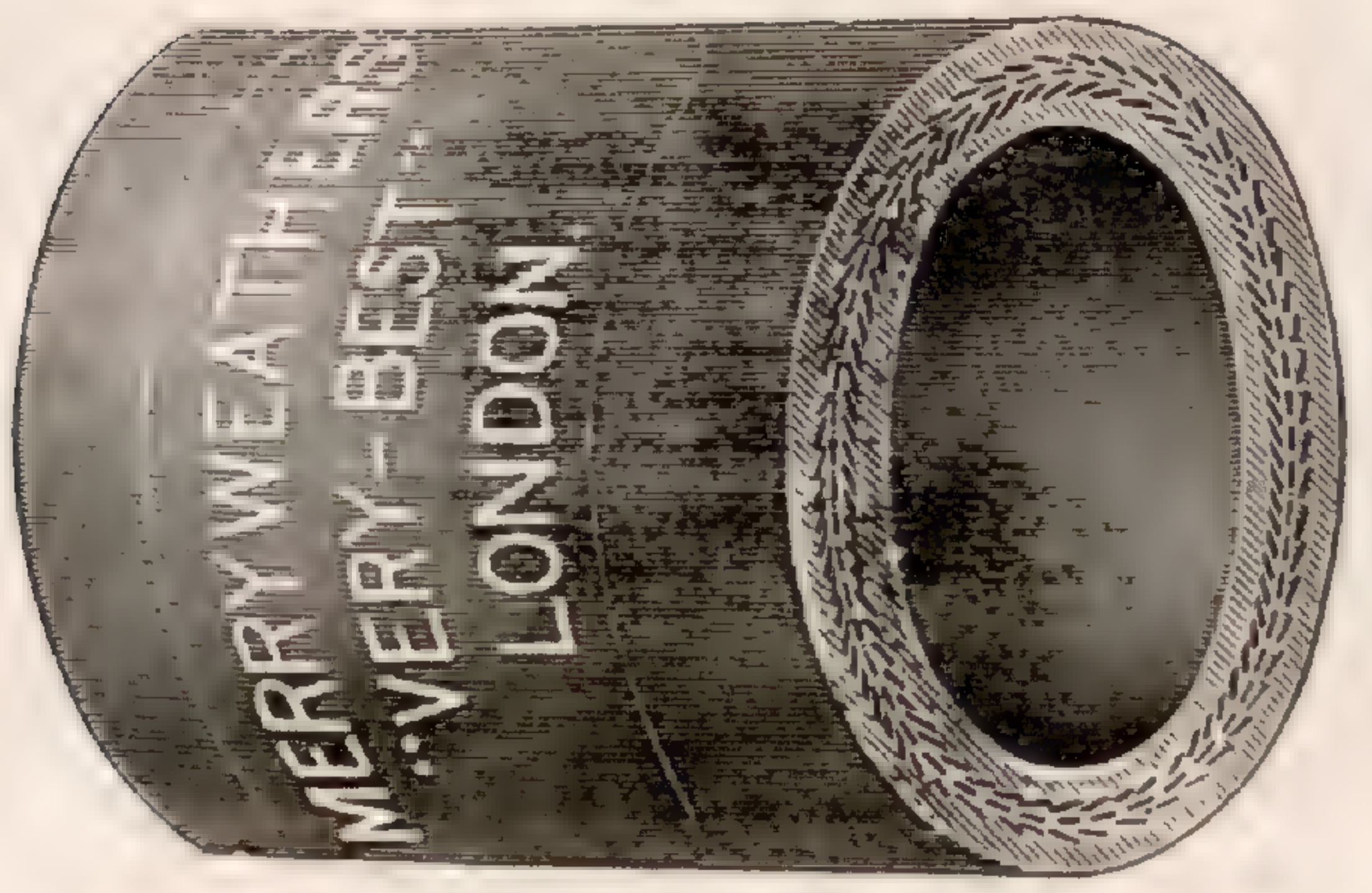
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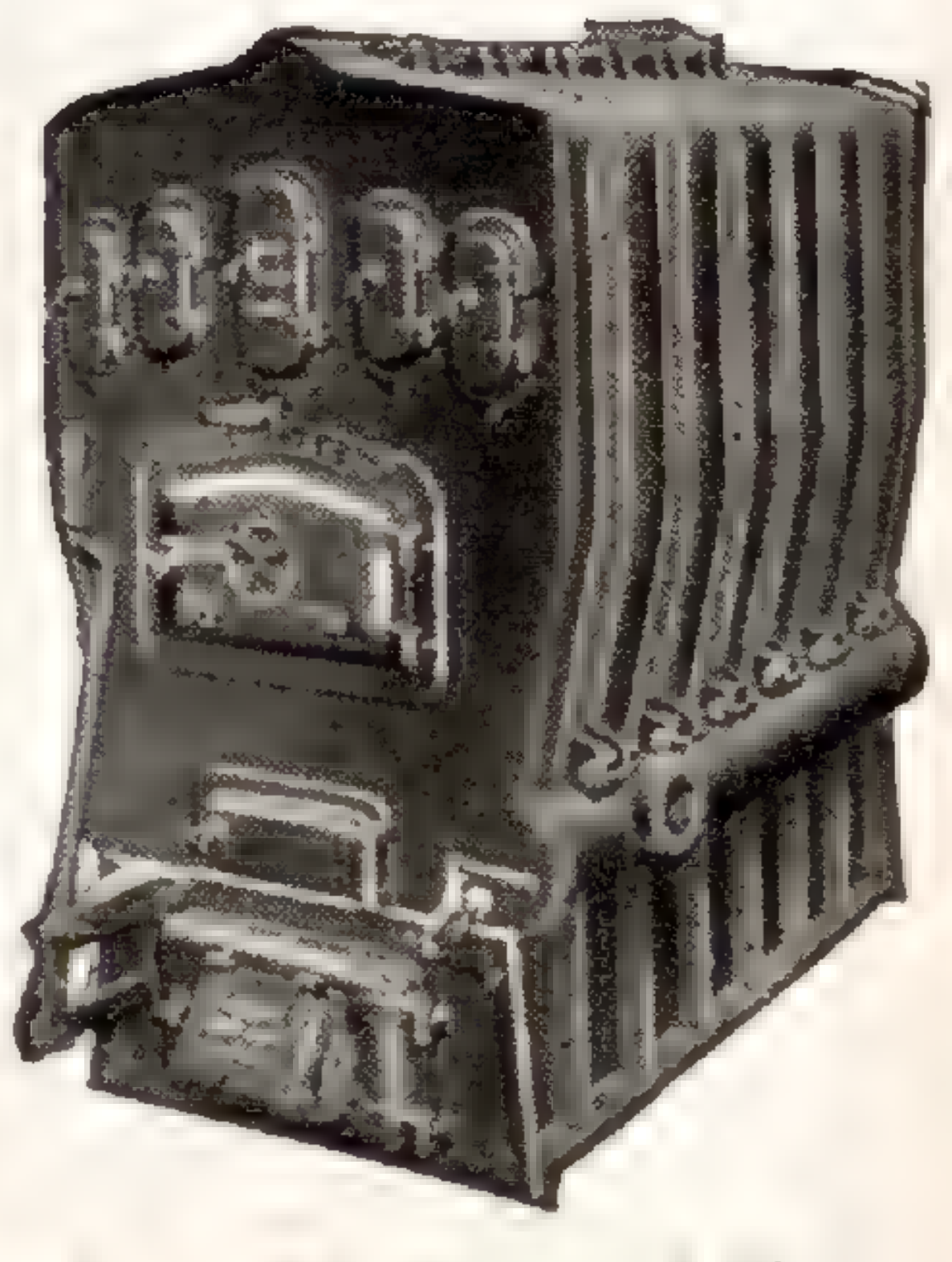

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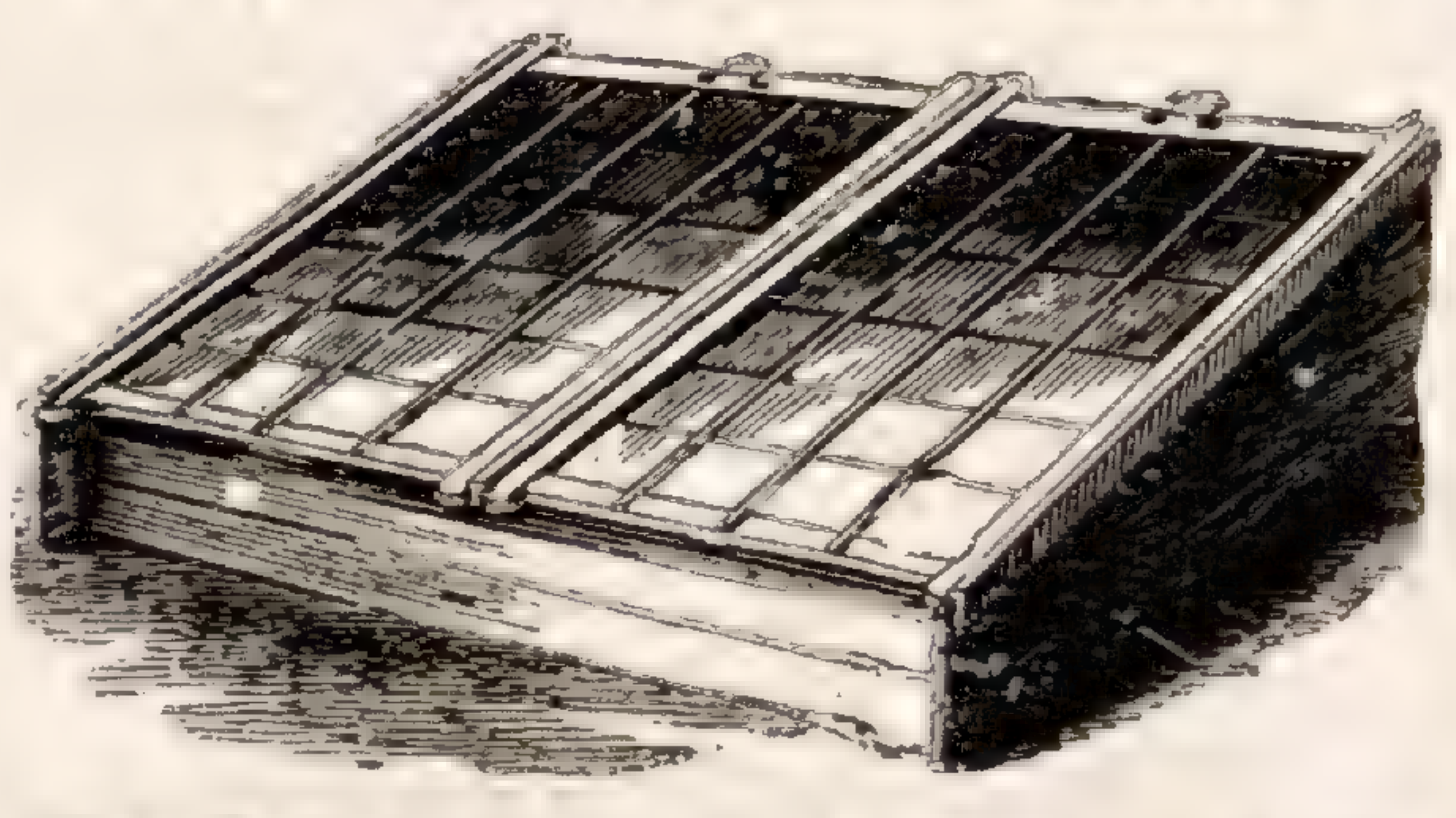

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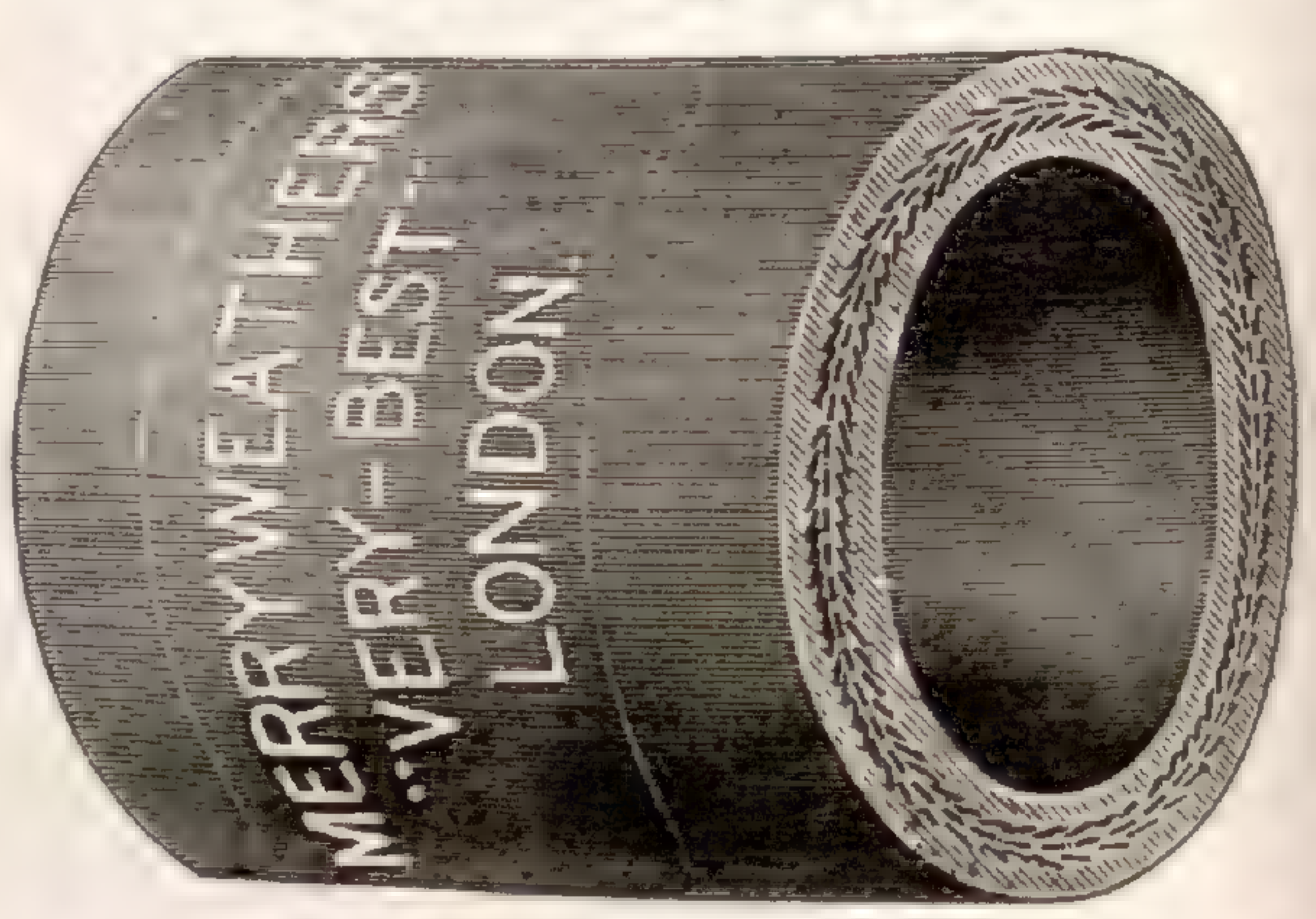

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VOL. LV.—No. 3,065. SATURDAY, JULY 27, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Horticultural Societies.

In a careful examination of the lengthy list of horticultural societies which forms so important a feature of the "Gardening Year Book," the mind becomes so impressed by their numbers that the question arises whether all or any considerable proportion of these organisations are fulfilling their mission in such manner as to render substantial service in the advancement of horticulture. The primary object of all societies that hold one or more exhibitions during the year should be the encouragement of horticulture generally, or some branch of the gardening art, and the means by which this object can be attained is the presentation to public notice of the plants, flowers, fruits, and vegetables most worthy of cultivation for various purposes, and the demonstration of the highest example of cultural skill. Societies that have not such object in view have no reason for their existence, and if they desire to have it as an essential part of their foundation, but fail to either educate their members and the visitors generally in the art of selection and cultivation, there is full justification for enquiring whether they are really serving a useful purpose. A satisfactory answer to such an enquiry as this cannot be obtained by staying at home. The exhibitions of a considerable number of societies that may be regarded as fairly representing the whole must be visited, and in an examination of the products the powers of observation should be exercised to the fullest extent. Writing with a wide knowledge of what is being done by large numbers of societies in various parts of the United Kingdom, we are well assured that those who act upon out suggestion and investigate the matter for themselves with an open mind, will agree with us that the present position of large numbers of horticultural societies should have the most careful consideration. We have had the matter in mind for some time past, and we have, as the result of observation over a wide area, irresistibly come to the conclusion that the time has arrived when an endeavour should be made to so reorganise horticultural societies as a whole as to effect a great improvement in their scheme of work. For a very long time the number has been very large, and of this number a considerable proportion have become more or less moribund and incapable of serving a really useful purpose. Some began in a small way, and have so failed to improve their position as to suggest that their foundation was due more to the desire to provide offices for individuals than to the hope that the organisations would assist in the development of horticultural enterprise in their respective districts. It is a very laudable desire to become the chairman, vice-chairman, secretary, and so forth of a society, provided there is scope for good work, but when the opportunities do not exist, and the ability is not forthcoming to make them, the society is unquestionably a hindrance to progress. At the present time, as for many years past, there is a great redundancy of societies associated with gardening, and before they can do work in proportion to the time and money devoted to them there must be a considerable reduction in their number. Leaving cottagers' societies out of consideration, all the small bodies that fail to fully justify their existence should be abolished, for they represent a waste of energy, time, and money, inasmuch as their exhibitions do not properly represent the present position of horticulture, and they have little educational value. When these have been abolished horticulturists should concentrate their efforts upon establishing a series of societies that shall be associated, not with villages and small towns, but with districts having a sufficient area to enable them to give the societies sufficient support without any considerable sacrifice on the part of individuals, and to undertake work of a higher degree of importance than is usually attempted. Strong district societies distributed over the whole of the country are the great need of the present day, and their foundation may be readily accomplished with the money that is now being wasted on the small, effete bodies that are so numerous. The district societies should be managed by committees whose members are drawn from relatively wide areas, and therefore are representative in character. To avoid the appearance of being especially associated with any particular part of the districts, the exhibitions should, as far as practicable, be movable, and be held in a different place each year, until the really suitable places have been exhausted. In some cases it will be advisable to hold the shows in the same place annually, as, for example, where the chief town occupies a central position, and there are railway or other facilities for reaching it readily from all parts. It will not be advisable to adopt a hard-and-fast rule with reference to the holding of the exhibition, but strenuous endeavour should be made to show in the clearest manner that the societies are not specially associated with particular towns, but belong to the several districts. Were this suggestion to be acted upon we should once more see at the majority of the exhibitions produce of so high a quality as to properly represent present-day skill. Societies that are

MR. E. HARRISS.

specially engaged in the encouragement of the cultivation of the products of cottage gardens and allotments are a class by themselves, and we do not suggest that they should be altered except as far as may be necessary to avoid the products of the cottagers' skill being overpowered by exhibits from great gardens, which are usually sent with the best possible, if mistaken, intentions. Neither do we suggest there should be any change in the competitions at the meetings of the gardeners' associations, for, as at present conducted, they do much good at a small cost. What we are anxious to see accomplished is the large sum of money annually absorbed by bodies incapable of useful work utilised in the creation and maintenance of societies possessing sufficient strength and vitality to exercise a decided influence for good upon the advancement of high-class gardening.

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**Mr. E. Harriss,** who has succeeded his father-in-law, the late Mr. Fyfe, as head gardener to Lady Wantage, at Lockinge Park, is quite familiar with the famous gardens now under his charge. His first gardening experience was gained at Impney Hall Gardens, Droitwich, where he served for nearly six years under Mr. Richard Parker. In 1894 he went to Lockinge as journeyman, and remained three years under Mr. Fyfe, leaving to take a charge in the fruit houses, under Mr. Owen Thomas, at the Royal Gardens, Windsor. A year or so later Mr. Fyfe offered him the position of general foreman at Lockinge, and this he accepted, filling it for three years, when, at the request of Mr. Owen Thomas, he returned to Windsor to take charge of the fruit department under glass. This onerous position Mr. Harriss filled to the great satisfaction of Mr. Thomas, and subsequently to Mr. Mackellar, for a period of twelve years, and now, for the third time, he has gone to Lockinge. It is remarkable that as journeyman, foreman, and as head gardener, Mr. Harriss has entered service at Lockinge upon invitation. Mr. Harriss's ability is of such a high order, and his knowledge of Lockinge so considerable, that we are quite certain the high position Lady Wantage's beautiful garden occupies in the horticultural world will be fully maintained under his management.

**Saltaire Rose Show,** held on July 17, was a great success. The leading rosarians were present in large numbers, and both roses and sweet peas were well and extensively shown. There was a brilliant assemblage for the opening ceremony, performed by the Lady Mayoress of Bradford, Miss Moorhouse, who was accompanied by the Lord Mayor, Alderman J. B. Moorhouse. The receipts amounted to £294, rather less than last year, and it is estimated that 8,308 persons paid for admission.

**The Clarence Elliott Trophy for Rock Garden Plants.**—Mr. Clarence Elliott, Stevenage, has presented a silver trophy to the Council of the Royal Horticultural Society, and this is to be offered to amateurs for an exhibit of alpines and plants suitable for a rock garden. The plants to be arranged with rock work, as a small rock garden, on a space 6ft. by 3ft. There must be not less than 18, or more than 24 species or varieties. Herbaceous plants, ordinarily exceeding 12in. in height, bulbs, and variegated or double plants to be excluded. The subjects shown need not all be actually in flower. The competition will take place on Wednesday, May 14, 1913, and all the plants exhibited must have been grown by the exhibitor since March 1 at least. Beauty of arrangement, the real suitability of the plants to rock work, rarity, culture, and correct naming, will be most taken into consideration by the judges. It is suggested that the plants should be grown in pots, not lifted from the open ground, but the pots should in all cases be removed before staging. A background of dwarf shrubs and conifers may be added. The Council will award a suitable medal according to merit, at their discretion, to the exhibitor adjudged second, and possibly also to the third.

**Proposed Rose Show for the City of London.**—Mr. A. E. Protheroe, of 67, 68, Cheapside, writes: "It has been suggested to me by several amateur rose growers that a rose society should be formed exclusively for City people. The primary object would be to hold an annual show in the heart of the City. I am convinced that there is ample room for such a society. There must be a very large number of keen rosarians amongst our City workers, as, indeed, a casual examination of 'buttonholes' during the rose season amply testifies. They would, I am sure, welcome an exhibition of roses in their midst, for only a comparatively small number can afford the time to attend the metropolitan exhibition of the National Rose Society or similar shows. The schedule would naturally include classes to suit the smaller as well as the larger growers, and, I think, should also have special ones for those dwelling within five and ten miles of the City boundary. Thus exhibitors would be competing against those who have to cultivate their roses under similar conditions, and this would foster a spirit of keen but friendly rivalry between the various suburbs. I shall be very pleased to receive names and City addresses of those who would be willing to join in the formation of such a society, from which a committee could be formed to carry out the working details."

**Food Value of Potato Haulm for Cattle.**—Mr. C. Bathurst, M.P., recently asked the President of the Board of Agriculture, whether potato tops were as useful food as hay for farm stock, and, if so, what treatment was necessary to render the 2,000,000 tons of haulm annually thrown away, fit for food. The reply was that green potato tops are edible, and sometimes fed to stock, but the use of such tops would injure the crop of tubers. Potato haulm, fully ripened, is quite unfit for stock feeding.

**Variation in Boskoop Giant Black Currant.**—Mr. Chas. Pearson sent shoots of black currant Boskoop Giant to the recent meeting of the R.H.S. Scientific Committee, to illustrate a variation which had apparently suddenly arisen in several localities. The leaves become much more dentate and the bushes fail to fruit. Sometimes only a portion of the bush is so affected, but frequently the whole, and in one plantation 50 per cent. of the bushes showed the variation. The Committee will welcome any observations that would throw light upon the phenomenon. It has been suggested that possibly hard pruning may have brought about the result, but there is no record so far of reversion.

**Development of Pollen.**—In a communication read at the recent monthly meeting of the Royal Microscopical Society, Lord Avebury gave a short account of the development of pollen and of recent researches on fertilisation. Lord Avebury divided pollen into: aërial pollen carried by the wind, aërial pollen carried by insects, and subaqueous pollen. The various forms of pollen were described and their distribution in the different orders enumerated. The most common form of pollen is elliptical, with three ribs, for which Lord Avebury believes there is as yet no explanation. Such pollen was originally spherical, and only assumed the elliptical three-ribbed form after leaving the anthers and losing a certain amount of moisture by desiccation. Compositæ for the most part have spiny pollen and are entomophilous, but the Edelweiss and some allied species are anemophilous and smooth. The Rosaceæ are almost all entomophilous, with elliptic pollen, but Poterium is anemophilous with spherical pollen. The willow is entomophilous, with elliptic three-ribbed pollen; the poplars are anemophilous with spherical pollen. Though the size of pollen does not depend entirely on the length of the pistil, and the length therefore which the pollen tube has to traverse, still, as a general rule, the longer the pistil the larger the grains.

**Carlisle Show and the Northern Fruit Congress,** to be held conjointly on September 4 and 5, promise to be of great interest, and the exhibition should be unusually large. The Speaker of the House of Commons, the Rt. Hon. J. W. Lowther, will open the exhibition and congress.

**Gardeners and the U.H.B.P.S.**—We are glad to learn that so many readers have acted upon our advice and applied for particulars of the benefits offered during sickness to those who become members of the United Horticultural Benefit and Provident Society. This society has now become approved by the National Health Commissioners, and there were no fewer than a hundred and thirteen applications for membership at the recent special meeting of the committee; at the previous meeting eighty-two new members joined.

**Carpenteria californica at Sherfield Manor.**—This handsome flowering shrub has seldom been seen to such advantage as during the present summer, and wherever there are established specimens there has been a wonderful wealth of its beautiful white blooms. At Sherfield Manor, near Basingstoke, two plants are growing against a south wall, and each is clothed in blossom. The unusual freedom with which the flowers are produced is probably due to the great heat of 1911, and the consequent ripening of the growth. Possibly many lovers of flowering shrubs may be induced to plant this Carpenteria because of its good behavious this year, but they must not expect to see such a profusion of flowers each season, unless the preceding summer is a hot and bright one.

**M. Lucien Chaure,** editor of the French "Moniteur d'Horticulture," has recently been awarded the rosette of an Officer of the Legion of Honour.

**Exhibition of Forced Spring Bulbs in** 1913.—A special exhibition of forced spring bulbs will be held at the Royal Horticultural Hall on March 4 and 5, 1913, the object being to demonstrate the varieties most suitable for gentle forcing. Exhibits of small and large collections are invited from amateurs and the trade, and R.H.S. medals will be awarded according to merit. The General Bulb Growers' Society of Haarlem have presented prizes totalling 21 guineas for eighteen hyacinths; 15 guineas for twelve hyacinths; £5 3s. for six hyacinths; and 11 guineas for four pans of hyacinths, ten roots of one variety in each pan. The blooms in each pan to be of distinctly different colour to those of the other three pans. For trade growers there will be a class for the finest decorative display of hyacinths grown from first-size bulbs, and the prize will be the gold medal of the General Bulb Growers' Society of Haarlem.

# NATONAL CARNATION SOCIETY.

The exhibition of this society, held at the Royal Horticultural Hall on Tuesday, July 23, was not quite so extensive as some the society has held in London; it was, nevertheless, an excellent one, and the fine quality of a very large number of the blooms staged considerably surprised many of the specialists. The brilliant and hot weather of early July, followed by many days of quite cool conditions, must have proved very trying to carnations, and the growers are to be congratulated upon the successful manner in which they overcame these climatic difficulties.

## BLOOMS SHOWN ON CARDS.

In the premier division, and in the leading class for show carnations, Mr. C. F. Thurston, Wolverhampton, led for a dozen flakes and bizarres, with full-sized, clean examples of Gordon Lewis, Admiral Curzon, Recorder, J. S. Hedderley, Ophelia, Merton, Master Fred, Flamingo, Ethel MacRae, and Torchlight; Mr. J. Douglas came second, and Mr. H. Mathias third. Five entries. There were also five competitors in the class for a dozen selfs, and here Mr. Hayward Mathias, Medstead, led with fine specimens of Maud Allen (Premier Self), E. Shiffner, Wyatt, Theodore, Gatton, Irma, Titan, etc.; Mr. C. F. Thurston came a good second, and Mr. J. Douglas had to be content with third place.

In the class for a dozen fancy carnations there were again five entries, and here Mr. H. Mathias was well to the front with a particularly beautiful box of grand examples of Donald McDonald, Becky Sharp (premier fancy, a variety raised by Messrs. A. R. Brown, Lim.), Mrs. Leo Hunter, Bombardier, Linkman, Hecla, Queen Eleanor, Erl King, Devonian, Hercules, and D. O'Connell; Mr. C. F. Thurston second, and Mr. J. Douglas third. Messrs. Arthur R. Brown, Lim., King's Norton, Birmingham, led the way for a dozen white-ground picotees out of five competitors, and their flowers were very clean examples of Mrs. W. H. Twist, Edmund Shorthouse, Janet, Mrs. H. Hoskier, Myra, Lady Maud, Dorothy, Violet, and Thos. Williams; Mr. J. Douglas second, but scoring a premier with his picotee Amy Robsart, with deep purple edge; Mr. H. Mathias third.

In the remaining large class, for a dozen yellow-ground picotees Mr. Hayward Mathias again scored a first, with Ariel, Corona, F. W. Goodfellow, Onward, Gloria, Puck, Santa Claus, and several seedlings; Mr. J. Douglas came second, and his example of Mrs. J. J. Keen was given the award as the best heavy-edged, yellow-ground picotee; Messrs. A. R. Brown, Lim., third.

## FLOWERS SHOWN AS GROWN.

Five classes were provided in the first division for flowers shown as grown, in vases. The first of these was for four vases of selfs, three blooms of each, and here Mr. J. Douglas led with Daffodil, Mrs. G. Jones, Bob Acres, and Mrs. G. Marshall, all finely staged; Mr. F. W. Goodfellow, Walsall, second, and Messrs. A. R. Brown, Lim., third. For four trebles of fancies, Mr. J. Douglas scored with grand specimens of Liberté, Lord Steyne, Edenside, and Pasquin; Messrs. A. R. Brown, Lim., second, and Mr. H. Mathias third. In the class for trebles of white-ground fancies, Mr. J. Douglas once more led, and this time scored with Delicia, Pearl, The Bride, and Montrose. Messrs. A. R. Brown, Lim., second.

Yellow-ground fancies, four trebles, brought out four competitors, and premier award fell to Mr. J. Douglas for Her Majesty, Onward, Exquisite, and Mrs. J. J. Keen; Mr. H. Mathias second, and Messrs. A. R. Brown, Lim., third. The best set of nine trebles, of selfs, fancies, and yellow-ground picotees came from Mr. J. Douglas, whose Linkman, Mrs. G. A. Reynolds, Pasquin, and Ilene were very fine; Mr. H. Mathias and Messrs. A. R. Brown, Lim., followed in the order named.

In this section Mr. J. Douglas won the trophy for the highest aggregate of points.

## SECOND DIVISION.

In this division there were numerous competitors in the classes for flowers on boards. Mr. H. R. Taylor, Cheam, scored for half a dozen flakes and bizarres, and his Black Diamond was the premier bloom of its class; Mr. W. Walker, Kilmarnock, second, and Mr. G. W. Ford, Acock's Green, third. For six selfs the prizes went in order of mention to the Rev. C. A. Gottzwaltz, Droitwich; Mr. W. H. Parton, King's Norton; and Mr. H. R. Taylor; while for half a dozen fancies Mr. Taylor led, and was followed in order by Mr. E. J. Price, Bournville, and Mr. G. D. Ford. Six white-ground picotees was a class that brought out seven entries, and here the awards were made in favour of Mr. H. R. Taylor, Mr. G. D. Ford, and Mr. J. A. Fort, Winchester; Mr. Price had the premier white-ground picotee—Fair Maiden—in this class, and Mr. H. R. Taylor, who was first for six yellow-ground picotees, had a premier bloom in Eclipse; Mr. Parton and Mr. Ford came second and third.

A quite good number competed in the division for flowers shown as grown, in vases. Mr. W. Walker led for three pink or rose selfs with Lady Hermione, and Mr. Parton was a good second. For a white self, three blooms, Mr. R. Morton, Woodside Park, scored with Mrs. Eric Hambro, Mr. Ford and Mr. W. Walker closely following. Mr. Morton was easily first for three crimson selfs, showing grand blooms of Mrs. G. Marshall; Miss Shiffner, Wallands House, Lewes, second, and Mr. A. Spurling, Borough Green, third. Daffodil was the variety shown nine times out of eleven in the class for three yellow selfs, and with this Mr. Morton came first; Captain A. G. Russell, Wheatley, Oxon, second, and Miss Shiffner third.

The class for three scarlet selfs found Mr. Parton to the front with Etna, Mr. W. Walker and Mr. Morton coming second and third respectively with Cardinal. Mr. Morton had the best three yellow-ground picotees, and Exquisite was his winning variety; Miss Shiffner second, and Mr. Parton third. For a buff or terra-cotta self Mr. Robert Morton scored with fine flowers of Elizabeth Shiffner; Mr. G. D. Ford second, and Mr. Parton third; eleven competitors. The yellow or buff-ground fancies class found fourteen competitors, and here Mr. Ford scored with Mrs. Penton; Mr. Parton second with Lord Steyne,

MR. ROBERT MORTON'S FIRST PRIZE TWELVE BUNCHES OF CARNATIONS,
With which he won the Martin-Smith Cup at the National Carnation Society's Show.

and Miss Shiffner third with Wallands. For fancies of any other ground colour Mr. Parton led with Ivo Sebright, while Mr. H. R. Taylor came second and Captain Russell third, with the same variety.

Mr. Morton continued his successes in the class for the white-ground fancies, scoring with The Nizam; Mr. H. D. Taylor second and Mr. J. A. Fort third. For three selfs of any other colour than specified Mr. D. Walker led with the deep heliotrope Jim Bludzo; Mr. L. Hart, Hertford, second, and Mr. J. A. Fort, third. The class for six trebles of selfs, fancies, or yellow-ground picotees brought out eleven competitors, and the chief prize-winner was Mr. R. Morton, who staged finely; Mr. W. H. Parton second, and Mr. E. J. Price third.

CARNATION MRS. G. JONES.

The first prize bunch of a buff or terra-cotta self carnation at the National Carnation Society's Show; exhibited by Mr. Jas. Douglas.

### THIRD DIVISION.

In the third division the classes were arranged for smaller growers, and the leading prize-winners were Mr. J. B. Willetts, Yardley; Mr. A. E. Chambers, Wellingbrough; Mr. E. W. Painter, Brentford; and Mr. C. Brown, Hatfield Peverel.

### MARTIN SMITH CUP CLASS.

Great interest always centres in this class, which is for a dozen distinct varieties, three blooms of each, selfs, fancies, and yellow-ground picotees to be represented. There were two entries, and the handsome cup fell to Mr. Robert Morton, Grange Dene, Woodside Park, for a grand lot of blooms of Lord Steyne, Daffodil, Linkman, Mrs. G. A. Reynolds, Mrs. George Marshall, Togo, Renown, Elva, John Ruskin, Margaret Lennox, Cyclops, and F. W. Goodfellow. Mr. W. H. Parton, Moseley, was second prize-winner with good vases of Soltaferre, Etna, Lord Steyne, Linkman, and Queen Eleanor.

### OPEN CLASSES.

This division required a bunch of nine blooms in each class. For a pink or rose self, Mr. J. Douglas scored with Rosy Morn; Messrs. A. R. Brown, Lim., second; and Mr. H. Mathias third. Mr. H. Mathias scored for a white self with good flowers of Titan; the Messrs. Brown and Mr. J. Douglas following. Mr. Lakeman, Thornton Heath, led for a crimson self with Mrs. G. Marshall, finely shown; Mr. H. Mathias second, and Messrs. A. R. Brown, Lim., third. In the class for a yellow self, Mr. Lakeman led among five entries with a grand bunch of Daffodil that contained the premier self flower; Mr. J. Douglas second, and Mr. H. Mathias third. Mr. J. Douglas, with Bob Acres, and Messrs. A. R. Brown, Lim., with Cardinal, were first and second respectively in the class for scarlet selfs. Among buff or terra cotta selfs, Mr. J. Douglas scored with a lovely bunch of Mrs. G. Jones; Messrs. A. R. Brown, Lim., second, and Miss Shiffner third. For any self variety of a colour not specified Mr. H. Mathias led with Helen, plum colour; Messrs. A. R. Brown, Lim., second with Clarice, and Mr. J. Douglas third with the violet-purple Purple Emperor.

In the yellow-ground picotee class Mr. J. Douglas annexed the first prize with John Ruskin; Mr. J. H. Lakeman second, with Margaret Lennox, and Mr. H. Mathias third with Gloria. Yellow-ground fancies found Mr. Douglas to the front again with Pasquin, followed by Mr. H. Mathias, who showed M. Thurston, and Messrs. A. R. Brown, Lim., who staged Linkman. Nine blooms of any other than a yellow or buff-ground fancy found Mr. Douglas once more to the front, with fine blooms of The Bride; Mr. Lakeman second with The Stoker, a dark crimson flower; and Messrs. A. R. Brown, Lim., third with Droitwich.

Mr. J. Douglas won the Cartwright Cup in this division, for "the best exhibits of any one exhibitor."

### SEEDLINGS.

In the seedling classes Messrs. A. R. Brown, Lim., scored for a scarlet bizarre or flake with Joseph Lister. Mr. Mathias had the best self with Irma. In the fancy class Mr. H. R. Taylor led with a big crimson-marked yellow ground, unnamed; Messrs. A. R. Brown, Lim., second with the pretty My Fancy. Mr. H. Mathias' Bill was the best white-ground picotee.

### CERTIFICATES.

Certificates were granted to Peggy, a white ground picotee, with light red edge, from Mr. Hayward Mathias; to Eclipse, a yellow-ground, red-edged picotee, from Mr. H. R. Taylor; to Gloria, a yellow-ground picotee with heavy rose edge, from Mr. H. Mathias; to Dago, yellow-ground picotee, with heavy bright crimson edge, from Mr. H. Mathias.

### NON-COMPETITIVE.

Several interesting exhibits from traders added to the extent and attractiveness of the show. Messrs. Webb and Brand, Saffron Walden, astonished everyone with their splendid spikes of double hollyhocks. The choice ferns from Messrs. H. B. May and Sons, Edmonton, were greatly admired. Mr. Maurice Prichard, Christchurch, contributed a host of phloxes, carnations, gladioli, etc. Mr. Chas. Turner, Slough, put up a bold exhibit of hardy flowers, and Messrs. Phillips and Taylor, Bracknell, arranged banks of hardy flowers around a water lily pool, as well as staging a collection of carnations and picotees. Mr. H. Lakeman, Thornton Heath, put up a fine lot of popular varieties of border and perpetual carnations.

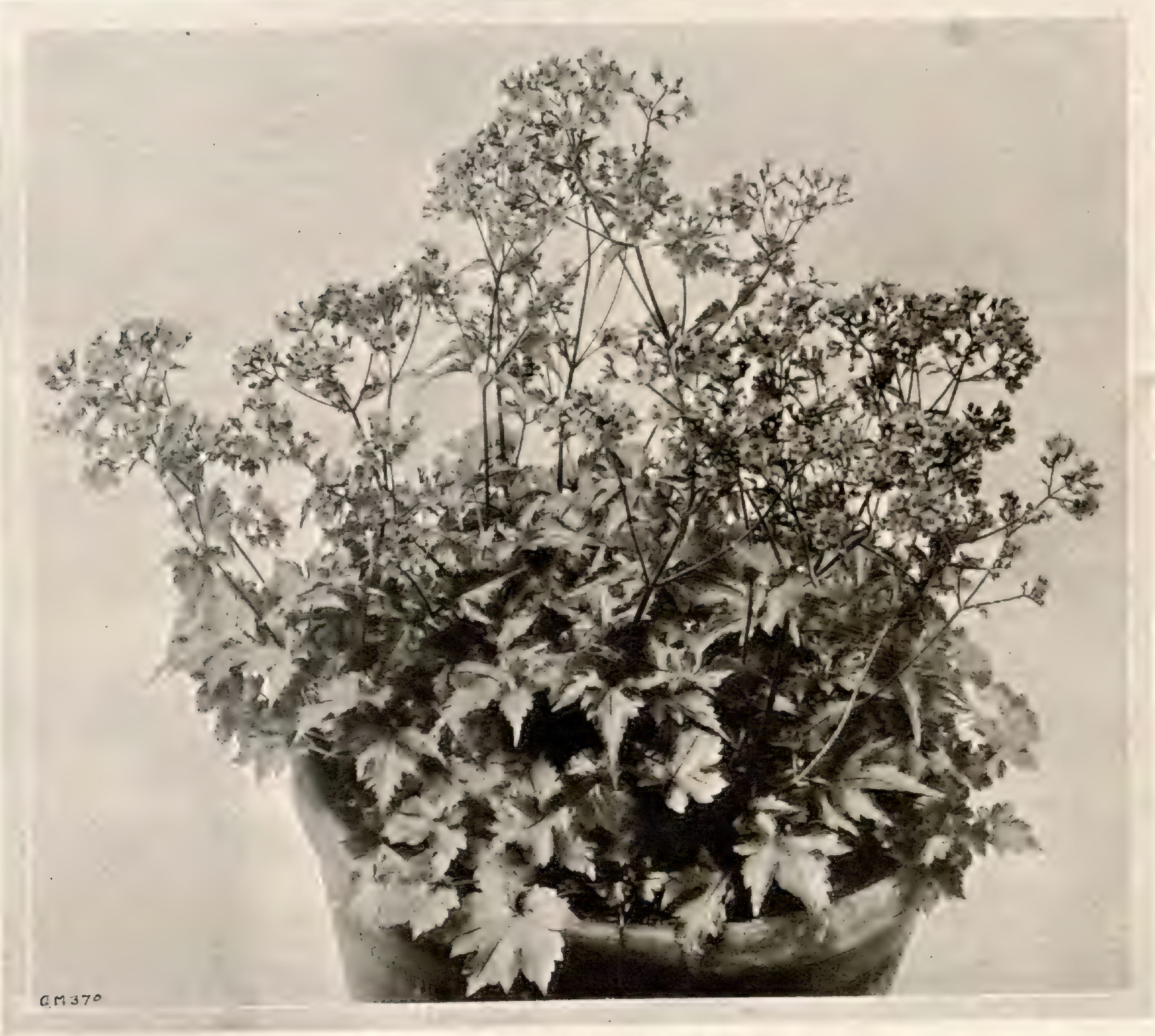
## GOLDEN-LEAVED IVIES.

Among hardy shrubs at Holland Park, a display second to none was furnished by the golden-leaved tree ivies, both grown as bushes and as standards. They are of high ornamental value, but, owing to the length of time necessary to build up an effective specimen, they always realise good prices. There is more than one golden-leaved form, but all are beautiful. Grown in pots or tubs they are exceedingly useful for various decorative purposes, especially in draughty spots where tender subjects would be liable to quickly suffer. Of climbing forms there are several whose leaves are more or less golden, notably angularis aurea, chrysophylla, digitata aurea, palmata aurea, and spectabilis aurea. Of variegated rather than golden-suffused kinds one of the newest is Hedera dentata variegata, a large-leaved, bold-growing variety, with clearly variegated leaves. Apart from their well-recognised value for the clothing of walls and similar purposes, ivies of different kinds are of considerable value as screen plants. Grown in large pots or tubs, and trained fan fashion, they are exceedingly useful for screening any unsightly feature. The fact that, grown in this way, they may be moved to wherever required is a great point in their favour.—T.

## NEW PLANTS, ETC.

### CATTLEYA WARSCEWICZI ALBA VAR. FIRMIN LAMBEAU.

This unique and extremely beautiful orchid appeared first in the United States, and there created a great sensation among orchid lovers. Quick to appreciate its beauty and worth, Messrs. Stuart Low and Co., of Enfield, purchased it, and eventually sold it to Mons. Firmin Lambeau, whose gardener, Mons. De Munter, has cultivated it most successfully. A figure appeared on p. 549 of our issue of July 20. The specimen carried three large flowers, wholly pure white save for pale lemon-yellow shading in the throat of the lip. First-class Certificate and Gold Medal, R.H.S., July 16. Mons. Firmin Lambeau, Brussels.



NEPHROLEPIS EXALTATA MUSCOSA.

An elegant, dwarf variety, with sturdy, somewhat erect, light green fronds. F.C.C., R.H.S., July 16. Messrs. H. B. May and Sons, Upper Edmonton.

### PLAGIANTHUS LYALLI.

This beautiful summer-flowering shrub, also known as Gaya Lyalli, is hardier than many people imagine, and this year it appears to be flowering with unusual freedom. As the illustration shows, the white, semi-pendulous, hibiscus-like flowers are crowded together. Each bloom is about an inch and a half across, and saucer-shaped. A note on the cultivation of this New Zealand plant appears elsewhere in this issue. F.C.C., R.H.S., July 16. Messrs. Robert Veitch and Son, Exeter.

### GLADIOLUS LANG-PRIM STRAIN.

By crossing the soft yellow Gladiolus primulinus, which hails from the falls of the Zambesi, with forms of Gladiolus gandavensis, etc., the Langport firm has evolved a new strain of graceful habit and form. The new varieties show in a marked degree the influence of G. primulinus, and, as we have already noted, Ella Kelway, Wraith, and Queen of Fairies are particularly good varieties of this new strain. A.M., R.H.S., July 16. Messrs. James Kelway and Son, Langport, Somerset.

### NEPHROLEPIS EXALTATA MUSCOSA.

Many of the newer plumose forms of Nephrolepis exaltata differ so little from each other that only experts can distinguish them, but this new-comer is very distinct, and promises to take a place among the very best of the long series of varieties we now have. It is of dwarf, compact habit, its light green, stiff fronds being well divided, but not so finely cut up or so soft to the touch as in the case of many other forms. If it maintains its present habit it will be very useful, as there is room for a small and beautiful fern that will last a long time in the house, as well as for the larger fronded sorts. F.C.C., R.H.S., July 16. Messrs. H. B. May and Sons, Upper Edmonton.

### PATRINIA PALMATA.

An interesting hardy perennial that promises to be a useful plant for the rock garden. It is of lowly growth, the palmate or trilobate leaves rising but a few inches above the ground. The small clear yellow flowers are produced in branched, flattish corymbs, and are fairly numerous. A.M., R.H.S., July 16. Miss Willmott, V.M.H. (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Great Warley, Essex.

### CROSSANDRA UNDULAEFOLIA.

This old stove plant is rarely seen in such fine condition as shown from the Burford Lodge Gardens. It is easily grown, and produces fairly large, brilliant salmon-coloured flowers in succession along an erect spike. Such a useful summer-flowering stove plant deserves wider cultivation. It is a native of India and the Malaya. A.M., R.H.S., July 16. Sir Trevor Lawrence, Bart. (gardener, Mr. W. Bain), Burford Lodge, Dorking.

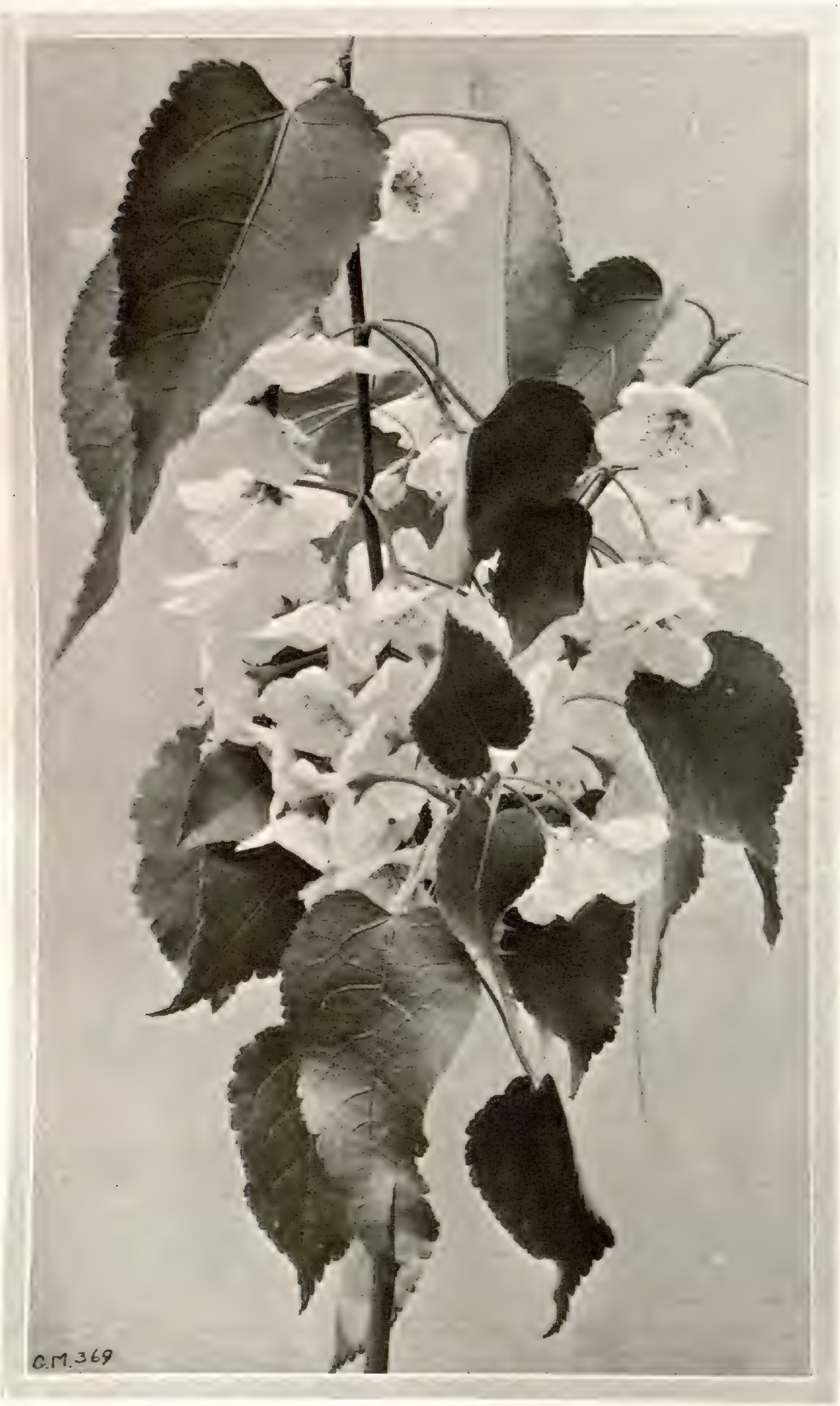
### ASTILBE RHENANIA.

A pretty variety obtained by crossing A. Arendsi Ceres and A. Queen Alexandra. It bears elegant, erect spikes of pink flowers, the tiny petals being violet-purple at the tips. A.M., R.H.S., July 16. Mr. W. Profittlich, Twickenham.

### NYMPHÆAS.

Attraction.—A very fine water lily with flowers fully nine inches across, bright crimson, shading to deep rose at the tips, and with a central cluster of orange stamens. A.M., R.H.S., July 16. Leopold de Rothschild, Esq. (gardener, Mr. James Hudson, V.M.H.), Gunnersbury House, Acton.

Formosa.—This beautiful variety is deep rose-pink, the back of the segments being flushed with crimson; stamens yellow. A.M., R.H.S., July 16. Leopold de Rothschild, Esq.



PLAGIANTHUS LYALLI.

A New Zealand shrub, producing white flowers freely during the summer. F.C.C., R.H.S., July 16. Messrs. Robert Veitch and Son, Exeter.

### ZYGOPETALUM BREWI.

A pretty, low-growing hybrid derived from Z Perrenondi and Z. rostratum. The flowers are of fair size, the sepals and petals green, tinged with purple, and the large lip cream-coloured, with a large rich rosy area and a bluish crest. A.M., R.H.S., July 16. Messrs. Charlesworth and Co., Hayward's Heath.

### ODONTOGLOSSUM EPICASTE.

The parents of this hybrid are O. Clytie and O. crispum, consequently the flowers bear a close resemblance to those of O. Thompsonianum. The flowers are rounded, of moderate size, and of intense blackish-purple colouring, probably the darkest hue yet seen in an odontoglossum; each segment has a fine edging of rose-purple. A.M., R.H.S., July 16. Messrs. Charlesworth and Co., Hayward's Heath.

### PEACH ROYAL CHARLOTTE.

This may be briefly described as a highly coloured Noblesse peach. It is an old, richly-flavoured, and useful variety that has borne numerous titles. A.M., R.H.S., July 16. Sir Trevor Lawrence, Bart. (gardener, Mr. W. Bain), Burford Lodge, Dorking.

"Carnations, Picotees, and Pinks" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## CAULIFLOWER DWARF MAMMOTH.

That there are many varieties of cauliflower goes without saying, but they are all, at times, unsatisfactory. Seasons are not always quite what these plants delight in, and other reasons there may be for them not producing good heads of flower. It is the practice with many gardeners to sow in the autumn to have plants come in to follow the late broccoli. For my own part I have never yet been able to see what is gained by such procedure. It may be that I have not been so successful with autumn-sown plants as with spring-sown. My objection to sowing in the autumn is that the plants, more often than otherwise, become stunted in growth through frequent checks, and often, when placed in their open quarters, prematurely form "heads" before they make sufficient growth. A cauliflower, to be succulent and good, should make a steady progress from the time the young plants are formed until the "heads" are fit for cutting. Plants, therefore, from seed sown early in the year have a much better chance of continuous growth than do those from seed sown in the autumn.

The advantages of sowing seed early in the year is fully demonstrated at Hackwood. I fancy some of the wiseacres thought that with the arrival of a new gardener onion growing might cease, but it has not done so. Onions still flourish there, as do other vegetables, notably cauliflowers. There is at the time of writing, several fine quarters of the cauliflower under notice. Mr. West informed me that the seed was sown the second week in January, and he is now cutting "heads" fit for any exhibition table. The variety is correctly described as dwarf, for there is practically little stem. The stock of Carter's Dwarf Mammoth is evidently a good one, and is evidence of what selection and re-selection will do in producing good strains of vegetables.

Paul T. More.

## PLAGIANTHUS LYALLI.

There is ample reason why more use should be made of this shrub for it is very showy, and blossoms during late June and early July after the greater number of flowering shrubs are over. A native of New Zealand, it is found wild in mountainous districts at altitudes of 2,000 to 4,000ft., where it grows into a large bush, sometimes 30ft. high. In this country it forms a wide-spreading bush in the open, 6 or 8ft. high, although under very favourable conditions it will probably grow larger. The ovate leaves are 4 to 5in. long, and the white flowers are borne three to five together in axillary clusters, each flower measuring from 1 to 1½in. across. Its nearest relative amongst hardy shrubs is the well-known Hibiscus syriacus, and similar culture is required by both shrubs. Rather light, well-drained, loamy soil and a sunny position offer suitable conditions, and in the warmer parts of the country open border culture is quite satisfactory. In colder districts, however, it is advisable to give it a place against a wall. It will pass through ordinary winters without injury, but a spell of severe frost may injure the younger branches; a vigorous plant, however, is rarely killed outright. Cuttings of half-ripened wood inserted in sandy soil in a close frame in July may be rooted, although there are many easier shrubs to propagate.

W. Dallimore.

Kew.

## SOME USEFUL BORDER FLOWERS.

### COREOPSIS GRANDIFLORA.

Although this plant is perennial, yet the most satisfactory results are obtained when it is treated as a biennial. It is a beautiful subject for a summer display in the flower borders, and deserves to be extensively grown. The fine yellow blossoms are borne in great abundance on wiry stems, and produce a grand effect when several plants are massed in good-sized groups. The flowers are extremely useful for table decoration, and a goodly number should be grown in the reserve garden for the supply of cut flowers.

Seeds are best sown during July, in pans or boxes, and placed in a cold frame to germinate. When the seedlings are of sufficient size to allow handling, transplant them into boxes, and afford frame treatment until established. When ready plant into nursery beds, where they make good stock for the following spring planting. April is the most suitable time for transferring them to their permanent quarters, and, if lifting and replanting are carefully accomplished, there is little fear regarding their future welfare.

Supporting the plants is necessary to maintain them in an upright position, for their beauty is altogether lost when the growths are allowed to fall over. A neat, slender stake, placed to each central growth, will be found to provide all that is required to keep the plants erect.

### PERENNIAL GAILLARDIAS.

These may be numbered amongst the most showy of all the summer border flowers. Brilliant effects are obtained by grouping several plants together in the foreground of the borders. The flowers are of immense value for room decoration, especially if used with some light material, such as gypsophila, and they are very lasting in a cut state. Although of perennial habit, the plants frequently die out when grown in wet, cold borders. A rich soil, in a warm, sunny position, is necessary for their successful cultivation; and, given this, the plants will survive two or three seasons, and sometimes longer. After flowering for three years they usually show signs of deterioration, and a fresh stock of young, vigorous plants should take their place.

Gaillardias are readily raised from seeds sown in July, and the young plants treated in the same manner as biennials, when they will flower well the following season.

If seeds are sown early in February, and the plants put out into their permanent quarters when large enough, a few flowers are obtained the first season. A good strain of seeds should be procured from a reliable source.

When it is desired to increase the stock of the named varieties, propagation by cuttings must be resorted to. To accomplish this successfully, the cuttings must be taken either in the spring or autumn. If taken during the former season, a little artificial heat is necessary to root them; while, if early autumn propagation is followed, they will root in a close cold frame. Plants rooted in the early part of the year should be put out into nursery beds, where they will make fine clumps for planting out either in the following autumn or spring. Autumn-struck cuttings should be potted up and wintered in cold frames. There are many lovely named varieties now obtainable, yet splendid results are to be had from a packet of seeds.

### PAPAVER NUDICAULE.

During late years a great improvement has taken place among the Iceland poppies, and, instead of only having the white, yellow, and orange forms, there are now many beautiful shades of colour. The flowers are extremely light and graceful, resembling crimped tissue paper when first opening from the buds. They have fairly good lasting properties, and are very effective when used for filling small glasses. A well-drained soil suits the plants best, and a sunny position should always be selected for their cultivation. Plants raised from seeds sown in February will flower the following summer, but the most satisfactory results are obtained from those raised from seeds sown in July. The seeds should be sown in pans, and germinated in a cold frame. The seedlings must be pricked off into boxes as soon as they are large enough to handle, and afforded cold-frame treatment until established, after which they must be gradually hardened off. In favoured districts, where the atmosphere is fairly dry during the winter, these poppies should be put into their permanent quarters during the autumn; but when there is any doubt regarding their hardihood, cold-frame protection should be afforded through the winter, planting them out in the following spring.

MR. F. DENNISON'S FIRST PRIZE SET OF TWENTY-FOUR ROSES at the Belfast Show. These flowers won the Amateur's Trophy.

In many gardens these beautiful little poppies reproduce themselves freely from seeds, and seedlings are frequently met with springing up in hard gravel walks at the base of a rockery. In less favoured gardens it is a difficult matter to keep the plants alive through the winter, owing to so much dampness. Where this trouble is experienced, it is advisable to protect the plants through the wet winter months.

### PYRETHRUMS.

The double and single pyrethrums are highly appreciated both for the adornment of the flower borders and for room decoration. The chrysanthemum-like flowers and light, feathery foliage, produce an effective display, either when growing in the border or in a cut state. There are many beautiful named varieties, both in the doubles and singles, but undoubtedly the latter are prettiest. Propagation is accomplished by dividing up the old plants and by seed-sowing. When it is desired to increase the stock of named varieties, division has to be resorted to. This operation should receive attention immediately the flowering season is over. The plants are lifted and carefully split up into small pieces, with roots attached to each piece, and planted in well-prepared nursery beds, where they will make good plants for putting out in the following early spring. If autumn-planting is preferred, the strongest plants may be selected and put out at such a time, leaving the small ones until the turn of the year in early spring.

It is an easy matter to raise a stock from seeds, and fine varieties may be obtained if seed from a good strain is sown. The seeds should be sown and the seedlings transplanted as advised for the poppies, eventually planting the latter into nursery beds when they attain sufficient size. Flowers are produced the following summer, according to the size of the crowns. The greatest enemies the pyrethrums have are slugs. These pests quickly destroy the young shoots before they appear above ground, and every endeavour should be made to prevent this. E. C. POOLEY.

Gnaton Gardens.

## SAWDUST MANURE.

I was much interested in the note on this subject which appeared on page 502 of the GARDENERS' MAGAZINE for July 6. In several large towns, to my knowledge, it has been a difficult matter to obtain manure free from sawdust and shavings and chips. Scores of tons of wood chips are used every year for bedding down cattle and horses, chiefly the latter. Undoubtedly, the sawdust retains practically all the valuable manurial liquid. There is, however, one matter connected with the use of sawdust and chips which is, to my mind, disturbing, namely, the danger of fungus trouble in the coming years where such material is used regularly. I would like to have some assurance on this point before using the wood in soil generally. Quite recently I remarked on the vastly improved appearance of the shrubs, trees, etc., in a nursery to a foreman in the said nursery, and he replied, "Yes; they are all looking well. We have stopped the use of sawdust and wood chips in the manure."

In Cheshire, my father used to bed down the cattle with "roach," i.e., the sandy portion sifted from the chipping from a neighbouring quarry. The bed was dry, the cattle warm and very clean; scarcely any liquid ran away, but was absorbed by the sandy roach. The manure, as collected, was duly stored, and, in time, used on the farm fields, both for grass and root crops, and it proved better than any of the manures with straw litter. The grit also improved the soil, which was very clayey.

GEO. GARNER.

# GARDENERS AND GARDENING.

## A Gardener's Education.

The recent conference at the International Horticultural Exhibition on the "Education of a Gardener" appears to have set many minds at work upon this all-important subject. Many and varied are the opinions expressed by writers, and many have criticised the present-day, haphazard system of educating the gardener. It is haphazard; in fact, there is no system in it. Mr. Hales aptly described it in his paper as "drift." Many writers have also come down hard on the purely college-trained man, and doubtless with good reason.

While we have had much criticism, we have had no serious attempt to outline or construct a scheme of training that will be any better than the present method. Now, I think there is very little good done by criticism unless something constructive is also suggested. We must be very, very careful as to what system we adopt if we are to bring practice and theory closer together. There is, and perhaps always will be, a tendency for practice and science, or theory, to diverge. I think most will agree that it is impossible for one man to be expert in practice and also expert in science. The two are so widely different that the thing is impossible. I admit that science and theory might be brought much closer together than they are at present, but that one man can be expert in both I deny. The whole tendency of progress is to separate them.

It is suggested that there should be some system of examinations, and that a National Diploma in Horticulture should be established. An excellent idea, but one which our severely practical friends will regret. One writer has referred to the fact that many gardeners are not too well educated. Now, the establishment of a N.D.H. will bring an entirely different class of men into the profession, provided it is anything similar to the National Diploma of Agriculture. The establishment of a N.D.H. means that gardeners who wish to obtain the honour must go through a college course. Horticulture is advancing, so much so that instead of recruits coming solely from the working classes, we shall find the middle classes taking up the profession.; The establishment of the N.D.H. will mean that only those holding the diploma will be able to secure good positions. The remuneration of these positions may not be very high at present, but the establishment of a criterion of ability will soon alter that.

We have a National Diploma in Agriculture, but we do not find the working classes studying for it. The holders are almost entirely middle-class men, and, what is more, they are mostly University or college-trained. Why, the courses at our agricultural colleges are arranged entirely for students studying for the N.D.A. Horticulturists look askance at college-trained men, yet this diploma for the establishment of which they are clamouring will be gained almost entirely by college-trained men, unless means are taken to prevent it. This may be rather a nasty pill to swallow for our severely practical friends, but, nevertheless, I believe it to be true, and I cannot say I am sorry. The better educated the men are who enter the profession the better will it be for horticulture.

It is all very well to sneer at a knowledge of classics, or of mathematics, but to do so is to show that we have not grasped the real meaning of education. It is education that has made the difference between the classes, and this difference is not only that one man has a knowledge of Greek or mathematics, while the other lacks it. The difference is something deeper and more difficult to grasp than that, and to deny it is to deny the whole benefits of education. Some say that the distinction between the classes is more marked at the present day than it has been before, but it is not. Class distinction was never less prominent, and education is the reason.

Now it must be admitted that anything which will debar the son of a working man from the honours of the profession of horticulture is not desirable. Most of the great horticulturists are, or have been, the sons of working men, and at the present day the majority of the best positions in the profession are filled by men who began in the humblest or lowest ranks, and have risen to their present status solely through their grit and individuality. Now, if we establish a N.D.H., and do not devise some means to place the honour within reach of working men's sons, we shall, as I have already stated, find the best positions filled with men from the middle classes.

Perhaps, as I have already exceeded the space limit, I may be allowed at some date in the near future to give my views as to how the N.D.H. could be established so as to eliminate the disadvantages mentioned above. J. C. W.

Kingston, Derby.

## The Head Gardener's Responsibility.

"H. C. P." very truly states that, considering the many and varied qualifications a gardener should possess ere he can take a responsible position as head gardener, his remuneration is very poor indeed. How are we to raise the status of the rising generation of gardeners? I suggest two things. Firstly, a National Union of gardeners; secondly, that head gardeners should take more interest in their journeymen.

At present, in a great many establishments, a journeyman inside has very little opportunity of learning the rudiments of outdoor gardening. His place is inside, and on no account must he go into the kitchen garden unless sent, which is very seldom. How then are our young men to gain the knowledge necessary to obtain a head gardener's post? Some head gardeners of my acquaintance never worked outside at all in their early days. Why not let the young men take an interest in all departments, and help all round occasionally? I know it might be difficult to arrange this in some gardens, but it would encourage those that really take an interest in their work, and enable us to weed out the wasters.

Consider the second man, or foreman. Let him take his place as second, not as first journeyman or foreman inside only. My idea of that post is that the man should take rank next to the head. How can he improve his knowledge of kitchen garden, pleasure grounds, and general work outside, if he is always tied to the houses, as so many are? Unless he has had several situations and been given a charge in one or more (which is unlikely), he is lost if the head is ill or called away, and he can look in vain for respect from those supposed to be under him.

In many places journeymen regard the head gardener as someone to stand in awe of, and they have to be practically their own tutors. Should they desire a change from one department to another, they, through no fault of their own, have to start a long way down the ladder again, and are no better off whatever. Among the half-dozen or so large establishments I have been in, only one of the head gardeners made a real attempt to improve the all-round condition of those under him. He was a man among men. Many are in similar positions, I regret to say, who seem to care little or nothing for the improvement or welfare of the young men. Let us then help, and do all we can to lay a good foundation of knowledge, as well as discipline, in those under us. When there is more sympathy between the head gardener and his subordinates, then, and not till then, shall we raise the status of gardeners and gardening. B. W. H.

Witley.

# NEW HYDRANGEAS.

An interesting series of new hydrangeas was shown in the French section of the International. They were exhibited by M. Moullière, of Vendome, who will be remembered as the raiser of that white variety, with huge heads of bloom, Madame E. Moullière, which, first brought forward two years ago, is now extensively grown in this country.

Of the new varieties shown the following were especially noteworthy: Ronsard, a light flower, which a markedly pink centre, and the large sterile blooms much serrated at the edges; La Perle, white, deeply toothed; President Fallieres, huge heads of bright pink flowers; Lilie Moullière, rich rose flowers, with a light centre; and Directeur Vuillermet, rich pink, much serrated. Some richly-coloured blue hydrangeas were also exhibited by M. Farjelon.

Beside these garden varieties one notable species was shown, and given an Award of Merit. This was Hydrangea Sargenti, a native of China. It is a robust grower, with very large velvety leaves, curious scale-like hairs on the stems, and widespreading heads of blossoms. The large sterile ones are, however, very few in number, so that it is not particularly showy. The small fertile blooms are bluish. K.

# GENISTA VIRGATA.

This is one of the most effective of those flowering shrubs that are at their best during June and July. It attains a height of over twelve feet, and is as far through, while its bright yellow flowers, produced in racemes at the end of the shoots, render it an especially handsome object. It is perfectly hardy, and succeeds in almost any situation, excepting where the soil is very wet and heavy, but a position sheltered from the high winds is desirable.

This genista is probably seen at its best when planted as an isolated specimen on the grass, where it has ample space to develop its dense, bushy habit. It is necessary for it to attain a fair size before it displays its full beauty. Like the other members of the genus it is most readily propagated from seeds, and the young plants should be grown in pots in a cool frame until, as good-sized specimens, they are ready to plant in their permanent quarters. J. Gardner.

# THE SPANISH BROOM.

In any selection of flowering shrubs that can be depended upon to maintain a display of blossoms during the latter half of the summer, the Spanish Broom (Spartium junceum) must be included. It is fairly well known, and cheap, yet at the same time it might with advantage be more often met with than is at the present time the case. This broom is too well known to need any detailed description, therefore it will suffice to say that its comparatively large pea-shaped blooms are of the richest golden-yellow tint, and borne freely on the long deep green rush-like shoots. It will run up to a height of six feet to eight feet or more, and when overtopping a bank of low-growing shrubs it has a very pretty effect. Beside this, when standing singly so that the long, slender shoots are allowed to dispose themselves at will, it forms a decidedly graceful specimen. It will succeed better in town gardens than it is generally given credit for. This broom is readily raised from seeds, and favourably situated the young plants grow away freely. Like most of its allies, the root system consists of a few deep descending ones with scarcely any fibres, so that established specimens transplant very badly. S. W.

## HYACINTHS IN POTS.

The first essential to success with hyacinths is good bulbs. If they are bought at auction sales at three or four shillings a hundred only disappointment will result, for though such bulbs, when planted about in shrubberies and wild gardens will yield a certain proportion of flower spikes, when we take the trouble of growing them in pots we want every bulb to be at least good, if not of the best. The next most important point is early potting, the middle of September being a good time to begin, and by making two or three pottings at intervals of a fortnight from then a longer succession of flowering may be obtained. They like a rich sandy loam, and the compost may consist of three parts turfy loam and one part leaf-mould, with the addition of some rotted manure, sharp sand, and bone-meal, the latter at the rate of a quarter of a pound to the peck of soil. The bulbs should be so potted that the crown of the bulb is just level with the surface of the soil, which latter should be a good half-inch below the rim of the pot, hyacinths needing a good deal of water when flowering.

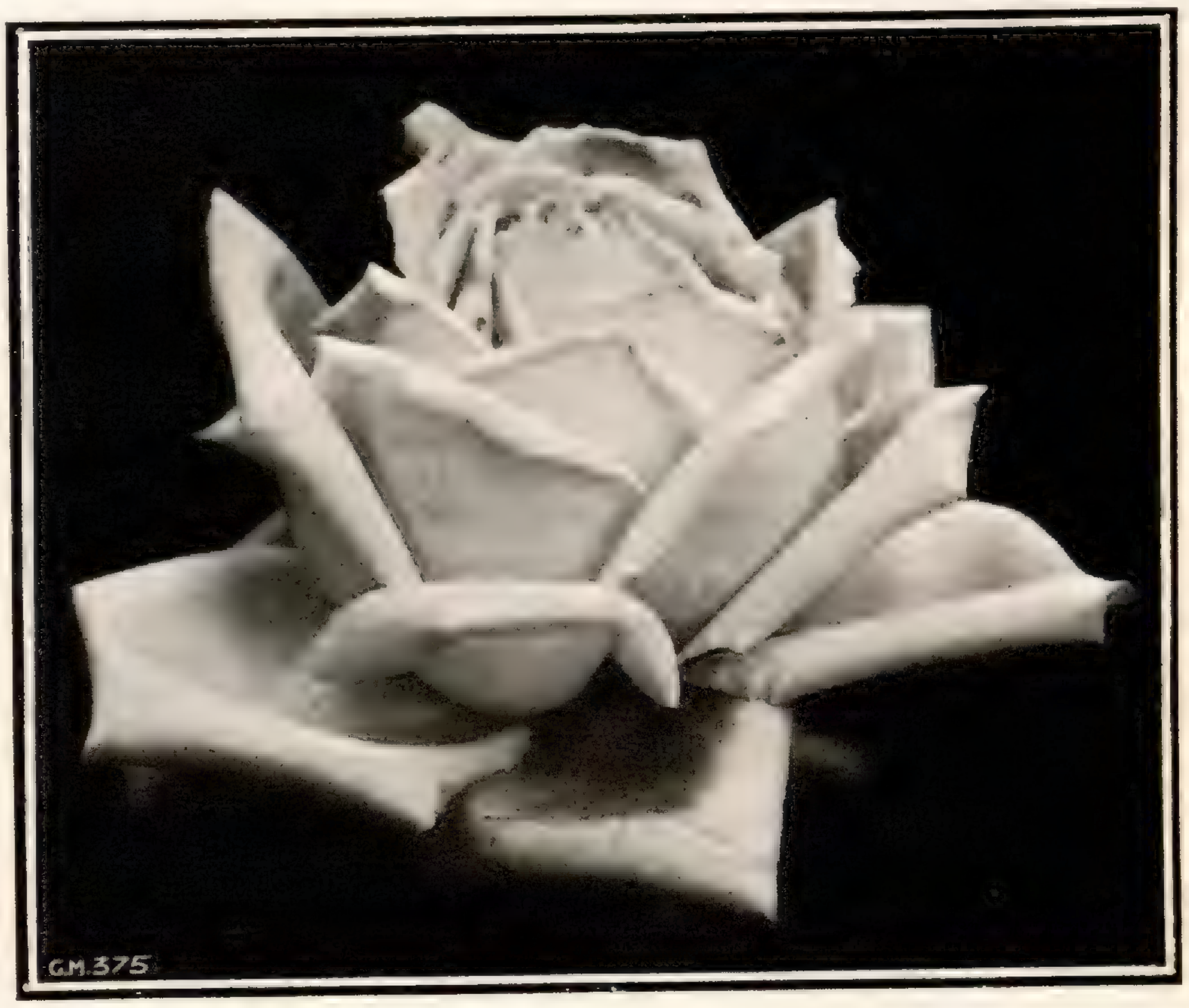
The bulbs need not be given an undue amount of root run, unless the flowering of the bulbs another year is a consideration, as they do very well when root-bound if well watered. A large bulb will succeed in a forty-eight, three medium bulbs in a thirty-two, or three, or even four, large ones in a twenty-four. The pots should be well watered once, set on boards under a north aspect, and covered with four to six inches of cinder ashes or cocoa-nut fibre refuse, being left untouched until they have made an inch of top growth, which will be in about three months. Then, as many as are wanted for the first batch should be moved indoors, and put in a subdued light until the shoots have become nicely green. An inverted flower-pot over the bulbs is a good plan to prevent excess of light and drought, both of which are very harmful to them at this stage. After this they may be set in a cold house or frame, which is protected from sharp frost, or gently forced in a warm house in which the temperature does not rise above 60 deg. As forcing is not consistent with the most finely developed flower-spikes and greatest depth of colour, a compromise has to be effected. If no other accommodation is available they may be put in a sitting-room window in full light after the spears are well greened. The important thing is to give them plenty of air and light, keeping them close to the glass of a frame or house, so that the foliage may not be developed out of proportion to the flower-spikes.

When the leaves have attained their full colour weak liquid manure may be given them once a week, and the pots should never be allowed to become dry, though, of course, they should not be kept standing in saucers of water. As soon as flowering is over they should be turned out of the pots and planted just as they are in hardy flower borders, shrubbery borders, by the side of woodland walks, and the like, where some of them will flower for several years. They may, however, be taken up out of the ground as soon as the foliage has died down, and some of the best selected for potting another season, but the practice is not recommended as they are seldom very successful as pot bulbs a second time.

By gently forcing the first two or three batches taken out of the ashes, putting the next two or three in a cold frame, and leaving the remainder to come into flower in a shady position, hyacinths may be obtained in flower in pots from the middle of January to the middle of April, and even a week or two outside these extremes. The great mistake often made in forcing is giving the bulbs insufficient time to form a good rooting system before forcing begins, the prime necessity being that the root growth should always be well in advance of the top. Algee Petts.

## WEIGELAS OR DIERVILLAS.

In making a selection of flowering shrubs, space should, if possible, be found for a collection of weigelas, as they form interesting objects either planted in groups or grown as single specimens when, during the month of June, the wealth of bloom produced is always attractive. A short time ago I saw a long row of these grown as standards, planted along a terrace. The stems were about five feet high, and so well had the plants grown that the long sprays of bloom reached near to the ground. The trees were planted about twelve feet apart, but as they had been pruned each season after flowering they had not become overgrown, so presented a neat appearance. To induce the plants to bloom freely they should be grown in an open, sunny position in order that the young shoots may become thoroughly ripened. It is useless to plant weigelas under the shade of trees or crowd the plants together in a shrubbery border, as they soon become a thicket of wood and produce but little bloom. Though weigelas will grow in almost any soil or situation, they thrive best in a rich loam, and an open, sunny position. Ample flowers will result under these conditions. The shrubs will withstand the most severe winters in this country uninjured, therefore may be planted in places where many other shrubs of a less hardy nature would suffer.



NEW H.P. ROSE CORONATION.
Colour soft clear pink. Gold Medal, National Rose Society, Belfast, July 19; Messrs. Hugh Dickson, Lim., Belfast.

The weigelas are easily propagated either by suckers, layers, or cuttings, and if by the latter mode, they should be inserted in the open ground during the autumn. If standards are desired, then run up a young shoot until it attains the desired height, when it should be pinched to induce the top buds to break, and so form a head.

There are several species of weigelas, but the most common are those varieties of the rosea type, and they form an interesting group. I have seen them growing freely in exposed situations, but have never seen them bloom so freely as they have done this year. The management of flowering shrubs is one of those branches of horticulture that receives but scant attention in most places, many of the kinds being planted and allowed to ramble at will, when they soon become a thicket of useless growths. They are either pruned at the wrong time or in an improper manner, the results being anything but satisfactory. Most deciduous flowering shrubs bloom on the young shoots, therefore these should be encouraged to develop themselves as much as possible in the early part of the season, so that the wood may become thoroughly ripened before the autumn. If due attention be paid to them we should hear of fewer failures.

Plants of all kinds are so often intermixed in the shrubbery borders that the strong-growing sorts soon overshadow the others, with the result that many which might be of interest become lost in the thicket, or are crowded out of existence, whereas had due consideration been given them the whole might have proved a source of pleasure and enjoyment. P. P.

**The Orange Lily** (Lilium croceum).—Of border lilies this species, which is a native of Switzerland and Northern Italy, occupies a foremost position, for it is one of the most dependable of all. The flowers are upright, and borne in good-sized heads, their colour being an attractive shade of reddish orange. They retain their freshness for a longer time than the different forms of the allied L. davuricum or umbellatum. Good examples of the orange lily are frequently to be seen in cottage gardens, a well-drained loamy soil being essential to its well-doing. When associated with delphiniums in a large bed a very pretty effect is produced. In some of the Continental catalogues the orange lily is to be met with under the specific name of aurantiacum.—W. T.

## THE MONTHS OF ROSES.

June and July are, according to tradition, the months of roses, but, with the aid of the more recent varieties, roses may be had in abundance for a much longer period.

> "I saw the rose grove blushing in pride.
> I gathered the blushing rose, and sigh'd—
> I come from the rose grove, Mother;
> I come from the grove of roses."
>
> —*Gil Vicenti.*

A Moslem tradition is that when Mahomet took his journey to heaven, the sweat which fell on the earth from the prophet's forehead produced white roses, and that which fell from Alborak, the animal on which he rode, produced yellow ones.

And the Greek poets tell that originally all roses were white, but were changed to red from the blood of Venus, who lacerated her feet with the thorns.

The earliest certain trace of the cultivated rose is from the pen of Herodotus, who tells that the two sons of King Temenus fled from Macedonia, and took up their abode in the gardens of Midas, where roses grew of themselves so sweet that no others could compare with them.

The rose is the badge of England, and John Gaunt used a red rose for his device in right of his wife, Maud of Lancaster, and Edmund, his brother, took for his a white rose, which their followers bore in the long wars between the houses of Lancaster and York; and long before this, at the seat of the latter at Longleat, in Wiltshire, in the garden there, grew a white rose tree, which bore upon one branch a fair white rose on one side and as fair a red rose on the other.

At one time there were no roses in England other than the wild forms, and tradition tells that they were brought here by the Crusaders from Damascus, where the hedges are choked by their boughs, and the very air loaded with their breath; and where no other roses will grow "sweet as Damask roses," wrote Shakespere.

Nearly all cultivated roses were budded or grafted on the common hedge or dog rose originally; of this rose Sir Thomas Browne writes that the beards in the leaves thereof of two are smooth, and have no beard, while the other two leaves are beset with beards on either side, but the fifth leaf is half smooth and half bearded, and in olden days there was some poetry in Latin about this, which translated reads:

> "One summer day, in sultry weather,
> Five brethren were born together;
> Two had beards and two had none,
> And th' other had but half a one."

Pliny tell how a drink made from the root of this rose saved a life; it is also called the Canker rose, and Shakespere writes:

> "The canker blooms have full as deep a dye
> As the perfumed tincture of the roses:
> But for their virtue only is their show;
> They live unwoo'd, and unrespected fade,
> Die to themselves. Sweet roses do not so."

In the poetic world the first honours have been awarded to the rose; for why, no one can tell, unless for its exquisite perfume and colour, so tender that the wild bee nestles in its scented bosom.

The yellow rose has been called the best of all the roses in the world, and came from the East.

The rose is symbolical of love, beauty, and innocence, and has furnished lovers and poets with more comparisons and imagery than all other flowers taken together; roses were more highly prized by the Romans than any other flower.

The nightingale is said to sigh for the love of the rose, and the Persians "assert that the bird flutters round the rose bushes till, overpowered by the strong scent, he drops stupified on the ground."

> "That bower and its music I never forget,
> But oft when alone in the bloom of the year
> I think: 'Is the nightingale singing there yet?
> Are the roses still bright by the calm Bendemeer?"

The Romans, by the testamentary wills, directed that their heirs should assemble once a year on the anniversary of the testator's death, at his grave-side, at which everyone present was to appear with roses; which custom, in some form or another, was continued until within comparatively recent times. Mr. Rose, who died at Barnes, in Surrey, in 1653, bequeathed to the poor of the parish the sum of £20 for ever on condition that his grave was planted with roses. This sum was laid out in land, and is called Rose Acre, and now produces annually £14 14s. 2d.

> "Roses, that briefly live,
> Joy is your dower.
> Blest be the Fates that give
> One perfect hour.
> And, though, too soon you die
> In your dust glows
> Something the passer-by
> Knows was a rose."
>
> —*Dr. Garnett.*

The rose is, according to tradition, the true emblem of the best and sweetest creature enjoyments in the world, which, being moderately used and enjoyed, may for a long time yield sweetness to the possessor, but if once the affections seize too greedily upon them, they quickly wither because of the excess of our affection to them.

George Simmonds.

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## SWEET PEA FANCIES.

Last season countless sweet pea enthusiasts devoted their efforts to the obtaining of many-blossomed sprays of great size, to the discovery of new tints in a flower, the blends and self-shades of which seem endless; but some growers also, or in preference, sought for new methods of making use of the plant for the perfecting of the garden. Some of the discoveries that resulted are being repeated this year, others are being aimed at.

In avenues the sweet pea has perhaps the best chance to exhibit its height and fitness for colour blending; clumps when ranged like the trees of a drive, in either single, double, or treble row, have a magnificent effect, and fully enclose any path that they border, shutting out the scene beyond on each side. Sharp contrasts are visible when white and indigo-blue or cream and maroon are placed in lines behind one another; shaded effects are softly beautiful where pale salmon, salmon-orange, and orange-vermilion appear in line rotation, or three shades in pinks, mauves, or blues. If the avenue clumps are all of different hues the choice of colour to most admire proves so bewildering that the summer may probably pass leaving it still undetermined.

A wonderful result was achieved in one garden by banking up the wide border soil so abruptly that the third row of sweet peas stood a yard higher than the first row. The plants were in triple hedges in this case, instead of lines of clumps, as the tier arrangement kept any from being hidden. It was found best to level the ground, making three terraces of border. When the full growth and blossoming was accomplished the path lay in a deep glade, or gorge, the towering walls of which blushed rose and red, flamed with yellow-orange, in places, in the rest were cool with the slate-lavenders that were repeated exactly in viola carpets beneath, or were white as snowy fields of hill formation, or azure as the skies above.

The sweet pea is a wonderful plant when grown almost as a standard. The main stem acquires a breadth that is increased in appearance by a stake cunningly painted the exact shade of grey-green of the foliage. Each branch can be extended horizontally and supported to the top of a similar-coloured but much slighter stick, the space ultimately covered in the umbrella fashion by foliage and blossom proves remarkably great. Many growers for garden beauty declare that only by devoting study to the natural growth of a sweet pea plant, then to providing it with the support it actually requires to separate and extend that growth best, can the full beauty be obtained. It is to be seriously questioned if the custom of employing closely-placed faggots is not a barbarism in sweet pea records, a convenience only to be tolerated in culture for trade purposes of variety testing, seed or blossom production. Excellent is the appearance of a thin boundary hedge made by placing plants at half-yard or longer intervals, and training out each branch horizontally on a well-fashioned espalier support of stakes and stout string.

Quite contrary in character, yet offering a legitimate effect for garden beauty, is the placing of sweet pea plants singly high up in a rockery, allowing the branches to trail downwards over a sufficient depth of stone-built banks. A sweet pea dell can be exquisitely made by this means, the appearance being best when only violas of identical colours are grown in the same place. Since salmons and scarlet are unknown among violas though pinks and crimsons are most brilliant now, where sweet peas of the former hues are employed their best accompaniments are grey or silver-foliaged dwarf plants.

Sweet peas secured to fences offer a new feature. The growth of plants thus treated proves all it should be. The trusses of blossom jut out well away from the back growth, seeking sunshine and air, showing themselves off to an extent that justifies the method were it adopted for the sake of evidencing alone the beauty of the flower; whereas, of course, the object should rather be the forcing a favourite plant to adapt itself to the purposes of pleasure-ground improvement. Against a painted wooden trellis on a house wall the appearance would be exquisite, the success as certain, supposing the richness and depth of the soil were the same as in a prepared plot. Aspect has to be considered. In warm localities a south one is too hot, an east or west one proving all that can be desired.

Some cultivators are trying to encourage height in individual plants by stopping all side shoots; others are stopping main shoots when but eighteen inches tall, with a view to the production of horizontal branches of extraordinary length. Experiments are praiseworthy in gardening, yet it is difficult to see how these can extend the popularity or usefulness of Lathyrus latifolius.

Striking contrasts of colour have been pleasantly gained by mingling clumps of a pale pink, such as Gladys Unwin, with Scarlet Gem, orange-salmon Evelyn Byatt with the bright blue of Miss H. C. Philbrick, and any true azure with the magenta rose of Lord Rosebery. Combinations of other plants with special sweet peas, to show them off, is one of the most clever uses of the living pigments of the artist-gardener's palette; a hedge all of pale yellow sweet peas proved delightful last year behind a border belt of beets; vivid indeed was a large plot dotted over with clumps all of scarlet-crimsons, carpeted entirely by golden feather.

M. H.

## WINTER-FLOWERING STOCKS.

When suitable varieties are chosen, stocks are well adapted for conservatory decorations, as they produce a wealth of bloom. Some of the dwarf-growing kinds are very useful as pot plants for rooms. What could be more charming for indoor decorations than well-grown plants of All-the-Year-Round stock? This is a fairly dwarf variety of free-flowering habit, having green wallflower-like leaves. It commences to bloom almost close to the ground, and retains its foliage so as to cover the soil in the pots. Then we have Beauty of Nice producing flowers of several shades of colour. When well-grown, this variety attains to a height of about two feet, producing long spikes which are well adapted for cutting. The East Lothian is also a favourite, particularly the scarlet form. There are also several others that make suitable plants, either for cutting or for conservatory decorations, as their flowers are sure to be attractive during the dull months of winter.

The present is a good time for sowing the seed, either in pans, boxes, or a cold frame, but, whichever method is adopted, the seeds should be scattered thinly, and after giving a gentle watering, should be shaded from the sun until germination takes place. As soon as the plants appear shading should be dispensed with, so that they may grow sturdily from the beginning. When the seedlings have made their second or third rough leaf, they should be pricked out either into a cold frame or in the open ground, care being taken in doing so to make the roots firm in the soil. Give a gentle watering, and if the weather is hot and dry, shade from the sun until established.

Stocks resent having their roots disturbed when they become large, therefore they should be transferred to pots when small, those known as large 60's being of a suitable size for the first potting. Prepare a light rich compost, and place one plant in the centre of each pot; do not press the soil too firmly as stocks make strong roots. When potted the plants should be stood on a bed of ashes in a cold frame from which the lights have been removed, as they should be induced to grow as sturdy as possible during the months of August and September. When the small pots are filled with roots transfer the plants to others of larger size, the dwarf-growing kinds will do well in 48's, but the stronger ones should have 32's. When the days become shorter, and there is a greater rainfall it will be necessary to place the lights on the frames, but so long as the weather remains open air should be admitted freely at all times; when, however, the nights become cold the frames may be closed. As winter approaches the plants should be transferred in batches to heated pits, where in case of severe weather a little heat could be turned on. It will now be necessary to pay close attention to watering, as the pots will be filled with roots, and if once the soil is allowed to become dry the bottom leaves are sure to fall. At the same time care must be taken not to over-water. Should green fly make its appearance fumigate at once. When in bloom the plants will be greatly assisted by occasional waterings with weak liquid manure, but this must not be overdone.

H. C. Prinsep.

## ÆSCULUS CALIFORNICA.

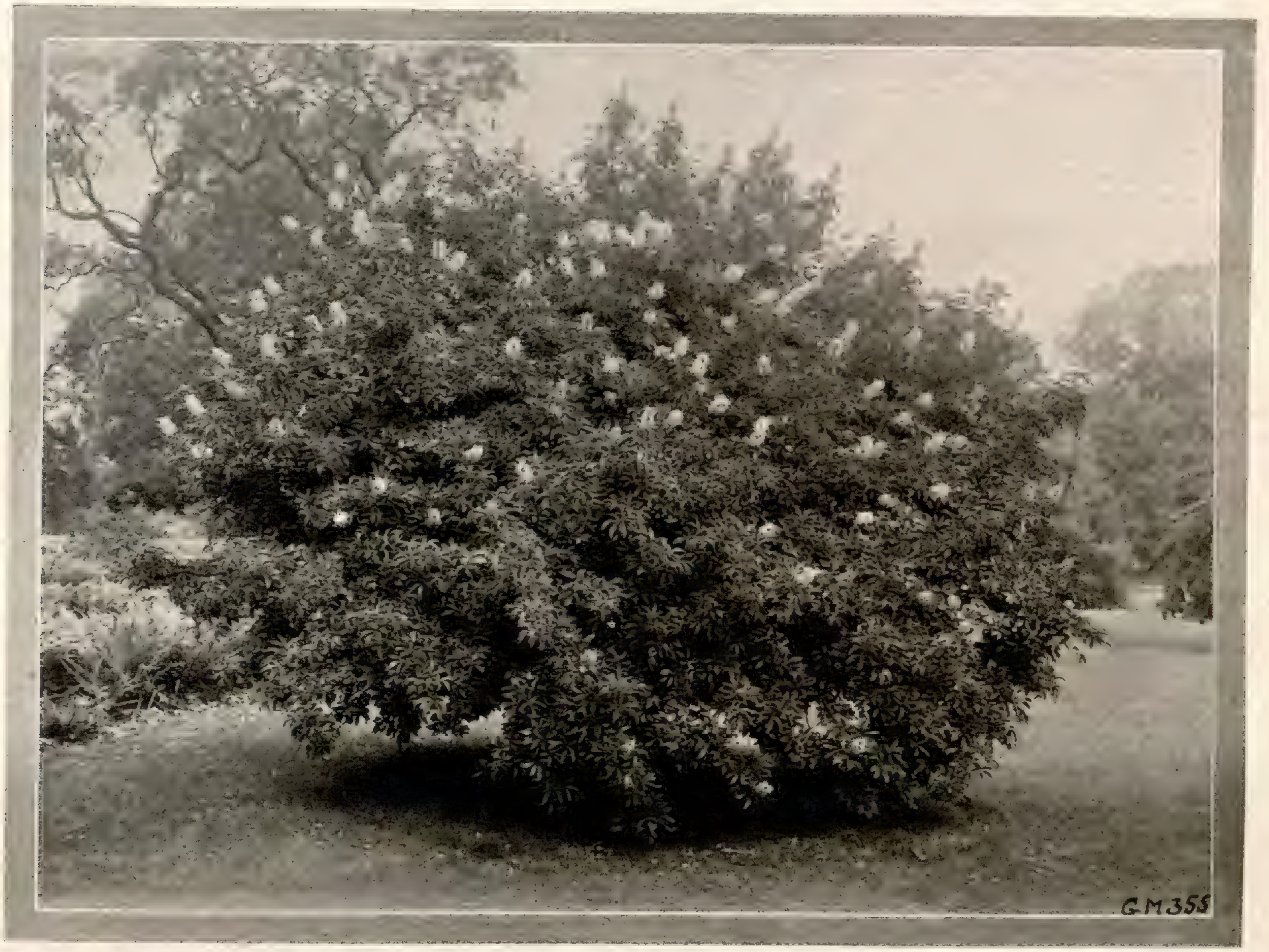
A fairly old inhabitant of our gardens, having first flowered in this country in the nursery of the Messrs. Veitch, at Exeter, in July, 1858, this chestnut, or Pavia californica, as it was then known, still remains an uncommon tree.

In its native country it forms a large shrub, 10 to 20ft. high, or a small, unusually spreading tree for its height of 30 to 40ft. Its common name is the Californian Buck-eye; it grows on the Upper Sacramento River and the western slopes of the Sierra Nevada mountains.

The leaflets are almost always in fives, 3 to 5in. long, and noteworthy as being probably the smallest leaflets of all the chestnut family. The fragrant white flowers, three-quarters of an inch across, are closely arranged on a compact raceme some 6in. in length; the orange-coloured anthers are very conspicuous. In addition to the beauty of the flowers a noteworthy and valuable character is the long season of flowering, which extends from the end of June until August, a succession of flowers continuing to open on the racemes for fully two months. The fruits, as in all the Pavia group, are smooth, brown in colour, 2in. to 3in. long, and in shape somewhat like a small pear.

The value of Æsculus californica as a lawn specimen is well shown in the illustration of a tree at Kew, about 15ft. in height and 20ft. through.

Kew. A. Osborne.



ÆSCULUS CALIFORNICA.
An uncommon but handsome tree, bearing spikes of white, fragrant flowers in July and August.

PROFITABLE FRUIT GROWING for Cottagers and Small Holders of Land.—By John Wright, V.M.H. A Gold Medal Essay, written for the Worshipful Company of Fruiterers. Fully illustrated. Price 1s., by post 1s. 3d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# WORK FOR THE WEEK.

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## CONSERVATORY AND GREEN-HOUSE.

CYCLAMEN. — These winter-flowering greenhouse plants need close attention. Young corms raised from seed last February have been steadily growing, and the largest are now ready for their final shift into six-inch pots. An open, sandy compost is best for them, consisting of two parts fibrous loam, one part leaf-soil, one part sand, some wood ashes, and a sprinkling of an approved fertiliser. The crown of the corm should be slightly raised above the surface of the soil when potting, to prevent damping of the flower buds when they appear. Corms kept over from last year, and which have been resting for some time, should be shaken clear of all old potting compost, and have the dead roots cut away; but great care must be taken with the living ones. The stems of dead leaves should be neatly trimmed with a pair of scissors (not pulled off) to within half an inch of the corm; re-pot at once in compost as advised above, and place in cold frames on a cool base; give shade, and water sparingly until root action and growth commence. Green-fly and black aphis are often troublesome on the young leaves, and will soon cripple them if not checked. It is best to fumigate occasionally as a preventive.

CALCEOLARIAS. — Herbaceous calceolarias should be sown at once. Choose a suitable pan, clean, and well crock it, and place over the crocks a layer of leaves. Prepare a fine sandy compost, fill the pan to within one inch of the rim, and press firm and level. The seeds should be sown thinly and evenly over the surface, and slightly covered with silver sand. The compost should be moist at the time of sowing, but should the pan require water before the seeds have germinated, the best way is to gradually lower the pan into a pail of water until the water rises through the compost to the surface. This will give the necessary moisture without disturbing the surface and washing the seeds about. The pan should then be stood in a cold frame, covered with a piece of glass, and shaded, to assist germination.

BULBS.—The time has arrived for considering the bulbs required for winter display. Freesias and Roman hyacinths should be ordered at once, and a batch of both should be potted up directly they arrive. A rich, friable compost is necessary, consisting of loam, leaf-soil, burnt earth, or wood ashes, with a good sprinkling of silver sand. The Roman hyacinths should be placed five in a five-inch pot, just burying them; the compost should be made firm, and given a good watering; when the moisture has drained away the pots should be buried in ashes. The bulbs soon commence to root and grow. The pots should be examined frequently, and when the growths are an inch long the stock should be taken out of the ashes and placed in a cold frame. After standing in the frame a fortnight gentle forcing may be commenced. The same kind of compost suits freesias, and these should be placed nine in a 48-sized pot, the bulbs being slightly covered and made firm. The pots should be stood straightway into cold frames, and covered with a layer of moss; when well rooted, growth is emitted from the top of the bulbs, and when the growths are two inches long the moss should be removed. The pots may then be placed on a shelf near the glass in a warm house. Care must be taken that they do not become drawn, or they will be quickly ruined. The secret of early forcing bulbs is to get them well rooted before placing them in heat.—Lewis Smith, Shotesham Park Gardens.

## THE ORCHID HOUSES.

CALANTHES.—The deciduous calanthes of the vestita and Veitchi section have now filled their pots with roots. It is desirable to apply a top-dressing of good fibrous yellow loam to the surface roots, mixing with it some fine dry cow manure and silver sand. They require at this season of the year an abundant supply of water, both at the root and in the atmosphere, the latter especially on bright sunny days. When the roots have permeated the fresh soil liquid manure made from sheep, deer, or cow droppings may be given from time to time. The liquid manure should not clog the compost. Care should be taken that the water used is heated to the same temperature as the house. Many plants receive a decided check from cold water, and in many cases develop black spot in the leaves and bulbs. The night temperature should never fall below 70 degrees, and in many cases it will be better if the figure reached is 5 degrees higher. If calanthes are grown among stove plants, they should be placed in a position by themselves, near the roof glass, where there is no danger of drip or water from the syringe reaching them. If grown in lean-to houses it is advisable to turn them round from time to time to keep the foliage erect. The later-flowering kinds are somewhat later in making their growth, but when they become well rooted they will need similar treatment to those mentioned.

PHAIUS, ETC.—The different sorts of phaius, as P. Wallichi, P. Sanderiana, P. Blumei, P. grandifolius, P. bicolor, P. maculata, and the hybrids, P. Cooksoni, P. Norman, P. Marthæ, phaio-calanthes, and phaio-cymbidiums, having commenced to grow, may be repotted if any are in need of fresh compost or larger pots. They all root well in a compost as used for calanthes, and they may be potted in the same manner. During their season of growth a decidedly moist atmosphere should be maintained, and on favourable occasions a light spraying overhead will do them no harm. Should the points of the leaves become discoloured, the moisture should be lessened and more air given.

PHAIUS TUBERCULOSUS may also be repotted, using a lighter compost than for the other species and hybrids. This plant requires more heat and moisture than its congeners, and should be placed in a shady position at all times.—J. T. Barker, The West Hill Gardens.

## THE KITCHEN GARDEN.

LATE PEAS.—Strict attention must be given these to ensure a constant supply over as long a period as possible. Providing robust varieties have been sown and the soil is good little will be required beyond mulching and watering. Watch for thrips in the points of the shoots, and attack quickly with a solution of soft soap and water, adding a little creamy sulphur; even dusting the rows overhead with light soot would act as a preventive. If mildew comes spray weekly with permanganate of potash; a few crystals dissolved in rain water, enough to bring the latter to a bright claret colour, at the same time dropping in a piece of sulphide of potassium, the size of a cobnut, will prove a good remedy.

COLEWORTS should be quite ready for planting out; place them fifteen inches apart in ground that has been occupied by early potatoes; plant firmly, water in, and, should cabbage butterflies be numerous, dust the plants over with dry wood ashes. If necessary sow another batch of Coleworts.

MUSHROOMS.—The late inside beds have been (and are) very prolific this year; no doubt owing to the cool nights experienced. If beds were spawned as advised outside, they will succeed these late inside ones.

SEAKALE.—This crop has made wonderful progress from thongs that were started to form crowns in boxes. Thongs that were planted straight away have come very badly, and not half a crop has shown as the result of a dry April; this shows the great value of starting thongs early in deep boxes where only a few thousand are required. Ply the hoe through the crop, and give a final dusting of soot and salt.

ENDIVE.—Transplant these as ready, and made another good sowing of the Batavian, as it can be used for cooking if required, beside being the best variety for salads.

GLOBE ARTICHOKES.—Cut the heads and place them in water as soon as ready, to encourage a regular supply. Give ample encouragement by applications of liquid manure and mulchings.

LETTUCES.—Make weekly sowings to meet the demand, and if the weather is dry water the drills previous to sowing. Make regular sowings of turnips in various parts of the garden.—Geo. Ellwood, Swanmore Park Gardens.

## HARDY FRUITS.

APRICOTS.—The summer pruning of the apricot requires a considerable amount of discrimination, to avoid, as far as possible, the inducement of late growth in the autumn; trees in vigorous health, if pruned hard and late in the summer, invariably make a late growth, particularly if wet weather sets in after a long spell of drought. Early frosts severely punish these late growths, and the trees receive a sharp check. To obviate this danger a certain number of shoots should be allowed free growth to take the flow of sap, and in this matter the operator must be guided by the vigour of individual trees; the object to be aimed at is to thoroughly ripen the young shoots and spur wood, and at the same time prevent the trees making fresh growth, to be eventually nipped by early frosts. The fruits promise to ripen early, and where the crop is a heavy one it is advisable to take off those fruits intended for preserving or bottling as early as possible, as the remaining fruits will then receive the benefit of this relief. Earwigs play havoc with the fruits unless kept under; short lengths of broad bean stalks placed in and amongst the branches will trap the marauders, and a weak solution of paraffin and water, applied to the base of the wall at intervals of two or three days, is helpful in warding off the attack of this troublesome pest.

WATERING.—The lack of rain in most parts of the country, and the great heat, has rendered the application of water to fruit trees a pressing necessity, especially so when dealing with soils of a light or shallow character. Apples on the paradise stock and pears on the quince stock are those most affected by long periods of heat and drought. Orchard trees of apples and pears worked on the crab and pear respectively are not so readily affected, although these, if carrying good crops of fruit, should, if necessary, have a good soaking. In this immediate neighbourhood the trees have had no moisture at the roots since the end of March, and, consequently, owing to lack of water, they are casting their fruits. A free and constant use of the hoe is of the utmost value in preserving moisture. Mulching should be done wherever possible as a means to the same end. Even should rain set in, the soil is now so dry that, unless it is unusually heavy and continuous for some days it would fail to reach the roots in time to assist the swelling fruits.

GATHERING EARLY APPLES AND PEARS.—Most varieties of early pears, such as Beurre Giffard, Jargonelle, William's Bon Chretien, etc., should be gathered as soon as they part readily from the stem when lifted to a horizontal position. By examining the trees at frequent intervals, and taking off such fruits as are ready, the supply will be considerably prolonged, and the flavour of the fruits be of a much higher quality. Early apples should be eaten direct from the tree, for if stored a few days they become mealy and insipid. Unless the trees are looked over daily many of the fruits fall to the ground, and are spoilt for dessert purposes.—W. Messenger, Woolverstone Park Gardens.

# EXHIBITIONS AND MEETINGS.

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## National Rose Society at Belfast.

JULY 19.

For the first time in its history the National Rose Society paid this year a visit to Ireland, and having regard to its success, the wish expressed by Colonel Sharman Crawford, at the opening ceremony, that it would not be the last time the society would come to Ireland, can hardly fail in its realisation.

Within recent years horticulture has received largely increased attention in the North of Ireland, more especially in the great district of which Belfast is the centre, and some two years ago the Irish Rose and Floral Society was formed, with Colonel Sharman Crawford as its president, and Mr. H. P. Pinkerton as hon. secretary and treasurer. Last year the society commenced active operations by holding an exhibition of roses and other summer flowers, and this proved so successful that this year's exhibition was extended, and the National Rose Society was invited to hold its provincial exhibition at Belfast in conjunction therewith. The invitation was readily accepted, for a desire had for several years been felt by many members of the Council that, on the first favourable opportunity an exhibition should be held on the other side of the Irish Sea. The preliminary arrangements for the show were made without the slightest difficulty, and Friday, July 19, was fixed as the most suitable date.

The exhibition was held on this date in the gardens of the Botanic Garden Park, than which no more suitable spot for a rose or other flower show could be found within the United Kingdom. The park is extensive, richly furnished with grand trees and handsome shrubs, and laid out with so much taste as to afford an excellent example of the landscapist's art. There was a glorious exhibition of roses, and this was supplemented by remarkably fine displays of sweet peas and hardy flowers. The Irish Society carried out its part of the arrangements so well as to evoke the heartiest expression of approval from both exhibitors and visitors, and it provided some half-dozen marquees that were spacious, light, and well ventilated. Thus it was that the flowers stood well, and could be enjoyed with the maximum amount of pleasure by the crowds of visitors. It was interesting to observe that not only were the tents provided with ample means for ventilation, but the ventilators were open and not kept closed as at some of the English exhibitions held of late in the hottest of weather.

There were a goodly number of the members of the executive of the National Rose Society present, and the Rev. J. H. Pemberton, president of the society, was in strong force, for he not only exhibited with much success in several of the leading classes, but he was active in fulfilling the duties of his high office. Mr. Edward Mawley, who, by the way, was described as Sir Edward Mawley (a distinction he well deserves) by one of the speakers, was, as usual, in capital form, and Mr. Pinkerton and other officers of the Irish Society did all that could possibly have been done to show that rosarians from England were heartily welcome, and to ensure the success of the exhibition.

### NURSERYMEN EXHIBITION ROSES.

The competition was very keen in the majority of cases, and the roses were, on the whole, of high quality. Very spirited was the contest in the trade class for thirty-six blooms, in which the premier award comprised, in addition to the cash prize, a valuable trophy and a gold medal. In the result Messrs. Hugh Dickson, Lim., Royal Nurseries, Belfast, occupied the place of honour with blooms equally remarkable for their large size, freshness, and colour. Of special merit were the blooms of Coronation, a superb pink flower that was awarded a gold medal in the seedling class, and also received the silver medal for the best bloom of any rose in the nurserymen's classes, other than H.T., T., or N.; Gladys Harkness, David Gilmore, Edward Mawley, Lyon, H. Pinkerton, a beautiful flower of a rich cream colour, tinted with rose; Mrs. Foley Hobbs, Gloire de Chedane Guinoisseau, Ethel Malcolm, W. C. Dickson, Mrs. Theo. Roosevelt, Charles Lefebvre, Mrs. Stewart Clark, Leslie Holland, King George V., Archie Gray, and Snowball. Messrs. Alex. Dickson and Sons, Newtownards, followed closely for second place with finely-finished blooms. Messrs. S. McGredy and Son, Portadown, were third with a fine set of blooms. Messrs. Hugh Dickson, Lim., were first also in the class for seventy-two varieties with an excellent collection, in which Mrs. Humphreys, a beautiful rose of a pleasing soft, yellow hue with deeper centre was fine. Messrs. A. Dickson and Sons were a close second with a stand in which those two brilliantly-coloured roses, C. J. Grahame and Leslie Holland, were splendidly represented. Very keen was the contest for the first place in the class for twenty-four varieties, three blooms of each, between Messrs. Hugh Dickson, Lim., and Messrs. Alex. Dickson and Sons, and in the result the first and second awards were made in the order of the names. Very fine in the first-prize stands were two blooms of Gloire de Chedane Guinoisseau, Leslie Holland, Snowball, Jonkeer J. L. Mock, David Gilmour, Mrs. S. Ross, and Mrs. D. McKee. Remarkable for their high development were the blooms of White Killarney, Lady Greenall, Caroline Testout, Mabel Drew, George Dickson, Lady Barham, and Edward Mawley, shown by Messrs. A. Dickson and Sons.

The chief class in the second of the sections set apart for nurserymen was that for thirty-six varieties, and in this the premier position was occupied by Mr. George Prince, Longworth, Berks, who staged Madame J. Gravereaux, Mrs. Dudley Ross, Earl of Warwick, Hugh Dickson, and Juliet in superb condition. Mr. J. Walsh, Portadown, was a capital second. Mr. Prince was first also for sixteen varieties, three blooms of each, with a level set of blooms, and Messrs. E. Smith, High Street, Belfast, was second.

There was a spirited competition in the trade classes for teas and noisettes, and the blooms were large in size and characterised by freshness. For eighteen varieties Mr. G. Prince was a splendid first, and especially noteworthy were the blooms of Miss A. de Rothschild, Mrs. Myles Kennedy, Madame Jules Gravereaux, W. R. Smith, Molly Sharman Crawford, White Maman Cochet, Mrs. E. Mawley, Comtesse de Nadaillac, Ernest Metz, and Souv. d'Elsie Vardon. Messrs. Hugh Dickson, Lim., were a good second. The first place for twelve teas was occupied by Mr. J. Mattock, Oxford, and Mr. J. Walsh and Messrs. F. E. Smith and Co. were second and third, the blooms being meritorious throughout.

### OPEN TO NURSERYMEN AND AMATEURS.

This section contained much to interest, inasmuch as it included the classes for twelve new roses and twelve blooms of any new rose. In the first of these two Messrs. Hugh Dickson, Lim., were first with a stand containing finely-developed blooms of Mrs. Richard Draper, Marquise de Ganay, Mrs. Maynard Sinton, Mrs. A. E. Coxhead, Ethel Malcolm, King George V., Souv. M. L. Perrier, Mrs. S. Ross, Mrs. Foley Hobbs, Leslie Holland, Evelyn Dauntesey, and Countess of Shaftesbury. Messrs. S. McGredy and Son were second, and Mr. W. Bentley, Belgrave, Leicester, third, both staging well. Messrs. Alex. Dickson and Sons had in their stand a superb bloom of their new crimson George Dickson, which was awarded the silver medal for the best bloom of a H.T. in the trade classes, which is the second time it has secured the H.T. medal at the N.R.S. exhibitions this season. The first prize for twelve blooms of a new rose was secured by Messrs. Hugh Dickson, Lim., with superb specimens of the brilliantly-coloured Leslie Holland. Mr. Prince was second with Mrs. Foley Hobbs.

There was a strong competition for the prizes for twelve blooms of any hybrid perpetual, and it was interesting to find all the exhibitors staging Frau Karl Druschki. Very fine were the blooms of this famous rose in the first-prize stand from Messrs. Alex. Dickson and Sons. Messrs. Hugh Dickson, Lim., and Mr. G. Prince were second and third with good blooms. Mr. W. Bentley scored in the class for twelve blooms of a hybrid tea with flowers of J. B. Clark in a high state of development; Messrs. Hugh Dickson, Lim., second with Countess of Shaftesbury. Mr. G. Prince was first for twelve blooms of a tea-scented variety with White Maman Cochet at its best. Messrs. Alex. Dickson and Sons were second with Mrs. Foley Hobbs.

### VASES AND BASKETS OF ROSES.

Exhibition blooms in vases were admirably shown, and the several collections formed a distinct and attractive feature. In the class for twelve varieties, five blooms of each, to be staged in twelve vases, Messrs. S. McGredy and Son were first with a fine set of blooms, those of Dean Hole, E. Mawley, Mrs. Foley Hobbs, and Mrs. D. McKee being especially meritorious. Messrs. Hugh Dickson, Lim., followed for second place with a set in which the Lyon was seen at its best. Messrs. Alex. Dickson and Son, who were third, had the brilliantly-coloured A. K. Williams in especially fine condition. Messrs. Hugh Dickson, Lim., scored for a vase of nine blooms of Harry Kirk.

Roses shown in plain baskets formed a very attractive feature, and the several contributions to the classes possessed much value educationally. On the whole they were far superior to the majority of those shown at the Society's Metropolitan exhibition, for the exhibitors, while using sufficient blooms to make the baskets thoroughly attractive, avoided the mistake of crowding the blooms. In the class for nine baskets, Messrs. Hugh Dickson, Lim., obtained premier honours with a set in which Lady Pirrie was finely shown, and in the smaller class for five baskets Messrs. S. McGredy and Son were first with tastefully-arranged baskets, in which that of the brilliant red G. C. Waud was of special merit. Mr. E. J. Hicks, Twyford, was second in the latter class, and Mr. J. Mattock third.

### DECORATIVE ROSES, OPEN.

The contributions to the classes for decorative or garden roses were numerous, and they contributed appreciably to the interest of the exhibition. The flowers staged in these classes were highly attractive, but the backs of the stages erected by some of the exhibitors were a serious disfigurement to the tent, and should not have been allowed. The post of honour in the class for eighteen varieties, to be shown in vases or other receptacles, was occupied by Mr. J. Mattock, who had Arthur R. Goodwin, Irish Glory, Mrs. Segond Weber, Bardon Job, Orleans, American Pillar, Mrs. H. Stevens, and Simplicity in capital condition. Messrs. Hugh Dickson, Lim., were second. The competition was keen in the class for twelve bunches, and Mr. E. J. Hicks was first with Rayon d'Or, Madame Abel Chatenay, Excelsa, and Countesse de Cayla as his best. The competition for the second place between Mr. G. Prince and the Rev. J. H. Pemberton was so close that there was not half a point difference in the merit of the collections; in the result the awards were made in the order of the names.

### AMATEURS.

Amateur rosarians were in strong force, and on the whole they staged blooms of fine quality. There were six or seven entries in the trophy class for twenty-four blooms, all more or less good, and in the result the handsome trophy, the gold medal and cash prize, constituting the first prize, were awarded to Mr. F. Dennison, of Leamington, who is one of the most popular of amateur rosarians, and was heartily congratulated on all sides when the decision of the judges became known. The blooms were throughout of large size, fresh, and of superb colour; and among the varieties that attracted special attention were Ulrich Brunner, Frau Karl Druschki, Dean Hole, Caroline Testout, Horace Vernet, Madame Jules Gravereaux, Mrs. Myles Kennedy (which was awarded the silver medal for the best bloom of a hybrid tea in the exhibition), C. J. Grahame, J. B. Clark, Maman Cochet, Alice Lindsell, Avoca, and Mabel Drew; Mr. W. Boyes, Middleton-on-the-Wolds, Driffield, was a capital second with large, finely-finished blooms, and Mr. J. H. Welsh, Dunardale, Londonderry, had an excellent collection of blooms for third place.

Very keen was the competition in the amateurs' class for thirty-six varieties, and the Rev. J. H. Pemberton, Havering, was a splendid first with blooms of superb quality, the most noteworthy being those of Lohengrin, King George V., A. K. Williams, Mrs. H. Walsh, Dr. O'Donel Brown, and Earl of Warwick. The other successful exhibitors in the class were Mr. H. V. Machin, Gateford Hill, Worksop, and Mr. W. Boyes. The latter had a superb bloom of Gloire de Chedane Guinoisseau, which was awarded the silver medal for the best hybrid perpetual in the amateurs' classes. The class for eight varieties, three trusses of each, was a good one, and Mr. F. Dennison was first with a splendid box, in which the blooms of Mrs. J. Laing and Miss Molly Sharman Crawford were of a high order of merit. Mr. H. V. Machin was a close second with a fine set. For six blooms of any one variety Dr. Campbell Hall, Monaghan, was first with good blooms of the Duchess of Portland, and Mr. H. V. Machin was second. There was a very spirited competition for the prizes for a collection of decorative roses, open to amateurs, and the premier award was made in favour of the Rev. J. H. Pemberton, whose collection was equally remarkable for the high development of the flowers and the taste evinced in the arrangement.

FIRST PRIZE BOWL OF ROSES AT BIRMINGHAM SHOW.
Exhibited by Messrs. Perkins and Sons, Coventry.

In other classes open to amateurs, the principal prize-takers included Mrs. Dunlop, Holywood; Mr. R. Thompson, Ballynahinch Spa; Mrs. G. Herbert Brown, Helen's Bay; Colonel Sharman-Crawford, Crawfordburn; Mr. W. Upton, Leicester; Mr. J. H. Welsh; Mr. T. F. Crozier, Dublin; Mr. F. J. Harrison, Ulverstone; and Mr. Mahlon Whittle.

### NEW ROSES.

H. Vessey Machin H.T., a large, globular flower of a rich crimson colour. From Messrs. Alex. Dickson and Sons. (Gold Medal.)

Mrs. R. D. McClure H.T., a beautiful rose, the colour clear pink; H. E. Richardson H.T., a distinct variety with medium-sized flowers of a deep crimson hue; and Coronation H.P., a lovely rose with large, globular flowers, a soft, clear, pink colour. From Messrs. Hugh Dickson, Lim. (Gold Medal.)

Lady Mary Ward H.T., a medium-sized flower of a rich orange hue, shaded yellow at margins of petals. From Messrs. S. McGredy and Son. (Gold Medal.)

Colleen H.T., an effective variety with large, bright pink flowers; British Queen H.T., flowers pure white and of superb form. From Messrs. McGredy and Son. (Silver-gilt Medal.)

Mrs. James Lynas H.T., a charming variety, the flowers large and the colour blush pink. From Messrs. Hugh Dickson, Lim. (Silver-gilt Medal.)

Miss Muriel Wilson T., a beautiful variety with pale primrose-yellow flowers. From Dr. Campbell Hall. (Card of Commendation.)

### SWEET PEAS.

The sweet peas in competition for the prizes in the twenty-seven classes provided for them by the Irish Society proved a delightful and immensely attractive feature. The number of entries was very great, the majority of the flowers were of large size, and under the favourable atmospheric conditions the colour was especially well developed. Especially noticeable was the superb development of colour remarkable in such varieties as Mrs. W. J. Unwin, May Campbell, Edna Unwin, and Elsie Herbert.

The most important of the several classes was that for twelve bunches, and here Mr. Edward Cowdy, Laughall, was first with splendidly-developed sprays of Mrs. C. W. Breadmore, Queen of Norway, Faulkner's Primrose, Edna Unwin, Audrey Crier, Afterglow, White Queen, and Mrs. Hardcastle Sykes. Mr. Robert Wellwood, of Strandtown, scored in one of the two classes for six bunches with Etta Dyke, Marjorie Willis, Douglas Unwin, Mrs. R. Hallam, Maud Holmes, and Nettie Jenkins in superb condition. In a second class for six bunches Mr. J. Achen, Portadown, was first, staging superb bunches of Tennant Spencer, Mrs. C. W. Breadmore, Helen Lewis, Nettie Jenkins, Mrs. R. Hallam, and Gladys Burt. The premier award for twelve bunches of varieties selected from a given list was awarded to Mr. J. Hall, of Moy. The premier position in the class for nine varieties was occupied by Mr. J. Smellie with Rosabelle, Mrs. Cuthbertson, Sunproof Crimson, Mrs. Hugh Dickson, Elsie Herbert, Thomas Stevenson, Doris Usher, Lady Helen Grosvenor, and Elsie Herbert in a high state of development. The competition was very strong in the whole of the classes for single bunches of specified colours, the number of entries being very large in the majority of them. Space will not permit of their being referred to in detail.

### HARDY FLOWERS.

These were so largely and well shown as to form a display that was at once attractive and of much interest. Mr. H. D. M. Barton, of Antrim, scored in the class for twenty-four bunches, which was open to amateurs only, with a magnificent collection. Highly meritorious also was the collection of twelve bunches from Colonel Sharman-Crawford, and the first-prize collection of six bunches from Mr. Robert Boyd, of Holywood, evinced cultural skill of a high order of merit.

Hardy annuals were splendidly shown, and the first prize for twelve bunches was awarded to Mr. Edwin Hughes, Craigavad, and the premier award for six bunches was made in favour of Mr. Clarence Craig, Clough. These and other exhibitors in the classes for hardy flowers may be heartily congratulated on the high quality of their contributions.

Carnations were well shown, and in the six classes provided for these flowers Mr. T. F. Crozier, Lord Dunleath, Mr. H. E. Richardson, and Mr. R. Boyd were the most successful of the competitors

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## Birmingham Horticultural Society.

JULY 19 AND 20.

For a number of years flower shows have annually been held in Handsworth Park, Birmingham, under the auspices of the Handsworth Horticultural Society. These shows have been of considerable extent, and in many respects above the average in point of merit and interest. Every now and then the suggestion was made that the Handsworth Show should form the basis of a greater horticultural exhibition under the more general and widespread patronage of Birmingham. This year the idea took shape, and, with the Lord Mayor of Birmingham as president, and the Aldermen and Councillors on the committee, the first show of the Birmingham Horticultural Society opened on Friday last, and continued to Saturday. Nurserymen, gardeners, amateurs, and cottagers came forward right royally to support the show, and the result was a vast array of well-grown plants, flowers, and vegetables; but, alas! what should have been one of the best exhibitions ever seen in the Midlands was very badly arranged. It appears that the entries exceeded all expectations, and staging was not provided to accommodate all the exhibits, and in many classes one had to run from tent to tent in search of the entries. Such a state of affairs made both proper judging and reporting almost impossible, and as a matter of fact, the opening day left us with a good many classes still to find. It is far from our wish to throw cold water on the efforts of our Birmingham friends, and so we make the suggestion that another year a few practical horticulturists who are themselves exhibitors should be put upon the staging and schedule committees. There is no lack of highly qualified men around Birmingham, and it seems to us their absence from the committees was most unfortunate. We hope next year there will be a great improvement, and that we may then and for many years to come be able to report Birmingham Show as occupying a foremost position among the leading exhibitions in the kingdom.

### OPEN SECTION.

The four groups in the class for an arrangement of stove and greenhouse plants, occupying 300 sq. ft., were very creditable efforts. Messrs. J. Cypher and Sons, Cheltenham, were declared winners of the first prize, and it may be said their group was arranged with the good taste one always expects and finds in the work of this well-known firm. There were capital corner and dot plants of crotons, Humea elegans, and palms, with good cattleyas, odontoglossums, clerodendrons, and other fine flowering subjects in undulating mounds, surmounted by a rustic arch supporting a fine kentia as the centrepiece. Second place was worthily taken by Mr. J. MacDonald, gardener to Sir George Kenrick, Edgbaston, whose principal plants were similar in character and quality to those mentioned in the winning group, a few Malmaison carnations and crassulas also being used, together with long trailing plants of beautifully tinted selaginellas. Third prize went to Mr. W. Vause, Leamington, who used rather too many tall plants; Mr. W. R. Manning, Dudley, was given fourth prize.

Messrs. Cypher and Sons' twelve specimen stove plants secured premier honours, their Allamanda Hendersoni and A. nobilis being beautifully flowered specimens, a grand plant of Croton Warrensi being also conspicuous. Mr. W. Vause was second in this class. Of two entries staged in the class for six coleus Mr. Alfred Cryer, gardener to A. Kenrick, Esq., Edgbaston, had the best, and really good plants they were; Mr. Perks, gardener to J. Boston, Esq., J.P., Handsworth being second. Mr. Perks was also a winner for six fuchsias.

The growing popularity of rock and water gardening prompted the inclusion of a class for a display occupying 20ft. by 20ft.; there were two entries. The judges awarded first to Messrs. Gunn and Sons, Olton, who had a bright and attractive exhibit, but the dominance of border phloxes and big liliums of the longiflorum and auratum types was scarcely in keeping with the requirements of the class, whereas, as a rock and water garden, that designed by Messrs. Child and Co., Acocks Green, seemed nearer the specification, although placed second. Possibly the objection was that, although a deep gully had been formed, spanned by a bridge, and planted with Japanese iris, reeds, spiræas, etc., the water had not been turned on, whereas the centre of Messrs. Gunn's exhibit was a pool with nymphæas floating on its surface. Both exhibits were worthy of special note.

### ROSES.

The principal rose class was for forty-eight blooms distinct, for which a £6 first prize was offered, and of the four entries Messrs. Perkins and Sons, Coventry, took the lead. The flowers staged were of high quality, there being a few blooms of outstanding merit, particularly Mrs. Joseph H. Welsh, Claudius, and Dean Hole. Mr. J. Mattock, New Headington, Oxford, was second with much smaller but fresh and even flowers, Gloire de Chedane Guinoisseau, Suzanne Marie Rodocanachi, and Mildred Grant being among his best flowers. Mr. W. T. Mattock, Barton End, Oxford, was third. Messrs. Perkins and Sons scored again in the twenty-four class, showing excellent blooms of Frau Karl Druschki, Edward Mawley, The Lyon, and Lady Barham; Mr. Henry Drew, Longworth, Faringdon, followed, and Mr. J. Mattock came third.

Messrs. Perkins and Sons maintained their lead in the class for eighteen blooms, beating Mr. H. Drew and Mr. J. Mattock, who took second and third places respectively. For twelve teas Messrs. W. and J. Brown, Stamford, had the advantage, showing neat flowers of W. R. Smith, Mdme. J. Gravereaux, Maman Cochet, and Mdme. Fermorel. Mr. Drew was second, and third prize went to Messrs. Townsend and Sons, Worcester.

The prizes for a collection of roses occupying 10ft. by 4ft., were keenly contested, the first prize being well won by Messrs. Gunn and Sons, Olton. A big mass of fresh, clear Lyon roses, supported by pillars of Hiawatha, Crimson Rambler, and Leontine Gervaise, made a grand background for bowls of General McArthur, Juliet, White Killarney, Marquise de Sinety, and other of the newest and best hybrid teas. Messrs. W. and J. Brown, Stamford, were placed second, their stand just failing in light and delicate shades; Mr. J. Mattock, Oxford, came third, and a fourth prize went to Messrs. R. M. Fraser and Son, Malvern, while Mr. W. T. Mattock was highly commended. This class was a feature that would have done credit to any show.

Mr. W. T. Mattock scored with twelve bunches of garden roses, and was followed by Mr. J. Mattock and Messrs. Perkins and Sons in the order named. For a single bowl of roses there were half a dozen entries, and it must be remarked that the exhibits were very tasteful. Messrs. S. Perkins and Sons were given pride of place for the Lyon rose, displayed with long sprays of dark foliage. Miss F. Jenks, Codsall, followed with a very lightly arranged bowl, third prize going to Mr. W. T. Mattock.

### HARDY FLOWERS.

The class for two dozen bunches of hardy herbaceous flowers was responsible for six entries, among which Messrs. T. B. Grove's effort was adjudged the best. These Sutton Coldfield nurserymen had among their most successful vases some good phloxes, Veronica spicata rosea, and Galega Hartlandi. Messrs. Harkness and Sons' second-prize exhibit contained Papaver Mrs. Perry, Lilium candidum, Lupinus Rose Queen, and good gaillardias; and Messrs. G. Gibson and Co., Bedale, also had some good things on their third-prize stand. Messrs. Harkness and Sons led for a collection of delphiniums, and second prize was taken by Mr. A. Cryer, gardener to A. Kenrick, Esq., while Messrs. Gibson and Co. came third.

The collection of perpetual carnations put up by Mr. A. F. Dutton, Iver, Bucks, was the only entry in its class, first prize being awarded. A smooth-edged clear yellow, named Yellow Gem, was conspicuous on this stand, and it should be a valuable acquisition. Twelve vases of border carnations, three blooms of each, found four entries, Messrs. A. R. Brown, Lim., King's Norton, being victors with fine flowers of Lord Steyne, Alba, Margaret Thurston, Black Douglas, My Fancy, and Kaffir Chief. Mr. H. H. Parton, Moseley, was second, his Sam Weller, Lord Steyne, and Linkman being three good yellow-ground fancies; third place was awarded Mr. C. J. White, gardener to Frank Bayliss, Esq., Walsall. For a collection of carnations and picotees staged on a space 6ft. by 4ft., Messrs. W. J. Godfrey and Son, Exmouth, had the advantage over Messrs. A. R. Brown, Lim., both stands containing good flowers, nicely arranged.

The class for twelve border carnations and picotees, distinct, found Mr. W. H. Parton at the head, with large, well-grown blooms of excellent varieties; he was followed by Messrs. A. R. Brown, Lim., and Mr. C. J. White.

Violas are always nicely staged at Birmingham, and for a dozen bunches, distinct, there were six strong entries. Mr. Howard Allen, Handsworth, took first place with beautifully-grown flowers. Mr. J. Bastock, Moseley, came second (he was guilty of omitting to label his flowers), and Mr. F. Reily, King's Heath, was third. A class of more than ordinary interest was that for a collection of pansies and violas tastefully arranged on a table space 6ft. by 3ft. Here Mr. J. Bastock scored a decisive victory with small vases of good varieties set up in front of a mirror that made a very good background. Messrs. Seagrave and Co., Sheffield, were second with well-grown flowers arranged in a more formal manner; Messrs. Pemberton and Sons, Walsall, third.

### SWEET PEAS.

A good deal of interest was centred in a class for a display of sweet peas occupying 20ft. by 4ft. A silver challenge cup, value twenty guineas, a gold medal and £5 were offered for the best group, and the successful exhibitors were Messrs. Herd Bros., Penrith. Their display was arranged on a low stage in a manner that made it possible to see every flower with ease. The varieties included such good things as Red Star, Melba, Hercules, Thomas Stevenson, Romani Rauni and R. F. Felton, the whole consisting of well-grown flowers put up in a really attractive manner. Mr. J. Stevenson, Wimborne, came a good second, his flowers showing excellent cultivation, and Messrs. Holder and Co., Erdington, were third in a keenly-fought competition.

Another big class was for twenty-four bunches in twelve varieties, and there being seven entries, all of good quality, Mr. George Hallett, gardener to Sir R. Graham, Bart., Carlisle, scored a first, his flowers, which were of good quality, being set up to great advantage in clear glass vases. Mr. F. R. Minshall, Market Drayton, was a good second, and Mr. John Vicarage, Harvington Nursery, Kidderminster was third.

### GARDENERS AND AMATEURS.

This was a large section of the show, and it must be recorded that the exhibits, both in point of variety and quality, were demonstrative of high culture, showing that around Birmingham gardening is well and largely practised.

The groups in this section were admirable. Occupying 15ft. by 8ft. with single frontage, they were eight in number, and Mr. Alfred Cryer is to be congratulated on his well-merited win among so many strong competitors. All his plants were well-grown stuff, the crotons beautifully coloured, the palms shapely, and the orchids, begonias, liliums, etc., were bright and clean. With a highly-built background, central and corner mounds, the body of the group was lightly arranged. Quite different in style was the second-prize group put up by Mr. G. Corbett, gardener to Hume C. Pinsent, Esq., Harborne, whose strong point was colour, provided mainly by Verbena Miss Willmott, schizanthuses, liliums, and highly-coloured but small crotons. Of necessity these subjects gave a somewhat flat arrangement, and the introduction of a few tall foliage plants would have been an improvement. Mr. T. Perks, gardener to J. Boston, Esq., Handsworth, received third prize, his group being very tasteful in arrangement. There were two other classes for smaller groups, in one of which Mr. W. S. Smith, Handsworth, took first, and Mr. J. Cope, Balsall Heath, second; while in the other the only exhibit was that of Mr. E. Collet, gardener to T. Ollard, Esq., Handsworth, who was awarded a second prize.

Six exotic ferns were best shown by Mr. H. Faulkner, gardener to J. R. Shaw, Esq., Handsworth. In Mr. Ellison's class for twelve ferns Mr. H. Faulkner was again winner, and for three specimens Mr. Perks took first and Mr. R. Usher second. Mr. Perks also won for six fuchsias. For six stove plants Mr. A. Cryer put up some fine plants, winning a first, his Phœnix rupicola and Kentia Belmoreana being grand specimens. There were numerous other classes for greenhouse plants, such as gloxinias, begonias, etc., the competitors already named accounting for most of the awards.

There were two entries for a dozen bunches of stove and greenhouse flowers, the winner being Mr. A. H. Lord, gardener to C. A. Palmer, Esq., Handsworth; he was followed by Mr. J. Freeman, gardener to Colonel Walker, Acock's Green. A very nice little collection of hardy flowers was put up by Mr. E. J. Keeling, Small Heath, with which he won first. Sidalcea Listeri, Gypsophila rosea, Lysimachia clethroides, and Alstrœmeria chilensis were among his best subjects;

second prize in the class went to Mr. H. C. Potter, Handsworth, Mr. Carter, Erdington, being third.

There were a large number of vegetable classes, the chief one being for a collection of nine kinds. First honours were secured by Mr. E. Winchester, Rubery, who staged capital peas, cauliflowers, potatoes, tomatoes, French beans, etc. Mr. Edward Deakin, Birmingham, was second with smaller, but very even, produce; Mr. H. S. Foster, gardener to F. E. Muntz, Esq., Hockley Heath, coming third among some half-dozen entries. In Messrs. Webb's special class, Mr. H. Davis, gardener to H. Watson Smith, Esq., Stourbridge, was chief winner, Mr. Deakin taking the leading award offered by Messrs. Sutton and Sons, and again in Messrs. Yates' class.

### TABLE DECORATIONS.

There were twenty-four exhibits in the four classes for table decorations, and in the open class, orchids excluded, Mr. Stephen Sims, Derby, led with a very tasteful arrangement of Lady Hillingdon roses with trails of small-leaved ampelopsis. The second prize went to Mr. A. G. Newbold, Cuttleover, Derby, who used Carnation Mrs. Reynolds Hole in conjunction with roses, just slightly overdoing the use of the flowers; Miss Ada Townsend, Worcester, came third with a delightful arrangement of single roses. Miss M. L. Deakin won in the ladies' class, using pale pink sweet peas, with trails of bronzed selaginella; Mrs. F. Anderson, Moseley, also used sweet peas in her second-prize table.

Robert Sydenham Limited offered special prizes for decorations in their "Rural" receptacles, and Mr. Edward Deakin, Birmingham, scored with a pretty arrangement of Mrs. Routzahn sweet pea, Miss F. Jenks, Codsall, coming second with a much heavier arrangement, and third prize going to Mr. W. Caldicott, gardener to Jesse Varley, Esq., Wolverhampton.

Only one entry for a table of fruit was forthcoming, the exhibitor being Mr. Stephen Sims, Borrowash, Derby. He had Irish Peach apples, Black Hamburgh grapes, Early Rivers nectarines, and White Heart cherries, his floral decorations being of sweet pea Mrs. Routzahn.

### NON-COMPETITIVE EXHIBITS.

These were presented in large numbers, and were of considerable interest and worth. Not only did local nurserymen come forward, but well-known exhibitors from far and wide brought produce of varied character, making in all a splendid display that added much to the attractiveness of the show.

Hardy flowers were largely shown, and were the centre of attraction to most visitors. We were pleased to notice a general departure from the crowded style of arrangement in favour of a lighter and more tasteful display. Among a great variety of subjects staged by Messrs. G. Gibson and Co., Leeming Bar, Bedale, were some good bunches of Verbascum Ivanhoe, Delphinium Cashmerianum, and the striking Aconitum uncinatum. Phloxes were prominent on Messrs. Hewitt and Co.'s stand, but the Solihull firm had also many comparatively uncommon and choice herbaceous subjects. Messrs. Rich and Co., Bath, showed herbaceous flowers, as also did Messrs. W. J. Godfrey and Son, Exmouth, Oriental poppies, Romneya Coulteri, and some fine pentstemons being shown by the latter.

Messrs. Bakers, Wolverhampton, put up an elaborate and very fine exhibit in the form of a herbaceous border with a lily pool in the foreground, a stone wall and pathway, well furnished with suitable plants, running between the border and the pool. On either side of the latter were beds of roses, the Lyon and General McArthur being the varieties used. It was altogether a well-devised and capitally-executed piece of work. Both sweet peas and roses played a part in Messrs. Jarman and Co.'s exhibit, and this firm showed their sweet sultans in good style. Messrs. Clibrans, Altrincham, filled a big space with sweet peas.

A big stand of sweet peas, embracing a large number of up-to-date varieties, came from Messrs. Simpson and Sons, Birmingham. and another smaller but very choice exhibit was that from Messrs. R. J. Barnes and Son, Malvern, who also staged rambler and Wichuraiana roses and a few distinct bedding violas. The brightness, as well as the size of the sweet peas from Messrs. G. Stark and Son, Great Ryburgh, made their stand specially admirable. A new clear salmon named Stark's Salmon was undoubtedly the finest thing among the many fine things shown. Among the perpetual carnations from Messrs. Young and Co., Cheltenham, a vase of the Hon. John Boscawen was the newest, and is a very pretty variety that may be described as an improved Fair Maid.

Messrs. Sutton and Sons, Reading, staged in their usual effective manner a large and varied collection of well-grown vegetables. The skilful use of annuals of bright colours added much to the interest of the exhibit. Excellent antirrhinums, hollyhocks, and liliums supplemented sweet peas, larkspurs, clarkias, and other pretty subjects, and all were set up in a delightful manner.

Mr. H. N. Ellison, West Bromwich, had a well-grown specimen of the new Pteris Parkeri among the choice ferns he showed, and the cacti staged included a number of well-developed specimens of excellent kinds. Messrs. John Peed and Son, West Norwood, put up a group of caladiums worthy of the firm that has specialised in caladiums for so many years. From Twerton Hall, Bath, Messrs. Blackmore and Langdon brought cut blooms of double and single begonias which, needless to say, were of rich quality and most charming colours.

Messrs. Webb and Sons' familiar temple-like arrangement was furnished with sweet peas, with a few carnations and liliums at the base. The vegetables on the stand were of excellent quality, and the varieties of the very best. Mr. J. MacDonald, Harpenden, had an exhibit of lawn and pasture grasses of remarkable interest and educational value.

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## **Southampton Jubilee Show.**

JULY 16 and 17.

On the County Cricket Ground the fiftieth exhibition of the Southampton Horticultural Society was held on the above dates, and was a great horticultural success, but we fear it was not a financial success, for at the time we left the ground there were very few visitors. The schedule was comprehensive, containing classes specially arranged for carnations, in connection with the Southern Counties section of the National Carnation Society.

### CARNATIONS.

Thirty-six classes were provided, making quite a fine display in themselves. For twelve vases of selfs, fancies, and yellow-ground picotees, arranged on a space 4ft. by 3ft., there were three entries, and Mr. J. Douglas, Bookham, Surrey, was first with desirable blooms of Purity, Pasquin, and John Ruskin. Messrs. A. R. Brown, Lim., King's Norton, Birmingham, second. Mr. Douglas was first for four vases of selfs, and Mr. Hayward Mathias, Medstead, second. In a class for four vases of fancy carnations, other than white grounds, Messrs. Douglas and Brown were first and second respectively. In the white ground fancy carnation section the Messrs. Brown were first and Mr. J. Douglas second. Yellow-ground picotees in vases were best shown by Mr. J. Douglas, the premier bloom being a good one, in this exhabit, of Onward.

Dressed flowers were neither numerous nor of exceptional quality. For six flakes and bizarres Mr. J. Douglas won, as also he did for fancies, Pasquin and Alice Byron Stewart being noteworthy flowers. For six selfs Mr. Douglas was first, and Zulu and Miss Willmott were his best kinds. Mr. Hayward Mathias had the premier yellow-ground and white picotees, winning in both sections.

In the amateurs' section there was more competition, Mr. G. Cousens, gardener to J. A. Fort, Esq., The College, Winchester, winning for six vases of selfs, fancies, and yellow-ground picotees. Mr. R. G. Rudd, gardener to W. H. Parton, Esq., Studholme, Moseley, Birmingham, had the best four vases of selfs, the best four vases of picotees, and the best single vase of any white-ground variety. Mr. R. Ransom, gardener to C. A. Linzee, Esq., Bramdean Lodge, was first for dressed carnations in two classes with good blooms of well-known varieties.

For five vases of tree or American carnations Mr. Usher, gardener to Sir Randolph Baker, Bart., Ranston, Blandford, was awarded second prize, the first being withheld. Mr. Ellwood, gardener to W. H. Myers, Esq., Swanmore House, Bishop's Waltham, won for three varieties of American carnations.

### PLANTS.

For a group of miscellaneous plants, arranged for effect on a space of 120 square feet, there were three entries. Mr. E. Wills, Winchester Road Nurseries, Southampton, was first with a rather flat arrangement of suitable plants. Mr. Turner, gardener to the Hon. Mrs. Elliott Yorke, Hamble Cliff, Southampton, second. Mr. Bealing had the best five ferns.

### SWEET PEAS, ETC.

In the class for nine distinct varieties, Messrs. Toogood and Sons providing the prizes, there were seven entrants, and Mr. Usher secured the leading place with good examples of popular sorts; Mr. Bealing, Bassett, Southampton, second. The last-named won Mr. R. Sydenham's and Mr. Longster's special first prizes with extra fine flowers. Mr. Usher secured Messrs. Sutton's first prize for six varieties, and also the lead-place in Messrs. Webb's and Messrs. J. Carter and Co.'s special classes.

Roses were well shown. For a representative group Mr. John Mattock, Headington, Oxford, secured the Hon. Mrs. Yorke's valuable challenge cup with a fine display of popular varieties, effectively arranged; Messrs. Rogers and Sons, Bassett Nurseries, Southampton, second. Messrs. Perkins and Sons, Coventry, won for two dozen distinct varieties with fresh, well-coloured examples of leading sorts; Messrs. D. Prior and Sons, Colchester, second. Messrs. Perkins also secured the premier place for twelve teas or noisettes, Messrs. D. Prior and Sons following.

Floral decorations were an extensive display. For a dinner table decoration no fewer than twelve competed. Miss Minnie Snellgrove, 10, Oxford Road, Southampton, won with a pretty table of Iceland poppies; Miss L. A. Nicholas, 60, Whitworth Crescent, Bitterne Park, second. For a table of carnations Mrs. A. R. Bide, Guildford Road, Farnham, was first among seven entrants with an effective arrangement of a dark-edged variety with suitable greenery; Mrs. Bealing second. Miss Snellgrove arranged the best sweet pea table—quite an effective effort.

### FRUITS AND VEGETABLES.

Fruit made a handsome display, and for a collection of six dishes, distinct, Mr. W. Baxter, gardener to Captain Dalgety, Lockerley Hall, Romsey, was first with extra fine grapes, peaches, and melons. Mr. T. Hall, gardener to Ellen Lady Swaythling, South Stoneham House, Southampton, won for four bunches of black and white grapes, showing excellent Madresfield Court and Muscat of Alexandria. Mr. W. Hall, gardener to Major Chichester, Embley Hall, Romsey, won for two bunches of any white grape with Muscat of Alexandria in capital condition. Peaches and nectarines were well shown, the Locksheath Nursery Company, Southampton, winning in both classes. Mr. Ellwood had the best melon—Emerald Gem.

Vegetables were a strong feature of the show, and Mr. Ellwood was invincible in all classes in which he took part, securing first place in the society's classes, and in those provided by Messrs. Toogood and Sons, Messrs. Sutton and Sons, Messrs. E. Webb and Sons, and Messrs. Carter and Co.

### NON-COMPETITIVE.

Trade exhibits were numerous and attractive. Messrs. B. Ladhams and Son, Shirley, Southampton, arranged in a separate tent an exceedingly fine old English garden, with flagged paths, rockeries, walls, etc., all effectively planted; it was quite one of the finest displays seen for a long time at Southampton. (Gold Medal.) Messrs. Rogers and Sons, Southampton, had roses, shrubs, and rockery plants. (Gold Medal.) Messrs. W. Wells and Co., Earlswood, had carnations Gloriosa, Lady Algy, Bonfire, and Scarlet Glow in good form. (Silver Medal.) Messrs. E. Webb and Sons, Wordsley, had sweet peas, gloxinias, tomatoes, melons, peas, etc., all of high quality. (Gold Medal.) Mr. Alsen, Denmead, arranged sweet peas effectively. (Silver Medal). Mr. J. Stevenson, Wimborne, sent sweet peas in variety. (Silver-gilt Medal.) Messrs. S. Bide and Son, Farnham, contributed sweet peas effectively arranged in baskets, vases, etc. (Silver-gilt Medal.)

Mr. H. Burnett, Guernsey, had carnations of high quality and great variety. (Gold Medal.) Messrs. H. B. May and Sons, Edmonton, had choice ferns. (Gold Medal.) Mr. C. W. Breadmore, Winchester, was represented by sweet peas in quantity and of high quality. (Silver-gilt Medal.) Messrs. Toogood and Son, Southampton, presented fine vegetables. (Gold Medal.) The Locksheath Nursery Company, Southampton, arranged a large group of fruit trees in pots, heavily laden with excellent fruit. (Gold Medal.)

## Cardiff.

JULY 17, 18.

The twenty-fourth annual show was held as usual in the Sophia Gardens by the kind permission of the Marquis of Bute, and was a great success. The schedule is a comprehensive one, containing close upon 200 classes, and providing sections for forestry, cottagers, and honey. The entries were numerous, and the competition keen, while the trade exhibited largely, adding much to the interest of the show.

### PLANTS.

The leading class is that for a group of miscellaneous plants arranged in the centre of the tent, and to occupy a space of 150 sq. ft. Messrs. J. Cypher and Sons, Cheltenham, were the leading prize-winners with a collection of crotons, palms, orchids, ferns, and Humea elegans, all well displayed without crowding, and producing a bold and harmonious display. Mr. McIntyre, gardener to Lady Hill, Llandaff, was a good second.

For a smaller group J. L. Morgan, Esq., Llandaff, was the premier prize-winner with a bright display, although a trifle flat. The executors of the late James Howell, Esq., Cardiff, came second. The last-named was first for three specimen ferns with large, healthy plants. Fuchsias, geraniums, begonias, and gloxinias were of an ordinary character.

### CUT FLOWERS.

Roses were numerously shown and of good quality. For twelve distinct triplets, Mr. J. Basham, Bassaleg, Newport, was first with large, fresh, shapely blooms of Ethel Malcolm, Mrs. E. Mawley, Mrs. Joseph Welsh, Mdme. M. Soupert, and Frau Karl Druschki as the best; Mr. S. Treseder, Cardiff, second, with smaller specimens; Messrs. J. Jefferies and Son, Cirencester, third. Five competed. In a similar class for teas or noisettes, the King's Acre Nursery Company, Hereford, were first with neat, if somewhat small blooms of Medea, Muriel Grahame, and Mdme. Constant Soupert; Mr. S. Treseder second. The last-named won for twenty-four distinct with neat, finely-coloured examples of popular sorts; Mr. J. Basham second, among five entrants. The King's Acre Nursery Company had the best eighteen blooms of tea or noisette varieties, as well as the best twelve of any one variety of any other than a tea or noisette, showing Dean Hole. Messrs. Jefferies and Son won with Mrs. E. Mawley for a dozen blooms any one variety, tea or noisette.

The class for a collection of roses arranged in a space 9ft. by 4ft. 6in., with rose foliage only, brought out four competitors, these making a handsome display. Mr. W. Treseder, Cardiff, was first with bold groups of His Majesty, Molly Sharman Crawford, White Killarney, Liberty, and Ethel Malcolm effectively arranged. Mr. J. Crossling, Penarth, second, with bold displays of Victor Hugo and Joseph Hill; Messrs. Jefferies and Son, third.

Carnations were numerously and well shown. For a collection of tree, American, or Malmaison varieties, arranged in a space 6ft. by 4ft., Mr. C. Wall, Melrose Nursery, Bath, had an extremely fine display of handsome blooms of rose-pink Enchantress, Carola, Winsor, May Day, and Mrs. C. Waud. Mr. Waters, Balcombe, Sussex, was second.

Much encouragement is here given to border varieties and picotees shown with their own foliage, not dressed or tied; the class is to show their value for decoration, in an arrangement on a space 6ft. by 3ft. Mr. C. Wall was here also successful with an excellent set of such sorts as Criterion, Black Knight, and Ann Hathaway.

Hardy flowers here receive much encouragement, arranged in a space 15ft. by 4ft. Mr. W. Treseder was distinctly ahead with a fine exhibit, arranged in a natural manner on the ground; Mr. R. F. West, Llandaff, second with a group more formally arranged. For twelve bunches of herbaceous flowers, in which tasteful arrangement is considered, Mr. West led with phloxes, coreopsis, gladiolus, and gaillardias, all well represented; Mr. D. Burgess, Cardiff, second, with smaller sheaves. Mr. West also secured the first place for a collection of annuals in not less than twelve distinct kinds.

Sweet peas are usually here well represented, and many classes are provided. For eighteen vases, distinct, eight staged, the best coming from Mr. A. E. Usher, gardener to Sir Randolph Baker, Bart., Ranston, Blandford, who had blooms of fine size and colour, but on such long stems as to give them a "stalky" appearance; Mr. T. Edwards, Brecon, second. No fewer than fourteen staged six bunches, distinct. Mrs. Jenner, Wenvoe Castle, was first with a desirable set of leading sorts; Mr. Alan Gibbs, St. Andrew's, a close second. Mrs. Jenner secured the leading prize offered by Mr. R. Sydenham for twelve bunches distinct. Mr. E. Thomas, Merthyr Tydvil, won the premier place in Mr. Eckford's class for twelve varieties; Mr. C. Harvey, Dinas Powis, being a close second. For one vase of any variety Mr. Usher won with Edith Taylor. In the class open only to competitors in Glamorgan and Monmouth, for six vases, distinct, no fewer than seventeen entered, and the best set was a grand one from Mr. Alan Gibbs; Mrs. S. Bryan, Bridgend, second.

### DECORATIVE CLASSES.

A great feature is here made of this department; the classes are numerous and the prizes good. For a table laid for dessert, 8ft. by 4ft., any flowers excepting orchids to be used, six competed. Mr. W. Treseder easily won the premier award with a charming display of excellent fruit, combined with a light arrangement of pink carnations and pale blue sweet peas with suitable greenery; Messrs. Case, Cardiff, second.

In the amateurs' section, nine took part in the dinner-table decorations. Mrs. Shackson, Porthkerry Park, was first with an evenly-balanced arrangement. In the class for a sweet pea dinner-table decoration nine entered, and Mrs. Gerhold, Penarth, with pink flowers and suitable greenery, easily secured the leading award.

Bouquets were a distinct feature; for roses Mr. P. Thomas, Abbey Road, Cardiff, with Abel Chatenay, was easily first. Messrs. Case secured the premier position for pink carnations, and Mr. Thomas led for a bride's bouquet, with a superb arrangement of odontoglossums. Mr. W. Treseder, with orchids, admirably disposed, won for a basket of flowers, and Mr. C. J. Ellis, Weston-super-Mare, won for two baskets of flowers, orchids excluded, with red and white carnations.

### FRUIT.

Mr. R. German, gardener to E. H. Elsworth, Esq., Llandragh Castle, was first for two bunches of white Muscat grapes, with really fine examples of Muscat of Alexandria. Black Hamburgh grapes were best shown by Mr. G. Clark, Talygarn. Mr. Elsworth had good Madresfield Court in the class for any other black variety. Mr. F. Bibby, with handsome fruit of Dryden, was first for nectarines, and also for peaches, with Crimson Galande.

Vegetables were a strong feature. Mr. Searle, gardener to the Marquis of Northampton, Castle Ashby, secured the leading awards in the principal classes.

### NON-COMPETITIVE.

Trade exhibits added considerably to the merit of the show. Messrs. Sutton and Sons, Reading, staged fully one hundred bunches of sweet peas of excellent quality, these deserving the gold medal awarded. The King's Acre Nursery Company had a representative group of fruit trees in pots. (Gold Medal.) Mr. Farmer, gardener to the Marquis of Bute, Cardiff Castle, arranged a group of miscellaneous plants that was much admired. (Gold Medal.) Messrs. John Forbes, Hawick, had pentstemons, phloxes, and delphiniums in great variety. (Silver-gilt Medal.) Messrs. House and Son, Westbury-on-Trym, Bristol, staged a bold and effective group of herbaceous plants, sweet peas, and alpines. (Silver-gilt Medal.) Mr. W. Treseder had a pleasing group of shrubs, palms, etc., at the entrance to the large tent. (Silver-gilt Medal.) Mr. Ellison, West Bromwich, was awarded a Gold Medal for a collection of cacti.

## Liverpool Horticultural Association.

JULY 17.

The annual sweet pea and rose show was held in the Corn Exchange. The entries were well up to the average, but, owing to the extreme heat, there was some falling off in the rose section.

### SWEET PEAS.

For twenty vases an excellent display was made, and Mr. W. Davies, gardener to Dr. G. J. Phillips, led the way with a grand lot of strong spikes carrying fine blooms, notable for their size and colour; Elsie Herbert, Nubian, John Ingman, Hercules, Maud Holmes, Helen Lewis, W. R. Beaver, and Thomas Stevenson were excellent. Second, Mr. R. R. Anderson, Birkenhead; third, Mr. W. Bond, gardener to J. Pearson Heron, Esq. For twelve vases Mr. W. Davies again led, having fine spikes of Nubian, Thomas Stephenson, Mrs. Hardcastle Sykes, etc.; Mr. H. Foulkes, gardener to Major F. M. Roome, Formby, and Mr. E. T. Barrett, gardener to E. Cozen Hardy, Esq., Wootton, were second and third respectively.

In the class for twelve vases, waved standards, Mr. H. Foulkes led with excellent specimens of George Herbert, Florence Nightingale, etc.; the remaining awards went to Mr. H. Forder, gardener to Colonel Cornwallis West, Ruthin Castle, and Mr. John George, gardener to Thomas Henshaw, Esq., Roby, as named. In another class for twelve vases, distinct, the prizemen were Messrs. J. George, A. Ratson, Fazackerly; and R. S. Shepherd. For one bunch of Sutton's Queen the winners were Messrs. W. Bond and G. Faulkner.

For twelve vases, distinct, amateurs only, Mr. Jos. Roberts, of Gresford, staged well for first place, and was followed by Mr. S. H. Curtis. For six vases Mr. R. Aindow, of

GLASGOW
CENTENARY FLOWER SHOW,
in Marquees on Bunhouse Grounds,
Kelvingrove, Glasgow,
On WEDNESDAY, THURSDAY, and FRIDAY,
September 4th, 5th, and 6th.

£500 in Trophies and Prize Money.

Schedules may be had on application to the Subscriber.
Entries close on August 21st.
HUGH M. MACKIE, Secretary and Treasurer,
124, St. Vincent Street, Glasgow.

SANDY SHOW, BEDFORDSHIRE.
44th YEAR.
THURSDAY, AUGUST 29th, 1912.
Largest One-day Show in the Midlands.
PRIZES VALUE £1,000, including
£90 for Plants and £55 for Cut Flowers.

Entries close August 22nd, 1912.

Schedules, Entry Forms, etc., of
WM. GREEN, Secretary, Sandy.

Formby, led, and for a like number of waved varieties, with waved standards, Mr. G. Faulkner took the lead. In the classes set apart for members of the corn trade, Messrs. E. J. Procter and J. Tapscott took the lead.

ROSES.

Considering the high temperature roses were of good colour, but below the average size.

For eighteen hybrid teas Mr. J. W. Parker, gardener to J. R. Dixon Nuttall, Esq., Prescot, was the only exhibitor, and his best blooms were Lyon, Lady Ashtown, R. C. Wardle, and Mrs. W. J. Grant, etc. For eighteen blooms, distinct, Mr. Parker still held his own with a fair stand, followed by Mr. J. H. Kefford, gardener to Mrs. J. Smith, Thelwell; and Mr. John Aindow, gardener to W. A. Rockliff, Esq., Formby. For twelve blooms Mr. Aindow came to the front with some excellent examples of G. C. Waud, Mons. Paul Ledi, etc. For six blooms Mr. W. Foulkes led the way.

For twelve blooms in not less than six varieties, Mr. Loo Thomson held the leading position; and for six, Mr. P. Fitzpatrick; and for two vases Mr. Charles Green, Neston, were first; and in the local class Mr. Chris. Hackney was successful.

OTHER CLASSES.

For a table of sweet peas, Miss Newsham led in a strong competition, and for the general table Mrs. H. E. Marsh won with lovely bronzy roses. Herbaceous cut flowers were staged finely, Mr. John George winning in the class for twelve bunches with an effective exhibit; Mr. J. W. Parker second. For six bunches Mr. Parker came out top; and for six bunches of flowers grown in the open Mr. Loo Thomson took the lead, followed by Mr. E. Sergerson.

For six carnations and picotees, three blooms of each, Mr. James Calder took the lead, having fine blooms of Ann Hathaway; Messrs. R. R. Anderson and Charles Russell took the second and third prizes respectively. For twelve blooms arranged in vases Mr. Mills, gardener to H. S. Barrett, Esq., took the lead with pleasing blooms of Miss Peggy, Miss Willmott, etc. Messrs. James Calder and Joseph Oxton took the remaining awards.

For six blooms the prizemen were Messrs. James Calder, Mills, and G. A. Turner. For six blooms, amateurs, Mr. R. Duke led, and for one vase of three blooms Mr. E. Sergerson won with Cecilia.

Mr. E. Turnbull had the best six pansies and viola blooms.

NON-COMPETITIVE.

Non-competitive displays were in strong force, and did much to enhance the interest of the exhibition. Gold Medals were awarded to Mr. R. Manson, of Gateacre, for a fine display of roses with a background of ramblers, and vases and boxes of exhibition varieties of good form and colour; to Messrs. Dicksons, Chester, who had an exhibit of roses and herbaceous flowers; to the Liverpool Orchid Company for orchids and roses; to Messrs. R. P. Ker and Sons, Aigburth, for a table of miscellaneous plants, including well-coloured crotons, with an addition of fruit and vegetables; to Messrs. Bees, Lim., for herbaceous cut flowers, roses, and alpine plants; to Mr. H. Middlehurst, Liverpool, for a pleasing collection of sweet peas of well-known varieties; to Mr. R. Wright, of Formby, for sweet peas, his Mrs. Hettie Roome being a telling new variety; to Messrs. Aldersley and Marsden Jones, for a fine display of well-grown sweet peas.

Silver Medals to Mr. C. A. Young, of West Derby, for a charming display of carnations and picotees, arranged on show boards; to Mr C. Russell, Blundellsands, for a good set of carnations in vases; to The Covent Garden Seed Company, for herbaceous flowers; to Mr. W. Rowlands, Chilwall, for cut roses; to Messrs. Jones Bros., Liverpool, for cut flowers; to Messrs. Aitken and Faulkner, Tarvin, for sweet peas and herbaceous flowers; to Messrs. Fishlock Bros., for floral decorations; and to Mr. Hodgkinson, for gloxinias of a good strain.

## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE.

JULY 16.—Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Sir J. D. Llewelyn, Dr. A. B. Rendle, Messrs. W. Hales, W. Fawcett, Hooper Pearson, and F. J. Chittenden (hon. secretary).

DELPHINIUM CONSOLIDA SPORTING.—Mr. W. Hales showed inflorescences of D. consolida with all flowers on one side white and flowers partly blue and partly white on the other. They had appeared in a bed of the ordinary D. consolida at Chelsea where no white forms had been seen before.

DELPHINIUM, GARDEN FORM, VIRESCENT.—Mr. Chittenden showed inflorescences from a blue garden form of delphinium, with all the flowers virescent, the foliose character of the parts (the stamens were not affected) varying somewhat in degree. In some the carpellary leaves were still folded and closed at their edges, the ovules being represented by the serrate margins of the folded edges; in others they were quite open.

PLANTS INJURED BY FUMES FROM SMELTING WORKS.—Sir John Llewelyn showed leaves of a number of different plants from cottage gardens in the Swansea district showing very serious injury, in the form of dead margins and patches. This injury had appeared simultaneously with the introduction of a new method of extracting zinc from its ores in the neighbourhood, and it was thought that probably the greater volume of fumes emitted from the stacks, and possibly a difference in the composition of the fumes was accountable for the greater damage wrought. The specimens were referred to Dr. Voelcker.

ERIA RHYNCOSTYLOIDES.—A botanical certificate of appreciation was recommended to this beautiful, though small-flowered orchid, native of Java, exhibited by Sir Trevor Lawrence, Bart., V.M.H.

CERTIFICATE OF APPRECIATION.—A certificate of appreciation was recommended to Messrs. Charlesworth, of Hayward's Heath, on the suggestion of the Orchid Committee, for work done in raising Odontonia x Edna, exhibited at Holland House Show.

## Reading Gardeners' Association.

The strongest muster of members for the society's annual excursion since the memorable trip to Welbeck Abbey in 1907, assembled on Thursday, July 18, when, by kind permission of Waldorf Astor, Esq., the beautiful gardens and grounds at Cliveden, near Maidenhead, were visited. The steam launch "Majestic" conveyed the party from Caversham Lock at 9.30 a.m., outlying members joining at several locks and at Henley until the number reached 150.

Cliveden was reached at 1.40. At the landing-stage the party was met by the head gardener, Mr. W. Camm, and under his guidance at once proceeded by the steep winding path to the summit of the hill, thence to the huge covered tennis court, where through the kindness of the vice-president an excellent luncheon was in readiness. After the repast and the loyal toast, the Chairman expressed the thanks of the members to Mr. Astor and Mr. Camm for their kindness, and a vote of thanks was accorded to the vice-president, Mr. L. Sutton, for so kindly entertaining the party.

Leaving the tennis court the party walked across the private golf course to the pretty water garden. The fine range of glass houses and the walled garden were then inspected. The mansion, situated immediately above the world-famous Cliveden Woods, which renders the Thames at this point so singularly beautiful, claims as its founder George Villiers, Duke of Buckingham, favourite of Charles II., and was for a time occupied by Frederick, Prince of Wales, father of George III. Two former mansions having been destroyed by fire, the present handsome structure in the Palladian style was designed and erected by the late Sir Charles Barry, and stands in a beautifully timbered park of 300 acres. Passing through the forecourt lawns and gardens, gay with colour, the terrace on the south front was gained. From this point of vantage a view of surpassing beauty is obtained. In the foreground is the charming and extensive Italian garden, exquisite in design; beyond, the woodlands rise abruptly from the Cliveden reach of the Thames, and in the distance the beautifully wooded counties of Berks and Surrey are seen. Passing round the mansion the glass houses immediately adjacent were inspected, and then a visit was paid to the charming herbaceous garden just in the zenith of its beauty. Many were inclined to linger here, but time would not permit.

Having regard to the delays experienced in the morning a punctual start on the return journey was made, and Reading was reached shortly before ten p.m., after an outing pronounced by all to be one of the most enjoyable and successful promoted by the association.

## Horticultural Club.

The usual annual outing of the members of this club took place on Thursday, the 18th instant, and, despite the unseasonable lapse into chilly and gloomy weather, was an extremely enjoyable one. Some fifty ladies and gentlemen, occupying two saloon carriages, reached Slough from Paddington about midday, proceeding thence in motor brakes to Stoke Poges, where they visited the old church, sacred to reminiscences of the poet Gray, whose tomb is in the churchyard, and notable as containing the pew of William Penn, whose name is equally immortalised as the founder of the new great State of Pennsylvania. Leaving the old church, parts of which date back to the twelfth century, the party was then driven through Burnham Beeches and the charming woodlands of which they form a quota, stopping to partake of a very excellent lunch at Wingrove's Restaurant there.

Among the guests were two from Canada, Professor Hutt and Mr. Whyte, and the usual toast of "The King" having been honoured, Mr. Druery proposed that of the visitors generally, coupling their names therewith, in response to which toast they replied in highly appreciative terms as regards the hospitality they were enjoying, the wondrous beauty of the places they were privileged to visit, and last, but not least, the heartfelt reciprocity with which they and their fellows from Canada had recently met in their endeavours to increase the solidarity of the great British Empire by fraternal cooperation.

The lunch over, the party proceeded to Cliveden, where, by permission of W. W. Astor, Esq., they were conducted by Mr.

Camm, the head gardener, through its magnificent grounds and gardens, enjoying en route innumerable glimpses of the picturesque, meandering reaches of the Thames which limits the estate in that direction. Though the day was gloomy and threatening only a few drops of rain fell, and the air was sufficiently clear to detract no whit from the beauty of the many vistas afforded through judicious gaps in the woodland. From Cliveden the party were then driven, by special invitation of Sir Harry J. Veitch, to East Burnham Park, where tea was provided, and another opportunity afforded of inspecting more beautiful gardens, laid out on most charming lines, and, of course, under such auspices as those of the host, replete with the latest and most beautiful horticultural acquisitions. The party was then driven back to Slough Station, where the saloons were awaiting them, and expressed themselves as deeply grateful to both Sir Harry Veitch and Lady Veitch for their kindly hospitality and to Mr. R. Hooper Pearson, the hon. secretary of the club, for the completeness of the arrangements which had been made by him, with Sir Harry Veitch's aid, for their comfort and enjoyment during the day.

### East Anglia Horticultural Club.

Over a hundred members and friends joined in the summer excursion of this club to the noted gardens at Westwick House, Norwich. Colonel Petre, through his genial gardener, Mr. Geo. Davison, had thrown the whole of the gardens, woods, and fruit farm open for the party to ramble in at their own will. The day was cooler than the past few had been, which everyone was thankful for. Almost as soon as they entered the gardens the party was passing under a huge pergola over 300ft. long, and covered with all the choice subjects associated with such locations. The varieties of vitis were most numerous, and gave a charming effect. A little further along, and the visitors passed along a herbaceous border over 350ft. in length, and at no part less than 30ft. wide. The subjects here are planted in large bold masses, and to see them in their glory is a sight to be remembered. Most hardy plant growers know what Mr. Davison has done to improve the montbretias, and it was not to be wondered at that huge tracts of the garden are planted with these flowers. Everything in the greenhouses and vineries seemed at their best, pointing all along to the skill of the man in charge.

Fruit growers, and especially those who have visited the autumn fruit show of the R.H.S., know of Mr. Davison's skill in the culture of pears, but to see his trees is an education. This year they are better than ever, and it will not be surprising to hear that important prizes are won with them. Apples, too, were looking in first-class condition. After the mansion garden had been thoroughly inspected, the party, under the escort of Mr. Davison, wended away to the fruit farm which Colonel Petre has taken a great interest in. Tons of black currants had just been gathered and sent away, and the "pickers" were just busy upon the raspberries. All these pickers are local people, and the sums they are able to earn in this work are a great benefit to the community.

The woodlands, noted for their many kinds of timber, especially firs, were not forgotten, and the large lakes added a charm to the whole of the sylvan scene. Much more could be written, but it must suffice to say that everyone was interested and well pleased with the visit.

### Bournemouth Gardeners' Annual Outing.

On Tuesday, July 16, the members of this society had their annual outing at Southampton. Soon after arriving there a number of them paid a visit to the docks, where they inspected some large liners. After lunch at the Grosvenor restaurant they visited the Jubilee Show of the Horticultural Society of Southampton, which was held at the County Cricket Ground, Bannisters Court. Although the weather was very hot the party greatly enjoyed their inspection of the many and various exhibits, which were of a high order of merit.

### Woking Sweet Pea Show.

The first exhibition of the newly-formed society in the above town was held on the 13th inst., and it was a distinct success. The Public Hall was filled with really excellent produce; it was, in fact, the London show on a small scale, with exhibitors like Mr. T. Stevenson, gardener to E. G. Mocatta, Esq., and Mr. W. Hopkins, gardener to the President, F. A. Wellesley, Esq., J.P. There were many visitors, who, perhaps, had not an idea as to the perfection obtained in sweet peas, and were thus given an opportunity of inspecting specimens that have not been surpassed anywhere this year. Mr. Hopkins did not compete, but put up a score of big bunches in tall glasses, which were much admired. Mr. Stevenson won the first prize in the open class for twelve bunches with, among others, Elsie Herbert, Mrs. Breadmore, Thomas Stevenson, Queen of Norway, Barbara, Edith Taylor, Edrom Beauty, R. F. Felton, and a beautiful vase of a newer form named Queen Mary. The local classes brought capital competition, Messrs. Gabriel, Seabrook, Churcher, and others being responsible for blossoms of much merit. It is also pleasing to note that the society is likely to go on. Promises of support were numerous, and two interested members have already offered silver cups for next year.

## NOTES OF OBSERVATION.

**Climbing Tropæolums.**—Common as they are, so that a pennyworth of seed will go a long way, these are among the finest of climbing plants of annual duration. For the clothing of any unsightly object during the summer their rapid growth is greatly in their favour. Within recent years there has been a great improvement in the colour of the flowers.—S.W.

**Ampelopsis Lowi.** — This pretty form of Ampelopsis Veitchi, or Vitis inconstans, as it is often called, differs considerably from the type. This last is decidedly variable in character; among other items some individuals are more slender in growth than others. The variety Lowi belongs to this section, and in other respects it differs in the leaves being more or less cut and slashed, a feature totally wanting in the typical A. Veitchi. Though brought out a few years ago Ampelopsis Lowi is not yet sufficiently known, for its merits as a pretty self-clinging climber are considerable.—K.

**The Creeping Jenny** (Lysimachia nummularia).—There are very few plants of a more accommodating nature than this, for it can be put to many uses. In damp positions on the rockwork it is very beautiful, while for growing in suspended pots or baskets its markedly pendulous nature stands it in good stead. For the front of window boxes it is also just the thing, provided it is not allowed to suffer from want of water.—T.

**Verbena Mahoneti.**—This pretty verbena, which is by some authorities regarded as a variety of the Brazilian Verbena tenera, is a very pretty kind, and one quite distinct from most of the garden forms in general cultivation. It is of a rather weak procumbent habit of growth, while the flowers, which are of a clear, purplish violet colour, have each segment clearly margined with pure white so as to present the appearance of a white cross on a violet ground. It is not much known, but is amenable to the same mode of culture as the garden varieties of verbena.—S. W.

**Achimenes Rose Queen.**—Of the different garden varieties of achimenes now in cultivation many of the coloured kinds have flowers more or less of a purple hue, except the smaller forms, that show the influence of Achimenes coccinea, a pretty scarlet-flowered species from the West Indies and the oldest member of the genus. The variety Rose Queen is quite distinct from any of these, the colour being a very pleasing shade of deep pink, with a light throat. It affords a very pleasing variety to the forms more generally cultivated.—W.

**Episcia fulgida.**—One of the many beautiful - flowering gesnerads native of South America, for it was introduced from New Grenada in 1873. Both from a foliage and a flowering point of view it is very pretty. The leaves, which are roundish, oblong, and from six to eight inches in length, have their upper surface wrinkled, and of a deep green colour, with the midrib and principal veins of a silvery whiteness. The flowers are tubular and of a rosy-scarlet colour. This plant produces runners freely, and grown in a suspended basket the long stolons terminated by the young plants have a very pretty effect. If these runners are allowed full play the plants do not flower as freely as if they are pinched off. This episcia is also known by the generic name of Cyrtodeira.—T.

## OBITUARY.

### MR. WM. COMFORT.

Mr. Wm. Comfort died at Berwick-on-Tweed on July 15, at the age of 65. He was one of five brothers, all of whom, like their father and grandfather, followed gardening as a profession. He served his apprenticeship in his native county of Aberdeen, and afterwards he became foreman at Altyre, near Forres. He served as head gardener at Maryhill, Elgin; Aberlour, Banffshire; Farnley Hall, Otley, Yorkshire; Knowle Hall, near Birmingham; and Kylemore Castle, co. Galway, first under the late Mr. Henry, M.P., and latterly under the Duke of Manchester. Since he retired from service, about seven years ago, he has resided in Berwick-on-Tweed, where he carried on a fruiterer and seedsman's business. He leaves a widow but no family. One of his brothers is Mr. Charles Comfort, Broomfield Gardens, Davidsons Main's, Midlothian.

### FORTHCOMING ENGAGEMENTS.

SATURDAY, July 27.—Derby Gardeners' Association Summer Show.
Fife and Kinross Horticultural Society.
Gourock Horticultural Society.
TUESDAY, July 30.—Royal Horticultural Society: Floral, Fruit, and Orchid Committees meet at noon. General meeting with lecture by Mr. Cecil Hooper on "Pollination of Fruit Blossoms," 3 p.m. Scientific Committee, 4 p.m.
WEDNESDAY, July 31.—Burwash Horticultural Society.
Totton Horticultural Society.
Midland Carnation and Picotee Society's Exhibition at Birmingham.
Dinas Powis Horticultural Society.
Llanelly Horticultural Society.
Chesterfield Horticultural Society.
Pevensey Flower Show.
Nettlebed Flower Show.

→ Spraying ←
The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested "FOUR OAKS" which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-**. No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 G, SUTTON COLDFIELD.**

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

PROPAGATION OF ŒNOTHERA MISSOURIENSIS.—F. E. J., Hexham.—I have a good specimen of Œnothera missouriensis, but, as it does not seem to ripen seeds, I should like to know how best to propagate it.—This pretty, prostrate species does not seed readily, therefore propagation should be effected by dividing the tufted growths in spring, as soon as mild weather begins. Cuttings of the young shoots, inserted in sandy soil and placed in moderate heat, will root, but care must be taken to commence a gradual process of hardening off directly they have become well rooted.

SPARTIUM JUNCEUM.—W. N. S., Taplow.—We have a number of specimens of this splendid summer-flowering shrub, but some of them are by no means shapely, owing, probably, to lack of care in their youthful condition. Please tell me whether they will stand somewhat severe pruning, to bring them into shape; and, if so, when they should be pruned.—Except for the purpose of keeping it within bounds, or improving its shape, Spartium junceum requires little pruning, but when it seems desirable to use the knife pruning should be done in spring before new growth commences, and then the plants may be cut back quite hard if necessary, and strong growths from the base will result.

PLANTING COLCHICUMS.—N. J. C., Bristol: I shall be obliged if you will tell me the best time to plant colchicums, and from whom to obtain bulbs.—Colchicums should be planted as early in July or August as the bulbs can be obtained. If planting is deferred until after August there is considerable danger of loss resulting from the reduced vitality of the bulbs. You can procure bulbs from any of the hardy plant and bulb specialists who advertise in our columns.

GARDENERS AND HEALTH INSURANCE.—M. M., Oswestry: Kindly let me know through your columns the name and address of the secretary of the United Horticultural Benefit and Provident Society. I have been much interested in the references recently made to this society and its work in the pages of the GARDENERS' MAGAZINE.—The secretary is Mr. Wm. Collins, and his address, 9, Martindale Road, Balham, London, S.W.

SPOTS AND HOLES IN PEACH LEAVES.—A. W. E., Hertford: I am sending some peach leaves, and ask you to kindly tell me the cause of the spots on the leaves, and why the leaves fall off while green. The house is sprayed regularly every day, and the ventilators are opened first thing in the morning and not closed until the last thing in the evening. An early answer will oblige.—The leaves show evidence of a slight attack of the Shot Hole Fungus (Cercospora circumscissa). Burn all the leaves as they fall, relieve the tree of fruits as quickly as possible, and take pains to so water and ventilate that no checks are imposed. After removing the fruits spray with an ammoniacal solution of copper, made by mixing 1oz. of carbonate of copper and 5oz. of carbonate of ammonia in a quart of hot water, and then adding 16 gallons of cold water. Try a small portion of the tree first, as it may be necessary under certain circumstances to add a little more water to the solution. Do not use Bordeaux Mixture. Next year spray with the ammonia and copper solution just as the leaves begin to expand, and repeat the spraying at intervals of about ten days or a fortnight.

## NAMES OF PLANTS.

H. B., Yeovil.—1, Santolin incana; 2, a white form of Polemonium cæruleum; 3, Epilobium angustifolium; 4, Tradescantia virginica.

J. P., Sidmouth.—The specimens sent are such wee scraps that we cannot properly identify them, especially as there are no flowers; 1 is probably Marjoram, judging from its fragrance, and 2 may be the tip of a growth of Buddleia globosa.

D. H., Guildford.—With a few exceptions it is well-nigh impossible to determine a plant from a single leaf; with the best will in the world to help you we cannot do more than suggest that the wedge-shaped leaf and the trilobate one appear to belong to the aralia family. We may point out that the leaves received were smothered in red spider, suggesting that they are growing under conditions too hot and dry.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. JULY 14 TO JULY 20. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| July 14—Sunday | 7 0 | 64 | 62 | 82 | 60 |
| ,, 15—Monday | 12 36 | 77 | 70 | 87 | 57 |
| ,, 16—Tuesday | 12 12 | 74 | 67 | 86 | 57 |
| ,, 17—Wednesday | 12 6 | 68 | 61 | 81 | 56 |
| ,, 18—Thursday | 1 54 | 63 | 59 | 71 | 54 |
| ,, 19—Friday | — | 55 | 50 | 59 | 45 |
| ,, 20—Saturday | 0 36 | 55 | 54 | 64 | 49 |
| Means | (total) 46 24 | 65 | 60 | 75 | 54 |

| DATE. 1912. JULY 14 TO JULY 20. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| July 14—Sunday | — | 66 | 64 | 60 | 53 |
| ,, 15—Monday | — | 68 | 64 | 60 | 48 |
| ,, 16—Tuesday | — | 68 | 65 | 60 | 47 |
| ,, 17—Wednesday | — | 68 | 65 | 61 | 46 |
| ,, 18—Thursday | — | 68 | 65 | 61 | 48 |
| ,, 19—Friday | 0·14 | 65 | 64 | 61 | 33 |
| ,, 20—Saturday | — | 62 | 63 | 61 | 42 |
| Means | (total) 0·14 | 66 | 64 | 60 | 45 |

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# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Business is steady at recent prices.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Asters, white | per doz. bun. | 3 0 | | 5 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 6 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 3 0 | | 8 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum | per doz. bun. | 2 0 | | 3 0 |
| Coreopsis | per doz. bun. | 0 9 | | 1 0 |
| Cornflowers | per doz. bun. | 0 9 | | 1 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 6 0 | | 8 0 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 0 9 | | 1 6 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Gladiolus Colvillei | per doz. bun. | 2 6 | | 8 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Irish, English | per doz. bun. | 4 0 | | 5 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 6 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 6 | | 3 6 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 2 6 |
| Pelargoniums | per doz. bun. | 3 0 | | 6 0 |
| Poppies | per doz. bun. | 1 0 | | 1 6 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 2 0 | | 3 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Stocks | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas | per doz. bun. | 1 0 | | 3 0 |
| Sweet Sultan | per doz. bun. | 3 0 | | 5 0 |
| Tuberoses | per doz. | 0 4 | | 0 6 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

A good demand continues, but prices show a slight downward tendency.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Australian | per box | 6 0 | | 10 6 |
| ,, English | per bush. | 5 0 | | 7 0 |
| Apricots | per ½-sieve | 6 0 | | 7 6 |
| Bananas | per bun. | 4 6 | | 13 0 |
| Cherries | per ½-sieve | 3 0 | | 10 0 |
| Currants, Black | per ½-bush. | 6 0 | | 9 0 |
| ,, Red | per ½-bush. | 4 0 | | 6 6 |
| Figs | per doz. | 1 6 | | 6 0 |
| Gooseberries | per ½-bush. | 2 0 | | 5 0 |
| Grapes, English | per lb. | 1 0 | | 5 0 |
| ,, Almeria | per doz. lbs. | 6 0 | | 8 0 |
| ,, Guernsey | per lb. | 0 10 | | 1 6 |
| Greengages | per box | 0 9 | | 2 0 |
| Lemons | per case | 15 0 | | 20 0 |
| Melons | each | 0 6 | | 3 0 |
| ,, Cantaloupe | each | 2 0 | | 6 0 |
| Nectarines | per doz. | 3 0 | | 15 0 |
| Oranges | per case | 8 0 | | 30 0 |
| Peaches | per doz. | 4 0 | | 15 0 |
| Pineapples | | 2 0 | | 4 6 |
| Plums | per ½-sieve | 3 0 | | 5 0 |
| Raspberries | per doz. pun. | 3 6 | | 7 0 |
| Strawberries | per doz. pun. | 4 6 | | 8 0 |

### Vegetables.

Large supplies meet a ready request at the rates quoted.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| Asparagus | per bun. | 2 0 | | 10 0 |
| Aubergines | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey | per lb. | 0 4 | | 0 10 |
| Beet | per bush. | 1 6 | | 3 0 |
| Cabbage | per basket | 1 6 | | 2 0 |
| Carrots | per doz. bun. | 2 0 | | 3 0 |
| Cauliflowers | per doz. | 1 0 | | 3 0 |
| Cucumbers | per doz. | 1 6 | | 3 0 |
| Endive | per doz. | 1 6 | | 3 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per tally | 2 0 | | 3 0 |
| Marrows | per doz. | 1 0 | | 2 0 |
| Mint | per doz. bun. | 2 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per case | 6 0 | | 8 0 |
| Parsley | per doz. bun. | 2 0 | | 3 0 |
| Peas | per bush. | 3 6 | | 9 0 |
| Radishes | per doz. bun. | 0 9 | | 1 6 |
| Rhubarb | per doz. bun. | 2 0 | | 3 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 3 0 | | 3 9 |
| ,, Guernsey | per doz. lbs. | 3 0 | | 3 3 |
| Turnips | per doz. bun. | 2 0 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

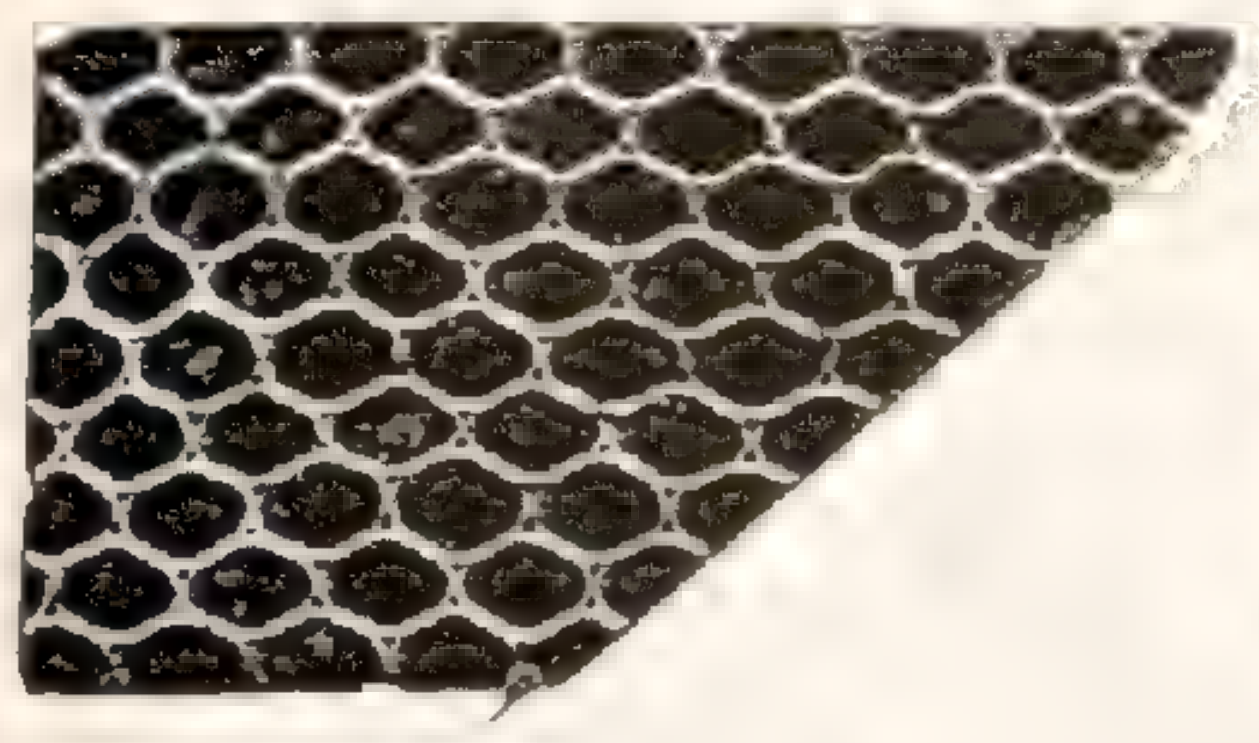
## LONDON POTATO MARKETS.

The return of warmer weather has kept the demand from rising.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per cwt. | 4 0 | to | 6 0 |
| Teneriffe | per cwt. | 7 0 | | 8 0 |
| Kents | per cwt. | 5 0 | | 6 0 |
| St. Malo | per cwt. | 5 6 | | 6 0 |
| Lincolns | per cwt. | 5 0 | | 6 0 |

**PROTECT your FRUIT from WASPS**

COVER ALL VENTILATORS WITH



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| No. 1 (Fine), as shown above. | | No. 2. (Rather Stronger) | |
|---|---|---|---|
| 48 in. wide | 1/2 per yd. | 48 in. wide | 1/4 per yd. |
| 60 ,, | 1/6 ,, | 60 ,, | 1/8 ,, |
| 72 ,, | 1/10 ,, | 72 ,, | 2/- ,, |
| 84 ,, | 2/6 ,, | 84 ,, | 2/9 ,, |

Other widths in proportion.

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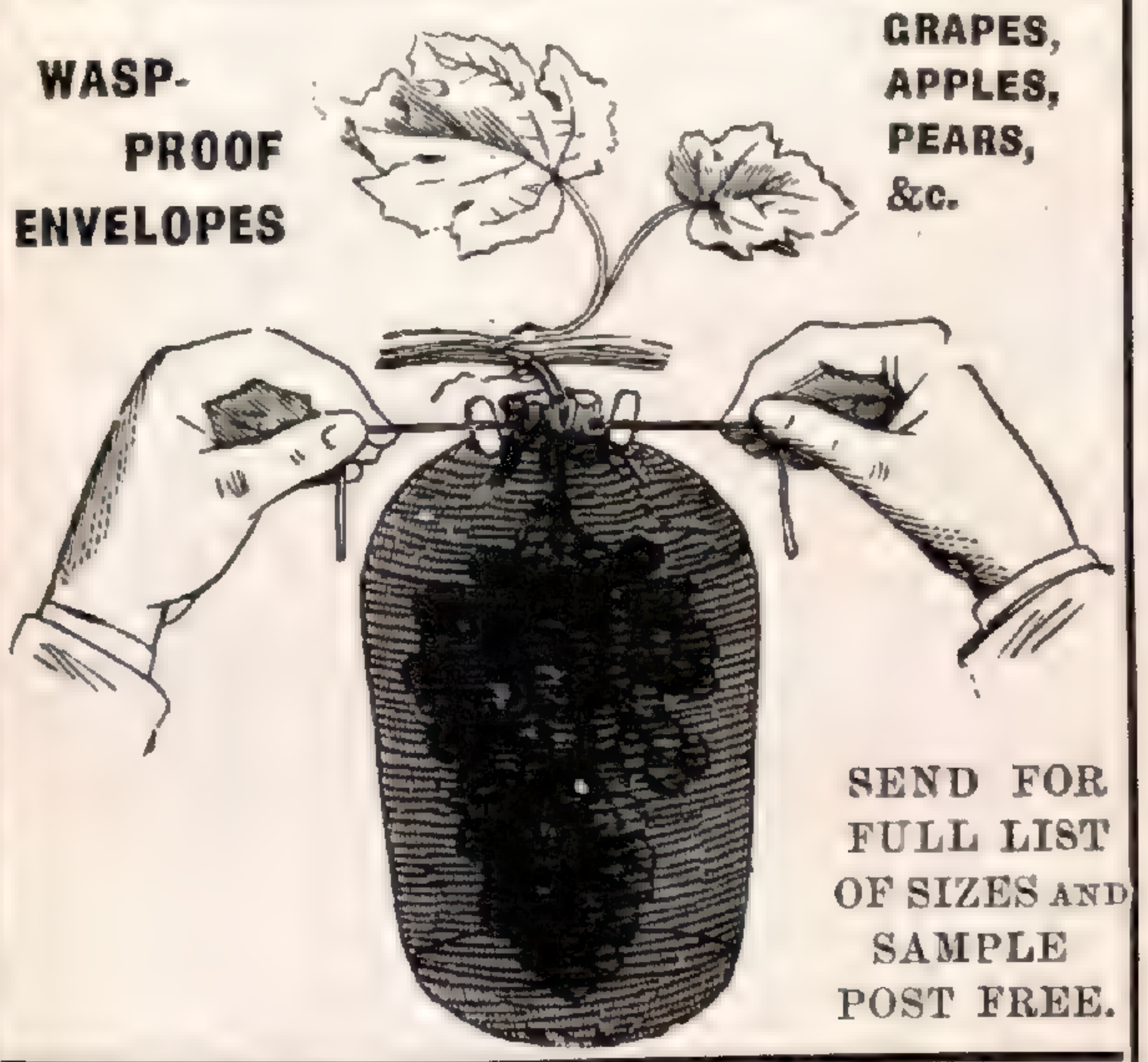
For **PROTECTING GRAPES, APPLES, PEARS, &c.**



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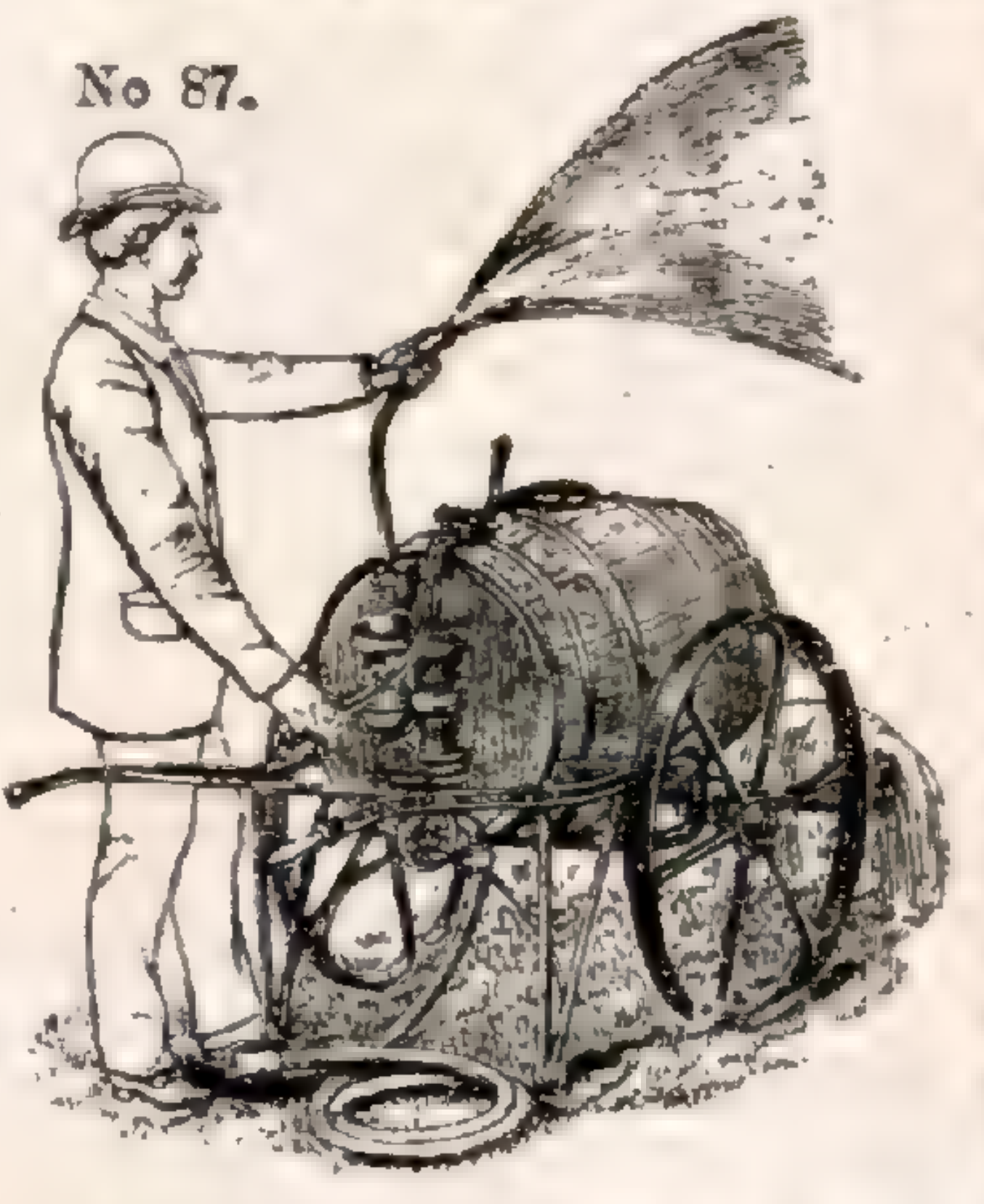

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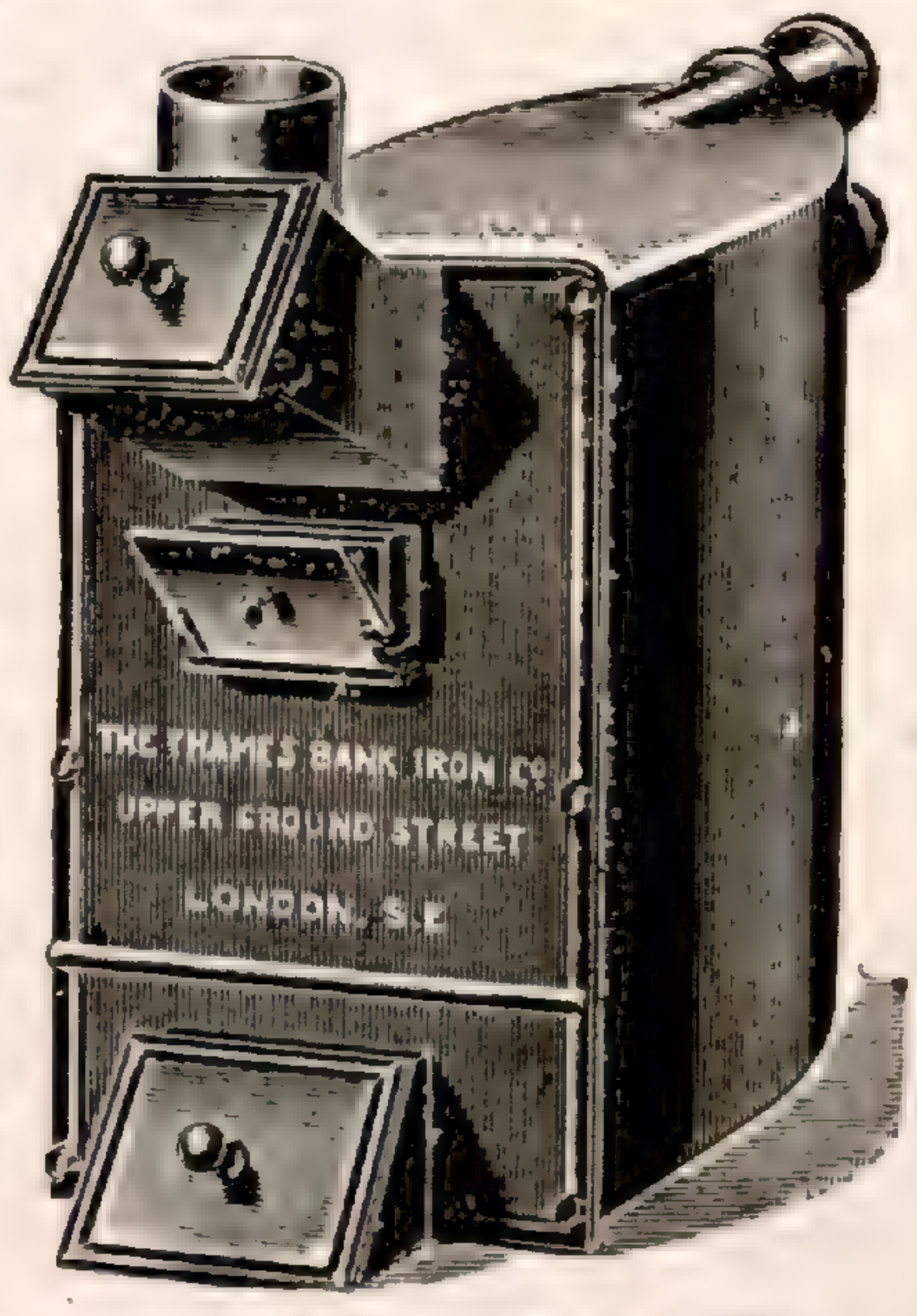

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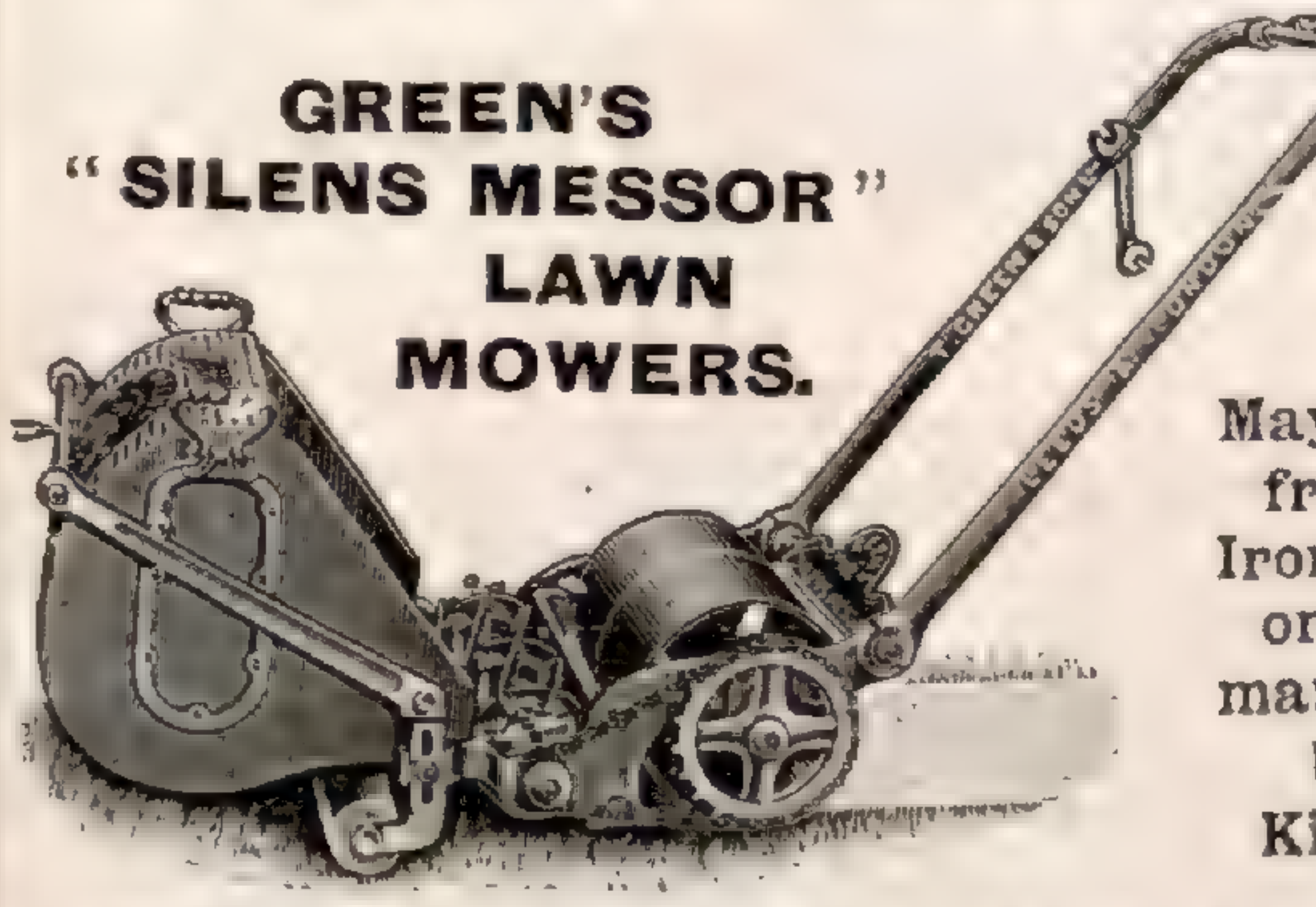

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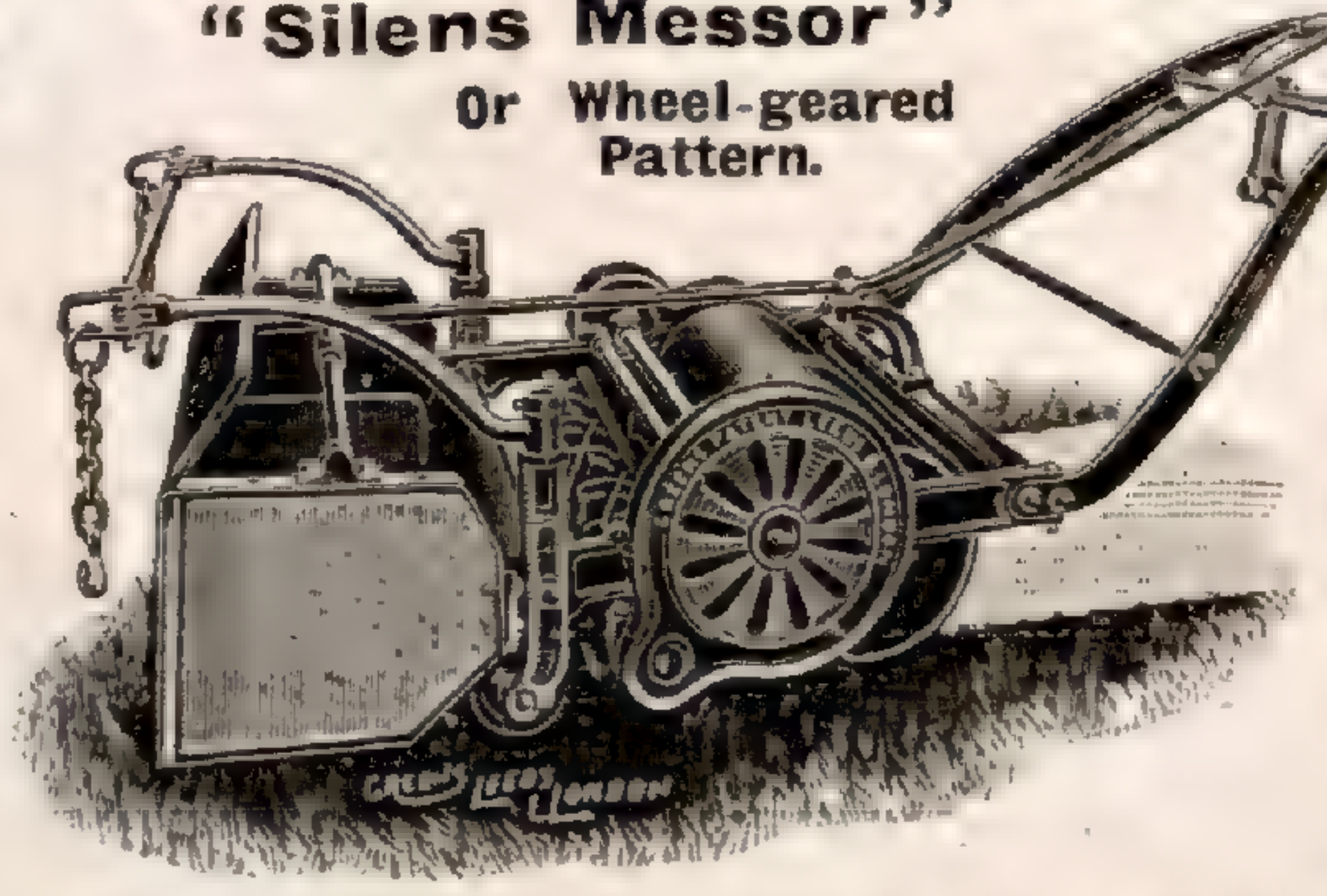

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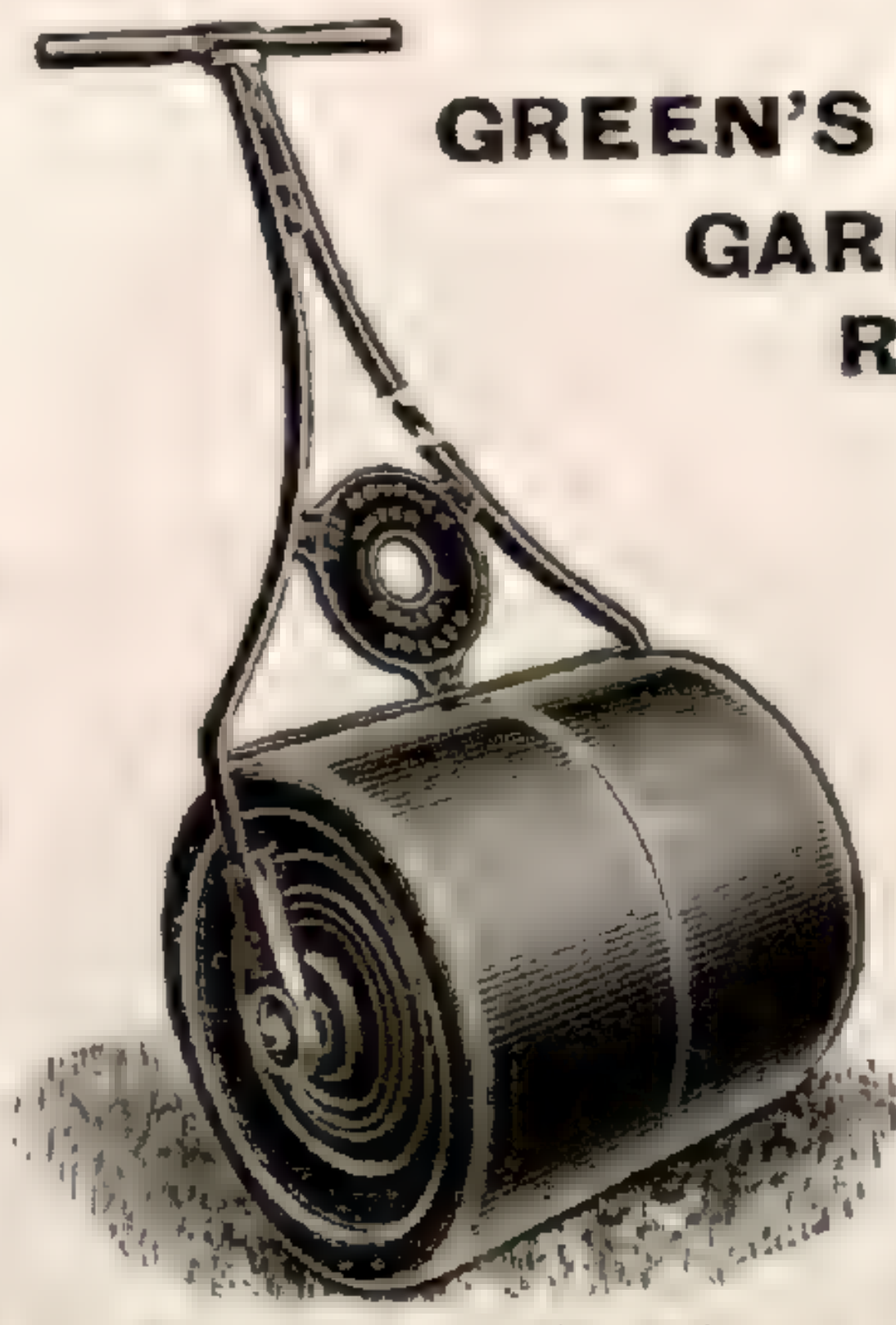

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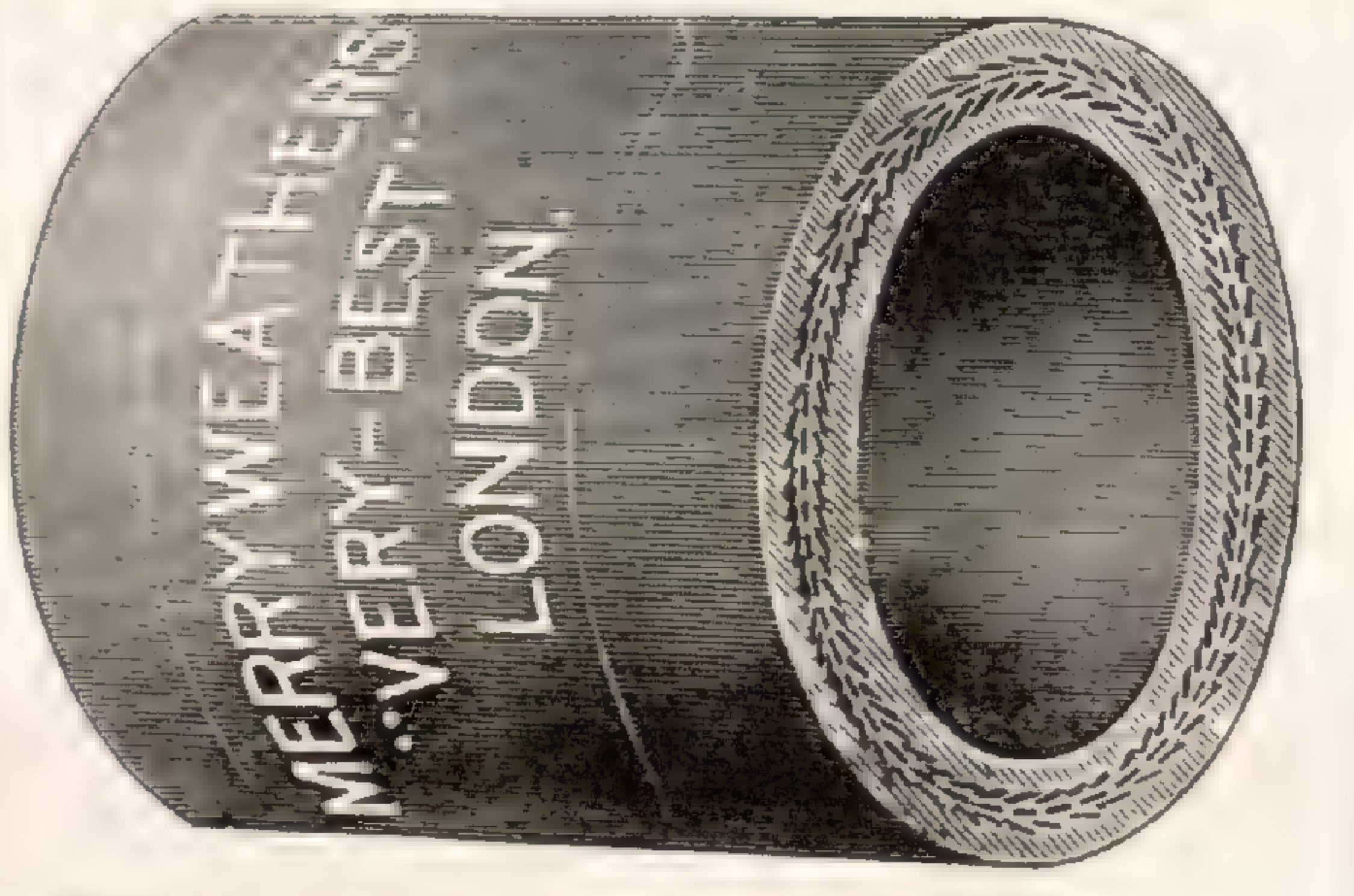

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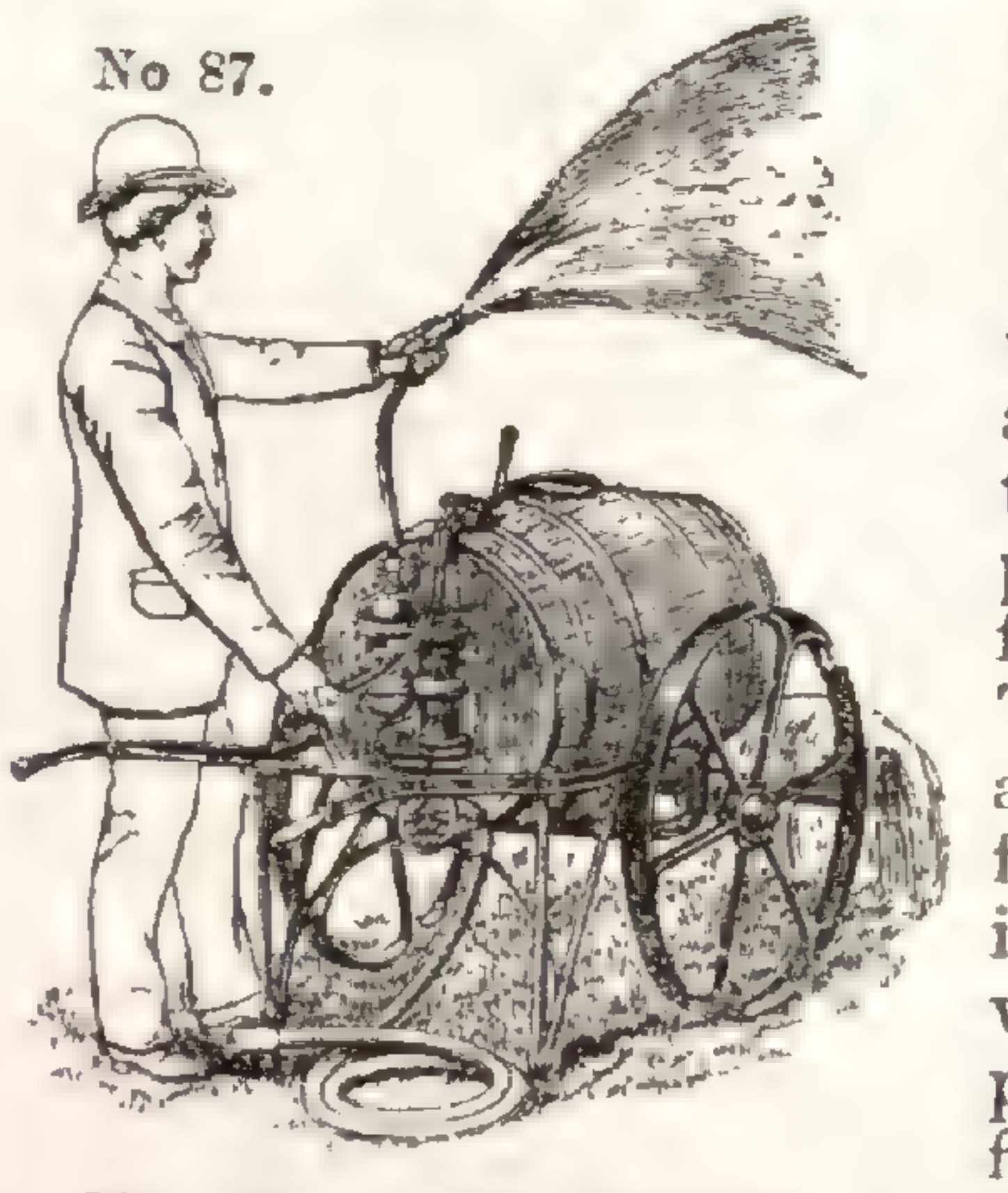

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VOL. LV.—No. 3,066. SATURDAY, AUGUST 3, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Knowledge.

It is at once curious and of absorbing interest to consider how what we term knowledge, which has lifted man to so high a pinnacle above the animal world, and given him such a marvellous grip upon the natural forces of his environment, has been accumulated and built up as the ages progressed. How the capacity for thought originated we need not discuss, it is not a thing on which fossilised remains can throw any light, though in the domain of the remains of human handiwork, including the old flint tools, we get a faint glimpse of progress in contrivance of means to an end, which demonstrates the dawn, or more, of the reasoning power. It is true that in the rest of the animal world, and even to some slight degree in the plant world, we see contrivances which seem to imply even more than a glimmering of reason, but there is never an iota of that accumulating and combining faculty which man enjoys and employs, that hybridisation and cross-breeding of thought which has led up, step by step, to his present exalted position. One of the most important steps—we may indeed say the most important of all—was the translation and transformation of the intangible thought into visible and transmissible characters. Rude hieroglyphics or crude cuneiform inscriptions on stone and imperishable clay still survive to show us how this presumably commenced. Vocal language doubtless long preceded even these, but vocal language in itself is as transient as the breath that forms it, and, though memory may permit of its being handed on from generation to generation, memory itself is treacherous, and little to be relied upon. The graven word, however, lasts indefinitely, and it is one of the most interesting features of our theme that those, so to speak, original marks have been found translatable, and the thoughts therein incorporated have found transmissible shape to every civilised brain in all the countless idioms of the world, and even ultimately in the unsubstantial dot and dash, or intermittent flash of the wireless telegraph. In the interim between these two extremes there lie, of course, the many grades which printing proper passed through, the development of which has, in these days, linked together on easily intelligible lines all the intellects of the world. By virtue of this intercommunication, thought breeds thought with greater and greater rapidity. In one brain, perhaps, a mere glimmering of a great idea is conceived, and finds expression, and this in its turn becomes the fertilising germ or enlightening inspiration in another. A thousand apparently unconnected and inchoate facts are noted by various individuals, and suddenly, in some brain, a ray of light is engendered by their association, and lo! a new law is found, and a myriad other facts are simultaneously illuminated, brought into rank, and another great forward step is chronicled; and so it goes on. The more we know the more we are able to penetrate the so-called secrets of Nature, secrets no longer, but rewards held out, as it were, by her for the patient student, the "poking and prying" scientists, who devote themselves to her study in the thorough-going spirit of research. All this progress, however, depends, and this is really what has inspired us in writing the above, upon the definite and careful record of results. The entire edifice of our knowledge is built up, as it were, of a myriad of bricks. The raw material is often accumulated with little or no plan, as merely recorded and attested facts, but then, as we have indicated above, a plan reveals itself, the bricks work themselves into the structure, whose permanence, of course, depends upon their soundness, as with buildings of more substantial character. Every student of Nature, every horticulturist or gardener, to bring the point home, is a potential brick-maker, but to be a practical one he must not only experiment and observe, but he must give his fellow men the benefit of his knowledge by keeping careful record of what he sees. Too many there are who go through life, and even obtain good positions and great respect as experienced, practical men, but when they die nearly all, if not all, of their acquired knowledge dies with them. In these days we have a Press whose special function it is to collect and disseminate knowledge of practical value, record fresh observations, and, in short, do their best to add, in their own special line, as many bricks as possible to the great Temple of Knowledge, to the existence of which we all, in one way and another, are infinitely indebted throughout our lives, as the source of both our comforts and necessaries, to say nothing of our intellectual enjoyments and general progress.

MR. JOHN GARDNER.

**Mr. John Gardner,** who was appointed head gardener to the late Sir John Astley, Bart., at Elsham Hall, near Grimsby, in 1868, occupied that position until he retired in October, 1911. In recent years he served under Sir Francis E. Astley-Corbett, and during the period of forty-three years that he had charge of the Elsham Hall gardens, nothing but the most cordial relations existed between employers and employed. It is not to be wondered at, owing to the changes in horticulture and in the fashion of gardening, that Mr. Gardner practically remodelled the gardens during his tenure of office, and lived to see much of his earlier planting come to full fruition. When Sir J. Astley instituted the Elsham and Worlaby Horticultural Society forty-one years ago, Mr. Gardner became the manager of the show annually held on August Bank Holiday, and the success of the exhibition has been largely due to his work and influence. Mr. Gardner has now resigned his position in the society, but his many friends propose to present him with a testimonial as a record and appreciation of his long and able services. In his younger days Mr. Gardner was a successful exhibitor, while his success as a gardener is well known. Mr. J. Gardner, of Batsford Park Gardens, one of our contributors, is a son of the Mr. J. Gardner whose portrait appears in this issue.

**Grant of £500 a Year for Experimental Work in Fruit Culture.**—The Board of Agriculture has intimated its willingness to make a grant of £500 a year towards the provision of a plantation wherein trials may be conducted and experiments carried out in fruit culture. The Board suggests the co-operation of the County Councils of Kent, Surrey, and Sussex, and the grant will be made only on condition that the authorities at Wye Agricultural College make themselves financially responsible for the conduct of the work. We understand that the Education Committee of the Kent County Council has recommended a substantial grant for the purpose, and it is estimated that the cost of necessary land and buildings will amount to about £2,500.

**Patrinia palmata.**—As a consequence of an unfortunate printer's error, the inscription prepared for an illustration of a new fern was attached to our illustration of Patrinia palmata, on p. 571, in our issue of July 27. Those of our readers who file the Gardeners' Magazine will kindly note that the proper inscription should read: "Patrinia palmata. A dwarf hardy perennial, with palmate or trilobate leaves and flattish corymbs of clear, bright yellow flowers. A.M., R.H.S., July 16. Miss Willmott, V.M.H., (gardener, Mr. C. Fielder, V.M.H.), Warley Place, Great Warley."

**A Novel Window Display.**—During its Cricket Week, Tunbridge Wells adds to its natural beauty and gaiety by means of various decorations. The Tradesmen's Association offers several prizes for the best shop window display, and the premier award, a handsome cup, was won this year by Mr. John Charlton, whose display represented an Old English Garden. The foreground was a paved walk, with low-growing plants among the stones. Towards the terraced end a sun-dial figured, and on the terrace stood the figure of a boy carrying a flower-laden basket on his head. At the back of the window a bold herbaceous border was arranged, finely filled with hollyhocks, liliums, campanulas, delphiniums, violas, etc., with pillar specimens of rambling roses, honeysuckle, and clematises, at intervals, the whole being backed by a hedge of Cupressus Lawsoniana. This display was very greatly admired, and Mr. Charlton is to be congratulated.

**Horticulture and Land Taxes.**—The following resolution was passed unanimously by the Horticultural Advisory Committee of the Land Union, on Tuesday, July 23: The Horticultural Advisory Committee of the Land Union, consisting of practical men engaged in the horticultural trade, emphatically protests against the proposal to impose further taxes on land (as distinct from other forms of property), and states without hesitation that the practical result of such taxation would inevitably be to compel many British growers, who necessarily cultivate considerable quantities of land, to close down (they being already hard-pressed by the competition of growers in other parts of Europe). The committee further desires to point out that this result would not only ruin many nurserymen and market growers, but would throw out of employment many thousands of workpeople employed by them, and would also render it impossible for persons of moderate means to enjoy the benefits of a garden. Finally, the committee urgently claims that land should be relieved from the crushing and increasing burden of rates and taxes at present imposed to cover the cost of various public services which should properly be borne by the Imperial Exchequer.

**Proposed Rose Show for the City of London.**—Respecting this proposal, Mr. David Aitchison, St. Mary Axe, E.C., writes: I think Mr. Protheroe's suggestion (p. 568) an excellent one, and am sure there would be no difficulty in getting a sufficient number of members to start such a society, provided the annual subscription were not too high, as many people would willingly pay 5s. per annum, while only enthusiasts would give more. I believe the only society of the kind in the City at present is the "Baltic Rose and Sweet Pea Society," St. Mary Axe, which was formed in 1907, and has been a great success, the last show, held on July 2, being the best of all, but this society is confined to members of the Baltic, Mark Lane, and Lloyds.

**Open Space for Shoreditch.**—On Saturday last the gardens surrounding the old almshouses in Kingsland Road, Shoreditch, were opened for the use of the public. A lily pool and fountain have been provided, and a portion of the gardens has been reserved for games for the children. The almshouses belonged to the Ironmongers' Company, and were erected in 1715 with the money bequeathed by Sir Robert Geoffreys, who was Lord Mayor of London in 1686, when Shoreditch was but a little village. Now, Shoreditch has an area of 543 acres, and a population of 111,463, so this little open space will be a pleasant oasis in a wilderness of bricks and mortar.

**Hertford's New Garden.**—Hertford Castle and its surrounding five acres of grounds have been leased to the Corporation of Hertford, for the public use, for seventy-five years, at an annual rental of half-a-crown. This unique arrangement is due to the generosity of Lord Salisbury, who, on Saturday last, amid much enthusiasm and rejoicing, opened the fine new entrance gates presented by Mr. Osmond McMullen. These gates are practically in the centre of the town, and so are a great convenience as well as a handsome ornament. The Corporation presented Lord Salisbury with a gold key and with a silver model of the castle.

**Addition to Brandelhow Park.**—Manesty Park, about ten acres in extent, has been acquired by the National Trust. This adjoins, and will be added to, the beautifully wooded area of about two hundred acres, known as Brandelhow Park, situated on the western shore of Derwentwater.

**Carnation Feast at Reading in 1787.**—The following quaint record of particulars concerning a Carnation Feast held at Reading in 1787, appeared recently in the "Daily Telegraph": A Carnation Feast will be held at Mr. Smith's, the Horse and Jockey Inn, Castle Street, Reading, on Friday, the 27th instant, when the person that exhibits the eight best whole-blown French carnations, of eight different sorts, will be entitled to a piece of plate of one guinea and a-half value; to him that shews the eight second-best ditto of eight different sorts, a piece of plate of one guinea value; and to any person that exhibits three seedlings of his own blowing, of this year's raising, to be intitled to a piece of plate of half a guinea value. The prizes to be determined by three umpires chosen by the majority of the company. Each persons that shews to subscribe two shillings and six-pence towards the prizes, and to prove on oath that the flowers are his own blowing from the layers or plants from the spring potting

**The Hampton Court Vine,** now 144 years old, is this year carrying a crop of about 300 bunches of grapes, many of these weighing over two pounds each. The crop will soon be fit to cut.

**Progress at Brighton.**—It is with very great pleasure we learn that the Brighton and Sussex Horticultural Society has secured two hundred new members since January last. The exhibition recently held in the Dome and Corn Exchange was a good one, and the Corporation Challenge Bowl and Gold Medal for the most meritorious exhibit was won by Mr. G. Chandler, gardener to S. C. Witting, Esq., Hollingbury Copse, Patcham. For the third successive year Mr. Chandler also won the cup presented by the late Alderman J. W. Howlett for the best group. This trophy he has now won outright, but the society will not be the loser as Mr. Witting has presented another cup for competition.

**Proposed Boating Lake for Hull.**—The Rt. Hon. T. R. Ferens, M.P., the new High Steward of Hull, has offered to construct a large boating lake for Hull, between East Park and the King George V. Playing Fields. We need hardly add that the Corporation of Hull have gratefully accepted this generous offer.

**Great Rose Show at Boskoop in 1913.**—A large exhibition of roses will be held at Boskoop, Holland, in July, 1913. Mr. T. H. Van Nes is president of those who are promoting the exhibition.

**A Wild-flower Garden at Norwood.**—Attached to the South London Botanical Institute, at Norwood, is a garden about seventeen yards square, wherein Mr. Griffin, the Curator, grows a quite remarkable collection of British wild flowers, together with examples of those exotics that have settled down in this country and become naturalised. Those living in the south-east of London and wishing to improve their knowledge of British botany might well make a call at 323, Norwood Road. In the institute is a collection of some 40,000 dried specimens.

**Front Flower Gardens at Nottingham.**—We have pointed out time after time how very greatly the beauty and attractiveness of a town could be increased if the residents took some pains to make their own front gardens presentable. In this connection a correspondent points out that considerable art is displayed by many of the citizens of Nottingham in the laying out of their small front gardens. He writes: Take my street as an instance, what could be more pretty and enchanting than Dryden Street, with its beautiful old brown stuccoed frontage, now a perfect mass of greenery and creepers, the ivy and Veitchi and Virginian creeper completely festooning its windows and doorways, while many of the gardens are a perfect blaze of colour with beautiful flowers. I often go out of my way to walk down such streets, and I think it would be a good thing if our Public Parks Committee, or those in power in the Horticultural Society, would do as many of the railway companies and other authorities are doing, that is, give prizes for the best-kept front gardens. It would encourage the art of gardening and tend to make many parts of our old city pleasant and attractive.

## WILD FLOWERS WORTH GROWING.

Many of our native wild flowers are very lovely, and in a number of instances they are well worthy of cultivation, although in some quarters their beauty is overlooked in favour of more costly things. If some of these plants had been collected in far-off countries, at much risk and expense, they would be more highly valued than is the case at present. A number of our indigenous plants succeed admirably on rock gardens and in herbaceous borders, while a large percentage of them look their best when naturalised in the wild garden.

Among the anemones, A. nemorosa (the Wood Anemone) is a charming subject for naturalising; while A. Pulsatilla (the Pasque Flower) is frequently grown in rock gardens. Arabis alpina (Rock Cress) is deservedly popular; it grows freely in certain hilly districts. Dianthus cæsius (the Cheddar Pink) grows freely on limestone rocks in Somerset, and is a very attractive plant. Lychnis viscaria and L. alpina grow on the hills in North Wales and Scotland, and the improved garden forms are very effective plants. Cerastium arcticum (the Mouse-Ear Chickweed) and C. alpinum are found on the rocks in the North, and are sufficiently attractive for the rock garden. Dryas octopetala (the Mountain Avens flourishes on some hillsides in Scotland, and is a charming little plant.

Several of the potentillas (Cinquefoils) are worthy of a place; while that lovely little plant Saxifraga oppositifolia is especially attractive. Forms like S. o. splendens and S. o. pyrenaica are great improvements on the type, with larger flowers. Sedum album and S. rupestre are attractive members of the stonecrop family; and Sempervivum Tectorum (the Houseleek) is a well-known native plant that flourishes on old walls and roofs. Several of the wild orchids, like Orchis mascula, O. maculata, and Cypripedium calceolus, are lovely little plants; the latter has bright yellow flowers; and Habenaria biflora (the Lesser Butterfly Orchid) is one of the most attractive.

Aconitum Napellus, Trollius europæus (the Globe Flower), Astrantia major (the Master Wort), Centranthus ruber (Red Valerian), and Solidago virgaurea (Golden Rod) are suitable subjects for the herbaceous border, and are all indigenous. Caltha palustris (the Marsh Marigold), Epilobium angustifolium (Rose Bay, or French Willow), and Lythrum salicaria (Purple Loosestrife) flourish in shady positions near the water's edge. Scabiosa arvensis (the Field Scabious) is worth naturalising in the wild garden; as also is the common field Marguerite. Several members of the Cranesbill family, like Geraneum sanguineum and G. pratense, with purple-blue flowers, are attractive for the shrubbery border.

Spiræa Ulmaria (Meadow Sweet), Fritillaria Meleagris (Snake's Head), Digitalis purpurea (the common Foxglove), Campanula latifolia (the Bellflower), and C. rotundifolia (the Harebell) are charming subjects for naturalising. Scilla festalis (the Bluebell), narcissi, and the snowdrops must, on no account be omitted; while Myosotis alpestris (the Mountain Forget-me-not) and M. palustris are attractive in their proper sphere. Verbascum nigrum (a native Mullein), with yellow flowers, grows about 3ft. in height. Malva sylvestris (the common Mallow) and other members of the family are suitable for naturalising.

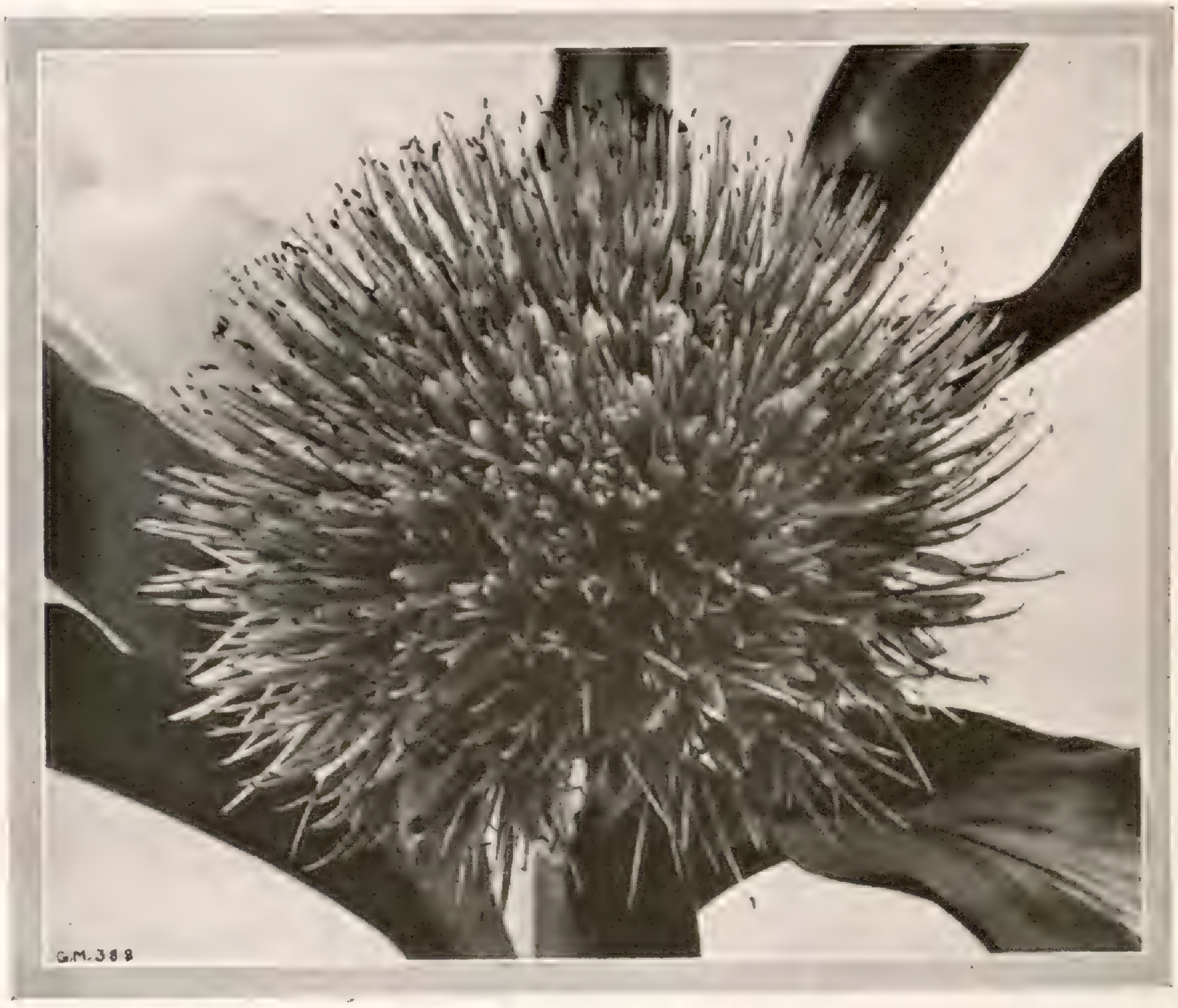
Butumus umbellatus (the Flowering Rush) and Iris pseudo-acornus (the Water Flag) are suitable for the water garden, as also is Nymphæa alba (the white Water Lily), a very charming flower. Polemonium cœruleum (Jacob's Ladder), Anchusa sempervirens (the Evergreen Alkanet), and Pulmonaria officinalis (Common Lungwort) are suitable for shrubbery borders. The periwinkles, both Vinca major and V. minor, are charming plants, and so is Hypericum calycinum (St. John's Wort), its rich yellow flowers being especially showy. Corydalis lutea (Yellow Fumitory) is largely naturalised in some districts, and it grows on dry banks and walls.

Calluna vulgaris (Common Ling), Erica ciliaris, and E. vagans (Cornish Heath) are very effective planted in large masses. Convalaria majalis (Lily of the Valley) and Primula acaulis (the Primrose) are both well known, and are seen at their best when naturalised in large masses.

Amongst climbers, Clematis vitalba (Traveller's Joy) and Lonicera Periclymenum (Honeysuckle or Woodbine) are very delightful when growing over forest trees in the wild garden. Cytisus scoparius (Common Broom) and Ulex europæus (Furze or Gorse) are very effective when in flower, and succeed admirably on rough banks. Viburnum Opulus (the Guelder Rose) and V. Lantara (the Wayfaring Tree) are both handsome shrubs; while Rosa rubiginosa (Sweet Briar) and R. canina (the Dog Rose) are each charming in their way. Cratægus oxyacantha (the Hawthorn) and the various native prunuses and pyruses, the Bird Cherry and the Crab Apple, for example, add more than a little beauty to our gardens.

The above list is by no means exhaustive, and merely indicates some of the more desirable members of our native flora. Those who are really interested in wild flowers could very well collect a number of the species named for themselves, and add them to their gardens.

Batsford Park Gardens. J. GARDNER.



HÆMANTHUS ANDROMEDA.

Flowers bright salmon-scarlet, borne in dense, rounded heads. A.M., R.H.S., July 30. R. R. Cory, Esq. (gardener, Mr. Cobb), Duffryn, St. Nicholas, Cardiff. (See p. 599.)

## PINUS BANKSIANA.

In numerous places in the North of England and Scotland there is a disposition to plant this North American tree under forest conditions, for the reason that it is considered to be of a peculiarly hardy constitution, and will probably grow where other kinds of trees will not. Before embarking on any considerable expense, however, it would be wise for intending planters to look further into the history of the tree, with a view to ascertaining whether it is ever likely to produce timber, even if it grows in high and exposed places. The Americans do not look upon it as a commercial timber tree, except in a few places in the extreme north, where there is practically nothing else.

At its best it is little more than a scrub pine, although trees with a diameter of two and a-half feet, and a height of seventy feet, are recorded by Hough in "American Timbers."

Comparatively few mature trees are to be found in this country, for its unsatisfactory growth after the first few years has been against it as an ornamental tree, and the few old trees to be found are rarely more than twenty to thirty feet high, of small girth, and a stunted character. With this in view, it appears to be waste of time and money to introduce the species where anything else can be grown, whilst for the present there is plenty of land in most parts of the country at a comparatively low elevation which might be planted before attempting high and exposed land.

The probable reason why this tree finds friends is that whilst growing in nursery quarters its growth for a few years is as vigorous as that of the Scots Pine, annual shoots of twelve to fifteen inches on three-year-old plants being not uncommon. This rate of growth is not retained for long, however, especially when the trees have been placed in permanent quarters.

W. DALLIMORE.

## HORTICULTURAL EDUCATION IN FRANCE.

In the report on Horticultural Education, prepared for the International Conference held at Chelsea in May last, Professor L. Henry, of the National School of Horticulture, Versailles, contributes the following account of horticultural education as conducted in France:—

Horticulturists may be divided under three heads, viz.: Horticulturists proper, seedgrowers, and market gardeners.

1. Horticulturists.—One or other of the following methods is usually pursued in training horticulturists proper:

A. By professional apprenticeship—

(1) Either in some horticultural establishment,

(2) At the residence of someone who possesses gardens so large as to necessitate the employment of professional gardeners for the purpose of maintaining them,

(3) In public gardens, such as botanical or ornamental gardens belonging to the State or Municipality, of which a considerable number exist.

(4) In the garden schools of the various horticultural societies (twenty-four in France).

B. By a stay in one of the special schools numbering sixteen in all.

2. Seed Growers.—The same method is followed as in the case of horticulturists proper, but in this case the number of special firms or persons cultivating seeds is much more limited, only certain large houses raising their own seeds, such as—Vilmorin-Andrieux and Cie., Cayeux and Le Clerc, Chausse, Fortin, and Laumonnier, Simon (Louis-Léon), in the neighbourhood of Paris—Rivoire at Lyon—and Denaiffe at Carignan (Ardennes).

All other seed merchants, and even some large houses themselves for different specialities, draw their seed supplies from specialists who are generally located in districts particularly suitable for such productions.

3a. Market Gardeners, or Maraichers, as they are called in France.*—In the environs of very populous centres, such as Paris, Lyons, Lille, Nancy, etc., the cultivation of market gardens to be really remunerative requires special knowledge, practice, and a particular training, which is difficult, if not almost impossible, to acquire otherwise than by a proper apprenticeship with some specialist of experience.

Thus it is in this way that the professional market gardeners in France are generally very independent, being specialists who can demand for the vegetables which they produce a remuneration quite out of proportion to the work entailed—in fact, a regular salary for one of the roughest professions, which, however, strange to say, is handed down from father to son in families of simple manners, usually patriarchal, honest, and very hard-working.

3b. Vegetable Growers.—Although market gardening is quite a special branch of the horticultural art, and necessitates a particular apprenticeship, it is not quite the same thing as producing vegetables in season, which only requires simple and non-expensive material.

Strictly speaking, this should not be called a speciality, since it is a relatively easy and simple part of horticulture in general, in fact, a cultivation open to all, yet it may become, if it is properly carried out, a source of very considerable profit.

This cultivation must be learnt with those gardeners who are established with the special aim of supplying modest households, and for this purpose they work a piece of land, more or less extensive, without attempting to obtain articles of luxury so much as those in season and of fine quality.

It can also be learnt in large private houses under the direction of a clever and trained gardener. Very often, and it is one of the best methods, the apprenticeship is a family one—the son then works as soon as he can with his father and receives from him all the technical instruction and all the necessary manual qualifications. Naturally the schools of agriculture worthy of the name make their pupils familiar with the cultivation of vegetables under conditions more or less perfect, according to the resources which they have at their disposal. Schools of agriculture themselves, when they are properly managed, and possess a chief who is practical and somewhat clever, also form gardens adaptable for the ordinary culture of vegetables.

It is in these same establishments that agricultural students are taught those methods which are indispensable to the smallholder. This part of the training is very often neglected, in spite of all the interests which it presents from the point of view of food production, and the resources which one can derive from it. The teaching of gardening, in principle, forms part of the programme of the movable domestic agricultural schools; but what can they do, and what influence can they have for a period of instruction restricted to three months at the outside, crammed with so many subjects, and purely theoretical from the horticultural point of view? They are held during the winter months, and all classes of this nature must, of necessity, do without practical application.

This is a state of manifest inferiority by comparison with what takes place in neighbouring countries (Belgium, Germany, Switzerland, Italy, England, etc.), where fixed schools are the rule and where the young woman—the future housewife—is instructed in the art of gardening, which, later on, she will have to undertake in rural cultivation.

Whilst a neighbouring country, Switzerland, possesses two horticultural schools for young women, it is as much as France can do to show a single experimental, permanent, domestic, horticultural-agricultural school, brought into being by private initiation.

### Theoretical Instruction.

Leaving aside the purely practical part and considering the theoretical instruction only, this we find is distributed—

(1) In horticultural schools of all kinds.

(2) Agricultural schools of all degrees and the farming schools where the instruction for vegetable culture is more particularly adapted to the needs of the farm.

(3) Various special schools under the authority of the Minister of Agriculture.

(4) Domestic agricultural schools, either stationary* or movable.

(5) Lectures and courses held by special professors.

(6) Lectures and courses organised by various societies of popular instruction, associations philotechniques, associations polytechniques, young people's unions, gardeners' societies, and lectures organised by the horticultural societies.

(7) Municipal and county lectures or classes.

Under the impulsion of enthusiastic initiators, these classes and lectures have been organised more or less generally, but especially, as goes without saying, in important centres where audiences are not wanting. Paris, in particular, has in this respect achieved some very remarkable progress, and such and such a professor (often a trained and clever gardener), and such and such a willing delegate, animated solely by his desire to render useful service and to serve the cause of horticulture, gathers round him in the evening during the winter in some hall which is held at his disposal by some intelligent municipality or some society favourable to progress, an audience eager for instruction—attentive and sympathetic.

There the clerk, freed from his office or shop labour, the working man from his workshop, the amateur who cultivates his little garden plot in the suburbs, come to derive the information which is necessary for the intelligent cultivation of vegetables and fruit.

### Technical Training of Arboricultural Gardeners.

4. Arboricultural Gardeners. — The knowledge of the cultivation of fruit trees is acquired in the same manner as vegetable culture—

(1) By study in special schools;

(2) Professional apprenticeship to practical work under the direction of arboricultural gardeners, whether in private houses, or in establishments devoted to fruit production, or in important nurseries;

(3) By attendance at classes and lectures given by county or municipal professors, or of horticultural societies, or even of popular educational societies.

### Technical Training of Gardeners in Private Houses.

Gardening in private houses embraces all the various branches of horticulture.

The preparation of gardeners for this work is accomplished in France principally by apprenticeship under the orders and directions of experienced, clever, and master gardeners. The apprentices, being anxious to perfect their professional instruction, afterwards stay a certain time with specialists, vegetable growers, florists, arboriculturists, etc.

The schools we have previously mentioned as teaching horticulture also train a certain number of gardeners for private houses. There are many complaints in France of the apprenticeship difficulty in horticulture, as well as in every other branch of the agricultural and industrial concerns. In order to meet this difficulty the horticultural authorities recommend and propose some special schools for horticultural apprenticeship.

### Technical Instruction of Gardeners of Public Parks and Scientific Gardens.

To stay and work in some establishment of a similar kind (public gardens and botanical gardens of the State, societies, or some large school, etc.) constitutes the most usual preparation for this work in France.

The National School of Horticulture of Versailles is, in this respect, a nursery often made use of, especially as in recent years positions of this nature are competed for.

In its School of Arboriculture of St. Mandé, the Administration of the Public Gardens and Walks of the City of Paris, who retain at St. Mandé trained and specially competent specialists, prepare agents fully qualified in these matters.

(To be continued.)

**Heuchera sanguinea.**—I noticed a reference in your paper recently to Heuchera sanguinea, and thought a note respecting it might interest you. Heuchera sanguinea, one of my introductions, was brought by a friend of mine from Mexico; there were six plants packed in a small basket, five of which were alive, and were planted in my private garden at Tottenham, where they flowered well, the spikes being four feet high, and much finer than anything I have seen since. They produced a quantity of first-class seeds, the whole of which was then handed over to Mr. T. S. Ware, of Tottenham. As the plant propagated so freely from seeds, division was neglected, and so the true plant was soon lost. However, the plant now passing under the name of "Walker's Variety" was from the original seed which I gave Mr. Walter C. Walker; when I saw it in bloom I obtained it from him, and this was the origin of the variety sent out under his name, which, I contend, is the nearest I have seen to the originally imported plants.—Amos Perry, Enfield.

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*In horticultural language, when speaking of the cultivation of vegetables, one distinguishes between market gardeners and kitchen gardeners. Market gardeners have in view the supply of the markets, and this is carried on under special conditions; kitchen gardeners rather have in view the providing of household requirements by means within the reach of anyone.

* Permanent or stationary domestic agricultural schools are still very rare in France, as so far everybody is especially attached to the creation of movable schools.

## TALL CAMPANULAS.

The value of tall campanulas for garden decoration during the summer months is apparent to all lovers of the garden. The grace of these useful perennial plants gives a touch of daintiness which few other hardy flowers can surpass. There is scarcely a garden, whether it be country or town, which would not be greatly enriched by the inclusion of a selected collection of the taller campanulas, and this being so, it behoves the garden lover to keep in touch with the most useful members of the group.

It has ever been my aim to include at least a few of the best campanulas in every planting of hardy plants, which has come under my personal direction, and the results have always justified their inclusion. It may have been noted that in many gardens the perennial campanulas have been represented solely by the persicifolia forms, to the total exclusion of all others. Although I wish to keep the persicifolia section well to the forefront, I also desire to bring the more noteworthy of the other species well in view, in order that they may do their full share in beautifying the summer garden, as well as more robust growth.

Digressing just for a moment on the question of soils and situation, I can confidently recommend a fairly heavy soil for the majority of the tall campanulas, as in such a soil they usually produce first-rate results. A moderately heavy soil, well worked, is capable of a high state of fertility, but, on the other hand, it should be thoroughly drained if the best results are expected. Retaining the moisture during dry summer weather, it naturally ensures better blossoms and a longer period of flowering.

A notable exception to this rule is C. persicifolia Moerheimi, the popular double white, which, lacking somewhat in constitution, seems to require a lighter, warmer soil to keep it in good health. I usually endeavour to give this variety a slightly raised position in order to get the best possible display from it. As to situation, it does not matter materially whether it be sun or partial shade, save that the blossoms usually last longer if not exposed to the full power of the sun. With us this does not make much difference, as the flowers are soon pollinated by the bees, resulting in faded blossoms that have to be speedily removed.

Blues, whites, and purples are the hues that predominate among the campanulas, and these colours are very telling for garden effects. There is a lightness, a delicacy, about these shades which is wonderfully pleasing, and it is these pleasing colour tones that blend so well with delphiniums, Chrysanthemum maximum, and other associating perennials. Glorious as the campanulas are in the sunlight, they are, to my mind, far more beautiful in the evening twilight. Then in the softer, dimmer light they are superb. Silhouetted in the decreasing light those soft hues take on additional distinctness and beauty. They are then a revelation to those who do not know them under an evening sky—a glory indeed.

Taking the persicifolia group first, we note several sterling varieties. Of these the best blues include Daisy Hill, a lavender-blue semi-double; maxima duplex, a semi-double in deep blue; Pallida grandiflora, a pale blue; and La Fee, a lovely lavender-blue of great merit. Mountain Cloud is a fine large-flowered blue-purple raised here, and gives decided promise as the colour is so telling. Of the whites, the best are alba grandiflora and its subvariety, a. g. plena, two splendid gems; Coronata, with its cup and saucer blossoms; Newry Giant, a large semi-double; Moerheimi, beautiful, but none too robust; and a seedling double, named Avalanche.

C. lactiflora is very worthy of note, its height and graceful spreading heads of small milky blossoms making it and its blue-flowered variety cærulea a splendid subject where tall plants are required. C. latifolia and its varieties call for distinct notice, being of material service for the borders and the wild garden. Growing erect, with drooping flowers produced after the manner of the foxglove, these are quite decorative, especially the whites. The type is a deep blue, alba is a good white, macrantha a rich purple, and pallida a pale blue. C. Burghalti, a satiny purple-blue, and Van Houttei, a paler pendulous blue, are hybrids of latifolia, but their exact parentage seems lost. C. latiloba or grandis, is another good plant for effect. It is a soft metallic blue in colour, and with the white form alba is grand for massing. It differs from persicifolia chiefly in its very short footstalks and its pale green foliage. C. amabilis from the Crimea is a very graceful subject. Other useful forms are the single and double, white and blue, forms of C. trachelium, C. elegans, a good violet form, and the pale blue nodding flowered C. sarmatica.

P. S. Hayward.

## CELSIA CRETICA CLIVEDEN VARIETY.

The Cliveden variety of Celsia cretica was found by the late Duchess of Cleveland among the rocks in Algiers in 1898; she brought it home, and I grew it at Battle Abbey for her each year. I knew it was a fine variety, but it was by accident rather than design that I put it up before the Royal Horticultural Society. The echium then shown was brought from the Canary Islands by the same lady in 1898, and was raised from seeds also.

I may say the best results are gained with Celsia cretica by sowing the seeds now, and growing the plants in small pots; the spikes I exhibited in June were from plants in 54-sized pots. I find by more liberal treatment larger plants can be produced, but these have not the same graceful effect as those grown with their roots somewhat cramped in small pots. The latter are unique for vases, jardinières, etc., on the tables.

Wm. Camm.

Cliveden Gardens, Taplow.

CELSIA CRETICA CLIVEDEN VARIETY.
A large and handsome variety with light yellow flowers. A.M., R.H.S., April 30.
W. W. Astor, Esq. (Gardener, Mr. W. Camm), Cliveden, Taplow.

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**Lilac Miss Ellen Willmott.**—This is one of the most striking of the double-flowered lilacs with white blossoms, its main distinctive feature being the large size of the individual blooms, in which respect, as far as my experience extends, there is no other to equal it. This variety is one of the many raised by MM. Lemoine et Fils.—T.

## A SEVEN-FLOWERED SWEET PEA SPIKE.

I am sending a photograph of a sweet pea, Mrs. Hardcastle Sykes, which I thought might be of interest to your readers. The seven flowers were produced on one stalk, which divided some 15in. from its base, each of the branches having three flowers, while the seventh bloom was placed exactly at the division. I grew a spike of Florence Nightingale with seven blooms on it, but the arrangement of the flowers was not nearly so effective as in this case.

A. E. Protheroe.

Bourne House, Purley.

A SEVEN-FLOWERED SPIKE OF SWEET PEA MRS. HARDCASTLE SYKES.

**Tuberous-rooted Begonias.**—The tuberous begonia of the present day has now reached such a state of perfection that it is difficult to say how a further improvement can possibly take place. We used to have several forms of double flowers, but the tendency now is towards the development of blossoms in shape like a perfect rose, and which, at the same time, hold their heads up well. To one who has watched the progress of these begonias from their early stages, the development of the present-day race is most surprising.—S. W.

## DAHLIA CULTIVATION FOR EXHIBITION.

During early August the dahlia grows with great rapidity, especially after rain or during damp, warm weather. Those who have grown dahlias for any length of time can look back on great extremes of climatic conditions (not that this is a matter confined to dahlia growers only), and whereas in one season it has been a case of ceaseless watering, another stands out in one's memory chiefly on account of wind and rain, and consequent wettings to the skin when attempting to do anything to the plants. These differences make it impossible to say what shall or shall not be done in the way of watering and feeding.

In wet seasons feeding is not so necessary as in dry, and the only way to apply manure is to put it on top of the ground and let it wash in. Taking an average, there are few years that are either very wet or very dry, and feeding by means of liquid manure is usually possible during some portion of the growing season. It is of no great consequence whether artificial or natural manures are given, but the latter are less likely to spoil the plants. No better plan can be adopted than to use a big tank or tub as a "distillery," and place in it, when full of soft water, a bag of animal manure and a bag of soot. The manure may be renewed frequently, and no fear need be entertained that it will be given too strong, providing the plants require the water, and are on well-drained soil. During a really dry spell give two gallons per plant twice a week, or even three times in exceptional circumstances, but it is folly to give water a little and often, as this merely damps the surface, which dries away at sunrise, and the lower roots get no benefit whatever. I might add that diluted sewage is a good stimulant, but perhaps rather inclined to cause coarse growth and flowers. I have not used it personally, but have noted the results in two or three country places, where no other manure was used.

We now come to thinning and disbudding, and as previously pointed out, pompons and singles require very little actual disbudding. In the case of pompons, the side buds are seldom very full in the centre, and a few may be removed, as well as the old flowers, while singles must have the seed pods removed. Doubles may be disbudded freely, and the side shoots for some distance down the stem must be removed also. This will also prevent the plants getting too bushy, as by removing the little side growths when disbudding very few remain to flower.

In the case of cactus varieties, a more elaborate system is often necessary, as the individual shoots are more numerous and not so robust. Red Admiral, for instance, produces quantities of growths often from below ground and near the base, but, on the other hand, Irresistible and Ivernia need hardly any thinning, and only require disbudding. The finest flowers are obtained on the six or eight main stems, and upon these being disbudded the strongest of the lower side shoots are allowed to remain, tied in, and left to develop. Thus the six main stems now become the supporters of other young shoots, which, in their turn, carry on the system, and ensure a continual display of flowers. It is a quite easy matter to overthin the plants, and a beginner in his zeal to produce big flowers, may overlook the fact that he is leaving no young growth to follow on later. I have seen plants so badly thinned that, although displaying six or seven very fine flowers, yet after these had developed and been cut, there was not a shoot left which would flower inside three weeks, and as the flowers were too early for the show they had been grown for, the exhibitor was left a wiser if a sadder man.

All weakly growth, either from the base or higher, may be cut out, and when old flowers are no further use, cut them off with as many joints as have previously been disbudded.

Having grown a good flower is only part of the battle when exhibiting is the object in view, and the part that often proves the undoing of the would-be champion is taking the flowers to a show in first-rate condition. Flowers which were perfect examples the day previous to the show are, at the time of judging, either badly flagging or open in the centre, and, although perhaps twice the size, yet count less than younger flowers on a competitor's stand.

Those who adopt some means of shading the blooms are liable to use older flowers than would be the case if all had been left out in the sun and rain; old blooms flag quickly or drop the whole of their back florets. A friend once said to me, "Why did you show that bad flower; it spoils the bunch?" I remarked: "Simply because I couldn't make another."

A few hints, however, may prove useful. First, cut early, long before sunrise, and for preference cut in the morning, even if not staged until the evening. After cutting place at once in water, allowing most of the stem to be in the water, and stand in a cool dark place, if possible on a brick or damp cement floor. When arranging the flowers in wires or on boards do not finger them, as it is surprising how soon the freshness fails if a bloom is turned and twisted a few times. When arranged, only very lightly dew them over. It may be necessary to syringe if a dry easterly wind is blowing, but the blooms had better flag a little than develop a lot of flat florets round the eye. I ought to have said that when selecting the flowers allow for what the flower will develop during the next twenty-four hours, as they often grow considerably after being placed in water. Nothing is more worrying than to feel that every minute the flowers are getting less valuable. When putting cactus dahlias in wire frames, it is best to bend the wire to fit the flower, rather than wriggle the flower about in a vain endeavour to get it to face properly.

After each show, thoroughly examine the plants, and cut out the old growths at once, tying and disbudding the younger growth. The plants often look a little shattered after a lot of flowers have been cut, but it is surprising how quickly they recover, especially if the weather permits a good watering with liquid manure.

At the end of September, or earlier if time can be spared, remove all the young wood not showing buds, and tie the plants up trim and taut. In this way fine flowers will continue to come until well into the autumn. It is always a mistake to abandon dahlias too soon, as in October they flower freely, and often to perfection, if kept free from rubbishy growth which soon exhaust the energies of the plant.

H. Stredwick.

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## BIGELOVIA GRAVEOLENS.

This interesting Composite, though not hardy enough to stand throughout the year in the open ground, except in the most favoured parts of the country, is well adapted for wall culture in places where there is a fair amount of sun. Being naturally a sunloving shrub, a south or south-west aspect should be chosen whenever possible, and the soil should be well drained and warm, a light loam being most suitable. B. graveolens enjoys a wide range of distribution in Western North America, for it occurs from British Columbia to New Mexico. The aromatic leaves are one to three inches long, narrow, and greyish. The yellow, tubular flowers are borne during early autumn, September and October, in dense, crowded heads, and are showy at a time when flowers are becoming scarce.

In Vol. III. of Britton and Brown's "Illustrated Flora of the Northern States and Canada," p. 326, it is described as Chrysothamnus nauseosus. The name of Bigelovia was given in honour of Dr. Jacob Bigelow, the author of "Medical Botany of the United States." Although there are not a very large number of hardy shrubby plants in the order Compositæ, many of those which do exist are of an interesting character, as is instanced by the plant under notice, and by the fine collection of New Zealand olearias which was exhibited at the recent International Horticultural Exhibition.

W. D.

## SOME GOOD BUTTONHOLE ROSES.

Few flowers are more pleasing for personal decoration than rose buds, but they must be of a variety that does not fly open too quickly. Betty, G. Nabonnand, Irish Elegance, and Gardenia are very pretty in their earliest stages of growth; but they fly open too soon for any lasting decoration as a coat or buttonhole flower.

Much more lasting varieties are found in Lady Roberts, Anna Olivier, Francisca Kruger, Lady Hillingdon, Madame Antoine Mari, Madame Jean Dupuy, Souvenir de Pierre Notting, and Rubens from among the tea-scented sections, while Souvenir de Stella Gray is one of the most striking coat-flower roses we have. The noisettes give us a few suitable varieties in William Allen Richardson, Celine Forestier, and Caroline Kuster, but these blooms must be quite young.

There are several suitable varieties among the growing class of hybrid teas, some of the most noticeable being The Dandy, Avoca, Richmond, Mrs. Walter Easlea, and Chateau de Clos Vougeot, all very dark crimsons. Various shades of orange, yellow, and copper are found in Mrs. Aaron Ward, Edu Meyer, Gustave Regis, James Coey, Jacques Vincent, Madame Ravary, Marquise de Sinety, Mrs. Arthur R. Waddell, Mrs. Peter Blair, Theresa, and Madame Pol Varin Bernier. For deep cherry reds few can surpass Lady Battersea, Papa Gontier, and Madame J. W. Budde. Sarah Bernhardt and Prince Camille de Rohan are two very free-flowering, deep velvety-maroon coloured roses that last well in a suitable form, and are very sweetly scented.

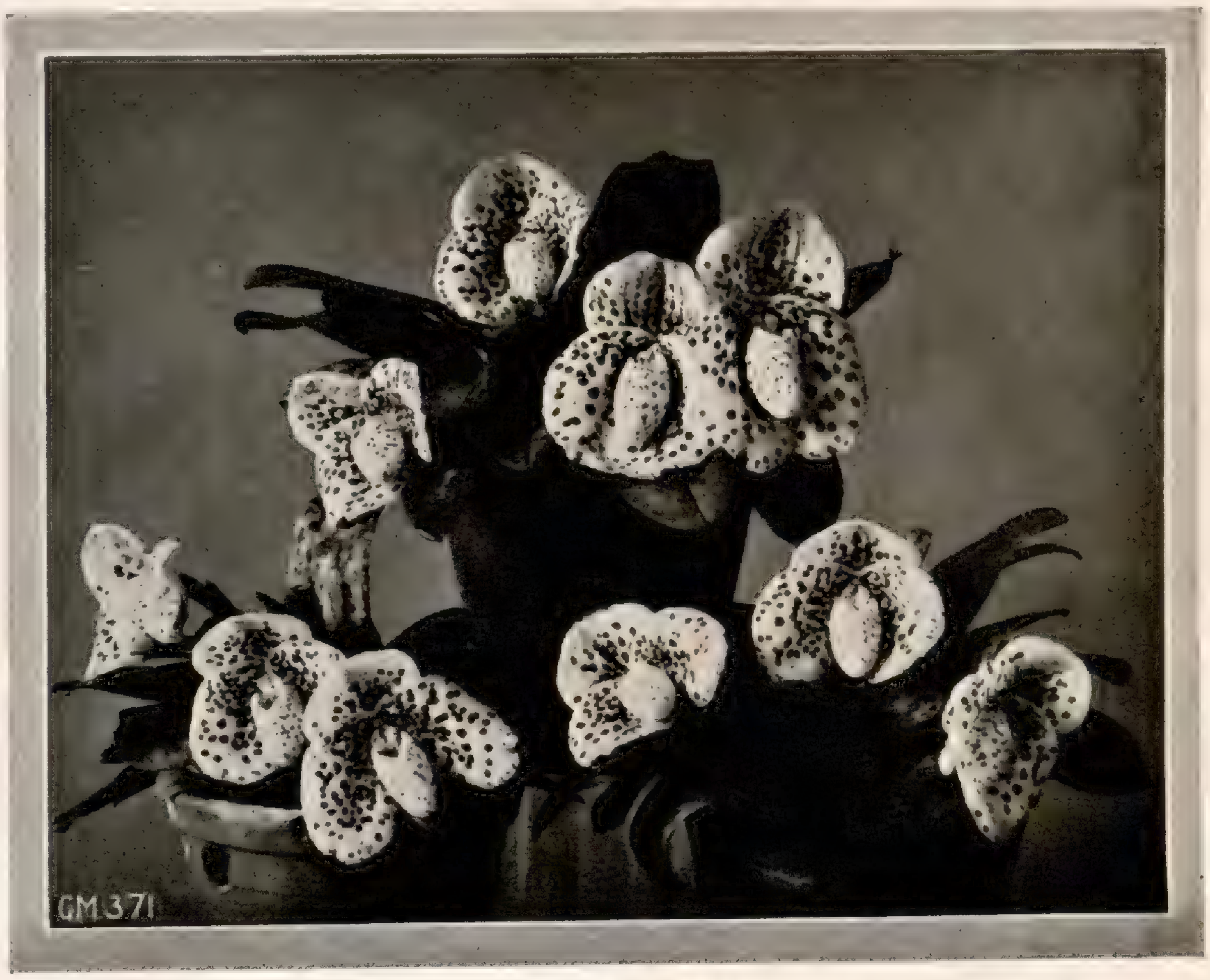
When dealing with coat flowers one cannot omit the better crested forms of moss varieties. Here, Blanche Moreau and White Bath are good pure whites; Celina is, perhaps, the best dark variety; Common Moss, Old Crested, and Salet being good pinks.

A. P.

## CYPRIPEDIUM BELLATULUM.

Cypripedium bellatulum is, perhaps, one of the most striking species of the genus, and yet is little cultivated in gardens. In few flowers is there found such a contrast of colour as in this orchid. As will be seen in the accompanying illustration, which is from a photograph of some plants grown in the Cambridge Botanic Garden, the petals, dorsal sepal, and pouch, have a ground of pure waxy white, thickly sprinkled with large, very deep blood-red blotches. The leaves, which measure about 10in. by 2½in., are also handsome, being dark velvety green, mottled with whitish patches on the upper surface, and on the under-side dark reddish-brown. The flowers are about 3in. in diameter, and are borne upon short stems. The plant remains in flower about a month.

This orchid is not of easy cultivation. It prefers a moist, tropical temperature, and should be grown in a compost consisting of loam, peat, sphagnum, and small lumps of charcoal. The addition of a few pieces of lime is sometimes recommended, but here it does perfectly well without any.



CYPRIPEDIUM BELLATULUM.

Flowers of waxy texture, white, with dark red-purple spots.

The plant is a slow grower, and, therefore, rather than endeavour to increase one's stock by means of division, it is better to import new roots. C. bellatulum was introduced into this country in 1888 from islands to the S.E. of Cochin China. A pure white variety (album) was introduced in 1895.

R. Stewart Lynch.

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**Croton Souvenir de Thomas Rochford.**—This is a particularly good narrow-leaved croton, and one remarkable for the very bright colour that the leaves assume. Varying as they do in the colour of the leaves even on the same plant, crotons are exceedingly difficult to describe, but when at its best this variety has the major portion of the leaf of a brilliant salmon-scarlet colour, an extremely effective tint either by day or under artificial light. This last feature is greatly in its favour as a table plant.—K.

## CRINUMS FOR GARDEN DECORATION.

A number of the crinums, including one or two which are second to none in the genus, have a sufficiently hardy constitution to admit of their successful cultivation in the garden. In commit with many another exotic, they have settled down as naturalised British subjects with a good grace, and, provided the slightest protection is afforded during very severe weather, and more especially when we are favoured with torrential rains in mid-winter, they will not fail to resolve themselves into large and wide-spreading specimens.

It will occur to the cultivator to allocate a sheltered site, and perhaps no better place can be found for them than a raised border abutting upon a glass-house facing south. It is of paramount importance that the site be well-drained, and where the natural soil is heavy and tenacious loam, which often rests upon pure clay, the best plan is to remove the whole to a depth of three feet, and replace by efficient drainage and a suitable medium. To form a nine-inch layer of drainage, brick-bats, clinkers, etc., may be pressed into service, followed by turves grass sides downwards, which will effectually prevent the finer particles of soil being washed into the drainage material. A mixture of turfy loam, with a liberal quantity of leaf-soil, coarse sand, and broken crocks incorporated will meet their requirements as far as soil is concerned.

CRINUM MOOREI IN A SHELTERED BORDER AT KEW.

The best season for planting is late spring, as this allows for a long period in order to form growth, and to become thoroughly established in their new home before they are called upon to withstand our English winters for the first time. Specimens of large size, in pots or tubs, that are found to occupy too much space under glass, may be arranged in permanent quarters out of doors at any time during the early summer months, but it is inadvisable to put them out after August has become a memory.

Other details are to so arrange the border that there is a gentle slope from the back, with a view to the plants being fairly dry in winter; also to place a thick layer of cow manure about a foot distant from the plants, all round, in spring, to form a basin for the reception of the copious supplies of water they require from May onwards. A ready means of protecting the plants in winter is found in a thick layer of leaves, while reed mats will, if properly fixed, take off heavy rains, etc.

One of the most popular and most extensively planted of hardy crinums is C. Powelli, which I believe is an hybrid that claims as parents C. Moorei and C. longifolium. It boasts a robust constitution, and established plants produce several scapes from each bulb in the course of the season, the flowers being rosy-red in colour. Then we have varieties in album and rubrum, which are well worth attention, the last-named having flowers of a very pleasing shade in soft rose. I noted a small colony of C. Schimperi in a western garden last season, and was struck with the beauty of the pure white funnel-shaped flowers, which measured 9in. in length and 5in. in diameter. The more vigorous of the umbels had ten flowers, whilst those of medium stature were content with half a dozen. This species hails from Abyssinia, and the leaves are carried in perfectly erect fashion.

Another white-flowered kind is seen in C. latifolium var. Yemeuse, and when it is said that a score or more of flowers are borne upon very large umbels it will be readily understood that it is a plant of very considerable decorative value. Its flowering season extends from July to the end of August, when its efforts in this way are exhausted for the season. A first-rate colony of C. Moorei exists in a narrow border abutting upon the palm-house at Kew, and last season created a brave display. It is of strong growth, the rosy-pink flowers being borne on 6ft. high scapes. It is very necessary that this species be given a warm, sheltered spot, and this applies even in the South of England, while in the North it is liable to come to grief if left in the open. Very fine must be written against its variety alba, whose pure white flowers assume a blush tinge with age, which seems to enhance its beauty.

Walter H. Aggett.

## NIDULARIUM PICTUM.

The Bromeliads are a much-neglected race of indoor plants, some of which are remarkably showy, and, what is more, they retain their beauty a considerable time. The strap-shaped leaves, which are arranged in a regular vasiform manner, and thus form a dense rosette, are of a rich green, mottled with a deeper tint, and spiny at the edges. The flowers are borne in the centre of the tuft of leaves. They are violet in colour, and, being borne on short stalks, are not particularly showy, the most striking feature of the inflorescence being the shortened leaves which surround the blossoms. These leaves are of a brilliant shining scarlet colour, a feature which is retained for a long time.

This nidularium, which was introduced from Brazil over sixty years ago, is available for various decorative purposes, a valuable feature being the fact that from the firm, leathery texture of the leaves it is very little affected by draughts. It must be regarded essentially as a stove plant. Though generally met with under the name at the head of this note, it is by our botanical authorities regarded as Karatus fulgens, while it is also occasionally known as Guzmannia picta. Like many of its class, it grows freely in a compost made up chiefly of fibrous peat and sand, with free drainage. S. W.

# THE ROSE GARDEN AT KEW.

It seems somewhat out of place to designate any particular part of Kew where roses are gathered together as the Rose Garden, because roses are to be found in many parts of this great national garden, in scattered beds, in groups, and in large collections. There is the great rose pergola between the Rock Garden and the Herbaceous Garden, the collection of rose species and allied subjects towards the Pagoda, and the naturally planted rose garden or dell between the North Gallery and the Pagoda, but what is generally regarded as the Rose Garden proper is at the south end of the Palm House, and this is the part shown in the accompanying illustration. At the north end of the Palm House, between it and the Lily House, there are also numerous rose beds, and here the varieties Earl of Warwick, Duchess of Wellington, Mons. Paul Lede, and Mdme. Ravary give a good account of themselves. On the Palm House terrace four large circular beds occupy the corner positions, and these are filled with pegged-down plants of the inevitable Frau Karl Druschki, Gustave Regis, Lady Waterlow, and the brilliant and fragrant Gruss an Teplitz, each variety filling one bed.

The rose garden was replanted last autumn, and it has been a great success this year, while the growths on many of the varieties promise well for an autumn display. The three large beds depicted on the left of the illustration are occupied respectively by Mildred Grant, Caroline Testout, and Killarney. In the foreground is seen a small circular bed of Mrs. Aaron Ward, a charming variety, and beyond is a large bed of the newer Joseph Low, a capital pink bedding variety; further along are beds of Mdme. Abel Chatenay, always good; Lady Pirrie, a lovely copper and salmon H. T.; Lady Ashtown, a capital bedding variety; Rayon d'Or, of fine colour, but not a good grower as seen here; Mrs. A. R. Waddell, a fine, free salmon-red garden rose; a bed of standards of Florence Pemberton; a large oblong bed of the brilliant and very free General MacArthur; a small bed of The Lyon, grown as standards; and a bed of Orleans, now a dense mass of bloom, finishes the list in this direction. Marie Van Houtte, Duke of Edinburgh, and Antoine Rivoire fill beds in front of those depicted.

The old plan of filling a bed with as many varieties of roses as possible has well-nigh disappeared from gardens of any pretensions, but there are many rose lovers who have not the room to plant roses by the dozen, score, or hundreds of plants of a variety, and so they want to know which varieties are likely to be the most satisfactory. At Kew the habit of a variety, as well as the effect it produces, can be studied readily. Where beds of considerable size are devoted to one variety, it is a comparatively easy matter to determine whether such variety is suitable for the home garden. It must always be remembered that the soil at Kew is not ideal for roses, and that a variety found to succeed here is not likely to fail elsewhere.

VIEW IN THE ROSE GARDEN AT KEW.

**Dwarf Tropæolums.**—As showy annuals for dry and sunny spots the dwarf varieties of tropæolum are very desirable, as they are not at all particular in their requirements, and their flowering season extends over a lengthened period. In the suburbs of London they meet with a ready sale, small seedlings being hawked about by the costermongers in large numbers during the bedding season.—W.

# PRIMULA MALACOIDES.

The value of this primula for greenhouse decoration cannot be too highly estimated, and the species also lends itself wonderfully well to rock garden adornment. It is one of the most useful of all the recently-introduced Chinese species. The flowers are produced in great abundance on slender stems, being borne in tiers, each stem bearing a large number. In colour the flowers are of a delicate shade of lilac, occasionally varying to pale pink. For winter flowering the seeds are best sown in March, and the plants grown in a cold frame until the autumn, when they must be housed. To obtain a continuation of blossoms during the winter months seeds should be sown at intervals. Unlike the seeds of many primulas, those of this species quickly germinate, and there is little trouble in raising a batch of plants.

From an inside decorative point of view, P. malacoides is an important plant for winter use, as the flowers lend themselves exceedingly well to table dressing, and the graceful spikes of blossom are very effective. For outside planting the seeds are sown in January, and plants raised from this sowing usually flower in July, making a pretty display of colour when grown in cool, shady spots in the rock garden. For spring flowering outside the seeds are sown early in the autumn, and the plants wintered in cold frames. In April these are put out in sheltered spots, when the flower spikes soon appear. Possibly in some favoured localities this primula can be naturalised, but it is very doubtful whether it is hardy enough to withstand the dampness which is experienced in many of our gardens. E.

## QUANTITY v. QUALITY.

An interesting little article on "Baskets of Roses" appeared in the GARDENERS' MAGAZINE of July 20, in which the writer calls attention to the new classes for garden baskets to be found in many of the rose schedules of to-day. After commenting on the attractiveness of these baskets of roses, he proceeds to protest against the practice adopted by many recent exhibitors of overcrowding them with flowers; and he justifies his criticism by giving an excellent illustration, from a photograph taken at the National Rose Society's exhibition, of a basket of the Lyon rose. In this basket I can count at least forty-eight roses, which is certainly twice as many flowers as should be arranged in a basket of the specified size—namely, 14in. across.

I believe Messrs. William Paul and Son, of Waltham Cross, were the first to make considerable use of these baskets. For many years I have noticed them in the non-competitive exhibits this firm stages at the Hatfield Show, and I have always been struck with the beauty and freshness of the result. At the Holland House Flower Show this summer the same firm's exhibit owed much of its attraction to these baskets, and, as I was thinking of showing in the amateurs' class for three baskets at the National Rose Show, I noted specially how they were arranged, and how many flowers were wanted to make a good effect. In most cases from fifteen to twenty roses were used. The flowers were all young and fresh, and this gave a light and graceful effect, and allowed the form of each rose to be seen. When I came home I arranged a basket of Lady Ashtown with about twenty-four flowers. It looked well when the flowers were half-open, but the next morning they had expanded, and the basket was just a mass of pink colour, each flower having merged its shape and individuality in that of its neighbour, and any charm of arrangement there might have been was entirely lost. I think that if the flowers used are of good form, and the exhibitor is skilful in arranging them, fifteen to eighteen blooms will generally be found sufficient to make a good effect in a basket of the dimensions quoted above.

It is not, however, in baskets only that exhibitors are inclined to use far too many flowers. Many of the bunches of garden roses to be seen both at the National and at provincial shows are spoilt from a decorative, and still more from an artistic, point of view by being overcrowded. Exhibitors would seem to think they have only to produce a fine mass of colour to be awarded first prize, and in not a few cases the judges would appear to be of the same opinion. When, however, the judges have a more cultivated taste, and refuse to award the prizes to the weightiest exhibits, looking rather for beauty in the individual flower or truss, and elegance and taste in the arrangement, then it is often the public who object.

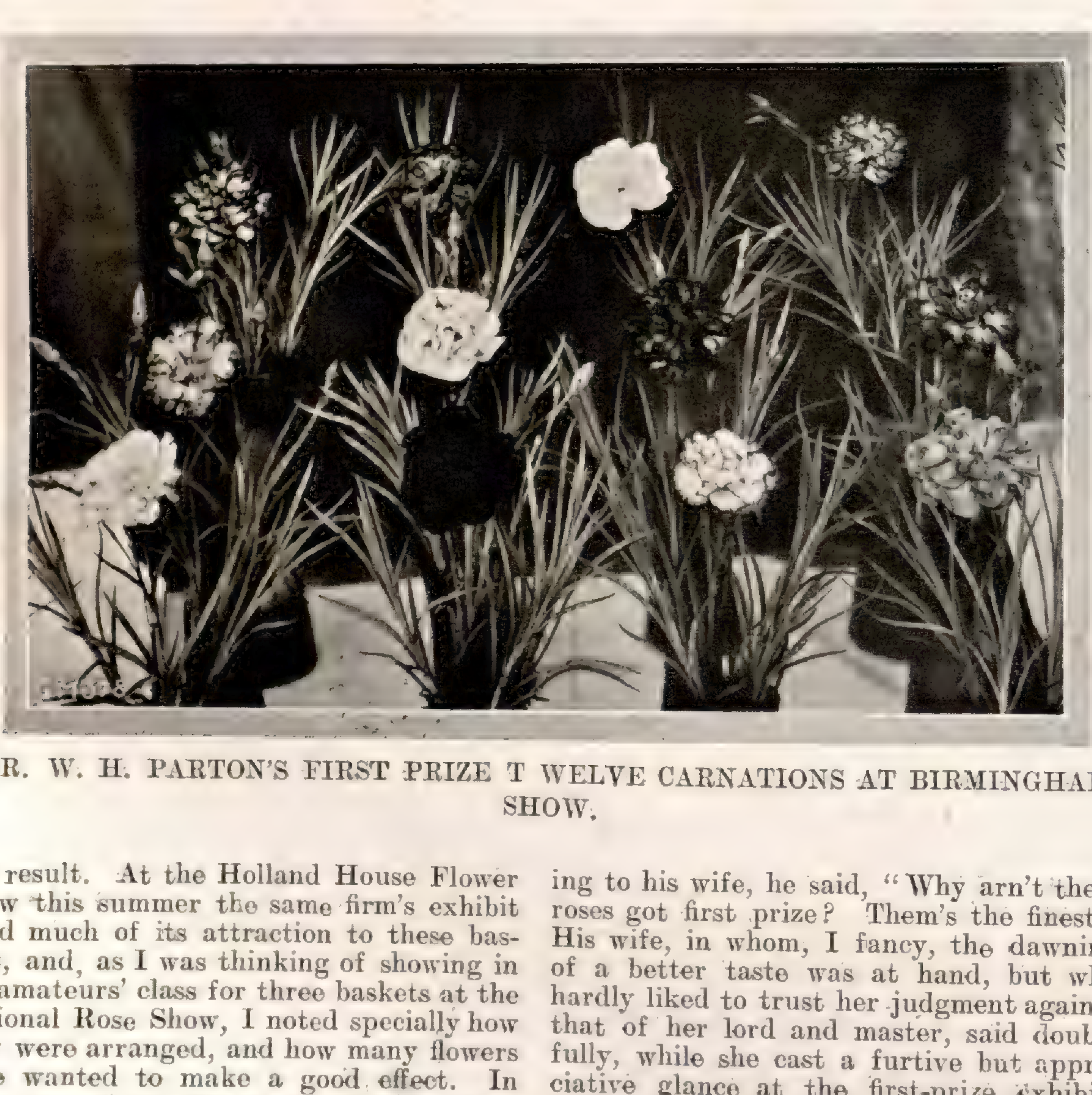
At a recent show in the Eastern Counties, where the judges had shown their good taste by passing over some enormous vases crowded with blossoms in favour of some well-arranged vases which contained about half the quantity of flowers, I was amused to hear the comments of a local visitor. He stood in front of the great, clumsily-arranged vases, then looked disparagingly at the light and pretty arrangement to which the first prize had been awarded. He was evidently much puzzled, and, turning to his wife, he said, "Why arn't them roses got first prize? Them's the finest." His wife, in whom, I fancy, the dawning of a better taste was at hand, but who hardly liked to trust her judgment against that of her lord and master, said doubtfully, while she cast a furtive but appreciative glance at the first-prize exhibit. "Yes; they are certainly the biggest." But this, from her husband's point of view, was a mere splitting of straws. "Well!" he said triumphantly, "arn't the biggest the finest?" The lady was silenced, if not convinced; but I felt very grateful to the man for having summed up in such a delightfully concise sentence what, apparently, is the motto of many exhibitors and some judges—"Arn't the biggest the finest?"

If we look to the real meaning of the word "fine," we shall see it is more nearly opposed to than synonymous with bigness. Crabb defines it thus: "Fine, in the natural sense, means smallness in general. . . thread is said to be fine as opposed to the coarse and thick. . . that the texture of a spider's web is remarkable for its fineness," etc., etc. Or, as Pope has it, "The spider's touch, how exquisitely fine!" So a specimen rose, to be fine, may be either large or small; it must be well-proportioned, pure in colour, perfect in form. A vase or basket of roses should be filled with roses that are as good in form and colour as their type admits, and so arranged that each flower or truss of flowers stands clear of the rest, allowing the beautifying effect which results from light coming between the sprays.

If the framers of schedules would more often copy the N.R.S., and specify the number of sprays allowed in a vase, we should not see so many of the distressingly crowded vases as we now do. I was sorry to see that in this year's schedule of the N.R.S. a retrograde movement had been made, in the fact that in the decorative classes for garden roses, where the space occupied by the exhibit is limited, the maximum number of stems allowed has been increased from seven to twelve. The latter number, in most cases, is too many for the space at the exhibitor's disposal; but too often the temptation to cram in as many sprays as were permitted proved too strong to be resisted, and the decorative effect of the exhibits suffered in consequence.

In sweet pea classes, and again in daffodil classes, the number of blooms to be shown in each vase is nearly always specified, with the result that no one can win simply by bringing up big battalions of blooms; and the taste of the exhibitors and of the general public is improved. There results, no doubt, a certain monotony which is the last thing to be wished for in a rose show; so it is well that in some classes the taste of the exhibitor should be trusted, and where this fails the judges should consistently refuse to award the prize. WHITE LADY.

## PRIZE CARNATIONS AT BIRMINGHAM.


MR. W. H. PARTON'S FIRST PRIZE TWELVE CARNATIONS AT BIRMINGHAM SHOW.

Mr. W. H. Parton, Moseley, Birmingham, an enthusiastic amateur carnation grower, staged at Birmingham Show on July 19 a fine dozen blooms of border carnations and picotees, distinct varieties, with which he won first prize in open competition. Our illustration of this exhibit shows that the flowers were staged singly, in vases, with sprays of carnation foliage, a method that has of late largely superseded the old-fashioned florist's custom of staging on boards. The varieties included excellent flowers of Linkman, Lord Steyne, and Sam Weller, three good yellow-ground fancies, as well as selfs of rich colours and with broad, smooth petals.

## DIPLADENIA BOLIVIENSIS.

Several examples of this easily-grown species of dipladenia were noted in a collection of indoor plants shown by Mr. L. R. Russell at Holland Park. This species, which, as its name implies, is a native of Bolivia, was first introduced by the late Richard Pearce, of tuberous begonia fame. It may be grown in a cooler structure than the large-flowered, brightly-coloured kinds, which were at one time popular for growing into large specimens. In Dipladenia boliviensis both the leaves and flowers are comparatively small, these last being from $2\frac{1}{2}$ to 3 inches in diameter, and in colour pure white, with the interior of the throat rich orange. It forms a very pretty climber for the roof of an intermediate house, especially where the flowers are brought near the eye. Besides this, pretty decorative plants may be formed by training the flexible branches around a few sticks, under which conditions they will flower freely.—T.

# ORIGIN OF COUNTESS SPENCER SWEET PEA.

Some further light is thrown upon the origin of the waved or Countess Spencer type of sweet pea by the communication made by Mr. Wm. Cuthbertson to the pages of the "Journal" of the Royal Horticultural Society. It is as follows:—

"In my lecture on 'New Sweet Peas' before the Royal Horticultural Society on February 20, 1912, I said, regarding the origin of Countess Spencer (the first of the waved sweet peas), that some colour was given to the opinion that it was a mutation from the fact that it was supposed to have occurred in other places than at Althorpe about the same time. I have had confirmation of that since.

Early in March I received a letter from an unknown correspondent—Mr. E. Viner, 14, Somerset Road, Frome—in which he stated that my name had been given him by a friend as one deeply interested in the development of the sweet pea. Mr. Viner said he thought he could tell me something that would interest me about the origin of the waved sweet pea. My reply was that I should only be too glad to hear from him. Subjoined I give the essential portions of Mr. Viner's important letter, which practically convinces me that Countess Spencer appeared as a mutation in Prima Donna in several places in Great Britain in the same season.

It will be remembered that Mr. Cole claims that his Countess Spencer was the result of crossing Triumph and Lovely, and crossing again in $F_1$ with Prima Donna. Mr. Unwin has put on record that Gladys Unwin (a modified waved form) also came out of Prima Donna, and I have been told by others that they saw the waved form the same season, but could not perpetuate it."

### Mr. Viner's Letter.

14, Somerset Road, Frome.

W. Cuthbertson, Esq., Edinburgh.

Re Sweet Pea Countess Spencer.

Dear Sir,—I received your esteemed letter this morning, and I now proceed to give you the details of the origin and pedigree of this pea.

As an artisan living close on the town, my garden has always been very limited, and therefore I have to make a selection of what serves, or what I like, best.

It must have been in the spring of 1900 I procured a few seeds each of Prima Donna and Lovely with the object of choosing the one I liked best, and my choice fell on Prima Donna. I quite discarded Lovely. The following year I grew Prima Donna from seed I saved myself, and quite late in the season I noticed a spray of two blooms (on Prima Donna) at the extremity of a shoot, with a peculiar crimpled character. I marked them and allowed them to seed (no other flowers appeared), and I obtained seven good seeds. The following year I planted them in due course, and all germinated, and, to my delight, five retained the wavy character; the other two were Prima Donna—pure. But the waved ones were glorious in the fine weather of early July. Now the Bath Show (Rose, etc.) was, and is now, held about the second week in July, and I took a bunch of the blooms and got them placed before the judges and committee, who gave me a certificate for it, and on the spur of the moment, at the suggestion of others, it was named Nellie Viner. Mr. I. House was at this show and saw the flowers, and wrote me later with the object of buying it. Later in the season I sent blooms to Mr. Eckford, to whom I eventually sold.

Through this part of the country it is well known that I secured this variety in the way described, but the fact has apparently never reached these in high places.

Mr. Wright, in his book, "Beautiful Flowers and How to Grow Them," says in the chapter on sweet peas that the variety was raised by some amateur, but by whom or where he was unable to say.

Of course I know Mr. Cole's variety was put on the market first, Mr. Eckford being obliged to grow another season, as the stock was small. Mr. Eckford was also informed that the variety on the market was something like his; he therefore dropped the idea of another name, and sent it out as his superior stock of Countess Spencer. I think had it not been for me, the finer form of this charming flower would never have been known.—I am, most respectfully yours,

E. Viner.

# EXAMINATION OF SCHOOL TEACHERS

## In Cottage and Allotment Gardening.

The Royal Horticultural Society's examination in Cottage and Allotment Gardening, open only to school teachers, was held in various centres on April 27, 1912.

One thousand and eighty-nine candidates entered for the examination, being an increase of 592 over the entries for 1911; 106 obtained sufficient marks for a first-class, 702 for a second, and 209 for a third, leaving only 30 failures, 41 absentees, and one candidate who was disqualified for consulting notes.

The examiners, Mr. F. J. Chittenden, F.L.S., Mr. John Fraser, F.L.S., Mr. Alexander Dean, V.M.H., and Mr. C. R. Fielder, V.M.H., report that, generally speaking, the answers returned showed an intelligent grasp of the subjects of the questions. The questions on vegetable cultivation, especially, produced very practical answers, and were awarded correspondingly high marks. It is, however, surprising that so many candidates would make up a hot-bed with well-rotted manure.

The examiners notice that the word "born" is much used in reference to the germination of seeds. The term is by no means a good one, for, as a rule, it applies to animal life, and not to plant life. Want of practical knowledge was very apparent where cyclamen, lobelia, and snapdragon were given as subjects suitable for training on a cottage wall! There was a similar want of knowledge, or thought, in recommending arsenical washes for currant and gooseberry bushes attacked by caterpillar.

Question 10 was well answered and diagrammatically illustrated, but in a large number of cases it was suggested that all the soil should be excavated within a given distance from the tree, instead of taking out a trench only at a certain distance. A still greater fault was the recommendation to use manure freely in refilling the trench, as this might be expected to reproduce the very condition of unfruitfulness and gross growth which it is the object of root-pruning to counteract.

In Section B a greater proportion of the candidates showed an appreciation of the principles concerning which questions were asked than in previous years; but, even so, there was still on the part of many a lamentable lack of the power to apply principles to practical gardening. Questions in Section B are designed to test how far the simple facts of plant physiology and structure, and of the nature of the soil, are really grasped by the student—grasped, that is, in such a way that they can be actually utilised in garden work. These questions cannot be adequately answered by those who have only read books. They require observant acquaintance with the things themselves, and intimate knowledge of the way a plant "works."

Perhaps the commonest mistakes were in saying that a plant is variegated because it does not receive sufficient carbon-dioxide; that hoeing "fills up the capillary tubes"; that the cabbage white butterfly pupates in the soil; and in confusing transpiration with respiration. Such errors result in mistakes in cultivation if an attempt is made to apply them.

W. Wilks.

For pretty gardens and lovely flowers read The Flower Garden, by T. W. Sanders, F.L.S. An up-to-date work on the formation, planting, and management of the garden, with description and cultivation of flowers and plants adapted for outdoor culture. Price, 7s. 6d. net by post, in box, 8s., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# LYCHNIS CŒLI-ROSA.

Cultivated in gardens as Viscaria oculata, this beautiful and showy annual possesses merit of a very high order for garden decoration, being admirably adapted for producing a lasting and effective display in beds or borders. A native of Southern Europe, and a member of the Dianthus family, it revels in abundance of sunlight; in other respects it is an extremely easy subject to cultivate, succeeding in any ordinary garden soil.

Like many of our best annuals, this subject amply repays careful cultivation, and is indeed never seen at its best unless thinly planted, allowing some 15 to 18in. between the plants. Sown in the open ground toward the end of September, and transplanted to frames for the winter, strong, bushy plants are obtained that are ready for permanent planting about the end of March or early in April. Growth is exceedingly rapid, and by the middle of May each plant will be at least 2ft. through and almost as high, the entire clump or bed presenting an impenetrable mass of leaves, stems, and blossoms, the latter being so much in evidence at that season that few annuals can equal it in this respect. The flowering season of autumn-sown plants extends from early May until the end of July, as the effort at seed production does not appear to impair their vigour to the same degree as in some other instances, while it is worthy of note that viscarias transplant with great freedom.

Autumn sowing has much to recommend it where an early display is required, but seeds sowns in the ordinary way in the open, during March, will yield, at least, equally good results, and the plants will form a succession to those sown in autumn. The advantage of sowing in situ in spring is readily apparent with many annuals; increased vigour and lasting qualities, combined with extra size, are generally in evidence, while it calls for the minimum of labour and attention. Staking is neither required nor desirable.

The best forms of Lychnis cœli-rosa or Viscaria oculata, for garden decoration, include the type, having rosy-purple flowers, the base of the petals being marked by a heavy dark blotch, and cœrulea, a most delightful shade of lavender-blue, and somewhat suggestive of a blue linum in flower; essentially a summer colour, it appeals to a very wide circle of admirers. In fulgens the colour is a good shade of blood-red, while picta has flowers almost pure white, with a dark blotch at the base of the petals.

Viscaria oculata is now regarded as a species of lychnis, the name given in the "Kew Hand List" being Lychnis cœli-rosa.

Thomas Smith.

Coombe Court Gardens.

# THE JACOBEA LILY.

Sprekelia formosissima is often met with in bulb catalogues as Amaryllis formosissima, is a native of Mexico, and, according to the "Dictionary of Gardening," was introduced therefrom as long ago as 1658. Bulbs can, when dormant, be purchased at a comparatively cheap rate, and with ordinary care they can be depended upon to flower in early summer. The blossoms, which are produced before the leaves, are of an intense crimson colour—a very striking tint. This sprekelia is not at all a difficult subject to grow. The bulbs should, on receipt in the autumn, be potted in a mixture of loam and sand, with a little leaf-mould if the loam is of an adhesive nature. They must then be kept in a greenhouse temperature, and given a little water occasionally during the winter months. As the days lengthen more water will be required.—W. T.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

SOPHRONITIS GRANDIFLORA.—This is now commencing to grow, and may require repotting. It should be grown in shallow pans filled to quite three parts of their depth with drainage materials. Only a thin layer of compost is needed, and the kind used for cattleyas will answer requirements. The plants should be potted quite firmly, and be suspended in a light and moist position in the Odontoglossum house. Water must be afforded sparingly until the flower buds appear and the roots enter the new compost freely, when an increased supply may be given. The other sophronitis may be treated likewise, with the exception of S. violacea, which thrives better in a shady part of the intermediate house, and requires, when in active growth, an abundant supply of water at the root.

SOPHRO-CATTLEYA, SOPHRO-LÆLIA, AND SOPHRO-CATLÆLIA HYBRIDS.—These comprise some of the most gorgeous and highly coloured flowers imaginable. Undoubtedly, as time goes on, a true scarlet cattleya (or what will answer its purpose) will be obtained in this group of orchids. So far, some considerable difficulty has been experienced in the cultivation of these kinds, but many hybrids of complicated parentage take some little time to understand, and this most brilliant race is no exception. There are some three dozen or more of these interesting plants at the present time in existence, all worthy of a place even in the most select collection. Many will now commence to grow, therefore if any are in need of new rooting material, attention should be given them without delay. They are best treated as cattleyas, and will succeed in a similar compost, and delight in a cool position, elevated well up to the light in the cattleya house. They require very careful treatment at all times, and should be carefully watered, as an excessive supply may cause the decay of both leaves and pseudo-bulbs. Plants that are now at rest must not be unduly hurried, and a cool position in the intermediate house is the best for them. Cleanliness of the plants and their surroundings is an absolute necessity, remembering that attacks of small scale will do these delicate plants irreparable damange.

BURLINGTONIAS.—Many do not succeed with these orchids as well as they would like. They are free flowering, of compact habit of growth, and the flowers last for a considerable time in full beauty if kept free from damp. They thrive in small baskets, or pans, and should be suspended from the roof of the cattleya or intermediate house, where, owing to the amount of light and air available, they make satisfactory progress. They will succeed in the same kind of compost as the preceding. The drainage should be ample, and during the season of growth a free supply of water should be given, but when the plants are resting this must be greatly diminished, yet not altogether withheld, for if allowed to get dust-dry they will suffer, and the growth made will be unsatisfactory the following season. Small white scale is very persistent in attacking these plants, and must be kept in check by frequent sponging.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

RIVINA HUMILIS.—This shrubby plant is well worth growing for house and table decoration because of its bright red berries, borne in racemes. Well-grown plants form a pleasing contrast to the general collection of stove plants, especially in the dull season. Propagation is readily effected either from seeds or by cuttings. If two or three batches of plants are raised at intervals of a month or thereabouts, they will become effective successionally. Like many other stove plants the Rivinas will withstand a lengthy sojourn in the cool greenhouse during the summer, but a temperature of not less than 60 deg. is necessary during winter and spring. The standard form of training will give the best effect.

REMARKS IN GENERAL.—There will not be a press of work in this department for a time, therefore devote special attention to securing sufficient numbers of the various plants required for use indoors during next winter and spring. Where time allows thoroughly wash all pots with hot water, inside and out, before use, and wash the crocks used for drainage. It sometimes happens that the outsides of pots containing plants become coated with moss; these also should be cleaned. Above all things avoid overcrowding and an excess of shade at this season, and turn the plants occasionally to ensure symmetry. The careful cultivator who is interested in his work will attend to these small details regularly, and without such attention the best results cannot be expected. While the daily watering is being done many of these details may well be carried out, such as giving each plant a turn, picking off decayed foliage and superfluous growths. Admit air freely on fine days to ensure short-jointed, mature wood, and properly developed leafage. Staking should be attended to betimes where required, and care taken not to insert the stake too close to the main stem of the plant or the main roots may be severed. I am inclined to think this is a matter too often neglected. Probationers will do well to bear in mind that to be thoroughly successful cultivators it is very important they should think of these small matters for themselves.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

MELONS.—Plants that have recently been put out into their fruiting quarters are making rapid progress. Pay particular attention to stopping, tying, and thinning out the young growths, and pollinate the female flowers daily until a sufficient quantity of fruits are set. Maintain a free circulation of air in the house night and day during the flowering period, and guard against the use of strong stimulants until after a good crop has set and the fruits are swelling freely. The house should then be closed early in the afternoon, well syringing the plants with tepid water. Red spider is more or less troublesome to the plants at this season of the year, so a sharp look-out must be kept, and if discovered immediate steps should be taken to eradicate it. Also in many places mildew is troublesome on late-planted melons. We find the best remedy for mildew is to lightly vaporise the plants on three successive evenings with the sulphur vaporiser, but air must be admitted to the house early next morning, or otherwise the foliage is liable to burn during sunshine.

STRAWBERRIES.—Stock layered into three-inch pots, as advised in a previous calendar, will be well rooted, and no time should be lost in placing them in their fruiting pots; use six-inch pots for the final shift. The pots must be thoroughly clean, and moderately drained with clean, broken crocks and rough lime rubble; mix up a sufficient quantity of soil to pot the whole batch of plants, and place it under cover; use good fibrous loam, mixed with leaf-mould, or well-decayed cow manure, with a little lime rubbish or road scrapings added. Place one plant in each pot, and pay particular attention, when giving them the final shift, that the base of the crown is not lower than the finished surface, or otherwise this will induce them to form two or three crowns. Make the soil moderately firm in the pots, using a light rammer for this purpose; after the work of potting has been accomplished place the plants in a shaded aspect for a few days until they have recovered from their shift, and afterwards they can be placed in the open quarters on a gravel or ash base. Give water carefully until the roots have permeated the new soil, and spray the plants two or three times a day with clear water. Remove all runners as they appear. The pots can be placed close together for a time, but as the foliage develops more space must be allowed to afford the plants plenty of light and air. It should be borne in mind that unless the crowns of the plants are fully developed and well ripened poor results will follow when forcing takes place.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

TROPÆOLUM SPECIOSUM.—This attractive climber is not so frequently grown in English gardens as it deserves to be, owing, no doubt, to the fact that it is difficult to establish in many localities. It should always be given a cool position, and where it has failed to succeed elsewhere it might well be given a trial on a north aspect, as it frequently grows and flowers freely in such a situation. It can sometimes be grown with success when planted under the shade of evergreens, and the background provided by them displays its brilliant vermilion flowers to advantage. A deep, fairly light and moist soil suits this climber the best, and when heavy land has to be prepared for it, a quantity of leaf-soil must be thoroughly incorporated. It requires watering in dry weather, and a mulch of short manure helps to keep it cool at the base. It is best propagated by division of the roots, and young plants should be planted out in the spring.

ROMNEYA COULTERI.—There is no more delightful subject than the Californian Tree Poppy for planting in a warm and sheltered part of the rock garden, or at the base of a wall facing south. The flowers are usually produced on the points of the new shoots, and are sometimes six inches across, of the purest satiny whiteness, with yellow centres. The plant is quite hardy, but it prefers a fairly light, warm soil, in which it produces vigorous growths that flower during August and September. The flowering stems should be cut down in winter, and a liberal mulching of leaf-soil be then applied over the roots. It greatly resents disturbance when once established, but when removal is necessary it is best carried out in the spring, just as growth is about to commence.

MECONOPSIS WALLICHI.—Under favourable conditions this handsome plant forms a specimen fully four feet in height, and when its pretty pale blue flowers are expanded it is a conspicuous object in the rock garden. During the summer it prefers a fairly moist and partly shaded position, but in the winter months means must be taken to prevent it becoming too wet at the roots. Meconopsis integrifolia is another interesting plant, with pale yellow flowers. It is a biennial, and succeeds under the same treatment as the foregoing. Sow seeds as soon as they are ripe, and let them germinate in a cold frame. Plants growing in the wild garden here have developed into sturdy specimens from self-sown seeds.

SHRUBS NOW IN FLOWER.—Among flowering shrubs, those that contribute to the floral display at the present time are especially welcome. Several of the spiræas are gay with bloom, and of these S. Lindleyana, with its fine arching plumes, is a lovely plant, fully ten feet in height. S. ariæfolia is another desirable kind, with creamy-white flowers; while S. Anthony Waterer, S. bullata, and S. Douglasi, all with bright red flowers, are attractive. S. Aitchsoni, somewhat like S. Lindleyana, has pretty fern-like foliage. In the broom family, Cytisus nigricans has tall, erect spikes of yellow flowers; while C. leucanthus is a pretty, dwarf shrub with cream-coloured flowers, and it is suitable for the rock garden Ceanothus Gloire de Versailles is flowering freely, and makes a capital plant for the pergola. Hydrangea paniculata is producing its plume-like heads in profusion, and Clethra arborea is studded with its lovely white bell-shaped flowers. The latter subject prefers rich loamy soil, with peat or leaf-soil added, and it thrives best in partial shade.—J. Gardner, Batsford Park Gardens.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

On July 30, there was another small exhibition at the Royal Horticultural Hall, Westminster. Phloxes and gladioli were very much in evidence. Orchids were not largely represented, and no Certificate or Award of Merit was granted by the Orchid Committee. The Floral Committee had a fairly busy sitting, and granted nine Awards of Merit; while the Fruit and Vegetable Committee granted three Awards of Merit and one First Class Certificate to potatoes that had been grown at Wisley and tested for cooking quality.

### FLORAL COMMITTEE.

A rare display of very fine gladioli from Messrs. Jas. Kelway and Son, Langport, provided one of the leading features of the meeting. The spikes were set up lightly with asparagus sprays. Several of the new Langprim hybrids were shown, but large-flowered forms were most in evidence, and of these we were specially interested in Crown Jewel (A.M.), pink and yellow; and Lady Muriel Digby, Lady Regnart, Cowslip, Hall Caine, La Parisienne, Prince of Orange, Golden Measure (very fine), and Miss Zena Dare. All these latter were of yellow or yellowish colouring, and formed a distinct and attractive set.

Several small collections of gladioli were staged by Dutch growers, notably Messrs. Jean Barth Bros., G. Zeestraten and Sons, and P. Vos. There was no style in the disposition of the spikes; in one case there was a printed label to designate ownership; in another a pencilled note; and in another case a name and address was written in ink on a piece of soft paper. Conspicuous varieties were Badenia, with bluish-mauve flowers marked with violet; Glory of Noordwyk, soft yellow, that has gained a F.C.C. at Amsterdam, Haarlem, and London; Willy Wigman, white, with red-brown blotches; Emperor of India, darkest maroon-crimson; and the small yellow Sulphur King.

Messrs. Jas. Veitch and Sons, Chelsea, exhibited four graceful rafter plants of fuchsias, set over a collection of cannas, in splendid variety, Browallia speciosa major, B. viscosa, Kalanchoe flammea, and a set of beautiful greenhouse rhododendrons, among which was the new rosy-carmine Clorinda (A.M.), a fine variety, obtained by crossing R. jasminiflorum carminatum with R. Minerva, these two parents being also shown. Thalictrum dipterocarpum, with its graceful spikes of bluish-mauve flowers, also figured in this group. Hæmanthus Andromeda (A.M.), with large, dense heads of bright salmon-scarlet flowers, and large, broad green leaves, was represnted by seven flowering specimens, exhibited by Mr. Cobb, gardener to R. R. Cory, Esq., Duffryn, St. Nicholas, Cardiff. This hæmanthus reminds us of H. Katherinæ.

In the exhibit from Messrs. H. B. May and Sons, Edmonton, conspicuously beautiful ferns were Adiantum Farleyense gloriosum, A. Veitchi, A. cardiochlaena, Nephrolepis Neuberti, and N. Mayi. Mr. F. Cooper, gardener to N. C. Davidson, Esq., Borlases, Twyford, Berks, sent a batch of seedling coleuses, but the colouring was not particularly brilliant. A bank of carnations from Messrs. Wm. Cutbush and Son, Highgate, was composed chiefly of perpetual varieties, such as Mikado, Rose Doré, the new light yellow-ground Miss Winnie Hey, Mrs. McKinnon, a new red, Carola, Goldfinch, and R. F. Felton.

Messrs. Bees, Lim., Liverpool, exhibited Lobelia Blue Bees, a strong-growing, trailing variety, with bright blue, white-eyed flowers; Roscœa capitata purpurata, with purple flowers, and Dracocephalum Forresti, with soft lavender-blue flowers, and Lilium lophophorum, were also staged by the Liverpool firm.

Messrs. T. S. Ware, Lim., Feltham, were large exhibitors of phloxes and pentstemons, and they showed the latter particularly well, staging a dozen spikes or so of such showy and beautiful varieties as Fire Dragon, Salamander, Damocles, Arethusa, Eros, the vivid and white-throated Diamond—a splendid sort, Lady Hallé, Sylviane, Taurus—deep red, a dense spike, Mrs. R. Paget, and Capella. Messrs. Stuart Low and Co., Enfield, set up a few perpetual carnations, but their most prominent subject was Clethra arborea (A.M.), with horizontal spikes of pendant, pearly-white flowers; some of the plants, in five-inch pots, were flowering quite freely and beautifully. Where it thrives out of doors this is a fine flowering shrub. Hardy flowers in variety were contributed by the Guildford Hardy Plant Nursery Company, Guildford.

An effective bank of hardy flowers from Mr. Maurice Prichard, Christchurch, included a selection of the best phloxes, the pretty Heeria elegans, with rosy-purple flowers; Lysimachia Henryi (A.M.), of dwarf habit, and bearing clusters of yellow flowers; delphiniums, gladioli, Montbretia George Davison, and the handsome Crimson Powelli. Phloxes were largely staged by Messrs. W. Wells and Co., Merstham, the leading varieties being Champs Elysées, Selma, Elizabeth Campbell, Henri Regnault, Le Prophete, the large-flowered Rose Queen, Geoffry St. Hilaire, and the dark purple Le Mahdi. Messrs. Rich and Co., Bath, presented a collection of pentstemons, but, unfortunately, the flowers had not travelled well; the same firm contributed a collection of phloxes that included the leading varieties.

Mr. Jas. Box, Lindfield, displayed phloxes in fine style, his group being quite artistic, as well as effective. There were great mounds of such lovely sorts as Sheriff Ivory, Le Mahdi, Lindfield Beauty, G. A. Strohlein, Fiancée, General von Hentz, Frau A. Buchner, and Selma. The new, large-flowered Francois de Neufchatel—greyish blue; and Widar, soft blue, another new sort, were two very promising varieties of considerable distinction. Messrs. Webb and Brand, Saffron Walden, exhibited fine spikes of splendid hollyhocks, the big double blooms being very attractive. A few outstanding varieties were Walden Primrose, Fire King, Peri, Ovid, Rosy Morn, and Lady Bailey.

The phloxes exhibited by Mr. H. J. Jones, Lewisham, were well staged, and notably good were the spikes of Mdme. Paul Dubrie, soft blush; Brilliant, Antoine Mercier, Le Mahdi, G. A. Strohlein, and Elizabeth Campbell. Two stands, composed of sprays of Bocconia microcarpa and Solidago altissima, attracted a great deal of attention, the ladies being loud in their praises of this pretty combination of greeny-grey and gold. Messrs. H. Cannell and Sons, Swanley, filled a large space with a brilliant exhibit of cannas and begonias, the latter chiefly represented by double varieties. Their pendulous double scarlet variety, named Decorator (A.M.), was especially graceful and suitable alike for pots and baskets, for while the stem is fairly sturdy, the flowers hang gracefully on longish stems. The parents of this variety were Washington and Fleur de Chrysanthéme.

The Rev. J. H. Pemberton, Havering, exhibited Rose Danæ (A.M.), a small-flowered, pale yellow variety, suggestive of Allister Stella Gray, but bearing its blooms more sturdily in lax clusters. One of the most brilliant flowers in the show was Eschscholtzia Mikado canaliculata (A.M.), a vivid scarlet variety, with orange-yellow centre, and with the petals beautifully crimped or goffered (the ladies would probably say pleated), in regular lines from base to margin. This was shown by Mr. W. H. Gardiner, St. Osyth.

### ORCHID COMMITTEE.

Messrs. J. and A. McBean, Cooksbridge, put up a small collection of orchids, and here were Odontoglossum Harryanum, O. Rolfeæ, O. Elaine, Cattleya gigas, Odontioda Charlesworthi, Dendrobium Dearei, etc. Messrs. Stuart Low and Co., Enfield, submitted a group of considerable size, and made a quite good show with Cattleya Warscewiczi, C. Harrisonæ, C. granulosa, Brasso-cattleya Maronæ, Renanthera Imschootiana Miltonia Lambeauianum, and Disa grandiflora. From Mr. E. H. Davidson, Borlases, came a six-flowered spike of Vanda Sanderiana, Cattleya Rex, with two spikes, Odontioda Cooksoniæ with two fine spikes, etc.

Messrs. Charlesworth and Co., Haywards Heath, had a small exhibit, and here the leading plant was Odontioda Madeline, a lovely crimson-flowered hybrid between O. Charlesworthi and Odontoglossum crispum; Cattleya Warscewiczi majestica, Stanhopea oculata, Habanaria Suzannæ with white, fringed flowers, Grammangis Ellisi and Brassavola Digbyana were also well shown. Mr. W. H. White, orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, showed a fine specimen of Cypripedium W. R. Lee, with five spikes, and a total of thirteen flowers; a cultural commendation was awarded. Odontoglossum Jasper was well shown by Mr. De Barri Crawshay, Rosefield, Sevenoaks.

Mr. Thurgood, gardener to H. T. Pitt, Esq., Rosslyn, Stamford Hill, exhibited Cattleya Dowiana, C. Warscewiczi, Frau Melanie Beyrodt with five lovely flowers, Odontioda Charlesworthi, Brasso-cattleya Helen, and the quaint little Bulbophyllum barbigerum. Mr. H. A. Tracey, Twickenham, also sent a few orchids.

### FRUIT AND VEGETABLE COMMITTEE.

The Church Army sent a large collection of vegetables grown at gardens in Stillington Street and Elverton Street, Westminster; dwarf beans, carrots, marrows, endive, onions, parsnips, and turnips were specially well represented.

Several potatoes, cooked and uncooked, were brought up from the society's gardens at Wisley, and awards were made as under.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Potato Witchill Seedling, from Messrs. Smith and Son, 18, Market Street, Aberdeen.

Award of Merit.—To Lysimachia Henryi, from Mr. Maurice Prichard, Christchurch; to Gladiolus Crown Jewel, from Messrs. J. Kelway and Son, Langport; to Begonia Decorator, from Messrs. H. Cannell and Sons, Swanley; to Rhododendron Clorinda, from Messrs. J. Veitch and Sons, Chelsea; to Hæmanthus Andromeda, from R. R. Cory, Esq., Duffryn, St. Nicholas, Cardiff; to Clethra arborea, from Messrs. Stuart Low and Co., Enfield; to Eschscholtzia Mikado canaliculata, from Mr. W. H. Gardiner, St. Osyth; to Rose Danæ, from Rev. J. H. Pemberton, Havering, Romford; to Astilbe simplicifolia, from Mr. G. Reuthe, Keston, Kent; to potato Imperial Beauty, from Messrs. Barr and Sons, Covent Garden, W.C.; and to potatoes Irish Gem and King George V., from Mr. W. E. Sands, Hillsborough, co. Down, Ireland.

### MEDALS.

Silver-Gilt Flora.—To Messrs. J. Kelway and Son, Langport, for gladioli.

Silver-Gilt Banksian.—To Mr. Jas. Box, Lindfield, Sussex, for phloxes; to Messrs. T. S. Ware, Lim., Feltham, for pentstemons and phloxes.

Silver Knightian Medal.—To Westminster City Church Army Gardens, for vegetables.

Silver Flora.—To Messrs. H. B. May and Sons, Edmonton, for ferns and campanulas; to Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse plants; to Messrs. Stuart Low and Co., Enfield, for orchids; to H. T. Pitt, Esq. (gardener, Mr. Thurgood), Stamford Hill, for orchids.

Silver Banksian.—To Messrs. H. Cannell and Sons, Swanley, for begonias, etc.; to

Mr. M. Prichard, Christchurch, for hardy flowers; to Mr. E. H. Davidson, Borlases, Twyford, Berks, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids; to Messrs. J. and A. McBean, Cooksbridge, for orchids.

Bronze Flora.—To Messrs. W. Wells and Co., Merstham, for phloxes and carnations.

Bronze Banksian.—To Messrs. Aldersey and Marsden Jones, Tilston, Malpas, for sweet peas; to Mr. H. J. Jones, Ryecroft, Lewisham, for phloxes.

## Leamington.

The third annual show of the Leamington and County Horticultural Society was held under favourable conditions in the park on Wednesday and Thursday, July 24 and 25. Thanks to liberal support from the gentry of the county of Warwick, this society offers very attractive prizes, and at no provincial show is there so fine an array of handsome challenge cups as at Leamington. Competition is consequently very keen, and, although the society is quite in its infancy it manages to provide an exhibition of flowers, fruits, and vegetables that is equal to that seen at what may claim to be the leading shows in the country.

It is somewhat strange that in face of all this there is very much room for improvement in attendance; in fact, on both first and second days the attendance was most disappointing. We wish it were otherwise, for the management of the show is in every respect a credit to those in office, and if the good people who are generous in the matter of subscriptions would but come forward and grace the show with their attendance, Leamington would speedily stand high among horticultural events. The weakness in this respect is a real danger, as evidenced by the fact that the trade exhibits this year were fewer than on the two former occasions. It is the attendance that attracts those exhibitors who exhibit for commercial purposes, and the trade can be relied upon if they find the public are ready with their support.

In a show of all-round excellence the outstanding features were the carnations, the big collections of roses, and the wonderful group of stove plants from Messrs. J. Veitch and Sons, which received unstinted praise from all. Table decorations were numerous, but it is surely time someone came forward with some originality and variety to break the monotony of sweet peas used in small tubes that do not hold sufficient water to keep the flowers fresh.

### GROUPS AND PLANTS.

The group class was not large, there being only three entries. The space occupied by each was 20ft. by 12ft., and certainly in point of merit the exhibits would compare favourably with those generally seen at the leading events. Messrs. J. Cypher and Sons, Cheltenham, who secured the chief award, had a group in their best style. A grand specimen Kentia occupied the position of honour in the centre of the group, raised on a cleverly-constructed arch, which was tastefully furnished with small crotons, caladiums, the pretty little Origanum hybridum, etc. The corner crotons were beautifully furnished plants, and the groundwork of cattleyas, odontoglossums, maidenhair and other ferns was disposed with exquisite taste. Mr. J. Macdonald, gardener to Sir George Kenrick, Bart., Edgbaston, was an excellent second, and in his arrangement he used orchids and liliums freely among the foliage plants. Mr. Wm. Vause, the local nurseryman, had a very effective, but slightly heavier group, for which he received third prize.

Messrs. J. Cypher and Sons led the way for twelve stove and greenhouse plants, with beautifully-trained specimens of stephanotis, clerodendrons, statices, and ixoras, with a splendid specimen of Phœnix Roebelini in the centre of the group. Mr. Vause's second prize lot consisted of much smaller plants. Mr. R. Denton, gardener to A. Cay, Esq., Woodside, Kenilworth, received first prize for three lovely ferns, second prize going to Mr. Bartlett, gardener to C. C. Shaw, Esq., Thornbank, Leamington; and third to Mr. H. J. Finch, gardener to J. H. Burley, Esq., Leamington. Mr. Vause had a finely-developed bougainvillea, with which he won first for a single specimen plant in bloom. Mr. Bartlett scored for a single specimen foliage plant, Mr. A. J. Friend, gardener to the Misses Robinson, Leamington, being second, and Mr. Vause third.

In the class for six begonias, first prize among six entries went to Mr. Jones, gardener to Mrs. Rayson, Leamington, the plants being well furnished with bloom. Mr. Denton took second place. Mr. J. Steadman, gardener to Mrs. Stanbridge, Elm Bank, Lillington, was third. Mr. W. G. Jones had a good half-dozen gloxinias that stood right away from three other very moderate entries. Mr. Denton received a twenty-guinea challenge cup for a group of ferns arranged on 20ft. by 4ft. table space. No other competitor came forward, which is a matter for regret, as this should be a fine class with so attractive an award. Mr. Denton's collection included a good many varieties of adiantums, plumose nephrolepis, lomarias, etc., all small, neat plants. Mr. Denton's name again appeared as winner for three coleus, his plants being dwarf, symsymmetrical bushes of brightly-coloured varieties. Three zonal pelargoniums were shown by Mr. W. G. Jones, who staged shapely plants of double varieties; Mr. M. Golby, gardener to Mrs. Jenkins, Westwood, Holly Walk, Leamington, coming second.

### ROSES.

The class of greatest interest among the roses was for a group of either pot plants or cut flowers, arranged for effect on a table space of 12ft. by 4ft, a challenge cup, value 25 guineas, being offered. Only three exhibits were put up, but they were so excellent that the class was the object of general admiration. The fortunate winners were Messrs. Gunn and Sons, Olton, who deserve high praise for the glorious display of the leading varieties they arranged with masterly skill. Great pillars of Excelsa, Dorothy Perkins, and Dorothy Dennison were supported by mounds of White Maman Cochet, The Lyon, Lady Roberts, and the delightful Edu Meyer, with a host of others in smaller bunches. Mr. Wm. Lowe, Beeston, Notts, was a fine second; Le Progres, rich orange-buff, was well shown, with Richmond, Geo. C. Waud, and Pharisaer, while all the more popular hybrid teas were put up in either small groups or big masses. The King's Acre Nurseries, Lim., Hereford, had a good group, for which third prize was awarded, their stand of the charming, single Irish Elegance being conspicuous.

Roses in boxes made a very good diplay, the flowers being well up to exhibition standard. Messrs. Perkins and Sons, Coventry, took the lead for twenty-four blooms, and on a very even stand were particularly good flowers of William Shean, Claudius, Mdme. M. Soupert, and Captain Hayward; second place was taken by Mr. Henry Drew, Longworth, Faringdon, and it may be said that the two exhibits were very nearly equal in quality. King's Acre Nurseries, Lim., Hereford, were third, their flowers looking just a bit weather-beaten. Twelves made a big display with some half-dozen or more entries, Messrs. Perkins and Sons winning again, the second and third prizes going to King's Acre Nurseries and Mr. Henry Drew in the order named.

Messrs. Perkins and Sons once more led in the class for six blooms of one variety, showing beautiful flowers of Horace Vernet, an old favourite. Messrs. Chapman and Collins, Royal Road, Leicester, were second with Captain Hayward, and King's Acre Nurseries third with Alfred Colomb. Mr. Henry Drew led for twelve teas with a very striking stand, his best flowers being Mrs. Foley Hobbs, White Maman Cochet, and E. V. Hermanos; second place was filled by Mr. W. T. Mattock, Barton End, Oxford, the King's Acre Nurseries figuring as third prize winners. The best six teas of one variety were Messrs. Chapman and Collins' set of Nita Weldon, Messrs. Perkins and Sons' Mdme. Jules Gravereaux coming second, and Mr. Drew third with White Maman Cochet.

### HARDY FLOWERS.

A twenty-five guinea challenge cup for twenty bunches of herbaceous flowers, excluding bulbs, secured four entries, and these, being well staged, made an excellent show. Messrs. Gunn and Sons were most successful, and their flowers were fine, clean, and good throughout. Phlox Josephine Gerbaud was prominent, and other good things were Lysimachia clethroides, Potentilla Gibson's Scarlet, and a particularly brilliant gaillardia named Vulcan. Mr. Frank Bouskell, Market Bosworth, put up a good set for second prize, his Papaver Jeannie Mawson, Helenium cupreum, Aconitum bicolor, and Sidalcea Listeri being beautifully grown. Mr. C. H. Herbert, Acock's Green, came third, his flowers being staged with pleasing lightness. Mr. Herbert scored for twelve bunches with a big bunch of Eryngium amethystinum, and good alstrœmerias, lythrums, galegas, etc.; Mr. Wm. Lowe, Beeston, was second; and Mr. F. Bouskell third.

Some very nice cactus dahlias were staged by Messrs. Pemberton and Sons, Bloxwich, Walsall, who won first for twenty-four blooms; Johannesberg, a big amber flower, was very attractive; and Peerless (crimson) was also good. The Messrs. Pemberton also scored for six varieties of violas. There were some fine vases staged in the class for six bunches of stove or greenhouse flowers, the winner being Mr. F. Daniels, gardener to J. B. Akroyd, Esq., Birdingbury Hall, Rugby. Lapageria rosea, L. alba, gardenias, Gloriosa superba, and liliums were the flowers used, asparagus sprays serving to set them off. Second prize was won by Mr. T. Parry, gardener to W. J. Gresson, Esq., Birlingham House, Pershore; Mr. A. J. Friend, Leamington, coming third.

It is dangerous to resort to superlatives, but the opinion was freely expressed that the display of carnations here was the finest seen at any British show. At all events, we have no hesitation in recording that eight entries in the class for a group of cut carnations, each filling ten feet by four feet space, were as fine a lot as any society might wish to see, and the judges' had no light task in selecting the exhibit that should receive the challenge cup. Messrs. Young and Co., Hatherley, Cheltenham, were the fortunate winners, and were warmly congratulated on their success. Quality of bloom on this stand was well assisted by tasteful arrangement, and, as we have often remarked, Messrs. Young and Co. both grow and stage remarkably well. A big mass of Duchess of Devonshire, with Hon. Lady Audley Neeld on either side, made the centrepiece, with Lady Henderson, May Day, White Perfection, and plenty of other varieties to flank them, and finish off the front. It was a splendid effort. Mr. Chas. Wall, Melrose Nursery, Bath, came a very good second, a good many border varieties being used in this exhibit, in addition to well-grown perpetuals. This was an exhibit that would have done credit to any exhibition, and it was the exceptionally keen competition and the excellent arrangement in the winning group that placed it second—a position of no small credit in such company. Mr. C. F. Waters, Balcombe, who came third, had also a grand lot of flowers.

Mr. A. F. Dutton, Iver, Bucks, had a beautiful set of twelve vases, with which he secured first prize, the new variety Mrs. A. F. Dutton being shown in splendid form. Mr. W. H. Parton, Studholme, Moseley, was placed second, his flowers being border varieties of choice quality; Messrs. A. R. Brown, Lim., King's Norton, followed, also with border kinds. Mr. Parton's set of twelve blooms, selfs, won well, Solfaterre, Mrs. Griffiths Jones, Sir Galahad, and Cardinal being lovely flowers; second prize in this class went to Mr. C. H. Herbert, who was first in the class for twelve fancies.

### SWEET PEAS.

These were put up in large numbers, and the leading class was for a display occupying a space of twenty feet by four feet, a twenty guinea challenge cup being offered as first prize. The victor was Mr. T. Jones, Bryn Penylan, Ruabon, and it goes without saying that his flowers were remarkable for their size, length of stem, and good texture; while the arrangement was very neat. Afterglow, Rosabelle, and Charles Foster were brought prominently before and above a mass of popular varieties, and at the back were big stands of Melba, Edrom Beauty, and Thos. Stevenson. The second prize was annexed by Mr. E. T. Bromley, Roseleigh, Wilmcote, Stratford, who introduced baskets among his vases.

Robert Sydenham Limited's class for nine varieties made a great display, the entries being numerous and good. The chief award went to Mr. W. H. Holloway, Port Hill Gardens, Shrewsbury, his flowers being large, without coarseness; second prize fell to Mr. W. V. Wall, gardener to J. Booth, Esq., Ardencote, Claverdon, who used maidenhair fern (we did not like it) to set off the flowers; the third prize was secured by Mr. T. Batchelor, gardener to H. Mitchell, Esq., Mercote Hall, Hampton-in-Arden; fourth going to Mr. J. Randall, 103, Tackbrook Street, Leamington. Messrs. Webb and Sons also had a good sweet pea class for eight bunches, the lead being taken here by Mr. P. Vincent, gardener to J. W. Lamplough, Esq., Manor House Hotel, Leamington; with Mr. A. Taylor, Leconfield, Kineton Road, Olton, second; and Mr. G. L. Blackburn, gardener to Captain Starkey, Bericote House, Leamington, third.

### FRUIT.

A collection of fruit of high quality was exhibited by Mr. J. Gibson, gardener to the Duke of Portland, Welbeck Abbey, Worksop, who secured the challenge cup, and also a Silver-gilt Knightian Medal from the R.H.S. The eight dishes were of Black Hamburgh and Muscat of Alexandra grapes, Welbeck Seedling melon, Williams' Bon Chretien pears, Barrington peaches, Pineapple nectarines, Brown Turkey figs, and Rival apples. The table was tastefully decorated with Malmaison carnations that were a fine exhibit in themselves.

Mr. Gibson repeated his success in the four-dish class, showing a splendid Royal Jubilee melon, with peaches, nectarines, and Muscat grapes. Second prize in this class went to Mr. E. R. Jones, gardener to Lord North, Wroxton Abbey, Banbury, his Black Hamburgh grapes being very good bunches; third prize was taken by Mr. E. Coy, gardener to the Lady Knightley of Fawsley, Daventry. Mr. Gibson won for black grapes, followed by The Manor Fruit Farm, Knowle, the same order being maintained in the white grape class. Mr. Gibson's dish of Barrington peach topped all other entries; Mr. Jones, Wroxton, led for nectarines with a fine dish of the variety Pineapple, and also scored for a white-fleshed melon. The Manor Fruit Farm won both for dessert and cooking apples, beating Mr. Gibson in the former class.

### VEGETABLES.

These were staged in considerable quantity, but the quality was not at all high. The class for ten dishes found several competitors, and first prize fell to Mr. J. R. Tooley, gardener to Hugh Andrews, Esq., Toddington Manor, Winchcombe; Mr. E. R. Jones, Wroxton Abbey, second; and Mr. Rainbow, 11, Church Hill, Birmingham, third. Several firms offered prizes for produce grown from their seeds, and the result was a big display, occupying all one side of a tent. Mr. G. L. Blackburn, gardener to Captain Starkey, Bericote House, Leamington, took the lead in Messrs. Clibran's class. The first prize in Messrs. Dickson and Robinson's class went to Mr. T. Parry, gardener to W. J. Gresson, Esq., Birlington House, Pershore; Messrs. Webb's prize being secured by Mr. E. Winchester, Brookside, Rubery, Birmingham. Still another class was provided by Messrs. Sutton and Sons, the winner here being Mr. W. Wright, gardener to M. P. Lucas, Esq., The Oaks, Leamington.

### OTHER CLASSES.

In the amateurs' section there was a group class, the area to be covered being 12ft. by 9ft. A challenge cup, which was the leading award, was secured by Mr. A. J. Friend, gardener to the Misses Robinson, Newlands, Leamington, who made free use of Oncidium flexuosum, Francoa ramosa, begonias, and carnations, together with Asparagus plumosus, crotons, and small palms. It was a bright and well-devised group. Mr. J. Fisher, gardener to Alderman Holt, Oaklands, Leamington, took second place.

Table decorations filled a large tent, there being no less than twenty-six exhibits. For a dinner table for eight persons, Mr. W. J. Mattock, Oxford, took first place with a nicely-arranged centrepiece of odontoglossums and Gloriosa superba, and corner vases of cypripediums, with a judicious use of asparagus and selaginella. In the ladies' class Miss M. L. Deakin, Hay Hall, Hay Mills, Birmingham, was first, using sweet peas lavishly. Robert Sydenham Limited's class filled well, and Miss Deakin was again the winner, and we certainly liked this table better than that in the previous class.

### NON-COMPETITIVE.

Messrs. J. Veitch and Sons, Lim., Chelsea, had an exhibit that for extent, variety, and intrinsic value was admittedly the finest feature of this fine show. The group was mainly composed of a superb collection of ornamental stove and greenhouse plants, and to enumerate the many subjects, all of which were really good, would occupy more space than we can afford, much as we should like to give our readers an idea of the beauty and interest of a group which filled nearly 700 square feet.

Messrs. Peed and Sons, Norwood, were the fortunate winners of the challenge cup offered for the best trade exhibit, the firm putting up a really good group of caladiums in excellent variety, and all well-grown, highly-finished plants. Rufus, a blood-red variety, was very conspicuous, and the huge leaves of John Peed were in striking contrast to the tiny, but pretty, C. argyrites, which is as useful and popular as ever. Maidenhair ferns were freely used to set off the bright and varied foliage of the caladiums. Conspicuous on a big stand of ferns, put up by Messrs. H. B. May and Sons, Edmonton, were some excellent specimens of Platyceriums. Mr. H. N. Ellison, West Bromwich, had ferns and cacti, many of the latter being of comparative rarity.

Hardy flowers were shown well by Messrs. Dicksons, Lim., Chester, their phloxes and gladioli being remarkably bright. Another big and attractive exhibit of hardy flowers was put up by Messrs. J. H. White and Co., Worcester, Montbretia rosea and Campanula Bonieusis being worthy of special note. Sweet peas came in quantity from Messrs. Aldersey and Marsden Jones, Tilston, Malpas, and also from Messrs. W. H. Simpson and Sons, Birmingham, who, in addition, showed a fine lot of antirrhinums. Sweet peas and carnations were tastefully used by Robert Sydenham Limited, Birmingham, to demonstrate the usefulness and artistic merits of their rural table decorations.

Messrs. J. Waterer and Sons, Lim., Bagshot, had a group of conifers and other ornamental trees and shrubs in the open; Cedrus atlantica glauca was represented by a number of young shapely trees, and there was a mass of vivid colour in the flowers of Spiræa Anthony Waterer. A big display of horticultural requisites was made by Messrs. Wm. Wood and Sons, Lim., Wood Green, there being, in addition to samples of chemicals, a number of tools and implements of varied utility. A device that deserves mention was a moth trap, exhibited by Mr. Hagon, of Leamington; by means of this trap, which is lit up at night, moths can be caught alive, thus serving either the purpose of clearing a garden of pests or of obtaining specimens for study.

### MEDALS.

The society's medal awards to non-competitive exhibits were:

Large Gold.—Messrs. J. Veitch and Sons, Lim.; and Messrs. J. Waterer and Sons, Lim.

Small Gold.—Messrs. H. B. May and Sons.

Silver.—Messrs. J. H. White and Co.; Mr. H. N. Ellison, Messrs. Aldersey and Marsden Jones, Messrs. W. H. Simpson and Co., Messrs. Dicksons, Lim., Robert Sydenham Limited, Major Stringer and Messrs. Harbutt and Co.

Bronze.—Messrs. Hinton Bros.

### ROYAL HORTICULTURAL SOCIETY'S AWARDS.

A deputation from the Royal Horticultural Society visited the Leamington Show, and made the following awards:

Gold Medal.—To Messrs. J. Veitch and Sons, Chelsea, for stove and greenhouse plants; to Messrs. J. Cypher and Sons, Cheltenham, for a group of plants; to Sir G. H. Kenrick, Bart. (gardener, Mr. Macdonald), Edgbaston, Birmingham, for a group of plants.

Silver-gilt Flora.—To Mr. W. Vause, Leamington, for group of plants; to Messrs. J. Cypher and Sons, Cheltenham, for stove plants; to Messrs. Gunn and Sons, Olton, for roses; to Mr. Chas. Wall, Bath, for carnations; to Messrs. Young and Co., Cheltenham, for carnations; to the Misses Robinson, The Newlands, Leamington (gardener, Mr. A. J. Friend), for a group of plants.

Silver-gilt Banksian.—To Alfred Holt, Esq., J.P., Oakland, Leamington (gardener, Mr. J. Fisher), for a group of plants.

Silver-gilt Knightian.—To His Grace the Duke of Portland, K.G. (gardener, Mr. J. Gibson), Welbeck Abbey, for fruit.

Silver Knightian.—To H. Andrews, Esq. (gardener, Mr. J. R. Tooley), Toddington Manor, Winchcombe, for vegetables; to Mr. J. E. Warr, 3, Glebe Place, Leamington, for vegetables; to Mr. G. H. Wilkins, 18, Northcote Street, Leamington, for vegetables; to Mrs. E. W. Everitt (gardener, Mr. E. Allaway), Sherbourne House, Leamington, for fruit.

Silver Flora.—To Mr. William Lowe, Beeston, Notts, for roses; to Messrs. Gunn and Sons, Olton, for herbaceous flowers; to Messrs. Dicksons, Chester, for cut flowers; to Messrs. W. H. Simpson and Sons, Birmingham, for sweet peas; to Messrs. Aldersey and Marsden Jones, Tilston, for sweet peas; to Mr. C. F. Waters, Balcombe, for carnations; to C. C. Shaw, Esq. (gardener, Mr. W. Bartlett), Thornbank, Leamington, for a group of plants; to Mr. T. Jones, Bryn Penylan, Ruabon, North Wales, for sweet peas.

Silver Banksian.—To F. Bouskell, Esq., Market Bosworth, for herbaceous plants; to the King's Acre Nurseries, Hereford, for roses; to A. Cay, Esq. (gardener, Mr. R. Denton), Woodside, Kenilworth, for ferns.

Bronze Knightian.—To Mr. T. Noon, jun., The Square, Stockton, for vegetables; to Mr. J. Wright, 45, Guy Street, Warwick, for vegetables; and to Mr. Ed. Deakin, Hay Hall, Hay Mills, Birmingham, for vegetables.

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## Scottish Horticultural Association.

The annual excursion of this association took place on July 27, when, on the invitation of the hon. president, Captain Archibald Stirling, 100 of the members, including the president, Mr. Massie, and several other office-bearers, visited the beautiful grounds of Keir. On arrival at Keir the visitors were received by Captain and the Honourable Mrs. Stirling, and afterwards they were entertained to luncheon in a large marquee erected on the lawn. Captain Stirling presided at the luncheon, and, after the loyal toast had been duly honoured, extended a hearty welcome to the party, and gave the toast of "Prosperity to the Association," and in doing so, he referred to the hearty response which had been made to the appeal which he had sent out for new members. The toast was acknowledged by Mr. Massie, who said that the future success of the association was already assured by the result of the appeal, and that Captain Stirling's year of office would be remembered as a red-letter one in the annals of the association, and he conveyed to Captain and Mrs. Stirling the hearty thanks of the party for their splendid hospitality. Thereafter Captain and Mrs. Stirling conducted the party over the principal apartments of Keir House, and the weather, which, unfortunately, had broken down early in the afternoon, having improved somewhat, the fine gardens and grounds were next inspected. On leaving, three hearty cheers were, on the call of the President, given for Captain and Mrs. Stirling, and, but for its being somewhat marred by the weather conditions, the outing was a most enjoyable one in every respect.

## Melksham and District Gardeners' Society.

The members of the above society had a most enjoyable outing to Reading on Tuesday, July 23, when they paid a visit to the well-known seed establishment of Messrs. Sutton and Sons.

Mr. Leonard Sutton welcomed the party, and two representatives of the firm took them over the whole of the offices and warehouses. Before inspecting the trial grounds the party enjoyed an excellent luncheon, provided by the firm, and presided over by Mr. Castle. Mr. Legg, on behalf of the society, thanked the Messrs. Sutton for their kindness. Some two hours were profitably spent at the trial grounds, and at 3.15 a brake conveyed the party to Southcote Manor, some four miles out, where was to be seen a large breadth of sweet peas, in the finest varieties, the soil being of greater depth here than at Reading. The party also explored the fine old manor house, rich in oak panelling, etc. A drive back to Reading, and a cup of tea, completed a very pleasant day's arrangement.

## Haywards Heath Show.

The twenty-fourth annual exhibition of the Haywards Heath Horticultural Society was held on July 24, and it was a great success.

This society is one of the most flourishing in the south, and the fact that it drew a gate of £115 indicates how well it is supported. Even the rule that compels handing over half the gate money, above £50, to the local Athletic Club, does not prevent the society from keeping a reserve and balance of about £50.

The recent show was favoured by beautiful weather, and, as the local conditions had been more favourable to plant growth than in some districts we know of, the exhibits were of high quality all through.

The sweet peas were wonderfully good, although some of the competitors have much to learn in the art of staging. Mr. F. Beal, of Uckfield, again won the James Box Challenge Cup for eighteen bunches. His blooms were remarkable for size, and we have never seen Mrs. Hardcastle Sykes in such good form. No one ventured to try conclusions with Mr. Beal, and unless someone outside the district ventures to give him battle next season, the cup will be his. Although numerous exhibitors contested the smaller classes, no one had flowers to match Mr. Beal's eighteen. For twelve bunches Mr. C. Lucken had a clear win.

The rose classes were rather weak, very few really good flowers being on view. Border carnations and dahlias were well shown, and hardy flowers were splendidly staged. Mr. J. E. Shirley, gardener to the Rev. T. G. Wyatt, easily won the Kleinwort Challenge Cup for eighteen bunches of hardy flowers, and here again, unless some newcomer puts in an appearance, a fine cup will depart for good, as Mr. Shirley has two claims upon it.

The plant classes brought out some fine exhibits, and we have not seen better fruit and vegetables staged at any district show this season. Giant gooseberries are a feature at Haywards Heath, and anyone who desires to know what big berries really are should visit this show. Black currants, too, were almost as big as Morello cherries, even the cottagers being able to shine in this direction. Messrs. Sutton and Sons, Messrs. J. Cheal and Sons, and Messrs. Daniels Bros. offered prizes for vegetables, and these were hotly contested.

The combined competition, open to all horticultural societies in Mid-Sussex, brought Lindfield and Balcombe into close contest, and the former gained the challenge trophy, reversing the award of last year. The Balcombe collection was richer in flowers, but it was not so artistically staged, nor were the fruits and vegetables so fine in quality as those of Lindfield. On the latter exhibit we noted some of the most gigantic gooseberries we have seen, while the grapes, peaches, etc., were all of high class.

## OBITUARY.

### MR. JAMES MITCHELL.

One of Forfarshire's oldest and most respected gardeners, Mr. James Mitchell, who for forty-five years was head gardener to the Earl of Dalhousie at Panmure House, has passed to his rest. Coming to Panmure sixty years ago, he had the honour of remodelling the old gardens, laying out and planting new ones, and erecting commodious glass structures, to the great satisfaction of the four successive Earls with whom he served. Born in Arbroath district eighty-nine years ago, he was a noted local historian, and an antiquarian of no mean order. A natural student of botany and geology, a good all-round gardener, and a competent judge, his services were often requisitioned in various ways. He retired from active work fifteen years ago, and went to live in Carnoustie, but latterly he resided in Dundee.

One of Nature's gentlemen, he was generous, kind, sympathetic, and sincere, and quickly found out the good points in his "Billies," as he always called his young men. These he encouraged, ruling with gentleness and firmness, for harshness was not in his nature. Many of his men now hold good positions in the world of horticulture, in almost every land where the art is practised to any extent, and these will recall his good qualities and cherish his memory.

## TRADE NOTES.

Messrs. Webb and Sons, of Stourbridge, have been awarded gold medals for exhibits of their specialities at Bath, Wolverhampton, Southampton, and Birmingham shows. Other recent awards include gold medals at York and Richmond.

Messrs. Robinson Bros., Lim., West Bromwich, are organising an exhibition of horticultural produce for the benefit of their customers, and a glance through the schedule before us shows that the firm is entering into the venture in a spirit of commendable enterprise. £350 in all is divided between seventy-five classes, the largest individual prize being £20 for the best collection of vegetables. The show will be held in the Botanic Gardens, Edgbaston, Birmingham, on August 28 and 29. Schedules may be had on application to Messrs. Robinson Bros.

At the leading horticultural shows at which Messrs. Sutton and Sons, of Reading, have been recently exhibiting, they have received the highest award, a gold medal, viz., on July 9, Wolverhampton, for sweet peas; July 10, Bath, for flowers and vegetables; July 17, Cardiff, for sweet peas; July 19, Birmingham, for flowers and vegetables; and July 23, at Brighton, for flowers and vegetables.

## GARDENERS AND GARDENING.

### THE DIPLOMA AND THE GARDENER.

Mr. J. W. Bamber, Lecturer on Horticulture and Nature Study to Herts C.C., has contributed the following article to the "Monthly Magazine" of the North of England Horticultural Society:

It may be too early to criticise the promised Diploma in Horticulture, so little of a definite nature being known by the crowd —of which I am one. It is to be hoped the last gathering for conference and discussion on this urgent and overdue subject has not yet been convened. Up to date there has been too much Professor in evidence and not enough Worker, and till this error is corrected, matters are not likely to be satisfactory to all. If the way the wind blows tells anything, the diploma is not for the working gardener, but for those at the top of the profession. Viewing it so, it is commendable, desirable, and useful; but if this is to represent the sum total of horticultural education and award, then it is insufficient, and does not meet a great need—perhaps the greatest need—in the profession. What is wanted is something to meet the working gardener. It is useless saying we will leave the gardener out for the present. This cannot be. If the diploma is to represent real training, then all those who obtain it will have been gardeners somewhere in their training.

Leaving school will represent the beginning of the training, and the diploma will represent a finish. What the gardener requires is an award somewhere intermediate between beginning and finish. The education for the award cannot be undertaken by mutual improvement societies. A competent teacher is required, and the work must be undertaken by educational authorities. Courses of study at a college, or long-continued courses at a secondary school, are not essential to train the gardener. As a matter of fact, most young gardeners have neither money or the time to attend costly courses of education, and if such courses of study are insisted on, then the opportunity for obtaining the diploma will be limited to a favoured few. What the diploma should represent is knowledge and practice in combination, and where this has been obtained matters little; it may be in some obscure garden, or it may be in some college with a shining reputation. To infer that knowledge and truth can be found only within college walls is to infer a fallacy, and to think that gardeners who work small gardens are all ignoramuses is another fallacy, and both are fatal to progress. The college does not make the gardener. The true gardener is born and not made, and what the college gives is the best opportunity for educing all that is good within him.

All educational systems represent means to an end, the end being the making of good and beautiful citizens, each after his own particular line. Elaborate collegiate systems of education are no better than simpler

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systems if they produce no better results. The first things requisite for horticultural education are—a good teacher, a lecture room and laboratory, a sympathetic and encouraging educational authority, and a standardised syllabus that shall embody the base principles of the profession. Perhaps it may be said that any such system would be a neglect of the practical. Where the students are gardeners the practical can be left to look after itself, at least in the early stages. From experience we all know the average gardener is fairly proficient in his practice but weak in his theory.

What a gardener should learn, in profit to himself, is unlimited. Generally it cannot be too wide, and specially it should be directed to his calling, which will demand a knowledge of botany, zoology, and geology. The elementary and second stages in the first subject requires but little modification to fit it to the gardener, but a special syllabus in both the other subjects will need to be drawn up to meet the gardener's requirements. The whole training in these subjects should not occupy more than a four years' study. Once a student has made up his mind to try for something higher than the position of head gardener then he will be prepared to extend his studies. He must learn by practice the most up-to-date methods for all work, and for this purpose it would be necessary for him to attend courses—here the short course may be of value—at an experimental garden.

To meet the case of the working gardener, I would suggest classes in secondary education between 7 p.m. and 10. These classes are popular in the cotton districts of Lancahire, and there is no great reason why they should not be tried elsewhere. A young lad leaving school could without effort attend one class a week. Granting the lessons were honestly worked and continued till the ages of 22-25, a fair amount of general and special training could be got in, more than enough to make an intelligent worker in Nature's workshop, instead of one who works this way and that because his chief taught him so.

The best education in practice is obtained not by staying a long time at one big place, but by stopping short periods at good places. If a young man migrates, say every two years, he should satisfy himself beforehand that a new place will extend his previous practical experience. Mr. Hale's suggestion of an organised system of exchange of young gardeners deserves the deepest consideration. This migration has one drawback. In many country districts it will not be possible to get two classes, representing different stages in the instruction, running contemporaneously. This means a young man leaving Stage II. and migrating to Stage I. will have a waiting break in his study. With a little thought this could be remedied.

Let the gardener once realise that the diploma is only granted after an intense training that must reach a standard which is altogether unnecessarily high for his work, then he will regard it as hopeless, and the consequent apathy will keep him at about the same level of educational inefficiency. On the other hand, foster his hopes by an intermediate award, that will meet all his working requirements, and at the same time incur little expense, then the probabilities are created that many gardeners, after reaching the intermediate stage, will continue their studies, it may be from love, or it may be with the prospect of obtaining a higher position in life. It is the gardener—the worker, and not the lecturer or professor, that stands in most need of facilities for progress. Elevate the worker and workers will supply all the lecturers needed.

Any system of education that omits the initial stages and ignores the worker is faulty, and cannot be permanent. There is no need for a feverish haste. Certainly, it would be wiser to build slowly and well than to hasten the matter, and produce a system that is productive of little more than dissatisfaction.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.
Height above Sea-level, 150 feet.

| DATE. 1912. JULY 21 TO JULY 27. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| July 21—Sunday ...... | 3 54 | 64 | 59 | 71 | 51 |
| ,, 22—Monday ..... | 0 48 | 62 | 58 | 67 | 48 |
| ,, 23—Tuesday...... | 1 36 | 66 | 62 | 70 | 57 |
| ,, 24—Wednesday.. | 8 6 | 70 | 62 | 77 | 55 |
| ,, 25—Thursday.... | 7 36 | 70 | 62 | 75 | 57 |
| ,, 26—Friday........ | 7 24 | 67 | 61 | 74 | 51 |
| ,, 27—Saturday..... | 8 18 | 69 | 63 | 74 | 59 |
| Means ... | (total) 37 42 | 67 | 61 | 72 | 54 |

| DATE. 1912. JULY 21 TO JULY 27. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| July 21—Sunday ...... | — | 63 | 62 | 61 | 42 |
| ,, 22—Monday ...... | 0·01 | 63 | 62 | 61 | 41 |
| ,, 23—Tuesday...... | 0·05 | 64 | 62 | 61 | 54 |
| ,, 24—Wednesday.. | trace | 64 | 62 | 61 | 51 |
| ,, 25—Thursday.... | — | 66 | 63 | 61 | 51 |
| ,, 26—Friday........ | — | 66 | 64 | 61 | 42 |
| ,, 27 Saturday.... | trace | 67 | 64 | 61 | 49 |
| Means ... | (total) 0 06 | 64 | 62 | 61 | 47 |

# FORTHCOMING ENGAGEMENTS.

MONDAY, August 5.—Bank Holiday.
Foxlydiate and Hewell Summer Show.
Clevedon Horticultural Society.
Clewer Horticultural Society.
Carshalton Summer Show.
Eton Wick Flower Show.
Weybridge Flower Show.
Bletchley and Fenny Stratford Summer Show.
TUESDAY, August 6.—Leicester Flower Show; two days.
Barry Flower Show.
Scottish Horticultural Association.
Messrs. W. Artindale and Son's Sweet Pea Show.
Panteg Horticultural Society.
WEDNESDAY, August 7.—Bridgend Flower Show.
St. Fagan's Flower Show.
Ipsden Flower Show.
THURSDAY, August 8.—Harrogate Summer Show.
North of England Horticultural Society at Harrogate.
Sheffield Horticultural Society.
FRIDAY, August 9.—Shilton Flower Show.
SATURDAY, August 10.—Aberdeen Sweet Pea Show.
Nelson Horticultural Society.

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# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

fairly good request is met by large supplies at moderate prices.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Adiantum cuneatum ... | per doz. bun. | 4 0 | to | 6 0 |
| Asparagus plumosus ... | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri ......... | per doz. bun. | 8 0 | | 12 0 |
| Asters, white .............. | per doz. bun. | 3 0 | | 5 0 |
| Bouvardia ................. | per doz. bun. | 6 0 | | 7 0 |
| Carnations ........................ | per doz. | 1 6 | | 2 6 |
| ,, ...................... | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison ............... | per doz. | 3 0 | | 8 0 |
| Cattleyas ......................... | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum | per doz. bun. | 2 0 | | 3 0 |
| Coreopsis ...................... | per doz. bun. | 0 9 | | 1 0 |
| Cornflowers ................. | per doz. bun. | 0 9 | | 1 0 |
| Croton leaves .................... | per bun. | 1 0 | | 1 6 |
| Delphiniums ................. | per doz. bun. | 6 0 | | 8 0 |
| Eucharis ........................... | per doz. | 2 0 | | 3 0 |
| French fern .............. | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias ............... | per doz. bun. | 0 9 | | 1 6 |
| Gardenias ......................... | per doz. | 2 0 | | 3 0 |
| Gladiolus Colvillei ...... | per doz. bun. | 2 6 | | 8 0 |
| Gypsophila ................. | per doz. bun. | 2 0 | | 3 0 |
| Lapageria ......................... | per doz. | 1 0 | | 2 0 |
| Lilium auratum ................ | per bun. | 4 0 | | 5 0 |
| ,, speciosum ............... | per doz. | 1 6 | | 2 6 |
| ,, longiflorum ........... | per doz. | 1 0 | | 2 0 |
| Lily of the Valley ...... | per doz. bun. | 8 0 | | 15 0 |
| Marguerites ................ | per doz. bun. | 1 6 | | 3 6 |
| Mignonette ................. | per doz. bun. | 4 0 | | 5 0 |
| Myosotis .................... | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums ......... | per doz. blms. | 1 6 | | 2 6 |
| Pelargoniums .............. | per doz. bun. | 3 0 | | 6 0 |
| Poppies ..................... | per doz. bun. | 1 0 | | 1 6 |
| Roses ................................ | per doz. | 0 9 | | 2 6 |
| Scabious .................... | per doz. bun. | 2 0 | | 3 0 |
| Smilax ................... | per doz. trails | 2 0 | | 3 0 |
| Spiræa ...................... | per doz. bun. | 4 0 | | 6 0 |
| Stocks ...................... | per doz. bun. | 3 0 | | 4 0 |
| Sweet Peas .................. | per doz. bun. | 1 0 | | 3 0 |
| Sweet Sultan ............... | per doz. bun. | 3 0 | | 5 0 |
| Tuberoses .......................... | per doz. | 0 4 | | 0 6 |
| Violas ......................... | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

There is an excellent demand for all kinds of fruits.

| | | s. d. | s. d. |
|---|---|---|---|
| Apples, Australian ........... | per box | 6 0 | 10 6 |
| ,, English ................. | per bush. | 3 0 | 8 0 |
| Apricots ......................... | per ½-sieve | 6 0 | 7 6 |
| Bananas ............................ | per bun. | 4 6 | 13 0 |
| Cherries ......................... | per ½-sieve | 5 0 | 12 0 |
| Currants, Black .............. | per ½-bush. | 6 0 | 9 0 |
| ,, Red ..................... | per ½-bush. | 4 0 | 6 6 |
| Figs ..................................... | per doz. | 1 6 | 6 0 |
| Gooseberries ................. | per ½-bush. | 2 0 | 5 0 |
| Grapes, English ..................... | per lb. | 1 0 | 4 0 |
| ,, Belgian ......................... | per lb. | 0 6 | 1 0 |
| ,, Guernsey ................... | per lb. | 0 10 | 1 6 |
| Greengages ........................ | per box | 0 9 | 2 0 |
| Lemans ............................ | per case | 8 0 | 32 0 |
| Melons ........................................ | each | 0 6 | 3 0 |
| ,, Cantaloupe .................. | each | 2 0 | 6 0 |
| Nectarines .......................... | per doz. | 3 0 | 15 0 |
| Oranges ........................... | per case | 10 0 | 30 0 |
| Peaches ............................ | per doz. | 4 0 | 15 0 |
| Pears ............................... | per bush. | 3 6 | 6 0 |
| Pears, French ..................... | per box | 3 0 | 4 6 |
| Pineapples ....................................... | | 2 0 | 4 6 |
| Plums ........................... | per ½-sieve | 3 0 | 5 0 |
| Raspberries ................ | per doz. pun. | 3 6 | 7 0 |
| Strawberries .............. | per doz. pun. | 4 6 | 8 0 |

### Vegetables.

Supplies are good and plentiful, and there is a very good demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe ........... | per doz. | 2 0 | to | 2 6 |
| Acparagus .......................... | per bun. | 2 0 | | 10 0 |
| Aubergines .......................... | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey ................ | per lb. | 0 4 | | 0 8 |
| ,, Runner .................. | per bush. | 2 6 | | 3 6 |
| Beet .............................. | per bush. | 2 0 | | 3 0 |
| Cabbage .............................. | per tally | 4 0 | | 6 0 |
| Carrots ...................... | per doz. bun. | 2 0 | | 3 0 |
| Cauliflowers ..................... | per doz. | 1 0 | | 3 0 |
| Cucumbers ........................ | per doz. | 1 6 | | 3 0 |
| Endive ................................ | per doz. | 1 6 | | 3 0 |
| Horseradish ............... | per doz. bun. | 10 0 | | 12 0 |
| Lettuce ............................ | per score | 0 9 | | 1 0 |
| Marrows ............................ | per doz. | 1 0 | | 2 0 |
| Mint ............................ | per doz. bun. | 2 0 | | 2 6 |
| Mushrooms .................... | per doz. lbs. | 6 0 | | 10 0 |
| Onions ............................. | per case | 6 0 | | 8 0 |
| Parsley ...................... | per doz. bun. | 2 0 | | 3 0 |
| Peas .................................. | per bush. | 3 6 | | 9 0 |
| Radishes ...................... | per doz. bun. | 0 9 | | 1 6 |
| Rhubarb ...................... | per doz. bun. | 2 0 | | 3 0 |
| Spinach .......................... | per bush. | 1 6 | | 2 6 |
| Tomatoes, English ......... | per doz. lbs. | 3 0 | | 3 9 |
| ,, Guernsey ......... | per doz. lbs. | 3 0 | | 3 3 |
| Turnips ...................... | per doz. bun. | 2 0 | | 3 0 |
| Watercress .................. | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

Prices show little alteration from those previously given.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords ........................ | per cwt. | 4 0 | to | 6 0 |
| Kents .................................. | per cwt. | 4 6 | | 5 0 |
| Lincolns ............................ | per cwt. | 4 6 | | 6 0 |

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

---

PELARGONIUM PAUL CRAMPEL.—"W. T." writes: Noting, under "Answers to Correspondents" (page 420), your reply to "J. W.," perhaps I can throw a little light on the matter. There is certainly no variety known as Paul Crampton—indeed, the close resemblance of the two names would suggest that it has arisen from a mistake in spelling. The variety Paul Crampel, a single-flowered one, was first distributed by M. Lemoine, of Nancy, in 1892, but it was some time after that before it became popular. Then, about four years ago, it produced (in, I believe, more than one place) a double-flowered sport, and this is now extensively grown under the name of Double Paul Crampel, and though I have met with it in many quarters, no other name, so far as I know, has been applied to it. It is a good showy variety, but is never likely to attain the same amount of popularity as the single form. Of this last there is a salmon-coloured kind, which has been of late very frequently met with under the name of Salmon Paul Crampel. It will no doubt be a good deal used for bedding, as last season it gave satisfaction in the few places in which it was tried.

INTERNATIONAL FLOWER SHOW IN NEW YORK IN 1913.—In answer to several correspondents who ask for information regarding the International Horticultural Exhibition to be held in New York next year, we may say that the European address to which enquiries should be sent is, Exhibition Offices, 75, Chancery Lane, Holborn, W.C. The exhibition will be held from April 5 to April 12, in the Grand Central Palace, 46th to 47th Street, Lexington Avenue, New York City. All exhibits for this exhibition will be admitted to the building duty free. The exhibition is being promoted by the Society of American Florists and Ornamental Horticulturists, and the European agent is Mr. A. S. Manders.

CODE DES COLEURS.—A. W. F., Ruby: We hope to give you the necessary reply in our next issue.

BLACK FLY ON CHRYSANTHEMUMS.—F. R., Stocksfield: I find black fly very troublesome on my chrysanthemums, especially on the upper portion of the growths, and I should be very glad if you will tell me how best to get rid of the pest.—Spray the infested plants with a quassia solution, or dip the affected portions, if such a proceeding is practicable. Place half a pound of quassia chips in boiling water, and allow them to simmer for ten or twelve hours, always keeping the chips well covered with water. Dissolve quarter of a pound of best soft soap in some boiling water, and to this add the quassia extract, duly strained; stir well together, and add sufficient soft water to make up five gallons of mixture. Spray or dip the plants on two consecutive days, and on the third day syringe with clear water.

BLACK SPOTS ON ROSE LEAVES.—J. J., Bungay: I enclose a few rose leaves, and you will find each leaflet has one or more blackish spots. One or two rose trees show more of this "spotting" than others, and those most affected are losing some of their leaves. This loss of leafage suggests a fungus attack, therefore I shall be glad if you will tell me what causes the spots, and how I had best proceed to cure the trouble.—The blackish spots are evidence of the presence of a fungus known as Actinonema rosea. So far as we are aware, only the leaves are attacked. Remove and burn all badly affected leaves, and all those that fall from the tree. Spray occasionally with potassium sulphide solution, and commence spraying early next spring as the buds burst, and repeat the spraying at intervals of a week or so.

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### NAMES OF PLANTS.

W. D., Sussex.—1, Asparagus Sprengeri; 2, Jasminum officinale.

F. B. M., Conway.—1, Gaultheria Shallon; 2, Ligustrum lucidum.

S. J. C., Swaffham.—1, Phacelia campanularia; 2, Itea virginica; 3, Senecio macrophyllus.

P. A., Dawlish.—1, Helenium cupreum; 2, Achillea mongolica; 3, Mertensia sibirica; 4, Camassia esculenta; 5, Tigridia pavonia.

R. B., Liphook.—1, Calycanthus occidentalis; 2, Leycesteria formosa; 3, Diplopappus chrysophyllus; 4, Santolina incana.

L. W. A., Retford.—1, Solanum jasminoides; 2, Ixora macrothyrsa; 3, Gloriosa superba; 4, Selaginella cæsia; 5, Dichorisandra musaica; 6, Calla palustris.

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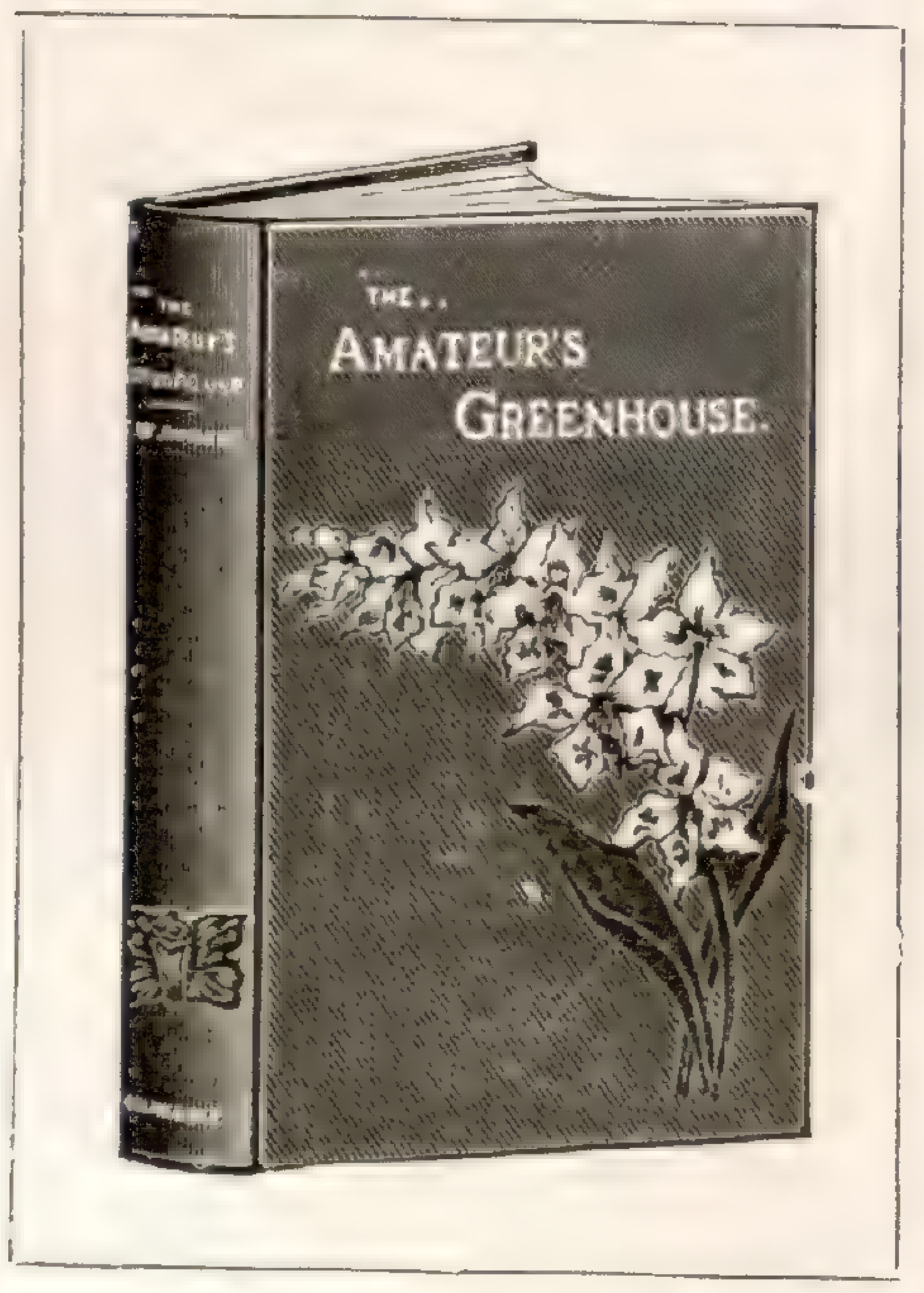

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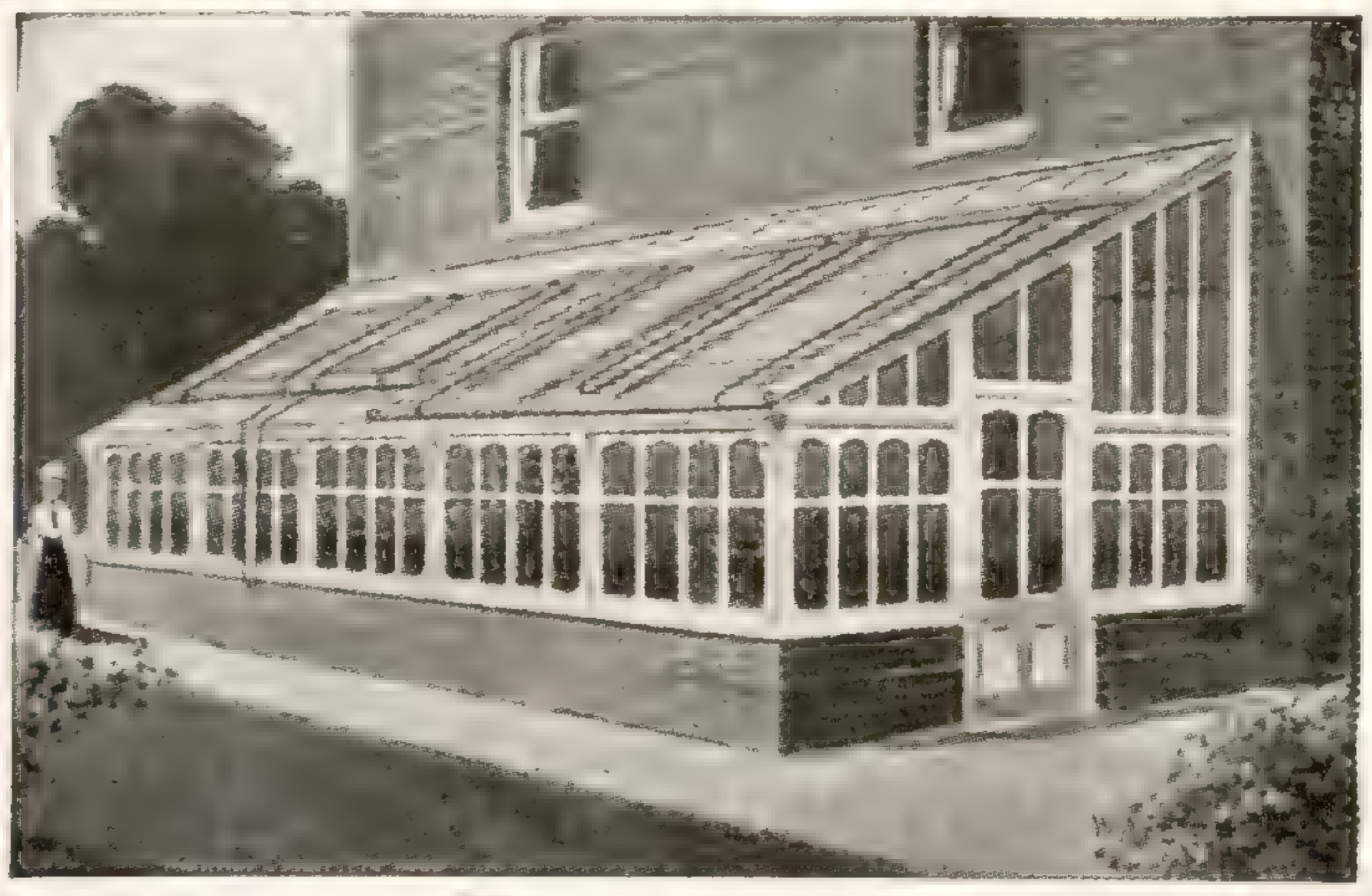

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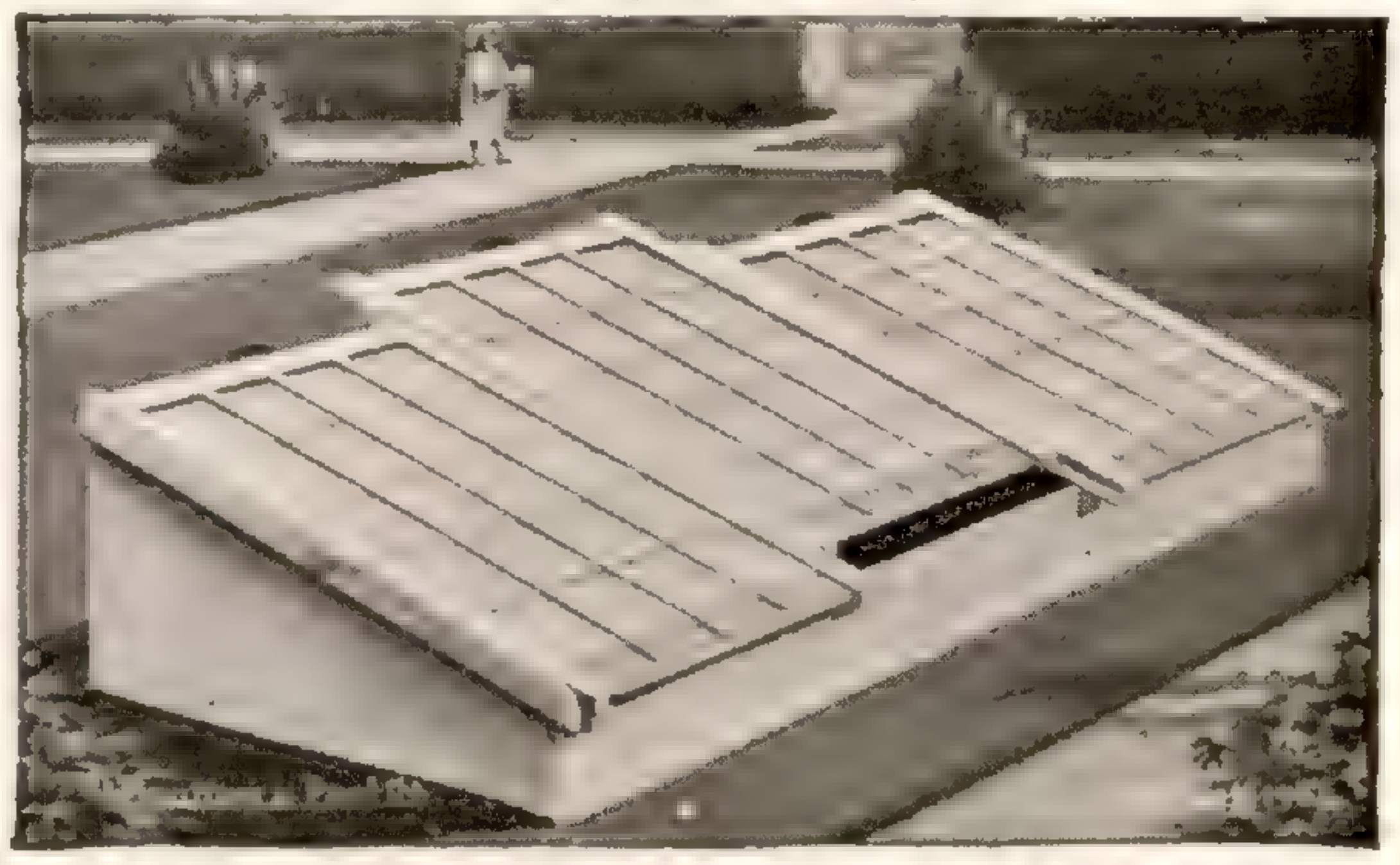

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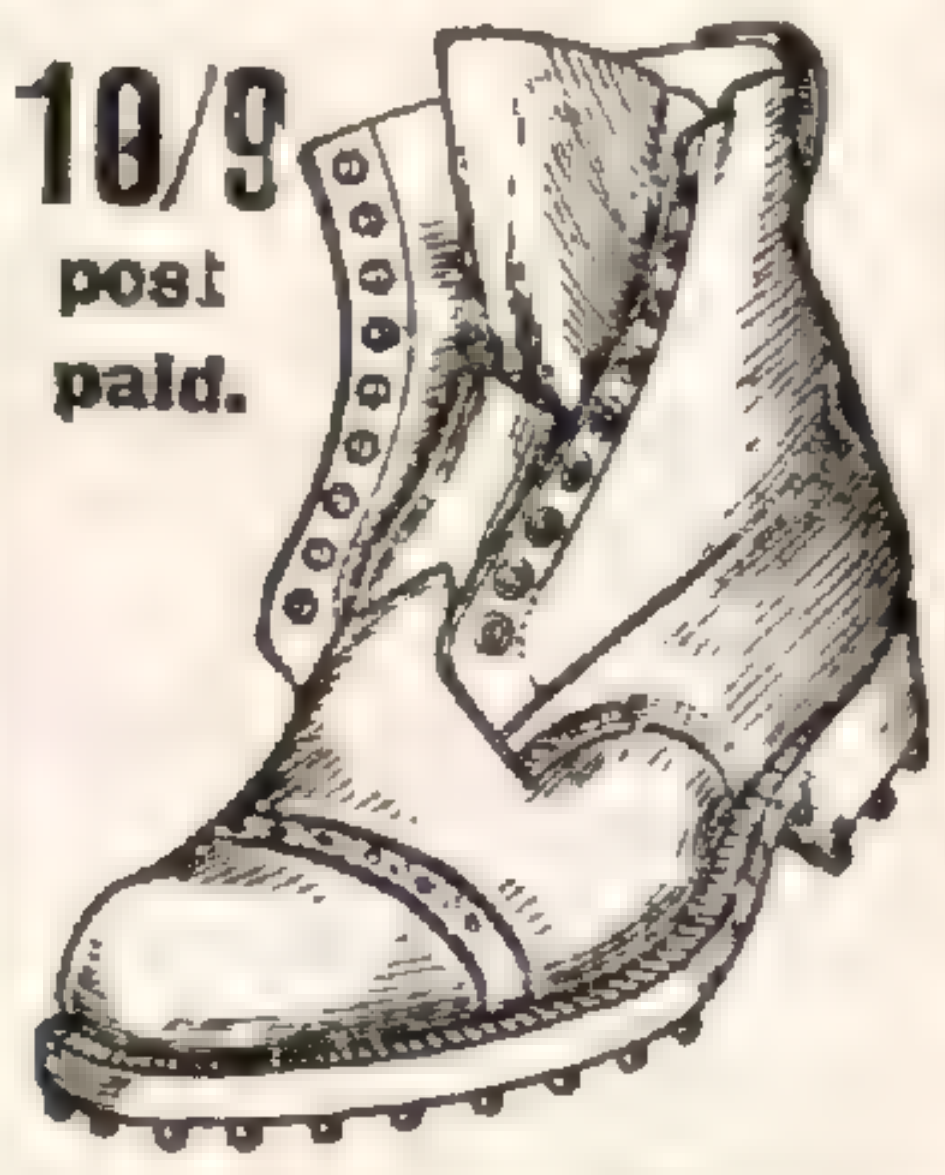

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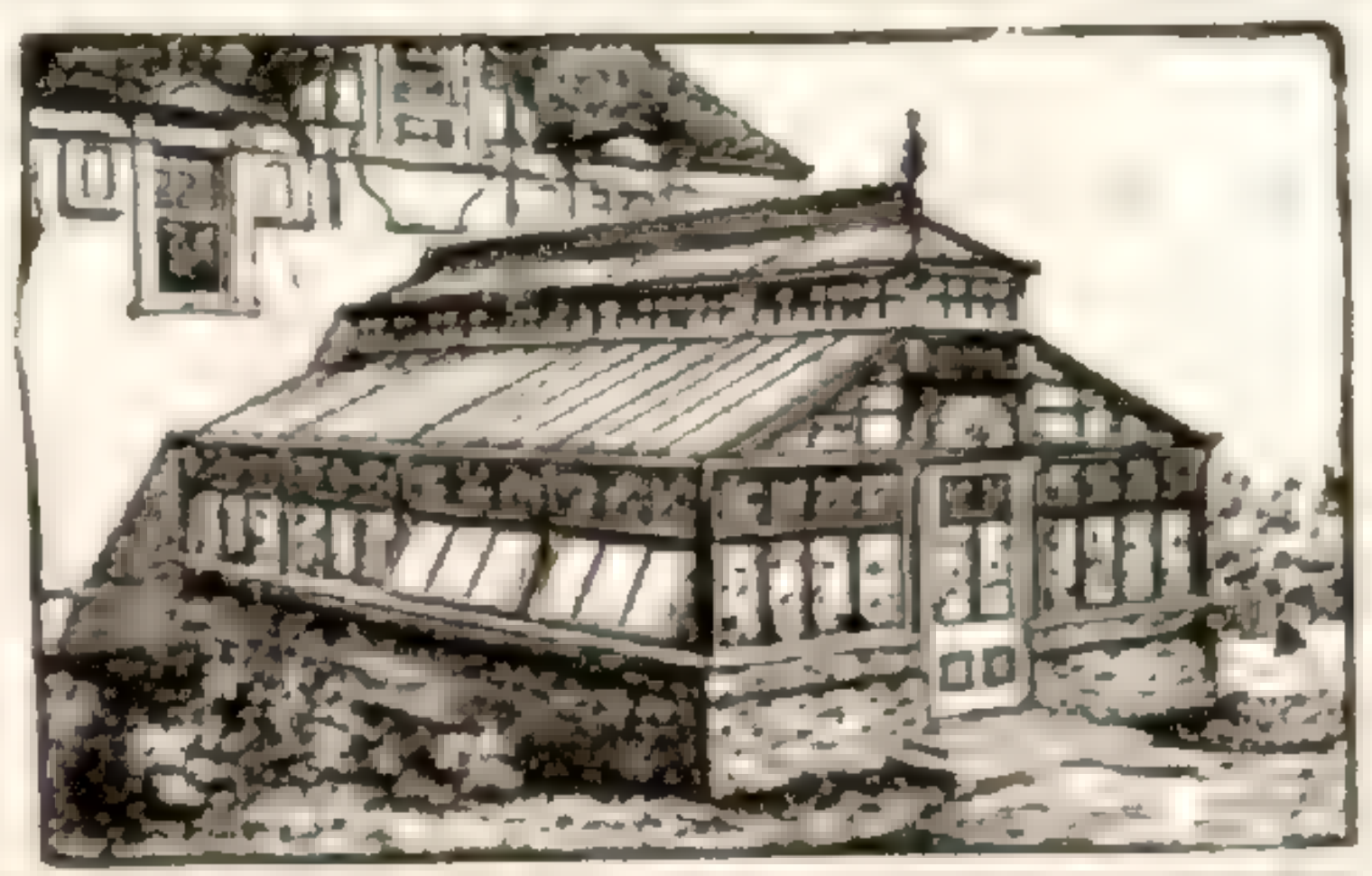

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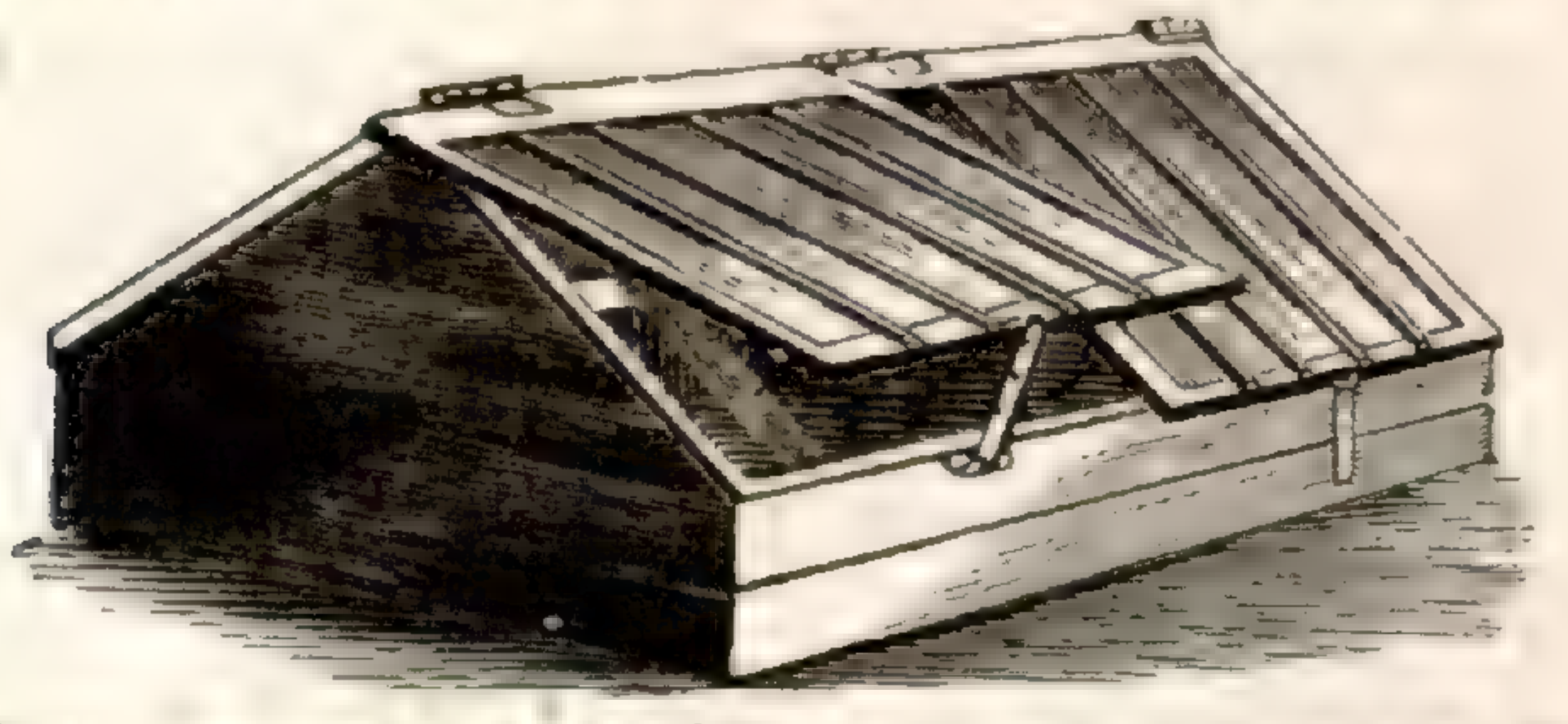

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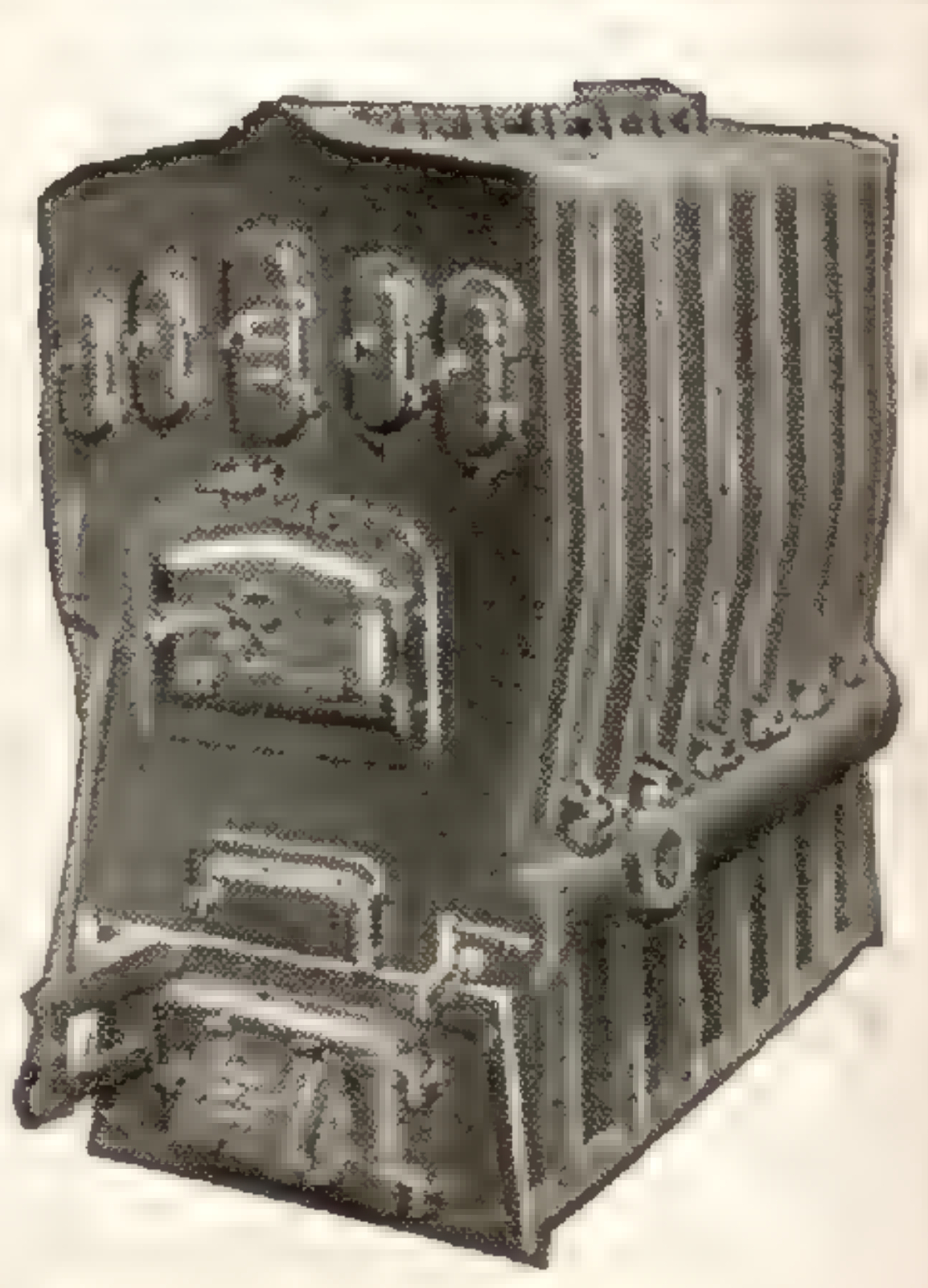

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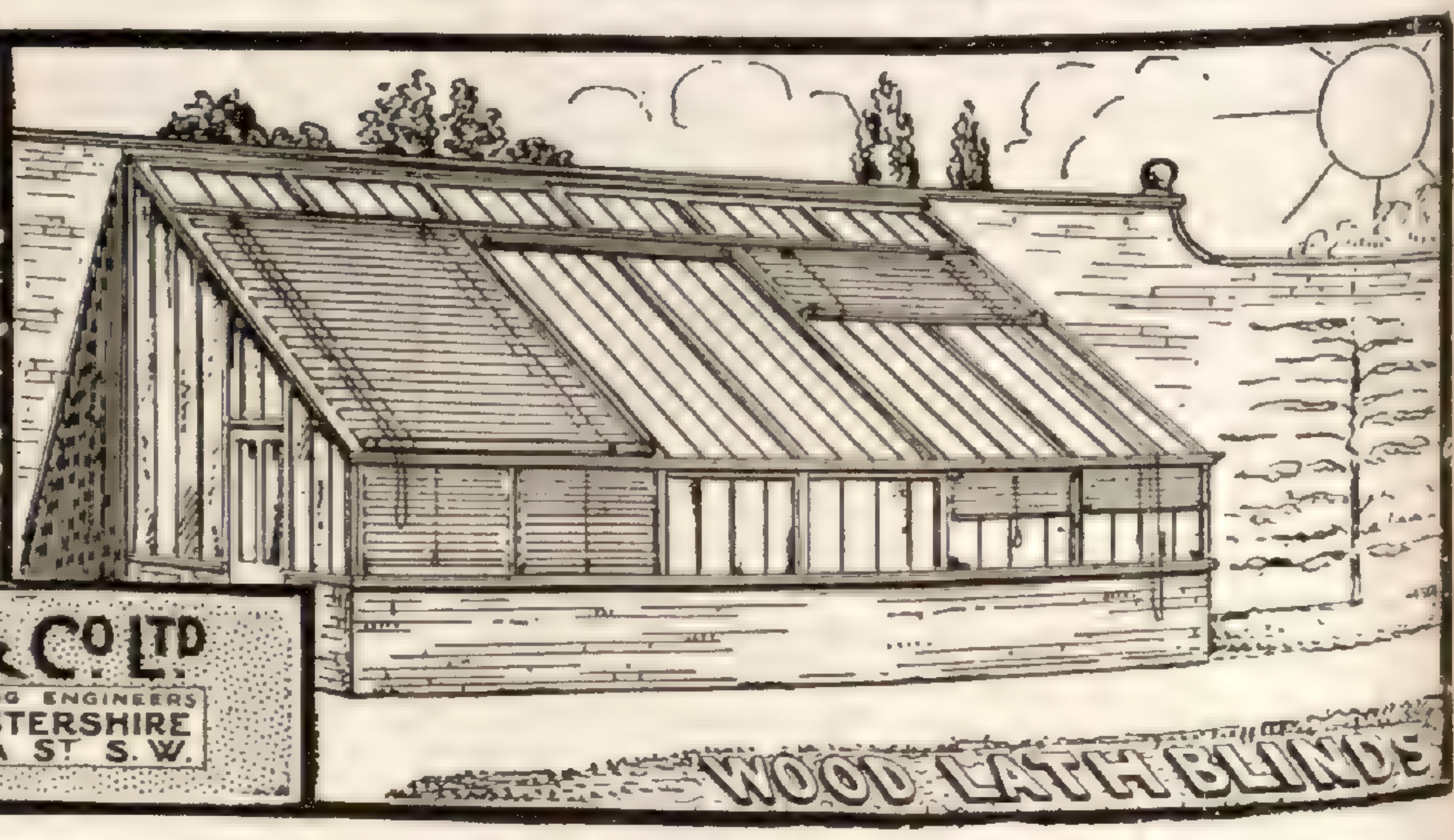

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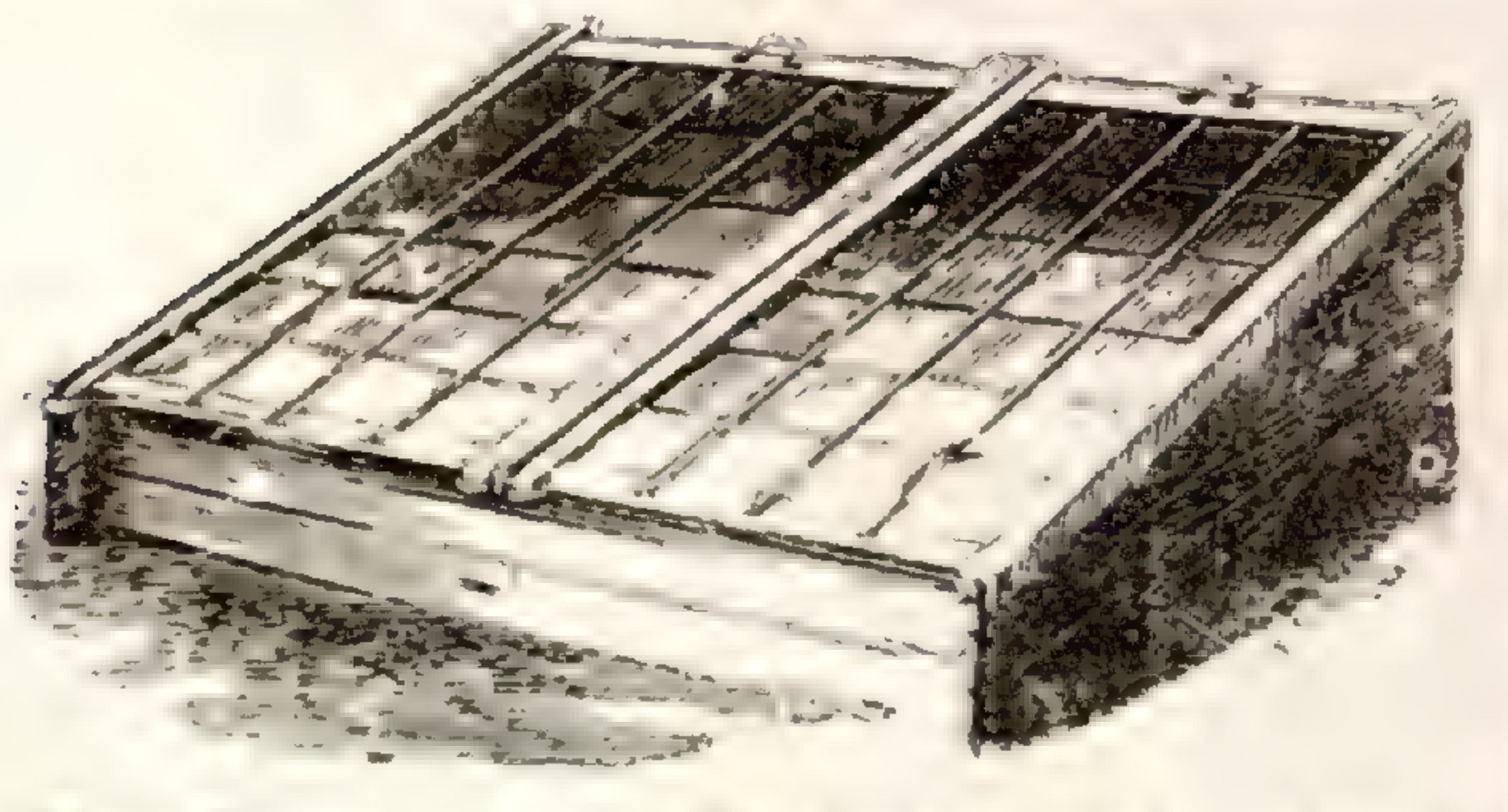

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VOL. LV.—No. 3,067. SATURDAY, AUGUST 10, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Irish Cottage Gardening.

MR. P. S. HAYWARD.

Within the past twenty years so much has been accomplished in the development of both the practical and scientific aspects of horticulture in Ireland that those who are interested in rural industries have full justification for indulging in a strong feelling of gratification. Such an immense amount of good work has been done that those who have been actively engaged in bringing about the great and highly beneficial changes that are everywhere manifest might almost be excused were they to show an inclination to assume they might slacken in their efforts without appreciable injury to the cause they have so much at heart. During this comparatively short period we have seen a complete change in the views that were held with regard to the possibilities of Ireland as a fruit-producing country. A quarter of a century ago few indeed were those who considered the cultivation of the choicer kinds of hardy fruits on commercial lines possible. But many were those who regarded the derelict and practically worthless orchards then so numerous, not as evidence of a lack of enterprise, but as a proof of a change in the climatic conditions of the country during the period which had elapsed since their formation. Now it is generally admitted by those who have given their serious attention to the question that, not only can hardy fruits be grown in open orchards, but, given the necessary knowledge, with such success as to justify the adoption of orchard culture in fruit production for market. As the result of this reversal of opinion, large areas have been planted with the finest of the varieties of hardy fruits that thrive in the open, and strenuous endeavour has been, and is, indeed, being made to adopt the most advanced methods of procedure in their management. In like manner the possibilities of bulb culture has been recognised, and, as so well known to those interested in the bulb trade, hardy bulbous plants of various kinds are now being largely grown with a full measure of success for commercial purposes. Other subjects of interest to horticulturists are also being successfully cultivated, but for our present purpose it is not necessary to particularise them. The improvement in the horticultural aspects of the country is largely due to the activities of the efficient staff of horticultural instructors that has been organised by the Irish Agricultural Department, and to the aid rendered by the well-devised demonstration plots that have been formed in a considerable number of districts. Considerable assistance has also been rendered by the Ulster Fruit and Chrysanthemum Society, which has for several years past carried out a series of competitions in the pruning of orchard trees. Great as the progress of improvement has been, we may hope that, with fuller experience on the part of all who are engaged in educational work, the rate will be materially accelerated. We give expression to this hope because, while the achievements in the past have been such as to afford abundant satisfaction, much work of importance remains to be done. Private gardens that are under the charge of experienced men are now, as in the past, remarkable for their varied attractions and high keeping, and need not be referred to in this connection, except to say that they have exercised a highly beneficial influence on the transitional work that has been accomplished outside their boundaries during the last two decades. With so much to afford satisfaction in connection with the present position of horticulture in Ireland, it is a matter for regret that but little, if anything, has been done to encourage the cottagers and owners of the smaller holdings to beautify the surroundings of their homes with such flowers as would be well within their reach, and to improve their methods of cropping the areas devoted to vegetables for home use. Cottage gardening can hardly be of less importance in Ireland than in England, and yet it would appear from observations recently made in the more northern of the several provinces, that, while immense improvements have been made in cottage gardening in England during the past quarter of a century, the Irish cottage gardens are at the present time in much the same condition as they were at the beginning of that period. It would, perhaps, be unreasonable to expect any material extension in the area available for the cultivation of flowers, but it is difficult to understand there should have been no improvement in the utilisation of the available spaces if serious attempts have been made to instruct the occupants in the methods of procedure best adapted to their circumstances. At the present time, it is possible to travel long distances without seeing a cottage set in a garden worthy of the name. In numberless instances the space available for flowers is not sufficient for the production of an effective display; but, surely, if there is room for only half a dozen plants, it is better to fill it with attractive subjects that can be readily obtained and easily grown, than to allow it to be overrun with weeds. Again we observed in many cases that where the area was sufficient to form an attractive little flower garden, the plants were of an indifferent character, and allowed to so run together as to form an inextricable and certainly not beautiful mass. Very few, indeed, were the gardens in which there was evidence of the owners being otherwise than oblivious of the necessity of periodic thinning and replanting. The present state of things as regards the floral aspects of cottage gardening in Ireland is especially to be regretted because of the number of beautiful plants that can be successfully grown in the country which will not succeed in England, or only in a few favoured districts. In one garden we saw a hedge of Veronica Andersoni, which was producing a glorious display of flowers, but in hundreds of others this handsome shrub was wholly absent. The elegant Fuchsia Riccartoni enjoys a considerable degree of popularity, and is frequently met with, and, in some instances, has been allowed to fill the whole garden and envelop the cottage in flowers and foliage—a practice that is not desirable from a hygienic standpoint. Considerable variation in cultural methods is found in connection with vegetables, but there is a remarkable similarity in the cropping, for the majority contain but little beyond potatoes, cabbages, and curly kale. These are all good in their way, and should probably form the staple crops, but there are others which will at once occur to our readers that are equally essential to health, and give a good return for the space devoted to them. There may be some difficulty in effecting the much-needed improvements, but most work that is worth doing is beset with difficulties, and none occur to us in this connection that cannot by strenuous endeavour be surmounted. The time has come when an endeavour should be made to instruct cottagers in the best methods of furnishing and managing flower gardens, clothing the walls of their dwellings with climbers, and in cropping their kitchen gardens with a view to obtaining a greater variety of vegetables than is now grown without any material reduction in quantity. This educational work is likely to be more successful if carried out in conjunction with parochial organisations, but the help the horticultural instructors are so well able to render should be taken full advantage of.

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**Mr. P. S. Hayward,** whose portrait we give in the present issue, is familiar to our readers through the vigorous articles on hardy flowers and Japanese gardening that have appeared from his pen in our columns. He is gardener to Mr. and Mrs. Lilley, at Holland House, Southcliffe, and has, practically, made the gardens of which he has charge. He is an idealist in gardening, with a strong leaning towards Japanese art and design as expressed in horticulture. After three years' service in landscape gardening under his father, Mr. Hayward spent a number of years in private and trade gardens, chiefly in Kent and Sussex, and then filled a position as manager to an East Anglian firm of florists. Later, he was engaged by Messrs. R. Wallace and Co., in constructing and planting rock gardens for Lord Cowdray, F. J. Hanbury, Esq., and others, finally making the rock gardens, water gardens, rose garden, and pergolas at Holland House, Southcliffe. Mr. Hayward takes a close interest in the improvement of hardy flowers, and is always endeavouring to create novelties. So far his chief successes have been among pentstemons, aubrietias, campanulas, irises, and varieties of Viola gracilis, but he has also raised many new carnations and begonias. By way of recreation, Mr. Hayward contributes articles upon those subjects he most loves, and he has "the pen of a ready writer."

**Severe August Weather.**—The first week of the present month is likely to hold the record for bad weather for many years to come. In many districts holiday-makers experienced the most unpleasant conditions of rain and wind, while in some places the temperature fell to freezing point, and in others snow fell. Snow fell in many parts of Scotland, and even in Westmorland, in the Upper Eden Valley, snow fell so heavily that the haymakers were able to engage in a snowballing match. After a heavy wind and rain storm Newcastle experienced a severe fall of temperature, seven degrees of frost being recorded on one farm, while freezing point was reached in many places, and consequently many tender crops have suffered badly. Even in the Peak district, round Huntingdon, and in many of the fen-lands, frost was registered, and this added to the trouble farmers are already suffering from potato disease. In some parts of Wales the heavy rains have caused the rivers to flood the hay and corn fields, and in Devonshire rain and wind have very largely spoiled the hay and apple crops. For holiday-makers, as well as for farmers and gardeners, the weather is anything but propitious, and it is sincerely to be hoped that brighter, warmer weather will speedily return, to the great benefit of everyone and everything.

**The Oldest Vine in Scotland** is supposed to be the fine old specimen of Black Hamburgh in the gardens at Bearehill, Brechin, the residence of Mrs. Duthie. This vine is said to have been planted 135 years ago, so that it runs the Hampton Court vine closely in point of age. Under the care of Mr. Scott, the gardener, the Bearehill vine is carrying a crop of about four hundred bunches of grapes.

**Disaster to French Culinary Pea Crop.**—A report has reached us to the effect that the culinary pea crops in some parts of France have been more or less ruined by severe attacks of a fungus named Thielavia basicola, a pest all too well known among sweet pea growers in this country. We regret this is so as it will probably mean a great shortage of seed peas, but now that the disease has worked such havoc experts will be set to work to find cause, cure, and preventive measures, and probably in our own country the fear of similar trouble will inspire action.

**Weybridge Recreation Ground,** which is such a source of pleasure to the inhabitants of Weybridge, is at present very gay with masses of various hardy perennials. Ample room is provided for bowls and tennis for the grown-ups, and for cricket, swings, and see-saws for the children, and there still remains room to walk upon the grass and view the long flower borders and their contents. Mr. Pagram, who is well known as the raiser of several fine single chrysanthemums, has charge of this little park, and finds in it ample scope for his energies. Achillea eupatorium massed in a border near one of the entrances, is producing a very fine effect just now.

**Cottage and Window Gardening in Norwich.**—We are always delighted when we have the opportunity of recording successful efforts to beautify village, town, or city by means of cottage gardening and window gardening. Norwich is especially fortunate in that a number of her public men take a keen interest in such matters as these. Sir Eustace Grey, chairman of the City Parks and Gardens Committee; Mr. Edward Wild, chairman, and Mr. Louis Miller, secretary, of the Open Spaces Society; and Rev. G. N. Herbert, chairman, and Mr. M. C. F. Solomon, secretary, of the Window Gardening Society, are, with others, doing a great work of encouraging gardening in and round the humbler homes of the city. In the parish of St. John de Sepulchre, the appearance of some of the streets has been altogether transformed from grey to gay by the admirable displays of flowers in front and back gardens, and by the particularly good results obtained in window gardening. A wonderful spirit of rivalry and "house pride" has sprung up concurrently with the advance in floriculture, and as such a spirit is wonderfully infectious, other districts are certain to follow suit if those who have the power have also the will to offer modest prizes by way of encouragement.

**Holiday Visitors to Public Parks and Gardens.**—Notwithstanding the cool wind and occasional showers, holiday-makers in the London district fared better than most people on Bank Holiday, and there was a goodly measure of sunshine throughout the day. Kew Gardens received 108,000 visitors; 200,000 went to Hampstead Heath and Parliament Hill Fields; Richmond and the Thames Valley were well patronised; about 50,000 went to Hampton Court, 33,201 to the Zoological Gardens, and 10,000 to Windsor Castle. All the London parks were filled with holiday-makers, who thoroughly enjoyed the fresh beauty of flowers and grass and trees.

**Royal Botanic Society.**—By a codicil attached to his will, Mr. C. Brinsley Marley, the late treasurer, the Royal Botanic Society has been released from obligations amounting to £1,560. At a recent meeting of the society one hundred and thirty-seven new Fellows were elected, and thirty-three nominations were made.

**Sisyrinchium angustifolium,** a rare British plant, that is generally considered to belong almost entirely to Ireland, has been found wild in Glen Clova, Forfarshire, and the specimen was identified by the Kew authorities. Hooker gives the habitat of this species as "Bogs, Galway and Kerry."

**A Big Foxglove.**—The big gooseberry seems to have given place to the big sunflower, but the latter has now a keen competitor for public favour in the big foxglove. In an Irish contemporary a lad of 8½ years records a foxglove 8ft. 3in. high, carrying 225 blossoms, as against a previous best of 8ft. ¼in. and 119 flowers. While the "big" in flowers, fruits, and vegetables is by no means always the best, we are rather pleased to notice the keenness with which these floral records are contested, because it shows the widespread interest in gardening, and such records always tempt someone else to cultivate better than they have done previously.

**The Mischievous Bullfinch.**—In a recent issue of the "Journal of Economic Biology," the editor, Mr. W. E. Collinge, gives the results of his investigation of the food of the bullfinch, and these fully justify the opinions held by gardeners and fruit growers as to the injury done to vegetation by this handsome and destructive bird. Mr. Collinge made an analysis of the contents of the stomachs of 308 of these birds, which were killed at different seasons in five counties. As the result of this analysis, it was found that from January to May the food of the bullfinch "consists largely of fruit-buds and fruitlets, and in addition to those which are eaten, an equal, or even larger, number are wantonly destroyed by this bird." Mr. Collinge further states "that the bullfinch is for quite half the year most destructive in fruit orchards, causing considerable losses to growers, which far outweigh any little good it may do in keeping down the spread of weeds. Indeed, its value in this respect is extremely doubtful, for it certainly helps in the distribution of such weeds as dandelion, dock, groundsel, ragwort, charlock, etc."

**An Extraordinary Mushroom.**—Mushrooms do many queer things, especially if they find themselves in unusual places. At Hull a mushroom forced itself through a greenhouse wall composed of bricks and a layer of cement, and even after that effort developed to the size of a saucer. As other mushrooms are developing on the inner side of the greenhouse wall, the owner is wondering what may happen to the greenhouse if more of them start housebreaking.

# THE POSSIBILITIES OF A SCHOOL GARDEN.—II.

### As a Manual Process.

When gardening was first introduced as a recognised subject in the curriculum of elementary schools, it was as a manual process pure and simple, and as such it remains, but with a number of other features added to it, which have suggested themselves as time has passed. Even as a manual process school gardening has not escaped criticism. Many have said, and some still say, "What is the good of spending money in teaching boys gardening? They can learn that at home." Perhaps they could, but do they? Experience answers, "No," and in a general way the amount of gardening that the average boy learns at home is on a par with his knowledge of geography and arithmetic that he acquires from his parents. I think if the majority of teachers were asked what their pupils know about gardening when they first enter the class, I think the answer would be that, with here and there an exception, the lads do not even know the proper way to handle the tools, and if they were left to sow seeds of their own accord at the outset the amount of after-thinning required would be enormous.

The fact of the matter is that gardening at home and gardening at school are two entirely different and opposite things. Take, as an illustration, the son of an ordinary labourer who has a large garden or allotment to look after. Of course, he makes use of his boy, but how much real gardening does the latter do? For the most part, he is a drudge, a picker of stones and puller of weeds, and his mind, instead of being fixed on his work, is centred on a bit of green somewhere not far off where more fortunate lads of his age are enjoying a game of cricket. In fact, I am not sure whether this gardening at home is not rather qualified to give a distaste for the work, and I have heard more than one man say that he had such a surfeiting of it as a lad at home that he never wanted to do any gardening afterwards. Again, what can the average parent teach about gardening, even if he had time in his few spare hours to impart a portion of his own store of knowledge to his son?

Gardening at school, however, is another matter altogether. Nine out of every ten boys like it, there is a sense of personal possession about the lad's plot; it is his own, he is a gardener, a proprietor, he does the sowing and the planting, and when the crops grow and mature he feels that he has accomplished something. Not only this, but the school plot instils into the nature of many a boy a taste for gardening that grows. Not long ago a head gardener who is fully qualified to teach his boy gardening, informed me that his lad displayed no interest in it at all until he was given a plot at school, but after that a new interest was awakened, the boy wanted a piece of ground to work himself; he made a raid on his father's seed supply, and spent his evenings cultivating the patch that was given to him. It is not too much to say that the lad would not have done so if he had never been put in the garden class at school, and thus the influence of the teacher was greater than that of the parent, and it happens so in many things besides gardening.

The school garden gives an opportunity to what is generally called the dull boy, but whom it would often be more fitting to describe as the lad who is not endowed with great mental power, but with capacity for working with his hands. Previous to the introduction of manual processes in the school curriculum, this boy never had a chance; his place was at the bottom of the class, and no matter how he tried, he could make no headway. In the school garden, however, the boy who nature intended to work with his hands rather than his brain finds his vocation. He can hold his own here, because he can work, and very often a lad of this type is receiving an infinitely better education on the garden plot than he could ever do inside the school, because he is getting training and exercise in the use of his hands.

In a certain village where no better provision could be made, an intelligent cottage gardener of the labouring class was engaged to teach the boys in the school garden. Some exception was taken to him because he was not qualified to give any theoretical instruction, but I cannot help thinking that this was wrong. It was not claimed for him that he was the type that you would select as a teacher of school gardening, but in the particular instance he was the best material available, and what he could do was to make the boys skilful workmen. He knew how to dig, how to sow, plant, and perform other operations in a workmanlike manner, and if he could teach the boys to do these things as well as he could do them himself, then they would be all the better for the instruction they received under him. What is wanted in these days is not only men who know something, but men who can do something, and a great failing about education in the past was that, while it imparted so much knowledge, it failed to make the boy useful in the sense of being handy as a workman.

Nor is it only on the school plot that gardening is useful as a manual process, for the gardener, like the sailor, is proverbially a handy man; he wants a lot of things that he cannot buy, so he makes them. Very often a school garden is associated with the workshop, and the two go very well together. Gardeners are in the habit of making a good many things out of material that is available, and, though the article, when complete, may have its faults in point of roughness and finish, it serves his purpose, which, after all, is the great thing. Previous to the introduction of school gardening, who ever saw a hand-barrow made in a school out of an empty sugar-box? Yet these are the things that are being turned out continually now, and not long ago I saw a boy at a school making, for his own use, a small frame with the aid of his pocket-knife, a hammer, and a few nails.

Just another illustration, and this was a case of a man who employed three boys in his garden, and when asked which was the best, he pointed to one, and said that he could do things without the need of being shown how. This was a boy who in the last two years of his school career had been in the gardening class. If, then, gardening at school, with the allied woodwork, etc., were nothing more than a manual process, the using of tools, the exercise of muscle, and the doing of work, it would justify its place in the school curriculum, because we do not want boys to be turned out of elementary schools with their hands untrained entirely in manual labour. By nature boys like to use their hands, and one object of school gardening is to teach them that it is not infra dig. to do so. It upholds, in fact, at an early and impressionable age, the dignity of labour, it appeals to the boy's sense of order, to his inventiveness, and his inquisitiveness, and because the garden is at school, it possesses a fascination that it could never have at home.

H.

# THE ENGLISH HEDGE-ROWS.

> "The tangled hedge-rows, where the cows push out
> Impatient horns, and tolerant, churning mouths,
> 'Twixt dripping ash boughs; hedges all alive
> With birds and gnats, and large white butterflies."

In olden times there were no hedges or fences; the country was all waste. According to tradition, our hedges owe their origin to the Black Death or plague, a pestilence which so decimated the rural districts of England that much of the arable land passed out of cultivation, and was turned into pasture. Then, we are told, hedges were planted to prevent the cattle from straying.

In the year 1514 the citizens of London felt grieved because the fields about Islington, Shoreditch, and other places near to the City were enclosed, fenced, and hedged, which stopped their practice with the bow and arrow and other pastimes. So they assembled themselves one fine morning, and went with spades and shovels into these fields, and within a short space of time all the hedges were cut down, the ditches filled, and the fields were never after hedged.

But far away from London hedges were a necessity, not only to keep cattle within bounds, but to mark the different ownerships of the several properties. Thus it came about that we got our beautiful roadside hedges. Wordsworth writes:

> "Once again I see
> Those hedgerows, hardly hedgerows—little lines
> Of sportive wood run wild."

The original senses of hedges is enclosures, and near Cambridge is a collection of farm buildings, which are called the King's Hedges. A hedge is a barrier or fence formed by bushes or small trees growing close together, such as thorn bushes or beech, generally woven together when newly planted, with twigs or wattling.

A favourite in the hedge-row is the holly. Then we have the black and white thorn, which, when properly attended to in respect of annual pruning, is the most effectual fence for domestic animals, and also an excellent shelter. In Kent, Surrey, and Sussex, we find quickset, holly, yew, and privet all mixed with hazel, ash, dog-rose, and other varieties, intermingled with the sweet honeysuckle.

Some of our roads are bordered by high hedge-rows studded with stately trees, the character being given rather by age and wide-spreading branches than by mere loftiness; the banks somewhat lofty, and their clothing various, now covered with long, lank grass, now short and smooth, now bare and worn into little furrows, with the knotted roots of ancient trees obtruding through the road; these scenes in summer are very beautiful to the eye, but these hedges are not safe hedges. They are used by vagabonds as places of shelter or resort, for they are far away from the police. In olden days these rogues were called "Hedge Birds."

Much is to be learnt from our hedges. Do you want to go out for pleasure? Poor Robin, in 1733, wrote:

> "Observe which way the hedgehog builds her nest;
> For if 'tis true that common people say
> The wind will blow the quite contrary way."

There are many curious hedge plants to be found by a careful searcher. One, the Bee Orchis, on which Nature has formed a bee feeding on the breast of the flower, so perfect that it is impossible to distinguish it from the real bee. Then there is the Fly Orchis, which is to be found on and in the hedges near the sea coast in Devonshire; then the foxglove, which is said to resemble young ladies—they always turn their flowers towards the roadside, they know they have pretty faces. You will never find these flowers facing the hedge. In the Midlands you will find "hedges of thorn, brier, rose, bramble, and maple, only to be seen and to be admired and loved." Box hedges are not durable, for box is easily rent from the stem when old, and clipped holly grows no berries, and has a dull look, but it makes the best and most impenetrable of hedges.

In the outskirts of London, we see in nearly every street the privet planted in the little front garden, and being frequently clipped, it keeps its leaves all the year round, and is pleasing to the eye.

In Shakespeare's time, on washing days, the linen was dried on the hedges, and so it is to this day in many country places; and, strange to say, in the West of England, you often see children on their way to school walking on the hedge tops.

England has many admirable lanes, but none more so than Troutbecks, where these run towards the wilds at the head of its glen. You have the mountains on either hand, the beck more or less by your side, flowery meadows stopping its way, and such a tangle of honeysuckle and hawthorn for hedges as the eye loves to behold, mixed with wild raspberries, white and pink foxgloves, and lovely ferns innumerable—a scene once seen not soon forgotten.

Hawthorn may be found in perfection on the road to Oxford, before reaching Beaconsfield. The only thing to complain of is the almost oppressive scent of the hawthorn, with the showers of white petals that fall continually and whiten one like a snowstorm. In Suffolk it was a custom that the first farm servant who brought in a branch of hawthorn in full blossom on the first of May should have a dish of cream for his breakfast.

Ashurst, in Sussex, is so called from the enclosures being small, and the hedge-rows wide; hence "the wood of ash trees." Chidham, in the same county, has a curious story, for in a hedge-row on the farm of Mr. Woods was discovered growing a single wheat stalk, which, by careful treatment, became noted throughout England for its productiveness.

A favourite in our hedge-rows is the sweet briar, perfuming the surrounding air, and even when not in blossom exhaling a delicious fragrance. The oak is also found in the hedge-row, and in May tassels of green flowers hang from the twigs; the leaves show a transparent yellow-green, and here and there may be seen the rosy cheek of a swelling white oak apple.

We never hear of transplanting hedges in these days, yet in the year 1771, at Swaith, near Barnsley, it was a practice to transplant white thorn hedges of any growth, even to thirty or forty years old. In winter, after cutting, the old hedge was grubbed up, and set pretty deep in a trench where the new hedge was to be made, and did not fail to grow.

In the Island of Portland, four miles from beautiful Weymouth, there are no hedges! Geo. J. Simmons.

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**Begonia Major Hope.**—For bedding purposes this pleasing pink, double-flowered variety seems to have caught on everywhere, and it plays a part in many pretty combinations. In conjunction with Alyssum maritima and Leucophyta (Calocephalus) Browni, it forms a very attractive bed at Hampton Court.—K.

## GARDENERS AND GARDENING.

### Does Education Pay

I was not at the conference at the International Horticultural Exhibition when the education of a gardener was considered, and I am therefore unacquainted personally with what may have been discussed. The question of the education of a gardener is as necessary now as ever it was, and with this difference, that, under present competition, the better a man is equipped the greater chance he has of succeeding.

When one considers the remuneration offered at the present day for the average gardener, there does not, however, appear very much to tempt young men to qualify for such positions, and it requires a large amount of enthusiasm to induce the embryo gardener to take up the profession when he sees the difficulty men have in obtaining suitable positions. If a young man has started on a gardening career, the best thing he can do is to educate himself for the position he aims at. Unfortunately, the majority of gardens are somewhat isolated and the opportunities for acquiring other information than is gained in daily practice are limited; but if head gardeners were more ready to assist and encourage those who want to improve themselves, these helps to self-improvement would be easily obtained. I fear there are many gardeners who do not give their young men much encouragement in these things; and, on the other hand, there are comparatively few young men of the present day who show any great desire for study. I know this from personal knowledge of young men who have served under me.

How many young men of the present day trouble to keep a diary of the work which goes on in the garden, whether in their own department or in others? Or if there is a good collection of conifers or other outdoor plants, do they make themselves conversant with the names, habit of growth, and other peculiarities of the trees or plants? What botanical knowledge do they possess to enable them to recognise the plants they meet with under different conditions of growth? How many can draw a plan to scale, and work it out in practice? Yet these things are necessary in the equipment for a responsible position as head gardener.

It should be realised by our young men that knowledge acquired can never be taken from them, and the greater knowledge a man can bring to bear upon his work the greater his chances of obtaining his proper position. Tact, smart appearance, and good manners are all valuable factors in the struggle for positions. There is also another useful thing if a man has to work for his living, and that is, influence. Many men occupy their present positions because they are "sons of their fathers"; probably if they had competed on their merits for the positions they now hold they would have lost the prize. Again, many men seize their opportunity when offered, and are shrewd enough to make the most of it. There appears to be at the present time some scarcity of really good young gardeners.

Gardening has changed in many ways of late; a few years since a head gardener was engaged for the position he was expected to fill. The employers knew what the engagement was for, and the carrying out of their duties was left to the man engaged. Things worked smoothly, and generally to the mutual benefit of employer and employed. Nowadays it does not appear necessary for the head gardener to know very much, as, too often, the management and control of the gardener is taken out of his hands; he is told how to carry out certain duties, and so is reduced to a machine which can be set in motion as desired.

It is well that the owner of a garden should be keenly interested in it, but it would be better if the pros and cons were discussed between himself and his gardener, without much notice being taken of third persons. There should then be that mutual confidence between them so necessary in all undertakings, and which is beneficial to both. Under such conditions we should find fewer dissatisfied gardeners, and a greater incentive to the younger men to interest themselves in their work. Paul T. More.

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### A Gardener's Education.

This topic, which has been so much discussed, proves very interesting to the majority of gardeners, but I do not think it goes much beyond that. The suggestion that there should be a National Diploma in Horticulture is a good one, but if such a diploma is established I do not think it will be very beneficial to the average private gardener. The possession of a diploma would be of more use to a man seeking a position as horticultural instructor.

In his remarks on this subject (page 574), "J. C. W." suggests that the diploma would be likely to bring a different class of men into the profession; but would many of the middle-class, which he alludes to, accept situations at the present rate of remuneration? Furthermore, he assumes that the establishment of a criterion of ability would soon improve the wages of gardeners. This I fail to understand. There are already a large number of well-trained and capable gardeners who are prepared to accept situations at the present rate of pay, and so long as that is so, employers are not likely to pay more, in spite of what the B.G.A. hopes to do, and however good its intentions may be. I venture to say that the majority of employers do not care whether their gardeners hold a diploma or not, so long as they carry out their duties in a satisfactory manner.

In most cases such a diploma would go to the college-trained man; but would the latter be capable of taking charge of a large private garden? I think most readers will agree with me that he would cut a poor figure compared with the man practically trained in garden management. The training afforded by a horticultural college teaches students something about manures, insect pests, and how to grow certain crops, but it by no means teaches the various duties a private gardener is expected to carry out—duties that can only be learned by experience. I do not know that there is a better way of training a gardener than by the apprenticeship system, which enables him to accumulate a knowledge of all branches of his profession; but in addition to practical work, young men should be encouraged and helped to study. They will never regret the time so spent in future years. Personally, I have been fortunate enough to receive a college education, but, in addition to that, I have worked my way in different gardens from the very bottom of the ladder. A good education is certainly a considerable help to a gardener, but he cannot obtain a full knowledge of his profession without steady and continuous application to practical work.

Nous Verrons.

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**Thunbergia grandiflora.**—For a lofty structure where a stove temperature is maintained, this thunbergia can be recommended as a vigorous-growing climber, and one whose large, light blue flowers are borne in great profusion over a lengthened period. It is a native of the East Indies, where it may be often seen festooning forest trees. —S. W.

**Hydrangea paniculata.**—The large-headed Hydrangea paniculata is grown in immense numbers, both as a hardy shrub and as a pot plant. For the open ground the typical kind does not, at least to my mind, gain sufficient recognition, and it is very difficult to obtain from nurseries. From the variety grandiflora it differs in its more vigorous growth, richer green leaves, and fewer sterile blossoms.—W.

## NEW PLANTS, ETC.

### BEGONIA DECORATOR.

A handsome and useful begonia, suitable alike for basket or pot culture. The soft scarlet flowers are double and of good size without being unduly heavy, and they are carried at the end of fairly long, pendulous stems. Washington and Fleur de Chrysanthéme were the parents of this newcomer. A.M., R.H.S., July 30. Messrs. H. Cannell and Sons, Swanley.

ESCHSCHOLTZIA MIKADO CANALICULATA.
Flowers rich scarlet, with orange centre. Petals prettily crimped. A.M., R.H.S., July30. Mr. W. H. Gardiner, St. Osyth.

### CLETHRA ARBOREA.

A beautiful flowering shrub that is only a success under glass, except in very favoured places. The flower spikes stand out almost horizontally from the stems, and each carries from a dozen to a score of pendant, white flowers. It is by no means a new plant, but is deserving of attention for greenhouse culture. A.M., R.H.S., July 30. Messrs. Stuart Low and Co., Enfield.

### GLADIOLUS CROWN JEWEL.

A splendid, large-flowered variety with the flowers well posed on the stout and branching spikes. The colour is soft deep pink, the three lower segments having each a blotch of yellow. A.M., R.H.S., July 30. Messrs. Jas. Kelway and Son, Langport.

### LYSIMACHIA HENRYI.

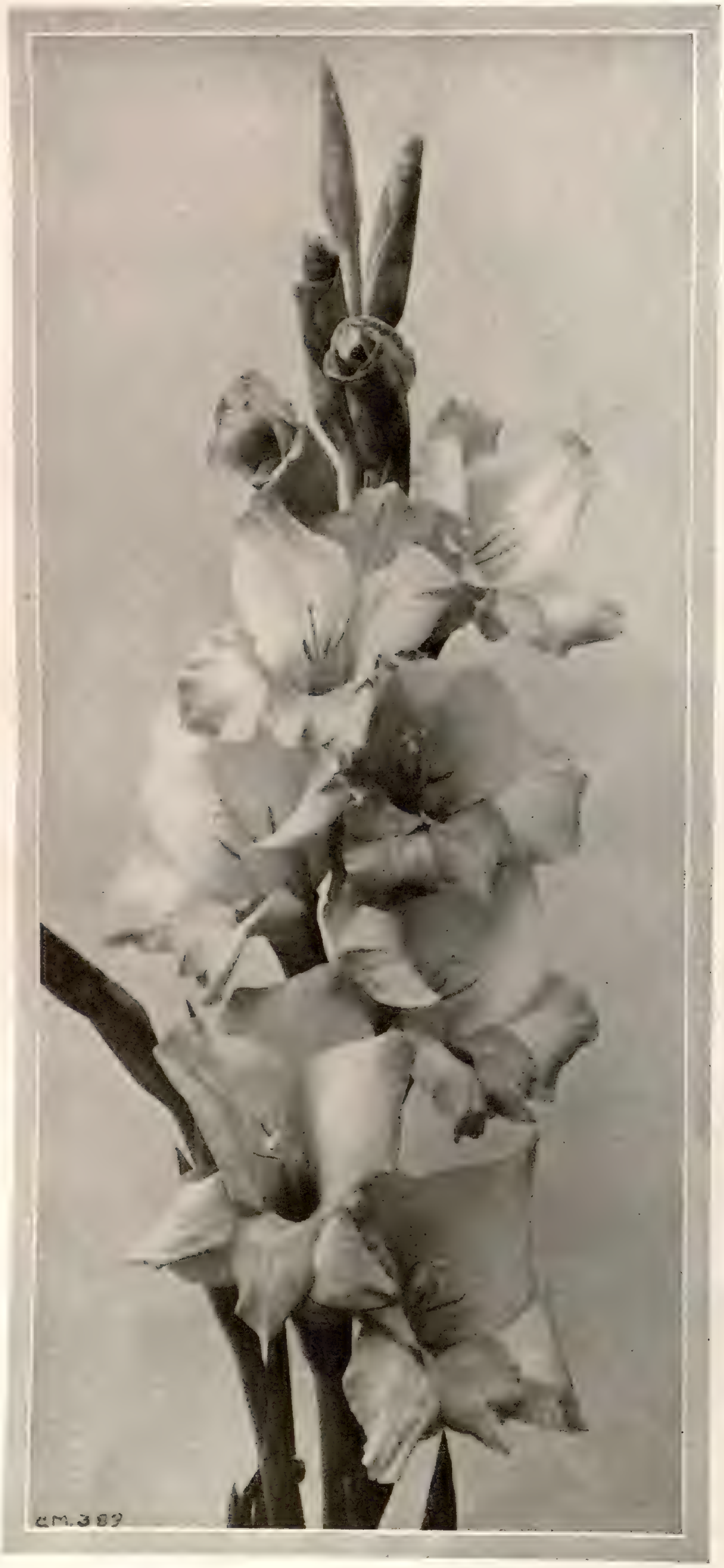
This new Chinese species is of lowly growth and dense habit. The stems are stiff and inclined to be prostrate; the lanceolate leaves are about two inches long and freely produced, while the small, yellow flowers, not so large or bright as those of the Creeping Jenny, are borne in clusters at the ends of the growths. A.M., R.H.S., July 30. Mr. Maurice Prichard, Christchurch, Hants.

### ASTILBE SIMPLICIFOLIA.

A charming little alpine species that does not exceed six inches in height when in flower. The deeply-lobed and deeply-toothed leaves cluster closely together, and from among them rise the little spikes of tiny pure white flowers. The spikes are about eight inches long, and are usually curving rather than erect. A.M., R.H.S., July 30. Mr. G. Reuthe, Keston, Kent.

### HÆMANTHUS ANDROMEDA.

This is a handsome plant, closely allied to the Amaryllis, but bearing much smaller flowers than the latter, and having them crowded together in a globose head. The colour is rich salmon-scarlet. Seven specimens were shown, and they reminded us strongly of Hæmanthus Katherinæ. A specimen was figured on p. 589 of the Gardeners' Magazine of August 3. A.M., R.H.S., July 30. R. R. Cory, Esq. (gardener, Mr. Cobb), Duffryn, St. Nicholas, Cardiff.



GLADIOLUS CROWN JEWEL.

Flowers deep soft pink, with a yellow blotch on each of the three lower segments. A.M., R.H.S., July 30. Messrs. Jas. Kelway and Sons, Langport, Somerset.

### RHODODENDRON CLORINDA.

A warm-greenhouse variety, obtained by crossing R. javanicum carminatum with R. Minerva, the former carmine, and the latter yellowish. R. Clorinda bears good trusses of beautiful, light, rosy-carmine flowers. A.M., R.H.S., July 30. Messrs. Jas. Veitch and Sons, Chelsea.

### ESCHSCHOLTZIA MIKADO CANALICULATA.

Eschscholtzia Mikado has been long recognised as one of the finest members of its family, and, grown in a mass, the vivid scarlet flowers, with their orange centres, produce a wonderful colour effect, especially during sunshine. E. Mikado canaliculata differs only from the type in having the petals lightly and prettily crimped or pleated, the lines of the "pleating" running regularly from the base to the margin of each segment. A.M., R.H.S., July 30. Mr. W. H. Gardiner, St. Osyth.

### ROSE DANÆ.

A free-flowering, sturdy rose, producing its blooms in lax, stiff clusters. The shining foliage and the buds suggest that Allister Stella Gray was probably one parent. The buds are yellow, and the flowers open soft yellow, but soon fade to cream and white. It is an attractive variety. A.M., R.H.S., July 30. Rev. J. H. Pemberton, Havering, Romford.

### POTATOES.

Witchill Seedling. — A shapely, shallow-eyed kidney potato, with a skin only slightly russeted. F.C.C., R.H.S., July 30. Messrs. Smith and Son, Aberdeen.

King Georve V.—A handsome white kidney potato, with shallow eyes and roughened skin. A.M., R.H.S., July 30. Mr. W. E. Sands, Hillesborough, co. Down, Ireland.

Irish Gem.—A fine-looking, smooth-skinned roundly pebble-shaped variety. A.M., R.H.S., July 30. Mr. W. E. Sands, Hillesborough, co. Down.

Imperial Beauty.—A very clear, smooth-skinned potato of decided and elongated kidney shape. A.M., R.H.S., July 30. Messrs. Barr and Sons, Covent Garden.

## SIMILARITY IN BUNCHES OF GRAPES.

For several years past I have noticed that the bunches of grapes on shoots growing from certain spurs had the same peculiarity of shape every year. I refer to the variety Alicante. On what I may term No. 1 the bunch had the same high front every year; the back portion of the bunch at the top receding. On No. 2 the bunch came with long, even shoulders every year, the finished bunches always being tapering and well-formed. On No. 3 the bunch was quite round, that is, the shoulders and other parts of the bunch growing out evenly all round, the finished bunch standing out well on the exhibition board. The bunches on shoots from other spurs have varied in shape from year to year, but those referred to have never varied, the bunches of one year being counterparts of those of previous years. I wonder whether other cultivators have noticed anything similar in regard to their own vines; if so, their observations will be of interest. Geo. Garner.

## VIOLA HEDERACEA.

Commonly known as the New Holland violet, this is one of those dainty little subjects that one is so apt to overlook among larger and more vigorous plants; hence it is necessary to exercise some care when selecting a position for it. It is stoloniferous in growth, having small reniform leaves like some campanulas, while in general habit of growth it is suggestive of a toad-flax. The flowers, borne singly on wiry stems, are quite reminiscent of the Dog Violet in form, the colour being a pale violet-blue with a broad margin of white. It succeeds best planted in a cool, well-drained spot, with not too full an exposure to sun, while, on account of its diminutive size, no stronger-growing subject should be allowed to encroach upon it. Introduced from Australia, and known to gardens since 1823, this plant is not commonly met with, probably because it does not prove really hardy in cold or otherwise unfavourable districts.

Thomas Smith.

Coombe Court Gardens.

# PEARSON'S RELIABLE BULBS.

**We offer the very best Bulbs procurable from any source at extremely moderate rates. ∴ The following are a few items quoted from our bulb catalogue, which will be sent free on application.**

## NARCISSI:

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| **Albatross,** a very fine Barrii ... ... ... ... | 4/0 doz. | |
| **Argent** a beautiful new semi-double ... ... ... | 3/0 doz. | |
| **Barrii Conspicuus,** a well-known favourite ... ... | 25/0 1,000 | 3/0 100 |
| **Emperor,** monster bulbs ... ... ... ... ... | 7/6 100 | 1/0 doz. |
| **Empress,** extra size ... ... ... ... ... | 6/0 100 | 1/0 doz. |
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| **Minnie Hume,** a good Leedsii ... ... ... ... | 3/0 100 | |
| **Mrs. Langtry,** one of the most graceful of the Leedsii | 3/0 100 | |
| **Poeticus Chaucer** ... ... ... ... ... | 5/0 doz. | 0/6 each |
| ,, **Epic** ... ... ... ... ... ... | 7/0 doz. | 0/8 each |
| ,, **Homer** ... ... ... ... ... ... | 4/0 doz. | 0/5 each |
| ,, **Horace** ... ... ... ... ... | 7/6 doz. | 0/8 each |
| ,, **Ornatus** ... ... ... ... ... | 20/0 1,000 | 2/6 100 |
| ,, **Virgil** ... ... ... ... ... ... | 12/0 doz. | 1/3 each |
| **Princeps,** giant variety ... ... ... ... ... | 4/6 100 | |
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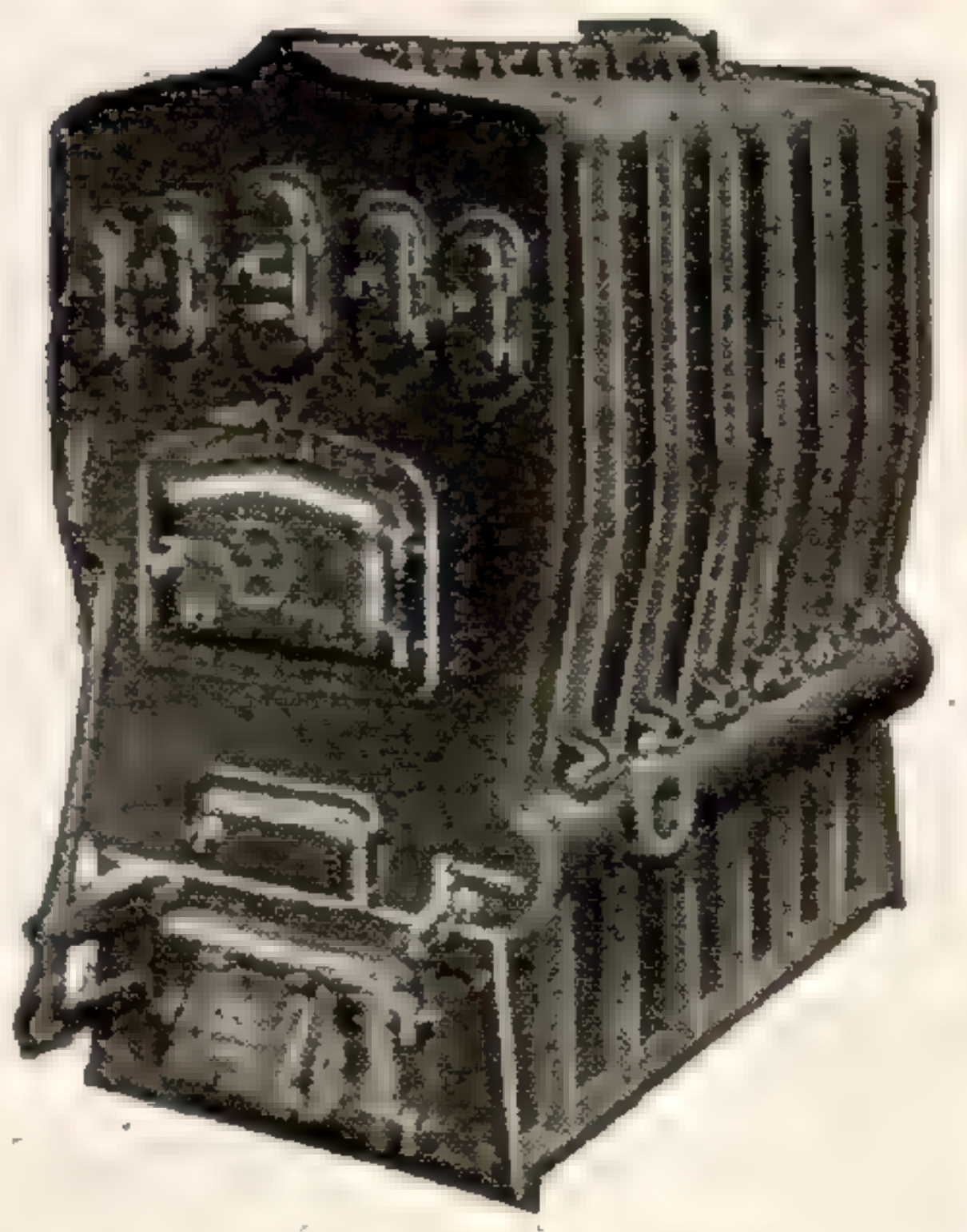

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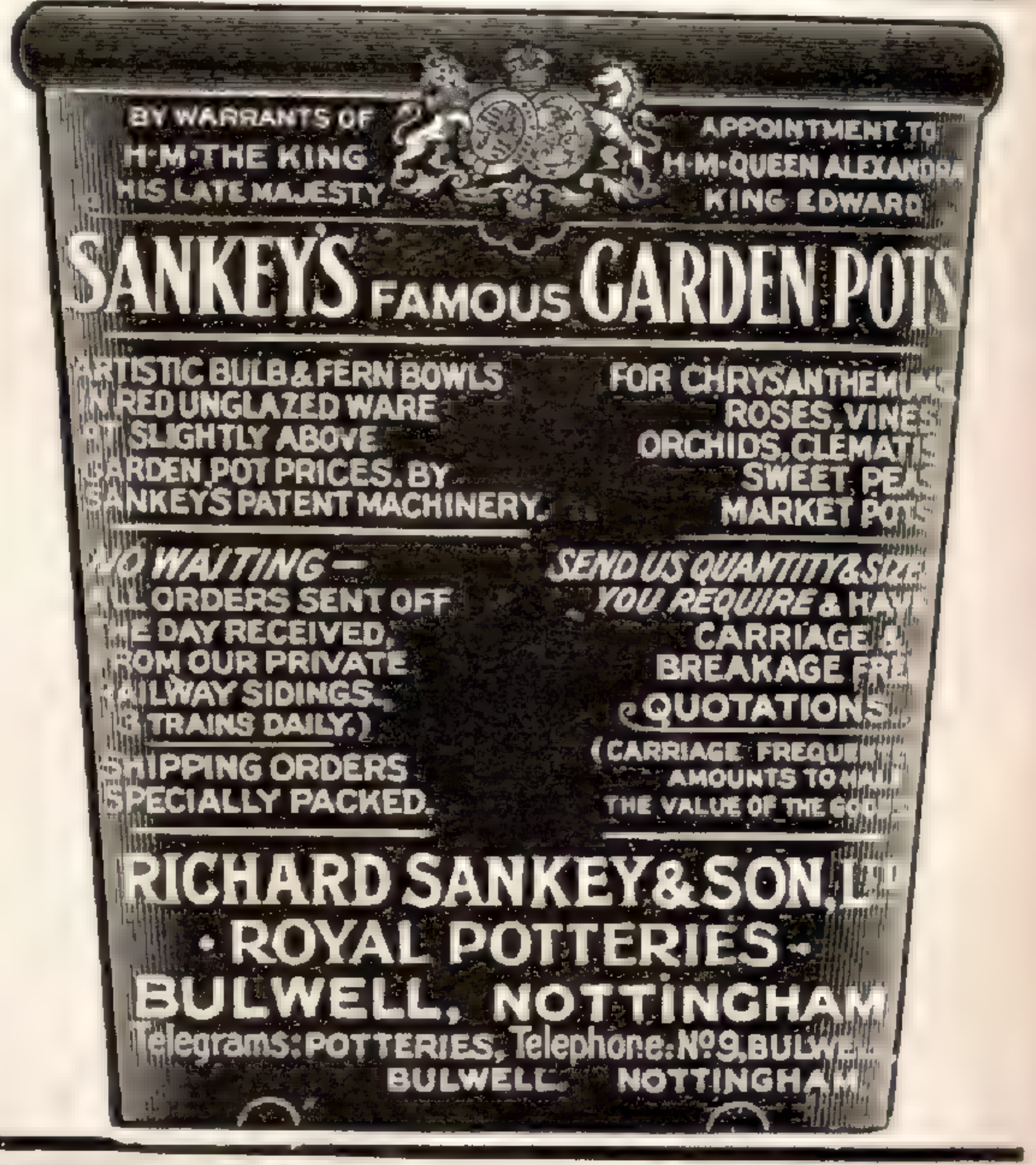

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## HYDRANGEA HORTENSIA.

It is worthy of note that, despite many transitions through which horticulture has passed in the last decade or so, Hydrangea Hortensia has ever maintained a foremost place in gardening. It is difficult to exaggerate its usefulness, as it lends itself to a variety of purposes in decoration, while in the cultivator's hands it is most tractable.

HYDRANGEAS ON THE TERRACE AT COOMBE COURT, KINGSTON.

For furnishing greenhouses and conservatories specimens in small-sized pots are generally in request; these are readily obtained by inserting cuttings at this season; placing them in a close pit until rooted, when they should be gradually inured to less close conditions, eventually exposing them to sun and air in autumn in order to build up strong buds to flower the following year. Plants treated in this manner may be grown in 60-sized or 48-sized pots, and will develop an inflorescence out of all proportion to the size of the pot, the chief requisite to this end being a rich, loamy soil when potting, while, during the growing period in spring, a weekly application of liquid manure is advisable. After flowering, plants of this description are most suitable for growing into large specimens. Before placing them in larger pots as much old soil should be removed as possible, as this admits the maximum quantity of new soil, and is also a safeguard against overpotting. To obtain large specimens, such as are generally in request, as tub plants, for furnishing terraces and other formal positions in the garden during summer, large plants of several years' growth are needed, and, when placing these in large tubs, it is never advisable to use plants other than those thoroughly well rooted, as hydrangeas resent anything in the nature of sour soil, and the tendency to this end is ever present at "tubbing" time, hence more than ordinary care should be exercised in watering. Once established in tubs it is comparatively easy to maintain hydrangeas in maximum vigour by frequent applications of liquid manure or an approved fertiliser dusted over the surface and watered in, while an annual top-dressing of rich soil to the tubs in spring will greatly stimulate activity in the roots.

Hydrangea Hortensia attains its highest decorative beauty when treated practically as a hardy shrub, as is readily evidenced from numerous examples grown in the open in favoured parts of the country. When cultivated in tubs or pots, protection from frost is necessary in the case of the roots, and if water is withheld from these in late autumn, so that the mass of soil is practically dry during winter, then hydrangeas may safely be wintered in any airy outhouse, shed, or even sheltered verandah. Early in March they should be examined, cleaned, and watered, and placed in a sunny yet sheltered part of the garden, and, with the unfolding of the first leaves, the annual top-dressing should be afforded. Plants so treated flower during August and September.

In order to obtain hydrangeas in flower during May and June the plants should be introduced into heat in January. A temperature of 50 deg., rising 5 or 10 deg. with sun heat, is ample at all times, and if they are placed near the glass and fully exposed to the sun, short, robust specimens will result. A long-growing season is much to be commended for hydrangeas, in preference to rapid forcing, as the latter invariably weakens the wood, and entails much staking, whereas, by the former method the wood is generally strong enough to support the flowers without assistance.

Hydrangea Hortensia is most in request at present when obtained in rich pure shades of pink or blue; the former colour is readily obtained by high cultivation, and may be described as natural to the species, but the blue colour is more or less accidental, and, with plants cultivated in pots, is rarely permanent; hence artificial treatment is most generally practised in order to obtain this colour. Oxide of iron and alum have long been held in repute by gardeners as a means to this end, but their action is always slow and often erratic. A preparation lately placed upon the market gives the quickest results I have yet obtained, and the blue shades are singularly free from the purple which frequently mars one's efforts in this direction.

It is well to remember when potting hydrangeas, with the view of obtaining blue flowers, that lime in any form is detrimental to the process, a remark that applies equally to water impregnated with the same substance. Thomas Smith.

Coombe Court Gardens.

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**Bougainvillea glabra.**—Despite the fact that, when grown out of doors during the summer months, the bracts of this bougainvillea are very richly coloured, it is often allowed to develop in a close and shaded structure, under which conditions it cannot for one moment compare with those grown in a cooler and more exposed manner. Time was when this bougainvillea was regarded absolutely as a stove plant, but now, in common with many other subjects, it has been proved that less heat is necessary for its well-doing.—W. T.

## ROSE MADAME JULES GRAVEREAUX.

This fine rose was introduced by Messrs. Soupert et Notting eleven years ago, and has remained a great favourite from the first. It is classed as a tea-scented variety, although it is not a pure tea rose, being the result of crossing the noisette Rêve d'Or with the hybrid tea Viscountess Folkestone, which the late Mr. Henry Bennett—a pioneer among rose hybridists—gave us in Jubilee year.

In colour, size, and habit of growth, Madame Jules Gravereaux is just what one might reasonably look for from such parentage. It is a splendid climber for almost any position, and makes grand heads in standard form. In addition to its great usefulness in the garden (it being almost impossible to use it to wrong purpose), it has figured very prominently in the winning stands at rose exhibitions, gaining the silver medal as the best flower of any tea or hybrid tea variety upon many occasions.

Of exceptionally strong and robust growth, it flowers more continuously than most of our vigorous roses. Carrying handsome foliage that is freer than usual from mildew—a most disfiguring as well as crippling disease upon rose foliage, it does not possess quite such long and rambling growths as the strongest of its parents—Rêve d'Or—and is all the more suited for pillars because of this characteristic, combined with the excessively free-blooming qualities of Viscountess Folkestone.

It is also a capital rose on the back wall of a conservatory, but must not have a too moist atmosphere because of its great doubleness, any check to opening causing decay. Most of us recognise the fruity sweetness of perfume found in Viscountess Folkestone, and all of this is fortunately retained in the rose under notice. The flowers illustrated represent some recently exhibited in fine form by Messrs. Frank Cant and Co., Braiswick Nurseries, Colchester.

ROSE MADAME JULES GRAVEREAUX.
A free-flowering, sweetly-scented variety, flesh-coloured, with yellow shading.

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**Lilium Warleyense.**—As shown at Holland Park, and illustrated in the Gardeners' Magazine of July 6, this is indeed a superb lily, but still I question if it can be regarded as other than a form of Lilium sutchuenense, a Chinese species with which we have within the last ten years or so become fairly familiar. True, I have never before met with examples of L. sutchuenense the equal of those shown as L. Warleyense, but unusually developed bulbs may account for this.—W.

## HARDY PLANT CHAT.

### Dictamnuses.

The fraxinellas are such distinct-looking hardy flowers that they should never be forgotten by those who wish to possess the best border flowers of June and July. Yet there are many gardens which are the poorer because of their absence. They are said to be good dry-weather plants, but this must be accepted with the proverbial grain of salt, as some experiments with plants in dry and moderately dry soils proved to the writer. These dictamnuses form long tap roots, it is true, but if the subsoil is a poor and sandy or gravelly one this is no great advantage, as they find their way down into a stratum where there is little to support the plants. The best are those which have access to some good rich soil beneath, and it is advisable to give them as good a chance as possible by deep digging or trenching and manuring at first. Good plants have been much crippled by neglect of this attention, whereas those which were properly attended to showed their gratitude for liberal treatment.

There is, however, a considerable diversity among the individual plants, many of which have been raised from seeds, and show a good deal of diversity in stature and vigour. The dictamnuses known as caucasicus and tauricus are, however, nobler than the other forms of the common one, which is named D. albus in the Kew "Hand List," although best known to us as D. Fraxinella. Some doubt has been thrown on the belief that the dictamnuses emit an inflammable vapour, which will ignite on a calm evening if a lit match is applied to the flowers or upper portions of the stems. This is, however, a well-proved fact, and it renders these handsome border flowers more interesting than they would otherwise be. Yet they deserve notice for their beauty. By the way, they are easily raised from seeds, but if these are not fresh germination may be slow.

### Sanguisorba canadensis.

One finds that this tall border or wild garden plant is appreciated for cutting, as it has pleasing creamy-white flowers in light-looking spikes. It is rather surprising to know that so many people are unacquainted with this Canadian burnet, especially as it increases quickly, and is very accommodating in its ways. Although a native of swamps and low meadows, where it grows from one to six feet high, it is not at all averse to a dry border, and it grows with the writer to quite five and six feet in such a border. It is not nearly so stiff when in flower as our native burnet, and the spikes look quite light and elegant. It sows its seeds freely enough, and also increases by underground runners, so that it can hold its own well, and requires to be watched, indeed, lest it injures some of its neighbours

### Geranium pratense.

It may appear superfluous to write of the native cranesbill called Geranium pratense. But it would seem that there is a good chance of it giving a considerable diversity of colouring if some attention were devoted to raising seedlings. We know, of course, that some of the best forms approach G. grandiflorum in size and colour, and that there is also a white variety. Then there are the double varieties—that with double blue and the one with double white flowers—both making good border plants. The writer came across a light blue variety in a garden the other day. This was a self-sown seedling which had originated in a nursery in the midst of a clump of a hemerocallis, and both had been purchased to secure this light blue variety. In view of its appearance, and the fact that we have a white variety and that the deeper-coloured ones vary in depth of tone, there would surely be some encouragement for seedling raisers, crossers and hybridisers to persevere.

S. Arnott.

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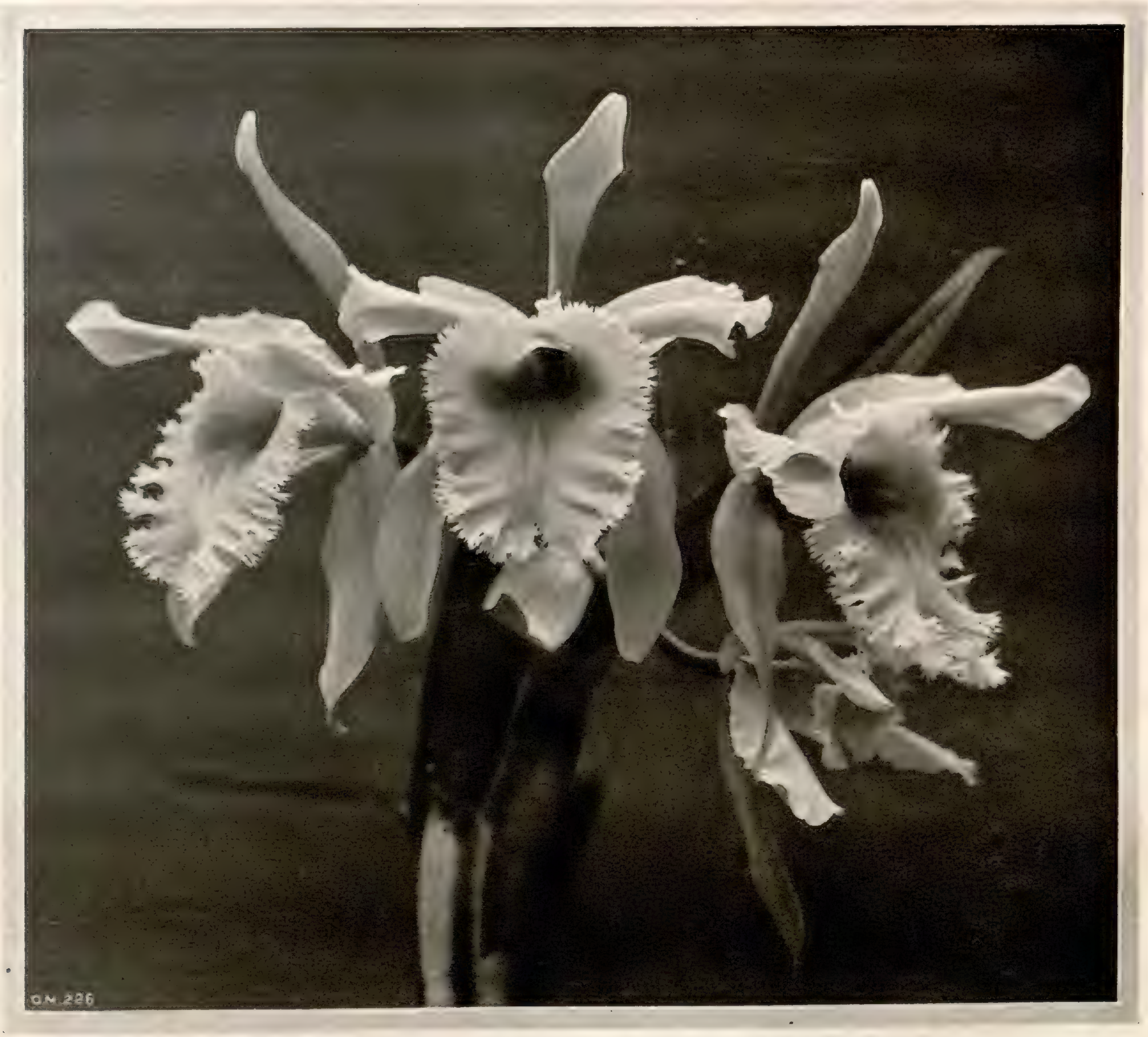
## BRASSO-CATTLEYA HEATONENSIS HOLFORD'S VARIETY.

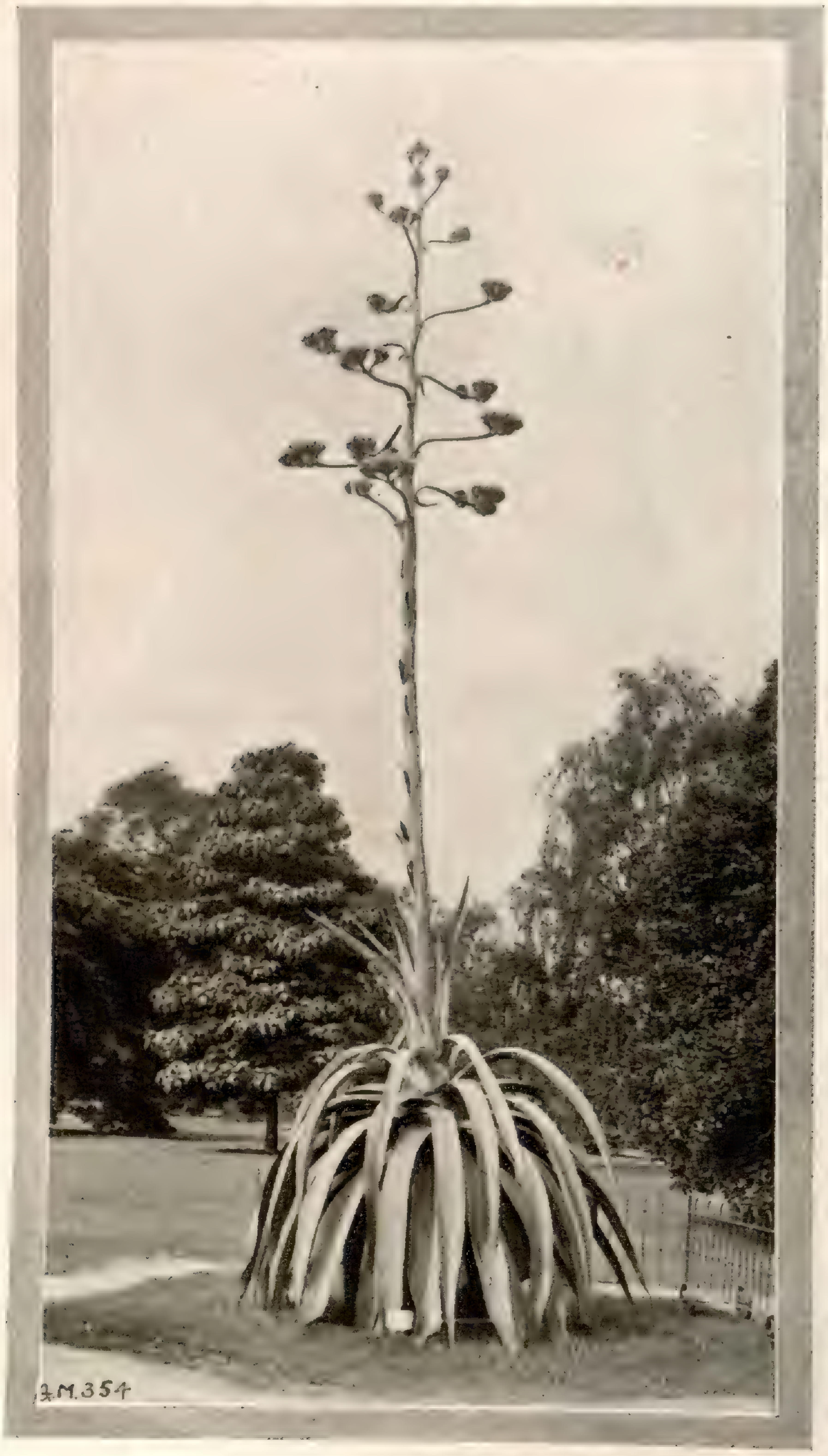


BRASSO-CATTLEYA HEATONENSIS HOLFORD'S VARIETY.
Flowers large, soft buff-yellow, shaded with silvery rose; lip finely fringed.

Among the many very handsome orchids that bear a varietal name, which is a sign of their great worth, few of the large-flowered hybrids derived from Brassavola Digbyana exceed Brasso-cattleya Heatonensis Holford's Variety, either in size or beauty. This is a wondrously beautiful form of the hybrid between Brassavola Digbyana and Cattleya Hardyana, and the colouring is an exquisite combination of soft, buff-yellow and silvery-rose, with a large yellowish area on the centre of the large and prettily fringed lip. At the great International Horticultural Exhibition of May last the specimen herewith illustrated was a conspicuous beauty in the splendid display of fine plants so admirably staged by Mr. H. Alexander, orchid grower to Sir George Holford, Westonbirt, Tetbury, Gloucester

## AGAVE ATROVIRENS.

The stately Agave atrovirens has of late created much interest owing to the splendidly developed specimen which for a long period was one of the most noteworthy objects in the succulent house at Kew, having reached the flowering stage, and once more brought into prominence the legend that certain of the agaves blooms once in one hundred years. In the GARDENERS' MAGAZINE for May 4 of the current year we gave an illustration of the plant before the development of the flower spike had commenced, for the purpose of showing the noble proportions of the species when in a robust state of health, for many years previous to its reaching the period of flower development. Concurrently with the illustration a brief account was given of the history and characteristics of the species, and in presenting an illustration of the specimen when its notable inflorescence had attained its full development, there is no occasion to do more than briefly refer to one or two points of interest of which no mention has previously been made. The plant has sixty leaves, and of these the largest was seven feet three inches in length, and had a breadth of fourteen and a-half inches at the base, and of nine and a-half inches in the middle. Several of the lower leaves had a thickness of fifteen inches at the base and eleven inches in the middle. Of the year in which the specimen that has now flowered, and thereby reached its last stage, was added to the Kew collection there is no record. It is, however, known that it was in the collection in 1873, and that it was then between four and five feet in diameter, or about one-third the diameter that was ultimately attained.



AGAVE ATROVIRENS, OR THE CENTURY PLANT, NOW FLOWERING AT KEW.

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**Erigeron speciosus superbum.**—Given fine weather, this is a charming plant for the herbaceous border, but very few are so quickly affected by the rain. It causes the heads of bloom to droop, and the florets to stick together to such an extent that it is termed by a friend of mine the Dorothy Draggletail Plant. Two or three bright days, however, suffice to put matters right.—K.

## THE STUARTIAS.

The Stuartias form an interesting group of shrubs, and the few species in cultivation are of an ornamental character. Unfortunately they are not very easy to cultivate, hence their comparative rarity. About half a dozen species have been described, but it is doubtful whether more than three are grown in this country. They appear to require a warm, moist, and deep, loamy soil, but appreciate a little peat about the roots. Permanent positions should be found for plants whilst they are quite small, for they are very impatient of root disturbance, and suffer severely after transplanting. Seeds form the best means of increase, although it is possible to root cuttings. Young plants should be grown in pots until such time as they can be placed in permanent positions.

S. Malachodendron from the Southern United States, forms a shapely bush, from 6 to 14ft. high in its native country, though it rarely exceeds the smaller dimensions here. The leaves are up to 4in. in length and 2in. or so wide, and the flowers, which are borne singly from axillary buds, are 3½ to 4in. across, white, with sometimes crimson marks on the outsides of some of the petals, and a central mass of purplish or crimson-purple stamens. The flowering period is July and August. In America it inhabits swampy ground, and often occurs in shady places. As long ago as 1742 it was recorded as having flowered in the garden of Mark Catesby, at Fulham, but neither then nor since has it been common.

S. pentagyna is another species from the Southern United States, where it is met with in the mountains of Carolina, Georgia, and Tennessee. Its average height appears to be from 8 to 10ft., although specimens up to 20ft. high have been recorded. The young wood is usually tinged with red, and the same colour may often be noted about the margins of the leaves. The leaves are broadly ovate, up to 4½in. long and 2½in. wide, with serrated margins. As in the former species, the flowers appear singly from axillary buds. They are white or cream-coloured, often deeply stained with crimson on the outer side, 3 to 3½in. across, and usually composed of five large petals and one small petal, the yellow stamens forming a good-sized tuft in the centre of the flower. A figure of it is given in the "Botanical Magazine," t. 3,918.

S. pseudocamellia is a Japanese plant, which has been said to attain the dimension of a good-sized tree under the most favourable conditions in its natural habitat. The largest examples are stated to attain a height of 50ft., with a girth of 6ft., on the mountains of Hakona and Nikko. Here, it has only been seen in bush form, although its habit is more suggestive of tall growth than that of the other species. The lance-shaped leaves are 2 to 3in. long, with finely-serrated margins. The white flowers are about 2in. across, and they are relieved by a central mass of golden stamens.

Another Japanese species has been described in S. monodelpha, but it is doubtful whether it is in cultivation. Described as a tall shrub or small tree, herbarium specimens show it as having oval leaves up to 3½in long and 1¾in. wide, and small white flowers with violet anthers. In addition to this there are two other species, S. grandiflora and S. serrata, neither of which is known in gardens, although the name of grandiflora is sometimes given to S. pseudocamellia.

W. DALLIMORE.

# CAMPANULAS FOR THE HERBACEOUS BORDER.

The list of campanulas suitable for the herbaceous border is an extensive one. The various species and varieties make up a group of plants which cannot very well be dispensed with. The flowers are also highly appreciated for cutting, as the majority of them last well in a cut state.

Although by no means fastidious regarding soil and situation, the majority of campanulas delight in a cool root run and a half-shady position. Many of the dwarf alpine species, which are usually grown in the rock garden, may be successfully used for edging the herbaceous border, especially if a few stones are used to prevent undue moisture lying round and amongst the tender shoots. Generally speaking, a light loam, which has been enriched with decayed manure, will be found an excellent rooting medium, but it must be fairly moist. It is necessary to lift, divide, and replant some of the strong-growing kinds every two or three years, otherwise the growths become too crowded, and small flower spikes will result.

CAMPANULA CARPATICA ALBA. [Photo: C. P. Raffill.

A fine white-flowered plant for beds or borders.

Campanulas are readily raised from seeds, and, although the colours are sure to vary somewhat in shade, yet this is a highly interesting part of the work, and many beautiful plants are to be so obtained.

C. amabilis is a splendid member of the family, having large, open, saucer-shaped flowers, borne on branching stems about 2ft. high. In colour the flowers are a rich blue. Being a fast grower, this species requires dividing about every two years to obtain good spikes of blossom. C. barbata should be treated as a biennial, for it invariably dies out after flowering. It well deserves a place in the border.

The various forms of C. carpatica are wonderfully well suited to the front portions of the borders, where they form excellent edgings. The foliage is very thick, and most of the varieties of this type are profuse bloomers. C. carpatica has blue flowers, and there is the lovely white form C. c. alba, that must not be omitted. There are several beautiful selections or hybrids from this dwarf campanula which should be included in every collection of hardy plants. China Cup, with pale blue flowers; Isobel, blue; pelviformis, soft blue, flowers slightly reflexed (this latter variety has also a white form); Riverslea, a strong grower, with large, open flowers of a pale blue colour; and White Star are all good, and this last may be said to be the best of the whole section. The growth is somewhat stiff and more erect in habit than the others, and the large, open flowers, which are white, with a distinct shading have a ring of pale purple in the centre. These campanulas are of great value, for they may be grown to advantage both in the rock garden and the border.

C. Fergusoni is a hybrid of exceptional merit, being the result of a cross between C. carpatica and C. pyramidalis alba. The flowers are pale blue, borne on stems which grow from 18in. to 2ft. high. C. glomerata and C. glomerata dahurica are both fine border kinds, growing about 2ft. high, and producing terminal heads of purplish flowers. C. grandis (or latiloba) is a beautiful species, somewhat similar to C. persicifolia, but having more expanded flowers than the latter. The rich blue flowers are much appreciated for cutting, as they are light and graceful. This species, with its white form, alba, make a capital pair. C. lactiflora grows about 4ft. high, and has beautiful sprays of milk-white flowers, which which are borne on the ends of the growths. The colour will vary slightly when plants are raised from seeds, and a little more blue will be produced in many of the flowers; in any shade of colour it is a plant well worth cultivating. C. latifolia and its white form are desirable plants, growing about 4ft. high; C. latifolia macrantha is an improvement on the type, having larger flowers.

C. persicifolia (the Peach-leaved Bellflower) is a popular old favourite in all gardens, and is one of the most useful of all the campanula family. To obtain the best results it is important that the plants should be lifted and divided at least every two years, and the strongest growths must be selected for replanting. Replanting should be attended to early in the autumn. C. persicifolia and its numerous varieties should be well represented in every collection, not only on account of the great value they possess for border decoration alone, but for the usefulness of the flowers for cutting. C. persicifolia alba has large, pure white flowers, and there is also the double variety, C. p. alba fl. pl. Among the named varieties there are Daisy Hill, with round, double flowers of a pleasing shade of blue; Humosa, semi-double, blue; La Fee, one of the more recent introductions, with large lavender-blue flowers, and is an excellent addition to the family; and Moerheimi, a well-known variety, its pure white semi-double flowers produced in great abundance, and lasting for some considerable time. Unfortunately, in some gardens this variety does not grow quite so freely as many of the others, therefore a little more attention should be given it. Newry Giant is said to be an improvement on the preceding, having a much stronger constitution.

E. C. Pooley.

Gnaton Gardens.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

COCHLIODAS AND ODONTIODAS.—The genus Cochlioda is not a large one, the only known species being C. Noezliana, C. rosea, C. sanguinea, and C. vulcanica. These, however, in the hands of the hybridist, have been of considerable importance. Crossed with odontoglossums, they have given us the beautiful odontiodas, and these comprise some of the most brilliant orchids that have yet been raised. As time goes on, undoubtedly still greater strides will be made in these plants, and we shall obtain flowers of vivid colouring and easily produced in a cool house. There are already some thirty or more odiontiodas in commerce, and all have some good qualities, and are worthy of cultivation. O. Bradshawiæ, O. Bohnhoffiæ, O. Charlesworthi, O. heatonense, O. Keighleyensis, O. Thwaitesi, and O. Vuylstekeæ, comprise the best-known and include some of the choicest. They all thrive in a cool, airy, and moist atmosphere, such as is suitable to the cool odontoglossums. I find they succeed grown in shallow pans, suspended or raised well up to the light, the whole year round. In a suitable atmosphere, and under judicious treatment, they are easy to cultivate, and not subject to insect pests, but every endeavour must be made to keep thrips at bay. This troublesome pest must be eradicated by mild fumigations at regular intervals.

POTTING.—The plants are rather erratic in their time of growing and flowering, but the majority are now making their growths for next year's flowering. If any are in need of fresh rooting materials they should be potted just as the young growths are about to push forth new roots. They should be treated exactly as odontoglossums, and will succeed in the same kind of compost, potted in the same manner, and in the same way. Small pans should be employed, as nothing is so fatal as overpotting. The pans should be thoroughly well drained with clean crocks, and the plant should be placed so that the base of the pseudo-bulbs is slightly above the rim of the receptacle; press the compost moderately firm, without bruising the roots. I do not advocate finishing off with a layer of fresh sphagnum moss, as so often seen, but believe in trimming the whole of the surface to give it a neat appearance. During active growth the supply of water must be ample, but at no period should the rooting material be allowed to remain dry for any considerable length of time.

MILTONIODAS AND ONCIDIODAS.—Cochliodas have also been crossed with Miltonias and Oncidiums, and no doubt, as time goes on, we shall have our collections enriched by many beautiful bigeneric orchids. As the culture of these latter hybrids differs from the former, I will defer giving their treatment until some later date. In treating bigeneric hybrids, where the parents are of a quite different character, it is always safe to treat the plant according to the predominating parent.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

STREPTOCARPUSES.—These plants are most useful at this period when some of the earlier subjects are passing out of bloom. Given an airy, light position, and shaded, they present a brilliant display when massed together. The colours have been so improved during the last few years that they now vie with the gloxinias, while for general use they far surpass those fine plants. The culture is simple when well understood. The compost best suited to their needs will be two parts fibrous loam, one part peat or leaf-soil, and one part coarse silver sand. They are best raised annually, and should be sown in two batches Seeds for one batch should be sown now, while another sowing should be made in February. The plants, when well established, like liquid manure frequently. Streptocarpuses cannot be relied on to reproduce themselves true from seed, unless each variety is kept separate. Should it be desirable to increase any special variety there are two methods of doing so. One way is by division, the stem being severed between the growths; the plant should then be pulled to pieces, and each portion potted up separately. The other, and perhaps better, way is to cut off some of the long leaves, and prepare pans of compost, two parts sand, one part loam, and one part cocoanut-fibre refuse, well mixed. The midrib of the long leaves should be cut through with a sharp knife, one inch from cut to cut, and the leaf spread out its full length, with the midrib slightly buried and made firm in the compost; the pans should be placed in a propagating frame, and kept moist and shaded. Small plantlets will soon appear at each cut in the mid-rib, and shortly afterwards they will emit roots, and when these are an inch long, the leaves should be severed and each piece with a plantlet potted up separately.

HEATING APPARATUS.—The present is the most convenient time to have this examined and overhauled. Should a boiler have given out or developed leaks it may have to be replaced by a new one, and this can be now carried out without fear of injury to the plants, and prevent a big loss should it have to be done in the winter or spring. See that air valves and stopcocks are clear and work freely; leaky joints in the pipes should also be picked out and re-plugged. Furnace bars must be removed, the bearings cleaned and replaced; if one should be burnt or warped it should be replaced by a new one, otherwise all the others will quickly warp, too. Furnace doors should be in order, and the flues and chimney stacks clean, and everything placed ready to start the fire at any moment. — Lewis Smith, Shotesham Park Gardens.

## HARDY FRUITS.

LAYERING STRAWBERRIES.—In many parts of the country the long period of dry weather has seriously affected the strawberry plants, and for those contemplating the formation of new plantations from home-grown stocks it will be a difficult matter to secure the requisite number of layers. The operation should be completed as soon as circumstances permit, for it is an essential point to have the young plants established as early as possible in their permanent quarters. The general practice is to layer into 3in. pots; it is advisable not to use too small a pot, as the root action is quickly restricted, and, if not frequently looked over during dry weather, the plantlets are apt to suffer from lack of moisture. It is possible to establish useful plants by drawing the runners from two rows into one space, and then partially cover with finely-broken mushroom bed manure or leaf-mould, or a mixture of the two; this makes a good rooting medium, and the young plants may readily be lifted with good balls of roots for immediate transference to their allotted quarters.

PREPARATIONS FOR PLANTING.—The site selected for forming new beds, if not previously well manured and trenched, should be prepared at the earliest possible moment; generous treatment in the way of manure and deep cultivation of the soil well repays the trouble involved. Our method is to prepare the station early in the year, and plant a crop of early potatoes; these are cleared off, and the land carefully forked over to remove any small tubers which may have been overlooked at lifting time. Other crops may be grown, but only those which will be over in time to prepare the ground well ahead of planting time.

PLANTING STRAWBERRIES. — The earlier the plants are put out in August the better opportunity they will have to develop good root-action, and sound, plump crowns for the ensuing season. Generally the space allowed between the rows is two feet, and eighteen inches from plant to plant in the row, and where the plants are treated as biennials this is a satisfactory method to follow. There are two varieties for which the above spacing is not strictly adhered to. Reward is so vigorous with us that more space is required, both in the row and between the rows; on the other hand, Waterloo, the very dark-coloured variety, requires much less space than most varieties, and is planted one foot apart in the rows. The soil should be in a moist condition at planting time, as should also the ball of soil of the young plants; plant firmly, and not too deeply. A good soaking of water will complete the operation.

SWEET CHERRIES ON WALLS. — As soon as the fruits are gathered remove the nets, and thoroughly cleanse the trees with the garden engine or hose. Probably aphis will be present, and this should be eradicated with a suitable insecticide. Fasten in any loose growths required for extension, removing others which are not necessary for filling up gaps, etc. Varieties which hang on the trees well into August may possibly require extra protection against wasps; if so, this should receive prompt attention. Young trees should on no account suffer from lack of moisture at this particular season.—W. Messenger, Woolverstone Park Gardens, Ipswich.

## THE KITCHEN GARDEN.

PARSLEY.—The June sowing has germinated well. Encourage a free growth by stirring the soil regularly, and giving an occasional dusting of soot. Make still another sowing if demands require it, but this time make the sowing on a sheltered border, where handlights or frames can be used through the winter months.

LEEKS.—The earthing up of these should now be completed without delay. In dry weather give copious supplies of water and liquid manure. A late batch could still be planted as ground becomes vacant, planting these with an iron bar, six inches deep, just covering the roots with soil, and adding more soil at intervals.

BROCCOLI.—Late spring varieties may still be planted out; land that has been cropped with strawberries for three years provides a very good site. Perhaps an iron bar will be needed for planting them, the ground being hard on such plots, but fine firm growth will result, which will stand the severe weather with impunity.

WINTER GREENS AND SAVOYS in plenty should still be planted; water in as planting proceeds. Providing a batch was sown late in May, good sturdy plants will be forthcoming for planting now. Continue to plant out coleworts.

AUTUMN-SOWN ONIONS.—Beds for these will soon be required if they are to mature where sown. We find it the better plan to sow on ground previously occupied by potatoes, levelling it up and making it firm before sowing the seeds. We delay the planting until March. Good varieties for this sowing are White Leviathan, Red Rocca, and Lemon Rocca.

SPRING-SOWN ONIONS that have been cultivated for special purposes will not need much attention after this date in the way of watering. All that is now needed is to encourage in every way a steady ripening process by aerating the soil, and pulling decayed leaves and decaying skins away. When bulbs are finishing off partially raise them with a fork, eventually lifting them altogether, when they can be laid on moss, wood wool, or any other soft material, and placed in the sun, but kept from rains.

LETTUCE.—Make a judicious sowing of various kinds, and in various parts of the garden, for the early spring supply; perhaps the 20th of the month is the best time in the south, allowing a week earlier in the north. Excellent varieties are Stanstead Park, Brown Bath Cos, Sutton's Winter White Cos, All the Year Round Cos, Little Gem, and Golden Ball.—G. Ellwood, Swanmore Park Gardens.

SANDY SHOW, BEDFORDSHIRE.
44th YEAR.
THURSDAY, AUGUST 29th, 1912.
Largest One-day Show in the Midlands.
PRIZES VALUE £1,000, including
£90 for Plants and £55 for Cut Flowers.

Entries close August 22nd, 1912.

Schedules, Entry Forms, etc., of
WM. GREEN, Secretary, Sandy.

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# EXHIBITIONS AND MEETINGS.

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## Leicester Flower Show.

AUGUST 6 AND 7.

The 27th of the series of horticultural exhibitions in the Abbey Park, Leicester, was held on Tuesday and Wednesday, and, from the horticultural standpoint, was one of the most successful. Financially, it must have been considerably below the average, for at Leicester, as elsewhere in the Midlands, the weather was wet and tempestuous, and therefore not favourable to flower shows. That the attendance was below the average there can be no doubt, but it was surprising to see such a large gathering under such untoward conditions.

The same number of tents were provided for the accommodation of the competitive contributions and the miscellaneous collections as in previous years, but they were all of greater length and width, and were well filled. The groups arranged for effect formed a large and highly attractive feature. Roses were shown in such large numbers and splendid condition as to surpass all previous displays. Sweet peas were plentiful and good, and it was therefore unfortunate that the blanks in the tent devoted to them were such as to mar the effect which they are so well able to produce. Floral decorations were of high merit, and constituted an attractive feature, and of fruits and vegetables there were immense displays.

The exhibition is held under the direction of a committee formed by members of the Leicester Corporation, and of this body Mr. Collier is the chairman, Mr. J. Stayne is the secretary, and Mr. J. Burton is the superintendent, and committee and officials may be heartily congratulated on the admirable manner in which the arrangements were, in accordance with custom, carried out.

### CUT ROSES.

Roses were shown in much larger numbers than usual, and the contributions to both the amateur and trade classes were remarkable for their high quality. As the result the displays of these fragrant flowers constituted one of the most distinct and attractive of the many features of interest.

There were six entries in the open class for twenty-four varieties, and the majority of the stands contained blooms of quite exceptional excellence, but, unfortunately, several suffered much from what is technically known as over-dressing. The blooms staged in this class by Messrs. Perkins and Son, of Coventry, were almost free from this defect, and as they were otherwise good, the premier award was made in favour of the firm. Of much merit were the blooms of Mrs. John Laing, Charles J. Grahame, Mrs. T. Roosevelt, Captain Hayward, Avoca, Lyon Rose, Gloire de Chedane, Guinnoiseau, Marquise de Ganey, Yvonne Vacherot, and Florence Pemberton. Messrs. Hugh Dickson, Lim., Belfast, followed closely for second place with splendidly developed blooms, which had been somewhat over-dressed. Very fine were Charles K. Douglas, a beautiful crimson hybrid tea; Edward Mawley, Berthe Gaulis, Mrs. Sam Ross, Mrs. David McKee, Lady Alice Stanley, and H. E. Richardson. Mr. W. H. Frettingham, Beeston, who was third, also had blooms that were large in size and well finished. There was a spirited contest in the open class for twelve tea-scented varieties, and the awards were made in favour of Messrs. Perkins and Son, Mr. H. Drew, Longworth, Berks; and Messrs. R. Harkness and Co., all of whom staged well.

In competition for the prizes for twelve blooms of any one variety, Messrs. Hugh Dickson, Lim., were first with Captain Hayward, the blooms of full size, and distinguished by their brilliant colouring and high finish. Mr. H. Drew and Messrs. Perkins and Son were second and third with Mrs. John Laing in good condition. The prizes for twelve blooms of any one tea-scented variety were awarded to Mr. W. Bentley, Belgrave, Leicester; Messrs. Perkins and Son; and Mr. W. H. Fettingham, who staged Mrs. Foley Hobbs, Molly Sharman Crawford, and W. R. Smith respectively.

There were two entries in the open class for a display of roses, and both were so highly meritorious as to form a fine feature. Messrs. Hugh Dickson, Lim., were first with a display remarkable for its effectiveness and the high quality of the blooms. The general scheme comprised a series of pillars of La Tosca, Frank Workman, Lady Pirrie, Madame Ravary, Dorothy Perkins, Lady Godiva, Excelsa, and baskets of such roses as Captain Hayward, Karl Frau Druschki, and Mrs. Sam Ross. In the fringe of roses along the front Simplicity and Hiawatha were used with good effect. Mr. John Barrow, Oadby, was first with a charming arrangement, but rather too light for so dull a day.

There were three competitors in the amateurs' class for twenty-four blooms, and the post of honour was occupied by Mr. F. Dennison, Cranford, Leamington, with splendidly developed blooms of Florence Pemberton, Gustave Pigneau, Caroline Testout, John Ruskin, Horace Vernet, Madame Wagram, Comtesse de Turnne, George C. Waud, Dean Hole, Earl of Warwick, and other of the leading varieties. Mr. H. Lowe, Beeston, followed for second place with a box of excellent blooms. Mr. W. Boyes, Middleton-on-the-Wolds, was a very close third with excellent blooms, the high-coloured varieties being especially noteworthy.

In competition for the prizes for eighteen varieties, Mr. F. Dennison was again first, staging blooms of exceptional merit, the Lyon Rose being perfect in colouring. The Rev. J. H. Pemberton, Havering, was a close second with blooms of full size and superb in finish; especially noteworthy were those of Dr. O'Donel Browne, Countess of Shaftesbury, Earl of Warwick, Hugh Dickson, Claudius, and Francois Michelon. In the class for twelve blooms, distinct, the prize-takers were Mr. F. Dennison, Mr. R. Clarke, Beeston, and Mr. W. Buxton, Carlton, in the order of their names.

The successful competitors in the amateurs' class for tea-scented varieties were Mr. F. Dennison, Mr. W. Upton, and Mr. H. Lowe, all of whom staged blooms of good quality. There was a brisk competition in the class for six blooms of any one rose, and the premier award was made in favour of Mr. F. Dennison, with a box in which Alfred Colomb was represented at its best; Mr. H. Lowe staged the Lyon Rose in fine condition for second place.

For twelve blooms in three varieties, arranged in as many rows, Mr. F. Dennison was first with well-developed blooms of Alfred Colomb, Dean Hole, Ulrich Brunner, and Bessie Brown; Mr. W. R. Clarke was second with good blooms. The amateurs' class for eighteen blooms was a strong one, and Mr. G. Speight, Market Harborough, was first with large, well-finished blooms, that of Marquise de Ganey being especially meritorious. Mr. M. Whittle, Belgrave, Leicester, staged well for second place, and among his blooms was a splendid example of J. B. Clarke; Mr. W. Upton third. There was a very severe competition in the amateurs' class for twelve blooms, and Mr. G. Speight was again first, and was followed by Mr. W. Upton and Mr. M. Whittle for second and third place.

The sixes were good, and for blooms of distinct varieties without reference to class, Mr. M. Whittle scored, and Mr. G. Speight and Mr. W. Upton were second and third. Mr. G. Speight obtained premier honours for six tea-scented varieties, and Mr. W. Upton for six of any one variety.

To the miscellaneous class Mr. W. Bentley contributed a large and highly attractive collection of roses, which occupied about one-half of the length of one of the largest tents. At the back were huge pillars of wichuraiana roses that reached from the stage to the top of the tent, and in front of these were short pillars and vases of exhibition and decorative varieties, the whole producing a charming effect.

### HARDY FLOWERS.

Hardy flowers constituted, as usual, a distinct and attractive feature. For a collection, Mr. C. H. Mayer was a capital first with lightly arranged vases of coreopsis, chrysanthemums, veronicas, marguerites, phloxes, pentstemons, helianthuses, and perennial peas. Mr. H. Hill, Syston, had a good collection for second place, but it suffered much from overcrowding. Stocks were hardly up to the average, owing to the heavy rains, but Mr. A. Gilmore, who was first, staged large and otherwise well-developed spikes.

Sweet peas were shown in large numbers, and produced a highly attractive display. They were, of course, much better than at last year's exhibition, but they were not equal to some previous years owing to the cold, wet weather that prevailed for some time previous to the date of the exhibition. The effect was somewhat marred owing to the number of blanks in the tent devoted to these flowers, and for these those who failed to fill their entries were responsible. Leicester is by no means the only show that has suffered from growers of sweet peas who have entered but have not shown their flowers or taken the trouble to inform the officials of their inability to take part in the competition. With a view to prevent entries being sent in without full consideration, or to induce entrants notifying the officials when they are prevented showing, some societies stipulate that a certain sum should be sent with the entries, and that this shall be forfeited if the entries are not filled and no notice sent that the entrants are unable to stage. It would be well were this practice to be more generally adopted.

A considerable number of special prizes were provided by seedsmen, and in Messrs. E. Webb and Sons' class for six bunches Mr. E. Sandle, Knighton, and Mr. C. H. Mayer were first and second with meritorious flowers. Two classes were provided by Robert Sydenham Limited, and in that for six bunches Mr. G. E. Lewis and Mr. Henry Stanton were first and second. In competition for the prizes for nine bunches Mr. E. Sandle, Mr. C. Robinson, and Mr. A. Cameron were the prize-takers in the order of their names. Mr. W. Butler, Oadby, and Mr. A. Grover were first and second in Messrs. Harrison's class for nine bunches, and in Mr. Unwin's class for the same number of bunches Mr. Widderson was successful in obtaining premier honours.

Carnations were largely and well shown, and in competition for six varieties, six blooms of each to be shown in vases, Mr. F. G. Duffey was a good first with finely-finished blooms; Mr. R. Makepeace was a good second, and Mr. Hill third. For six blooms, distinct varieties, the winners were Mr. F. G. Duffey, Mr. J. Gumley, and Mr. J. Rudkin. The best collection of fancy carnations were those shown by Mr. J. Gumley, Mr. J. Rudkin, and Mr. F. G. Duffey. Picotees were well shown by Mr. J. Gumley, Mr. Duffey, and Mr. R. Makepeace.

### FLORAL DECORATIONS.

Floral decorations were plentiful and of much merit. Very strong was the competition in the classes for baskets of flowers, but, unfortunately, the majority of the arrangements were much crowded. Mr. H. Widdowson, Loughborough, was first with a lightly arranged and very tasteful basket; Mr. J. Barker was second with a basket that would have probably taken a higher place had the quantity of flowers been considerably reduced. Mr. J. Vine was third with an effective but somewhat formally arranged basket.

Hand bouquets occupied a long run of tabling, and proved a great source of attraction to visitors. Mr. J. Barker had the best shower bouquet, and Mr. E. Vine was second. Mr. J. Barker was also first for bridal bouquets with a remarkably tasteful arrangement of carnations, chrysanthemums, and lilies. Mrs. Underwood, Coventry Road, Letterworth, was second.

### PLANTS.

The big marquee in which the groups arranged for effect had a place was rich in attractions, and afforded many object-lessons of much value in the arrangement of plants remarkable for the beauty of their flowers or foliage. The competition in the great group class was of the keenest, and Messrs. J. Cypher and Sons, Cheltenham, added to their many honours by winning the first prize. That the arrangement was remarkable for the taste displayed goes without saying, and to describe it in such manner as to convey a clear idea of it is practically impossible without devoting more space than can be spared to the report. Suffice, therefore, to say that the group was one of the most successful of the many efforts of the firm, and afforded an object-lesson of a value that cannot well be over-estimated. The second prize was awarded to Mr. Holmes, West End Nurseries, Chesterfield, for an effective group that was probably rather too strong in crotons, although characterised by much taste; Mr. W. R. Manning, Dudley, was third with a good group.

Specimen plants were not plentiful, but they were more numerous and of higher quality than is usually the case at provincial shows. For a single specimen in bloom, Mr. C. Ward was first with a well-flowered example of Stephanotis floribunda; and Messrs. J. Wright and Sons, Leicester, were second with a large, finely-flowered fuchsia. Mr. C. Ward and Messrs. J. Wright and Sons were also first and second for coleus with large and highly coloured specimens. Ferns were represented in capital condition, and chief among the more successful exhibitors were Mr. W. Weston and Mr. H. Rogers, Leicester. The last-named exhibitor and Messrs. J. Wright and Sons were especially successful in the classes for zonal pelargoniums and fuchsias, both staging splendidly-flowered specimens, trained in natural, and therefore graceful, style.

### FRUIT.

The most important of the features in the division set apart for fruit was that formed by the contributors to the two classes for dessert tables, decorated with flowers. Two separate sets of prizes were provided in each class, one for fruit and the other for flowers. There was an especially strong contest for the prizes for six kinds of fruit, and the premier award was made to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby. The kinds were Muscat of Alexandria and Muscat Hamburgh grapes, Noblesse peaches, Pineapple nectarines, Royal Favourite melons, and Lady Sudeley apples, all of which were of the highest quality. Mr. Goodacre was first also for floral decorations, which consisted chiefly of vases of Madame Abel Chatenay roses and Francoa ramosa. Mr. T. Ireland, gardener to the Misses Webb, Newstead Abbey, Notts, was second for fruit and decorations, both being of a high order of merit. Especially noteworthy were the dishes of Goshawk peaches and Pitmaston Orange nectarines. Mr. Buxton, Carlton, was third for decorations and fruit with excellent produce, and tastefully arranged flowers. It is seldom that the prizes for decorations follow those for fruit, as in this case.

Very brisk also was the contest for the awards in the class for tables of eight kinds of fruit with floral decorations, and Mr. J. H. Goodacre repeated the splendid success achieved in the preceding class by winning both for fruit and decorations. The fruits included two grand clusters of Muscat of Alexandria, and equal numbers of bunches of Black Hamburgh and Muscat Hamburgh grapes, which were remarkable for size of berry and fine colour; and excellent dishes of Lord Napier nectarines, Barrington peaches, Souvenir du Congrès pears, James Grieve apples, and Brown Turkey figs, with a Royal Favourite melon. The floral decorations consisted chiefly of scarlet carnations, gloriosas ,and orchids. As in the class for six kinds, Mr. Ireland was second for fruit and decorations, the peaches and nectarines being especially high in quality.

For four varieties of grapes, two bunches of each, Mr. Goodacre was a splendid first with clusters of Madresfield Court, Muscat Hamburgh, Muscat of Alexandria, and Gros Maroc. Mr. Ireland was a close second with large, well-finished clusters. In the class for two bunches of black grapes, Mr. J. H. Goodacre scored with two superb clusters of Black Hamburgh, and he was first also for two bunches of white grapes, well-finished bunches of Muscat of Alexandria. Mr. Buxton was first for six dishes of hardy fruit, and Mr. G. H. Greasley, Rothbury Temple, second. Peaches were admirably shown, and the premier award was made in favour of Mr. John Hay, Hothorpe Hall Gardens, Thedingworth, who had Sea Eagle in splendid condition. The best dish of nectarines was that of Stanwick Elruge, shown by Mr. T. Sims, Pinfold, Thorpe Satchville. Melons were comparatively few in number, but of cherries, plums, gooseberries, apples, currants, there was an immense display, and the fruit generally was of very high quality.

### VEGETABLES.

There was an enormous display of vegetables of all kinds that are now available for exhibition, and on the whole the quality was remarkably high. The contributions to the classes for collections were sufficient to fill the whole of one side of a marquee about two hundred feet in length, the other side being occupied by the entries in the classes for single dishes of specified kinds. As is customary, the entries were numerous in the society's class for a collection of nine kinds, and the produce was throughout of great excellence. Mr. J. Hudson, Gimson Road, Leicester, was, as for some years past, successful in obtaining the first place, and staged produce in every way worthy of his high reputation as a cultivator. All the examples were so good that none can be mentioned as being the most noteworthy. Mr. Hartshorn and Mr. W. Ball, who were second and third, also staged collections of great excellence. There were nine entries in the class, but not one of the exhibitors affixed a single name to his exhibits.

There were six or seven competitors in the class in which Messrs. Sutton and Sons offered the prizes for six kinds, and in this, as in the preceding class, the post of honour was occupied by Mr. J. Hudson with a collection deserving of the highest praise. Mr. W. Ball was a good second, and Mr. W. Townsend, Melton Mowbray, was third. Messrs. E. Webb and Sons' prizes for six kinds of vegetables were keenly contested, and Mr. J. Hudson, Gimson Road, Leicester, was first with cauliflowers, onions, tomatoes, runner beans, and peas of exceptional quality; Mr. O. Hartshorn, Thurmaston, was a good second; and Mr. W. Buxton staged excellent produce for third place. The competition for the prizes offered by Messrs Harrison and Sons, Leicester, for collections of ten varieties was spirited, and Mr. J. Hartshorn, Syston, and Mr. J. Cank were first and second with excellent produce.

### NON-COMPETITIVE EXHIBITS.

The miscellaneous contributions from nurserymen and seedsmen were numerous, meritorious, and interesting, and contributed very materially to the attractions of the exhibition. The following awards were made:

Gold Medal.—To Messrs. E. Webb and Sons, Wordsley, Stourbridge, for a large and tastefully arranged collection, comprising sweet peas and other annual flowers, and many other of the specialities for which the firm is famous; to Messrs. Harrison and Son, Leicester, for an attractive and interesting collection of cut flowers, vegetables, etc.; to Messrs. J. Wright and Sons, Market Place, Leicester, for a large collection of miscellaneous plants; to Mr. H. J. Rogers, Leicester, for an effective collection of flowering and fine foliage plants; to Mr. Charles Warren, Abbey Nurseries, Leicester, for a large and tastefully arranged collecton of cut roses, etc.

Silver Cup.—To Mr. W. Bentley, Belgrave, for a large and beautiful collection of decorative and rambling roses.

Silver Medal.—To Messrs. Aldersey and Marden, Malpas, for a fine collection of sweet peas; to Mr. Ellison, West Bromwich, for an interesting collection of cacti, etc.; to Mr. J. Wilkins, Ayleston, for an admirable exhibit of rock and alpine plants; to Messrs. G. and F. Hallam, Aylestone, Leicester, for cut roses; to Mr. George Underwood, Ayleston Park, Leicester, for a large and interesting exhibit of violas; to Messrs. R. Pringle and Co., Belvoir Street, Leicester, for an exhibit of carnations and miscellaneous plants.

## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE, JULY 30.

Present: Mr. E. A. Bowles, M.A., F.C.S. (in the chair), Messrs. E. M. Holmes, C. H. Hooper, A. Worsley, G. Wilson, J. T. Bennett Poë, J. O'Brien, A. W. Hill, and F. J. Chittenden (hon. secretary).

INJURY FROM SMELTER FUMES.—Dr. Voelcker reported that the leaves sent to him from the last meeting were damaged by smelter fumes, probably by hydrochloric and sulphur acids in the fumes. Zinc and manganese were also present.

HYBRID ORCHID.—Mr. O'Brien drew attention to a hybrid orchid, Brasso-cattleya x Thetis, shown by Messrs. J. Veitch. It was raised between Brassavola Digbyana and Cattleya Aclandiæ, but practically all the spotting of the latter had been eliminated by the cross.

CATERPILLARS ON HOPS.—Mr. E. M. Holmes remarked upon damage done to hops by the larvæ of the peacock butterfly, Vanessa Io, in Herefordshire; Vanessa C.-album frequently damages them, but he had no doubt whatever that, what was apparently a previously unrecorded occurrence, in this case V. Io was the culprit.

MIMULUS MOSCHATUS ALMOST SCENTLESS.—Mr. A. W. Hill showed specimens of Mimulus moschatus to draw attention to the almost scentless condition of the plants. It would appear that under certain cultural conditions this plant fails to produce the essential oil to which its characteristic odour is due in any great quantity.

DELPHINIUM MACROCENTION.—Mr. Bartholomew, of Reading, sent a specimen of this uncommon species of delphinium from his garden. It is a native of Uganda, and is somewhat poorly figured in "Bot. Mag.," tab. 8,151.

## Royal Lancashire Show.

At the exhibition recently held at Moor Park, Preston, special prizes, in the form of silver cups, were awarded to the most successful amateur exhibitors, resident in the County of Lancashire, as follows: For herbaceous and hardy cut flowers, to Mr. W. G. Eastham, Preston; for sweet peas, to the Rev. A. R. Tomlinson, Bolton-le-Sands; and for cut roses, to Mr. R. L. Garnett, Wyreside.

### Bishops Waltham.

JULY 31.

This society held its 38th annual exhibition in the grounds of the historical old Palace Ruins. A special feature of the show is its division for floral decorations, and the interest taken in the neighbourhood makes it an event of some importance.

It would be difficult to find a more beautiful table than that arranged by Mrs. E. C. Pern, Droxford, Hants. The competition was good, eight competing. The conditions in this class are unusual, as orchids, roses, and carnations are prohibited. The winner chose Melba sweet peas, gracefully arranged with Asparagus plumosus, croton leaves, Berberis purpurea, selaginella, and grasses, the colours being blended in an admirable manner. Miss Taylor, Bemerton Rectory, Salisbury, was a good second with pink larkspur and Francoa ramosa. In a similar class for a decorated dinner-table, where carnations or roses only were to be used, five competed, Mrs. A. R. Bide, Highlands, Farnham, winning with Rose Lady Hillingdon, and its own dark foliage; Mr. R. F. Bealing, Bassett, Southampton, was second with a good arrangement of pink carnations.

For a table arranged with sweet peas, Mrs. A. R. Bide was awarded first, and Mrs. W. Parvin, Wintershill, second; eight competed. Miss Taylor was first in the class confined to lady members only, with a neatly arranged table of clarkias; Mrs. Pern second with purple and white centaureas. Miss Taylor was also first with a beautifully arranged basket of wild flowers. Mrs. Bide used roses Mrs. A. R. Goodwin and Mrs. W. Massey for a basket of flowers—a handsome combination that won easily.

Mr. Bealing was first for a vase of carnations, using Enchantress; he was also first for a bowl of roses—Mdme. Abel Chatenay—a delightful exhibit; Mrs. A. R. Bide being second with Sunburst. Vases of sweet peas arranged for effect were very good, ten competing.

Cut flowers made a fine display, the sweet peas being numerous and of good quality. Dr. E. C. Pern was easily first for twelve vases; Mr. I. Peppler, Bishops Waltham, winning for six varieties. Messrs. J. Carter and Co.'s first prize was well won by the Misses Gladstone, Hampton Hill (gardener, Mr. W. Cooper). Robert Sydenham Limited's first prize went to Mrs. C. Macrae, Meonstoke House (gardener, Mr. H. Childs), for six varieties; and in Messrs. Toogood's class Mr. T. C. Wilson, The Thicketts (gardener, Mr. H. Barnes), was successful. Mrs. Macrae was well represented by eighteen varieties of hardy cut flowers, and won easily in this class, and also for twelve bunches. Mr. W. H. Myers, Swanmore House (gardener, Mr. G. Ellwood), made a good display with annuals, in six varieties, and there were numerous good entries. Cactus dahlias in bunches of four varieties were distinctly good, the Misses Gladstone being first among six entries. Roses were a fine feature, and Mr. Myers had a grand display of six varieties (rambling section), among them being Flower of Fairfield, Lady Gay, and Minnehaha.

Fruit was of fine quality. For four kinds, grapes excluded, Mr. Myers won with fine plums, peaches, nectarines, and a melon. Mrs. Macrae was first for four dishes of fruits grown out of doors.

Vegetables were well in advance of other years. Mr. Myers secured first award in the leading classes, winning the first prizes offered by Messrs. Sutton, Carter, Webb, Toogood, and Dickson and Robinson. Potatoes, cauliflowers, tomatoes, onions, peas, and carrots were all of fine quality. Mrs. Macrae again won easily for prizes offered by Messrs. Daniels Bros., and Messrs. E. Hillier and Son, Winchester.

Non-competitive groups made a grand display. The Locksheath Nurseries, Lim., staged fine carnations, delphiniums, and gladiolus, the latter being exceptionally good. Their fruit trees in pots caused much interest, Apple Warner's King being phenomenal. Mr. J. Lewis, Sunny Hill Nursery, Swanmore, had a collection of small decorative plants, including lilies, ferns, geraniums, etc. Messrs. Rogers and Son, Southampton, sent numerous varieties of cut roses.

### West Derby.

This society held its twenty-first annual show in the Rectory Grounds, on August 5, by the kind permission of the Rev. Percy Stewart, president of the society. The entries were fully up to the average, and in many cases the competition proved very keen.

Mr. G. Osborne, gardener to Drs. Tidsdall and Ingall, led for the group of miscellaneous plants, and the same exhibitor had the leading four stove and greenhouse plants, and won for two palms or cycads. For six begonias, three doubles and three singles, Mr. T. Young, gardener to Miss Crossthwaite, led, with Mr. C. A. D. Crossthwaite second. Mr. G. Osborne had the best pair of pelargoniums.

For six dishes of fruit, distinct, Mr. G. Osborne took the lead with good grapes and well-coloured peaches. For six dishes of hardy fruits, Mr. H. Osborne took the lead, with Mr. Leith as second. For two bunches of white grapes, Mr. H. Osborne, gardener to R. R. Heap, Esq., won with Muscat of Alexandria; Mr. T. Edgar, gardener to the Rev. Percy Stewart second. For the two bunches of black grapes, Mr. H. Osborne and Mr. T. Edgar were placed as named, and Mr. Leith led for the dish of tomatoes with fine fruits.

In the class for a collection of vegetables, nine varieties, Mr. G. Osborne proved the winner with a fine set, followed by Mr. Leith For six varieties Mr. T. Edgar and Mr. S. Mashford proved successful.

In the class for twelve bunches of hardy herbaceous cut flowers, for which a handsome silver challenge cup was offered as first prize, Mr. T. Edgar proved successful, with Mr. H. Osborne second. For twelve bunches of hardy or half-hardy flowers, Mr. H. Osborne led in a strong competition. In the single vase classes Mr. T. Edgar scored for cactus dahlias, Mr. G. Osborne for gladiolus, Mr. R. S. Shepherd for carnations, and Mr. G. Osborne for roses and sweet peas.

The arrangements were good, and the attendance large.

### Mid-Annandale Flower Show.

A capital show was held in the grounds of the Mid-Annandale Agricultural Society on August 2. Last year the Lockerbie Show was practically a sweet pea one, but this was combined with the horticultural section of the Mid-Annandale Society, the latter's show falling at Lockerbie this year. The result was a good one, there being a strong entry, although the disastrous weather for some time before the show prevented some of the exhibits from being forward. This was especially noticeable in the sweet pea section, for which a marquee was provided. The popular flower was well shown, Mr. G. L. Moffat, Lockerbie, being the leading winner. Other cut flowers were very good; roses, largely cultivated here; cactus dahlias, violas, antirrhinums, etc., being well shown.

Pot plants were limited in numbers, but were highly creditable. Grapes and small fruits were among the best of the fruit classes, and vegetables were generally of high quality, though the leeks and onions were small, the early date of the show accounting for this. Amateurs made a good competition, and their produce was most creditable.

Messrs. E. Fairbairn and Sons, Edentown, Carlisle; and Messrs. Palmer and Son, rose growers, Annan, sent good non-competitive stands. The principal winners in the gardeners' classes were: Mr. Jas. M'Donald, Dryfeholm; Mr. J. Henderson, Elmbank, Dumfries; Mr. J. Wilson, Summerville, Dumfries; Mr. J. Wilson, Eskrigg; Mr. J. Tweedie, Broombush, Lochmaben; Mr. G. French, Heltand Cottage; Mr. D. Whitelaw, Locharbriggs; Messrs. Adamson and Hunter, Lockerbie; Mr. W. Tweedie, Mouswald; and Mrs. Black, Mayfield.

### G.C.R. Employees' Flower Show.

Under the auspices of the Willesden and District Horticultural Society a successful flower show was held at Neasden on Bank Holiday, August 5. The society is mainly supported by the employees of the Great Central Railway Company, and with the enthusiasm that generally characterises the railwaymen in gardening matters the show was well supported both in regard to entries and attendance.

Among the leading classes for vegetables was one for a collection of ten kinds. This was well filled, and the quality of the produce, and the manner in which the vegetables were staged, were highly creditable. There were also a number of classes for flowers and plants, and quite a big entry for table decorations in which the wives of the members showed themselves adepts in the artistic arrangement of cut flowers. The children had a class for wild flowers, and right well it was filled, many comparatively scarce and very beautiful native plants being represented. Mr. W. A. Richardson, the courteous and able secretary, was well supported by an energetic committee of workers, and we were delighted to find the society doing really good work for the advancement of horticulture among the workers of the district.

In addition to the prizes awarded at the show, there was a keen competition for the best kept allotment and garden, and it may be said the skill, forethought, and careful management everywhere apparent showed that in and around Willesden and Neasden there are quite a colony of enthusiastic and able amateur gardeners.

## NOTES OF OBSERVATION.

**Browallia viscosa.**—This pretty Browallia, which was shown at the meeting of the Royal Horticultural Society on July 30, is not nearly so well known as Browallia speciosa major, to which it affords a very pleasing companion. The flowers of the newcomer are smaller than those of the other, and of a rich, deep blue colour with a conspicuous white eye, such as is to be seen in some of the bedding lobelias.—K.

**Arctotis grandis.**—This is one of the many attractively-flowered members of the composite family that we have received from the southern part of Africa within recent years. The fact that daisy-like flowers with long, firm stems are at the present day much appreciated has no doubt a good deal to do with this arctotis being generally distributed. It is usually treated as an annual, under which conditions it both grows and flowers freely. In common with other members of the same order, Arctotis grandis is not seen at its best during dull, wet weather; but, given a bright, sunny day, the marguerite-like blossoms, whose florets are almost white on the upper surface, but tinged with purple on the reverse, with a conspicuous blue disc, are very attractive.—W. is best protected by a frame.—K.

**The Stag's Horn Sumach** (Rhus typhina).—A striking specimen of this in the front garden of a small villa is much admired by passers-by, and well serves to show its value in such a spot, as, though quite tree-like in habit, it seldom outgrows its position, while, should this happen, it can be readily pruned back in the spring before growth commences. Apart from its handsome pinnate foliage, its attractiveness is, in late summer and early autumn, greatly enhanced by the bright crimson inflorescences which terminate every shoot. Although their colour is lost, these remain in winter after the leaves have fallen, and impart a singular appearance to the specimen. The decaying leaves in autumn are also brightly coloured.—W.

# HORTICULTURAL EDUCATION IN FRANCE.

(Continued from page 590.)

## Technical Instruction of Wine Growers.

The cultivation of the vine in France must be considered under two aspects:

1. Viticulture properly called—that is to say, cultivation for the production of wine, the drink which is most consumed in France.

This important part of French agriculture is taught in the agricultural schools, and more particularly in those belonging to the vine-growing districts. There are, besides, two special schools: The National School of Viticulture of Montpellier (Hérault), and the Practical School of Viticulture of Beaune (Côte d'Or).

2. Cultivation of grapes for the table.

This cultivation constitutes one of the principal branches of fruit tree growing; it is taught as an integral part of arboriculture.

Cultivation in greenhouses, which, during the last twenty years, has made remarkable progress in France, is taught and practised with success at the National Horticultural School of Versailles, where some special houses have been built concurrently with the greenhouses for forced peaches and other fruit trees subjected to this kind of cultivation.

In certain parts of French territory, more particularly in the districts of the North and neighbouring regions, the business of forcing-houses and grape-houses is most important and prosperous.

## Technical Instruction of the Small Country Cultivator.

Here again family education plays the principal rôle. The father transmits to his children some portions of ground fertilised by his labours, with materials patiently got together, with cattle raised and fed through his jealous care, with the modest pecuniary resources slowly and laboriously accumulated little by little, and also conveys the tradition of his work, which he takes the precaution to show to his posterity as soon as they are able to assist him in his modest but independent and noble task.

In France country families of this kind are very numerous; in fact, one can say that they constitute the majority of the population, the most healthy part, the most virile, and the vital strength of he country.

Though for a considerable time rather against professional instruction by technical classes and lectures, the small French cultivator now sends many of his children to agricultural schools, and more particularly, as is to be expected, to those which answer their requirements the best (practical schools, farming schools, elementary agricultural schools, etc.).

It is this source which provides the majority of the pupils at our great National Horticultural School at Versailles, and one can say of this school, which has acquired a place of honour in French horticulture, that it is really the work of the sons of our small cultivators—the children of our rural democracy.

## Horticultural Degrees.

The special official horticultural degree, the highest to be obtained in France, is that given by the National Horticultural School of Versailles at the end of the three years' course of study, and bears the modest title of Diplôme de l'Ecole Nationale d'Horticulture.

This degree is given by the Minister of Agriculture after severe examinations, which are more and more difficult to measure as the level of the instruction is advanced in this remarkable institution, and is worthy in all respects of the great and universal renown of French horticulture.

This diplôme, though without a high-sounding name, has a great horticultural value, because it is only given to those pupils who are truly worthy to receive it.

It is necessary to say that certain people consider this title too humble, and are of opinion it should be transformed to the more high-sounding title of "Diplôme d'Ingénieur Horticole."

Beyond the diplôme already mentioned, "Certificats d'étude" are given, the possession of which allows the holder to have a certain number of pupils who, although not passing very high in their examinations, have shown they have sufficient knowledge to enable them in some measure to do good practical work.

The certificated pupils taking the highest places in the school of Versailles can obtain from the Minister of Agriculture a course in horticulture, either in France or abroad.

The title of Stagiaire is very superior, and very much sought after by the pupils of the National School of Horticulture; it constitutes for them a powerful stimulant.

## Diplomas and Certificates, other than those given by the State.

The various French Schools of Horticulture and Arboriculture other than that of Versailles, and not depending upon the State, but of the towns and counties—as that of St. Mandé (Seine), of Villepreux and of St. Cyr (Seine and Oise), d'Hyères (Var), d'Antibes (Alpes-Maritimes), or even of congregations (Asile de Fleury-Meudon, Ecole St. Nicolas d'Igny, Asile Fénelon à Vaujours, etc.)—also give diplomas or certificates of special study, but these titles are hardly of any value outside the interested establishments.

It is the same thing with the organised lectures or classes organised by the societies, counties, municipalities, etc.

The means by which gardeners of all classes can obtain information and advice.

1. The Agricultural Bureaux to the Government.—No official service of information or advice exists in France, so far as horticulture is specially concerned. This has yet to be completely organised. It is true that the Minister of Agriculture has at his disposal two organs, viz.:—

1. The monthly report of the office of agricultural information.

2. The Minister of Agriculture's circular of information.

Moreover, besides the fact that horticulture has only what may be called an insignificant place here, these publications are only sent gratuitously to the principal officials of the Department of Agriculture.

Neither the one nor the other can then be considered as answering this service fully. It is almost exclusively by the horticultural societies, by means of their journals and reports, and by the horticultural press, that the information referred to can be obtained.

## Bulletins and Journals Published by Societies.

All the French horticultural societies, and all the horticultural unions, have special organs of their own, which are published for the use of members of those associations, and the importance and frequency of issue of each depends principally upon the resources at their command. As a rule they are published monthly; sometimes, however, it is only quarterly, and in exceptional cases every six months or else annually.

These organs are, before all other things, intended for the publication of the activities of the society, the proceedings of meetings, the accounts of shows and exhibitions, visits to growers, horticultural events of local interest in the particular district, etc.

Certain of these publications are remarkable for the interesting matter which they contain, the diversity of the subject treated, and the care and trouble with which they have been studied.

The most important of these publications, and at the same time the most interesting and reliable, is, without doubt, the "Journal of the National Horticultural Society of France," which appears very regularly on the 10th of each month, in an 8in. pamphlet, containing from 50 to 100 pages, and is sent to each of the members.

Note.—The volume for 1910 contains 1,003 pages, of which 100 pages contain advice upon different matters.

The importance of this publication has increased from year to year since the foundation of the society in 1827, and in a measure has helped to increase the latter's prosperity.

At the end of 1909 the society had: 16 members of honour, 11 patrons, 36 corresponding members, 9 perpetual members, 58 life members, 131 lady patronesses, 3,650 shareholders, 266 honorary members, 304 societies and corresponding institutions. In all 4,481 members, which shows an increase of 1,457 over the number in 1899.

The "Journal of the National Horticultural Society of France" contains copies of the official documents, the minutes of the proceedings of all meetings, the reports received upon the different exhibitions and shows, various reports from its delegates, original articles on technical subjects, studies of different questions concerning horticulture, etc.

Numerous photo prints interspersed in the text still further increase the interest in this remarkable publication.

Several provincial horticultural societies, as, for instance, those of Lyons, Nancy, Lille, etc., themselves also publish reports and journals which, without having the importance of the "Journal of the National Horticultural Society of France," have not less real interest in them above all from the point of view of local horticulture.

Finally, one ought to mention, while on this subject, the Report of the Association of Old Pupils of the National School of Horticulture of Versailles, an association founded in 1882, and which can boast, with only a few exceptions, almost all its former pupils.

This report has a permanent place amongst the members of the association and the school. It gives the news of the school and makes known the position of each of the members, the works, prizes, and the success of everybody. Open to all, it publishes studies and original articles which are the more appreciated because they are written by old comrades and friends. It also gives a register of deaths of its members. It appears at the commencement of each year, and is brought up to date by a monthly publication which, under the title of the "Monthly Bulletin and Circular," contains the changes of address, the marriages, births, deaths, the distinctions and honorary duties of the members, the news relative to the association and the school, the positions vacant, establishments to let, etc., etc.

This circular, which is of great interest to members of the association, is confided to the care of the Printing Committee, who acquit themselves very well and very conscientiously of their task, their services being rendered gratuitously. In the page of information each member has the right to an announcement of three lines, free, and for every additional line he has to pay 50c.

## French Periodicals on Horticulture.

However important, however well done or useful the "Journal of the National Horticultural Society of France" might be, it cannot contain sufficient for the intelligent and studious horticulturist who is anxious to keep himself up to date in all movements and progress in horticulture, and to increase his technical knowledge. The publication in question does not address itself to the great mass of cultivators of gardens, but only to those who form a part of this big society—that is to say, those who pay the subscription, which is quite high enough (20 francs for members who are shareholders, and 25 francs for ladies who are patronesses). It has not, then, in any true sense a popular and professional publication.

It is the same thing with regard to the reports and journals of other horticultural societies and particularly so in the case of the Report of the Association of Old Pupils of the National School of Horticulture at

Versailles, which answers a special purpose. Therefore the periodical horticultural publications play a very considerable part in the homes of French horticulturists. There is not a horticulturist worthy of the name but receives his journal on horticulture. From this publication he learns the latest horticultural news, and by this he is advised of all interesting topics of new plants, processes, and rules, also of special methods of culture, of exhibitions, shows, etc., etc.

### Tuition in Primary Schools.

Up to what point is "horticulture," as a subject, taught in the elementary and upper schools—that is to say, what is the amount of horticultural tuition given in schools in France?

Tuition in horticulture is given in primary schools of every kind. For a long time past people have been endeavouring to organise and develop the elementary teaching of agriculture generally and horticulture in particular.

The law relative to primary education of June 15, 1879, which only came into force in 1882, after the pedagogic reorganisation, prescribed and provided for the teaching of agriculture in the primary public schools of every denomination*.

At different times indications have been given to the teachers, by instructions from the Ministry of Agriculture, as to the methods to be followed, which, if they had been conscientiously and intelligently observed, would have produced all the happy results which they were capable of producing, and also would have had a most favourable influence over agricultural progress.

The lists of subjects of January 4, 1897, and the very clear and precise circular issued by the Minister which accompanied them and contained comments upon them, thus define the rôle of the teacher as regards the professional tuition, viz.: "The school ought to prepare the child intelligently for an apprenticeship to the profession which will make him a living, and also to give him a taste for it."

Horticulture, naturally, has its place in the official programmes both for schools for girls and those for boys. The instructions of the Minister and his various circulars, notably those of April 25 and May 12, 1898, specify these. These instructions say that "masters and mistresses should select some lessons which could be given in the garden."

With a view to stimulating the zeal of the masters and mistresses in the carrying out of this important part of their task, and in order to encourage them, the Government offers every year, by way of recompense, special prizes for those amongst them who receive special mention for their success in this respect. A decree of January 30, 1891, provided for the division of the departments into four sections, and the distribution takes place in one section each year.

In recommending masters and mistresses "to select some lessons which can be given in the garden," the Minister's instructions pointed out the course to follow in order to teach the first elements of agriculture.

It is, in fact, only by giving lessons in the school-garden that the master or mistress can give this tuition most efficaciously and instil into the child a taste for horticulture. Such, at least, is the opinion of most careful, thinking people regarding agricultural progress. This was the opinion expressed by M. Duruy, Minister of Public Instruction before 1870, concerning whom profound and lasting memories still remain in the Rue de Grenelle. M. Duruy founded the "Champ de l'Ecole," or school-field, and almost all of a series of measures in favour of the creation of this.

The idea was taken up and extolled after his death by many promoters of agricultural tuition—such as Pierre Joigneaux (the eminent plebian), Georges Ville (Professor at the Museum of Natural History), Maurice Gérard (Professor at the Rollin College), and more recently M. Réné Leblanc (Inspector-General of Primary Education), who, by meetings in the provinces, has done so much for agricultural education.

In a school-garden the master has a powerful element to aid him in popularising and teaching horticulture. He has here free lands and liberty of movement. The people living in the country, when they are at times in doubt as to their knowledge, say, of an agricultural matter, readily recognise in him a certain superiority in the knowledge of kitchen gardening—that is to say, in whatever relates to vegetables, trees, or flowers. Then, have not his lessons, demonstrations, and advice much more weight and efficacy than if they were given in the open field? Also, as every horticultural operation may be compared to an operation of cultivation on a large scale, one recognises what may be the result of an education intelligently imparted in a school-garden, where a child has to do various kinds of work, which does not overtax his muscles like much of the work in the fields would do.

The school-garden, and the theoretical and practical lessons which the teachers give therein, play an important rôle in the agricultural education of the child; and this has been so well done in France for some years past that an active and fruitful propaganda has been made upon this subject by the general inspectors, academy inspectors, horticultural societies, societies for education and popular instruction, giving particular advice, etc.

In approving this tuition the Ministerial decree of January 31, 1897, which modified that of January 18, 1887 (Article 256), relative to the certificates for primary study, suggested one or two of the questions chosen in the programme for an average course of instruction.

(To be continued.)

**Polygonum lanigerum.**—A hot, sunny summer shows this polygonum at its best, hence in some places, at least, it is decidedly less effective than last year. For all this, it is even now very conspicuous, especially where care has been taken to plant it in a position fully exposed to the sun, and it has not an excess of moisture at the roots. Its distinctive character consists in the extreme silvery nature of the long lanceolate leaves, which, under a brilliant sun, are almost dazzling from their whiteness. This polygonium is a native of the tropics of the old world, and has been grown here about twenty years.—W. T.

**British Influence in Canada.**—The following interesting facts and figures regarding immigration to Canada has just been issued by the Department of the Interior at Ottawa. It appears that during the last 11¾ years 2,118,712 immigrants have entered Canada. Of these the British numbered 823,188; Americans, 752,120; and from Continental countries there came 543,404 persons. The distribution of this movement among the provinces of Canada has been approximately as follows: Western Canada absorbed the majority; 954,000 having settled in the three prairie provinces and 240,000 in British Columbia. In Eastern Canada, Ontario received upwards of half-a-million newcomers; Quebec, 300,000, and the Maritime Provinces, 100,000. During the fiscal year which ended March last immigration touched its highest point with 354,237, of which 138,121 were British and 133,710 from the United States, with 82,406 coming from other countries. Immigration from the United States continues to be a most interesting and significant factor. There is no doubt, considering the class from whom these immigrants are drawn, that they, with the purely British element, will provide that assimilative force necessary to impose British traditions and institutions upon the large contingent of immigrants drawn from other and possibly more backward races coming into Canada.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

MILDEW ON OUTDOOR VINES.—F. S., Brighton: Some outdoor vines here are suffering from a very bad attack of mildew. Please tell me how best to cure this disease. —Dust the affected leaves with flowers of sulphur, or spray with a solution of potassium sulphide; half an ounce of potassium sulphide, dissolved in a little warm water, and added to a gallon of soft water, will make a good fungicide for mildew.

ONION MILDEW.—C. G. H., Derby: I am sending you specimens of onions that appear to be suffering from a fungus disease; perhaps it is Onion Mildew, but I have no experience with this trouble.—The onions are badly mildewed, and steps should at once be taken to stop the disease. There are two good methods. One is to dust the plants with a mixture of powdered quick-lime and flowers of sulphur, using twice as much lime as sulphur. The other is to spray with sulphide of potassium. It will be necessary to use these remedies every week or ten days, according to the weather. Do not allow badly diseased onions or broken and affected onion foliage to remain on the ground, but burn them at once, because cleanliness in this direction will save a great deal of trouble in the future. Mildew-infected

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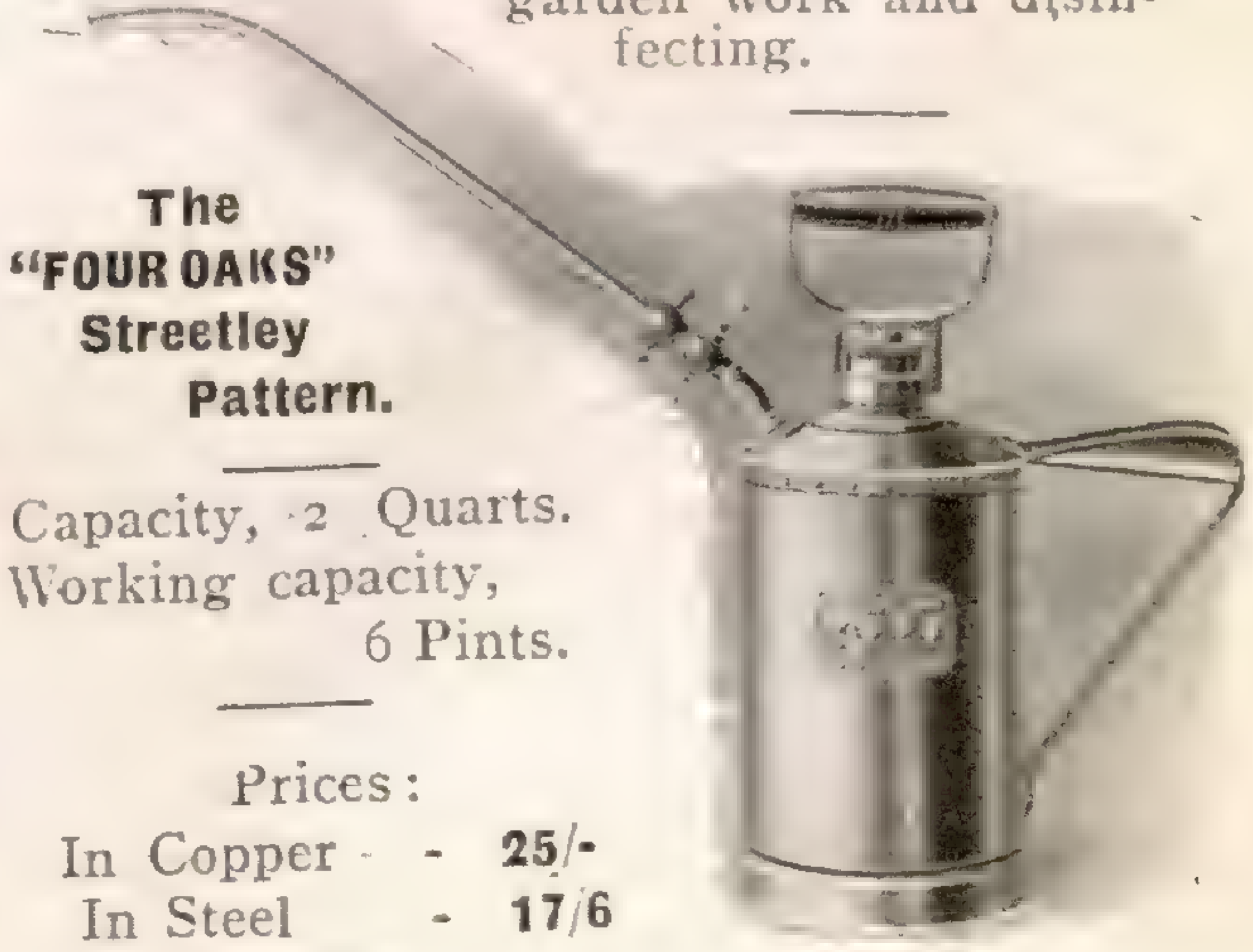

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* A list of subjects can be had at Delalain's Library, Paris, or of the Horticultural Library, 84bis, Rue de Grenelle, Paris, VIIe., who undertake to procure these for anyone requiring them.

onion leaves, if allowed to rot on or in the ground, give rise to resting spores, which have a remarkable vitality, and are able to set up a fresh attack if their host plant, the onion, is grown in the same soil within two or three years.

BUD DROPPING IN SWEET PEAS. — J. E. T., Chesterfield: Can you tell me why my sweet peas do not develop properly beyond the bud stage? They appear to be quite healthy, and the buds look well until it is time for them to open, when they turn yellow and fall. I am enclosing a few specimens for your inspection. The plants are very robust, about six feet high, and the leaves are deep green. They have had only farmyard manure, trenched in about three feet deep, two months before planting time, but they have been watered once with weak liquid manure. The ground had previously been occupied by apple trees, which were dug out last year.—Judging from the appearance of the stems and foliage of the specimens sent, the soil in which the sweet peas are growing needs a considerable addition of lime and potash, both of which are very necessary to the successful cultivation of sweet peas. It is rather late in the season to do anything that will be of very great benefit to the plants, but sulphate of potash used at the rate of 1oz. to each gallon of water, given once a week at the rate of two gallons per yard run, may be of service. Give a good dressing of lime between the rows, and lightly prick it in with a fork.

ROCK TOBACCO.—L. N. N., Maidenhead, asks whether we, or any of our readers, know the Rock Tobacco, and can say whether it is hardy or not?—The Rock Tobacco is Primulina Tabacum, a low-growing Chinese perennial of doubtful hardiness. It has purple, primula-like flowers, and if the fresh leaves are gently drawn between the hands they exhale a strong tobacco-like fragrance. If any of our readers have had experience with this plant, we shall be glad if they will send us a note concerning its cultivation.

SOLUTIONS OF COPPER SULPHATE. —M. E. F., Saffron Walden: I shall be obliged if you will inform me how to prepare solutions of copper sulphate, such as are used for spraying farm crops to check certain weeds.—To make a 2 per cent. solution of copper sulphate, 8lb. should be dissolved in 40 gallons of water; for a 4 per cent. solution, 16lb. in 40 gallons of water. To prepare a 15 per cent. solution of sulphate of iron, 60lb. must be dissolved in 40 gallons of water. In either case 40 gallons of solution will suffice for an acre of the cereal crop. To dissolve the sulphates of copper or iron the powdered material should be placed in a bag and suspended in the water by tying the top of the bag to a rod placed across the mouth of the barrel or tub containing the water. Warm water and frequent movement of the bag will aid solution.

## NAMES OF PLANTS.

S. S., Lewes.—Polygonum orientale.

A. P. C., Hereford.—Periploca græca.

G. W. D., Leatherhead. — Evidently a lælio-cattleya, and a very poor form.

R. P., Saltaire.—1, Symphitum officinale; 2, Silphium perfoliatum; 3, not recognised.

T. W., Beverley. — 1, Alnus glutinosus quercifolia; 2, a striped variety of Mirabilis Jalapa; 3, Nothoclæna sinuata.

G. A. G., Royston.—1, Rheum palmatum; 2, Vitis labrusca; 3, Catalpa bignonioides; 4, Carpinus Betulus—the Common Hornbeam.

M. E. H., Keighley.—1, Fuchsia triphylla; 2, Browallia speciosa major; 3, Kalanchoe flammea; 4, Panicum plicatum; 5, Curculigo recurvata; 6, Saintpaulia ionantha.

## GARDENING ENGAGEMENT.

Mr. W. E. Jones, previously for four years gardener to Alfred A. Thorn, Esq., Harcourt, Linslade, has been appointed gardener to W. Gravelly W. Willis, Esq., 25, North Street, Leighton Buzzard.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

The demand is but moderate, and there are ample supplies to meet it, although some outdoor flowers are suffering from the continued wet and cold weather.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Achillea | per doz. bun. | 1 6 | to | 2 0 |
| Adiantum cuneatum | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Asters, white | per doz. bun. | 1 0 | | 2 6 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 6 | | 2 6 |
| ,, | per doz. bun. | 10 0 | | 14 0 |
| ,, Malmaison | per doz. | 3 0 | | 8 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum | per doz bun. | 0 9 | | 1 0 |
| Coreopsis | per doz. bun. | 0 6 | | 1 0 |
| Cornflowers | per doz. bun. | 0 9 | | 1 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 4 0 | | 6 0 |
| Eucharis | per doz. | 2 0 | | 3 0 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 0 9 | | 1 0 |
| Gardenias | per doz. | 2 0 | | 3 0 |
| Gladiolus | per doz. | 1 0 | | 4 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 6 | | 2 0 |
| ,, longiflorum | per doz. | 1 0 | | 2 0 |
| Lily of the Valley | per doz. bun. | 8 0 | | 15 0 |
| Marguerites | per doz. bun. | 1 0 | | 3 6 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Myosotis | per doz. bun. | 3 0 | | 4 0 |
| Odontoglossums | per doz. blms. | 1 6 | | 3 6 |
| Pelargoniums | per doz. bun. | 2 0 | | 6 0 |
| Poppies | per doz. bun. | 1 0 | | 1 6 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 2 0 | | 3 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Statice | per doz. bun. | 3 0 | | 4 6 |
| Stocks | per doz. bun. | 2 0 | | 3 0 |
| Sweet Peas | per doz. bun. | 1 0 | | 3 0 |
| Sweet Sultan | per doz. bun. | 1 0 | | 3 0 |
| Tuberoses | per doz. | 0 4 | | 0 6 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

This being a holiday week business has been rather quiet.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, Australian | per box | 6 0 | | 10 6 |
| ,, English | per bush. | 2 6 | | 8 0 |
| Apricots | per ½-sieve | 6 0 | | 7 6 |
| Bananas | per bun. | 4 6 | | 13 0 |
| Cherries | per ½-sieve | 5 0 | | 12 0 |
| Currants, Black | per ½-bush. | 8 0 | | 12 0 |
| ,, Red | per ½-bush. | 4 0 | | 8 0 |
| Figs | per doz. | 1 6 | | 6 0 |
| Gooseberries | per ½-bush. | 2 0 | | 5 0 |
| Grapes, English | per lb. | 1 0 | | 4 0 |
| ,, Belgian | per lb. | 0 6 | | 1 0 |
| ,, Guernsey | per lb. | 0 10 | | 1 6 |
| Greengages | per box | 0 9 | | 1 3 |
| Lemons | per case | 8 0 | | 32 0 |
| Melons | each | 0 6 | | 3 0 |
| ,, Cantaloupe | each | 2 0 | | 6 0 |
| Nectarines | per doz. | 5 0 | | 21 0 |
| Oranges | per case | 10 3 | | 30 0 |
| Peaches | per doz. | 4 0 | | 20 0 |
| Pears | per bush. | 3 6 | | 6 0 |
| Pears, French | per box | 3 0 | | 4 6 |
| Pineapples | | 2 0 | | 4 6 |
| Plums | per ½-sieve | 2 0 | | 5 0 |
| Raspberries | per doz. pun. | 3 6 | | 7 6 |

### Vegetables.

Excellent supplies are forthcoming, and the demand is steady.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 0 | to | 2 6 |
| Asparagus | per bun. | 2 0 | | 10 0 |
| Aubergines | per doz. | 2 0 | | 3 0 |
| Beans, Guernsey | per lb. | 0 4 | | 0 8 |
| ,, Runner | per bush. | 2 6 | | 3 6 |
| Beet | per bush. | 1 6 | | 3 0 |
| Cabbage | per tally | 3 0 | | 6 0 |
| Carrots | per doz. bun. | 2 0 | | 3 0 |
| Cauliflowers | per doz. | 1 0 | | 3 0 |
| Cucumbers | per doz. | 1 6 | | 3 0 |
| Endive | per doz. | 1 6 | | 3 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per score | 0 9 | | 1 0 |
| Marrows | per doz. | 1 0 | | 2 0 |
| Mint | per doz. bun. | 2 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per case | 6 0 | | 8 0 |
| Parsley | per doz. bun. | 2 0 | | 3 0 |
| Peas | per bush. | 3 6 | | 9 0 |
| Radishes | per doz. bun. | 0 9 | | 1 6 |
| Rhubarb | per doz. bun. | 2 0 | | 3 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 3 0 | | 3 9 |
| ,, Guernsey | per doz. lbs. | 3 0 | | 3 3 |
| Turnips | per doz. bun. | 2 0 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

## LONDON POTATO MARKETS.

Larger supplies have arrived, and prices have fallen somewhat.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per cwt. | 4 0 | to | 5 0 |
| Kents | per cwt. | 3 9 | | 4 6 |
| Lincolns | per cwt. | 3 9 | | 4 6 |
| Blacklands | per cwt. | 3 0 | | 3 9 |

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| 1912. JULY 28 TO AUG. 3. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| July 28—Sunday | 6 24 | 60 | 57 | 68 | 58 |
| ,, 29—Monday | 0 30 | 56 | 56 | 62 | 55 |
| ,, 30—Tuesday | 7 54 | 61 | 56 | 67 | 53 |
| ,, 31—Wednesday | 0 18 | 57 | 55 | 63 | 49 |
| Aug. 1—Thursday | 8 36 | 58 | 53 | 65 | 51 |
| ,, 2—Friday | 7 30 | 57 | 53 | 65 | 45 |
| ,, 3—Saturday | 1 20 | 58 | 54 | 65 | 41 |
| Means | (total) 32 32 | 58 | 55 | 65 | 50 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| 1912. JULY 28 TO AUG. 3. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| July 28—Sunday | 0·18 | 67 | 64 | 61 | 54 |
| ,, 29—Monday | 0·20 | 65 | 64 | 61 | 50 |
| ,, 30—Tuesday | 0·04 | 63 | 63 | 61 | 46 |
| ,, 31—Wednesday | 0·19 | 62 | 63 | 61 | 41 |
| Aug. 1—Thursday | — | 62 | 62 | 61 | 46 |
| ,, 2—Friday | 0·06 | 61 | 62 | 61 | 37 |
| ,, 3 Saturday | 0·24 | 61 | 61 | 61 | 36 |
| Means | (total) ·91 | 63 | 62 | 61 | 44 |

## CATALOGUES RECEIVED.

J. R. PEARSON AND SONS, LOWDHAM, NOTTS. —A first-rate catalogue of bulbs, well arranged, capitally illustrated, descriptive, and instructive.

HERD BROS., PENRITH.—A handy list of the more popular bulbous flowers, together with a catalogue of roses, trees, and shrubs.

WILLIAM BULL AND SONS, CHELSEA.—A bulb list in which the varieties are rigidly selected, and yet collections for special purposes are a feature.

## FORTHCOMING ENGAGEMENTS.

SUNDAY, August 11.—Bruges International Horticultural Exhibition; open until August 18.

MONDAY, August 12.—United Horticultural Benefit and Provident Society.

TUESDAY, August 13.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "The Construction of the Wisley Rock Garden," by Mr. Pulham, jun.; Scientific Committee at 4 o'clock.

Clay Cross Horticultural Society.

The Gladiolus Society will hold an exhibition at the Royal Horticultural Hall.

WEDNESDAY, August 14.—East Anglian Horticultural Club.

Lambourne Horticultural Society.

Harrietsham Gardeners' Society.

THURSDAY, August 15.—Malton Flower Show,

FRIDAY, August 16.—Northern Carnation Show.

TUESDAY, August 20.—Aynho Flower Show.

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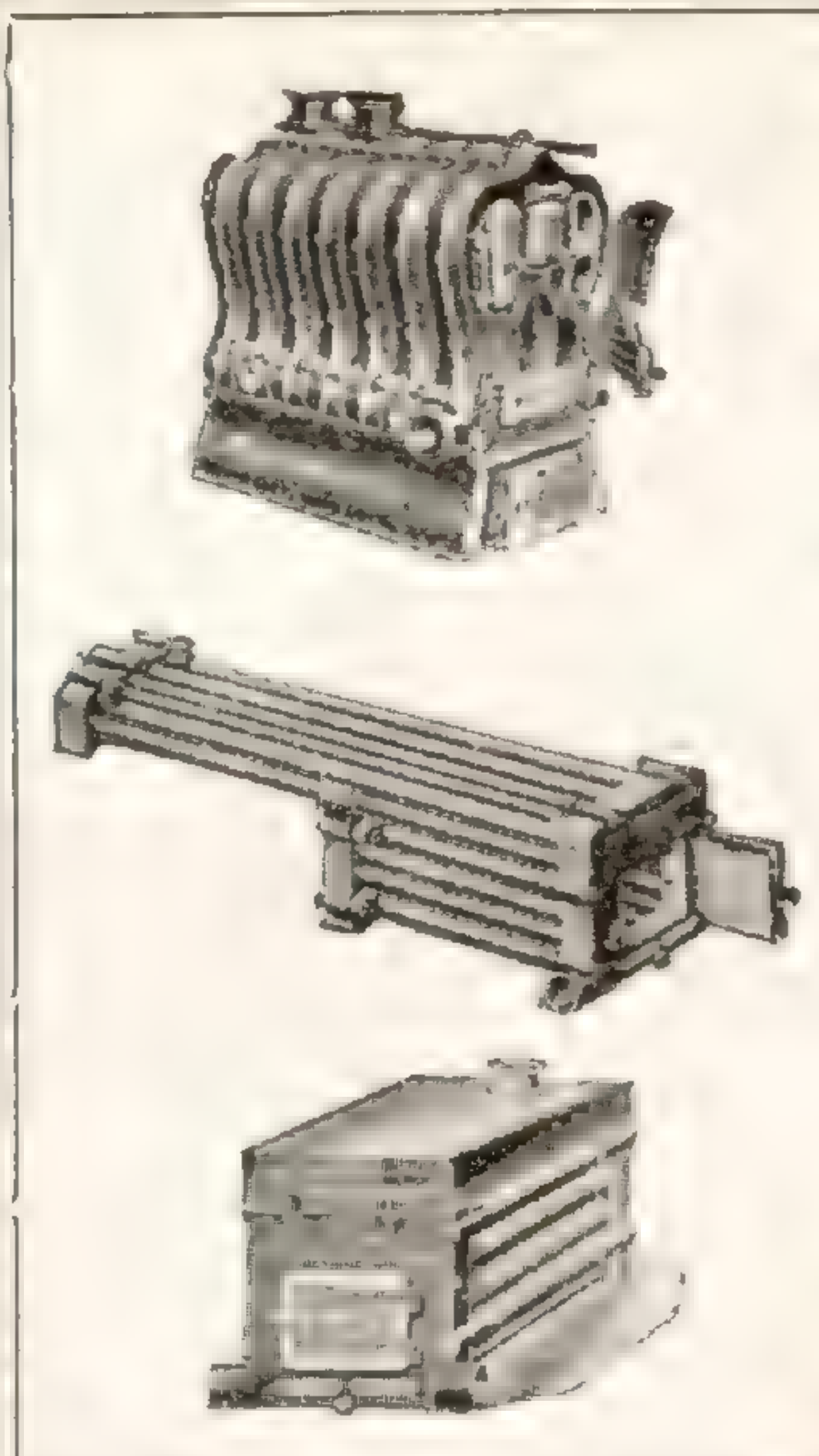

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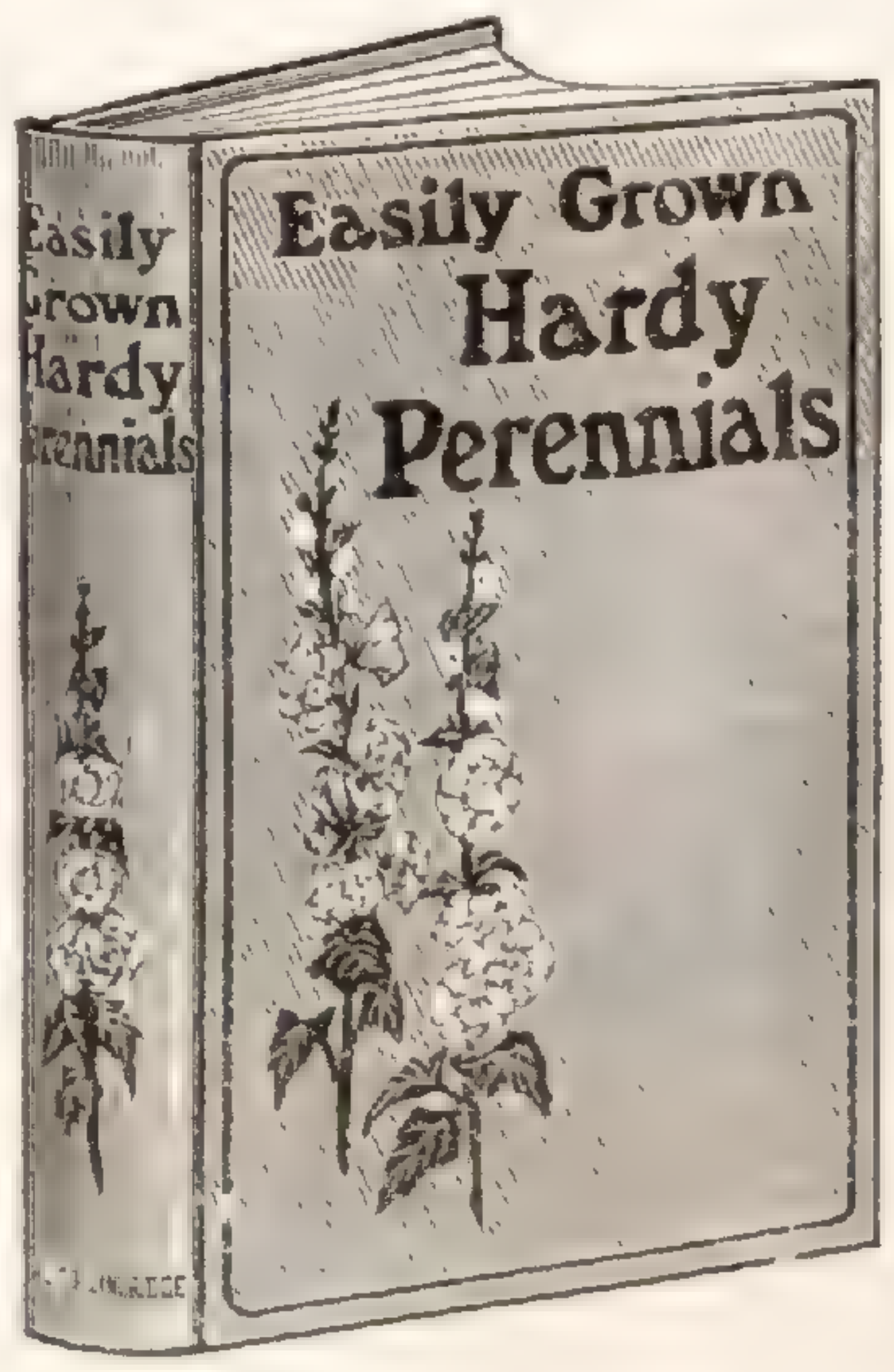

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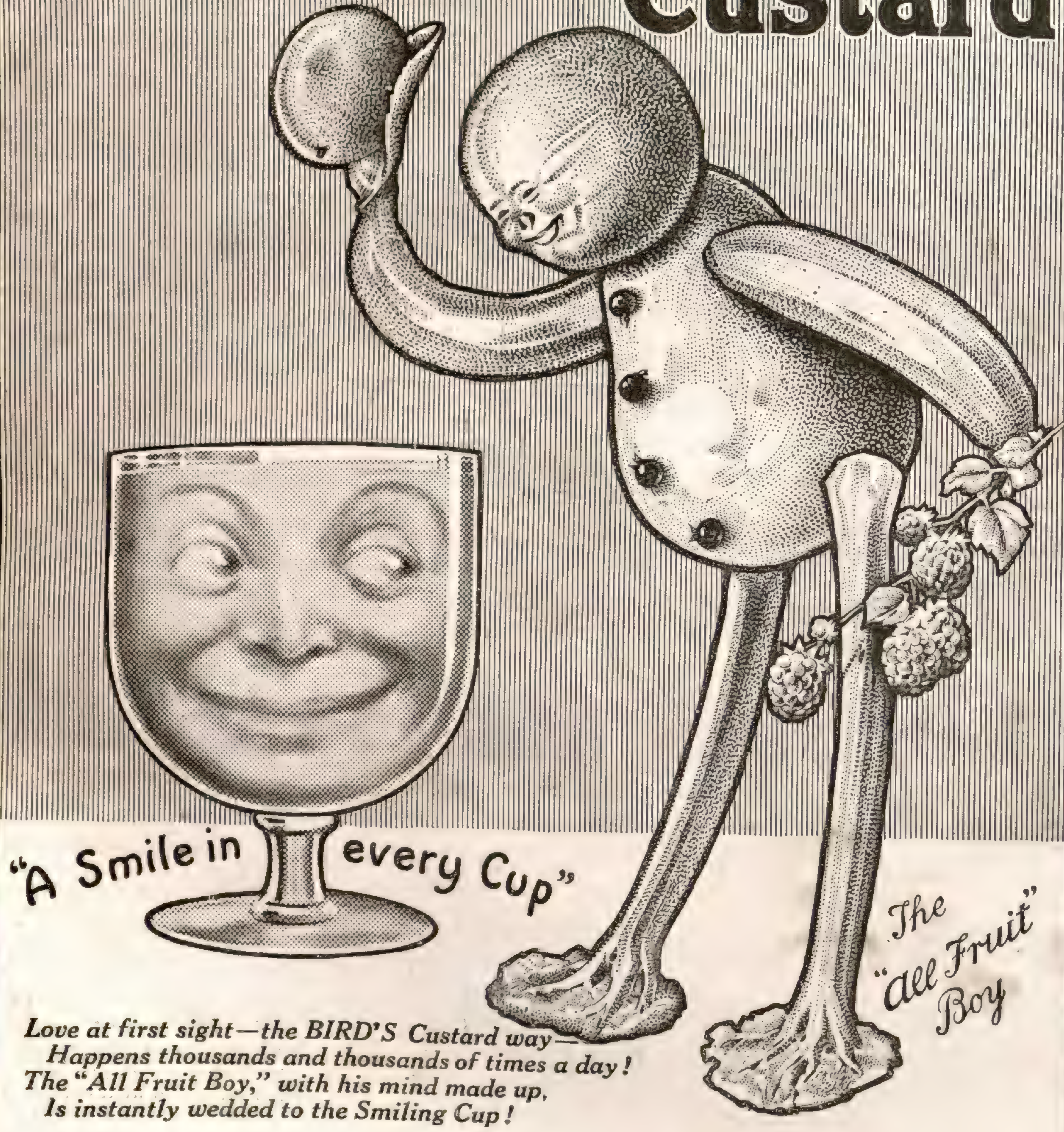
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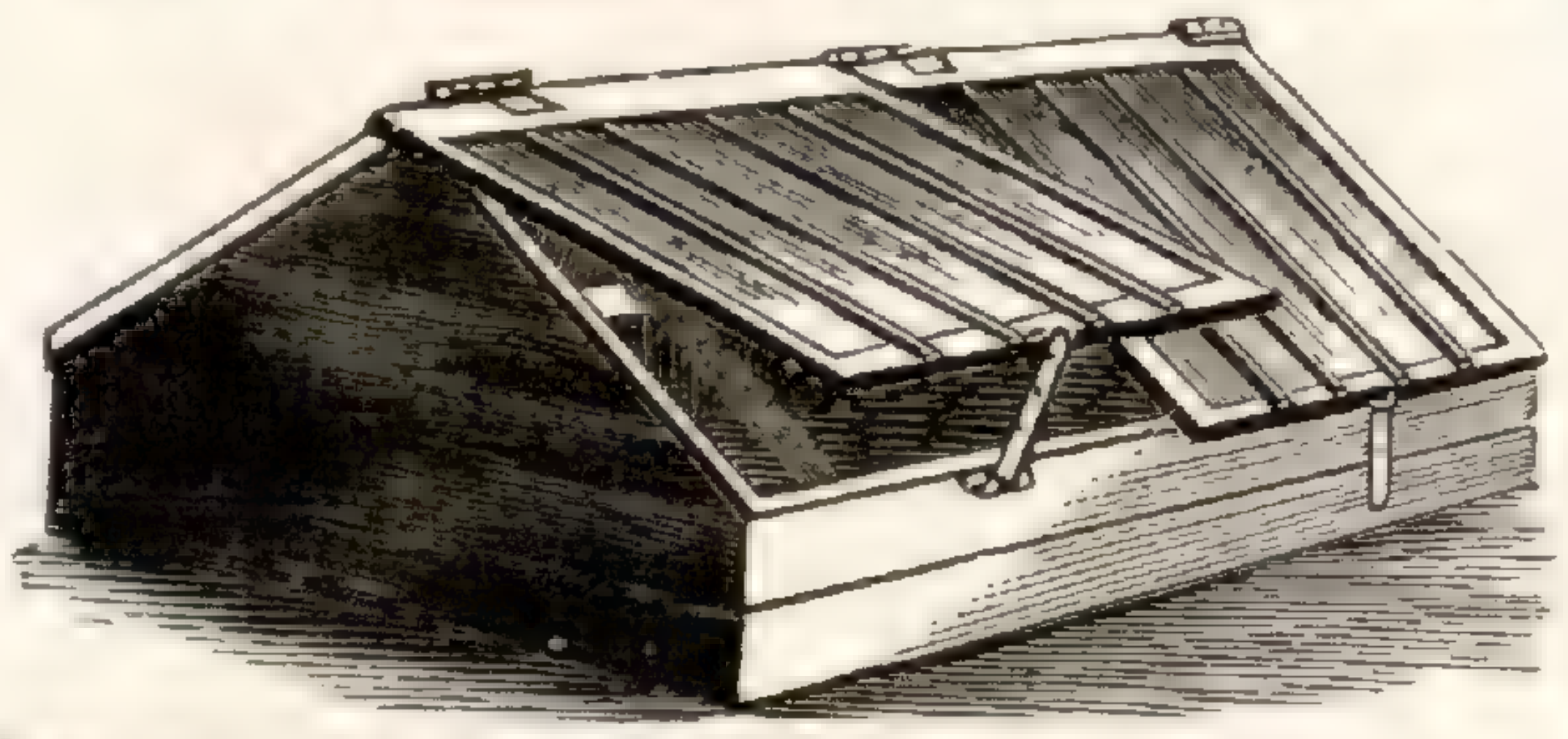

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VOL. LV.—No. 3,068. SATURDAY, AUGUST 17, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Proliferation.

The term proliferation (from proles, offspring, and fero, I bear) might, from its construction, be applied, of course, to all forms of life which produce living offspring directly, but in plants it is confined to those which produce offspring by buds engendered in unusual places. Thus most dicotyledonous trees, that is, those whose seeds produce two primary leaves or cotyledons, bear buds in the axils of their leaves, i.e., in the angle where the leaf-stalk springs from the twig or branch which bears it, but we do not call such trees proliferous, even though such buds may be induced to become independent plants by proper treatment. In numerous ferns, however, we find buds engendered on the upper, or more rarely, on the under, surfaces of the fronds. On Asplenium bulbiferum, for instance, a very common fern for room decoration, young plants appear in considerable numbers, first as small, scaly pimples on the subdivisions of the fronds, and then, under congenially damp conditions, as well-developed youngsters with fronds several inches long, and so precocious that they, too, break out into another generation while still attached, and this may even go a step further and produce a third. Several members of the same genus do the same thing in varied degrees, but the genus is a large one, and the majority present no such phenomena. Some species only assume a proliferous character in conjunction with abnormal variation, the normal type presenting no trace of it. Thus it is with the Polystichum angulare, in which proliferation is developed to the greatest extent in conjunction with reduced and very acutely pointed ultimate segments (acutilobum), though it also occurs in many other abnormal variations on different lines, usually near the bases of the fronds. Among the woodwardias we have two different forms of proliferation. W. radicans produces one or two robust bulbils near the end of each front. These develop while still attached into fair-sized plants, and consequently gradually weigh down the frond tips until they reach the soil, well away from the parent rootstock. This plant, therefore, represents an exaggerated Walking Fern, as the small-growing American species, Camptosorus rhyzophyllus, is called, owing to a similar habit of growth and distribution. W. orientalis, on the other hand, has its fronds profusely dotted over with small plants, produced on pimple lines as with the asplenium above described, but these are very loosely attached, and, having formed two or three tiny round fronds, fall off, sail to the ground, and root themselves fairly freely. The asplenium youngsters, on the other hand, have to wait until the old frond so far decays as to fall to the ground, and so bring some of the plantlets into contact with it. In all these cases, the bulbil plants produced have incipient roots at their bases, and, so far, are perfect little plants. An exotic, but practically hardy lastrea, L. vivipara, has the peculiar and rare faculty, as a species, of producing such bulbils on the frond backs in conjunction with the spore heaps. This is also done by some of our plumose varieties of Lady Fern (Athyrium filix fœmina), but these are very abnormal in other respects. Proliferation, however, may be induced artificially in cases where otherwise it would not appear. Thus the leaves of some plants, the begonias, for instance, possess the peculiar faculty of producing buds, i.e., of becoming proliferous, if they be wounded by cuts through their substance, and then layered. The wounds then heal, and the marginal cells develop buds round the edges, thus affording an easy means of propagation. Hyacinths and other bulbous plants bear proliferous buds if their bases be hollowed out, and the edges of their latent foliage is thus exposed; the principle being the same as in the case of begonia. The Hart's-tongue fern has produced proliferous sports which bear bulbils on the front surfaces or the stalks, such phenomena being confined to abnormal varieties, but all the numerous forms of this protean species, as well as the species itself, possess a latent proliferousness by virtue of which the old frond basis which build up the caudex, can produce bulbils ad libitum if severed and close cultured. On a base an inch long we have counted no less than thirty-six developed plantlets. It has also been demonstrated that even the severed roots of many plants are capable of producing buds under culture, and in point of fact, it seems fairly certain that active plant cells, wherever situated, contain all the essentials of plant creation, and are capable, under certain circumstances, of assuming the function of reproduction if the normal course of that function be obstructed. The materials which it is the function of the leaf to manufacture and distribute thereafter to the general plant system, fails, by the detachment of the leaf, to find its natural channel, and therefore is seized upon by the cells in the vicinity, at the point of least resistance, viz., the wounded edge, as pabulum for a new plant or plants, hence the bulbils. Proliferation, as we have said, may be induced in roots by severance, but it really occurs normally in many instances where tubers are formed. Thus, in the potato each tuber is practically an underground proliferous growth of one or more buds which the foliage above ground has furnished with, thanks to culture and selection, an abnormal amount of nutritive, starchy material. Mere fleshy roots, however, such as the turnip, carrot, etc., devoid of such lateral buds, do not belong to the proliferous category, and, as a general rule, it may be stated that the term "proliferous" is only applied to aerial bud-producing plants, usually on abnormal lines.

MR. SAMUEL GORDON.

**Mr. Samuel Gordon,** whose portrait is given herewith, has for about fifteen years had charge of the gardens at Monreith House, the Wigtownshire residence of Sir Herbert Maxwell, Bart. As becomes one qualified to successfully carry out the duties pertaining to an establishment where hardy subjects are almost exclusively tolerated, it is needless to say that Mr. Gordon, though yet comparatively a young man, has an extensive knowledge of herbaceous and rock plants, trees and shrubs, which, for the most part, thrive remarkably well in the genial climate for which this portion of Scotland is noted. In recent years the grounds surrounding the mansion of Monreith have been largely remodelled, and the various plants so arranged that each enjoys, as far as possible, the advantages of situation, as that of the maximum amount of shade or sunshine, shelter or moisture, according to their respective needs. Away from home Mr. Gordon is well known as a very successful cultivator of fruits and vegetables. At county exhibitions he has been well represented, and, encouraged by success near home, he has sought honours farther afield, notably at Edinburgh, where, at the autumn gatherings of the Royal Caledonian Horticultural Society, conspicuous good fortune has attended his efforts. Among his successes grapes have been prominent, particularly such kinds as Alicante, Alnwick Seedling, Muscats of sorts, and Black Hamburgh. For the latter Mr. Gordon has on two occasions at least been awarded (over and above the schedule prizes) the special medal for high culture which the society instituted some years ago to encourage a higher standard for this most popular grape. The Williams' Memorial Medal for general excellence of produce was also awarded a short time ago to Mr. Gordon at this society's autumn exhibition. Limits of space forbid further detailed reference beyond the statement that at Edinburgh last September, Mr. Gordon gained premier honours for a collection of vegetables (twelve varieties), which were considered by experts to have been of very superior merit. Though essentially an industrious man, and devoted to horticulture and its pursuits, Mr. Gordon spares time for requisite and healthy recreation. Formerly this took the form of cricket, but latterly the Scottish game of bowling has taken his attention, and the change has been to the great advantage of the Portwilliam Club, among whose members Mr. Gordon's name is generally prominent when important contests have to be decided.

**R.H.S. Grapes for Shrewsbury Fete.**—We understand that the Royal Horticultural Society proposes to exhibit about forty bunches of grapes at the Shrewsbury Floral Fete, on Wednesday next. There is now an excellent collection of grapes at the Society's Gardens, Wisley, and many of the varieties are of excellent flavour, and yet comparatively unknown. The collection, to consist of about twenty varieties, should prove very interesting and instructive.

**New Official Guide to Kew.**—The most recent of the publication associated with the Royal Botanic Gardens, Kew, is the "Popular Guide," which has made its appearance on our table within the past few days. Popular in style, as well as in name, this new guide bears unmistakable evidence of good work, and should prove of much value to visitors who take something more than a superficial view of the gardens and their many occupants. It may prove useful to those who regard the gardens as merely an attractive place of public resort in directing attention to the great importance of the work that is being done within their boundaries, and the splendid services they have rendered in connection with the development of tea culture and other great industries in India and the Colonies. The guide is accompanied by an excellent map, and in the earlier pages are given a description of the main features, and a historical sketch extending over the period which has elapsed since Richmond Lodge, which at one time stood in the Old Deer Park of Richmond, was the favourite residence of George II. and Queen Caroline. The functions of Kew are briefly, yet clearly stated, and then follow descriptions of the several departments of the gardens, these latter occupying between seventy and eighty pages. Although primarily provided as a guide to visitors to the gardens, it will be found useful to those who may wish to have a clear idea of the more characteristic features of the gardens, and of the several collections in the open and under glass, and have but few, if any, opportunities of visiting Kew. The guide is published at sixpence, and may be obtained through the booksellers in the usual way.

**National Hardy Plant Society.**—The second annual conference of the National Hardy Plant Society will be held at Shrewsbury on the second day of the show, Thursday, August 22, at the George Hotel, at 3.30 p.m. Mr. T. W. Sanders, F.L.S., will read a paper on "Are Flower Shows Advancing Hardy Plant Culture as they might and ought to do?" There will also be a discussion on the herbaceous species and varieties of the genus veronica. All visitors to the show interested in hardy plants are cordially invited. Certificates will be awarded to new plants of sufficient merit. Particulars of any plants entered should be sent to the secretary, Mr. F. Bouskell, Market Bosworth, Nuneaton, on or before the 20th inst.

**A New Colonial Fruit Farm.**—We understand that the Trade Orchard Company, of St. John, New Brunswick, has taken another step towards the establishment of a model fruit farm in the province. At a recent meeting of the board of the company it was decided to buy a farm of about fifty acres, located within sixteen miles of the city, and a short distance below Brown's Flat. The land is said to be ideal for the growing of apples and other similar fruits. The land is at present under crops, but it will be taken over early in the autumn, and preparations will be made for setting out about 2,000 trees next spring.

**Relation of Light to Advance Growth.**—The recently-issued "Transactions" of the Royal Scottish Arboricultural Society affords evidence that Wiesner's researches on the Lichtgenuss of plants are being followed up by investigators in forestry work. Wiesner's term may, observes "Nature," be rendered as photic ration, or the ratio between the intensity (i.) of the light actually falling upon a plant or its parts, or its habitat, and the intensity (I.) of full daylight at the same time. The ratio between the two intensities (i. : I.) is the specific photic ration. In a paper on the relation of light intensity to advance growth—that is, to the trees which have sprung up in openings in the forest, or under the forest canopy, before regeneration fellings were commenced—Mr. G. P. Gordon, B.Sc., describes observations made by him on oak and beech forests. Graphic representations are given, in which the number of seedlings per 0.8 square pole for each species of tree is plotted vertically, while the specific photic ration is plotted horizontally. The curve for oak indicates that, as the light intensity increases, the number of seedlings per unit area of the advance growth increases, reaching a maximum when the light intensity is one-fourth that of full daylight, and that large variations in light intensity are associated with comparatively small changes in number of seedlings. The curve for beech is very different, there being a comparatively large variation in seedling number for a small variation in light intensity, while the maximum is reached at one-fortieth the full daylight intensity. The author concludes by pointing out the practical importance of the Lichtgenuss method in forestry.

**State Aid for Flower Shows.**—With the exception of a few instances in Ireland, State aid is rarely granted in any form to flower shows in the United Kingdom, but on the Continent considerable financial and other help is extended to the managing body of the larger efforts, for the purpose of encouraging horticulture. At Bruges, the International Exhibition being held this week is being assisted to the extent of something like £1,000 from the State and Provincial Governments, and the site of the show, as well as the laying-on and supply of water and electric light, are provided by the Corporation. All this is done because horticulture is regarded as an important industry, and worthy of all possible encouragement.

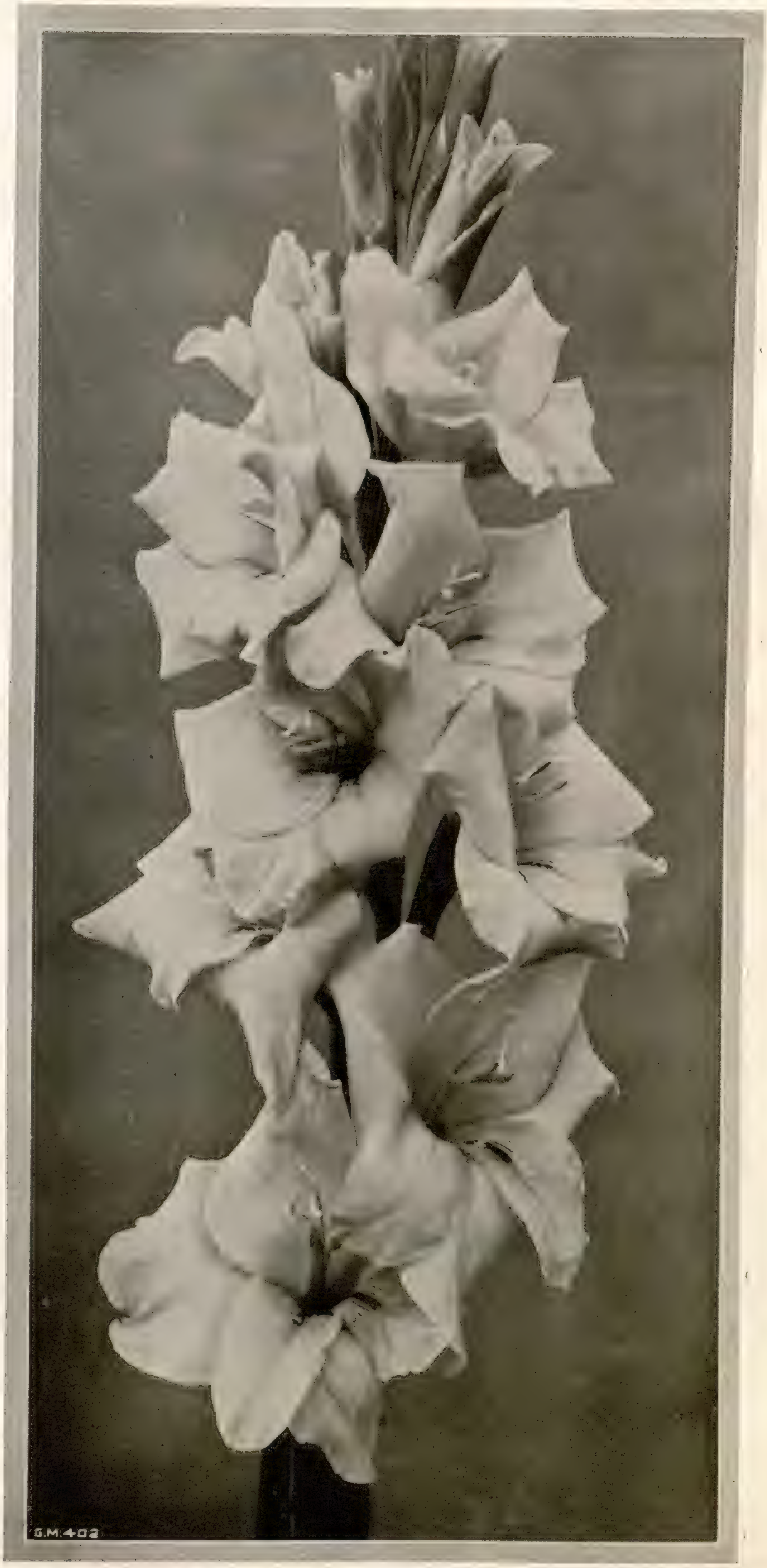
**The Potato Crop.**—The potato disease has made its appearance in a considerable number of the English counties; and, although it has not as yet done any considerable amount of damage to the crop, it has reduced its value somewhat. It has, perhaps, been most active in the Midland and Western Counties of England; but north of York but little, if any, damage has been done, and there is very little potato disease in Scotland. At the present time the Scottish potato crops are very promising, and, with more favourable climatic conditions, they should be heavy and of high quality. The Welsh potato crop is also very satisfactory at the present time. The low temperature which has been experienced of late, and has proved so hurtful in its effects upon many crops of both farm and garden, has rendered good service in connection with the potatoes, as both warmth and moisture are necessary for the rapid spread of potato disease, a fact which some writers appear to overlook.

**Blairgowrie Raspberry Crop.**—According to the "Glasgow Herald," the cold and wet weather that is being experienced in Scotland is having a disastrous effect upon the raspberry plantations in the Blairgowrie district. It is expected that much of the fruit will not ripen, and in the case of one plantation of 15 acres it is computed that the yield will average only one ton per acre. The critical state of the crop has practically caused growers to cease selling, and for present deliveries £35 per ton is being asked. Boilers have not yet obtained their full supplies. The berries are weighing badly, and pickers are complaining of the low wages being earned. Pickers' wages in the district amount to about £460 a day, and wages paid this season already exceed £4,500. The total despatch of fruit in the first week of August was about 618 tons (of which 368 went to England and 16 to Ireland), against 630 for the corresponding week last year, and a record of 915 the previous year. For the season the total railed is 1,318 tons, against fully 1,500 tons at the same time last year, and 1,470 tons the previous year. Prices for the same week last year fell from £42 to between £34 and £40 per ton; in the previous year the price was £16 to £20 per ton; in 1909 no price was quoted, the market being so bad; and in 1908 it was only £12 per ton.

**Instruction in Intensive Culture.**—We are informed that the Education Committee of the Surrey County Council have appointed a sub-committee to consider the question of the adoption of intensive horticulture as a subject of instruction in the various schools under their control.

**Proposed Bureau of Plant Industry.**—In the course of his presidential address at the British Pharmaceutical Conference in Edinburgh, Sir Edward Evans said he had been very much impressed by the fact that the Government of the United States, in addition to being very particular as to the purity of all drugs sold in that country, had a bureau of plant industry in connection with the Department of Agriculture. From this department important bulletins were issued, and, as the result of its investigations, the use of barks, roots, etc., of American origin had to some extent taken the place of the older drugs so familiar to the public years ago. He mentioned this matter as possibly the British Pharmaceutical Conference might think it worthy of consideration that the British Government should form in the Board of Agriculture a department such as existed in the United States to further the growth in this country of roots and herbs, which the small holdings and allotments might be the channels of carrying into effect. The soil of this country seemed adaptable for this purpose, as its produce was superior to any produced elsewhere; for instance, belladonna, peppermint, lavender, valerian, henbane, etc. They could not help noticing that what at first seemed a small industry often came to be one of considerable value, such as the trade in cascara sagrada, which was one of the most popular of drugs. It was estimated that the crop of this valuable bark now reached about 1,000 tons. It was collected almost entirely in the forests of Northern California, Oregon, and part of British Columbia, being obtained from a scrub bush, and some one hundred thousand or more trees were destroyed annually for the production. The consumption of cascara was now almost ahead of the supply.

**New Work on American Nymphæas.**—A memoir on the species of nymphæa indigenous to North America has been published by the Smithsonian Institution, and is an important contribution to the literature on ornamental aquatic plants. The authors of the memoir are Messrs. Miller and Standley, who direct attention to the fact that there are some groups of plants of which the taxonomy cannot be properly understood from herbarium specimens of an ordinary character, and among these are the aquatics. The memoir is of much interest as representing a successful endeavour to revise the knowledge of the American water lilies with the aid of fresh material obtained from all parts of the country. A few hitherto unknown species are described, and these raise the number of American species to nineteen. The descriptions are in all cases accompanied by illustrations of the leaves, flowers, fruits, and seeds. The attractiveness of the memoir is greatly enhanced by a number of finely executed plates showing the plants growing under natural conditions.



GLADIOLUS GOLDFINDER.

A distinct and beautiful variety, the flowers soft yellow, with red markings on the two lower segments. Exhibited by Mr. W. Pfitzer, Stuttgart, at the National Gladiolus Society's show at the Horticultural Hall on the 13th inst., and awarded the Silver Cup for two spikes of the best new seedling not yet in commerce. See page 639.

# GARDENERS AND GARDENING.

## EDUCATION AND TRAINING OF GARDENERS.

The monthly meeting of the Scottish Horticultural Association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 6th inst. Mr. Massie, the president, was in the chair, and there was an attendance of 60 members.

The evening was devoted to a discussion on the training and education of the young gardener, the discussion being opened with short papers by Mr. C. Comfort and the secretary on the practical and technical sides respectively. A general discussion followed, the meeting being substantially in agreement with the views put forward in the papers.

### APPRENTICESHIPS AND PRACTICAL TRAINING.

Mr. Comfort stated that in these days the man who learned his business only by haphazard means would soon find himself elbowed out, and hopelessly left behind in the race of life, and this was emphatically true of gardening, which demanded so wide a range of both practical and scientific knowledge. There were two individuals to consider in this question—the head gardener and the under gardener or apprentice. In selecting an apprentice, the head gardener should see that he was of good moral character and of fair intelligence, that he had received a good elementary education, and that he had some taste for gardening. Fewer lads were now offering themselves as apprentices than was the case some years ago, and he suggested that apprentices should be taken on at an earlier age than was usually the case, say, at fifteen instead of seventeen. At present young lads who intended to become gardeners hung on at odd work for two or three years after they left school, until they reached the age at which they were generally taken on as apprentices, and the best of them often turned their attention to something at which a start could be made at an earlier age.

The only reason for this putting back of the age in gardening, so far as he could see, was in order to obtain the services of a lad who was able to do a man's work for a boy's pay. There were few gardens, however, where a boy of fifteen could not be profitably employed. The change suggested would be of great advantage to the young gardener, and if it were to come into vogue the term of apprenticeship might with advantage be extended to four years, instead of three as at present. Having secured his apprentice, the head gardener should realise that, not only had he taken upon himself the responsibility of grounding the young man in his craft, but also of looking after his moral and physical welfare. So long as plants required immediate attention, the gardeners' bothy would most likely remain a necessity, and, while the almost palatial structures which have been erected in some establishments were not likely to become common, the place in which the young gardener had to live, and for the time being became his home, should, at any rate, be in keeping with modern ideas of health and comfort, and a place to which an intelligent young man would not be ashamed to take his friends. Bothies should also be provided with some literature, and there should be some facilities for recreation, for "all work and no play makes Jack a dull boy."

Too much should not be expected from the apprentice to begin with. Seniors were too apt to forget the gulf which separated them from the apprentice. The reason for doing a thing in a certain way should be explained to the apprentice. Not only should he be taught how to use his tools, but he should also be instructed to keep them clean and tidy, and, in fact, the lesson of tidiness in everything should be strongly impressed upon him. During part of his time the apprentice should have the opportunity of seeing everything that is to be seen in the establishment, though it may not be practicable in a four years' apprenticeship to take part in every practical operation, from weeding to the potting of a fifty-guinea orchid. The establishment in which the young man served his apprenticeship need not necessarily be a large one. In a well-appointed, moderately-sized garden, under the charge of an efficient head gardener, more would be found than the smartest apprentice could take advantage of even during a four years' apprenticeship. The establishment to avoid was one in which a cheese-paring policy was pursued. Economy was incumbent on all, but those who either could not or would not pay the necessary price for what was, after all, largely a luxury, should cut their coat according to their cloth.

Having chosen his calling, the young gardener would do well to remember that very much of his future success depended upon himself. Courteous and polite he should be, and he should learn that submission to those having authority over him was not only necessary to the advancement of his knowledge, but that it was also necessary for the formation of character. "Learn to obey and you will know how to command." Industry, too, should become a trait of his character. "Good striving makes good thriving," and industry should assert itself in every detail of his work. He should take pains to find out things for himself, and should strive to get to the root of everything. There was often a diffidence about asking questions, which might arise from natural shyness or from the fear of being considered ignorant. But no reasonable being expected to find an old head on young shoulders, and those having the charge of young lads should so cultivate their inter-relationships with them that they would have no fear of being snubbed even should they ask what might seem a silly question, so long as it was asked sincerely.

The young gardener's "time" being completed, it would, as a general rule, be well for him to move about a bit for the next few years, and if he could spend some time in establishments where certain subjects calling for skill in their cultivation were made specialities of, it would be to his advantage. He should also visit other establishments and interchange views with his fellow gardeners, and visits to flower shows should not be neglected; neither should the reading of at least one good gardening paper weekly.

### TECHNICAL EDUCATION.

After contrasting the position of the young gardener of to-day, as regards the advantages which he enjoyed in the way of technical education and cheap literature with that of the young gardener of forty to fifty years ago, the secretary said that, though they had to find out many of the secrets of their success as cultivators by rule of thumb methods, and their knowledge of these matters was therefore largely empirical, the old gardeners would hold their own with the younger ones either as cultivators or otherwise. Their average education, too, when they left school was better, he thought, than that of the average of boys leaving the elementary schools at present, and their efforts at self-improvement afterwards were more persistent than those of the present-day young gardener.

Before referring to the technical subjects which the young gardener should apply himself to once he had settled down to the serious work of his calling, the secretary said there was no doubt in his mind that, if the practical and theoretical trainings could not be carried on alongside each other, the practical should come first. It was absolutely wrong to put a young man through a course of technical training, and then to teach him the practice, and in most cases, it would be a hopeless failure. If a lad had made up his mind to become a gardener, he would have to realise that the time would come when he would have to teach other lads the practical part of it, and that, in order to do so, he would require to become a skilled workman himself; and there was no doubt that the most receptive time for practical instruction was at the very commencement of his career. If it were delayed until he had passed through a course of scientific training he would not take to it with the same avidity, if he took to it at all, and he would find himself handicapped at a later period of his career.

Those young men who commenced their gardening careers at the horticultural colleges would find their courses of instruction prescribed for them in the various college curricula, but the young gardener who had no opportunity of attending one of these colleges, provided he had received a good sound elementary education, might make considerable progress in some of the technical subjects without assistance, though it would be all the better for him if he could obtain some tuition, or if he were fortunate to be placed amongst studious companions. Botany, as the subject which would appeal most to him, being the natural science with which he would be most intimately brought into contact in his career, would probably be the best subject to begin with. It had the advantage of being a comparatively easy subject, and he would always have abundance of material for study. Entomology was the next in importance of the natural science subjects, and among the physical sciences perhaps the most important was chemistry, especially in connection with the manuring of plants, but the young gardener should also have a sound knowledge of elementary general physics, including meteorology. Of the other technical subjects which he should study, one of the most important was simple land surveying and levelling. With a good elementary school education the young gardener should know something about mensuration, and with a little tuition elementary land surveying and levelling should not be beyond his powers. It not infrequently happens that a gardener has to make an alteration in or an addition to his garden, or he may be called upon to make an entirely new one, and with a knowledge of this and a little elementary plan drawing he would be in a position to efficiently carry out such work. He should also have some knowledge of horticultural engineering. Lastly, a knowledge of book-keeping was most essential, and, as a gardener's books were not of a complicated nature, this he could get up with some reading and a little practice.

These were what might be called the essentials of the young gardener's technical education, but they by no means exhausted the list of subjects which he should get up, and his reading should be both extensive and varied. If the teaching of horticulture was his aim the more extensive his general knowledge of gardening was the better, and, thanks to an excellent horticultural press, he would have no difficulty in keeping himself abreast of the times whatever branch of gardening he specialised in. It was a mistake to assume, as was often done, he feared, that teachers of practical subjects like horticulture should be merely college graduates. All the better if they were college graduates, perhaps, but they should first of all be practical men, and the better they knew the practical part of their subject the more successful would they be as teachers.

The exhibits were: New pentstemon Mrs. F. Fulford and spikes of Kalanchoe flammea, cut from plants raised from leaf cuttings put in in July, 1911, and grown on in 3in. pots, from Mr. F. Fulford, Montgomerie Castle Gardens, Tarbolton, Ayrshire (awarded a cultural certificate for kalanchoe); Acalypha Sanderiana, from Mr. James Fraser, Bonaly, Colinton (awarded a cultural certificate); ox-eye daisies, from Mr. F. Baillie, Liberton; strawberries, gooseberries, and black currants from the City of Edinburgh Distress Committee's farm at Murieston, Mid-Calder, per Mr. Cairns (awarded a cultural certificate); new tomato, from Mr. G. N. Simpson, Edinburgh; Nephrolepis todeoides Smithi and Pteris incisa, from Messrs. James Grieve and Sons, Edinburgh (awarded a cultural certificate); plants of Onopordon Acanthium and Dipsacus fullonum, each about 6ft. high, from Messrs. Todd and Co., Edinburgh.

## LILIUM BROWNI.

The very beautiful Lilium Browni merits more than passing attention from those who love rare flowers, and especially from those who have a sheltered position and good lily soil to offer it. It dearly loves a mixture of sandy peat and leaf-soil, and s generally at its best when planted among dwarf peat-loving plants, such as heaths, andromedas, rhododendrons, and other so-called "American" plants. When grown among these subjects, suitable conditions of soil and moisture are provided, and the shrubs give that shelter to the advancing growths which so many lilies greatly appreciate.

Lilium Browni grows from 2ft. to 4ft. high, and its purple-spotted stems are abundantly furnished with lance-shaped eaves throughout their whole length. The tems are surmounted by one, two, or three trumpet-shaped flowers, each flower 6in. or in. long, prettily flushed with rosy-purple on the outside, but pure white inside, save for a medium line of purple down each of the three inner segments. The prominent, deep red-brown anthers are a conspicuous feature of a very attractive, refined, beautiful, and noble flower. July and August are the months in which L. Browni usually flowers out of doors. As a pot plant the species is very desirable, as it is charming for conservatory decoration and for grouping. Some idea of its value in beds of peaty soil may be obtained from the accompanying illustration, which represents t at Kew, in the sunk garden on the west side of the Palm House.

A BED OF LILIUM BROWNI AT KEW.

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DAHLIAS TO PERFECTION.—A thorough guide to the successful culture of these popular flowers is "Dahlias and their Cultivation," by J. B. Wroe, price 1s. net, by post 1s. 2d., bound in cloth 1s. 6d., by post, 1s. 8d., from W. H. and L. Collingridge, 48, Aldersgate Street, London.

## THE ROSE BEDS AT KEW.

I should like to add a few supplementary remarks to those that recently appeared concerning the roses at Kew. Each recurring season the roses at our National Garden form a much-admired feature, and now that the rambler varieties are practically over, one's thoughts naturally turn to the dwarf plants, of which there is a good and representative selection in the vicinity of the Palm House.

As might be expected, the hybrid teas contribute their share to the floral display, among them being the first of its class, La France, which is flowering with great freedom. New as well as old varieties are there represented, and among the more recent kinds may be mentioned that well-known tea, Lady Hillingdon, which in the bud state is so fascinating, but loose when fully expanded.

Other hybrid teas now in a very attractive stage are, of course, Caroline Testout, whose large, rosy-salmon flowers are borne in a bold and imposing manner; the blush-coloured La Tosca, one of the best of all bedding roses; the bright orange Madame Ravary, charming in the bud state as a button-hole flower; M. Paul Lede, remarkable for the carmine shading on its orange-yellow petals; Duchess of Wellington, deep orange saffron; Earl of Warwick, a beautiful pink flower with a deeper centre; Madame Jules Grolez, perhaps the finest, rose-pink of its class; Liberty, remarkable in this section for its deep coloured flowers; Mrs. A. R. Waddell, grand in its rosy-scarlet buds, but the flowers, which are of a bright salmon colour, are loose when fully expanded; Lady Ashtown, a beautiful, rose-coloured flower that continues well on into the autumn; Joseph Lowe, blush, deeper centre; Antoine Rivoire, a flesh-coloured flower, the base yellow flushed red; and Mrs. Aaron Ward, a peculiar combination of Indian yellow and rose.

Of those usually classed as teas pure and simple, beside Lady Hillingdon, above referred to, there are Corallina, semi-double flowers of a distinct reddish shade; Lady Roberts, reddish-orange, with an apricot suffusion, charming in the bud; Mrs. A. Byas, yellow and rose; Madame Lambard, bright rose, a fine autumn flower; Souvenir de Pierre Notting, apricot yellow and orange; General Schablikine, coppery-rose, a grand garden flower; Princess de Sagan, remarkable for its rich velvety crimson blooms; Anna Olivier, blush and rose; and Marie Van Houtte, a striking combination of yellowish-white, deep yellow, and peach.

The deep colours are at Kew mainly represented by hybrid perpetuals, all of which are good old tried sorts, such as Victor Hugo, Glory of Cheshunt, Dupuy Jamain, and Madame Victor Verdier.

Of sections other than those above mentioned are a bed of each of those pretty dwarf polyanthus, Jessie and Orleans Rose, and also of that rich gold and red-coloured member of the Pernettiana section, Rayon d'Or. Souvenir de la Malmaison is so fine as to well merit a place in the garden, though it must be looked upon as one of the most pronounced veterans. Beside these dwarf varieties, a bed of good-sized bushes of the richly-coloured Gruss an Teplitz, and another of the pure white Frau Karl Druschki are very striking. K.

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**Lobelia tenuior as a Basket Plant.**—This strong-growing, large-flowered lobelia, of the speciosa section, is usually met with as a pot plant. It, however, forms a very striking feature when grown in a suspended basket, if the long, loose-growing shoots are allowed to dispose themselves at will. There is a rosy form of this lobelia, but to my mind the rich blue, typical kind is the best.—T.

## THE MAKING OF AN IRIS GARDEN.

For a considerable period I have repeatedly urged the greater use of iris as garden plants, and it is in furtherance of their claims that I pen these notes. The value of irises as a permanent garden feature must be fully apparent to all garden lovers. They combine an elegance of design with one of the finest ranges of colour found among hardy flowers. They embrace a great diversity in habit, requirements, and uses, and deserve a keener, closer attention generally.

The making of an iris garden calls for originality and a fair knowledge of the iris species and varieties. I have noted irises grown in formal beds cut in the greensward, but this plan I cannot commend as the season of the irises used is so short as to render the beds practically valueless save just at the time of blossoming. What I wish to urge is the free use of many types of irises, in natural groupings, with the whole surroundings blending to make a perfect picture, and also securing a long season of blossom.

The late Sir Michael Foster's garden at Nine Wells may be taken as a starting point, and the idea given may be elaborated, and additional features introduced, to make a first-class scheme. Sir Michael loved all irises, and the range of species and varieties grown by him a few years back reached a considerable number, and, furthermore, gave him a "long display of flower," a fact which I desire to emphasise.

At Nine Wells the plan followed was to grow the irises in great natural groupings, with broad winding paths intersecting, or running parallel with them. Eremuri and a few other bulbous subjects were grown, in conjunction with the irises, and, save for a background of trees and shrubs, the whole design was of the simplest.

From this one can develop a good idea, and if one also takes into account the effects obtained by the Japanese iris gardens, then an iris garden will become a popular garden feature in the near future. In Japanese iris gardens Iris Kæmpferi and its varieties provide the dominant display; other irises may be used, but only as a foil or a setting to these grand forms. At Hori-kiri, a winding valley, dotted with tiny tea-houses, amid a waving river of iris blossoms, is one of the glories of the Japanese summer, and informal pathways traverse the whole garden, and enable the flower lover to keep in close touch with the blossoms.

And now for the main design of a typical English iris garden. It shall be situate, if possible, on a broken landscape, where one can secure a background of branching tree growth, with gently sloping banks falling to a valleyed depression. In the valley shall run a stream, just broad enough to show off the ripple of the water over the pebbled base. Here in the moist richness of the soil one can grow all the waterside irises, such as I. aurea, I. orientalis, I. Monnieri, I. Monspur, I. spuria, I. Delavayi, I. versicolor, and their hybrid and varietal forms. All the Siberian irises, with I. Kæmpferi, and I. lævigata, and their numerous varieties, should be used as well as I. albo-purpurea, and its forms cœrulea and alba.

Sloping up from the vale one can group great masses of the germanicas, selecting the finer forms of I. aphylla, I. pallida, I. asiaticus, I. neglecta, etc., of which there are so many now in cultivation. One should also include Iris stylosa for its valuable winter display; also such gems as I. cypriana, I. cristata, I. hexagona cœrulea, I. longipetala, and I. missouriensis. Drifts of the early bulbous irises, I. alata, I. reticulata, I. tuberosa, and many others should be utilised, and the Spanish and English irises be freely planted for making additional summertide displays.

I would suggest the acquisition of a stock of the best intermediate irises (hybrids between the I. pumila and I. Germanica groups); Dauphin, Freya, Dorothea, Sarah, Ivorine, and Bosniamac are a few of the many varieties. Then there are the hybrids of the Oncocyclus and Regelia groups, many of which are of easier cultivation than the specific forms. Crosses between these Cushion irises, and those of the I. pallida group are especially interesting, and are free in growth.

With the iris groups I would not hesitate to use a background of eremuri, rising, if possible, in front of a mass of bamboos. Groupings of selected gladioli, hemerocallis, montbretias, and perhaps a few lilies, give other and pleasing colours at times when the irises are on the wane, and afford a contrast which is of value in the garden.

Wander-ways of stepping stones should intersect the iris groupings, winding in pleasing diversity, and carrying one over streamlet, or by the sides of the pool. A low rustic bridge is never out of place in such pictures, and is to be desired if a waterway exists. A rest-house, lightly built, and screened with reeds or light canework from the full sun, with sufficient openings to give a view of the irises at various points, is almost essential. A resting place, a tea-house, if you like, will add greatly to the charm of the garden, but care should be taken to have it in harmony with the garden itself. In size, formation, and design it should fit in perfectly.

And should the outer surroundings consist of a surge of tree greenery against a clear sky line, the iris garden will appear to greatest advantage. It gives the frame to the picture, investing it with a pleasing, softening influence. All else would be comprehended in the term "good culture" (deep digging, an incorporation of suitable manure, and thorough cultivation). Irises are occasionally subject to disease, and badly-infested plants should be isolated, or, better still, destroyed. Given an immunity from disease, the iris garden should be a thorough success. P. S. Hayward.

## SEMPERVIVUM ARACHNOIDEUM.

This is sometimes known as the Cobweb Houseleek, and is one of the most singular of alpines. It has small rosettes of fleshy leaves covered over with a dense white down, which is intertwined all over the leaves like a miniature spider's web. It thrives in an exposed, sunny part of the rockery in a position such as that provided by a ledge of rock. It succeeds in a light sandy loam, and when once established, soon forms an attractive object. In summer the leaves are surmounted by pretty rose-coloured flowers, carried on thick, fleshy stems a few inches in height, and the whitish foliage displays them very effectively. The plant is propagated by offsets, which should be placed singly in small pots and kept in a cool frame for a time. Sempervivum arachnoideum is one of the most interesting members of the Houseleek family; the common S. tectarum is often seen growing on the roofs of old cottages and walls. J. Gardner.

Batsford Park Gardens.

## NOTES FROM KEW.

### Shrubby Begonias.

There is always a good selection of these to be met with at Kew, but just now the most notable feature is the extent to which they contribute towards the embellishment of the greenhouse. In maintaining a display in this structure, it is often difficult to obtain plants sufficiently tall to break up those of lower growth. For this purpose such kinds as the typical Begonia coccinea, B. Luzerna, B. President Carnot, and others are all extremely useful. Of B. coccinea there is a large, bold group in the greenhouse, and in this way it is seen to very great advantage, the large pendulous clusters of handsome scarlet flowers being set off by the ornamental foliage. The deep-toned leafage of B. Luzerna serves admirably as a setting to the clusters of pink blossoms.

Some large bushy specimens, 3ft. to 4ft. in height, of the variety Corbeille de Feu, serve to show this at its very best. It was raised and distributed by M. Lemoine, of Nancy, about twenty years ago, and was announced as the result of a cross between Begonia semperflorens and B. fuchsioides miniata. Corbeille de Feu is, as a bedding plant, decidedly popular, but such large specimens as those at Kew are seldom seen. One more variety needs especial mention, and that is B. carminata, which I have never before met with in such good condition. It is one of the Messrs. Veitch's hybrids, the male parent being the Brazilian B. coccinea, and the female the South African white-flowered B. Dregei. In B. carminata, which forms a decided bush, from 3ft. to 4ft. high, the colour of the flowers is a clear carmine-pink, while, what is of considerable importance, a succession is kept up for a long time. There are also several others, but the above include the most striking.

### Clerodendron fallax.

Being a native of Java, this showy clerodendron is often regarded as a stove plant, but it will do well in the greenhouse during the summer months; indeed, it is at this season seen to better advantage in that structure than under warmer conditions. A fine, bold group in the greenhouse at Kew shows it now at its best. If kept free from red spider it is a plant of easy culture, and can be readily propagated by cuttings or seeds. These last, however, frequently germinate in a most irregular manner.

### Impatiens Herzogi.

This balsam, which was introduced from tropical Africa a few years ago, has already become an established favourite. This is not at all surprising, for it is a remarkably showy species, and its season of blooming extends over a considerable portion of the year. It is of a sturdy habit of growth, with dark green foliage, and the flowers, which are in the way of those of Impatiens Holsti, but larger, are of a bright orange-salmon colour, with a small violet eye. Now in bloom in the intermediate portion of the T range.

### Eranthemums.

Of the members of this genus now in flower in the T range two at least are worthy of especial mention. The first—E. Cooperi, which, by the way, is also known under the specific name of sinuatum, is of a compact, freely-branched habit of growth, and flowers well when not more than a foot in height. The leaves are long and narrow, with a few deeply-cut teeth on the margin, and tinged with purple underneath. The flowers, which are over an inch across and freely borne, are of the purest white, with the lower segment freely dotted with purple. Eranthemum seticalyx is a pretty and distinct species that branches freely, and bears its flowers in terminal heads or panicles. The individual flowers, which are about an inch across, are very bright red, with a crimson stripe in the centre of the lower segment. A singular feature of this species is the resemblance that, at a superficial glance, the flowers bear to those of that pretty little South African bulbs—Anomatheca cruenta.

### Torenia atropurpurea.

Of this uncommon species there is a very attractive specimen in the intermediate portion of the T range. It is grown in a suspended basket, and, compared with the better-known kinds, is of close, compact growth, the dense mass of leafage being plentifully sprinkled with purple flowers, the interior of the throat being of a deeper hue.

### Lankesteria Barteri.

A near ally of the eranthemums; indeed, the Lankesterias are sometimes included in that genus. It forms an upright growing plant, clothed with oblong acuminate leaves about six inches in length, and more or less undulated at the margins. The flowers, which are densely borne in a terminal spike, with, in some cases, two or three supplementary ones, are of a pale yellow colour with a deep yellow centre, and attract attention by reason of their uncommon appearance and the profusion in which they are borne. This Lankesteria is a native of western tropical Africa, and does well in the intermediate portion of the T range, where it is now in flower.

### Dipladenia atropurpurea.

Twenty years ago a large amount of interest was centred in this dipladenia, from the fact that it had been accidentally reintroduced after being lost to cultivation for many years. It is a native of Brazil, and was first grown in this country in 1814, but was quite an unknown plant when given a first-class certificate by the Royal Horticultural Society in 1892. Compared with many of the dipladenias, the flowers are small, being about a couple of inches across, and in colour deep velvety-crimson, a decidedly uncommon tint. It flowers freely in a small state, and in this way may be seen in the T range.

### Achimenes.

A very interesting assortment of these are in flower in the T range, while in the greenhouse there is a striking group of Achimenes grandiflora magnifica. Compared with many members of the genus, this Mexican species is of vigorous growth, as it reaches a yard in height, and the light purple flowers, which are borne in great profusion, are about 2½in. in diameter. While suitable for pot culture, it is also seen to advantage in suspended baskets, where there is ample room for its development. For smaller structures, some of the less vigorous kinds are suitable, one of the best being Achimenes coccinea, a species with small, brilliantly-coloured flowers. It is a native of Jamaica, and is interesting as being the first achimene introduced into this country. As they can be readily increased, and their cultural requirements are but simple, it is surprising that achimenes are not more often grown. One thing to bear in mind in their culture is that, like many other gesneraceous plants, a liberal amount of leaf-mould in the soil is very beneficial.

K.

## EUCRYPHIA PINNATIFOLIA.

This is one of the most distinguished of July flowering shrubs, for the flowers are large and conspicuous, and a well-developed bush may be considerably more than 12ft. high and 6ft. to 12ft. or more in diameter. Unfortunately, good specimens are rarely met with, and even small plants are not common, a condition, doubtless, due to the difficulty of propagation and the doubtful hardiness of very young plants.

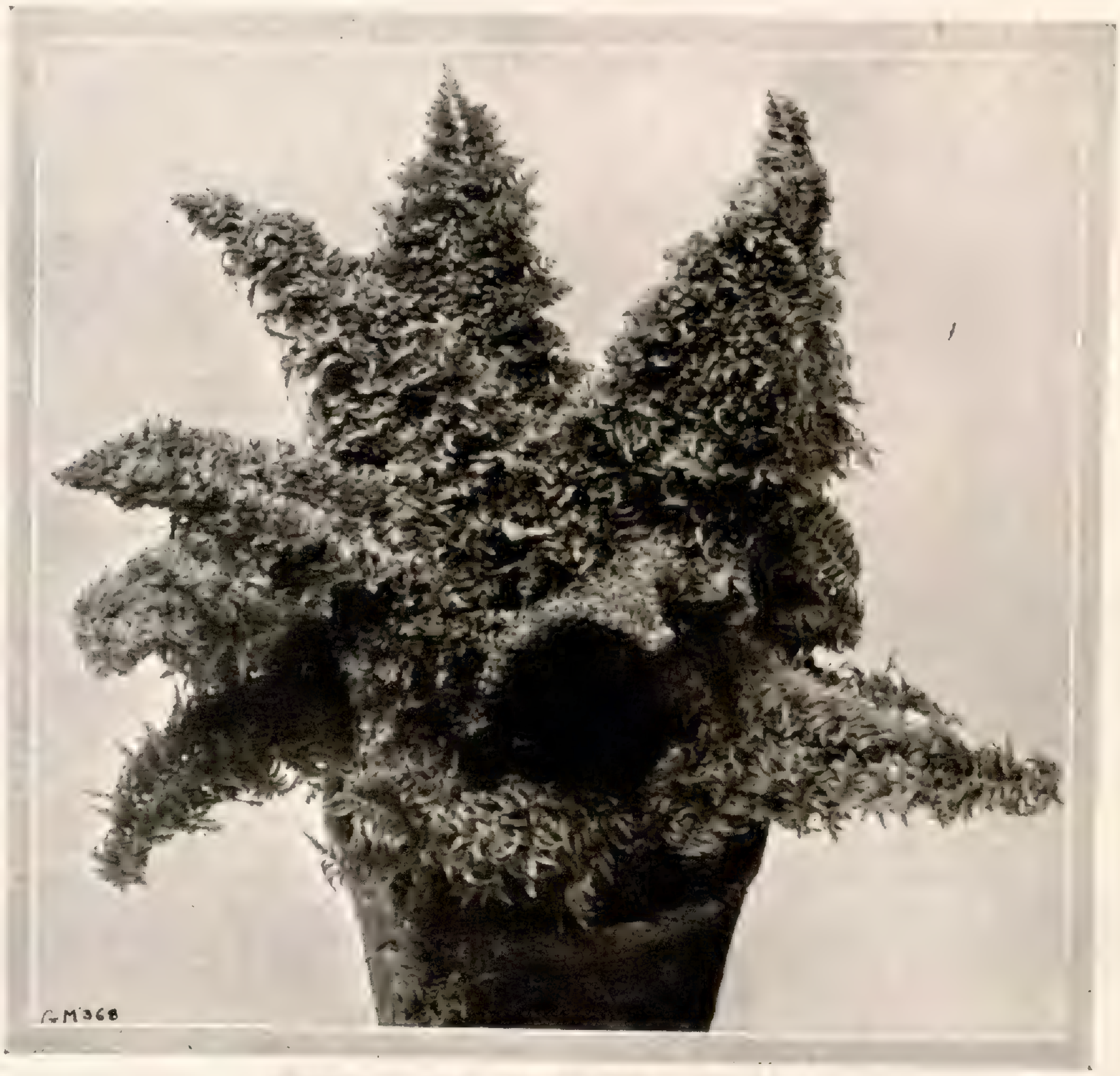
A native of Chili, the species belongs to the order Rosaceæ, the white flowers resembling those of a single rose, 2in. to 3in. across, or a single camellia. The short pinnate leaves are made up of narrow, dark green leaflets, which are evergreen in mild climates, but deciduous in moderately severe winters. E. pinnatifolia thrives in well-drained, loamy soil, but is partial to a little peat about the roots. Layering has been the usual means of propagation in the past, but it has not been very satisfactory, for after the branches have taken two years to form roots, many of the young plants have been lost in the effort to establish them after being severed from the parent plant. Seeds are sometimes ripened in the country, and these form the most satisfactory means of propagation. One of the finest plants in the country is to be found in the gardens at Trewidden, near Penzance, whilst Messrs. J. Veitch and Sons, of Chelsea, have one or more fine examples in their Coombe Wood Nursery.

W. Dallimore.

"Carnations, Picotees, and Pinks" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## NEPHROLEPIS EXALTATA MUSCOSA.

It is very rarely a varietal form of a fern receives a first-class certificate at the hands of the Royal Horticultural Society, and the possibility of such an award is materially reduced when the species is known to be extremely variable, and several forms of it are already on the market. When, therefore, a newcomer secures the highest award obtainable, in view of these circumstances, it must possess merit and beauty quite out of the common. There is no doubt about the fitness of the award made to Nephrolepis exaltata muscosa on July 16 last, when it was exhibited by Messrs. H. B. May and Sons. This variety is of sturdy, dwarf habit, and its light green fronds are well divided, but they possess a tougher texture than found in many plumose nephrolepis; and, consequently, there is excellent promise that this fern will occupy a very high position among those so generally grown for use in the home and for market cultivation.



NEPHROLEPIS EXALTATA MUSCOSA.

An elegant, dwarf variety, with sturdy, somewhat erect light-green fronds. F.C.C., R.H.S., July 16. Messrs. H. B. May and Sons, Upper Edmonton.

**Aphelandra tetragona.** — This, also known as Aphelandra cristata, is remarkable among aphelandras for two reasons, first, because it is one of the largest growers in the genus; and, secondly, because it is really the oldest of them all, having been introduced from the West Indies in 1733. Like most of the others, it is of upright growth, and the erect stem which reaches a height of a yard or more, is clothed with dark-green, broadly ovate leaves. The flowers, which are borne in a terminal decussate spike, subtended by three or four smaller ones, are of a deep scarlet colour. They are produced at different seasons of the year.—W. T.

# AMONG THE ALPINE FLOWERS.

> "Season of mists and yellow fruitfulness,
> Close bosom-friend of the maturing sun."
> —*Keats.*

Sometimes the poets are in happier mood than the gardeners, who find that the seasons do not always come as the bards would lead us to believe. As this is written the "maturing sun" has ofttimes been forsaking its bosom-friend. Instead of the rock garden being bathed in the mellow sunshine of the time, it has been too often shoulder in rain, and has had all its brighter colour tones dulled by the cloudy skies. Yet, despite all this, our alpine flowers have tried their best to give us good cheer, and they are able to bestow upon us some joyfulness of heart as we see their winsome flowers. Few they are compared with those which gladdened us in the earlier months, yet their flowers are welcome indeed, even though we are feeling that the hopes of the future bulk more largely in our minds now than in the earlier months. Truly the alpinist is in his seventh heaven early in the year, and already he thinks hopefully of what will meet his eyes in spring, though these thoughts are almost heresy towards the flowers of the present time.

### Campanula excisa.

From among the comparatively few flowers which meet our admiring eyes in the fast-shortening days we may choose for notice the curious, yet pretty, little bell-flower called Campanula excisa, which is flourishing here in what may be called a modified moraine, this only consisting of a thick covering of whinstone chips on an ordinary flat part of the rock garden. The moraine is in fashion now, but the system of cultivating in the moraine is one which may be overdone. It is not so necessary with many plants as may be supposed, and many of these will thrive equally well with simply an inch or two of gravel or chips above the ordinary soil, through which they will grow and luxuriate. The charming little Campanula excisa will doubtless flourish in the moraine, but it will grow quite well under the conditions indicated, and here there is a nice little specimen, not only thriving, but spreading among the chips which cover the light sandy soil in which it is planted. Very quaint are the drooping pale blue flowers, each with a bit taken out of each petal, just as if some envious insect had eaten a piece out of it. With its narrow foliage, its dwarf habit, and its curiously pretty flowers, Campanula excisa makes a strong claim upon us now.

### Tunica olympica.

Our familiar little friend—for we can call it nothing but a friend, indeed—Tunica saxifraga, which spreads its lace-like rosy flowers so gracefully over the rocks and stones at this time, has now a worthy companion in the sister flower, Tunica olympica. In T. olympica, however, the dainty little flowers are white, and the two together form a pleasing feature of the alpine garden at this season. Of the most graceful foliage and of slenderest habit, these Olympian and rock tunicas are delightful little plants, and are, withal, easy to grow in any light soil, loving the sun, yet not detesting comparative shade, and delighting to throw their delicate trailing branches over the rockwork to its adornment, and our corresponding delight. They are easy plants to raise from seeds, and, with the double form of T. saxifraga, form a trio of good and appreciated rock plants.

### Erica vagans.

As the flowering term of the alpines draws to an end we learn to appreciate more and more the autumnal heaths, of which we have now a considerable number. Without appearing to deprecate any of these one would like to draw the notice of the reader to the Cornish heath, Erica vagans, and its varieties. They are excellent plants for the rockery, and by reason of their accommodating ways are valuable for rock gardens large and rock gardens small, seeing that they can either be allowed to grow into large and handsome bushes, several feet across, or kept to a few inches in width. There are several varieties besides the type, which has pretty racemes of purplish-red flowers, with projecting, chocolate-coloured anthers. The white variety, E. v. alba, is very attractive with the contrast afforded by the white bells and the chocolate anthers. In E. v. grandiflora we have a larger-flowered variety of much beauty. Peat is not necessary for this Cornish heath, and it can be grown in some rough parts among stones and loam, quite as well as in richer soil—if not better, in fact. Like its allied forms, E. vagans stands clipping or pruning back well, and this should be performed as soon as the flowering is over. With the writer E. vagans and its varieties always come in earlier than the lovely forms of Calluna vulgaris, the common heath.

### Veronica Allioni.

There are three claimants in the field for the name of Veronica Allioni. It is not difficult to account for the fact that this is the case, as the foliage of each of the three resembles so nearly that of the others that confusion is not difficult unless the plants are seen in flower.

The plant I grow here as V. Allioni came to me a good many years ago from a good nursery, where it was catalogued as having erect little spikes of blooms like pencils. This was a figure of speech, intended, one would say, to express the narrowness of the little spikes of blue flowers and their erect habit. Whatever may have been in the mind of the cataloguer, this plant is a most desirable one, though a trifle shy of flowering when it grows into a large plant. It makes a close cushion of deep green leaves with incised margins, and bearing bonny little spikes of deepest purple-blue only some four inches or so high. Another claimant is a trailing, creeping speedwell, with small and inconspicuous light blue flowers, and not worth growing. Still another is the Llandudno form of Veronica spicata, a lovely little plant, deserving consideration for itself alone, but with taller and more pointed spikes of flowers.

Such are some of the flowers of the time when alpines grow fewer, and when we relish all the more those which are in bloom or are yet to come in the still shorter days.

S. ARNOTT.

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**Isolepis gracilis.**—Though botanists tell us that the correct name of this pretty, drooping, dark-green, grass-like plant is Scirpus riparius, the name at the head of this note is that by which it is generally known in gardens. It is a plant of very easy culture, provided it receives a good supply of water. For some reason or other it does not seem to be grown as generally now as it was at one time, yet for the edging of decorative groups it is both distinct and pretty. A striking group of Statice profusa and Malmaison carnations at the International Show, from the gardens of Mr. Leopold de Rothschild, Ascott, Bucks, owed not a little of its attractiveness to the edging of this isolepis. —T.

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# SCENTED-LEAVED PELARGONIUMS.

It is not often now that one sees the scented-leaved or Cape pelargoniums grown to any extent in our gardens, though there are places where they constitute a special feature. There is such a diversity of shape and size in their foliage, that one would think this alone was sufficiently interesting to cause them to become more popular than they are at the present day. The neat trusses of bloom that some of them produce are also worthy of notice, and this, combined with the fragrance of the foliage, ought to make them popular.

Some of the kinds have a neat, compact habit of growth, which renders them valuable as basket plants, particularly when in bloom, while others make grand subjects for decorative purposes. The variety of uses to which these plants can be employed are many, and the only drawback to their popularity that I am aware of is their being so subject to the attacks of green-fly. This, however, can easily be kept down if temperature and other conditions are favourable to growth. As some of the kinds, when liberally treated, give ample supplies of green sprays suitable for mixing with cut flowers, large plants grown against the walls, pillars, or trellises of the greenhouse or conservatory will be found most useful. As these strong growers must be liberally treated, the roots must not be restricted to small pots; therefore, where they cannot be planted out, they should be provided with pots of large dimensions. Varieties most useful for cutting are those having light, deeply-cut foliage, such as denticulata and the old lemon-scented form. Most people know Rollisson's Unique, which is an old variety producing large trusses of rich crimson flowers. Then we have Dale Park Beauty, Duchess of Devonshire, Fair Ellen, Pretty Polly, and a whole host of others, so that there is ample choice for those who are desirous of forming a collection.

Those who visited the International Horticultural Exhibition no doubt observed the fine collection of well-grown plants staged by Mr. Hudson, of Gunnersbury House Gardens. They were, indeed, grand specimens, the like not often seen, thus showing to what uses these plants may be put, especially if trained with a special object in view. For ordinary purposes such plants as these are not needed, though specimens when well grown are often useful for decorating large conservatories, etc., where ample air can be admitted. Pelargoniums will not thrive in a close atmosphere; neither will they grow in winter where the temperature falls too low, but, given suitable conditions, such as light and air, together with sufficient warmth, they make good headway. This class of pelargonium can be propagated at any season of the year except in the dull months of winter, therefore plants of any size may be had at all seasons, from those growing in small 60's to large specimens. These latter, however, take time to produce, especially in the case of slow-growing kinds. A light, rich soil and ample supplies of water during the growing season are essential, and, above all, it is absolutely necessary that the plants be kept free from insect and other pests at all times.

A light, rich, sandy soil, not rammed too firm, is best while the plants are small, but when older a good turfy loam, with a liberal supply of thoroughly decayed manure, is preferable, especially for those that make large foliage and ample growth. Potting is an operation that must receive careful attention.

H. C. PRINSEP.

## SOME POPULAR ERRORS.

It is needless to say that we all make mistakes in our gardening practice, for no one knows the best methods of treatment for every plant in the garden, and if he did there would soon be others introduced, the cultivation of which he would have to learn in part from experience. But there are numerous wrong practices which are so common that we might describe them as popular errors. Any intelligent amateur who observes the methods in vogue in the gardens he visits will have noticed a good many, and the experience may or may not suggest to him the possibility that visitors may notice not a few mistakes in his own garden also. Let us look at a few samples from bulk. We have often seen a man

### Putting Out Plants

when the ground is very dry, and watering each one separately, or pouring on as much water as will soak in, perhaps watering over the whole bed of plants with a rose. In such a case, the water goes little or no distance into the ground. Certainly not enough to moisten the soil round the roots, whereas if the ground had been soaked before being prepared for planting—and that is an easy matter when nothing is growing in it—there would have been moist earth all round the roots, and a little water applied to each plant would have freely run into the loosened moist soil, and settled it among the roots. Nothing looks so deplorable as plants newly put out apparently dying in the heat of early summer, with little patches of puddled soil round their withering stems.

### The Sowing of Seeds.

Similarly, one sees people watering the powdery earth after the seeds are sown, and the water very soon begins to run off. It has gone in no distance, perhaps not even as far as the seeds in some cases, and after one day's sun the surface is dry and caked together, thus facilitating the rise of moisture from below by capillary attraction, so that the soil rapidly loses any little moisture it contains, and the watering has to be repeated daily while the dry weather lasts, the surface shooting off the water almost like asphalte. If the soil had been soaked before it was prepared for a seed-bed there would have been no need to water it after the seeds had been sown, and the breaking up of the moist soil would have cut off the channels of conduction, and enabled it to retain enough moisture for germinating seeds and young seedlings for a week or two of dry weather.

### The Sowing of Annuals.

When little children begin gardening, the sowing of annuals is usually one of the first things to be tried, and the mistakes they make are commonly made by grown-ups, even when they are past the stage of beginners, such as sowing too late in the spring and too thickly at all times, with too much watering, and too little thinning. Though the sowing of annuals is considered such a simple matter, many, if not most, of them need to be very well grown to be worth growing at all. Sown in the open ground at the end of April they have little chance of becoming established before dry weather comes, with the result that they run up to flower in a weedy fashion. When the seed is sown too thickly, the seedlings become leggy before they are big enough to thin, almost as soon as they are up, in fact, and that is the ruin of any seedlings. Watering should be dispensed with altogether until the weather really becomes dry, as surface watering draws the roots to the surface, when, if not kept watered, they will succumb to a few hot days. There are other cultural disadvantages in unnecessary watering, and the best thing is to reduce the need for it to a minimum by deep cultivation, when many annuals in a fairly retentive soil will go through an ordinary summer without any attention in this respect, and will grow more sturdily and produce more blossom than if subjected to the frequent sprinklings to which the suburban gardener too often subjects them.

### Mulching

is another operation that is often wrongly practised, even by gardeners of experience. We see mulches put on late in the autumn or early in winter, with the result that the goodness is, for the most part, washed away before the plant can begin to make use of it in the spring, and when this time comes it prevents the soil being warmed by the sun, which is especially necessary if the soil is a cold and wet one, and, in such circumstances, harbours slugs. The time to apply a mulch is in dry weather, so that it may not only feed the plants and trees when the next rain comes, but keep the soil moist both by shielding it from the hot sun and lessening evaporation from its surface. If the soil is loosened before the mulch is put over it in June it will then facilitate the passage of water into the soil, and the latter will not run together as it does when the water is poured directly upon the surface. In the case of fruit trees a heavy mulch is often applied, and copious waterings given when the fruit is approaching maturity, and though the fruit may obviously swell as a result of the treatment, it is the reverse of what should be done, as it prevents the fruit acquiring its full flavour. Have a mulch over the roots during what may be called the growing season by all means, but in the case of late summer and autumn fruits, at any rate, it is better raked away, unless it has already crumbled to pieces, before the fruit begins to ripen, so that it may have all the benefit possible from sun and air to the soil about the surface feeding roots, fruit always acquiring a better flavour if the soil is dry at the time of ripening. In the case of late apples and pears, especially, the effect of feeding and watering late in the summer, to say nothing of autumn, is often disastrous in its effects, as by prolonging growth it delays maturity, with the result that the fruits do not "finish," as fruit growers term it, before gathering time comes, and the result is that they shrivel before they are properly in season.

### The Removal of Foliage.

The cutting down of plants and the removal of foliage generally, show that many people are quite ignorant of the functions of leaves, though it seems almost unnecessary to state here that it is by them that the digestive and respiratory processes of the plants are performed. If people realised this they would not so ruthlessly strip tomato plants of their foliage, but would so arrange matters that every possible square inch of leaf surface should receive the maximum amount of sun and air. Most people seem to know that bulbs should have the benefit of their foliage as long as possible, consistent with their minimum standard of tidiness, but they do not carry out their knowledge so far as to apply it to the cutting down of plants generally after they have flowered. Perennials like larkspurs and Chinese pæonies, for instance, need their foliage most of the summer to strengthen the roots and form the flowering crowns for next year. The cutting off of dead flower-heads and spikes should be done as soon as possible, but the more foliage which can be left to ripen the better. This applies to border chrysanthemums and others, the young growths from the base of which benefit by the stems being left till the foliage on them is finally destroyed by frost. Though some perennials, if partially cut down and well fed, will flower again to some small extent the same season, this is partly at the expense of the following year, and it is perhaps better to regard the roots as bulbs or tubers which need the foliage to be left as long as possible to give them the best chance of gathering strength for next year's display.

Alger Petts.

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## ASSISTING NATURE.

To obtain a full measure of success the gardener must, to a large extent, work hand in hand with Nature. He certainly cannot perform tasks that are contrary to Nature's laws, but rather has to assist Nature materially. A close study of plant life, and the way Nature deals with it, is most desirable, for without a knowledge thereof he cannot possibly obtain results that would otherwise be within his reach. The requirements of plants differ so largely as regards position, soil, and general treatment that much information on their respective requirements is essential in assisting them to attain their perfect development.

Observation is a faculty to be cultivated by all who would achieve success, and unless it is fully exercised the cultivator will not be able to give the plants under his care so much assistance as he could wish. Left to herself, Nature is capable of creating very charming scenes and features in field and woodland, and it is only by a knowledge of her methods that artistic and otherwise satisfactory effects can be produced in the garden. Plants and flowers, growing naturally in the fields and hedgerows, often produce effects that in their simplicity and beauty are equal to the most highly-considered examples of the gardener's art. The semi-wild garden is, perhaps, the department where Nature, assisted by one who is fully acquainted with her moods, produces the most delightful effects.

In such a garden Nature should be allowed a certain degree of freedom, or, in other words, plants should be permitted to grow away in much the same manner as they would in the wild state, a check only being placed on the rampant growers that have been included in the scheme of planting and upon undesirable invaders of the domain. The arrangement of the various subjects should be such as to suggest that they had sprung up naturally, instead of being located in a stereotyped manner, as natural grouping is one of the great charms of the semi-wild garden.

An intermingling of species can often be permitted, but breadths of distinct kinds are generally preferable; their form and blending, however, must be studied from a natural point of view. How often it happens that a group of some diminutive plant in an odd corner gives a sense of completeness. Many forms of plant life would produce but poor effects if it were not for man's assistance; they would frequently be but one wild, tangled mass of worthless growths.

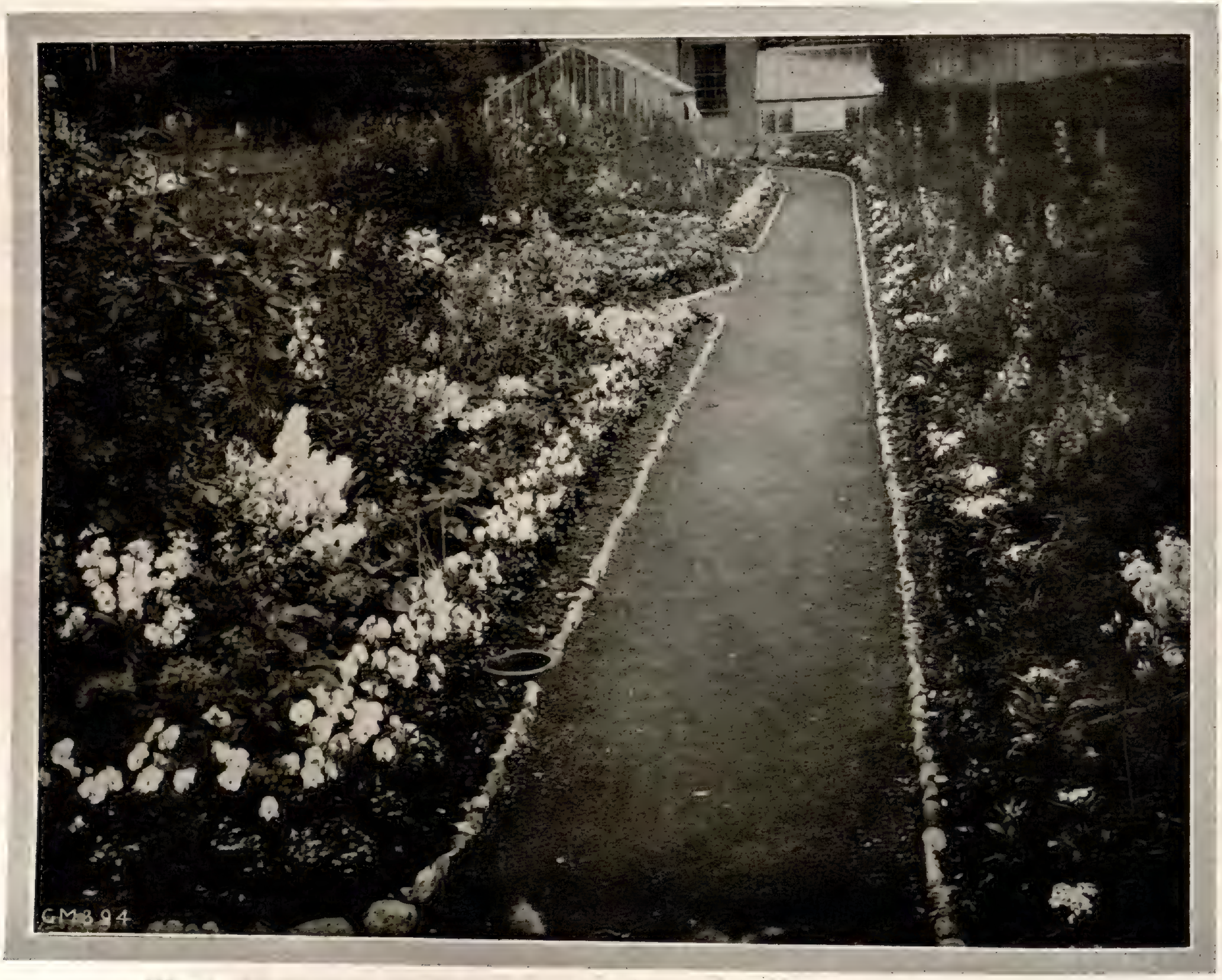
How vast is the number of Nature's products that are turned to account and rendered serviceable, knowledge and skilful manipulation being brought to bear upon them; products that would in many instances be of little or no benefit to mankind without expert assistance.

J. Gardner.

## A FIRST-CLASS COTTAGE GARDEN.

If a man is really in love with his hobby it is wonderful how successful he may become, and if that hobby is gardening then success is not only pleasurable to himself, but affords a great deal of pleasure to others. It does more, it stimulates the love of gardening in others, and creates a friendly rivalry that results in a general improvement of the surroundings of many homes in the neighbourhood.

The two illustrations given herewith indicate in some measure what can be done by an enthusiast. One represents an almost full-length view, and the other shows the large central bed, in the garden of Mr. John Stringer, at Hope Cottage, Sumner Road, Croydon. Mr. Stringer is a bricklayer, and has to leave home between five and six o'clock each morning to reach his work in good time, and he arrives home again in the evening about seven o'clock. His opportunities for gardening are, therefore, not exceptionally good, but by utilising every spare moment, early and late, and devoting his Saturday half-holiday to the work, he manages to keep his garden in first-rate condition over a long period. This year Mr. Stringer has secured the first prize offered for cottage gardens by the Thornton Heath and Norbury Horticultural Society, and he has also won the still higher honour of first prize offered by the Croydon Horticultural Society.



MR. J. STRINGER'S FIRST PRIZE GARDEN AT HOPE COTTAGE, CROYDON.

Mr. Stringer has long since found out that the best strains and the best varieties of flowers cost no more to grow than the poorest and oldest, and though they may cost a little more to purchase, they give first-rate results. In the border by the fence Mr. Stringer has splendid ten-week stocks, white, rose, and blue larkspurs, delphiniums in variety, pentstemons, antirrhinums, campanulas, sweet peas, nemesias, violas, pansies, and tropæolums. The rest of the garden is divided into three portions, and here the two end blocks have a central group of the best H.T. roses, clumps of sweet peas, grand Canterbury bells, a splendid lot of pure white ten-week stocks, delphiniums, larkspurs, a few dahlias, pelargoniums, calceolarias, and a bordering of violas.

The large central bed has a fine Dorothy Perkins rose as centrepiece, and around this are sweet peas and cactus dahlias. A belt of Paul Crampel pelargonium provides a rare display of rich colouring, while Verbena Miss Willmott, nemesias, and golden violas complete the bright and attractive scheme.

Cowper's observation that "he who loves a garden, loves a greenhouse too," is quite true, so far as Mr. Stringer is concerned, for he has two small greenhouses, one at either end of his garden. The larger one, near the house, gives shelter to a variety of pot plants. Ferns and tuberous begonias are very much in evidence, but there are also quite good specimens of several cool cypripediums, cœlogynes, and other orchids. The smaller greenhouse is used chiefly for raising the many tender and half-hardy plants that Mr. Stringer grows so successfully.

Close attention, enthusiasm, a good general knowledge of the more popular plants, and a proper understanding of what is implied by "good cultivation," are necessary to produce the results here indicated. But Mr. Stringer can grow vegetables as well as flowers, and devotes his surplus energy to the cultivation of excellent table produce on an allotment some distance from the bright surroundings of Hope Cottage C.

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## SPIRÆA HENRYI.

There are so many hardy, shrubby spiræas that a new one has to possess exceptional merits if it is to become popular, and it appears as though S. Henryi were of the number. Belonging to the canescens group, it has the advantage of blossoming between the time when the majority of the early kinds are over, and the later ones are approaching their time of flowering. Of vigorous growth, it attains a height of 5ft. and a diameter of 6 or 8ft. in about eight years from the sowing of the seed; therefore it should be planted in a position where it can have plenty of room for development. The leaves are ovate in outline, up to 1½in. long, and ¾in. wide, the upper part being serrated. White flowers are produced in dense heads from short, axillary growth, which appear from the previous year's shoots. Although individually, the flowers are small, they are made conspicuous by their numbers.

S. Henryi is a Chinese shrub, which was introduced early in the present century by Messrs. J. Veitch and Sons, through their collector, Mr. E. H. Wilson. In Vol. XXVIII. of the "Journal" of the Royal Horticultural Society, p. 61, an illustration of the plant appears, and on several occasions the species has been seen at the Horticultural Hall. W. D.

## STRAWBERRY CULTURE.

The abnormally dry summer of 1911 was most disastrous to many strawberry plantations, as the foliage in some districts was so affected with red spider that the plants failed to make runners, while in others, owing to a lack of moisture in the ground, many of the roots were killed. All this has accounted, in a measure, for the short crop of 1912, as many growers were unable to renew their plantations. On some soils the strawberry is not a profitable crop if allowed to remain on the same site more than two years in succession, for after the second year the plants make too much foliage. Where this is the case it is well to make a fresh plantation each season, doing away with a portion of the old one.

Where strong runners can be procured in July there should be no difficulty in obtaining a full crop the first season after planting, but where this is not practicable it is well to take a catch crop from the same ground, which can be done by planting lettuces or the like between the rows. If, however, runners can be procured early there will be no necessity to do this. It is a good practice to plant a row or two in a convenient place, where the runners can be layered into small pots, and a season is saved. Young plants usually make runners earlier in the season than old ones, and these, if layered in 4in. pots, would make strong plants ready for putting out in the open ground by the beginning of August. Choose a plot on which strawberries have not been grown for several years. The ground ought to be liberally manured and deeply trenched in readiness for the runners, so that they may be planted as soon as rooted, for they will grow more rapidly when planted out than if kept in the pots. In many gardens it is not always convenient to provide a plot just at the right time, and when this is the case one cannot obtain a full crop the first season after planting. Strawberries, if liberally treated, make good progress between the end of July and October, therefore if strong plants are put out at the end of the first-named month, or early in August, they will make strong crowns by the end of the season, before growth is checked by the cold weather. Some growers place three plants together to form a clump, and where they are intended to stand only two seasons this is good practice, as by so doing a full crop may be obtained the first season after planting. Others prefer to place the plants a foot apart in the rows, taking away alternate plants after the first season.

Varieties of strawberries, like other fruits, vary very much, some being of robust habit, and making ample foliage, while others are of compact growth. Soil and situation, too, have much to do with the growth of these plants. Where the ground is of a dry, gravelly character the plants do not increase so rapidly as they do on that of a more retentive nature, and this being so more room should be allowed for development when the soil is of the latter kind. Before planting is commenced the grower should determine the distance he intends the plants to be apart. For general use two feet six inches between the rows and two feet between the plants will be found ample, though where the crop is to remain on the same ground for three or four seasons it may be well to plant such strong-growing kinds as Royal Sovereign and others of that class three feet by two feet six apart, for more fruit is spoiled during a wet season by having the plants too close together than there would be were a greater distance allowed between the rows. Where the soil is of a light sandy nature it is well to make it as firm as possible previous to planting in order that the roots may the more readily take hold of it. After planting, should the weather be hot and dry, give the plantation one or two good soakings, after which they will be able to take care of themselves. All runners should be removed as they appear.

Where it is not possible to layer strawberries into pots the runners should be pricked out into nursery beds, and while here they should receive every attention until established. In some instances, owing to circumstances over which the cultivator has no control, planting has to be deferred until spring, but I do not recommend planting at that time of the year as a season is lost, the plants not being able to carry a full crop of fruit until the summer of the following year, but in such cases it is well to take a catch crop of some kind from the ground between the rows, which will, in a measure, compensate for the loss of fruit.

Varieties of strawberries are so numerous that there should be no difficulty in making a selection to suit any particular soil, though for general use not more than half a dozen need be grown. Of these some should be early, others mid-season and late, so as to extend the season of their usefulness as long as possible, and where the situation will allow it some of the latter kinds should be planted on a north border or like place.

P.

THE CENTRAL BED IN MR. J. STRINGER'S GARDEN AT HOPE COTTAGE, CROYDON.

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**Sedum spectabile atropurpureum.** — This sedum is not as well known as its merits deserve, for it must be given a place among the best of the late autumn perennials. It is a counterpart of Sedum spectabile itself, except that the flowers are of a deep red colour.—T.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

DENDROBIUMS.—Many of the dendrobiums, especially those of the D. nobile section, are now completing their growths. It will be necessary to examine them frequently, in order that those which have ceased growing and have the terminal leaf at the extremity of the pseudo-bulb fully expanded, may be removed to a cooler and drier atmosphere where they will receive the benefit of extra light and more air. They should be exposed gradually to full sunshine in order to thoroughly mature the newly-made growth. To retain these plants in a healthy and vigorous condition it is essential that the growth be thoroughly, but gradually, ripened and matured. The plants will be perfectly safe for a few weeks in a house where the night temperature is about 60 degrees, but after that time they should be removed to a structure where a cooler and drier atmosphere is maintained. The night temperature during the autumn months should range between 60 and 50 degrees, or, in very cold weather, it may drop as low as 45 degrees without any harm. If a house can be devoted entirely to such species as D. Wardianum, D. crassinode, D. Findleyanum, D. nobile, and their numerous hybrids, it will be an easy matter to choose a position on one side for the plants which have completed their growths, where they will enjoy more light and air but less moisture. It will also be easy to regulate the temperature as the plants complete their growth. Do not withhold water entirely from the roots immediately the new pseudo-bulbs are completed. The plants should be examined daily, and immediately any sign of shrivelling in the pseudo-bulbs is observed give a thorough watering, but this should not be repeated until the whole compost becomes again quite dry.

D. FORMOSUM, now opening its flowers or in bloom, should be well supplied with water until the flowers fade. This species produces its flowers at the apex of the current year's growths, the blooms remaining a long time in good condition.

EVERGREEN DENDROBIUMS, such as D. thrysiflorum, D. densiflorum, D. Farmeri, D. Bronkarli, etc., will now be in the middle of their growing season, and therefore must have generous treatment. Every inducement must be given them during the cold sunless weather we are experiencing to make their growths as quickly as possible. When growing freely they form large roots, which delight in a good depth of compost.

COOLER - GROWING DENDROBIUMS, such as D. infundibulum, D. Jamesianum, and others of this section will still be growing in their summer quarters, and do not require as much light or air as those of the deciduous and semi-deciduous types. When at rest these should be shaded from strong sunshine, and given sufficient water at all times to keep the pseudo-bulbs plump and the leaves green and in good condition. D. Falconeri and its fine variety giganteum should be suspended from the roof of the cattleya house, in a position where it is not subjected to a strong light. It should receive liberal treatment, and be syringed overhead several times a day with tepid soft water to prevent attacks of red-spider.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

GLOXINIAS.—As these pass out of flower remove them to a cool house where they will receive full sunshine. Although it is advised to reduce the amount of water at the roots after flowering, the plants should on no account be dried off suddenly. Let them go gradually and naturally to rest, then store them on their sides in an intermediate house for the winter. Those that flowered first should be marked as the earliest batch to be started into growth next season. Spring-raised plants still flowering should be kept going for as long a time as possible. During dull, sunless weather a little warmth should be maintained in the structure by fire-heat, in order to dispel damp.

ERANTHEMUM PULCHELLUM. — This beautiful blue-flowering subject requires good culture during the summer months, and frequent stopping to induce bushy plants. Stopping should, however, be discontinued in time to allow the after-growth to grow a few inches, and become ripened before dull, wintry weather sets in or the plants will not flower freely.

HIPPEASTRUMS.—To ensure free flowering when forced early in the year, the bulbs must be thoroughly ripened in the previous summer. New growth is made immediately after flowering, and as soon as this is completed in a genial temperature the plants should be duly hardened by placing them in a cold frame or pit exposed to full air and sun until they go gradually to rest, when they should be stored on their sides in a dry position in a cool house until restarted into growth next year. The largest bulbs should be chosen for the earliest batch, and if they are in good condition no repotting will be required. Seedlings should be kept growing for as long a time as possible in order to build up good bulbs.

FITTONIAS.—These prettily-marked foliage plants are well adapted for edging the stages, and for growing in baskets suspended from the roof. Wire baskets may be lined with green moss from the woods, and filled with a compost of two parts loam and one part each of peat and leaf-soil, with sand added. Insert the cuttings about four inches apart over the whole basket, well water in, and place in the propagating house, where they will quickly become established. When new growth commences peg the shoots into the moss, so that the whole surface of the basket may be quickly clothed, and pinch out the point of each shoot. The best way to afford moisture to all basket plants is to immerse them in a tub of water for a few minutes. Fittonia argyroneura has bright green leaves, lined with silvery white, whilst F. Pearcei is a capital companion to it, having markings of rosy-carmine. — H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

YOUNG POT VINES.—When the canes are fully developed—which should be about the middle of this month—remove them to their outside quarters, placing them in a sunny position to thoroughly ripen the wood and foliage. The method we adopt here is to fix galvanized pea trainers tied horizontally to strong stakes, about two feet from the level of the ground. The vines are then detached from the wire trellis in the house, and the pots and canes are carefully removed, and secured to the pea trainers outside. By adopting this method, there is always a free current of air around the canes, which materially assists the ripening of the wood. The pots are placed upon a good hard ash surface, and copious supplies of clean water given to the roots as required. In this position they are allowed to remain until the foliage begins to fall off, when the canes are then cut back with a sharp knife, leaving the rods about twelve feet in length. If they are not required for immediate forcing, place the pots close together under a wall, and protect with long stable litter. Tie securely in a perpendicular position to the wall, where they can remain until required for forcing purposes.

PINE APPLES.—The final potting of the successional plants should, generally be completed this month. After this work is accomplished, the house should be kept close, and the plant be shaded lightly. If necessary, water sparingly until the roots have commenced to push into the new soil, and lightly spray every afternoon with clean tepid water, the spraying being done after the ventilators have been closed. Maintain a bottom heat of from 80deg. to 85deg., and pot up crowns and suckers as soon as they are taken off. Plants swelling their fruits should be watered occasionally with weak liquid manure. Stake and tie all fruits as required, and admit plenty of air when possible, but not in such a manner as to cause cold draughts, or a sudden lowering of the temperature.

TOMATOES.—The plants generally have borne heavy crops of fruit, but we hear many complaints in this locality of the leaf disease, in spite of periodical sprayings with the Bordeaux mixture. Careful attention must be paid to the supply of water to the roots, and also admit plenty of air at all times; leaves badly infested with disease should be cut off, placed into old boxes, and immediately consigned to the fire. Towards the middle or end of this month sow seed for the production of plants for early spring supplies, using a light sandy compost, and grow them as near the glass as possible.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

PERPETUAL CARNATIONS.—These are continuing to make a bright display of bloom where planted out in the open, and as a result of their good behaviour as bedding plants they will be more largely grown for this purpose in the future. It is necessary to keep the plants neatly tied, and to remove dead blooms as they occur. The present is a good time to root cuttings to secure strong vigorous plants for next season; we invariably obtain our best specimens from plants rooted now. If inserted singly in thumb pots, filled with a light sandy compost, and kept close in a cold frame for two or three weeks, they will soon take root, provided they are afforded a light shade, and not allowed to become dry. For planting out of doors Britannia, Winsor, May Day, Mrs. C. W. Ward, and White Perfection are good.

PROPAGATION.—The present is a good time to propagate a number of hardy shrubs from cuttings of the half-ripened wood, or from layers, as by this means nicely-rooted specimens are obtained before winter, and these grow away freely the following spring. It is an advantage to remove the growths with the heel of the old wood attached, as roots are then emitted readily. Cuttings can be inserted near the edge of 48-size pots, or in a bed of soil in a cold frame, whichever is the most convenient, but a liberal quantity of sand in the soil is essential, and the compost must always be pressed down moderately firm. Keep the frame close until roots are emitted, and use the syringe freely to maintain a moist atmosphere.

SEASONABLE NOTES.—The flower beds require constant attention at this time of year to keep them attractive, and must have all dead blooms removed regularly. Tie up all subjects that need it, and keep the various plants employed for carpeting pinched back, while those planted to form designs will need frequent and careful treatment to preserve the correct outlines. Yew and other hedges can now receive their final clipping, but in carrying out this work it is important to keep them perfectly true to shape. A sharp pair of shears is the best tool to use, except in the case of large-leaved subjects like laurel, when secateurs are more suitable to avoid cutting the leaves. Lavender should be cut and dried as soon as it is in flower, and cuttings of this sweet-scented subject can be rooted easily at the present time. Lose no time in completing the layering of border carnations, so as to obtain strong-rooted plants before winter. In case of dry weather keep them regularly damped over to facilitate quick root formation. Sweet peas should have all the seed pods removed, so as to prolong the flowering period; if this is done and the plants are kept regularly supplied with liquid manure, a continuation of bloom can be expected for many weeks.—J. Gardner, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## Bruges International Horticultural Exhibition.

As far back as 1651 Bruges had a horticultural society, and there are catalogues or schedules dating from that early time to prove that the society held exhibitions with some degree of regularity. In those days every member was expected to bring a plant to each exhibition, one plant—no more, no less. Years rolled by for a long period, and the numerous trade members gradually drew together, and at the same time drew apart from the old parent society, devoting their attention to plants and flowers of commercial value, and troubling their heads little about plants notable for their curious character, botanical interest, or extreme rarity. At last there came to be two societies, and the tendency for them to stray farther and farther apart grew stronger and stronger with the procession of the years.

For centuries a great horticultural industry had been growing up in and around the old Flemish city of Ghent, but the trading spirit seemed to be very scant in the rival city of Bruges; indeed, in this, as in many other things, Bruges seemed to be satisfied with its ancient glory, its beauty, picturesqueness, and wonderful interest. On the one hand Ostend developed into a thriving port, and an immense and fashionable seaside resort; on the other hand, with modern methods added to unique business ability, handed down from generation to generation, the Gantoise made their city the great horticultural centre on the Continent. Bruges slept peacefully between the two.

In later times a few keen business men saw the possibilities of Bruges as a business centre, and especially as a fine district for the development of horticulture on commercial lines. M. Vincke, M. Beernaert, and Mr. F. Sander may be cited among those who knew when to take occasion by the hand. Under the guidance of such master minds business increased, acre was added to acre, and glass house to glass house outside the old gates or "ports" of the moat-encircled city, and Britishers found it was worth while to stop at Bruges, even though Ghent was their ultimate destination. Everyone who has a close acquaintance with the history of horticulture during the last score of years knows that Bruges has taken a very prominent part in the development of trade, especially in the cultivation of palms, orchids, and bay trees, but it needs a visit to Bruges ere one can understand the possibilities and prospects for the future.

The idea of holding an international exhibition at Bruges found birth in the fertile brain of Mr. F. Sander, sen. He had endeavoured to bring the two horticultural societies together, believing that a community of interests would be of the greatest possible advantage, and be the means of bringing business to all those interested. Two difficulties appeared; who would be the best individual to bring everyone together harmoniously and where could a big exhibition be held? Mons. Chas. Steinmetz, well liked and highly respected, was obviously the man for the business. The place? The audacious idea of securing the loan of the old market place—the largest market place in Europe so the people of Bruges say—was conceived. The city fathers granted the request and so eleven years ago the first international, a quite modest affair, was duly held.

Success breeds success, and so, notwithstanding the great exhibition at Chelsea in May last, the horticulteurs of Bruges resolved to hold a great exhibition this year. Again the city lent the market place, permitted many alterations, and gave financial help. The Province and the Government also lent their aid, and, in addition to the market place, the use of the great hall that runs along three sides of the courtyard of the famous Belfry of Bruges, was granted.

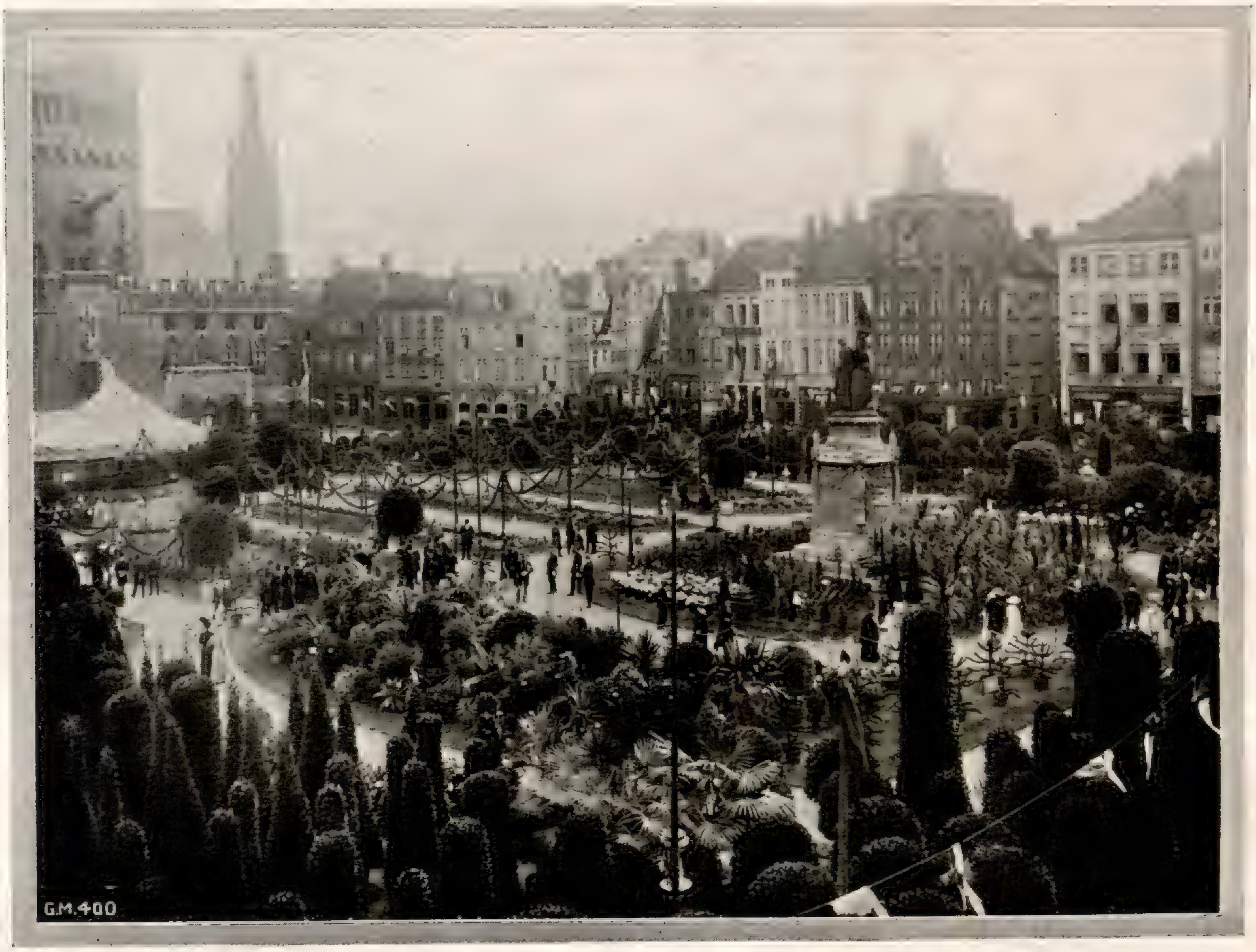
> "In the market place of Bruges stands
> the Belfry, old and brown;
> Thrice consumed and thrice rebuilded,
> still it watches o'er the town."

From Sunday, August 11, to Sunday, August 18, the historic belfry had a new watch to keep, i.e., over an horticultural exhibition of great importance, and there seemed to be an added gaiety in the carillons rung out by the smaller bells, and an added dignity in the sonorous notes of the great bells.

### THE EXHIBITION.

With that special genius which our horticultural confrères on the Continent seem to possess, the great Market Place of Bruges was transformed into a large garden. Half a dozen rows of stout wire strained to iron uprights, with some thin green canvas attached to them, formed the fence to enclose this part of the exhibition—a fence that was fully respected at Bruges, but which London gamins would have swarmed through or over with huge delight.

In the centre of the Market Place stands a large monument surmounted by statues of Bruges' two famous heroes, Jan Bradel and Pietar de Coning, and all round is cobble-stone paving. On this occasion the stones were completely covered and hidden by roads and paths of firm sand, by green turf lawns, by beds of gay tuberous begonias, of zonal and ivy-leaved pelargoniums and of cannas, and by great groups of dracænas and masses of fine shrubs from Australasia or the Mediterranean region. Just inside the fence, and ranged high in each corner were quantities of wonderful bay trees, their deep green colouring harmonising finely with the grey and brown of the surrounding buildings. The pathways and the temporary en-

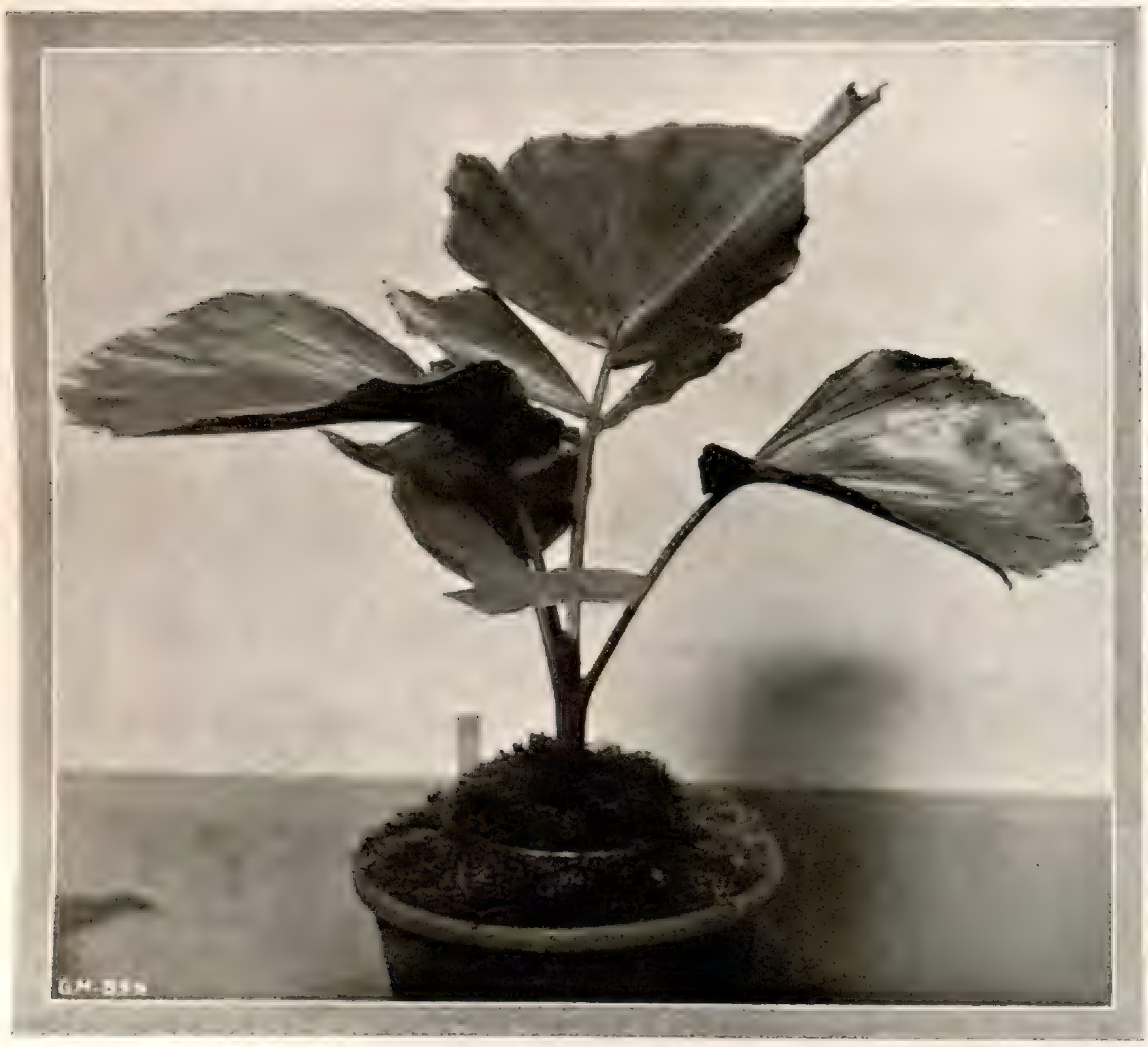


INTERNATIONAL HORTICULTURAL EXHIBITION AT BRUGES.

View of the Market Place, showing a large part of the Outdoor Section of the Exhibition.

trance gates were picked out with electric lights, and so at night the Market Place presented a quite pretty picture. Our illustration shows the monument with the competitive displays of pelargoniums and marguerites, grouped in flower beds, with fuchsias and dracænas behind them. It also shows one of the bay-tree corners, and the lower part of the Belfry filling the background. In the halls it was practically impossible to take photographs because of the subdued light.

The arrangement of the exhibition was on the usual continental lines, everything being disposed so as to ensure an effective and harmonious whole. In the Belfry Halls, as in the open Market Place, the same idea of general effectiveness was kept in view, with excellent results, but the lighting in the halls was not good, and during the numerous showers that occurred on the earlier days of the exhibition, the clouded skies made it difficult to read the labels on the plants. Palms, new plants, ferns, orchids, bromeliads, stove plants, dracænas, crotons, and anthuriums were among the leading features in the great halls, and these were all capitally grown and shown, indeed it was not possible to find a poorly-grown plant anywhere.



SOCRATEA FORGETIANA.

A distinct and attractive new palm exhibited at the International Horticultural Exhibition, Bruges, by Messrs. Sander and Sons, St. Albans and Bruges.

Cut flowers were not a large section, and it must be stated that in quality and in arrangement this was by far the weakest section of the exhibition. The roses were shown in little bunches on large flat boards or boxes. Gladioli were present in large numbers; each spike was stuck in a wine bottle, and the bottles set quite close together. It is a little pleasing to our insular vanity to know that we can display cut flowers better at home than at Bruges, and, so far as we could gather, at this season, we can also grow roses, gladioli, and phloxes better at home. Perpetual carnations were conspicuous by their absence at Bruges, and yet no British exhibition is complete without them. There was on exhibit of marguerite carnations in the courtyard of the Belfry, where bays, standard euonymuses, etc., were disposed in grass-bordered beds.

After our own great international horticultural exhibition at Chelsea, the Bruges show was a small affair, and, of course, it was not so large as the last Ghent Quinquennial Show. But everything must have a beginning, and for the third attempt it was an excellent effort.

## GENERAL ARRANGEMENTS.

A schedule of four hundred and sixteen classes means a large show, and much care in the disposition of the exhibits, but the committee, with the secretary, Mr. C. Steinmetz, and the president, M. Dumon, made their arrangements with the greatest completeness the position for everything being marked out boldly, the shape of every group carefully defined, and the name of every competitor marked on his place, so that there was no confusion.

Saturday, August 10, was devoted to judging, but it was quite a good while after the advertised time before the jury commenced work. M. Dumon addressed the members of the jury, and extended a hearty welcome to the seventy-five who had come from all parts of Europe, and one from America. As usual the judges were divided into groups, each with its own president and secretary. Judging was finished in good time, and then followed luncheon in the Provincial Government Buildings. During the whole of this day the exhibition was reserved for the officers and judges, and in their honour there was a special musical entertainment in the evening by a first-rate regimental band. This was all very pleasant, as was the banquet the following evening, but we should have been even more grateful had the award cards been placed in position fairly early during Saturday afternoon, so that the decisions of all the judges could have been known and noted.

Those who came over from England and acted on the jury were: Messrs. J. S. Brunton, Burnley; G. D. Clark, Dover; C. H. Curtis, of the Gardeners' Magazine; Jas. Hudson, V.M.H., Gunnersbury House, Acton; W. Iceton, Putney; Gurney Wilson, Haywards Heath; and Rev. J. Cromblеholme, Accrington, Manchester. Continental horticulturists on the jury included: Mdme. la Comtesse Louis de Hemptinne, Ghent; MM. Jules de Cock, Meirelebeke; Firmin de Smet and Romaine de Smet, Ghent; Jules Hye Ghent; Firmin Lambeau, Brussels; C. Pynáert, Ghent; Philippe de Vilmorin and A. Truffant, of Paris; H. Lambert, Trier; and M. Sibert, of Frankfurt; while Mr. T. Tyson came from Madison, New York.

There were sixty different competitors, representing Belgium, France, Holland, Germany, England, Luxembourg, and Switzerland.

## ORCHIDS.

Notwithstanding the late season, orchids were really well shown, and a goodly number of exhibitors came forward. The largest competitors were Messrs. Sander and Sons, St. Albans and Bruges, and they secured the Work of Art and the large gold medal offered for the best trade collection. This exhibit was a large one, and in it the specially fine things were Dendrobium superbiens, beautifully flowered, associated with hybrid odontoglossums, Lælio-cattleya Aphrodite, the charming Dendrobium Sanderæ, Cattleya Dowiana, Brasso-cattleya violacea, the aromatic and waxy flowers of Anguloa eburnea, Ærides Sanderiana, a fine example of Vanda Lowi, with three of its long spikes; Vanda cærulea, Acineta densa with numerous pendant spikes of golden flowers, Cypripedium Maudæ, and many other fine things.

The same firm had the best specimen Phalænopsis, a wonderful plant of P. violacea with seven huge leaves, and two spikes of its violet-centred flowers. For a collection of cypripediums, the Messrs. Sander led the way, and here the best things were C. Edwardi superbum, C. Felicity, C. A. de Lairesse, C. Warnhamense, C. Oakes Ames, and C. Lord Derby. The best specimen cypripedium was a large C. Lord Derby with four spikes and ten large green and white and rose-purple flowers. Another award fell to the St. Albans firm for a collection of cattleyas and lælias; here the flowers were rather small, save in the cases of C. Gaskelliana alba and Brasso-cattleya Thorntoni.

Miltonias were quite well shown for the season, and gold medals were granted to M. Jules Hye, Ghent, and Mons. C. Vuylsteke for their contribution of these effective flowers. The latter gained a medal for his four seedling miltonias, all from a cross between M. Hyeana and M. Phalænopsis, the one named M. Reine Elizabeth de Belgique being very pretty, with rosy-violet markings on the lip and on the petals. Cattleya gigas, Frau Melanie Beyrodt, with four beautiful blooms, the pure white sepals and petals forming a grand setting for the bright violet-purple lip, was exhibited by M. Jules Hye.

M. Firmin Lambeau was awarded a large gold medal, with felicitations, for a lovely collection of orchids. Vanda cærulea was capitally shown, and so were C. Gaskelliana, C. Juliet—white-flowered, Cattleya Baron Delbeke, a fine secondary hybrid, giving large evidence of C. Dowiana influence, and with a glorious combination of ruby, purple, and gold in the lip. The very pretty Oncidioda Charlesworthi, and Odontioda heatonensis added grace to colour and beauty, and Miltonioda Harwoodi, and Phalænopsis Rimestadiana were also very fine in this collection.

Messrs. Charlesworth and Co., Haywards Heath, contributed a table of orchids, and in this collection the branching spikes of Odontoglossom Solon, O. armainvilliersense xanthotes, O. Epicaste, and O. ardentissimum were conspicuously beautiful. O. crispum Golden Gem, with bright yellow lip, and yellow spottings on the sepals, was another beautiful and striking plant. Cattleya Rhoda, Lælio-cattleya eximia, Cypripedium Daisy Barclay, Odontionia Lairessæ, and Oncidioda Charlesworthi were other good and interesting plants in this gold medal display. M. G. Vincke, Bruges, was awarded a gold medal for a collection of orchids, composed chiefly of cattleya and lælio-cattleya hybrids.

M. Charles Dietrich, Anderghem, presented a handsome, if rather small, collection of orchids, containing fine examples of Cattleya Comet, C. Dupreana, Brasso-cattleya Maroniæ, Lælio-cattleya Lucida, L.c. calistoglossa, Miltonia Bleuana, and Cypripedium Massaianum.

## PALMS.

Palms were superb. There is no other word for it. On every hand there were specimens of all sizes, and of wondrous grace and variety. For eight specimens the Flandria Company and Messrs. Sander and Sons had a close fight for first place, but the latter won the premier award with gigantic examples. They had far and away the finest Latonia borbonica aurea we have ever seen, some of its leaves six feet across, and of a distinct yellow shade. The other kinds were Phœnix Roebelini, the grey-green Cocos Yatai, Phœnix canariensis, Kentia Forsteriana, 20ft. high, Latania borbonica robusta, Kentia Belmoreana, Corypha australis, and Sabal Blackburniana.

The Flandria Company put up a great corner group of twenty large palms, showing kentias, phœnix, coryphas, and rhaphis of a size and beauty rarely seen at home. This first prize group and the one previously noted, would have added very materially to the effect of the show at Chelsea in May last. Mons. H. C. Dumon, of Menten, is an amateur, who has a great love for palms, and grows them as a hobby, just as one grows orchids, or carnations, or sweet peas at home. He has wonderful specimens, and was awarded a special first prize for ten splendid plants of Brahia Roylei, B. dulcis, Latania borbonica, Kentia Forsteriana, K. Belmoreana, Corypha australis, etc. He also gained a special award for a splendid Phœnix canariensis, of enormous size, and finely grown. It was said that this had been grown from seed by M. Dumon, in whose collection it had remained forty-four years, and during the greater part of that time had been grown out of doors. Eighteen rare palms proved an interesting class, Messrs. Sander and Sons leading with Ptychoraphis Sieberti, Ceroxylon andicola (the wax palm), Linospadix Petrieanum, Pinanga Hencklei, etc. M. E. Leys Simoens was unbeatable for the fan-leaved latanias, palms that have almost gone out of fashion in Great Britain.

A palm that is daily growing in popularity is the graceful Phœnix Roebelini, most beautiful of all the date palms. As small plants it is largely used for table decoration at home, but we scarcely know it as a large specimen. At Bruges, however, there are many fine plants, 4ft. to 6ft. high, and furnished to the pot with elegant deep green leafage. It is a somewhat slow grower, but even so, it seems destined to quite displace the pretty Cocos Weddelliana from the position it has so long held. The Flandria Company had the best twenty specimens, and Mr. Story, Ghent, was a good second; the best single specimen, however, was a marvel of high culture submitted by M. Alloncius, Ghent. What makes Phœnix Roebelini so useful is its hardiness when used continually in dwelling rooms, restaurants, and hotels.

The best Rhapis humilis was a giant about 16ft. high and 10ft. across near the top, and carrying scores of its erect leafy stems; this, from M. G. Vincke, was greatly admired.

## BAY TREES.

All around the Market Place, just inside the wire fence, bay trees of all shapes and sizes were staged by the leading growers of Bruges and Ghent. There were bay trees dwarf, 18in. high; bay trees tall, 20ft. high; columnar, pyramidal, bushy, standard, mop-headed and three-tiered bay trees, all in the pink of health, and thickly covered with dense green fragrant foliage. One wonders where in the world all these bay trees go to, for obviously they are not grown for the fun of the thing. Some of the giants must be 50 years old. They have a value for the decoration of restaurants and winter gardens and also for terrace gardens in kindly climates, but in Bruges and Ghent there are literally millions of bay trees, and we heard of one firm putting in 20,000 cuttings this year. There must have been nearly a thousand bay trees at the exhibition. The finest large examples were four columnar ones and four pyramids from Messrs. Sander and Sons, but for round-headed standards M. G. Vincke scored for size, and he had a grove of huge specimens. Messrs. Sander and Sons; the Flandria Company, Bruges; and M. Vincke were the chief exhibitors of these wonderfully attractive and finely-grown and beautifully-trained specimens.

## NEW OR RARE PLANTS.

In this section Messrs. Sander and Sons, St. Albans and Bruges, scored almost all along the line. The word "recent" as applied to the introductions, was not, however, taken too seriously by the competitors. This firm gained the special award for a dozen plants of recent introduction, and their set consisted of Maranta Sanderæ, M. Veitchi, Eriobotrya japonica variegata (the variegated Loquat), Asparagus gracillima, a very light form of A. plumosus; Dieffenbachia Sanderæ, green, mottled with cream, and with the leaf-stalks of the very broad oval leaves clasping the stem curiously; Adiantum Siebertianum, that may be likened to A. Lawsonianum, but with all the pinnæ undulated; Polypodium irioides corymbiferum; Alocasia Micholitzi; Chamædorea pumila, a dwarf palm; Heliconia insignis, with dark bronzy-green leaves; Anthurium Sanderi; and Trevesia Sanderi, an extraordinary plant from Annam, with long-stalked, palmate leaves of dark, purplish-green colour, but with the lobes sculptured out in quaint fashion, here and there, often leaving several inches of the thick midrib quite naked; the young leaves are pinkish, and the tips of the lobes droop prettily ere the leaf expands fully.

The same firm scored for a dozen non-flowering plants of recent introduction, and here they showed Dracæna Deremensis Warnecki, already seen several times at home; Leea macropus, with broad leaflets; the prettily creamy-marked Ficus australis variegata; Dracæna perelegans, from the Solomon Islands, with long, recurving, narrow leaves, coloured red, pink, and green; Alocasia colossea, a noble plant, with large heart-shaped, light green leaves, on pale creamy-green stalks; and a much divided form of Polypodium irioides named Bartelsi. The best non-flowering plant not yet in commerce was considered to be the variegated Loquat; and the best flowering plant not yet in commerce was a yellowish form of the now popular Marguerite Mrs. Sander; it has full-centred flowers, the centre being soft yellow, and the outer ring of ray florets creamy-white.

Begonia Sanderæ gained the prize as the best new flowering greenhouse plant; it is after the character of B. semperflorens gigantea, and has red-tinged leaves, and neat, bright crimson-scarlet flowers in clusters. Socratea Forgetiana was adjudged to be the best palm of recent introduction; it is very distinct, and has broadly-rounded, rich green leaves, that are quite entire in the plant as shown. The best new seedling dracæna was D. tricolor, somewhat after the character of D. Baptisti. All the foregoing were from the St. Alban's firm, but Mr. Vincke scored for a new seedling aroid with Anthurium Mdme. Dumon de Menten; this has flattish, rounded spathes of fair size, and of a beautiful pink shade, and belongs to the A. Andreanum section.

## VARIOUS PLANTS AND FLOWERS.

The special gold medal and work of art offered by the Royal Horticultural Society of Bruges for the best collection of twenty-five flowering and non-flowering plants was worthily won by Messrs. Sander and Sons with a splendid collection, in which were remarkable specimens of the rare Dracæna Broomfieldi, Bilbergia Forgetiana, with broad creamy bands down its deep green leaves; Fourcroya Watsoniana, with long leaves handsomely variegated with green and white; Aphelandra undulæfolia, finely flowered; Adiantum Glory of Moordrecht, Dendrobium Sanderæ, a variegated form of Vanilla plomlatris, Cocolobea pubescens, the showy Solanum Wendlandi, Alocasia argyrea, Sansievera Laurenti with golden bands along margins of its erect bronzy-green leaves; Disa grandiflora, Dracæna Sanderiana, and Phynium variegatum.

Plants suitable for cool houses were very largely shown, and proved very interesting. Phormium tenax variegata, Acacia verticulata, oranges, myrtles, Clethra arborea, Metrosideros floribunda, Agapanthus umbellatus carrying its spikes of rich blue flowers, pomegranates, Eugenia australis, variegated euonymuses and oleas, eurya latifolia variegata, and oleanders full of bloom were among the subjects staged in the Market Place by Messrs. Sander and Sons and other firms.

In the matter of cordylines or cool-house dracænas the Flandria Company exhibited remarkably well, and set up fine plants of D. Doucetti, D. atro-sanguinea, D. Buyssei, something like D. Bruanti; the yucca-like D. Prince Albert; the elegant D. lentiginosa, and the yellow variegated D. Princess Elizabeth. These were handsome plants from 3ft. to 8ft. high clothed to the pot or tub with fine leafage.

In a small collection of conifers from M. Camille de Coninck, Maldegen, we noticed the white-tipped Sequoia sempervivum albo spica, the elegant Cupressus Lambertiana aurea, and Cedrus Deodara argentea-verticulata, all distinctly coloured and effective.

The range of colouring and form now to be found in Hydrangea Hortensia was very evident in a collection of neat specimens exhibited by M. de Coninck; especially good were the pink La Lorraine, the fringed Mdme. E. Mouillere, and the smaller Mdme. Renée Gaillard.

Mr. Charles Steinmetz, St. Andre, Bruges, put up the best collection of pomegranates, oranges, Eugenia australis, Clethra alnifolia, C. arborea, myrtles, euonymus, and other plants of like character, suitable for an orangery or for terrace decoration, and his collection was a very fine one.

Cycads and bromeliads are not often seen at home, outside botanic gardens, but they are grown on the Continent still. Messrs. Sander and Sons had noble specimens of Zamia Kirsteniana and a big double-crowned Eucephalartos Altenstieni. M. Jules Hye de Cock put forward a nice collection of bromeliads that included quite good examples of Vriesia hieroglyphica, V. fenestralis, Cryplanthus zonatus Bruarni, and Bilbergia rhodocyanea superba.

Ferns were not much in evidence, but a lovely group of Adiantum Farleyense Glory of Moordrecht, shown by Messrs. Bier and Ankersmit, Melle, attracted a great deal of attention by reason of its elegance and beautiful light yellow-green colouring of the fully-grown fronds, and the reddish-pink hue of the young half-expanded fronds.

Begonias were quite good, as shown by several firms; the largest double blooms were those displayed by M. Louis van Houtte, Ghent, and Fœmina, light pink, frilled; Raphael, golden-buff, frilled; and Madagascar, a big double orange-scarlet were outstanding varieties.

Among the gladioli staged by M. Alphonse Braeckman, Wetteren, were many of quite distinct colouring that should look well if highly cultivated; Bellfroi, blue and cream; Gastenbauinspector Fox, dark purple; Fanfaron, violet and blue; Argyrite, white; and Aboriginé, deep violet-purple, were a few we made a note of.

Some very good cactus dahlias were staged extensively by Mr. J. G. Ballego, Leiden, Holland, who displayed a large number of cactus and pompon varieties that are well known at home, and also set up a large decorative variety named Hortulanus Fiet that may be described as a salmon Gustave Douzon.

## Royal Horticultural Society.

There would have been only a moderate exhibition at the Royal Horticultural Hall on August 13, but, as the exhibits of the National Gladiolus Society filled considerable space, the hall was fairly well filled. Hardy flowers, gladioli, trees and shrubs, and a few orchids were the subjects chiefly shown, but there were a number of novelties, Montbretia Star of the East, and Lælio-cattleya Godmani being the best.

### FLORAL COMMITTEE.

An extraordinarily fine exhibit of ornamental trees and shrubs, flowering and foliage, was staged across the end of the hall by Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree. All the kinds displayed were represented by cut specimens, and in many cases a large number of specimens were grouped together so as to produce the same effect as a goodly plant or bush. We cannot find space to mention other than a small proportion of the subjects shown, but some of the most effective were Buddleia variabilis, B. v. Veitchi, B. v. superba, B. v. lilacina, Rhamnus frangula, Catalpa Kaempferi purpurescens, Spiræa silicifolia, S. callosa rubra, S. Douglasi, Hydrangea radiata, H. paniculata grandiflora, Colutea istria crowded with green bladders, Olearia Haasti, the graceful white Deutzia corymbosa, John Downie crab apple, Pyrus lanata, the purple beech, Cornus alba variegata, Rubus fruticosa fl. pl., Ceanothus azureus Indigo, Ligustrum medium with long, loose panicles of white flowers, Rhus cotinus—the Burning Bush, the golden-flowered Potentilla micranda, Myrtus Ugni, Fuchsia Thomsoni, Lavendula spicata alba, Clematis coccinea, and the yellow-fruited Coriaria terminalis. Altogether there were about three hundred distinct species or varieties of hardy trees and shrubs on view, representing a wonderful collection of rare and beautiful things.

Gladioli filled a very important place in the large group of hardy flowers contributed by Messrs. Barr and Sons, Covent Garden, and over a groundwork of double gypsophila the spikes looked very well indeed, especially those of the varieties La Comite, Etincella, Alice, Ledrines, and the dark plum-coloured Martinique. A fine pan of Acaena microphylla gained a Cultural Commendation. Other good things were Lilium sulphureum, L. nepalense, L. tigrinum splendens, and white agapanthuses. Messrs. H. B. May and Sons, Edmonton, showed neat pot plants of such useful large-spiked veronicas as Pearl, Lavinia, Reine des Blanches, Violette, Mauvena, the almost black-leaved and purple-flowered Favourite, La Merveilleuse, Admiration, fine deep blue; Mont Blanc, pure white; and Eveline, bright rose.

Though so late in the season for the southern counties, Messrs. S. Bide and Sons, Farnham, put up a fine lot of sweet peas, in vases, and some of the best varieties represented were R. F. Felton, Mrs. C. W. Breadmore, Scarlet Monarch, Clara Curtis, Edna Herbert, Mrs. W. J. Unwin, Queen of Norway, Florence Nightingale, Mrs. Hallam, and Elfrida Pearson. Messrs. Aldersey and Marsden Jones, Tilston, Malpas, were also exhibitors of sweet peas. Herbaceous phloxes from Messrs. W. Wells and Co. included big stands of Selma, the dark purple Le Mahdi, Bacchante, Iris, and Crepuscle; Linaria dalmatica from this firm was well shown.

Messrs. Jas. Kelway and Son, Langport, put up a very fine lot of large-flowered gladioli, some spikes having nine or ten fine opened flowers on them. Golden Measure was again in fine form, and so were the blush Duchess of Wellington, the purple Le Nuit, White Giant, Kelway's Purple, Melton, mauve; and Edward V., red. Some wonderfully fine flowers of double tuberous begonias were shown by Mr. A. L. Gwillim, Sidcup, and Marguerite Gwillim, clear soft yellow, was particularly fine among a number of good varieties.

Pentstemons were largely and extensively shown by Messrs. T. S. Ware, Feltham, who again grouped together large numbers of spikes of such varieties as Salomé, Ideal, Dolabella, Capella, Lady Hallé, Diana, Sylvaine, the brilliant red and white Diamond, Urania, and Palmira. A bank of dwarf celosias, set up by Mr. L. Russell, Richmond, was greatly admired; the colours represented were rose, yellow, scarlet, and purple. Mr. Russell's collection of hardy fuchsias proved interesting, but we should be inclined to question the hardiness of some of the varieties staged; F. myrtifolia minor, F. globosa, F. Riccartoni, F. Thompsoni, and F. gracilis were all good.

Messrs. R. Wallace and Co., Colchester, submitted some beautiful new montbretias, notably the splendid Star of the East, Prometheus, Comet, King Edmund, Lady Hamilton and Germania; they also contributed Kniphofia Unique, a neat, somewhat small-spiked coral red variety; gladioli, and liliums. Mr. Davison, gardener to Colonel Petre, Westwick, Norwich, showed a gloriously fine new montbretia named Star of the East. This was deservedly granted a First-class Certificate. It has blooms about four inches across, and of a rich yellow colour, with a little orange shading, and the flowers are borne on tall, sturdy, branching spikes. It is unquestionably the finest of the many beautiful varieties of montbretia with which Mr. Davison has enriched our gardens. Coleuses and Rex begonias from Messrs. H. Cannell and Sons, Swanley, showed how great is the range of leaf colouring in these useful plants. The Guildford Hardy Plant Company and Messrs. S. Low and Co., Enfield, respectively brought exhibits of hardy flowers and carnations.

Messrs. Felton and Sons, Hanover Place, W., had a fine exhibit of the large rose-pink flower of Neluarbium speciosum, with a number of the big circular leaves and curious seed vessels. This aquatic is grown in most botanical gardens, and in a few private gardens—Mr. Hudson has flowered it at Gunnersbury House, but we do not remember having seen flowers imported from the Orient before. We understand they are five days on the journey, and on arrival the buds are opened as one might open a water lily, and they will then keep well for a week or ten days in water. When held up on a wire frame for a day or two the big leaves become more or less rigid, and they then add to the beauty and interest of any bold decoration made with the flowers.

Mr. Amos Perry was a large exhibitor of gladioli and delphiniums, staging these in alternate groups. The lovely pale-pink America was one of the finest varieties of gladioli shown, but for the most part, the flowers were not labelled, and the spikes were a trifle crowded in the vases.

Rhodostachys ardina, a bromeliad, with spiny leaves, and a rosette of rose-pink flowers, set amid silvery bracts, was shown in flower by Mr. J. T. Bennett Pöe, Holmwood, Cheshunt. The pure white Cosmos, White Queen, from Messrs. Dobbie and Co., Edinburgh, gained an A.M. Messrs. Fells and Sons, Hitchin, contributed a small collection of rock plants.

### ORCHID COMMITTEE.

Very handsome was Lælio-cattleya Godmani (F.C.C.) (C. Iris x L.-c. callistoglossa), from F. Du Cane Godman, Esq., South Lodge, Horsham; this has lovely broad, deep rosy-purple sepals and petals, and a big royal purple, ruby-shaded, yellow-throated lip. Mr. H. A. Tracy, Twickenham, sent a few plants, including Oncidium Crœsus.

Messrs. Charlesworth and Co., Haywards Heath, were represented by Vanda Sanderiana, Stanhopea convoluta with four fragrant, ivory-white flowers; Oncidium luridum guttatum, and the pretty Platyclinis filiformis. Mr. E. H. Davidson, Borlases, Twyford, exhibited Cattleya Venus Golden Glory with yellow sepals and petals, Odontoglossum Pamela, Odontioda Ruby, O. Schroderi Davidson's var., O. Thwaitesi, and O. Empress Eugenie (A.M.), white, with dainty heliotrope markings.

Two handsome plants brought up by Mr. H. Alexander, grower to Sir George Holford, Westonbirt, Gloucester, were Lælio-cattleya luminosa Mandarin (A.M.), a fine thing with deep yellow sepals and petals, and dark purple lip; and L.-c. Glaucus (F.C.C.) (L. purpurata × L.-c. rubens), with bright deep purple sepals and petals and dark crimson-purple lip. A Cultural Commendation for Cattleya Tacitus with nine splendid flowers, fell to Mr. Alexander. Messrs. J. and A. McBean, Cooksbridge, showed Odontoglossum nigrescens, with small black-maroon sepals and petals, each of the latter having a tiny white base: a golden crest on the triangular lip was very conspicuous.

Mr. White, grower to Sir Trevor Lawrence, Bart., Dorking, put up capital plants of the lovely Lælia monophylla, Bulbophyllum odontissimum, Brasso-cattleya Joan, and a curious bulbophyllum with flattened racemes, allied to B. lupulinum.

### FRUIT AND VEGETABLE COMMITTEE.

Some early fruits from Messrs. S. Spooner and Sons, Hounslow, included attractive dishes of Langley Pippin, Early Strawberry, Worcester Pearmain, White Transparent, Beauty of Bath, Cellini, Williams' Favourite, Lady Sudeley, Jas. Grieve, Cardinal, Red Quarrenden, and Red Astrachan apples.

Numerous melons and marrows were brought from the Wisley Gardens, and awards granted to them after trial were confirmed at this meeting, as shown below.

### CERTIFICATES AND AWARDS.

First-class Certificate.—To Montbretia Star of the East, from Mr. Davison, gardener to Colonel Petre, Westwich, Norwich; to Lælio-cattleya Godmani, from F. Du Cave Godman, Esq., South Lodge, Horsham; to Lælio-cattleya Glaucus, from Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury; to melons Hero of Lockinge and Frogmore Prolific, from Messrs. Jas. Veitch and Sons, Chelsea.

Award of Merit.—To Kniphofia Unique, from Messrs. R. Wallace and Co., Colchester; to Cosmos White Queen, from Messrs. Dobbie and Co., Rothesay; to Rhodostachys andina, from J. T. Bennett Poë, Esq., Cheshunt; to Odontoglossum Empress Eugenie, from Mr. Davidson, Borlases, Twyford; to Lælio-cattleya luminosa Mandarin, from Lieut.-Colonel Sir G. Holford, Westonbirt; to melon Royal Favourite, from Messrs. Sutton and Sons, Reading; to marrow Bush Green, from Messrs. Barr and Sons, Covent Garden; to marrow Moore's Cream, from Messrs. R. Veitch and Sons, Exeter; to marrow White Bush, from Messrs. W. Nutting and Sons, Southwark Street, S.E.

Awards of Merit were confirmed in the case of the following flowers tested at Wisley, but not shown on this occasion: Hollyhock Newport Pink, from the Messrs. Dreer, Philadelphia; to sweet peas Isobel Malcolm, Mrs. Routzahn, and Tennant Spencer, from Messrs. Dobbie and Co., Edinburgh; to sweet peas Hercules and Premier, from Messrs. G. Stark and Son, Great Ryburgh; to violas Jubilee, Lavender Queen, Mrs. Chichester, and Snowflake, from Mr. M. Cuthbertson, Rothesay; to violas Edina, Maggie Mott, and Walter Walsh, from Messrs. Dobbie and Co., Edinburgh; to violas Bessie and Kingcup, from Messrs. A. Dickson and Sons, Newtownards; to violas John Quarton, Mrs. Davidson, and W. H. Highgate, from Messrs. J. Forbes, Lim., Hawick; and to viola Palmer's White, from Mr. Palmer, Derby.

### MEDALS.

Silver-gilt Flora.—To Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham House, Elstree, for cut hardy trees and shrubs.

Silver Flora.—To Messrs. Felton and Son, Hanover Square, W., for nelumbiums; to Messrs. R. Wallace and Co., Colchester, for montbretias, etc.; to Messrs. T. S. Ware, Feltham, for pentstemons, etc.; to Mr. L. R. Russell, Richmond, for celosias and fuchsias.

Silver Banksian.—To Messrs. H. B. May and Sons, Edmonton, for veronicas, etc.; to Messrs. S. Spooner and Sons, Hounslow, for apples.

Bronze Flora.—To Messrs. S. Bide and Sons, Farnham, for sweet peas.

## Aberdeen and Northern Counties Sweet Pea Society.

Sweet pea cultivators and others interested in these flowers have much reason for gratification at the splendid success achieved on the occasion of the second exhibition of this society, which was held in the Music Hall Buildings, Aberdeen, on the 9th and 10th inst. Both in entries and quality of blooms the show was much superior to that of last year. Despite the atrocious weather experienced of late, the flowers staged were marvels of horticultural skill. There were over 200 entries, comprising upwards of 500 vases, apart from the bouquets, table decorations, and other sub-divisions, and of the latest and best, all were included. Mostly of the Spencer type, the professional sections included some exquisite vases of Mrs. H. Sykes, Barbara, F. R. Felton, Mrs. Routzahn, Edna May, Thomas Stevenson, Nubian, Charles Foster, Elfrida Pearson, etc. All were particularly notable for their large, finely-shaped petals, beautifully set on fine stems. The blue riband of the show, a magnificent silver cup presented by Lady Fleming, of Dalmuinzie, for the twelve best vases of waved sweet peas, was gained by Lady Burnett, Crathes Castle, Aberdeenshire (gardener, Mr. J. Petrie). The winning exhibit was one of particular merit, and evoked great praise. The varieties shown included R. F. Felton, Thomas Stevenson, Nubian, Elfrida Pearson, Charles Foster, and Edrom Beauty. Mr. Petrie was warmly cheered when he stepped forward to receive the cup. Lady Burnett was closely followed by Mrs. Dunbar Dunbar, Seapark, Forres (Mr. J. Grigor, gardener), whose splendid record in sweet pea culture has become famous throughout Scotland. The third place went to Mr. A. M. Williamson, Monboddo (Mr. J. Tullo, gardener). For six vases, Mrs. Dunbar Dunbar gained first place with an entry of exceptional merit, and in Class 3 this same lady quite outclassed her competitors. In the fourth class—three vases of novelties—Lady Aberdeen, Haddo House (Mr. J. M'Kinnon, gardener), had a capital win. Mrs. Dunbar Dunbar, was the principal winner in the fifth, sixth, and seventh classes, her lavenders, scarlets, and pinks having no compeers. For picotee-edged sweet peas, Mr. John Roy, Kingsford, Alford, Aberdeenshire, had a meritorious win.

In the amateur sections, the Rev. E. V. Kissack, Aberlour Orphanage, Banffshire, was the outstanding prize-winner. Mr. Kissack's flowers were exceptionally fine, large, beautifully-grown specimens, and, indeed, there was little difference to be observed from those shown in the professional classes. Mr. Kissack practically gained all the leading honours among the amateurs with the exception of that for best bunch of white sweet peas. Here Mr. James Mitchell, Arbeadie Terrace, Banchory-Ternan, could not be denied the premier place, his entry being composed of exquisite sprays.

The section devoted to floral decorations proved one of the most interesting in the show. Limited to ladies, and judged by ladies, it formed a delightful feature. In the class for dinner-table decorations, leading honours were obtained by Miss May Fleming, Dalmuinzie, for an exceedingly chaste display, the blooms used being creamy-pink, and all of one variety, interspersed with lovely sprays of gypsophila. The judges passed warm encomiums on the simplicity of the arrangement and the fine taste displayed. Mrs. Porter, Monaltrie Gardens, Ballater, Aberdeenshire, proved a very good second. Mrs. Sinclair, Wellbrae Terrace, Aberdeen, won for best bowl of sweet peas with an exquisite arrangement of mauves and lavenders, which were deservedly admired. This same lady also led the way for the best large vase, any two varieties, arranged with appropriate foliage. This was a much-admired entry, and was composed of lavenders and orange-pink. The baskets were remarkably well shown, premier place going to Mrs. Porter, Monaltrie Gardens, Ballater, for a really capital entry. For shower bouquets, composed of pink sweet peas, any foliage, Mr. J. D. Smith, 127, Union Grove, Aberdeen, won handsomely, the taste displayed being much admired. For lady's spray and buttonholes, Mrs. Porter had another meritorious win. In the best display of sweet peas, arranged for effect, some very fine work was shown, and the premier place was occupied by Mrs. Dunbar Dunbar, but Lady Burnett and the Earl of Aberdeen made a capital second and third.

Thanks to the arrangements made by the enthusiastic secretary, Mr. H. Sinclair, F.R.H.S., Union Street, Aberdeen, the show went splendidly, and to that gentleman no little credit is due for once again giving Aberdonians an opportunity of seeing what can be done, and is being done in the culture of the sweet pea in the north-eastern corner of Scotland.

## National Gladiolus Society.

This society held its chief exhibition on August 13 at the Royal Horticultural Hall, Westminster. Large numbers of superb spikes were exhibited, and eleven classes were arranged for them. So far as we could gather the classes were not arranged consecutively, or, if they were, some exhibits were moved as soon as judging was finished somewhat late in the day. Class cards indicating the particular class to which any exhibit belonged were conspicuous by their absence, and so we had great difficulty in preparing a report; we did our best, however, and can only hope that good luck has attended our efforts.

For two dozen gladioli, three spikes of each, the Messrs. Kelway and Son gained the gold medal, and here showed immense spikes and grand flowers of Edward VII., salmon-scarlet; Princess Louise, white and cream; King of Gladioli, scarlet; J. C. Craigie, salmon-pink and cream; Aldebaran, heliotrope and pale red; Mrs. Alfred Mond, white and cream, etc. Mr. W. Pfitzer, Stuttgart, gained the silver-gilt medal for two dozen varieties of gladiolus; Muriel, blush and blue; Goldquelle, yellow; Erica von Barczay, maroon; and Gastenbauinspector Fox, heliotrope, were capital varieties in this set.

Mr. Pfitzer had a silver-gilt Kelway medal for a group of gladioli, 12ft. by 3ft., and here staged some glorious spikes of varieties grouped in their colour shades, with a mass of the yellow Schwaben in the centre.

For a dozen vases of gladioli Messrs. Warnaar and Co., Sassenheim, scored with Baron Hulot, l'Immaculé, Willy Wigman, Sieger, America, and other good things.

Mr. Wilhelm Pfitzer, Stuttgart, gained the silver cup for two spikes of the best new seedling not yet in commerce, with the beautiful soft yellow Goldfinder, a lovely variety with a few red-brown marks towards the base of the two lower segments. Mr. E. Stewart gained a silver-gilt medal for Gladiolus Michigan, bright salmon-red, with red-brown markings.

A silver trophy was awarded to Gladiolus Golden Measure from Messrs. J. Kelway and Son, Langport; this appeared to be first prize for a yellow gladioli. A bronze medal fell to the same firm for the bluish-purple La Nuit, and this latter award appeared to be the second prize in the "blue" class. The best spike of a late-flowering pink gladiolus was Panama, soft silvery-pink, from Mr. W. F. Banning, U.S.A.; Evolution Perfection, a large pink with deeper stripes, from Mr. H. H. Groff, Canada, gained second prize.

The premier spike of a late-flowering, blue variety was a spike carrying six opened flowers of Badenia, a finely-formed gladioli to which we have recently referred; this was shown by Mr. K. Velthuys, Hillegom, Holland.

The premier group of late-flowering gladioli was unquestionably the handsome collection staged by Messrs. J. Kelway and Son, Langport, and in their collection they had grand spikes of Duke of Richmond, Prince of Orange, the pink Duke of Buccleuch, Western Glory, crimson, Purple Rod, and Brooklands, salmon. We believe this exhibit won the cup offered by Sir F. Burdett, Bart., the society's president.

The Dutch Gladiolus Society put up a splendid exhibit, and used asparagus freely with their spikes. Baron J. Hulot, violet; Princeps, scarlet; Badenia, bluish; Niagara, cream; Albion, white; Faust, crimson, were especially noteworthy.

## Royal Lancashire Show.

The horticultural section of this important exhibition was held in a large marquee in Moor Park, Preston, and proved one of the best shows in the county. The trade growers were present in strong force, and greatly augmented the quantity and materially enhanced the interest of the show.

### PLANTS.

The class for a group of miscellaneous plants, with the liberal prizes of £25, £20, £15, and £10, brought three competitors, and Messrs. J. Cypher and Sons, Cheltenham, secured the chief award with a tasteful arrangement. In this were kentias, crotons in grand colour, liliums, odontoglossums, and other subjects. Lælias were effectively utilised. Mr. W. A. Holmes, Chesterfield, was second, having good liliums, roses, and crotons. Mr. J. Sharp, Almondbury, third. In competition for the prizes for twelve stove or greenhouse plants, not less than seven in bloom, Messrs. Cypher again took the lead with a good all-round collection, having Kentia Belmoreana, K. Fosteriana, and K. australis, in especially fine form; especially meritorious also were Croton Queen Victoria, C. Warreni, Allamanda noblis, A. Hendersoni, Statice intermedia, S. profusa, Ixora Regina, Clerodendron Balfouri, and Chironia ixifera. For twelve stove or greenhouse plants in pots, not exceeding ten inches, Messrs. Cypher again occupied the post of honour with well-developed plants, including a fine specimen of Phœnix Robelina.

In the class for twelve plants suitable for table decoration, the prizetakers were Messrs. W. A. Holmes, Jas. Sharp, and Jas. Cypher and Sons. For six orchids, the last-named exhibitor again occupied the first place, having Lælio-cattleya Wellsiana, Epidendrum prismatocarpum, and Anguloa Clowesi; Messrs. A. W. Holmes and C. Parker, Preston, secured the remaining awards. For the best specimen, Messrs. Cypher led with Lælio-cattleya callistoglossa, and Messrs. Holmes and Parker were second and third.

### CUT FLOWERS.

These were staged in large numbers, and on the whole in fine condition. For the best table of cut flowers with a superficial area of 100 square feet, Mr. W. G. Eastham, Preston, was a splendid first; and Mr. W. J. Garner, Altrincham, and Mr. J. Saul, Preston, staged well for the second and third awards. In the class for one bride's bouquet, Mr. Garner led with odontoglossums, and Mr. Eastham was second. In the class for a ball-room bouquet, the prizes were awarded to Messrs. W. G. Eastham, W. N. Wood, and P. W. Heyes, Preston. The winners for a bouquet of roses were Messrs. P. W. Heyes, S. M. Wood, and W. G. Eastham. The prize-takers for a dinner-table decoration, from which orchids were excluded, were Mrs. J. Nixon, Miss Newsham, and G. F. Hallett; for the table, open, Messrs. W. J. Garner and F. Newsham were first and second; and for the table of sweet peas, Miss Newsham, Mrs. J. Nixon, and Miss Eastham were the successful competitors.

Sweet peas were well shown, and for eighteen vases, distinct varieties, Mr. W. Bond, gardener to J. Herron, Esq., Freshfield, gained the premier award, staging excellent flowers of Earl Spencer, Sunproof Crimson, Mrs. J. Unwin, Clara Curtis, and Mrs. H.

Dickson; Mr G. T. Hallett, gardener to Sir R. Graham, Bart., Carlisle, was second; and Mr. T. Hindley, Lymm, third. In the class for twelve vases, Mr. G. T. Hallett led, with Mr. T. Leadbetter, gardener to Mrs. S. S. Rigg, Bowdon, second; and for twelve vases, private growers only, Messrs. F. A. Robinson, Styal, and Mr. B. Birch were first and second. For a similar class for amateurs the winners were Messrs. R. Kellett, G. F. Hallett, and W. Bindloss, Formby.

Collections of hardy perennials occupying a space of fifteen feet by five feet, formed a good feature, and Messrs. Harkness and Sons, Bedale, occupied the first place with a most imposing display, the liliums and poppies being excellent; Messrs. G. Gibson and Co., Bedale, and Mr. J. Saul, were successful in winning the remaining prizes. For twelve bunches hardy flowers, trade excluded, Mr. R. L. Garnett led; and for a collection of tree carnations, Mr. C. F. Waters, Balcombe, won with a fine display; Mr. J. Hathaway, gardener to J. Brennard, Esq., Thirsk, was a strong second.

Roses were of great excellence, and for twenty-four, Messrs. Alex. Dickson and Sons, Newtownards, were easy winners with fresh blooms, Mr. G. Dickson and Earl of Dufferin being especially noteworthy; Messrs. G. Gibson and Co. second. In the class for twelve varieties, the same order was continued; and for twelve varieties, the trade excluded, Messrs. R. L. Garnett and E. Brooks were placed in the order of their names.

### FRUIT.

In competition for the prizes for a collection of twelve varieties, Mr. J. Gibson, gardener to the Duke of Portland, Welbeck Abbey, led with excellent dishes of Muscat of Alexandria and Madresfield Court grapes, fine melons, Pine Apple nectarines, Barrington peaches, etc.; Mr. Hathaway was a close second with richly-coloured grapes; and Mr. A. Wright third. For two bunches of Black Hamburg grapes, Mr. Gibson won with well-finished clusters; Mr. Marr second. For two bunches of any other black variety, Mr. Gibson was again the principal winner with Madresfield Court, Mr. J. Hathaway second. For two bunches of Muscat of Alexandria, Mr. J. Hathaway obtained premier honours with fine bunches; and for two of any other white, Mr. Gibson was first with Foster's Seedling. Mr. D. McKelvie, gardener to J. Stone, Esq., was first in both classes for melons.

### VEGETABLES.

This proved the weakest section of the show. For nine distinct kinds, Mr. R. Moss, Preston, was first, and Mr. G. Barrow, Carnforth, second. For the collection of six kinds, Mr. G. F. Hallett secured the first prize in Sutton's class, likewise Messrs. Webbs' first prize for six kinds. Messrs. G. Barrow, R. Wright, J. Hathaway, and W. Wetherall had the premier awards made in their favour in the minor classes.

### NON-COMPETITIVE.

The executive were generous in their acknowledgements by awarding twelve gold medals. These were awarded as follows: To Messrs. C. M. Young and Co., Cheltenham, for a charming display of carnations; to Messrs. A. Dickson and Sons, Newtownards, for cut roses, including very fine blooms of G. Dickson and Edward Bohanne, a new variety, which was awarded a silver medal and certificate; to Messrs. H. B. May and Sons, Edmonton, for a choice display of ferns; to Mr. R. Bolton, Warton, for a large display of sweet peas; to Messrs. Dickson and Robinson, Manchester, for sweet and culinary peas (the latter including about sixty varieties, set up in cone form); to Messrs. Blackmore and Langdon, Bath, for tuberous begonias of high merit; to Messrs. Sutton and Sons, Reading, for a choice display of fruit and vegetables; to the King's Acre Nursery Company, for fruit trees in pots, well furnished with excellent fruit; to Messrs. Dickson, Brown, and Tait, Manchester, for a good collection of potatoes and onions; to the Lancashire County Council, for fruit trees, vegetables, etc., from their experimental grounds; to Mr. J. Saul, Preston, for a rock and water garden, well furnished with flowering and foliage plants, including a good display of water lilies.

Silver Medals were awarded as under: To Mr. H. Middlehurst, Liverpool, for sweet peas; to Mr. S. R. Crompton, Macclesfield, for violas and pansies; to Mr. H. N. Ellison, West Bromwich, for ferns; to Mr. W. Wright, Formby, for sweet peas; to Messrs. Castle Bros., Carnforth, for sweet peas; and to Messrs. Bolton Bros., Carnforth, for ferns.

## Dumfries Sweet Pea Show.

AUGUST 6.

For an opportunity of seeing a competition among sweet pea growers, and thus studying the progress in the sweet pea, the inhabitants of the Dumfries district are indebted to the Dumfries Agricultural Society, who again arranged an exhibition of these flowers in connection with their annual show. This was held at Dumfries on August 6, and proved quite a success, both in point of numbers and quality. Despite unfavourable weather, good blooms were the rule, and the exhibits would have done credit to a much larger show. In the class for professionals, Mr. C. Murray, Cowhill Tower Gardens, came first, with a close second in Mr. R. A. Grigor, Dalswinton Gardens, Dumfries. Mr. T. Carruthers, Cargenholm Gardens, Dumfries, was third. Some honorary awards were also given in this and the next class. In that for exhibitors who had not won a first prize, Mr. J. Smith, Netherholm House, Dumfries, came in first, with Mr. J. M. Wyllie, Cresswell Place, Dumfries, second; and Mr. Varney, Craigmorin, Troqueer, third. This exhibition seems to have quite established itself in the locality.

## OBITUARY.

### MR. WM. YATES.

Mr. Wm. Yates, head of the firm of Messrs. W. Yates and Sons, Cheltenham and Evesham, died at the end of July, after a long illness. He was 72 years of age, and was a seedsman of high standing. He took a keen interest in the production as well as the sale of seeds and was an exceedingly well-informed man. His two sons, Messrs. William and Stanley Yates, will continue the business, in which they have for some time been partners.

**The Double Pink Bramble.**—Given a dry and stony place, where but little else will thrive, this double-flowered bramble will hold its own, and, what is more, flower freely during the latter part of the summer. The individual flowers are very double and quilled, after the manner of a double daisy. From this feature it is sometimes known as Rubus bellidiflorus. Associated with choice subjects, it would be, of course, somewhat out of place, but for unfavourable spots it merits a note of appreciation.—W. T.

**Rhus cotinus.**—When furnished with its dense wig-like masses of inflorescence this, the Venetian Sumach, is not likely to be confounded with any other hardy shrub, as it is so perfectly distinct from them all. It is sometimes called the Burning Bush, and Smoke Tree, from the smoke-like character of its floral appendages when viewed from a distance. Besides the normal form, with its light reddish inflorescence, there is another, purpurea, in which the leaves are purplish, and the plume-like masses of a deeper tint than in the ordinary kind. This rhus will grow in hot, dry places better than many other shrubs, and in common with most members of the genus, the leaves die off in autumn very brightly coloured.—S. W.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

TRANSACTIONS OF NATIONAL CHRYSANTHEMUM SOCIETY. — A Thirty-five Years' Subscriber, St. Leonards-on-Sea: I shall much appreciate your kindness in informing me where I can obtain the "Transactions" of the National Chrysanthemum Society.—This publication can be obtained of the secretary of the society, Mr. R. A. Witty, 72, Savernake Road, Gospel Oak, N.W.

ANCHUSAS.—W. T. H., Suffolk: I much appreciate the beauty of the tall, free-branching variety of Anchusa italica, known as the Dropmore variety, and I should be much obliged by your informing me whether the form introduced from the Continent under the name of Opal is quite distinct from it. Some of my friends say that the two are quite distinct, but I have seen in some gardens plants which were supposed to represent the Dropmore variety and Opal, and failed to detect any great difference between them.—These two anchusas are perfectly distinct, and there should be no great difficulty in determining the points of difference. The Dropmore variety has deep blue flowers, while those of Opal are rather light blue, and the difference in the shade of colouring can be seen at a considerable distance from the plants. Probably your friends were under some misapprehension with regard to having both varieties. However that may be, there can be no question as to their distinctness, or the desirability of having the two in the same garden.

SPREAD OF WART DISEASE OF POTATOES.—W. M. B., Cheshire: With much regret I find that in one part of my garden my potatoes are attacked with the fungus causing the disease known as wart disease or black scab. Fortunately, a small proportion only of the tubers appear to be infected. I am naturally anxious to know whether the disease spreads rapidly, and what should be done to prevent it finding its way to other parts of the garden.—In reply to your first question we have satisfaction in being able to state that the wart disease does not spread with the same degree of rapidity as many other diseases to which vegetable crops are liable. Investigations of this disease have been conducted at the Harper-Adams Agricultural College during the past two or three years, and some interesting and useful results have been obtained. One of the experiments that have been made was carried out with a view to determine the point about which you require information. Briefly stated a piece of ground was purposely infected by removing at one place a cubic foot of soil and filling the hole then made with soil from an infected area. The whole piece was afterwards dug over, and potatoes planted to see how rapidly disease would spread from the centre of infection. It was found that it had only extended eighteen inches in the direction in which the soil was dug, while on the opposite side there was only a trace of disease on a plant nine inches from the infected soil. It was concluded from these results that the disease does not itself spread rapidly in the soil, but is soon spread over great areas by careless methods of dealing with affected plants, particularly the picking off of warty growths from tubers and throwing or leaving them about instead of destroying them, and the careless disposal of haulms from affected crops. In lifting the crop exercise the greatest care to ensure the whole of the tubers being removed from the soil and to separate every diseased tuber from those which are sound. The whole of the diseased tubers should be burnt, for if they are used for feeding pigs or other animals the spores will pass uninjured through the digestive system, and may, by means of the manure, be distributed over the garden, and infect those parts to which, as yet, the disease has not found its way. The haulm should be disposed of in a similar manner. No potatoes should be grown on the infected quarters for two or three years. It will also be advisable to limit the varieties grown to those which have been proved to be immune, notably Crofter, Chiswick Favourite, and White City among the maincrop varieties; Abundance and Conquest among the midseason varieties; and Snowdrop, Southern Queen, and Southern Star among the early varieties.

PLAGIANTHUS LYALLI.—M. B., Leicestershire: I have been much interested in the illustration and description of Plagianthus Lyalli, which appeared in the Gardeners' Magazine of July 27. The shrub certainly appears to be deserving of more widely-extended cultivation, and I shall in due course add it to my shrubbery border, or give it a place with some other choice shrubs against a warm wall. I shall be much obliged by your giving me the year of introduction, and stating whether you know of any really large specimens in the United Kingdom.—This species of Plagianthus was introduced from New Zealand in 1871, and, like several others of the beautiful shrubs from the same colony, requires a kind climate for their successful cultivation. Whether it would succeed in the open in the Midlands is rather doubtful, and we do not know of any specimens in that part of England which are so grown. The shrub may be successfully grown in the southern and western parts of England, and in some parts of Ireland, in the shrubbery border. In districts less favourable to plants that are not perfectly hardy it may be planted against a south or south-west wall with the prospect of considerable success. The largest specimen with which we are acquainted is the one in the gardens of Castlewellan Castle in co. Down, Ireland, the seat of the Earl of Annesley. This is about 15ft. in height, and rather more in diameter, and blooms with considerable freedom annually. One of the difficulties associated with the cultivation in this country of shrubs from New Zealand is their inability to withstand the effects of a severe winter. County Down is in the north-east of Ireland, but it is on the coast, and the temperature experienced during the winter months is greatly modified by the influence of the sea. In Leicestershire some very low temperatures are usually recorded during the winter months, and in consequence thereof the best results in the cultivation of Plagianthus Lyalli are likely to be obtained by planting against a warm wall, and giving a little protection during the coldest part of the winter.

SLOW RIPENING OF GRAPES.—L. S., Sussex: Owing to the low temperature that has been experienced of late, and the deficiency of sunlight, my grapes are not ripening so satisfactorily as I would wish. The Muscats, which are usually assuming a golden hue by the middle of August, are quite green. There are also signs of mildew in some of my vineries. What had I better do?—There is but one course for you to take and that is to use sufficient fire heat to maintain a temperature ranging between 70 and 75 degrees, and ventilate freely. It is a rather common practice to allow the temperature of vineries to drop during periods of cold, dull weather at this season of the year, and to greatly reduce the ventilation for the purpose of husbanding what little warmth is derived directly from sun heat, but this is a mistake. Grapes, with but few exceptions, cannot be brought to such a degree of maturity as will ensure their distinctive flavour being fully developed, and also keeping well after they have ripened. Therefore, when the warmth of the sun is deficient, the deficiency must be made good by the use of additional artificial heat. The closing of the ventilators during cold periods for the purpose of husbanding the warmth is usually followed by an attack of mildew that does considerable damage. When the artificial heat is brought into requisition ventilate sufficiently to maintain a dry and buoyant atmosphere. Gros Colmar cannot be ripened properly without the assistance of a brisk temperature, and the sparing use of artificial heat at this season is one of the causes of the indifferent flavour of this grape of which we hear so much.

FASCIATED ASPARAGUS. — Mr. W. Goddard, Holly Bank, Hunton Bridge, King's Langley, has kindly sent us a photograph of an interesting case of fasciation, which has occurred in his asparagus bed. The fasciated stem, he informs us, attained a height of 6ft., and was about two inches in breadth. The stem was forked at the apex, and, as is usual in such cases, the side shoots were arranged at right angles to it. Such cases of fasciation in asparagus are rather common, several specimens reaching us every year, but they are nevertheless very interesting, and we appreciate Mr. Goddard's kindness in giving us an opportunity of seeing the photograph.

POETAZ NARCISSI.—H. D., Southampton: We have usually grown a considerable number of the polyanthus narcissi for conservatory and house decoration, and they have invariably been much appreciated, although my employers would prefer them with a less pronounced fragrance. The varieties that have of late obtained promi-

Time's all but up!

August 23rd is the last day for sending in entry forms and coupons for the Guaranteed Gardenalities Show. :: The Show opens on the 28th.

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to get a coupon out of a tin of Carmona and a Schedule from Robinson Bros., Ltd., and lodge your entry form.

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**GUARANTEED :: GARDENALITIES**
**GRAND HORTICULTURAL SHOW**

**23rd**
*IS THE LAST DAY*

Address your application and your forms to ROBINSON BROS., LTD., WEST BROMWICH, STAFFS.

nence under the designation of poetaz narcissi appear to possess much merit, and are not so strongly scented. Would you advise me to grow the latter instead of the older forms?—We should not recommend you to discontinue the culture of the old bunch-flowered narcissi and substitute the poetaz narcissi for them until you have ascertained from your employers that it is their wish that this should be done. They will be in a better position to give their decision when they have seen the two classes in bloom and arranged within a short distance of each other. We consider the poetaz varieties as distinctly superior to the others, for they have larger and more finely-formed flowers, and they have a pleasant but not an overpowering perfume. They have also the advantage of being quite hardy, and they can be successfully grown in moss fibre for house decoration, as well as in the ordinary compost. Alsace, Aspasia, Elvira, Irene, Klondyke, and Triumph are all of much merit, and afford a full range of colour. Jaune à Merveille is an exceedingly fine variety, but as yet it is too expensive to be grown in quantity.

ANTS IN LAWN.—N. C. B., Handsworth Wood, Birmingham: Could you kindly give me any information that will help me to get rid of ants in lawn? We have tried almost every remedy we can think of, but without success.—Ants are very troublesome pests to get rid of when they have become established in large numbers on a lawn. Petroleum poured into their nests will quickly dislodge them, as also will a decoction of quassia chips and a solution of alum. We have within the past few years adopted the following method with success in dealing with an ant-infested lawn. When it is seen where the nests are located pieces of old virgin cork are laid over the nests, rough side downwards. The ants congregate in immense numbers under them, and on lifting up the pieces of cork the ants, with their eggs, can be readily swept into a pail of hot water, and thus made an end of. The pieces of cork should be taken up every second day for the purpose of drowning the ants that have congregated under them, but they should not be disturbed in the interval.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| 1912. Aug. 4 to Aug. 10. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Aug. 4—Sunday ...... | 2 18 | 60 | 59 | 68 | 55 |
| ,, 5—Monday ...... | 8 18 | 58 | 52 | 63 | 51 |
| ,, 6—Tuesday...... | 2 42 | 56 | 53 | 60 | 54 |
| ,, 7—Wednesday.. | 4 6 | 59 | 56 | 66 | 52 |
| ,, 8—Thursday.... | 3 6 | 58 | 54 | 65 | 52 |
| ,, 9—Friday........ | 3 30 | 57 | 54 | 62 | 50 |
| ,, 10—Saturday..... | 2 12 | 56 | 54 | 62 | 48 |
| Means ... | (total) 26 12 | 58 | 54 | 64 | 52 |

| DATE. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| 1912. Aug. 4 to Aug. 10. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Aug. 4—Sunday ...... | 0·11 | 62 | 61 | 60 | 55 |
| ,, 5—Monday ...... | 0·43 | 61 | 61 | 60 | 45 |
| ,, 6—Tuesday...... | 0·20 | 62 | 61 | 60 | 50 |
| ,, 7—Wednesday.. | 0·26 | 61 | 61 | 60 | 48 |
| ,, 8—Thursday.... | 0·18 | 62 | 61 | 60 | 46 |
| ,, 9—Friday........ | 0·07 | 61 | 61 | 60 | 49 |
| ,, 10—Saturday.... | 0·33 | 60 | 61 | 60 | 45 |
| Means | (total) 1·58 | 61 | 61 | 60 | 48 |

Thunderstorms on Wednesday, Thursday, and Saturday.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

There is a very fair supply of cut flowers, but business is somewhat slack.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Achillea | per doz. bun. | 1 | 6 | to | 2 | 0 |
| Adiantum cuneatum | per doz. bun. | 4 | 0 | | 6 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 16 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Asters, white | per doz. bun. | 1 | 0 | | 2 | 0 |
| Bouvardia | per doz. bun. | 6 | 0 | | 7 | 0 |
| Carnations | per doz. | 0 | 6 | | 2 | 0 |
| ,, | per doz. bun. | 6 | 0 | | 12 | 0 |
| ,, Malmaison | per doz. | 3 | 0 | | 8 | 0 |
| Cattleyas | per doz. | 9 | 0 | | 12 | 0 |
| Chrysanthemum maximum | per doz bun. | 0 | 9 | | 1 | 0 |
| Coreopsis | per doz. bun. | 0 | 6 | | 1 | 0 |
| Cornflowers | per doz. bun. | 0 | 9 | | 1 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Delphiniums | per doz. bun. | 4 | 0 | | 6 | 0 |
| Eucharis | per doz. | 2 | 0 | | 2 | 6 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Gaillardias | per doz. bun. | 0 | 9 | | 1 | 0 |
| Gardenias | per doz. | 2 | 0 | | 3 | 0 |
| Gladiolus | per doz. | 1 | 0 | | 4 | 0 |
| Gypsophila | per doz. bun. | 2 | 0 | | 3 | 0 |
| Lapageria | per doz. | 1 | 0 | | 2 | 0 |
| Lilium auratum | per bun. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 1 | 6 | | 2 | 0 |
| ,, longiflorum | per doz. | 1 | 0 | | 2 | 0 |
| Lily of the Valley | per doz. bun. | 8 | 0 | | 15 | 0 |
| Marguerites | per doz. bun. | 1 | 0 | | 3 | 6 |
| Mignonette | per doz. bun. | 4 | 0 | | 5 | 0 |
| Myosotis | per doz. bun. | 3 | 0 | | 4 | 0 |
| Odontoglossums | per doz. blms. | 1 | 6 | | 3 | 6 |
| Pelargoniums | per doz. bun. | 2 | 0 | | 6 | 0 |
| Poppies | per doz. bun. | 1 | 0 | | 1 | 6 |
| Roses | per doz. | 0 | 9 | | 2 | 6 |
| Scabious | per doz. bun. | 2 | 0 | | 3 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 0 |
| Spiræa | per doz. bun. | 4 | 0 | | 6 | 0 |
| Statice | per doz. bun. | 3 | 0 | | 4 | 6 |
| Stocks | per doz. bun. | 2 | 0 | | 3 | 0 |
| Sweet Peas | per doz. bun. | 1 | 0 | | 2 | 0 |
| Sweet Sultan | per doz. bun. | 1 | 0 | | 3 | 0 |
| Tuberoses | per doz. | 0 | 4 | | 0 | 6 |
| Violas | per doz. bun. | 0 | 9 | | 1 | 0 |

### Fruits.

Large supplies are being offered, and there is a good general demand.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, Australian | per box | 6 | 0 | | 10 | 6 |
| ,, English | per bush. | 2 | 0 | | 8 | 0 |
| Apricots | per ½-sieve | 6 | 0 | | 7 | 6 |
| Bananas | per bun. | 4 | 6 | | 13 | 0 |
| Cherries | per ½-sieve | 5 | 0 | | 12 | 0 |
| Currants, Black | per ½-bush. | 8 | 0 | | 12 | 0 |
| ,, Red | per ½-bush. | 4 | 0 | | 8 | 0 |
| Figs | per doz. | 1 | 6 | | 6 | 0 |
| Gooseberries | per ½-bush. | 2 | 0 | | 5 | 6 |
| Grapes, English | per lb. | 0 | 9 | | 4 | 0 |
| ,, Belgian | per lb. | 0 | 6 | | 1 | 0 |
| ,, Guernsey | per lb. | 0 | 10 | | 1 | 6 |
| Greengages | per box | 0 | 9 | | 1 | 3 |
| Lemons | per case | 12 | 0 | | 40 | 0 |
| Melons | each | 0 | 6 | | 3 | 0 |
| ,, Cantaloupe | each | 1 | 0 | | 3 | 6 |
| Nectarines | per doz. | 8 | 0 | | 21 | 0 |
| Oranges | per case | 10 | 0 | | 30 | 0 |
| Peaches | per doz. | 6 | 0 | | 21 | 0 |
| Pears | per bush. | 3 | 6 | | 6 | 0 |
| Pears, French | per box | 2 | 0 | | 3 | 0 |
| Pineapples | | 2 | 0 | | 5 | 0 |
| Plums | per ½-sieve | 2 | 0 | | 5 | 0 |
| Raspberries | per doz. pun. | 3 | 6 | | 7 | 6 |

### Vegetables.

Business is excellent, supplies and demand being unusually good.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 | 0 | to | 2 | 6 |
| Asparagus | per bun. | 2 | 0 | | 10 | 0 |
| Aubergines | per doz. | 2 | 0 | | 3 | 0 |
| Beans, Runner | per bush. | 2 | 6 | | 3 | 6 |
| Beet | per bush. | 1 | 6 | | 3 | 0 |
| Cabbage | per tally | 3 | 0 | | 6 | 6 |
| Carrots | per doz. bun. | 2 | 0 | | 3 | 0 |
| Cauliflowers | per doz. | 1 | 0 | | 3 | 0 |
| Cucumbers | per doz. | 1 | 6 | | 3 | 0 |
| Endive | per doz. | 1 | 6 | | 3 | 0 |
| Horseradish | per doz. bun. | 10 | 0 | | 12 | 0 |
| Lettuce | per score | 0 | 9 | | 1 | 0 |
| Marrows | per doz. | 1 | 0 | | 2 | 0 |
| Mint | per doz. bun. | 2 | 0 | | 2 | 6 |
| Mushrooms | per doz. lbs. | 6 | 0 | | 10 | 0 |
| Onions | per case | 6 | 0 | | 8 | 0 |
| Parsley | per doz. bun. | 2 | 0 | | 3 | 0 |
| Peas | per bush. | 3 | 6 | | 7 | 0 |
| Radishes | per doz. bun. | 0 | 9 | | 1 | 6 |
| Rhubarb | per doz. bun. | 2 | 0 | | 3 | 0 |
| Shallots | per doz. lbs. | 2 | 0 | | 2 | 6 |
| Spinach | per bush. | 1 | 6 | | 2 | 6 |
| Tomatoes, English | per doz. lbs. | 3 | 0 | | 3 | 9 |
| ,, Guernsey | per doz. lbs. | 3 | 0 | | 3 | 3 |
| Turnips | per doz. bun. | 1 | 6 | | 3 | 0 |
| Watercress | per doz. bun. | 0 | 4 | | 0 | 6 |

### LONDON POTATO MARKETS.

Supplies have shortened somewhat, and prices are firm.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Bedfords | per cwt. | 4 | 0 | to | 5 | 0 |
| Kents | per cwt. | 3 | 9 | | 4 | 6 |
| Lincolns | per cwt. | 3 | 9 | | 4 | 6 |
| Blacklands | per cwt. | 3 | 0 | | 3 | 9 |

## TRADE NOTE.

Messrs. Jas. Kelway and Son, Langport, have enriched our gardens with many beautiful varieties of a number of useful flowers, and among the latter their gladioli must be given a very high position. The firm has staged several remarkably fine exhibits of these stately flowers recently, and a few days ago they sent us a few spikes, each a yard long and carrying fine flowers. Some of the most striking varieties were Carlton, crimson; Velocity, warm salmon-red; Sir H. D. Wolff, brilliant scarlet; Captain Clive Coates, salmon-pink; and Aviator, rosy-lilac, prettily veined with pink.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, August 20.—Aynho Flower Show.

WEDNESDAY, August 21.—Shrewsbury Floral Fête; two days.
Hatherley and Reddings Horticultural Society.
Caerphilly Summer Show.
Weston-super-Mare Horticultural Society.
Margam Flower Show.
Cowbridge Flower Show.
Eastbourne Horticultural Society.

THURSDAY, August 22.—Aberdeen Horticultural Society; three days.
National Hardy Plant Society; Conference at the George Hotel, Shrewsbury, 3.30 p.m.
Peebles Flower Show.
Kiddington Horticultural Society.

SATURDAY, August 24.—West Birmingham Flower Show.
Hawick Horticultural Society.
Matlock Flower Show.

TUESDAY, August 27.—Royal Horticultural Society: Committees meet at 12 o'clock; Lecture at 3 p.m. on "Recently Introduced Water Lilies," by Mr. Jas. Hudson, V.M.H.; Scientific Committee at 4 o'clock.

WEDNESDAY, August 28.—Laughton Flower Show.

THURSDAY, August 29.—Sandy Horticultural Society.
Gerrard's Cross Horticultural Society.

FRIDAY, August 30.—Dunfermline Flower Show; two days.

SATURDAY, August 31.—Jedburgh Flower Show.

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Spraying
The question to-day is not "Shall we Spray," as every gardener knows he must Spray, but "What machine or syringe shall I spray with?" All the world answers, Use only the reliable tested "FOUR OAKS" which have won 30 Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, 45/-. No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—THE FOUR OAKS SPRAYING MACHINE CO., No. 3 G, SUTTON COLDFIELD.

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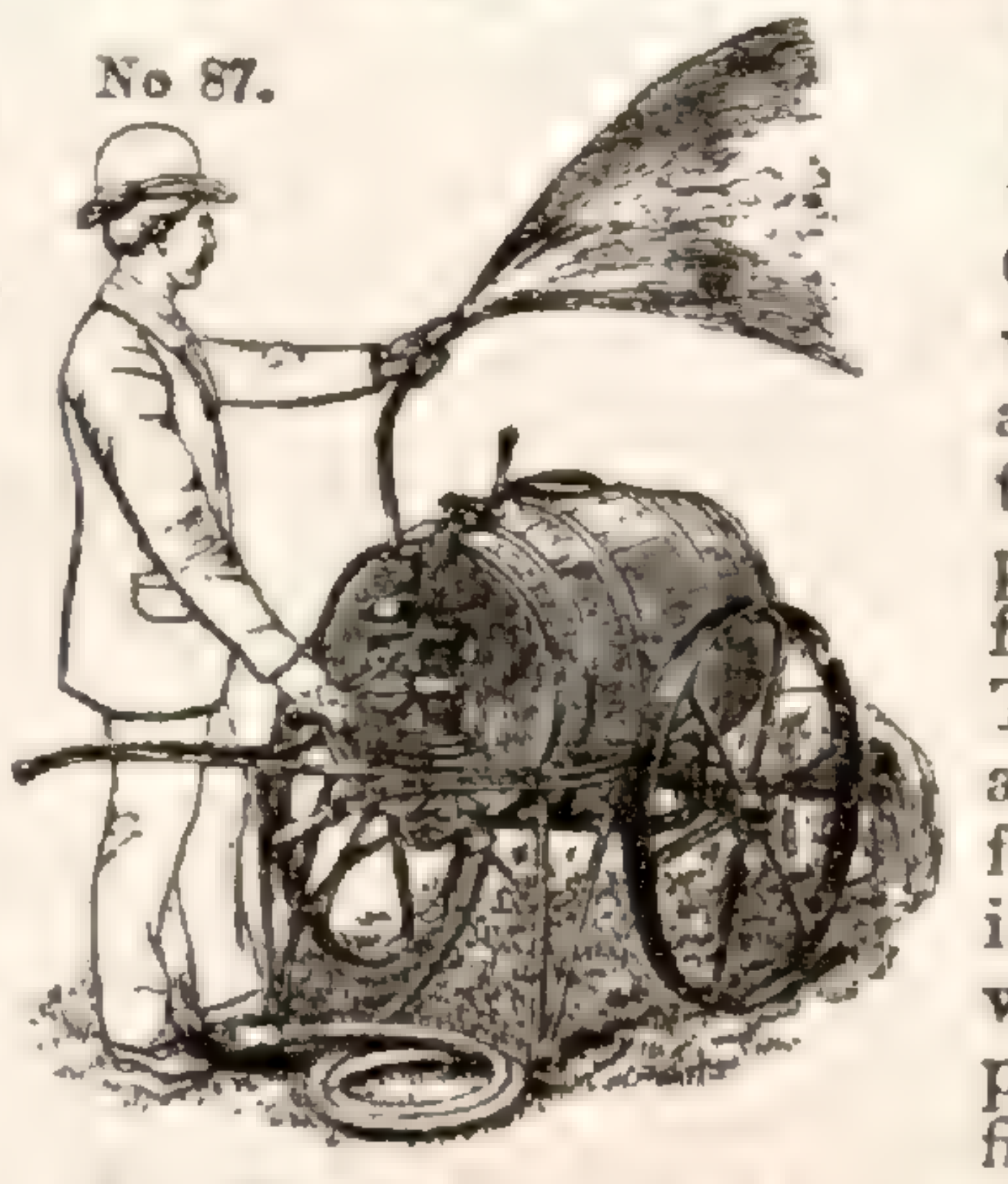

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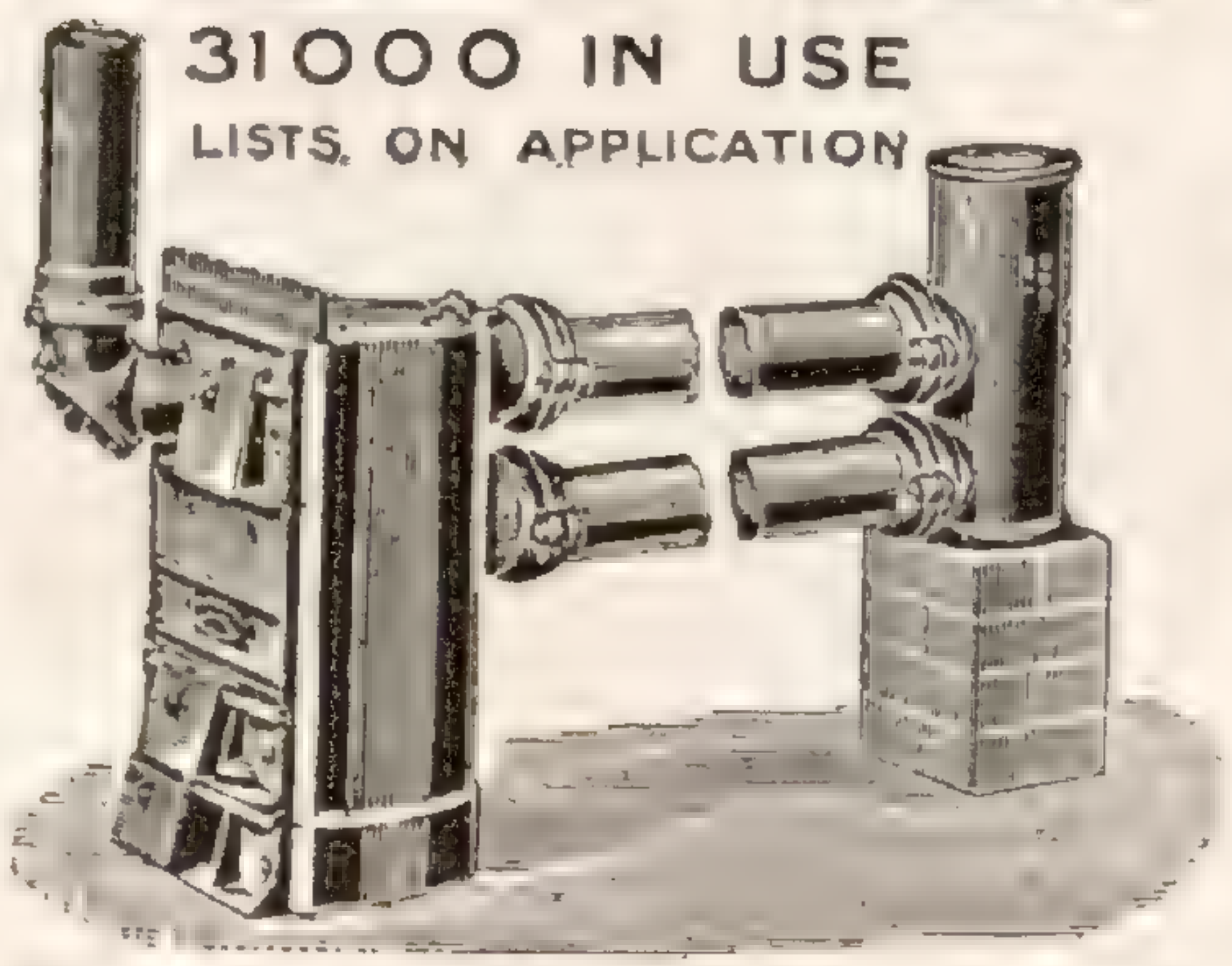

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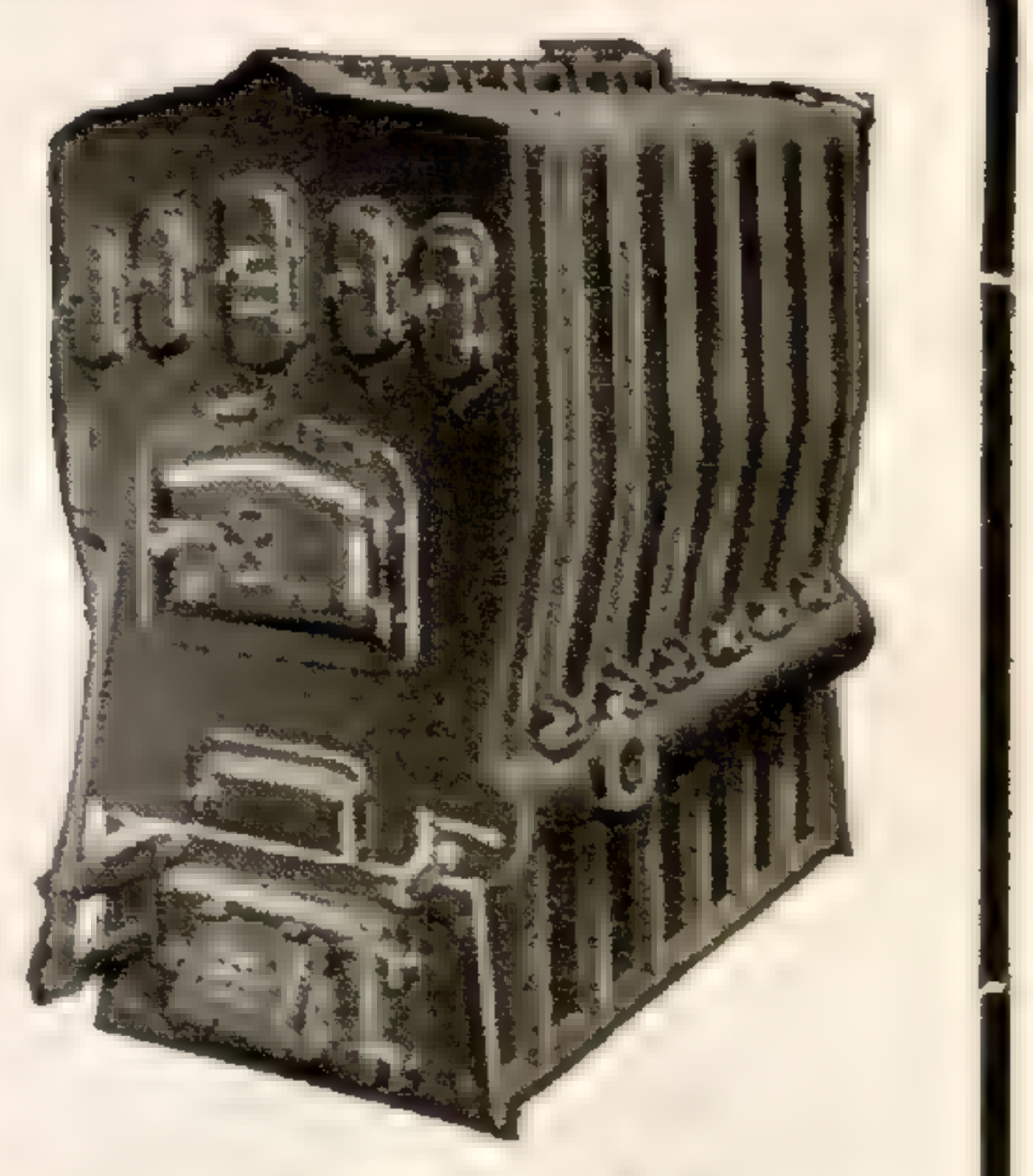

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VOL. LV.—No. 3,069. SATURDAY, AUGUST 24, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Nomenclature of British Ferns.

MR. CHARLES COMFORT.

Although we are not in sympathy with the views of those who would abolish scientific names from the literature of the garden, and substitute for them so-called popular designations, of which but a small proportion of plant lovers have any knowledge, and which, in some cases, would be more difficult to remember than those of a scientific character, we hold a strong opinion as to the importance of simplicity in the nomenclature of plants. The more simple the names of both genera and species, provided they are in other respects satisfactory, the better. In the first place, such names impose less strain on the memory, and the linguistic powers of cultivators, than do those that are more or less cumbrous, and, in the second, the plants are more quickly distributed over a wide area, provided they possess sufficient merit to obtain the attention of the general body of cultivators. It is not difficult to understand why plants bearing names that are at once distinctive and simple should become well known within a short period of their introduction, when it is recognised that before a plant can attain to any considerable degree of popularity it must be freely talked about, and before this can be done the name must be such that it can be readily remembered and pronounced. The opinion is held by some that the name has but little effect on the popularity to which a plant may attain, and if contrary views are expressed they will probably ask, with Shakespeare, “What is in a name?” and possibly may adapt his answer to this question, and suggest that “A rose by any other name would smell as sweet.” Such answer to the question is, of course, perfectly correct, for a name, however cumbrous it may be, will not in the smallest degree lessen the fragrance or reduce the charm of the colouring of the flowers. The point to consider, however, in discussing the question of the influence of names upon the popularity of plants is not whether they will affect some attribute, but whether a particular method of naming is conducive, or otherwise, to the plants becoming popular in proportion to their relative merits. We have no doubt that names have a considerable influence upon the future of plants, and proofs are by no means wanting in connection therewith. We have especially in our mind at the present time the nomenclature of British ferns, which, from the earliest days of the cult, has been so far unsatisfactory as to have proved a hindrance to their attaining the position in the garden their merits would warrant. We learn from the report which was published in our issue of the 17th inst. that the society formed a few years since in the interest of those who fully appreciate the ferns indigenous to the British Isles has now assumed proportions that would justify work of a more serious character than that in which it has hitherto engaged. We suggest the society should give the most careful attention to the nomenclature of the varietal forms, with a view to affecting such revision as would result in its simplification. At the present time, as, indeed, during the past half-century or more, the varieties of which a large proportion are of exquisite beauty, are shut out of many hundreds of gardens because of the cumbrous, and to many unintelligible, names that the past and present authorities have thought proper to give them. The authorities have been consistent in their method of naming from the earliest days of the cult until the present time, but the method was not a good one. Latin names have been given throughout, and, with the addition of immense numbers of varieties and sub-varieties, the nomenclature has become increasingly difficult. To those who have a representative collection, and devote much of their spare time to it, the Latin names have the simplicity of the first three letters of the alphabet. But it should be borne in mind that these plants, in their marvellous diversity of form and wondrous beauty, should not be confined almost exclusively to the gardens of experts, but should take their place in all gardens in which hardy plants are grown and appreciated. This is a consummation much to be desired, but highly improbable until a reform has been effected. To the expert such names as Athyrium filix-fœmina congestum minus cristatum, Lastrea pseudo-mas crispa cristata anguslata, Polypodium vulgare cornubiense trichomanioides, Polystichum aculeatum hybridium aculeato cruciatum Lowe, P. angulare acutilobum proliferum Allchin, and Scolopendrium vulgare limbospermum cristatum, will be easy enough. Not so to the majority of the owners of gardens, who shrink, and not unnaturally, from such names, and exclude the ferns from their gardens because of the burden laid upon them by their sponsors. We have during the past twenty years striven to extend the cultivation of the British ferns, and the progress the cult has made during this period is largely due to our endeavours. We have also discussed their merits with our personal friends, and on more than one occasion have been told there was but little interest associated with the cultivation of plants having names that render it difficult, if not impossible, to talk about them with one's friends. We commend this point to those who consider the existing system all that could be desired, for it is one worthy of attention. To state a case in favour of reform is one thing, but to show how a reform may be effected is another matter, and is frequently beset with difficulties not readily surmounted. In this case there does not appear to be an insuperable difficulty in making a change of a most beneficial character. Twenty-five years ago the daffodil began to obtain prominence as a garden flower, and numerous varieties were being introduced under Latin names. Happily, the undesirability of such a method of nomenclature was recognised by some of the leading experts, and the matter was brought before the conference held by the Royal Horticultural Society, April 1, 1884. The matter was discussed, and at the close of the discussion a resolution adopted to the effect that garden varieties of narcissi, whether known hybrids or seedlings, should be named or numbered in the manner adopted by florists, and not in the manner adopted by botanists. The resolution was accepted by all concerned, and the varieties that had received scientific names were renamed, and the new system adopted in the case of subsequent varieties. What was so satisfactorily accomplished with the daffodils might surely be also done with the British ferns.

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**Mr. Charles Comfort,** whose portrait we have the pleasure of giving in this issue, has long occupied a prominent position among the practical horticulturists of Midlothian, and is esteemed not less for the services he has rendered in the cause of horticulture than for his commanding ability as a gardener. Commencing his horticultural career as an apprentice in the gardens at Dalvey, near Forres, the seat of the late Norman McLeod, Esq., Mr. Comfort passed through, in the course of his training, the gardens of Aberlour, Banffshire; Donibristle, Fifeshire, one of the seats of the Earl of Moray; and Goodrest, near Reading. He then received the appointment of head gardener at Raasay House, Isle of Raasay, Inverness-shire, then the property of the late George Grant Mackay, Esq., and remained there five years. The gardens and grounds of Raasay House are extensive, and are remarkable for the magnificent hedges of Fuchsia Riccartoni, also for the single specimens of this fuchsia, which range up to fourteen feet in height, and are as much in diameter. The hydrangea, eucalyptus, and some other plants with a similar constitution, prove quite hardy. During the five years Mr. Comfort had charge of these gardens he carried out several improvements, not the least important being the planting of large numbers of the finest hybrid rhododendrons. In 1879 Mr. Comfort was appointed head gardener to the late W. H. Haig, Esq., at Cameron House, Windygates, Fife, where he laid out a considerable extent of pleasure grounds, and constructed a large rockery. Mr. Haig having acquired Broomfield, Davidson's Mains, Mr. Comfort accompanied him there at the end of his second year, where he has since remained. During the thirty-one years Mr. Comfort has had charge of the Broomfield gardens he has carried out many alterations to adapt them to the requirements of his employers, and, among other things, he converted the old kitchen garden into a mixed garden with roses of all classes, herbaceous plants, half-hardy annuals, dahlias, gladioli, and bearded irises. He has also planted ornamental trees and shrubs extensively, and the glasshouses have been erected under his direction. Mr. Comfort has been a member of the Scottish Horticultural Association for upwards of twenty years, fourteen years as a member of council. During this period he filled the presidential chair, and was three times a vice-president. Three years since he was elected, in recognition of his services, a honorary life member. Mr. Haig, who died in 1884, evinced the greatest interest in the gardens, and Mrs. Haig takes a great pleasure in them. Mr. Comfort attributes much of the success he has achieved to the encouragement he has received from his employers.

**"Gardeners' Magazine" Bulb Number.**—We have much pleasure in informing our readers that our next issue (August 31) will be chiefly devoted to bulbous plants that flower during the spring season. The contents will include articles on the value of spring-flowering bulbs, the newer daffodils, inexpensive daffodils for exhibition, hyacinths in the flower garden, choice bulbous flowers for indoor decoration, May-flowering tulips, lilies for general culture, spring-flowering bulbous plants for massing, and bulbous iris. The number will be profusely illustrated.

**Northern Counties Fruit Congress and Show.**—On September 4 and 5 a fruit congress and show will be held by the North of England Horticultural Society, at Carlisle, in conjunction with the annual exhibition of the Carlisle and Cumberland Horticultural Society. The congress will be held in the Arcade Room, adjoining the markets, and the Speaker of the House of Commons will perform the opening ceremony at 2 p.m. on September 4. The following is the programme: Wednesday, September 4, 4.30 p.m., Demonstration in the bottling of fruit, by Mr. J. S. Chisholm; 5 p.m., Paper on "Soils, in Relation to Fruit Growing," by Mr. G. P. Berry; 7.30 p.m., Paper on "The Washing and Spraying of Fruit Trees as a Means of Combating Insect Pests and Diseases," by Professor F. V. Theobald. Thursday, 3 p.m., Demonstration in the bottling of fruit, by Mr. G. P. Berry; 5 p.m., Paper on "Canker and other Bark Diseases of Fruit Trees," by Mr. F. J. Chittenden; 7.30 p.m., Demonstration in pruning fruit trees and bushes, by Mr. Chisholm. Spraying demonstrations will be given by various firms during the mornings of the 4th and 5th prox. in the Victoria Park.

**American Gooseberry Mildew in Kent.**—American gooseberry mildew has spread so freely in Kent during the present summer that large areas under gooseberry culture that were previously free have become affected with this destructive disease. A report of the extension of the disease was submitted to the recent meeting of the Kent County Council, and in this report it was stated that the disease reappeared this year in its summer stage on April 19, and spread so rapidly that when the inspectors reported on July 6 1,773 acres were already known to be affected. The committee added: "The discouraging feature of this year's outbreak is that the disease has already appeared in sixty-seven fresh plantations. In one district where the disease has hitherto been restricted within narrow limits 200 plantations have been already attacked. Much of the fruit has been attacked, and growers have not always been successful in excluding the diseased berries from their market consignments. It is advisable that for the protection of next year's crop growers should at once cut out and destroy all infected shoots." During the subsequent discussion it was stated that the disease had even made its appearance in one of the plantations attached to the Wye Agricultural College. The majority of the Council were of opinion that much more drastic measures than have been hitherto adopted would have to be enforced.

**Floral Portraits.**—The portraits of the King and Queen, which have been produced with the aid of coloured leaves and flowers in the South Park, Darlington, are now attracting much attention from visitors. The beds containing the portraits are circular in shape, and the portraits are set in a light ground-work. We admire the loyalty and the perseverance displayed by Mr. J. Morrison in carrying out such difficult arrangements, but we have no sympathy with this particular style of gardening.

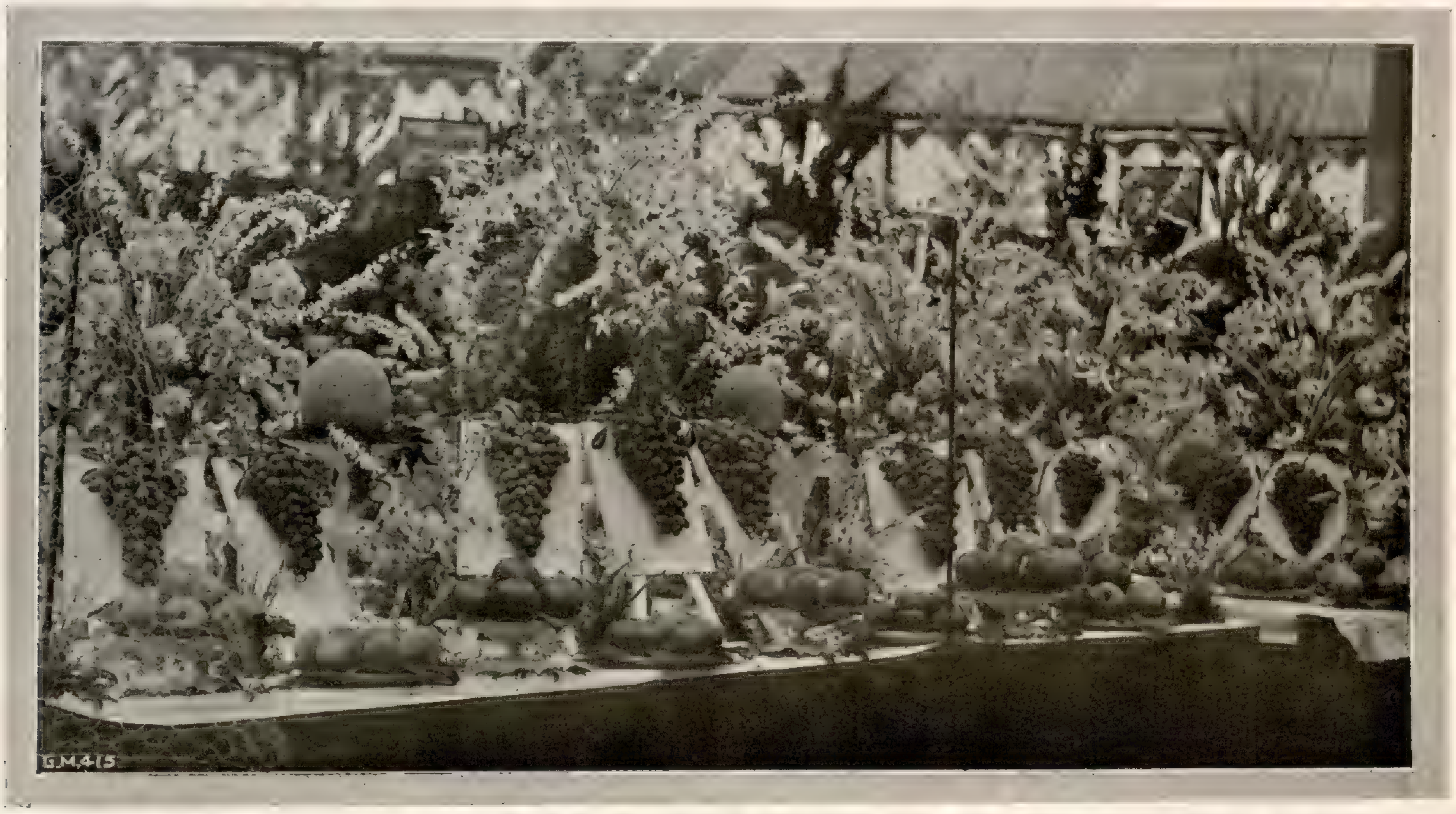
**The Weather in the North.**—Writing under Saturday's date, 17th inst., our Aberdeen correspondent says: A journey into the rural parts of the north of Scotland at present reveals a sad state of affairs. On every side one sees the effects of the unseasonable weather. In place of the acres of waving corn, gradually ripening to a golden hue, there are rain-saturated stretches of land, the crops on which have been much laid by the wind and rain that have for many weeks now been mercilessly beating upon them. The sowing of the crops this year took place in almost ideal weather, and all went well with the husbandman for a time. The grain crops came away very promisingly, and a month ago the farmers, accepting the fact that they would have a late harvest, were nevertheless looking forward to a successful issue. Then entered an August the like of which has not been experienced in the North for twenty years, and one that all sincerely hope will not be experienced for a similar period at least. Wind and rain became the order of the day, blighting the crops and the farmers' hopes at the same time.

**The King's Visit to Abbeystead.**—The King is visiting Abbeystead, the seat of Lord Sefton, near Lancaster; and, on his return from Lancaster to-day, the railway station will be elaborately decorated with flowering and ornamental plants. Messrs. Herd Brothers, nurserymen, of Penrith, have been commissioned to carry out the decorations, and the ornamentation of the platforms and corridors will be carried out in groups and panels of specimen palms, and ferns, fine-foliage, and flowering plants in great variety.

**National Dahlia Society.**—With the approach of the dahlia season, this society is resuming its activities, and on Tuesday next it will co-operate with the Royal Horticultural Society in making its awards to new dahlias. A joint committee has been formed by the combination of given numbers of the members of the Floral Committees of the two societies, and this committee will sit at the Horticultural Hall on Tuesday next, and proceed to consider the merits of novelties at 11.15 a.m. This committee will also sit on the occasion of the two September meetings of the Royal Horticultural Society. The annual exhibition of the society will be held at the Crystal Palace on September 17 and 18; and, as the dates are rather later than usual, they appear to be well suited to the incidence of the season, and a remarkably fine exhibition may be anticipated.

# SHREWSBURY FLORAL FETE.

"Better than ever," was the general verdict upon the Shrewsbury Floral Fête of 1912, held in the Quarry Grounds on Wednesday and Thursday, August 21 and 22. The specimen plants were grand examples of the highest cultural skill; grapes were good, though not superlatively so; groups were excellent, and cut flowers extremely beautiful and good; choice dessert fruits were displayed splendidly, but there seems need for some slight alteration in the schedule specification, for at present it is quite possible for a competitor to win or lose in the decorated dessert fruit table class on his flowers and decoration alone; indeed, it is possible for a man to win the first prize, and yet stage fruit several points inferior to that of his opponent. The show was altogether worthy of the old Salopian town and of the secretaries, Messrs. Adnitt and Naunton, who have laboured hard ever since the society started about thirty-four years ago. Judging commenced about 10 o'clock, and the members were admitted at 11.30, before judging was finished, and at 12 o'clock the tents contained solid masses of humanity, making judging, reporting, etc., well-nigh impossible. This year the first day was a beautifully fine one, and during the greater part of the day the ten big tents were crowded with those who appeared to take a keen interest in the magnificent collections of plants, flowers, fruits, and vegetables displayed. Entries were larger than usual, and trade exhibits more numerous than ever before.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FIRST PRIZE DECORATED DESSERT TABLE, EXHIBITED AT SHREWSBURY BY MR. JAS. GIBSON, GARDENER TO THE DUKE OF PORTLAND, WELBECK ABBEY, NOTTS.

## CHAMPION DECORATED FRUIT TABLE.

In this class a table 10ft. by 4ft. 3in. has to be filled with thirty dishes of ripe fruits, with suitable added floral decorations. There were three competitors, and rarely has there been so close a fight for the championship as on this occasion. Mr. Jas. Gibson, gardener to the Duke of Portland, Welbeck, secured the premier award with 253½ points. All the exhibits were very fine. Mr. Gibson's points were: Washington, Rival, Gascoigne's Scarlet, James Grieve apples, 6, 6, 6, and 6 points; Brown Turkey and Negro Largo figs, 6 and 5½; Muscat of Alexandria grapes, 8, 8, 7, and 7; Buckland Sweetwater grapes, 6½ and 6; Madresfield Court grapes, 8, 7, 7½, and 7½; Prince of Wales grapes, 8½ and 7½; Mrs. Pince grapes, 7½ and 7; Ringleader, Seedling, and two Royal Sovereign melons, 7, 7, 7, and 6½; Humboldt, Pitmaston Orange, and two dishes of Pineapple nectarines, 7, 6, 5½, and 4½; Crimson Galande, two dishes of Bellegarde, and Royal George peaches, 7, 7, 6, and 6½; two dishes of Souv. du Congrès, Marguerite Marillat, and Triomphe de Vienne pears, 6, 6, 5½, and 5½; Kirke's plums, 4; beauty of flowers and foliage, 5½; general arrangement for effect, 5½; total, 253½ points.

Mr. J. H. Goodacre came second with 252½ points, losing two points (4½ and 4½ against 5½ and 5½) on his flowers and decorations, which were a trifle heavy, and consisted of francoa and Lilium speciosum. He made, it seems to us, a point more on his fruit as a whole than did Mr. Gibson, his grapes scoring finely and bringing him well up. Mr. G. Mullins, gardener to Lady Henry Somerset, Easton Castle, Ledbury, third, with 235½ points.

## GREAT GRAPE CLASS.

A sum of £67 is awarded in six prizes for a collection of a dozen bunches of grapes in four or more distinct varieties. The floral decoration of each exhibit is judged separately. For the grapes a maximum of 11 points is granted for Muscat of Alexandria, 10 points for all other Muscats and Black Hamburgh, and 9 points for all other varieties.

There were seven competitors, and the premier award was made in favour of Mr. N. F. Barnes, gardener to the Duke of Westminster, Eaton Hall, Chester, who had shapely, fairly large, and finely finished bunches, as follows:

| No. of Bunch. | Variety. | Max. Points. | Points Awarded. |
|---|---|---|---|
| 1 | Black Hamburgh | 10 | 7 |
| 2 | Muscat of Alexandria | 11 | 10 |
| 3 | Appley Towers | 9 | 7 |
| 4 | Appley Towers | 9 | 7 |
| 5 | Muscat of Alexandria | 11 | 10 |
| 6 | Black Hamburgh | 10 | 7½ |
| 7 | Madresfield Court | 10 | 9 |
| 8 | Madresfield Court | 10 | 8 |
| 9 | Muscat of Alexandria | 11 | 10 |
| 10 | Muscat of Alexandria | 11 | 9½ |
| 11 | Madresfield Court | 10 | 8 |
| 12 | Madresfield Court | 10 | 8 |
| | | 122 | 101 |

Mr. Barnes also led for decorations, with Francoa ramosa, Gloriosa superba, and Oncidium sprays.

Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, came second, and his set scored as follows:

| No. of Bunch. | Variety. | Max. Points. | Points Awarded. |
|---|---|---|---|
| 1 | Black Hamburgh | 10 | 9 |
| 2 | Muscat Hamburgh | 10 | 9 |
| 3 | Muscat of Alexandria | 11 | 7½ |
| 4 | Muscat of Alexandria | 11 | 7 |
| 5 | Madresfield Court | 10 | 8 |
| 6 | Muscat Hamburgh | 10 | 9 |
| 7 | Muscat Hamburgh | 10 | 9 |
| 8 | Muscat of Alexandria | 11 | 7 |
| 9 | Madresfield Court | 10 | 8 |
| 10 | Muscat Hamburgh | 10 | 8½ |
| 11 | Muscat of Alexandria | 11 | 7 |
| 12 | Black Hamburgh | 10 | 9 |
| | | 124 | 98 |

Third prize fell to Mr. T. Bateman, gardener to C. A. Cain, Esq., Welwyn, with 97½ points out of a possible 123. Mr. W. H. Cook, gardener to Lord Belper, Derby, came fourth with 95 points out of a possible 120. Mr. J. R. Tooley, gardener to H. Andrews, Esq., Winchcombe, fifth with 90 points out of a possible 121; Mr. S. Barker, gardener to the Duke of Newcastle, Clumber, Worksop, sixth with 89 points out of a possible 124. Mr. S. Barker was second for the decoration of his exhibit; and Mr. Tooley third. Seven competitors.

## GRAPES.

Mr. J. Jones, gardener to R. J. Corbett, Esq., Towyn, had the finest four bunches of grapes, two white and two of black, and he scored with superb bunches of Gros Maroc, finely-coloured and berried, and Muscat of Alexandria; Mr. J. Mills, gardener to Captain Heywood Lonsdale, Shavington, second with Muscat of Alexandria, finely coloured, and Madresfield Court; Mr. T. Lambert, Brogyntyn, third. Nine entries.

Mr. W. H. Wilson, gardener to J. Brenton, Esq., Stourport, had the finest pair of bunches of Black Hamburgh, and he was followed by Mr. G. Mullins, and Mr. J. H. Goodacre among eight competitors. Mr. G. Mullins, Eastnor Castle Gardens, had the best single bunch of Black Hamburgh, Mr. Goodacre and Mr. Wilson following. For a pair of bunches of black Muscat grapes Mr. E. Jones, gardener to G. C. Lomax, Esq., Huyton, led the way with large-berried clusters of Madresfield Court; Mr. W. H. Wilson second, and Mr. J. H. Goodacre third. Madresfield Court grapes, as such, were best displayed by Mr. A. J. Cooke, gardener to Colonel H. C. Legh, Knutsford; Mr. N. F. Barnes, Eaton Hall Gardens, second, and Mr. Goodacre third, all showing well.

Mr. J. Barker, gardener to J. W. Raynes, Esq., Old Colwyn, led for two bunches of Alicante, showing weighty clusters; Mr. H. Cotton, Ledbury Park, second, and Mr. E. Jones third.

In the "any other black" class Mr. T. Lambert scored with Alnwick Seedling, particularly fine, the berries large and richly coloured. Mr. J. Jones, second with Gros Maroc, and Mr. J. H. Goodacre third with the latter variety.

Mr. N. F. Barnes led for a pair of bunches of White Muscat grapes with Muscat of Alexandria, and also scored for a single bunch with the same fine grape. Mr. J. Newton, gardener to D. W. Graham, Esq., Hilton Park, was second in the former class, and Mr. J. Jones in the latter. Buckland Sweetwater grape won first prize for Mr. J. T. Curtis, gardener to Sir H. Davies, Bishop's Stoke, Bristol, in the "any other white" class.

FIRST PRIZE FIFTEEN SPECIMEN PLANTS, EXHIBITED AT SHREWSBURY BY MESSRS. J. CYPHER AND SONS, CHELTENHAM.

In the county grape classes Mr. G. Mullins won for a pair of bunches of Black Hamburgh. Mr. Lambert, Brogyntyn Gardens, led for two bunches of Madresfield Court, for two bunches of white grapes, and in the "any other black" class. Mr. J. Mills had the best pair of Muscats.

### CHOICE FRUIT.

The best collection of nine dishes of fruit came from Mr. J. Mills, gardener to Captain Heywood Lonsdale, Shavington, who succeeded with fine bunches of Muscat of Alexandria and Madresfield Court grapes, Barrington and Royal George peaches, Pineapple and Stanwick Elruge nectarines, Rival apples, Countess melon, and Brown Turkey figs; Mr. W. Catt, gardener to A. H. Heber Percy, Esq., Hodnet Hall, second with good Madresfield Court grapes and Elruge nectarines. The awards for the floral decoration of the exhibits fell in similar order. Mr. Mills using Irish Elegance rose, Francoa ramosa, and Lilium speciosum, and Mr. Catt using carnations.

Mr. S. Barker, gardener to the Duke of Newcastle, Worksop, led for peaches with grand fruits of Crimson Galande; fourteen entries. For nectarines Mr. G. Mullins scored with Pineapple in fine form; nine entries. For apricots Mr. W. Catt, gardener to A. H. Heber Percy, Esq., Hodnet Hall, led with very fine examples of Large Early; nine competitors.

Hardy fruits were capitally shown in the local and county classes, the plums, cherries, red currants, and raspberries being unusually large and fresh.

### PLANTS.

A spendid set of fifteen specimen plants, ten to be in flower, secured for Messrs. J. Cypher and Sons, Cheltenham, the premier award of £20. The examples were among the very finest we have seen this firm stage over a goodly series of years. They were Kentia Fosteriana, Kentia Belmoreana, Crotons Mortefontaineasis, Warreni, and Countess, two giant examples of Ixora Duffi, with massive heads of deep orange flowers; two of Clerodendron Thomsonæ, Allamanda nobilis, very fine; two of Rondeletia speciosa, a very fine Statice profusa, and a S. intermedia, 7ft. across; Ixora Shawi, and a grandly-grown specimen of Chironia ixifera. Second prize fell to Mr. W. Vause, Leamington, whose large plants were not so well flowered as his competitors.

For thirty plants, in 10-inch pots, the Cheltenham firm scored again, and here their finest examples were Statice profusa, Ixora Shawi, Chironia ixifera, marvels of fine culture; Phœnix Roebelini, Acalypha hispida, and Allamanda Hendersoni; Mr. Vause, second.

Mr. T. Lambert, Brogyntyn, scored for a dozen stove and greenhouse plants, and showed good specimens of Ixora Duffi and Croton interruptum aureum; Mr. J. Farrant, Shrewsbury, second. Mr. Lambert was a large prizewinner in the county classes, and Mr. E. Bridge and Messrs. J. Knight and Sons, Wolverhampton, were also very successful, and both showed zonal pelargoniums in excellent style.

Premier award for six specimen stove and greenhouse plants was won easily by Messrs. James Cypher and Sons, with grand examples of Clerodendron Thomsonæ, Statice profusa, S. Gilberti, Allamanda nobilis, a mass of golden flowers; Rondeletia speciosa, and a splendid Ixora Duffi with a dozen heads of bloom. Mr. W. Vause, second; and Mr. W. R. Manning, Dudley, third.

### GROUP CLASSES.

The premier award for a group of hardy perennial plants, in and out of flower, with background of bamboos, etc., with pool of water, nymphæas, etc., arranged for natural effect, fell to Messrs. Gunn and Sons, Olton. The group had to occupy a space of 300 sq. feet, and the first prize was £25. The Messrs. Gunn had a charming background, well filled, and yet so arranged that the great groups of hollyhocks, Lilium auratum, L. speciosum, L. tigrinum, helianthuses, veronicas, phloxes, Chrysanthemum maximum, gladioli, etc., did not block out or clash with each other. Phloxes, scabious, astilbes, pyrethrums, and campanulas came to the edge of the little pool, with its complement of white, red, and yellow water lilies, while a rockwork edging, with Viola cornuta, sedums, veronicas, liatris, and heaths, formed the foreground, with corner groups of Lilium auratum. A very fine effect. Mr. John E. Knight, Wolverhampton, was placed second, and he had a rather sombre background of conifers, against which Galtonia candicans, kniphofias, liliums, phloxes, etc., were effectively grouped. In the foreground was a central group of Crinum Powelli, C. P. album, anemones, liliums, and montbretias, and behind this came a little stream, with its nymphæas and little bridge. Mr. T. R. Hayes, Keswick, gained third prize, and his pool, with its fine water lilies and bed of orange-berried Nertera depressa was a fine feature. Messrs. W. Artindale and Son, Sheffield, were awarded a special prize. Five entries.

The class for a group of miscellaneous flowering and foliage plants, arranged for effect on a space of 250 sq. ft., is always an attractive one. On this occasion there were four competitors, and Messrs. J. Cypher and Sons, Cheltenham, won the chief award

(Continued on page 655.)

## AUTUMNAL-FLOWERING CROCUSES.

It is somewhat singular that these very lovely flowers have not in the past received much notice. Even at the present time not nearly so many are cultivated in our gardens as might be. They have so many points in their favour at a season when out-of-door flowers are not, as a rule, any too plentiful. The colours, varying from dark to light-blue and white, are most distinct and attractive at a season when flowers of these shades are decidedly scarce.

### Positions.

No provision need be made in beds or borders for their culture, as it is better to plant them upon odd corners of grass. Here they will flower freely, but in order to secure a continuance for a few years afterwards a fair amount of sunshine is desirable. I prefer a warm, sunny slope, where, after planting, the grass can be left undisturbed, or not even mown. It is possible also to grow them close up to the boles of trees. We have grown them thus for several years, both under tall cedars and elms. The drought in such positions does not militate against their well-being.

CROCUS SPECIOSUS.
A fine breadth of this beautiful blue-flowered species at Gunnersbury House, Acton, W.

### Planting.

With respect to the time of planting, it is better to secure the corms during August, before any indication of growth commences, and plant them without delay. Should the growth have started more care is required in planting. We usually try, as far as possible, to avoid any semblance of formality in their arrangement. It is a very good plan to drop the bulbs indiscriminately, and plant them where they fall. In planting a small dibber is the best tool; with this holes should be made, about three inches deep, into which the corm should be placed, and some finely-sifted soil then be spread over the surface and worked in with a broom. Before using incorporate some fine mortar rubble with the soil. In most cases it is possible to leave the grass unmown, but at the depth of three inches one mowing afterwards will not do any harm, if done within a week or ten days. It is also well to tread the ground over firmly after planting.

### After Management.

Should the ground be bare of grass, I find it a good plan to sow some seed of a quick-growing lawn grass. This, if done at once, will start into growth and be sufficiently advanced to support the slender stems of the flowers. These autumnal crocuses all have somewhat elongated stems which easily bend over with the weight of the flowers after a heavy rain, there being no foliage of their own to give support to them. This foliage does not appear until early in the spring. With the object of preserving the foliage intact until it fades, it is most essential to leave it undisturbed, hence the grass must not be mown until the leaves turn yellow.

### Species and Varieties.

Two species, I find, stand out prominently above all others for general utility and reliability, viz.: Crocus speciosus, a bright blue, handsome, and distinctly showy species. It is excellent for the purpose I have indicated, i.e., for naturalising in grass. The illustration given with this article was from a group grown under these conditions, it being the fourth year of flowering after planting. As many as five flowers to a corm, and sometimes six, were to be counted. C. speciosus is usually at its best during the first half of October. Of this species there is a finer form, somewhat more vigorous in growth—C. sp. Aitchisoni—which can be strongly recommended. C. zonatus is the other species that I can specially recommend with confidence to be grown. It is of a pale-blue or lilac shade, with a distinct orange zone at the base of the flower, most distinct and effective. Its period of flowering is at least a week earlier than C. speciosus, if both be planted at the same time. C. nudiflorus, with flowers of a clear purple, can be strongly recommended. At one time it was naturalised in the Midland counties. C. cancellatus albus, with flowers of a satiny white, and a touch of purple at the base, is another somewhat showy-flowering and excellent variety. C. Saundersianus, a form of C. adriaticus, is another pretty species, white in colour, with violet at the base, and a yellow throat. It is not too late now to plant these crocuses.

Jas. Hudson, V.M.H.
Gunnersbury House, Acton, W.

## CLETHRA ARBOREA.

This is, in general appearance, widely removed from the hardy North American members of the genus, which are all deciduous. Clethra arborea is, however, strictly an evergreen, and of quite treelike habit, and bears a certain amount of resemblance to an arbutus. The white, drooping, bell-shaped flowers are borne in spikes, as a rule, during the latter part of the summer.

There are apparently three forms of this clethra, firstly, the type; next, one that flowers more freely in a small state than the other; and, thirdly, a variety with variegated leaves, but with markings not sufficiently clear to make it effective as a decorative plant. Clethra arborea itself is very suitable for growing in large tubs and standing outside during the summer months, when its lily-of-the-valley-like spikes of flowers are much appreciated, while the dwarfer variety (if variety it is) may be flowered well in pots six inches to eight inches in diameter. During the winter it needs to be kept safe from frost. This evergreen clethra is a native of Madeira, from whence it was introduced as long ago as 1784, but, strange to say, it was given an Award of Merit by the Royal Horticultural Society as recently as July 30 of this year. S. W.

## SOME GOOD PILLAR ROSES.

The variety found among climbing roses is very great, and at times it is difficult to give them just representation in garden decoration without overcrowding. With due regard to the habit of each, and by judiciously placing the different kinds, it is often possible to include a very great number in a comparatively small space, and if the colours are selected with care many spots in the garden will have their interest and beauty increased by planting some of these roses.

Climbing roses may be grown in the minimum space in pillar or pyramid form, and in this manner admit of being used in herbaceous borders or among hardy shrubs. In pillar form the only requisite necessary is a good stout pole of larch or oak; while pyramids are readily erected with three poles, extended 6ft. to 8ft. apart at the base, and having the points meeting together to form an apex. The latter system admits of each pole carrying a plant, so that every pyramid will carry three distinct varieties when necessary, and if these represent early and late varieties the maximum season of bloom is obtained.

When grown in single pillar form, climbing roses require close attention, particularly with regard to pruning, for if neglected in this respect they soon become over-grown, and their beauty is marred. As soon as they pass out of flower the old wood should be cut out as far as this can be dispensed with, retaining the best-placed shoots for covering the top of the pole and tying in all the current season's shoots. It will be obvious that in tying roses we should avoid any suspicion of lumpiness, and always have an eye to a light effect, and to this end I always favour leaving a foot or two free at the points, as this entirely destroys all suspicion of stiffness or undue formality when in flower.

Among roses suitable for pillars and pyramids there are Ard's Pillar, a variety having large, full flowers of a deep velvet crimson colour, Ard's Rover, dark crimson shell-like petals, and Ard's Rambler, having large flowers of orange-crimson, with a paler shade at the base of the petals. Bardou Job is one of the largest of semi-double roses, of a glorious crimson colour, and is an old, well-known variety. American Pillar, introduced four years ago, is one of the finest roses for garden decoration; the single flowers are large, of a fine rose-pink tint, that becomes paler at the base, and the trusses of flower are full, like huge bouquets. Billard et Barre is golden-yellow in bud, paler when expanded. Buttercup, deep yellow in bud, lemon when open, is not a vigorous grower, but a distinct and attractive flower. Cramoisie Superieure is an old favourite China rose, velvet crimson in colour, and one that flowers in great abundance; the climbing form is most suitable for pillars. Crimson Rambler, rich bright crimson, in dense sprays, must be lightly trained, or is liable to mildew. Goldfinch has large flowers, orange-yellow in bud, but almost white when open. Gruss an Teplitz, scarlet crimson, with dark foliage, is a sterling variety for autumn. Helene, early flowering, produces immense sprays of rose-pink flowers. Mdme. Berard has full flowers of a curious shade of yellow, much in the way of Gloire de Dijon.

Mrs. F. W. Flight bears immense trusses of semi-double flowers, blush-pink in colour, that last a long time in perfection. Psyche flowers in trusses of great size, and is pale rose-pink, flushed at the base with yellow. Rubin, a rich deep crimson flower, comes in huge sprays, and is very effective with the accompaniment of dark foliage. Tausendschon, one of the best of recent additions to climbing roses, has large flowers, bright satin pink, in large heads, and carried on stiff stems. Tea Rambler is a curious mixture of yellow, salmon, and pink; flowers small, in moderate trusses; the foliage is pale green and glossy. Thalia has rather small flowers, almost pure white, and flowers continuously all the summer and autumn. W. Allen Richardson, deep orange-yellow in centre, paler at edges of petals, is the finest rose of this colour and extremely floriferous.

THOMAS SMITH.

Coombe Court Gardens.

## THE COTTAGE GARDEN.

"Yes, there is holy pleasure in thine eye!
The lovely cottage in the guardian nook
Hath stirred thee deeply; with its own dear brook,
Its own small pasture, almost its own sky!
But covet not the Abode; forbear to sigh,
As many do, repining while they look—
Intruders—who would tear from Nature's book
This precious leaf, with harsh impiety.
Think what the Home must be, if it were thine;
Even thine, though few thy wants! Roof, window, door,
The very flowers are sacred to the Poor;
The roses to the porch which they entwine.
Yea, all that now enchants thee, from the day
On which it should be touched, would melt away."

—*Wordsworth.*

The cottage garden has become a proverb. The luxuriance with which plants grow, the way in which every inch of space is utilised, and the brilliance of the displays often obtained, are all quoted against those of us who have larger gardens, as if the standard attained in cottage gardens were something to be aimed at, but not likely to be reached. They are one of the characteristic features of the English wayside and almost peculiar to it, and to anyone travelling through the country at a sufficiently moderate pace, they constitute by no means one of its least attractive features if he has an eye for flowers, or even for natural beauty of any sort.

The praise bestowed upon cottage gardens is certainly well deserved, though anyone going frequently along the same road from spring to autumn will notice that their owners have not solved the problem of keeping the mixed border presentable throughout the season any more than their more favoured countrymen have done, a garden which compels one's attention in June being often lacking in colour in July. Still, there are certain elements in the way the cottager manages his garden which are not unworthy of our consideration.

One of its attractive features is the way in which the vegetable quarters are set off with flowers. Alongside the paths there are generally to be found large clumps of old-fashioned flowers, which grow with the greatest luxuriance on account of the annual manuring of the adjacent vegetable ground, and the abundance of sun and air in their partly isolated positions. There are not only masses of sweet williams, goat's rue, columbines, or white lilies along the margin of the onion bed—to the improvement of the latter without spoiling the effect of the former—but sometimes there are beds of these flowers cut out of the area assigned to cabbages and potatoes. Roses, too, there are in all sorts of odd corners, sorts that were more common a generation ago than to-day, and these, also, respond to the generous treatment they receive. Nothing is wasted, and by restoring to the soil all refuse that will decay within a reasonable time, besides importing a fair quantity of manure from outside, the soil tends to become more and more fertile owing to the incomings exceeding the outgoings, as is shown by comparing the level of the soil with that of the paths.

One of the secrets of the success of the cottage garden is the same as that of the "little farm well tilled." Everything is daily under the owner's eye during the main part of the gardening season, and the claims of the garden are, as a rule, no greater than he is able to satisfy, so that everything gets done just at the right time. Seeds and cuttings are put in "just between too early and too late." The ground rarely being shut in by walls or high hedges, the soil works well in the early spring, often before that in many larger gardens, and, given an early Easter for making a start, the cottager is always ready to take advantage of it.

Another reason why the flower garden is so often all successes and no failures, to judge from appearances, is that the cottager, as a rule, only grows those things which will do really well with him without an undue amount of coddling. There is a certain element of the survival of the fittest in this kind of gardening, for a plant that will not quickly get established is liable to be smothered and never seen again. Probably he does not know, though it might be regarded as a truism, that there is no garden so unfavourably situated but what some things will grow well in it, but he acts upon it, and the things that flourish with him are plants that, in most cases, have similarly flourished in his soil, or in that of his neighbours, for a generation or more. There is a good deal to be said for the system of confining one's attention to those subjects for which our soil and conditions are best suited, without wasting time in pampering and petting plants that, at the best, will only be a modified success, but it is a counsel of perfection only, for we all have our favourites, and too often they are plants which do not particularly like what we have to offer them.

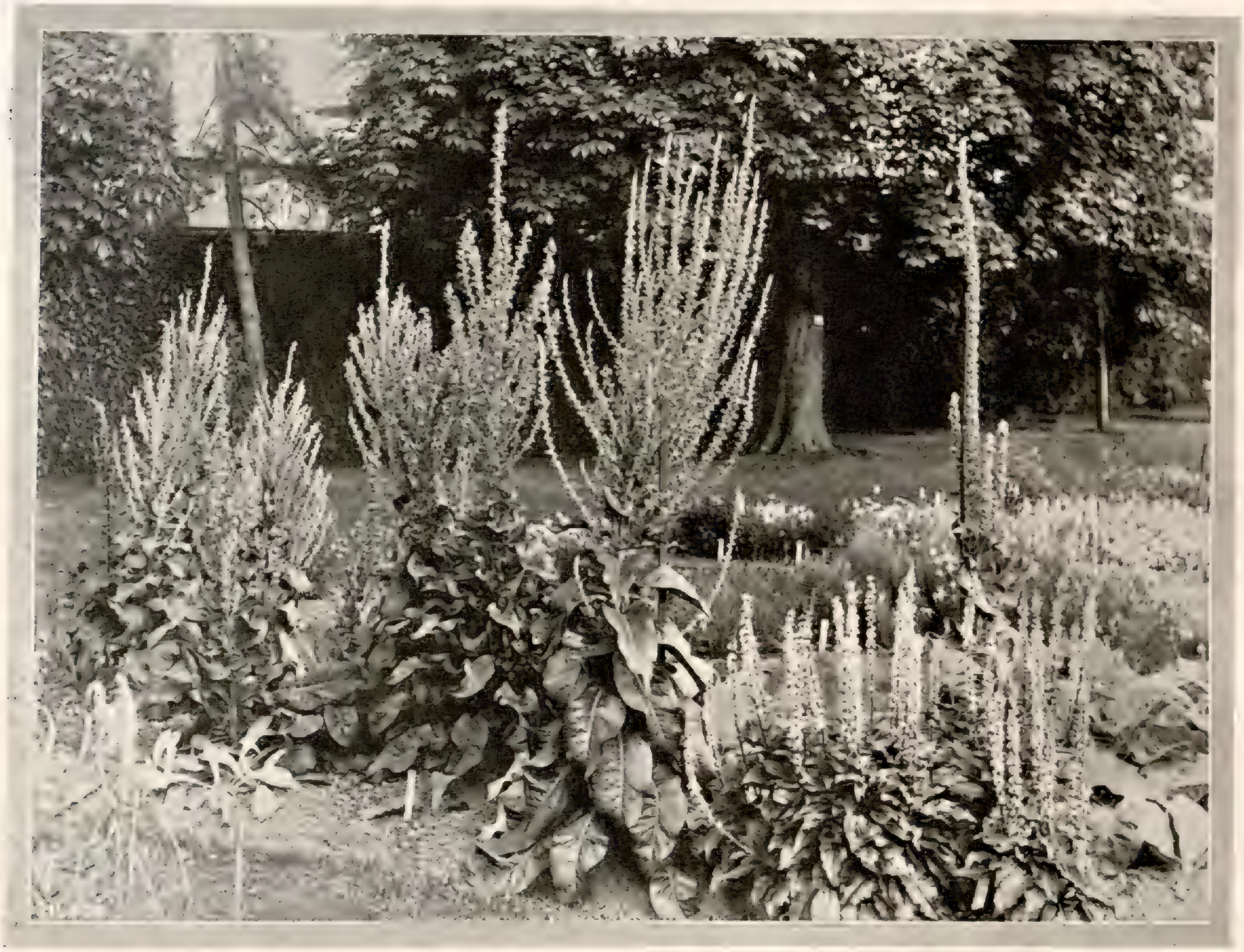
In conclusion, the cottage garden at least teaches us that great expense is not necessary for deriving much pleasure from our gardens. It is the professional flower show, with all its deceptions, that makes us run into so much wasteful expense, which is too often followed by disappointment rather than pleasure, while the cottage gardener rarely visits more than one show a year, and that the local one, where he sees the exhibits of other people like himself, with displays from the big gardens, which he is content to admire without envy or emulation. When a cottager acquires a plant from somewhere it is soon seen in many of the gardens of the neighbourhood, so ready is he to share with his neighbours. The ubiquity of a comparatively recent introduction like Doronicum plantagineum Harpur Crewe is a case in point. It brings to mind a passage from "The Garden that I Love," where the Poet Laureate says: "A flower border thus becomes a living record and diary of your wanderings, your visits, your friendships, a perpetual reminiscence of the generosity of the rich, of the graciousness of the poor."

ALGER PETTS.

"CARNATIONS, PICOTEES, AND PINKS" will tell you plainly how to grow these favourite flowers to perfection. The work is freely illustrated with plates of leading varieties, and explanatory diagrams. Price 2s. 6d. net by post, in box, 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

# VERBASCUMS.

The verbascums, or mulleins as they are more commonly called, when occupying suitable positions and grown well, are among the most stately of hardy plants, and some of them are well worthy of a place in the garden. The genus is an extensive one, comprising species that range in height from the pretty little V. phœniceum, about two feet high, to the giant V. olympicum, which often reaches a height of ten feet or more. For forming groups of an effective character, like that shown in the accompanying illustration, some of the taller kinds are well adapted, while for woodland or wild gardening they may be classed amongst the most useful subjects on account of their noble appearance when planted in well-selected positions. Several of the tall species may be used with advantage in the shrubbery border, where the shrubs are not too thickly planted, while the smaller ones like our native Moth Mullein (V. Blattaria), are very attractive in the fern border. In such positions this species will quickly become naturalised, and at the same time will not become spread in such manner as to become a nuisance.



A GROUP OF SPECIES OF VERBASCUM IN THE HERBACEOUS GROUND, KEW.
The stately Verbascum olympicum occupies a central position in the group.

For the purpose of cultivation all the mulleins may be regarded as biennials, although there are a few exceptions, such as V. nigrum. They are mostly of strong and rapid growth, requiring plenty of room for leaf development, and, if raised from seed sown outside, they require early attention in the matter of thinning out the plants. Only by attention to this detail will the finest effect and stately plants be produced. While they will grow in almost any position, they will repay good cultivation and a deep, well-worked soil. The seeds may be sown broadcast in the woodland or shrubbery where large quantities are required, but it must not be forgotten that early thinning is essential to success. A good method is to sow the seed in boxes, and prick off the seedlings either into pots or boxes, then when large enough plant them in the positions in which they are to flower. In planting it must be remembered that V. olympicum and similar large-growing species often have a spread of leaves from 4ft. to 5ft. across.

During recent years attention has been devoted to the improvement of some of the members of this genus, with the result that some five forms have been produced, of which one of the most desirable is a white form of V. phlomoides. Another is V. Caledonia, with bronzy-buff flowers, a most distinct plant of the habit of V. nigrum. The following are among the most ornamental species:

V. Blattaria, or Moth Mullein. — This species is one of our native plants, with dark green, shining leaves, and stems about 3ft. high. It has bright yellow flowers, about 1in. in diameter, with purple filaments. There is also a very pretty white variety.

V. Chaixi, or Nettle-leaved Mullein, is a rather stronger grower, and attains a height ranging from 4ft. to 6ft., with numerous yellow flowers disposed in dense branching spikes. This plant is more of a perennial than most of the others.

V. cupreum is a rare and beautiful hybrid between V. phœniceum and V. ovalifolium, with the dwarf habit of the former and distinct coppery-coloured flowers in slender spikes. It is a very old plant, having been raised about a hundred years ago. It flowers from May till July.

V. longifolium.—This plant may be seen on the right of the picture with rather a close spike. It was past flowering when the photograph was taken, but is a stately species with very large, white, woolly leaves, and a massive columnar inflorescence. The flowers are rich yellow and large, and closely packed together on stems 4ft. to 5ft. high. Also known under the name of V. parmosum, this plant is a recent introduction, being a native of Italy and the Balkans.

V. nigrum is a native plant, and well worth a place in the border. Only about 2ft. high, it is of neat habit, with yellow flowers and bright purple filaments. A group of the white-flowered variety of this species may be seen in the foreground on the right-hand side of the illustration, and this admirably shows the distinctive characteristics of the species.

V. olympicum.—This species, which occupies the centre of the group in the picture, is one of the noblest of the family, with large rosettes of white, woolly leaves and giant pyramids of rich yellow flowers, reaching to a height of 10ft. or more. Lasting in flower for a considerable period, with its candelabra-like inflorescences, it is very valuable and stately.

V. phomoides, with yellow flowers, and its white variety are also worth growing.

V. phœniceum.—A very pretty species with light, graceful spikes of flowers, which vary in colour from rich purple to white. It is well worth a place in the rock garden or select border, on account of its dwarf and neat habit. It flowers freely from May to July. Closely resembling this plant is V. Wiedmannianum, from Asia Minor, with deep purple flowers.

There are many other species in cultivation, one of the most recent introductions being V. leianthum, from Asia Minor, a tall-growing, somewhat slender-branching plant with small yellow flowers.

W. I.

## NEW PLANTS, ETC.

### LÆLIO-CATTLEYA GODMANI.

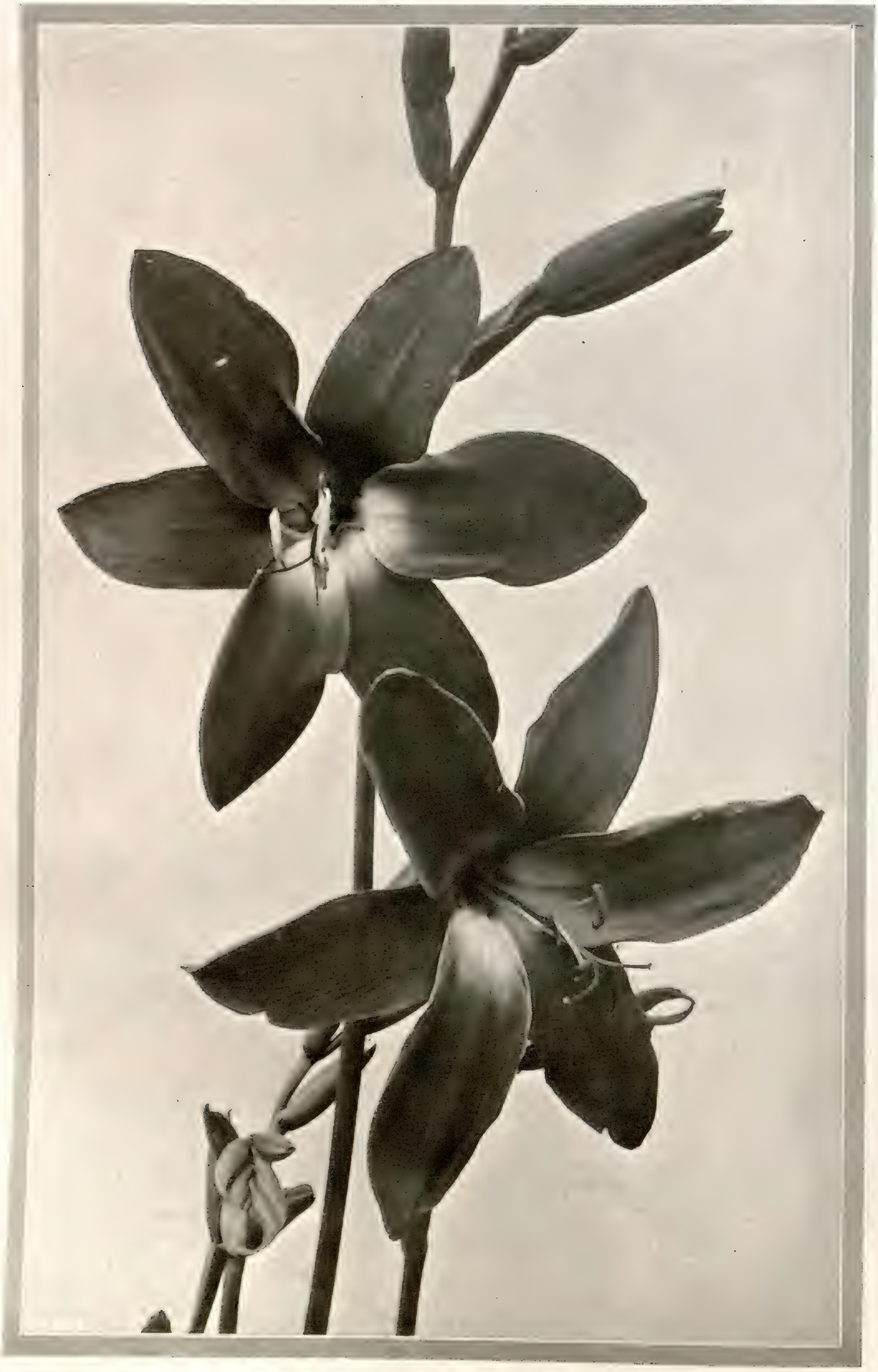
This particularly beautiful and shapely orchid has been obtained by crossing Cattleya Iris with Lælio-cattleya callistoglossa, and it takes rank as one of the finest secondary hybrids in this large group. The deep rose-purple sepals and petals are broad and substantial, and the splendid lip is rich royal purple, and shaded with ruby-crimson near the yellow-blotched throat. F.C.C., R.H.S., August 13. F. Du Cane Godman, Esq., South Lodge, Horsham.

### MONTBRETIA STAR OF THE EAST.

An exceedingly beautiful montbretia, and easily the finest member of the family. It has tall, branching spikes a yard high, and the individual flowers are four inches across, though some have measured over five inches across. The blooms stand up well, and are very regular in shape, deep rich yellow, suffused with orange. This is Mr. Davison's finest result among montbretias. F.C.C., R.H.S., August 13. Mr. Davison, gardener to Colonel Petre, Westwick, Norwich.

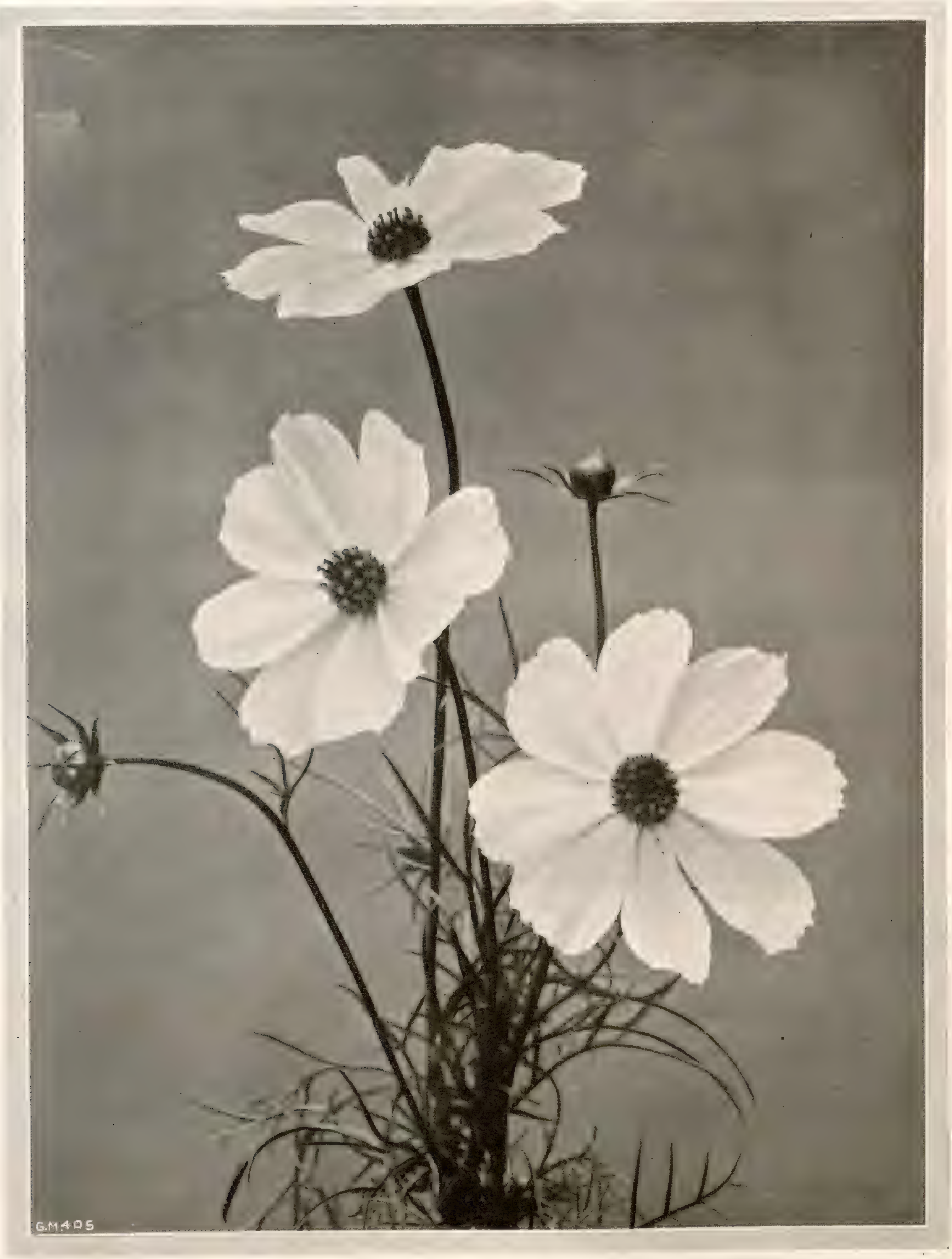
### ODONTOGLOSSUM EMPRESS EUGENIE.

A very pretty odontoglossum, carrying a number of good-sized flowers on a sturdy, tall spike. The segments are all broad and rounded, white, blush shaded, and lightly and daintily marked with little spots of heliotrope. A.M., R.H.S., August 13. Mr. E. H. Davidson, Borlases, Twyford.



MONTBRETIA STAR OF THE EAST.

A great advance among montbretias, with large, deep yellow, orange-suffused flowers over four inches in diameter. F.C.C., R.H.S., August 13. Mr. Davison, gardener to Colonel Petre, Westwick, Norwich.



COSMOS WHITE QUEEN.

A finely selected form, with regular and dainty flowers of purest whiteness. A.M., R.H.S., August 13. Messrs. Dobbie and Co., Edinburgh.

### LÆLIO-CATTLEYA GLAUCUS.

A very fine orchid, the parents being Lælia purpurata and Lælio-cattleya rubens. It is a stately hybrid with large flowers; the sepals and petals deep rich purple, and the lip dark crimson. F.C.C., R.H.S., August 13. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### LÆLIO-CATTLEYA LUMINOSA MANDARIN.

An unusually showy variety, with large flowers. The sepals and petals are deep rich yellow, and the lip dark purple. The Walton Grange variety of Lælia tenebrosa was one parent of this effective hybrid. A.M., R.H.S., August 13. Lieut.-Colonel Sir George Holford, Westonbirt.

### KNIPHOFIA UNIQUE.

A comparatively dwarf, neat-growing variety, with spikes of coral-red flowers, each tubular blossom in the poker-like head being quite self-coloured. A.M., R.H.S., August 13. Messrs. R. Wallace and Co., Colchester.

### COSMOS WHITE QUEEN.

Of good form and purest whiteness, this variety is certain to make the Cosmos family more popular than it is at present. The flowers resemble those of a dainty white single dahlia, and they are set amid graceful foliage. A.M., R.H.S., August 13. Messrs. Dobbie and Co., Edinburgh.

### RHODOSTACHYS ANDINA.

An interesting Chilian bromeliad that was introduced into England about 1850. It has a dense rosette of arching, narrow, grey-green, spiny leaves, and in the centre of the rosette is produced the globose head of small rose-pink or rose-red flowers set amid silvery bracts. A.M., R.H.S., August 13. J. T. Bennett Poë, Esq., V.M.H., Holmwood, Cheshunt.

# GARDENERS AND GARDENING.

## A Practical Educational Foundation.

The welfare of a gardener, especially with reference to his education, is engaging a good deal of attention, but a spirit of disappointment seems to pervade nearly all the communications on the subject. It seems to be generally agreed that a diploma in horticulture, if instituted, would go in most cases to the college-trained men. Few writers, however, go to the root of the matter and endeavour to point a way out of the apparent difficulty of the position.

It seems to me that every ambitious young gardener should have had four years' practical experience in a good garden or gardens before being allowed to enter for a college course. This method would give a young man many advantages, and he would be the better able to grasp and adapt his college education because of his practical experience. I have come into contact with several young men who have been college-trained, and, to my surprise, have found them inferior to practical men of similar age.

Could not the Royal Horticultural Society lead the way by means of co-operation with head gardeners? The latter would be able to point out specially intelligent young men who would profit from a college course, and such young men should be assisted, if necessary, to take such a course of training. An arrangement of this kind would cause young men to take a keener interest in their work, so that they might qualify for the special educational course. I believe a two years' college course, following four years' practical experience, would work wonders in the education of gardeners, but I am also quite sure that college-training alone will not enable a man to manage a private garden of any importance. H. E.

Colchester.

## What is a Gardener?

Being much interested in the correspondence that has been going on in the "G.M." lately, under the above heading, I ask the favour of being allowed to make a few remarks on this all-important subject.

In the first place, what is a gardener, and how did he obtain that designation? We often hear persons styled gardeners who have to feed pigs, clean boots, milk cows, and so forth; others call a man a gardener who simply works as a labourer in a garden, but in my opinion none of these are gardeners, and until we can define what a gardener really is, it is impossible to assign him his right position. Those who are acquainted with gardeners and gardening, know full well that we can find more and better qualified men who are unable to procure first-class situations than there are filling them, and this through no fault whatever of their own. I am not making statements without a full knowledge of the subject under discussion, when I say it is not always the qualification of the person that procures him a good berth, but the influence he has at his back. It would not be difficult to name instances where good men have been passed over in favour of those who have been personally recommended; this being so, I fail to see what use a diploma in horticulture would be.

Supposing all gardeners were compelled to pass an examination before being engaged, it would be interesting to know how many of them would be able to keep their situations. We want to raise the status of the gardener, and how to do so is puzzling the minds of many of us. The other day the writer was asked by an aristocrat to recommend him a good gardener; on obtaining particulars I informed him that he could get a good labourer at the wages offered, but not a gardener! Here are the particulars: Seven men kept; foreman in houses; glass, kitchen, and flower gardens, etc. Wages 23s. per week, with house; no firing. Employer to engage all under-men. I could name several such instances that have come under my notice. It is well known that there are at the present time men filling head positions in some large places, where from twenty to twenty-five men are employed, whose wages are but £65 per year. While men can be found to work for such wages it is not diplomas that are so much needed as Trade Unions, to prevent a man filling such positions for a mere pittance. There are few gardeners in such places that work less than seventy hours per week, including Sundays. Seventy hours at 4d. per hour would amount to 23s. 4d. per week—not the wages of a bricklayer's labourer, yet such men must keep themselves respectable, be fully qualified, have a diploma, pass an examination, and so forth!

Now, let us consider how many years it takes a man to acquire sufficient knowledge to become qualified to fill such a place. I will just state my own personal experience. Years gone by it was the custom to apprentice young men, and gardeners used to take premiums from them; the greater the reputation the place had, the larger the premium; but the usual figure was either £5 or £10 down, of 2s. per week stopped out of the pittance received in the way of wages. The writer was in the fortunate position of being able to pay the lump sum, but others had the 2s. per week deducted; and, as the wages paid to youths was 12s. per week, it left but 10s. to keep them. Times fifty years ago were not as they are now, and young fellows were compelled to work much longer hours, and a day's holiday was unknown. Having served my apprenticeship under one of the most exacting men that ever entered a garden, I was sent to a nursery to await a change. Going from the north to a London nursery was a change indeed; and after being in the nursery three months, I obtained a situation at 16s. per week, and bothy. The earth served for the floor, and the only entrance to the bothy was by a plank across the stoke-hole, over a tubular boiler. A premium of £10 and a good recommendation had obtained me this. Time wore on, and, after several ups and downs, extending over about fifteen years, I was offered a head gardener's situation. The dwelling-house was a shed at the back of a north wall, but, needless to say, I did not go there.

Some no doubt still believe in the old apprenticeship system; but those who have passed through the mill hold different views. Some advocate college training, others examinations in horticulture; but, gentle reader, you may rest assured the finest diploma you can possess is a friend at court; therefore, if you aspire to something higher than 23s. per week have a friend in your pocket. S. H.

Sussex.

# HYPERICUM REPTANS.

Several of the hypericums are suitable subjects for the rock garden, and when planted so that their drooping growths can trail among the boulders of a large rockery they are very attractive. H. reptans is one of the best for this purpose, and its clear, rich yellow flowers are produced in profusion at the present time, rendering the plant an object of especial beauty. This variety proves quite hardy in our locality, although in certain districts it may not be so, being, in some instances, partially killed back by frosts. Fairly light soil, containing leaf-mould and road grit, suits it very well, but it must be pressed firmly around the roots. Dry weather does not harm the plant, for last season our specimens withstood the drought without any ill-effects, and they are planted rather high up between boulders of rock with their growths carpeting the spaces between. J. Gardner.

Batsford Park Gardens.

# NOTES FROM SCOTLAND.

## The Season.

The inclement weather of late has very materially changed the aspect of the flower department in many gardens, as well as the excellent prospects in regard to crops that prevailed but a short time ago. Whether, providing an improvement, climatically, comes shortly, things in general will be as bad as many growers at present contemplate, is, of course, uncertain; but, all the same, much damage has been done which no ameliorating influences that may follow can possibly entirely efface this season.

Amateur cultivators, especially, have just cause to bewail the destruction wrought among their highly-cherished productions, more particularly those of taller growth, as some species of herbaceous plants, dahlias, and sweet peas. The latter, grown in isolated clumps had, owing to the excess of moisture, following upon a dry, warm period, and probably over-liberal supplies of nutriment by way of manures, made vigorous growth which, over-topping and extending much beyond the supports, appeared most promising while calm weather lasted, but as such in exposed positions were unable to offer sufficient resistance to strong gales of wind many of these have been brought to a recumbent position, which contrasts very adversely with their former erect and trim appearance.

Roses of the dwarf-growing types were past their best, as relating to summer bloom, ere the worst effects of the storms were experienced, but such gave the finishing touch to what may well be described as a brilliant period of inflorescence, as seldom, indeed, have finer blooms or greater numbers of them been witnessed.

In contrast with these large-flowering kinds, it may be remarked how well most of the rambler varieties pass through periods of inclement weather conditions, even when the growths sway considerably under the influence of strong winds, and, although some individual blooms may receive damage, others are ready to expand and take their place.

Bedding-out plants in general have suffered severely, and the accustomed colour brightness at this season is conspicuous by its absence. Owing to the cold nights, growth has been much retarded, and, except where very close planting out was practised, the beds, as yet, are not nearly filled. A change to warmth and drier conditions may, of course, alter this, and enable the plants to recover and present a prolific display of foliage and blossom. The usefulness of the begonia as a bedding plant is at present very striking, more particularly the small, profuse-flowering varieties, several beds of which show to much advantage, for, although in full bloom, heavy storms of wind and rain have passed over them, leaving them almost undamaged. James Day.

Galloway House, Wigtownshire.

**Potentilla Nepaulensis Willmottiana.**—With each succeeding season, the decorative value of Potentilla Nepaulensis as a border or rock garden subject appreciably increases. The form I most favour is known as Willmottiana, which, with its palmate, rugose leaves of deepest green and brilliant rose-carmine flowers, proclaim it a plant of sterling merit when in season during July and August. It is a free-growing subject, succeeding in any good soil that is well drained; it produces abundant foliage, from which arise stiff, branched stems some 15in. high, on which the flowers are borne. It ripens seed freely, and the resulting plants are true to the variety.—Thomas Smith.

# PRUNING ORNAMENTAL TREES.

There is probably no subject connected with horticulture which is so imperfectly understood, or so much abused, as the pruning of ornamental trees, and few young gardeners receive any systematic training in this branch of their profession, yet the proper development of many trees is only possible when strict attention is paid to pruning and general cultivation.

Undoubtedly trees would be better without pruning if they assumed their best proportions by natural means, but in the same way that a deformed child must be surgically treated if it is to develop into a good specimen of humanity, so must a deformed tree be pruned in order to allow it to develop in the best possible manner. Too often the nursery pruning of trees is neglected, and this leads to more pruning being necessary in after life than would be the case were pruning attended to during the early years. Some nurserymen, however, turn out really well-grown trees, and the pruning of such examples amounts to very little.

## Necessity of Pruning.

Pruning is condemned in some quarters on account of the severe measures adopted with street trees. This ought not to be, for the proper pruning of trees is a very different matter from the method employed in our streets. Street trees are certainly cut in such a fashion as to make them look very ugly, but it would be difficult to suggest a better plan. A municipal gardener is handicapped in many ways. He is limited to a few kinds of trees for street planting, and those are usually large-growing ones. They must be trimmed high enough to be clear of traffic, and their heads must not be large enough to shut out the light from adjoining houses or prevent the roadway drying in wet weather, therefore, as soon as the heads are really attractive they have to be cut hard back. A fault which might be remedied is that of planting too closely in streets. Trees are sometimes placed twelve to fifteen feet apart, and these, if not cropped hard, soon form a sort of hedge along each side of a road, whereas had they been placed fifty or sixty feet apart they might have been allowed to grow much larger, and would not have required the severe pruning which is necessary in the other case.

Again, it is a great mistake to plant trees in comparatively narrow streets where the traffic is heavy, for there is no room for them. The trunks are easily damaged, and the heads frequently cropped until the effect is painful. In such cases it would certainly be better to be without trees at all.

The pruning of park and garden trees, however, is another matter, and there is no excuse for its being neglected or performed in an improper manner.

## Pruning Young Trees.

As previously stated the nursery is the place where pruning must be strictly attended to if a good foundation for the future tree is to be laid. The object during this time must be the production of a tree with a strong trunk and rather narrow head of branches, which is capable of supporting its weight without the aid of a stake when planted permanently. To obtain such a tree it is necessary to exercise great care in the early pruning. Should this be left alone too large a number of leaders will be formed, and the central one will suffer accordingly. Side branches may also develop unduly, and rob the leader. On the other hand, if side branches are dealt with very severely the trunk will grow rapidly in height, and soon become too weak to support itself. The correct way to proceed is to keep the leader clear, and retain as many side branches as possible, the latter being shortened occasionally. If this shortening process is persisted in a considerable leaf area will be maintained to help in building up the trunk, and the branches will not increase very rapidly in thickness. As the trunk becomes strong enough to support itself a branch or two may be removed now and then. These must not be taken from the bottom only, but rather thinned out from those close together. By continuing this treatment for three or four years good trees are formed which will give little trouble when planted in permanent places. The subsequent pruning of such trees usually means keeping the leaders clear of side growths, thinning the branches occasionally, and removing the lower branches gradually as they advance in height.

Young ornamental trees which have been left unattended for several years are often wide-headed, with no distinct leading shoot, and such trees require rather severe treatment for a number of years to get them into the right condition for forming well-grown specimens. The tendency is for an isolated tree to develop in width more rapidly than in height, therefore the side branches have to be checked in order to give additional strength to the trunk. This might be done by simply taking the ends off all the branches, but a tree treated in such a manner would present a stiff and unnatural appearance, therefore it is a better plan to cut a few strong branches clean away where they can be well spared, and shorten the remaining ones back to side branches. The holes made by the removal of whole branches help a tree to retain something of its natural character, whilst by cutting the remaining branches back to side shoots it is relieved of stiffness.

## How to Prune.

If no distinct leading shoot exists, the branch nearest the centre of the tree should be selected for the leader, and be secured in an upright position by means of a stake fastened to the trunk. Should the branch be too strong for this, it might be wired up to a stake driven into the ground a few feet from the trunk. The same method is often successful when adopted for straightening a leaning tree. Branches which are likely to interfere with the development of the new leader must either be removed or shortened. New leaders may be formed fairly easily from side branches of broad-leaved trees, but less easily on conifers, and it is usually better to remove a damaged leader from a conifer, shorten the side branches round about, and try for a new upright leader from a dormant stem bud. When branches have to be tied or wired up care should be taken to place a stout piece of rubber or felt between the wire and the bark, and all such places should be examined annually in order to ascertain whether the ties are becoming too tight and are likely to cut into the bark.

The method of removing a branch from a tree has a considerable bearing on the healing of the wound, therefore care should be taken to make the cuts in such a way that they will heal most rapidly. In all cases when branches are cut out the wound should be cut quite parallel with the bark of the trunk. Some people are very fond of leaving an inch or two of the bottom of the branch, or of cutting it off at right angles with the trunk, but both ways are bad, for wounds so made, although small in comparison with wounds made parallel with the bark, fail to heal properly, whereas in the method recommended a complete healing may be looked for in a comparatively short time. In all cases it is desirable that the rough edges of a wound should be pared smooth with a sharp knife, and the whole wound painted over with coal tar as soon as possible after being made. If such a protective covering is not given, fungus spores are likely to obtain a footing, and decay may spread into the tree. When branches are shortened care should be taken to shorten them to a side branch, and in no case should they be reduced so as to look like long bare sticks.

## Removal of Dead Wood, etc.

Another important matter in regard to the pruning and upkeep of trees is the regular cutting out of dead and dying wood, and the removal of branches injured by wind, for the neglect of these seemingly trivial matters often results in permanent injury, and sometimes early death.

The time for pruning may be given as any period between the time when the young leaves are fully expanded and Christmas. There is a great deal to be said for performing the work in summer, for whilst the leaves are on the trees the operator is better able to judge of the amount of pruning actually necessary than when the branches are leafless.

In conclusion, one would urge that proper attention should be paid to young trees in order that severe pruning in after life will not be required; that the work be done in a careful and thoughtful manner, with due regard to the present appearance and future welfare of the trees, and that everything should be done to assist the healing of the wounds.

Kew. W. Dallimore.

# FLOWERING PLANTS AS STANDARDS.

A notable feature of the present day is the number of greenhouse decorative flowering plants that are now grown as standards. Fuchsias have always been so treated, as the drooping nature of their blossoms enables them to be seen to great advantage when they occupy a more or less elevated position. Concerning abutilons, too, much the same may be said, while in addition to these one frequently meets with standards of heliotrope, Salvia splendens, pelargoniums of zonal and ivy-leaved sections, lantanas, shrubby veronicas, and others. Apart from the fact that the flowers are brought nearer the eye on standards, these tall plants, when employed for grouping purposes, serve to break up any flatness or formality.

From their comparative novelty, as well as for other features, standards often attract a good deal of attention, and one is frequently asked how they are obtained. It is, in most cases at least, a very simple matter, all that is necessary being to strike good vigorous cuttings, and grow them freely, taking care that the growing point is not injured in any way. To prevent any mishap the plants should each be secured to an upright stick, and all side shoots removed till the required height is attained, when they may be allowed to branch out. Where these standards are used out of doors care must be taken that they are securely fastened. S. W.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CATTLEYAS.—As Cattleya gigas, C. Rex, C. Gaskelliana, C. Dowiana, and its variety aurea, C. Hardyana, and many others which flower at this season pass out of flower, they should be kept rather dry for some little time. They may also be exposed to more light and air than at other seasons. The compost should not be allowed to become dust-dry, or there will be loss of roots and of energy. Those plants that are in need of new rooting material should have attention as regards repotting, as soon as new roots are seen to be developing. A compost as advised in the issue of March 23 will answer the requirements of the whole of these orchids. Each plant should be potted firmly, with the rhizome placed just on a level with the rim of the pot or pan. When repotted, the plants should be placed at the cool end of the cattleya or intermediate house, where they will be exposed to the light and air; but should the weather be bright, care must be taken that they are not scorched by the sun. Until the plants are re-established only sufficient moisture is necessary to prevent shrivelling. Every care should be taken to keep the plants at rest, and to prevent secondary or autumn growth. When these secondary growths insist on pushing, the plants must be kept in their growing quarters, and every inducement given them to complete growth as soon as possible.

C. SPECIOSISSIMA should be treated in the same manner; although these remarks are made especially for C. Warscewiczi, which in so many cases fails to give a return of flowers for the room occupied. If this so-called shy-flowering cattleya is treated as advised, and not allowed to suffer from either too much or too little water during the winter months, and placed in a good light position at the warmest end of the cattleya house, I feel confident a fair percentage will produce flowers. I have from time to time observed that plants which have been kept dry, and did not push their growths early in February, failed to flower; while those which commenced to grow at that date rarely failed to do so. If this cattleya is potted now and treated as advised it will get well established before the winter months.

LÆLIAS.—L. purpurata, L. tenebrosa, L. cinnabarina, and many of their hybrids, should also be examined in order to see if more root room or new material is required. By this time their new growths will have reached a few inches in height, and will be pushing forth new roots. When giving plants larger pots, the old back pseudo-bulbs should be cut away; and, should the eyes be good, they may be potted up in small pots, when many will make new growths and soon become useful plants. Enough space should be allowed in the receptacle for at least two seasons' growth. Old plants that need renovation should also receive attention at this season. All exhausted or worn-out pseudo-bulbs and dead roots should be cut away, the old decayed compost removed, and the pieces potted separately into pots as small as possible, so that, when they become well rooted, they may easily be placed into larger receptacles.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

SCHIZANTHUSES.—Seeds of this useful annual should be sown at once for next spring display. Choose a seed-pan, clean and well crocked, fill it to within one inch of the rim with a sandy compost, sow the seeds thinly and evenly over the surface and slightly cover them with compost. The pan should then be placed in a slightly-heated frame and covered with a piece of glass. Directly the seeds have germinated the pan must be moved to a cold frame or the seedlings will become drawn and spoilt. When the seedlings are large enough the most forward should be taken out and potted sepa- be kept frost proof. The early batch will be possible to obtain three batches of plants from the same sowing. The seedlings must at all times be grown quite cool. During the winter a good position for them will be found on the top shelf of a vinery, where they will obtain the maximum of light and be kept frost proof. The early batch will be ready for a shift into flowering pots about the end of October, but the later batches are best kept in the small pots until the spring.

ARUM LILIES.—The time has arrived for these plants to be examined. There are two distinct systems practised for the resting or summer treatment. Some growers favour planting out, while others prefer to let them remain in their flowering-pots, simply drying them off by withholding water. I prefer and practise the former treatment. Those which have been planted out have, owing to the heavy rains we have experienced, started to grow much earlier than usual, and are now rooting freely. They should be carefully lifted with a fork, commencing at one end, and taking the row right through. Pots and soil should have been prepared beforehand. Arums are gross feeders, and require a rich, rather heavy compost, consisting of two parts loam, one part well-decayed manure, and one part coarse sand. They are very fond of soot, therefore a good dusting should be added at the time of potting. When lifted the plants should be sorted into three sizes. A ten-inch pot will accommodate four of the largest plants, and a five-inch pot will easily hold one strong-flowering plant. Arum lilies are very valuable at Christmas and Easter for church decoration, and they are equally valuable for house adornment. If they are potted in sizes, all the plants in each large pot will bloom at the same time.

LILIUM LONGIFLORUM.—Some bulbs should be obtained at once and potted, if required for Christmas display. These lovely lilies are always welcome, and especially in the winter when all outdoor flowers are over.

VALLOTA PURPUREA.—This is finely in bloom now, and should also be put into the conservatory. I have before stated in this calendar when vallotas and nerines are grouped together they produce a glorious effect.—Lewis Smith, Norwich.

## HARDY FRUITS.

RASPBERRIES.—The fruiting season is now over, and every effort should be made to remove the old canes as soon as possible; these should be cut out, and, at the same time, weakly young growths should be removed where a sufficient number of stout, healthy growths are available for the purpose required. When tied to individual stakes, five or six growths are ample; these should be loosely tied up to prevent breakage from strong winds. Where trained on wires a sufficient number of young canes should be laid in, allowing ample space between the growths to permit the thorough maturing of the rods. Manurial assistance will prove most beneficial, particularly so where no previous feeding has been afforded. If the soil is naturally deficient in lime, a dressing should be applied forthwith. During the fruiting season weeds spring up in abundance; these should now be cleared off and the plantations made clean and tidy.

LOGANBERRIES, ETC.—The various kinds of fruits similar in habit of growth to the loganberry should receive similar treatment to that advised for raspberries. The thorough ripening of the young growths is of the utmost value, and greatly enhances the prospects of a good crop of fruit for another season. Overcrowding should be strictly avoided. As a successional fruit to the raspberry the wineberry is well worthy of more extended culture, and should certainly be grown wherever space can be afforded, even if it is but a row or two. The plants present a most pleasing sight when carrying a crop of fruit.

SUMMER PRUNING.—By this time growth has practically ceased, and the operation of summer pruning should now be completed. Cordon and espalier pears and apples, unless regularly pinched back, will have made a considerable amount of growth, and, apart from such growths which may be required for extension or filling up vacant spaces, all unnecessary shoots should be cut back fairly close; much depends, however, upon the condition of each individual tree as to whether hard pruning should take place or otherwise. Trees carrying an average crop of fruit may, with advantage, be closely pruned; those with a vigorous habit of growth and little or no fruit will, if cut too hard, make a secondary growth, which is not desirable; but by leaving a certain number of growths evenly distributed over the tree, the risk of secondary growths will be obviated. Bush trees require similar treatment, and to obtain fruits of high colour and quality there must be free admission of light and air; it is therefore obvious that growths which interfere with the due passage of sun and air must be removed, and as soon as possible, to gain the desired results.

PROTECTING PLUMS.—Choice plums should be netted to ward off the attack of birds; if wasps are troublesome it will be necessary to use special protecting material, and to closely envelop the trees, as the least hole is quickly found out and made use of. The best plan is to search for and destroy wasps' nests.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

TOMATOES OUT OF DOORS.—The weather of late has not been over favourable to the ripening of this crop. Remove side growths and large leaves that prevent sun from reaching the fruits. Stop the leader to encourage every bunch to perfect its fruits. If only good-sized green fruits form at the tops of the plants, these can be ripened late inside or, if desired, can be used for tomato chutney or pickle. Any fruits that are now colouring should be gathered and stored in boxes to ripen, placing them on a shelf in an ordinary greenhouse or frame.

INDOOR TOMATOES will need a little fire heat should the weather remain cool. Pay strict attention to watering, or cracked fruits will be the result. Young plants for winter fruiting should now be shifted into their fruiting pots. Guard against excessive moisture. These will do well in any cold house for some time to come.

SPINACH.—The principal sowing of this crop can now be made for winter and spring supplies. Sow again two weeks hence, when much ground will be vacant after the lifting of maincrop potatoes. Sow in drills eighteen inches apart. Do not forget to sow a row or two of the perpetual spinach beet at the same time as the Winter Prickly and the Carter Spinach.

TURNIPS will grow readily after this date; treat as advised for spinach. Red Globe and Snowball are two good varieties.

ENDIVE.—Late-sown plants should be put out without delay so as to form fair-sized plants before winter sets in. Make still another sowing, this time in a cold frame or hand-light, finally planting the seedlings under lights so that, should severe weather set in, and spinach is at a standstill, they can very conveniently be used as a substitute for the latter.

ONIONS.—This crop is keeping its foliage very late this year; hardly a plant has fallen down yet; consequently they will be later in ripening than usual. With continuous wet weather afford a little help by lifting their foliage occasionally; should it fall too thickly or rot, mildew and decay will set in, whereas the regular movement of the leaves will help to dry and ripen the crop.

LATE PEAS.—Pay attention to this crop as the gales which usually occur from now onwards may blow them over; treat runner beans likewise, securing them safely.—G. Ellwood, Swanmore Park Gardens.

## SHREWSBURY FLORAL FETE.

(Continued from page 646.)

of £25, with a charming exhibit. An extremely beautiful kentia formed the centre of the background, and around and under it were lightly grouped elegant crotons, ixoras, and Lilium speciosum. A light archway carried more crotons and Fuchsia triphylla. Right in front brilliant crotons combined with Oncidium Marshallianum, O. flexuosum, odontoglossums, cattleyas, lælio-cattleyas, and liliums to produce a light, graceful, and yet rich effect. Ferns, small caladiums, and low crotons formed the groundwork and margin of this delightful contribution.

Mr. J. V. Macdonald, gardener to Sir G. H. Kenrick, Whetstone, Edgbaston, came a close second, and once more included beautifully-grown crotons, handsome palms, oncidiums, odontoglossums, cattleyas, angræcums, ixoras, liliums, Francoa ramosa, and Selaginella cæsia in his finely-arranged exhibit. Mr. W. Vause Leamington, came second; and Mr. W. R. Manning, Dudley, was awarded a special prize.

FIRST PRIZE DISPLAY OF ROSES AT SHREWSBURY, EXHIBITED BY MESSRS. GUNN AND SONS, OLTON.

There were two competitors in the class for a group of tuberous begonias, arranged on a space 15ft. by 4ft., foliage plants and ferns allowed among the begonias. The two exhibits made a rare display of colour. Messrs. Blackmore and Langdon, Bath, were awarded the first prize for superb flowers on beautiful plants, their Royal George, Princess Victoria Louise, Lady Cromer, Lady Tweedmouth, and Mrs. Lockwood being a few of special merit. Messrs. T. S. Ware, Lim., Feltham, came a close second, and showed wonderful flowers of Mary Pope, Lady Cromer, Lady Ashdown, Dr. Hamilton, and King George IV.

Messrs. Hayes and Sons, Keswick, led the way in the class for a collection of alpine plants, arranged on a space of 100 square feet, on the ground. The fulfilment of the schedule requirements did not permit of a bold or fine effect, and the season was late also for a showy display. Veronicas, heaths, saxifrages, meconopsis, and campanulas were the plants most in evidence. Second prize was won by Mr. W. R. Hayes, Grasmere, whose violas, campanulas, hypericums, and heaths gave a fair amount of floral colour. Messrs. W. Artindale and Sons, Sheffield, third.

### FLORAL DESIGNS.

Messrs Dicksons, Chester, secured the first prize for a collection of floral designs, and so won the gold medal. This firm used Lilium longiflorum and Cattleya Harrisonæ freely in wreaths, harps, crosses, anchors, crowns, chaplets, etc.; asters and carnations combined beautifully and the "gates ajar" of white stocks and a base of odontoglossums, cypripediums, oncidiums, and croton leaves formed an attractive centrepiece. Bouquets and hanging baskets were also finely arranged. Mr. F. W. Johnston, Manchester, came second, and his cross of stephanotis, lily of the valley, and Anthurium Andreanum was very finely executed; the King's Acre Nurseries, Worcester, third.

Messrs. Felton and Sons, Hanover Square, London, W., led for a bouquet composed of Phalænopsis Rimerstiana, lælio-cattleyas, Oncidioda Charlesworthi, and hybrid odontoglossums; Mr. A. Adshead, Gatley, second, and Mr. W. J. Garner, Altrincham, third. Messrs. Felton scored for a basket of flowers with fine lælio-cattleyas and oncidiums beautifully arranged; Mrs. J. Nixon, Alderley Edge, second.

In the class for a basket of flowers, orchids excluded, Mr. A. R. Bide, Farnham, led with roses, and Mr. W. J. Garner was second.

For a table decoration Miss J. Jenks, Codsall, led with buff and pink roses. Mrs. J. Nixon, Alderley Edge, second with Gloriosa superba and francoa spikes. Mrs. A. H. Bide third with Lady Hillingdon rose.

### CUT FLOWERS.

The class for a collection of cut roses, arranged on a space 12ft. by 4ft., and 7ft. high, was a great one, seven competitors staging. Messrs. Gunn and Sons, Olton, secured the premier prize of £7 with a beautiful exhibit with arches of rambler roses and towering stands of Frau Karl Druschki, Irish Elegance, Lyon, A. R. Goodwin, Mrs. T. Roosevelt, and other fine things, with small vases of yellow and light roses in front. This exhibit was particularly bright and effective. Second prize was won by Mr. J. Mattock, New Headington; Messrs. W. and J. Brown, Peterborough, third; Messrs. Hugh Dickson, Lim., Belfast, fourth.

Messrs. A. Dickson and Sons, Newtownards, scored for a dozen bunches of decorative roses with Irish Elegance, Harry Kirk, Lady Pirrie, Mrs. Alfred Tate, and other good things; Mr. J. Mattock, New Headington, second.

Mr. Charles Wall, Bath, scored for a collection of carnations, and put up a splendid lot of popular varieties of the perpetual class. Mr. Wallace, Saffron Walden, a good second; and Mr. C. Waters, Balcombe, third.

Gladioli are fine exhibition flowers, and they were finely shown by Messrs. J. Mair and Son, Prestwick, and Mr. T. Lambert, Brogyntyn, the former winning for two dozen spikes, and the latter for twelve. Mr. J. Walker, Thame, scored for two dozen show and fancy dahlias, with large, gay floral globes of fairly good quality for the time of year. Mr. H. Woolman, Shirley, had the finest set of twenty-four cactus dahlias, but Mr. H. Peerman, well known at London dahlia shows, led the way for eighteen, and for a dozen cactus blooms with flowers of great merit. Messrs. Bullough and Bolton, Elland, won the chief award for a dozen cactus dahlias, six blooms of each, arranged with suitable foliage.

Messrs. Keynes, Williams, and Co., Salisbury, scored for a collection of cactus or decorative dahlias with a very bold exhibit of fine flowers staged with grasses and gypsophila in tall stands; the exhibit was a very pretty one. Mr. H. Woolman, Birmingham, third.

Messrs. W. and C. Bull, Frome, won first prize for two dozen bunches of hardy flowers, and did so with a fine contribution. In a similar class, but for a dozen bunches, Mr. W. Taylor, gardener to S. Bibby, Esq., Harwicke Grange, was the fortunate first-prize winner. Mr. W. H. Banks was the winner in a class for a dozen bunches of annuals, but he omitted to label his flowers. Mr. A. Myers, Shrewsbury, succeeded in the class for a dozen trusses of zonal pelargoniums, with a very bright contribution of excellent varieties.

For a display of border carnations and picotees the chief award fell to Messrs. M. Campbell and Son, High Blantyre, who had a very pretty exhibit. In the amateurs' class Mr. W. H. Banks, Kington, secured the chief prize, in creditable fashion, for carnations. For a dozen vases of carnations Mr. C. Wall was the leader. Mr. G. Bowness, Glasgow, scored well for eighteen bunches of sweet peas, and had quite bright clean flowers; Mr. J. Smellie, Busby, was second.

### VEGETABLES.

We very much doubt whether there has ever been a finer display of high-class vegetables than that at Shrewsbury on this occasion. A number of seed firms offer substantial prizes, and these are eagerly competed for. In the Messrs. Suttons' class for nine kinds, Mr. David Gibson, gardener to Captain H. Spender Clay, Lingfield, Surrey, was a splendid first with beautifully grown produce, and Mr. W. Gaiger, Elstree, was second. In Messrs. Carter's class Mr. E. Beckett led, with Mr. F. J. Barratt following. Mr. J. Hudson, Leicester, and Mr. J. R. Tooley, were first and second respectively in Messrs. Webb's class for nine kinds, and in Messrs. Clibrans' class Mr. Searle, gardener to the Marquis of Northampton, Castle Ashby, beat Mr. H. Turner, of Wellington. Mr. F. Sanderson, of Whittington, and Mr. E. E. Arnold, Wellington, were first prize winners in classes provided by Mr. E. Murrell. Mr. Searle and Mr. T. Jones, Ruabon, were first and second respectively in Messrs. Dickson and Robinson's class for nine kinds, and in the local class Mr. W. Taylor was the leader.

In the society's class for twelve kinds of vegetables, Mr. E. Beckett, V.M.H., Aldenham House, Elstree, led with superb leeks, celery, carrots, parsnips, peas, cucumbers, tomatoes, onions, cauliflowers, potatoes, beet, and runner beans; he gained 77 points. Mr. J. Hudson, Leicester, second with 72½ points; and Mr. J. R. Tooley third. Seven competitors. In Robert Sydenham Limited's class for nine kinds of vegetables, Mr. E. Deakin, Haymills, Birmingham, won.

### MEDALS.

Large Gold.—Messrs. E. Webb and Sons, Wordsley, Stourbridge; King's Acre Nurseries, Worcester; Royal Horticultural Society, Wisley Gardens, Ripley; Messrs. Sutton and Sons, Reading; Mr. Amos Perry, Enfield; Messrs. T. Rivers and Sons, Sawbridgeworth; Messrs. Clibrans, Altrincham; Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree.

Gold.—Messrs. H. B. May and Sons, Edmonton; Messrs. Gunn and Sons, Olton; Messrs. Young and Co., Hatherley; Messrs. A. Dickson and Sons, Newtownards; Messrs. Dickson and Robinson, Manchester; Messrs. Jarman and Co., Chard; Messrs. Bakers, Old Hall Nurseries, Codsall; Messrs. Isaac House and Son, Bristol; Messrs. Dobbie and Co., Edinburgh; Messrs. Hobbies, Lim., Dereham; Messrs. Jones and Sons, Shrewsbury.

Silver-Gilt. — Messrs. J. Forbes, Lim., Hawick; Messrs. R. Wallace and Co., Colchester; Messrs. Pritchard and Sons, Shrewsbury; Mr. L. R. Russell, Richmond; Messrs. Fred Smith and Co., Woodbridge; Mr. A. W. Thorpe, Birmingham Road, Lichfield; Messrs. Barr and Sons, Covent Garden; Mr. Robert Bolton, Carnforth; Mr. H. N. Ellison, West Bromwich; Messrs. Dicksons, Lim., Chester; and Mr. E. Murrell, Shrewsbury.

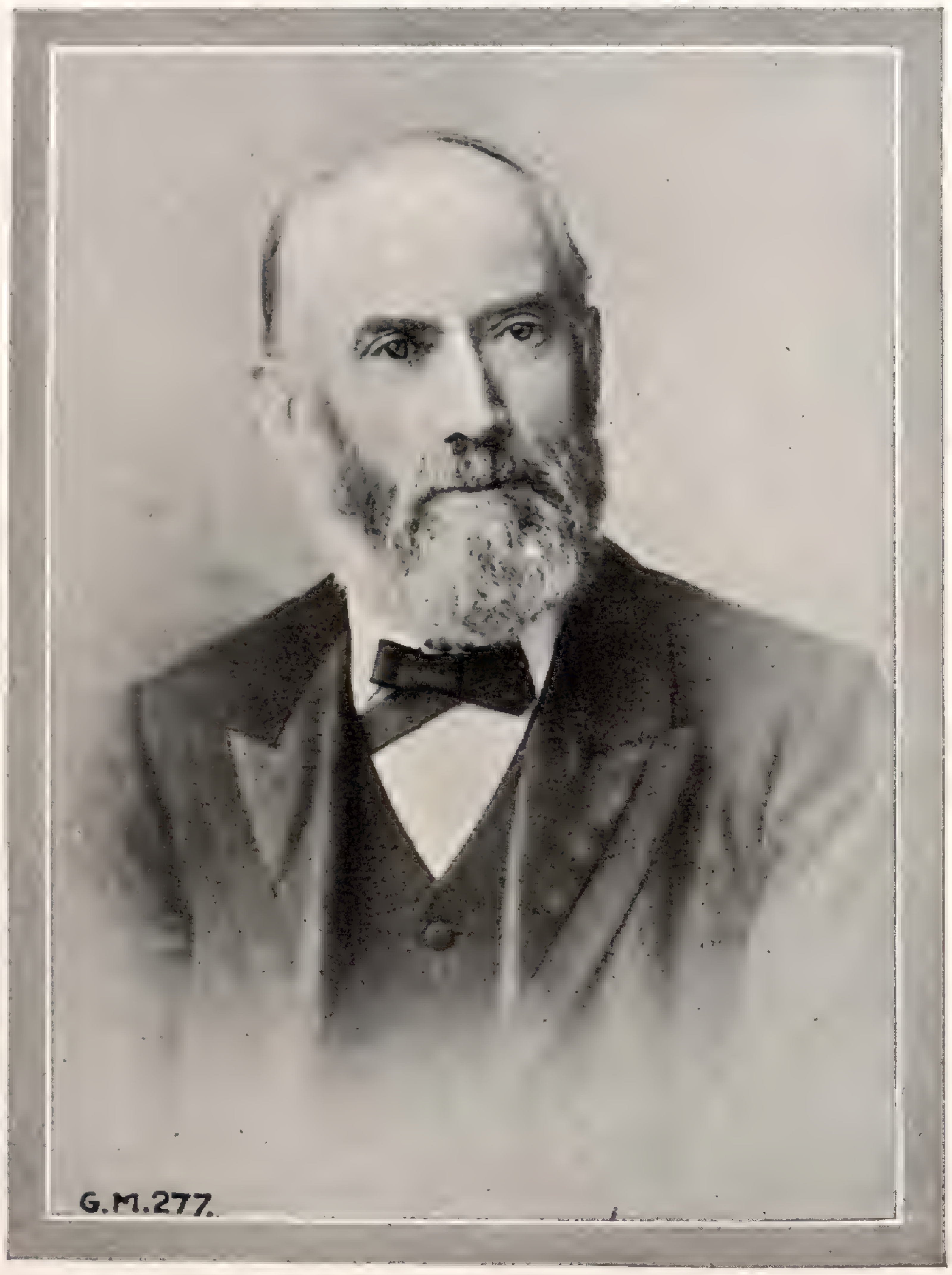
Silver.—Messrs. S. Bide and Son, Farnham; Messrs. Hewitt and Co., Solihull; Lapworth Nurseries, Hockley Heath; Mr. R. Hayes, Grasmere; Messrs. Hogg and Robertson, Dublin; Messrs. Conways, Halifax; Messrs. Webb and Brand, Saffron Walden; Messrs. Rich and Co., Bath; Messrs. A. R. Brown and Co., King's Norton; Messrs. Aldersey and Marsden Jones, Malpas; Mr. W. A. Manda, St. Albans; Messrs. G. Gibson and Co., Leeming Bar; Mr. A. Myers, Shrewsbury; Messrs. Caldwell and Sons, Knutsford; Messrs. Felton and Son, Hanover Square; F. Bibby, Esq., Hardwick Grange (for shrubs and climbers); Mr. W. L. Paterson, Shrewsbury; Mr. G. Underwood, Aylestone Park, Leicester.

We are compelled, by the pressure on our space, to leave over the non-competitive section until our next issue.

## OBITUARY.

### MR. ALEXANDER DEAN, V.M.H.

With deep regret we record the death of Mr. Alexander Dean, V.M.H., which occurred at his residence, 67, Richmond Road, Kingston, Surrey, on Tuesday, the 20th inst., in his eighty-first year.



THE LATE MR. ALEXANDER DEAN, V.M.H.

Mr. Alexander Dean, who was a striking personality in the world of horticulture, and enjoyed a high reputation as a writer, lecturer, and judge, was the younger of three brothers, all of great ability, and all associated with horticultural pursuits. Mr. William and Mr. Richard Dean devoted their attention chiefly to flowers, mainly those beloved of the florist, but Mr. A. Dean gave more attention to vegetables and fruits. Especially was he interested in vegetables, and in the course of his long and active life he did an immense amount of useful work by his advocacy of an extension of the cultivation and exhibition of these useful products. When associated with his brother, the late Richard Dean, in the management of their seed grounds at Bedfont, he raised a considerable number of potatoes of great excellence, and probably the one that retained a position in trade lists for the longest period was the large purple-skinned round known as The Dean. He was long a prominent and useful member of the Royal Horticultural Society's Fruit and Vegetable Committee, and he took an active part in the movement which resulted in the Vegetable Conference and Exhibition held at Chiswick in 1903. In connection with this event Mr. Dean initiated a gardeners' dinner, which was acknowledged to be the most successful function of its kind ever held in this country. This dinner took place at the Holborn Restaurant on September 29, 1903, on the evening of the first day of the fruit and vegetable show at Chiswick, which was the last great gathering held in the Royal Horticultural Society's historic gardens. Mr. Dean acted as secretary of the dinner committee, and upwards of five hundred gardeners and garden lovers were present. For many years he was a lecturer and instructor of horticulture under the Surrey Council, and took a prominent part in the advancement of horticultural education, while as a judge of vegetables and fruit he had few equals. Of fearless, independent, and sturdy character, Mr. Dean was most emphatic in declaring his opinions on matters horticultural in the horticultural Press, to which he was a regular contributor until advancing years rendered some reduction in his activities necessary. This free expression of his opinions led to many a fierce fight, from which he usually emerged triumphant and never vanquished. Gardeners' associations and gardening charities found in Mr. Dean an earnest advocate. In 1904 the Council of the Royal Horticultural Society conferred the distinction of the Victoria Medal of Honour in Horticulture upon him, an honour that was well deserved. During his residence at Kingston-on-Thames Mr. Dean's advocacy of window and flower garden competitions led to a material improvement in the appearance of those parts of the town occupied by the industrial classes. Mr. Dean maintained his interest in horticulture in general, and vegetables in particular, until the last, and some three years since he took a leading part in the formation of the National Vegetable Society, which has already done much useful work. Mr. Dean was elected the first chairman of the committee of the society, a position he held until a short time since, when his failing health induced him to resign.

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# EXHIBITIONS AND MEETINGS.

◆

## Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—August 13.

Mr. E. A. Bowles, M.A., F.L.S., in the chair.

CATERPILLARS ON HOPS.—Mr. Holmes reported that there was no doubt the caterpillars on hops were those of Vanessa Io.

BLACK CURRANTS SPORTING.—Messrs. J. R. Pearson and Sons wrote that their plants of black currants were similarly affected, but that the trouble was not due to pruning. A letter on the same subject was read from Mr. E. Ballard, who suggested that forcing by too much manure or too hard pruning was the cause of the "throw back" in black currants, and that the trouble is common amongst the Worcestershire growers.

HAZEL.—Mr. O'Brien showed hazel nuts with very large foliaceous bracts, a condition he had found fairly common in the neighbourhood of Haywards Heath.

PRIMULA PYCNOLOBA.—Messrs. H. Veitch and Sons showed a new Western China primula, P. pycnoloba, a species with small, dark purple flowers, very large sepals, and foliage resembling a megasea.

HEATHS DISEASED.—Some heaths with partial withering of the stems were sent. As the bark around the stem (at the collar) was partially decayed, it was thought the trouble was due to some irregularity in the water, probably lime or some such substance.

GLADIOLUS CORMS DISEASED.—Mr. Jenkins sent corms of gladiolus which had failed to grow; the substance of the corm was very woody, and the buds, which were still sound, had failed to push through, due probably to the effect of the dry heat of last season. Mr. Bowles remarked that he had occasionally noted this state of things in crocus corms.

OAK GALLS.—Mr. Odell remarked upon the widespread attack of the oyster gall (Neuroterus ostreus) on the Oaks, pointing out that the alternate gall, Spathegaster apallinus, was not so much in evidence during the early months of the year as the attack of Neuroterus last summer would indicate.

DINANTHE.—Mr. Bennett-Poë, V.M.H., showed some open flowers of the genus Dinanthe; the flowers are a deep blue, somewhat like Meconopsis Wallichi in form. Specimens of this new plant were shown at the International Show by Miss Willmott, V.M.H., and Mr. H. J. Elwes, V.M.H.

## The British Pteridological Society.

The annual meeting of this society was held this year at the Albion Hotel, Arnside, Westmorland, on August 5, when a good number of members were present, Mr. Alex. Cowan, of Penicuik, as president, taking the chair. Many of the members assembled on the Friday preceding the meeting in order to arrange some fern-hunting expeditions in the vicinity, but, owing to the distance which it was necessary to travel to reach good ground, and still more to the terribly cold and wet weather which prevailed during their stay, no "finds" of any special note can be recorded.

Subsequently, in view of the first drawback, it was resolved that Devon or Dorset should constitute the area for hunting on the occasion of the next meeting, since not only are the species there far more numerous than in the north, but ferns generally are far and away more abundant. At the meeting the hon. secretary, Mr. Chas. T. Druery, reported that the society was now represented by no less than 150 members, and that as a consequence the funds were in a very satisfactory position, fully justifying the establishment under his editorship of the "British Fern Gazette," the illustrated quarterly issued to members, the first volume of which, representing three years' issues, having just been completed. It was acknowledged on all hands that this "Gazette," which now represented the first permanent serial publication devoted entirely to our British ferns and their varieties and was contributed to by the Editor and many of the members, was a very practical, valuable, and up-to-date contribution to the standard literature of the cult.

A vote of thanks to the president and officers, who were re-elected en masse, was supplemented by a special one to the Editor, together with a testimonial in recognition of the services rendered by him to the society and to such fern lovers as contributed thereto. A large number of fronds of very beautiful ferns, some new finds, and some improved raised varieties, were exhibited, and displayed, in many cases, some most extraordinary advances in the development of those varietal charms, which in our native ferns far and away excel all exotics in diversity, and rival the best in beauty.

The hon. secretary, whose address is 11, Shaa Road, Acton, London, W., will be happy to send a sample copy of the "Gazette" to any one desirous of joining the society, the subscription to which is only 5s. per annum (August to August), and entitles not merely to fellowship with an ever-increasing number of fern experts and lovers, but also to four issues of the "Gazette," of which Volume II. will commence in September.

## Broughty Ferry Horticultural Association.

The annual excursion, held under the auspices of this association, took place on Saturday, 10th inst. Mount Melville, St. Andrew's, was the rendezvous. On arrival the party was met at the East Lodge by Mr. Wm. MacDonald, head gardener to J. Younger, Esq. Exploring the charming grounds was a delight to all. Something new was noted on all sides, while original ideas on the part of the landscape artist were in evidence, and commented upon by the visitors. It is not too much to assume that when the grounds are furnished with that luxuriant growth which must inevitably come in the strong soil, this will be amongst the most beautiful places in Scotland. Only ten years since the estate was acquired by Mr. Younger; he had much to do, and has done it thoroughly and picturesquely, without taking a single point of interest from a charming old-world country seat. There is beauty, charm, and substantiability in the beautiful and serviceable mansion, new from its foundations, to the Italian garden not yet complete. The rose garden, with the newest and best roses in carpets of Viola gracilis, were lovely, and ramblers, too, were in rich profusion, as hedges, and on the pergola. The formal flower garden was a mass of bold and telling colours, and the vegetable and fruit gardens contained supplies for all demands. The extensive glass ranges, all comparatively new, were a delight to all, and contained splendid crops of large peaches, well finished, and ripening grapes. Orchard house fruits were extra fine too, and carnations were splendid. Separate houses accommodate orchids, ferns, palms, melons, tomatoes, and stove plants in choice sorts. Such a garden is well worth visiting, and worthy to rank among the notable places of Scotland.

The party were further honoured in being the guests of Mrs. Younger, who entertained them to high tea. Mr. Grant conveyed the thanks of the company to Mr. and Mrs. Younger for their kindness.

## Poole (Dorset).

The fourth annual show of the Borough of Poole Allotments Association, Lim., was held in Poole Park on August 14, and proved a great success. In the various centres there are about seven hundred allotment holders, and at the show nearly 400 entries were made. In many classes there were more than twenty entries, and the produce throughout was very good indeed.

The Longfleet schoolboys, who have a garden of their own, had a nice collection of vegetables, which added considerably to the interest and attractiveness of the show. Cabbages, turnips, carrots, beet, parsnips, onions, potatoes, and marrows were staged in large numbers, and were of high quality.

Table decorations, sweet peas, roses, hardy cut flowers, including some very beautiful arrangements of them in baskets; and dahlias were also features of the show.

A complete arrangement of plants suitable for a window was a novel feature, and the various collections, tastefully arranged, were very attractive. Mr. W. Evans, gardener to G. J. Fenwick, Esq., was first in the class for a group of plants in semicircular form in the open division. Dr. Crallan and Mr. G. C. Richards were second and third respectively. Dr. Crallan was first, and Mr. Palmer (head gardener to the Poole Corporation) second, in the class for eight vases of sweet peas. Mr. Palmer had the best roses, followed by Mr. Evans and Dr. Crallan.

Non-competitive exhibits added much to the attractiveness of the show. Mr. T. K. Ingram, Parkstone, had a lovely circular group of miscellaneous greenhouse plants. Mr. H. W. M. Elford, Bournemouth, had seedling dahlias; Mr. R. Aireton, Longfleet, greenhouse flowering plants; Mr. C. W. Hill, sweet peas; and Mr. A. Piercy, Parkstone, plums.

## East Anglian Horticultural Club.

At the August meeting of this club, held at the Boar's Head Hotel, Norwich, Mr. W. Rush, the president, read an interesting paper upon "Stove and Greenhouse Foliage Plants." Mr. Rush has a varied collection of these under his charge, and is thoroughly versed in the subject, consequently he was able to give some very practical advice upon propagation and cultivation. The good discussion which followed showed that the members interested themselves in the subject. There was a fine exhibition of flowers, fruits, and vegetables. A special feature here was the well-conditioned apples of 1911 growth, which Mr. Frank Neave, Lingwood, staged side by side with those of 1912 growth. The collection of fruit from Mr. W. Shoesmith, gardener to F. W. Harmer, Esq., Cringleford, was striking evidence of good cultural skill.

## United Horticultural Benefit and Provident Society.

The monthly committee meeting of this society was held at the Royal Horticultural Hall, Westminster, on Monday evening, August 12, Mr. Thomas Winter in the chair. Ninety-one new members were elected, making about 300 since July 8. Mr. W. Collins is resigning the secretaryship on September 9, and Mr. A. C. Hill, of 35, Alexandra Road, West Kensington, W., has been appointed secretary pro tem.

## GARDENING ENGAGEMENT.

Mr. Harry Foster, who succeeded the late Mr. Charles Foster as Director of the "Times" Experimental Station, Sutton Green, Guildford, has been appointed assistant to Mr. Walter P. Wright, Horticultural Superintendent and Instructor in practical gardening to the Kent Education Committee. Mr. Foster's many friends will wish him every success in the duties upon which he enters about the middle of September.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

STREPTOSOLEN JAMESONI.—W. B., Chappel: I have two fine specimens of Streptosolen Jamesoni, and am anxious to make use of them for summer bedding. Would you be good enough to tell me if the plant is suitable for this purpose, and also how to propagate so as to obtain good sturdy plants by June 1 next?—Streptosolen Jamesoni is a fine plant for summer bedding, and is largely used for this purpose in many of the notable parks and gardens of London and other large cities. It is usual to insert cuttings of new growth early in March, in a warm pit, and grow the plants freely in a moist atmosphere; in fact, the treatment usually accorded young fuchsias struck early in spring will suit Streptosolen Jamesoni. As quite small plants the streptosolen is not a success for summer bedding, as the flowers are seen to the best advantage when the plants are a yard or more high, and rise well above a lower subject in the bed. We have never tried raising plants from autumn-struck cuttings, but we should try the method if we wanted to produce the largest plants possible by bedding-out time next year. In such a case we should root the cuttings now in gentle heat, pot them early, and grow the plants steadily in a warm greenhouse until March, when further potting and more heat and moisture should induce free growth in ample time for proper hardening off before early June

MILDEW ON CRIMSON RAMBLER ROSE.—J. R. P., Holywood: I shall be much obliged if you can tell me what is the matter with the Crimson Rambler rose, specimen of which I have enclosed. It has been growing over an arch for at least fifteen years, and has always bloomed well. This year it has a fine promise of bloom, but the flowering growths became affected like those sent. Last year there was a slight attack only. The plant has produced some fine young canes from the base this year. Is there a remedy, or shall I take up and destroy the plant?—The rose is suffering chiefly from an attack of mildew, but greenfly is also very much in evidence. Unfortunately, Crimson Rambler is particularly liable to mildew attack. Thin out all unnecessary growth, and cut out a large number of the flowering growths as soon as the flowers fade, though this may be done at once if the infection is very bad all over the tree. Spray the tree with a liver of sulphur solution, made by dissolving 1oz. of liver of sulphur in a little hot water, and adding it to five gallons of soft water. The whites of two eggs or a tablespoonful of liquid glue will give a little adhesiveness to the mixture.

MEANING OF PLANT NAMES.—W. B., Chappell: Will you kindly let me know the title of a book which gives the meanings of the specific names of plants? A great many of the names convey their own meaning, such as aquatica, riparia, alba, socotiana, etc., but I am constantly coming upon names of which I do not know the meaning.—A book that you would find very helpful is "Nicholson's Dictionary of Gardening," where the meaning of every plant name is given in brackets immediately after the name; while in the fourth volume is a pronouncing dictionary and a list of Greek root words from which a large number of botanic names are derived, with meanings and examples of derivations. B. D. Jackson's "Glossary of Botanic Terms, with Derivation and Accent," should also be useful, and, as it is necessarily a smaller and cheaper work than Nicholson's, you should get it first. Of course, it does not contain horticultural information.

GLOXINIAS.—R. T., Stockton.—Kindly advise me concerning the "blind" gloxinia I enclose.—There is not the slightest evidence to show what has caused the "blindness"; the tuber, roots, and leaves all seem perfectly healthy, and so some local cause must have been at work. We have seen begonias go blind after being watered inadvertently with very cold, hard water, and liquid chemical manures not infrequently defeat the end in view when used over-strong. It is in these directions, and in connection with fumigation, that we think you must look for the cause of the trouble.

POTATO SCAB DISEASE.—T. J., Shaftesbury: Can you give me some information concerning potato scab disease, and what is the best means of curing and preventing it? In Somersetshire last week I found the pink-skinned potatoes had the disease badly, but the white-skinned ones seemed to be fairly free. —It is quite impossible for us to help you unless we know more definitely what particular form of scab the potatoes are suffering from. Scab may be due only to mechanical injury resulting from the harshness of the soil. On the other hand, it may be due to the attacks of Oospora scabies or Spongospora scabies. The worst of all scab diseases is the Black Scab or Wart Disease, to which we have referred in these columns on many occasions. Growers with crops suffering from this terrible and unpleasant disease must report to the Board of Agriculture under the Destructive Insects and Pests Order. The penalty for neglecting to report is £10. You may obtain a leaflet dealing with and describing the black scab disease from the Secretary, Board of Agriculture, 4, Whitehall Place, London. Letters of application need not be stamped.

PROPAGATING CLEMATIS.—E. W., Harrogate: A friend of mine has a particularly good clematis. We neither of us know its name, but it is so beautiful that the propagation of a few plants is very desirable. Would seeds sown now prove satisfactory, or would cuttings or layering prove the surest way of securing a little stock? Any help you can afford us in our difficulty we shall greatly appreciate.—You may propagate clematises from seeds, but the seedlings would not necessarily reproduce the seed parent exactly. Seeds are best sown in early spring, in gentle heat, giving the seedlings cooler conditions as they advance, and planting them out in the autumn. Another method is to sow the seeds in sandy soil in a cold frame, as soon as they are ripe. In your case, however, the better plan will be to layer several growths, pegging them down firmly in fairly light sandy soil; but great care must be taken to make sure the layers are well rooted before they are severed from the parent plant.

PULQUE.—C. J. R., Essex: I am told that from Agave atrovirens, of which you have recently given two excellent illustrations, the Mexicans prepare a fermented liquor, which is known as pulque, and is largely drunk. I have not been able to obtain much information with regard to pulque, and I should like to know how the supplies of the sap from which it is made are obtained.—There is a considerable amount of information relating to pulque and its preparation in various publications, but it is scattered about and not readily accessible. It is, therefore, a matter of some interest that Mr. A. Burgestein prepared an article with illustrations fully dealing with the subject, and this was published in the "Oesterreichische Gartenzeitung" (Vol. vi., pt. vii., p. 252-8). An excellent abstract of this article is given in the current issue of the "Journal" of the Royal Horticultural Society, and, as it contains all the information you are likely to require, we give it herewith: "Pulque, the national beverage of Mexico, is obtained from the agave, generally from A. atrovirens, but many other species are used. When the seedlings have attained a height of four inches they are taken up, their leaves cut off, all except the central shoot, and the roots cut hard back. They are left to lie for seven days in the sun, and then replanted in a well-manured bed. Next year when they have reached a height of ten inches they are taken up again, the roots cut back, and replanted after exposure to the sun for fourteen days. They now send up abundant shoots in the axils of the leaves, which may be planted. The operation of root pruning and sun baths is repeated once more. When the plants are six to ten years old the central bud is cut off. Six months later the heart of the agave is hollowed out, forming a vessel a foot and a-half deep, which in the course of a week fills with liquid. This is collected twice daily. In good ground an agave will yield from one to one and three-quarters of a gallon of aguamiel daily for eight months. The plant then dies. The liquid contains about 10 per cent. of sugar. Some of the liquid is drunk as it is drawn from the plant, but most of it is fermented and converted into pulque."

LIMNANTHES DOUGLASI.—Spero, Kingston: Will you kindly advise me on the following matter: For the past three years I have tried to grow Limnanthes Douglasi, but have failed each time. The plan I have followed is to sow the seeds early in September in boxes, and after duly thinning the seedlings plant them out in the open ground. The young plants have always appeared to be doing well until about February, when they gradually die, roots and all. If you can suggest anything to get over the trouble I shall be obliged, as it is annoying to fail after taking pains to get the plants to grow. —Limnanthes Douglasi, like D. alba and D. rosea, are hardy annuals, that should be sown where they are to bloom. In well-worked and fairly light garden soil a good sowing should be made in early September. Thin sowing and early thinning are essential, so that good sturdy plants are left to stand the winter, and to flower next spring. In March and May other sowings should be made to succeed the autumn sowing; in these cases, also, early thinning is essential.

## NAMES OF PLANTS.

P. D. J., Bunbury.—1, Gesnera cardinalis: 2, Begonia Haageana.

F. E., Torquay. A garden variety of the Pomegranate—Punica granatum.

H. M. C., Sidmouth.—1, Fuchsia corymbiflora; 2, Gaura Lindheimeri; 3, Phacelia campanularia.

S. L., Huntingdon.—1, Spiræa Douglasi; 2, Colutea arborea; 3, Rhus Typhinus; 4. Ceterach aureum.

W. D. A., Horley.—1, Leptosyne Stillmani; 2, Rudbeckia Goldstrahl; 3, Polygonum orientale; 4, Muehlenbeckia complexa.

W. C. F., Renfrew.—The flowering plant is Statice Suworowi; the ferns are—1, Lastrea felix-mas cristata; 2, Athyrium filix-fœmina capitatum; 3, Lastrea pseudo-mas cristata; 4, Athyrium filix-fœmina laxo-cristatum; 5, Athyrium f.-f. cristatum.

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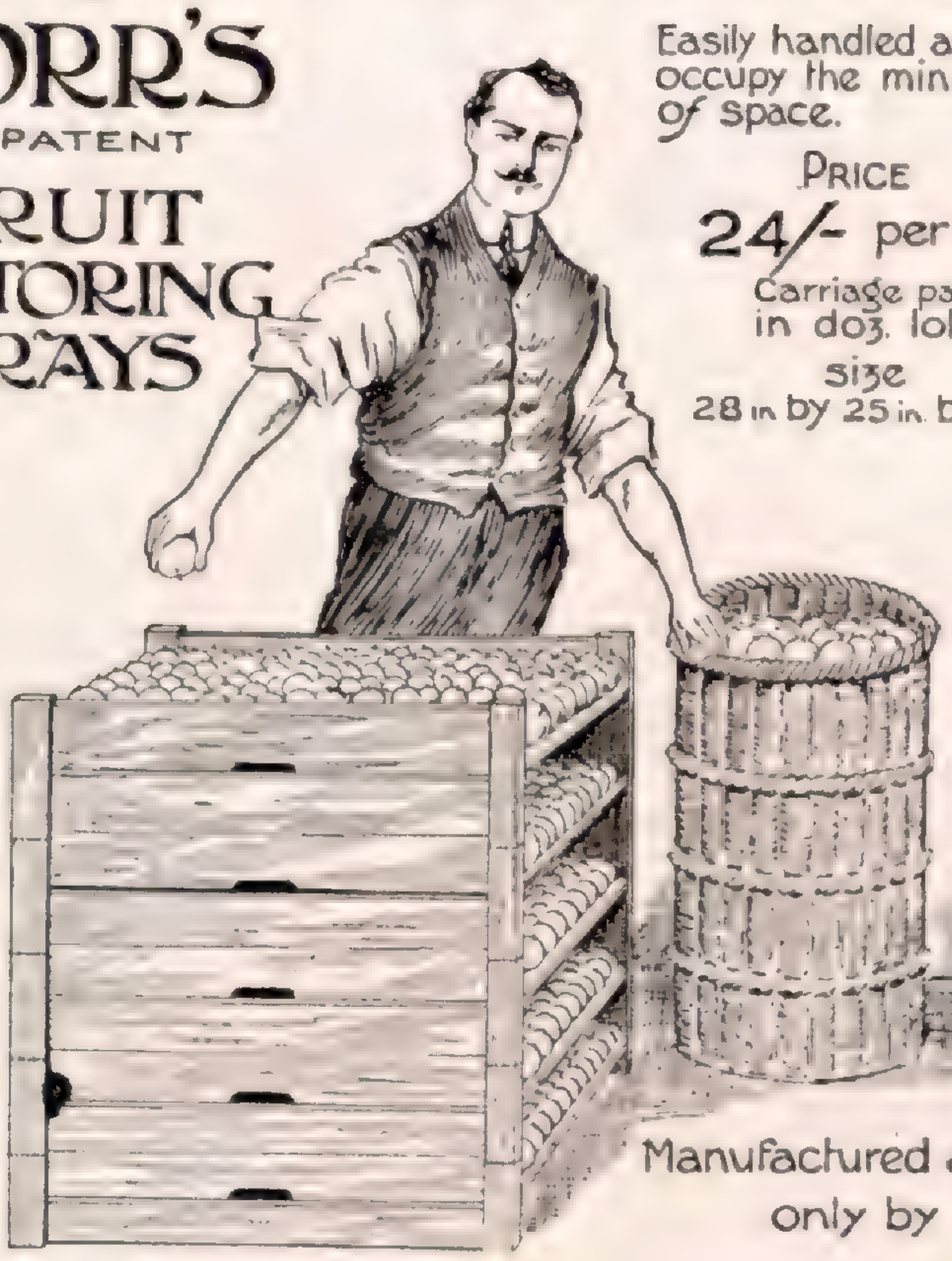

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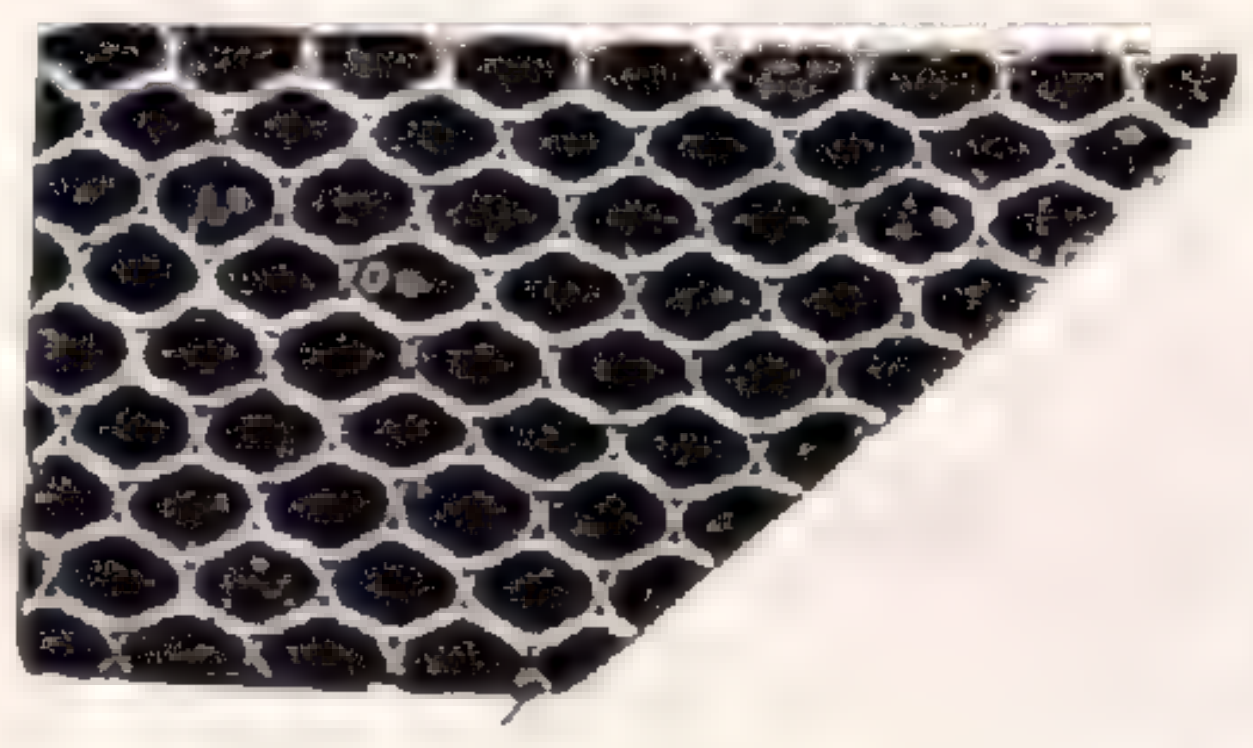

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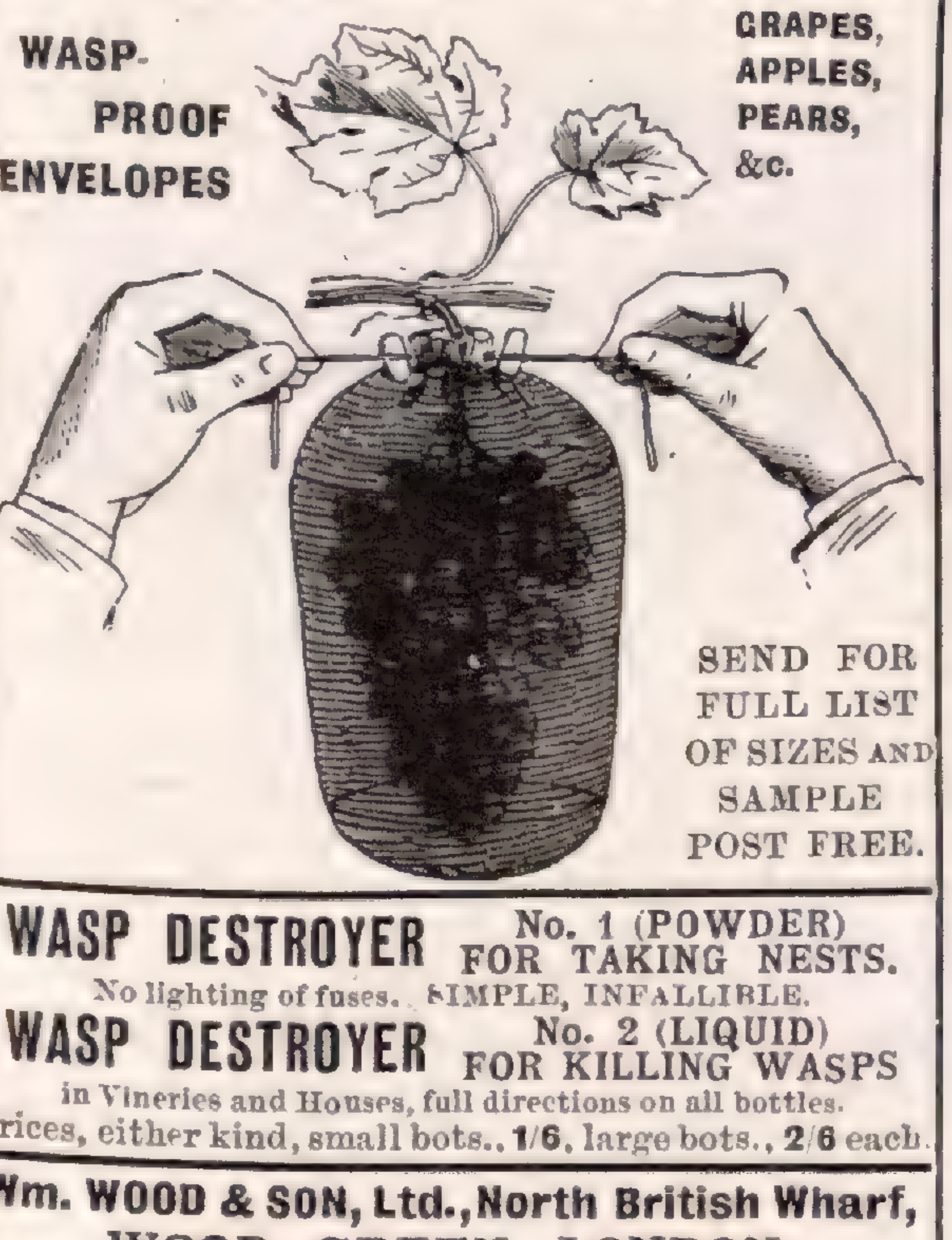

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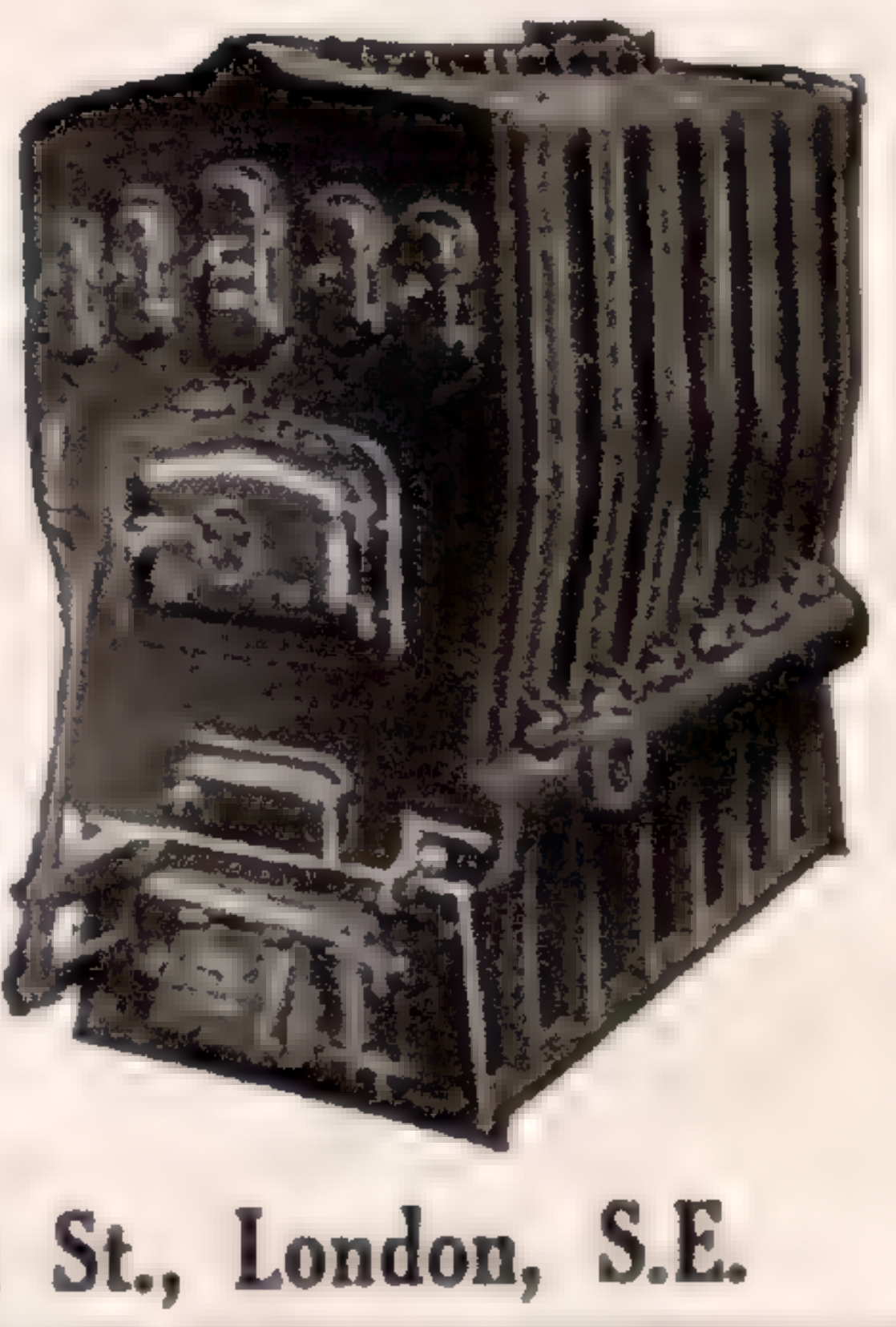

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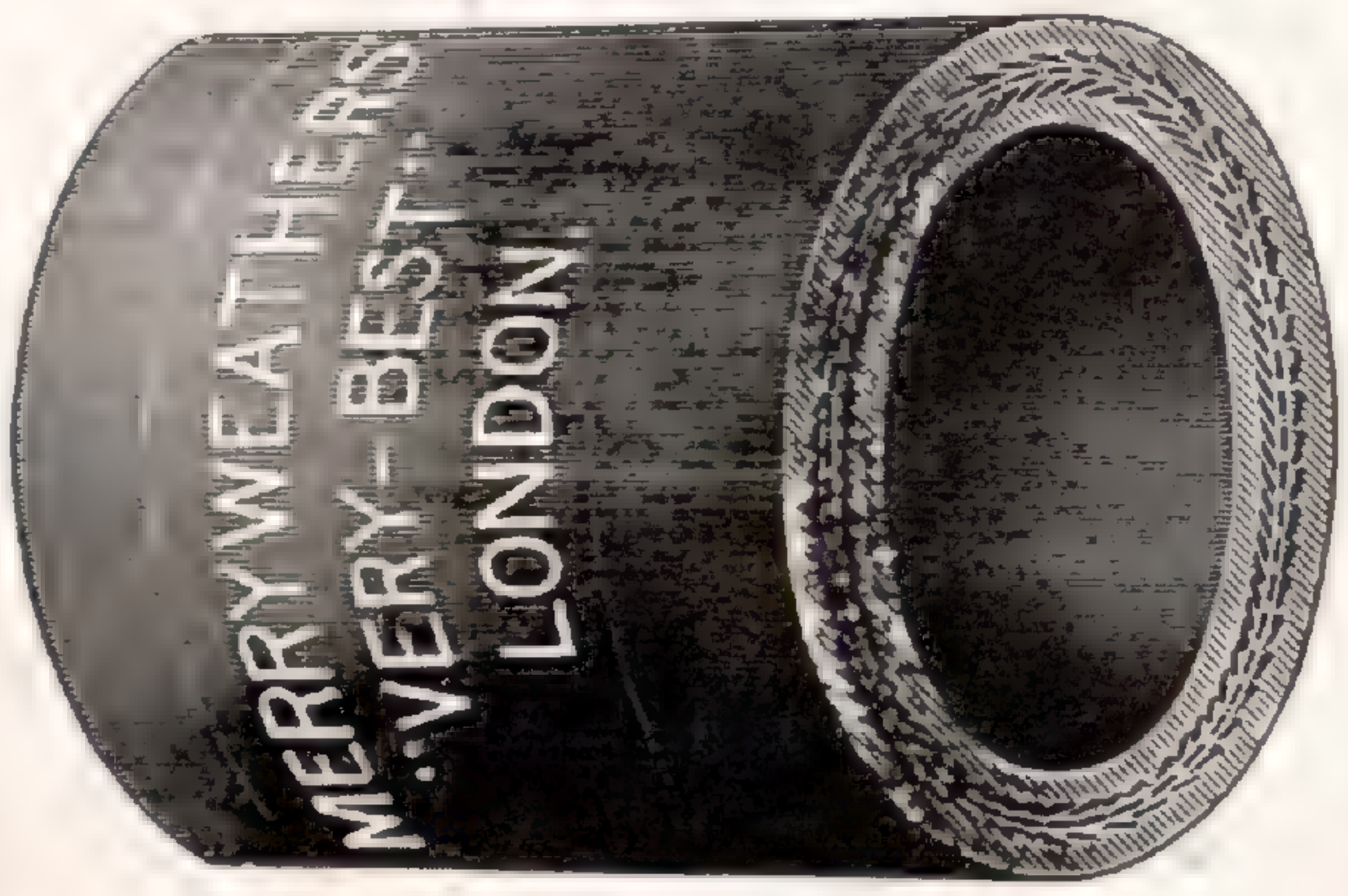

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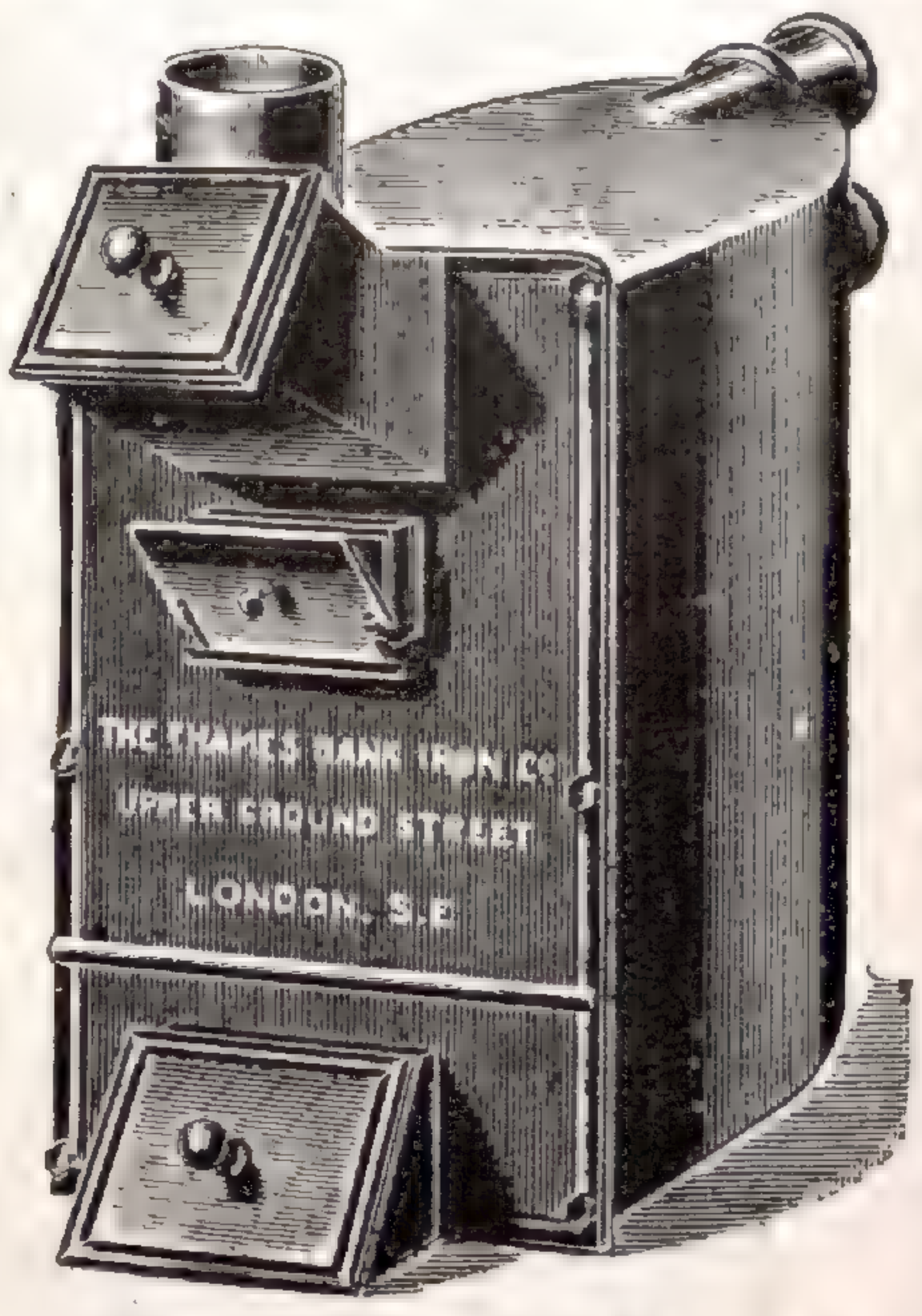

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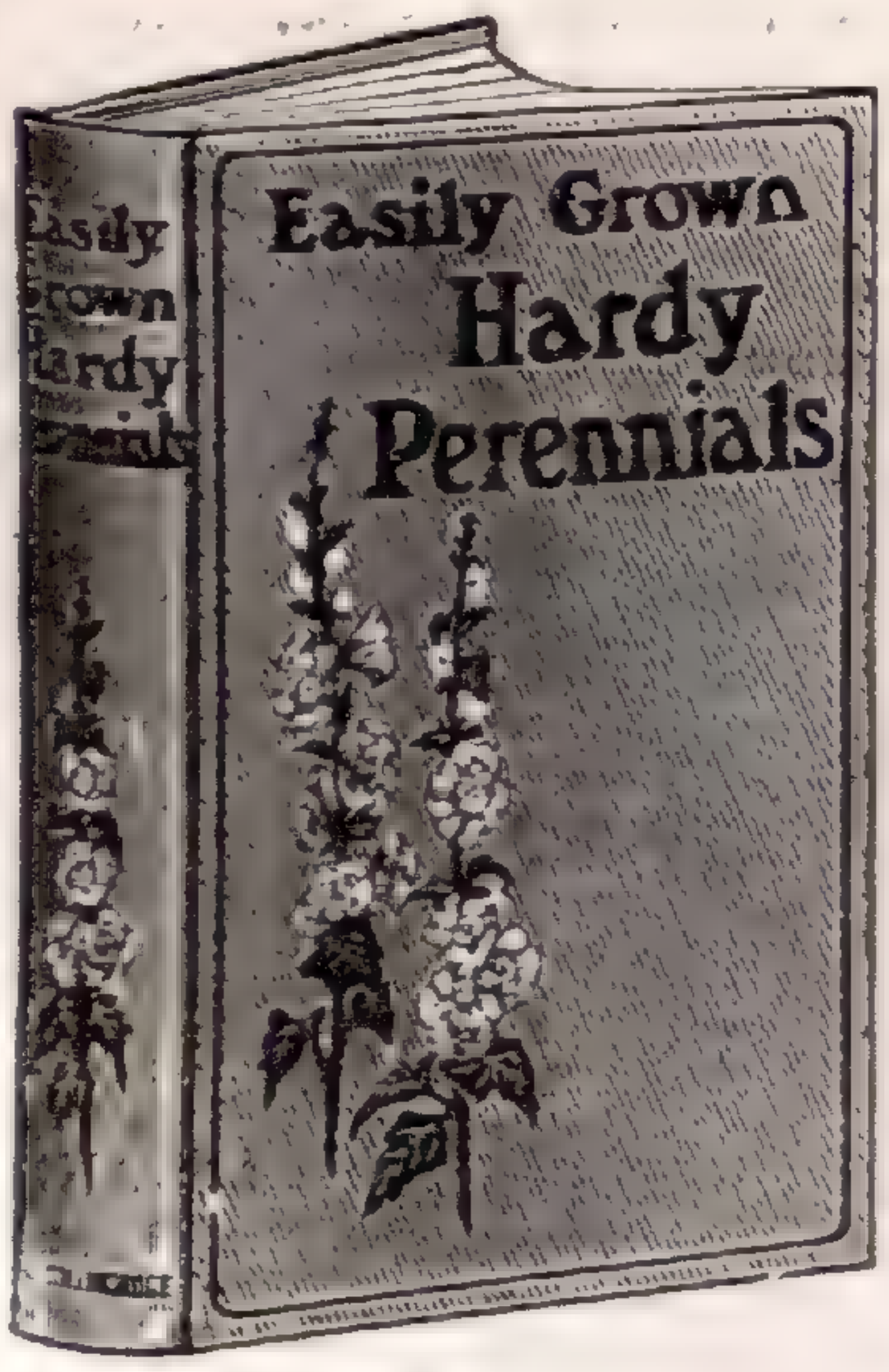

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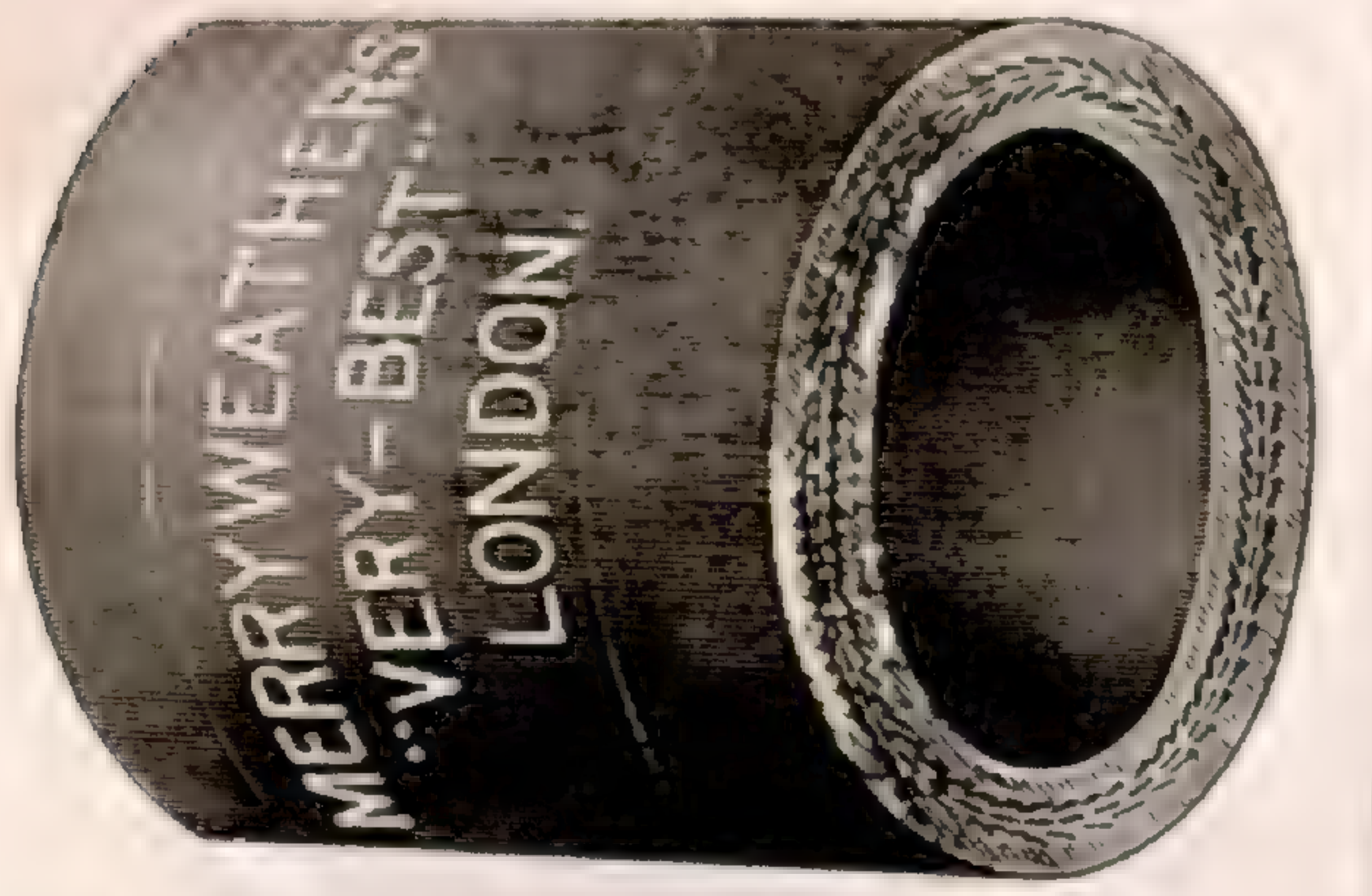

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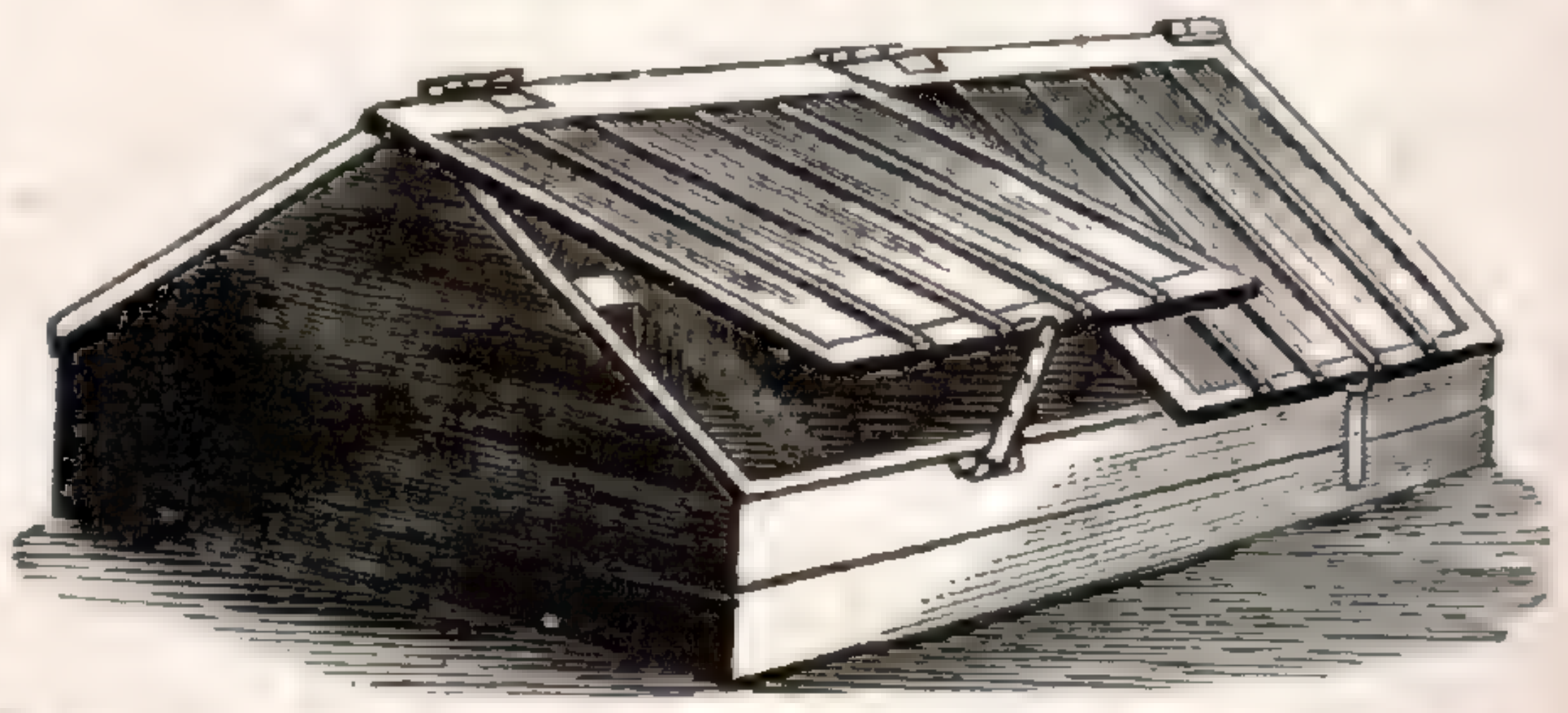

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VOL. LV.—No. 3,070. SATURDAY, AUGUST 31, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Value of Spring-flowering Bulbous Plants.

Many are the changes that have within recent years been made in the methods of beautifying the garden and the ornamental structures that have a place therein; and one of the most important of these has been the fuller utilisation of bulbous plants that yield of their floral wealth during the earlier months of the year. Time was, and that not so far distant, when the greater proportion of the gardens of all classes were wholly destitute of flowers during the joyous season of spring, or contained so few as to bring into stronger relief their poverty in spring blossoms. Happily, this state of things has been changed, not wholly, perhaps, but sufficient to enable us to say that it is now the rule, rather than the exception, to find flower gardens, not alone of the wealthy, gay with colour, and it may be redolent with perfume, during the three months which constitute the spring season. Not only is the flower garden made brighter and more interesting at this period, but the attractions of the conservatory and greenhouse have been increased, and the floral adornment of the home carried out on a more liberal scale. The more general cultivation of trees and shrubs that are remarkable for the beauty of their flowers and bloom in spring, or can be so readily forced as to yield their flowers at that season, have contributed in some degree to the great change that has been wrought in the spring aspect of the flower garden and conservatory, but the dominating factor has been the fuller appreciation of the great value of the early-flowering bulbous plants of which there is so great an abundance at the command of cultivators. The commencement of the high degree of popularity which these bulbous plants now enjoy was unquestionably stimulated by the successful endeavours that were made some thirty years ago to obtain for the daffodils then available the prominence they so well merited. The number even then was considerable, and fortunately, they included varieties such as Emperor and Empress, in which were combined with flowers of great beauty a constitution so robust as to admit of their multiplication at a rapid rate. As these and other of the beautiful daffodils that were known thirty years ago became widely distributed as the result of the enterprise of those who were associated with the bulb trade, the public taste for spring flowers underwent a remarkable development. As the result of this stimulus attention was given to tulips that bloom in May, and many fine old varieties were rescued from oblivion, new forms were raised, and these, as they came before the flower-loving community, still further increased the widespread taste for spring flowers. It is interesting to observe that, as one result of the change in public taste, hyacinths have been restored to public favour, and now take the position they so fully deserve in the production of tasteful colour effects, both under glass and in the open. This further appreciation of spring flowers is a matter that must afford gratification to all who take an active interest in bulbous plants, showing, as it does, that their value is becoming generally recognised. A still further extension in their use in beautifying the flower garden is much to be desired, for their value is great, and there are many gardens in which they are as yet but sparingly planted. Large numbers of the varieties of daffodils, tulips, etc., are obtainable at so small a cost that the most beautiful displays may be produced for a very small sum. For this reason they have strong claims upon owners of town gardens who desire to maintain the surroundings of their house attractive with flowers over the largest possible period, for by utilising the varieties of daffodils and tulips that are at once cheap and beautiful, the cost of producing effects of great beauty is, comparatively speaking, so small that the question of destroying them at the end of the flowering season is not a matter for serious consideration. To the owner of a town garden the facility with which the stock can be annually replenished is a great advantage, for he has no space available for the completion of their growth. Moreover, nearly all classes of bulbs rapidly deteriorate, as do many fibrous-rooted plants, when grown under the conditions that obtain in gardens within the influence of the atmospheric conditions that obtain in towns. In country gardens the bulbous plants will, as far as circumstances permit, be grown on from year to year, but where, as in so many cases, the spring bulbs have to be removed before they have completed their growth to make way for summer flowers, it will not be possible to maintain them for an indefinite period in the best possible condition. For flower production for beautifying the home in spring, the more important of the classes of bulbous plants that bloom at that season are of immense value because of the simplification of their culture, which has been effected by the introduction of moss fibre to which a small quantity of charcoal and broken shell is added when used. It may not be possible to grow them to so high a degree of perfection

MR. E. F. HAZELTON.

in this material, as in a skilfully prepared compost, but those so grown may be placed in the various apartments without any risk of water draining from the receptacles as in the case of ordinary pots, and damaging carpets or furniture. In some of the larger gardens it would be an advantage to make a rather larger selection of kinds than is usually the case, and attention might well be directed to certain of the anemones, such as A. apennina and A. blanda, the chionodoxas, the scillas, spring snowflakes, bulbous iris, muscaris, and tritelias, the majority of which are of great value both for borders and for planting in the grass. Fully appreciating the great value of bulbous plants that bloom in spring, we advise our readers to plant them freely, and as early in the season as it can be conveniently done.

**Mr. E. F. Hazelton**, who early in the current year succeeded Mr. C. R. Fielder, V.M.H., in the charge of the beautiful gardens of North Mymms Park, the residence of Mrs. Burns, is a gardener of wide and varied experience, and shows in a marked manner, by the high position he occupies as a practical horticulturist, that he has taken full advantage of the opportunities he has had for the acquisition of knowledge relating to the gardening art. Commencing his gardening career in the nurseries of Messrs. Saltmarsh and Son, at Chelmsford, under the late Mr. M. H. Ranger, he passed through the gardens of Broomfield, Chelmsford, the residence of the late R. Warner, Esq., and then famous for orchids; Tring Park, the residence of Lord Rothschild; and The Dell, Egham, the residence of Baron Schroder, filling various positions of more or less responsibility. Subsequently Mr. Hazelton occupied the position of foreman in the gardens of Arle Court, Cheltenham, and Trentham, Stoke-on-Trent, then the residence of the Duke of Sutherland. His first appointment as head gardener was at Brocklesbury Park, the Earl of Yarborough's seat, thence he went as head gardener at Longford Castle, the Wiltshire seat of the Earl of Radnor, and subsequently he was appointed head gardener to the Earl of Derby at Knowsley. In the several positions of responsibility that Mr. Hazelton has occupied he has afforded ample evidence of his remarkable administrative ability and his thorough acquaintance with all that relates to the garden and its management. Mr. Hazelton does not specialise, as that term is usually understood, and therefore there is no occasion for us to enter into particulars of his accomplishments as a gardener, but we cannot refrain from mentioning that we have been much impressed by the success he has achieved in the cultivation of fruits and vegetables.

**Flower Culture in Great Britain.**—The extensive cultivation of flowers for market is one of the developments of modern farming of which as yet there has been no record, although in many parts of England its importance as a means of exploiting land which would be less profitably devoted to ordinary farm crops is well recognised. Information which was obtained by the Board of Agriculture in connection with the inquiry under the Census of Production Act, 1906, showed that the counties in which flower-growing is most widely practised are Lincoln, Cambridge, Middlesex, Norfolk, Devon, Somerset, Cornwall, Cheshire, Lancashire, West Riding, Sussex, Kent, Hampshire, and Surrey, but there are very few English counties in which the cultivation of flowers for market is not carried on, while in Wales and Scotland the industry has established itself in a few localities. Among the flowers most extensively cultivated are asters, chrysanthemums, daffodils, dahlias, lilies of the valley, narcissi, nasturtiums, pansies, roses, sweet peas, violas, violets, and wallflowers. The total area devoted to the cultivation of flowers and shrubs appears to be slightly more than 4,000 acres, and the gross value of the production is put at £121,000.

**Bulbous Plants for Indoor Culture.**—The cultivation of bulbous plants in moss fibre for beautifying indoor apartments in the earlier months of the year is becoming increasingly popular, and with a view to render further assistance to those of our readers who are specially interested in the indoor culture of plants, we arranged for an illustrated article on the subject to appear in this issue. The pressure on our space prevents our publishing the article in this issue with the whole of its illustrations, and we are therefore compelled to hold it over until our next issue.

**St. Petersburgh International Horticultural Exhibition.** The Russian Imperial Horticultural Society will hold a great exhibition next year on the occasion of the tercentenary of the Imperial House. The exhibition will open at the end of April, and include decorative and other plants, flowers, fresh and preserved fruits, scientific exhibits, products of school gardens, etc.

**Manchester Chrysanthemum Show.**—We are informed that an exhibition of chrysanthemums will be held by the Royal Botanical and Horticultural Society of Manchester in the second week of November next. The show will be held in the Manchester Town Hall, and about £160 will be offered in prizes.

**August Weather.** — Our readers will not need to be told that during the present month the rainfall has been largely in excess of the average, and that both temperature and sunshine are considerably below. These unfavourable climatic conditions are only too evident; but it may be of interest to compare the weather of this month with that experienced in the corresponding month of some previous years in which it was of an abnormal character. In the Augusts of 1885 and 1891 the weather was so cold and wet as to be the worst recorded for August in the memory of the present generation. At the time of writing it is not possible to do more than compare the official weather records for the first twenty-four days of the present month with those for the whole of August in 1885 and 1891, but these are sufficient to show that the weather in the current month will not be far from the worst, if it does not establish a record. The total rainfall for the first twenty-four days of this month was 3.20in., as compared with 0.93in. in August, 1885, and 4.55in. in August, 1891, and the number of rainy days in the same periods of the three years were 21, 10, and 22 respectively. The mean temperature for the first twenty-four days of this month was 58.5 deg., and for August, 1885, 59.1 deg., and August, 1891, 59.8 deg. The highest temperature recorded this month has so far been 70 deg., and for August, 1885 and 1891, 80 deg. and 76 respectively. The lowest temperature recorded in the respective periods was 46 deg., 41 deg., and 43 deg. No temperature exceeding 80 deg. was recorded in the three periods. From the commencement of this month until the 24th inst. 79 hours of bright sunshine were recorded or a daily average of 3.3 hours. In August, 1885, there were 116 hours of bright sunshine, or a daily average of 3.7 hours, and in August, 1891, there were 134 hours of bright sunshine, or a daily average of 4.3 hours. The following figures show how great is the difference between the rainfall, temperature, and sunshine of the first twenty-four days of this month, and that of August, 1911. In the last-named month the mean temperature was 68.8 deg.; highest temperature 96 deg.; lowest temperature, 51 deg.; there were 11 days on which the temperature exceeded 80 deg.; 243 hours of bright sunshine, or a daily average of 7.8 hours, and the total rainfall of 1.13in. These figures are taken from the records of observations made at Brixton and Westminster. During the past week the rainfall, if it has not established any records, has been sufficient to deluge the country and do enormous damage.

**Potato Breeding.**—At a recent conference at Cambridge, Dr. Salaman spoke on his researches on potato breeding. He has succeeded in establishing that the inheritance of many characters in the potato is governed by the Mendelian law. Practically all domestic varieties are hybrid in the Mendelian sense—that is, if the flowers are selfed and plants are raised from the true seed (as distinct from the tuber), a large number of types differing from the parent are produced. Dr. Salaman showed that in regard to shape of tuber (long or round), habit of growth (erect or procumbent), colour of tuber (red, purple, or white), the inheritance follows the Mendelian law of segregation. Interesting results have been obtained from a study of the wild species, Solanum etuberosum, which, though grown in this country for many years previously, set seed for the first time in 1906. The interest of this variety lies in the fact that it is believed to be immune to phytophthora disease, and there is consequently a possibility that by working on Mendelian lines it may be practicable to produce a variety of the domestic potato immune to this disease.

**Functions of Kew.**—In the new "Popular Official Guide to the Royal Botanic Gardens, Kew," attention is directed to the fact that, besides numerous other duties and functions of a minor character, these gardens have four leading national and Imperial functions to perform. These are: (1) The advancement of botany; (2) the introduction of new and valuable plants to the Colonies; (3) as a place of public resort; and (4) as a school of horticulture. As a national establishment, it stands in relation to botanical science much as Greenwich does to astronomy. The botanical survey of the Empire has been carried out with the aid of the herbarium, with its 2,000,000 specimens, and the library, which contains some 24,000 volumes. Floras of ten Colonies and dependencies have been published, and others are well advanced. At Kew, also, was compiled "Index Kewensis," an alphabetical list of every plant name published. In connection with the introduction of various new and valuable plants to the Colonies, one of the chief duties in 1841 was the introduction of plants of economic value to the Dependencies of England. These include fruits such as bananas and pine apples; foods like tea, coffee, and cocoa; medicines and drugs, such as quinine and coca; rubbers, dyes, timbers, and fibres. Two of the greatest successes in connection with the second of the functions of the Gardens were the introduction of quinine to India and the introduction of Para rubber to the Malay Peninsula. When, in 1866, the experiment of introducing the quinine plant (Cinchona) from South America to India was undertaken, the Government of Bengal alone was expending £40,000 annually on quinine. Now a dose of five grains can be bought at any post-office for a farthing.

## SNOWFLAKES.

In the many plants which constitute the family of the Amaryllids we have a number of our most popular and delightful flowers. Yet some of the members of the order are not so widely known as they deserve, and among these we may well include the snowflakes or leucojums. Of these there are three sections—those which flower in spring, the summer-flowering forms, and those which give their elegant flowers in the later months of the year. They are such beautiful and useful plants that it is not amiss to speak of them now, when the planting-time is with us, and when we are ordering our bulbs for the season.

### The Spring Snowflakes.

In leucojum or Erinosma vernum we have one of the most delightful of spring flowers, this spring snowflake successfully vieing with the snowdrop in grace and charm, having, indeed, a greater wealth of beauty, and producing in the grass, in the border, or on rockwork some of the most exquisite of all effects, with its handsome, bell-like flowers of purest white, save where a beautiful spot of colour adorns the tip of the perianth segments, and reveals more fully the perfect purity of the blossom as a whole. Growing from six inches to a foot in height, it is of surpassing beauty among the white flowers of spring. There are several forms of the spring snowflake, and each is beautiful enough to deserve our consideration at planting time. The typical Leucojum vernum is charming, with its perianth segments all of the same length, as pure as the snowdrop, but daintily tipped with a green spot. It is, as a rule, single-flowered, but occasionally in a clump a stray bulb or two may give two flowers on a stem.

It is difficult to say whether we most admire this typical spring snowflake, which has grace enough to compel admiration, or its varietal forms; yet there is beauty in the variety called carpathicum. This is a lovely snowflake, differing but little in general appearance from the other, save in the fact that the spot at the tip of the perianth segments is of a lovely golden-yellow instead of green. It is a charming variety, whose colouring appeals to many of us.

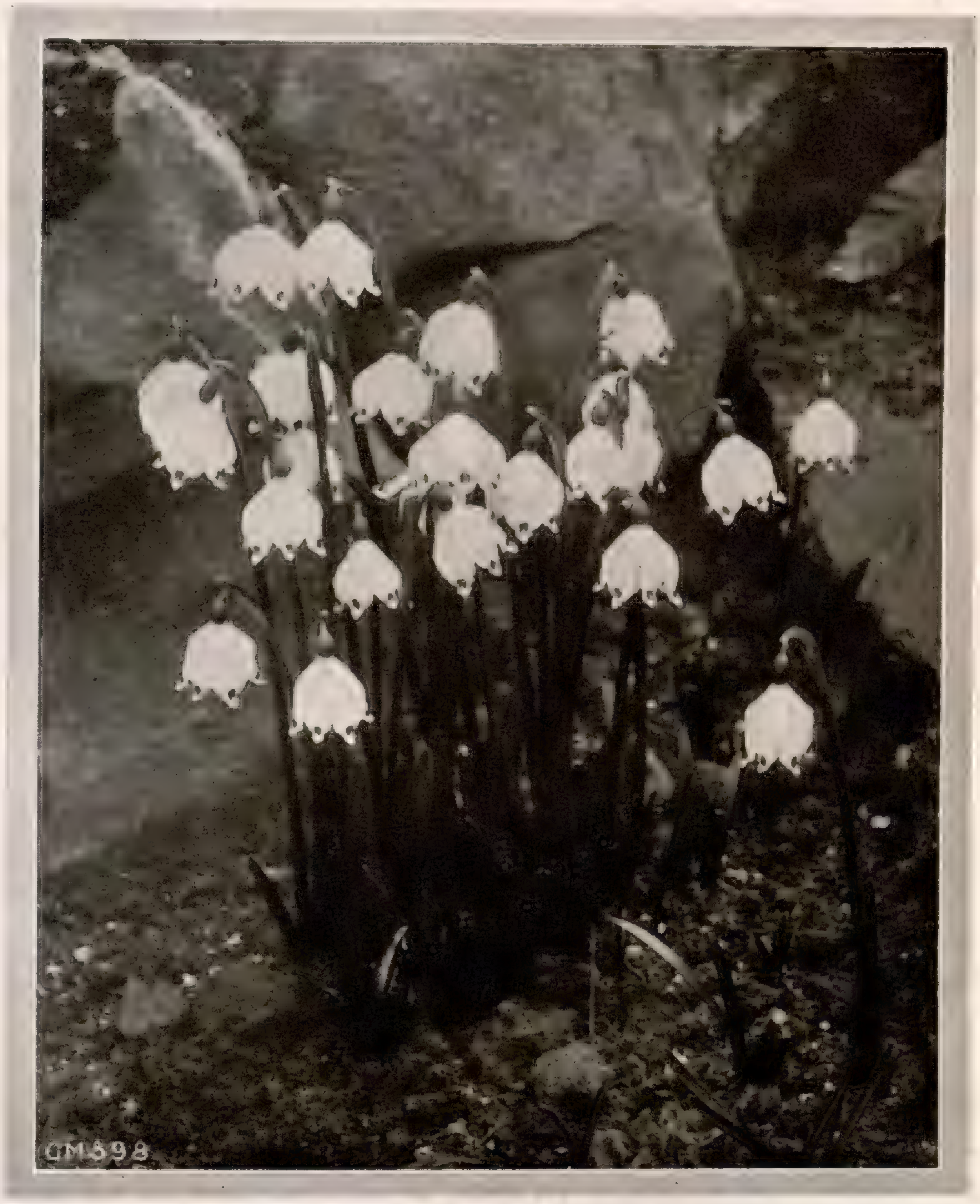
Perhaps the finest of all the spring-flowering leucojums is that called by Mr. J. G. Baker L. vernum Vagneri, which is the earliest and most robust of the set. It occasionally blooms in January, but usually in February, and has almost invariably two flowers on a scape, while the green spots are deeper in colour than those of the ordinary L. vernum. This is often grown as L. carpathicum, and it corresponds with the flower shown in the "Botanical Magazine," plate 1,993, save that it has green spots, while that of the plate referred to has spots of yellow.

There thus appears to be a considerable difference of nomenclature, and it is to be hoped that the names may be revised once more, as the writer has seen, and has in his possession, some varieties differing from the above, including a twin-flowered, yellow-spotted spring snowflake.

There is also a double spring snowflake, called Leucojum vernum multiplex, but this is scarce, and is also rather a disappointing flowerer, sometimes coming misshapen, and often failing to bloom. It is difficult to obtain, and it was only lately that the writer was able to replace it after being without it for years.

### The Summer Snowflakes.

Much less refined than its sister of spring, Leucojum æstivum has yet a role to fulfil in the garden. Its clusters of small, white flowers, tipped with green, are useful for bouquets and wreaths, and when arranged in a glass with foliage are by no means to be despised. The value of this summer snowflake is, however, lessened by the fact that its stem is too long for the size of the flowers when grown in the open in the ordinary way. It is more of a moisture-lover than its sister flowers, and this has suggested a means of reducing the apparent length of stem. This is to plant it as an aquatic, with about six inches of water above the base of the stem. In water it looks delightful. It may also be planted among low grass, or carpeted by some plant which will deprive it of some of its ungainly appearance. Its ally, L. pulchellum, sometimes called L. Hernandezi, has smaller flowers, and comes into bloom about fourteen days earlier. It appears to be a little more tender than the ordinary L. æstivum, which flowers in May.



THE CARPATHIAN SPRING SNOWFLAKE (LUCOJUM VERNUM CARPATHICUM).
Flowers white with yellow spots on the segments of the corolla.

### The Autumn Snowflakes.

The most reliable of the autumnal-flowering snowflakes is Leucojum autumnale, a graceful little plant, and a gem for the rockery or for pots. It grows about six inches or so high, and has narrow, grassy leaves, and a succession of little flowers of white, tinged with red, on chocolate-coloured stems. It is a very dainty snowflake, which to know is to admire.

L. roseum, a Corsican species, is both rare and tender. It is only from two to four inches high, and blooms in September and October. It should be grown in pure sand. Other snowflakes are L. trichophyllum, with its variety grandiflorum, which flowers in April; L. tingitanum, an April bloomer from Morocco; L. hyemale, another spring flowerer; and L. longifolium, from Corsica, flowering in April and May, but these do not appear to be in commerce.

### Cultivation.

The spring and summer snowflakes like a good soil, rather inclined to moisture, and should be planted rather deeply—six inches not being too much. The autumnal varieties prefer a rather dry soil, and are more tender than the others. Planting should be performed as soon as the bulbs can be procured. The best time to plant L. autumnale is in June or July, placing the bulbs, which are small, at a depth of about two inches.

S. Arnott.

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**Ceanothus Indigo.**—While most of the ceanothuses have flowers of some shade of blue, this is the richest coloured of the numerous varieties that bloom during the latter part of the summer and early autumn. —W.

## LILIES FOR GENERAL CULTURE.

Though many lilies, owing to their somewhat exacting requirements, can scarcely be recommended for general culture, there still remains a wide choice of many beautiful kinds that can be grown under anything like favourable conditions.

### Lilies in Pots.

Apart from their value as outdoor flowers, some kinds of lilies are extensively grown under glass for the decoration of the conservatory and dwelling-house for grouping purposes, or for the supply of cut flowers. While many can be grown in this way, the choice is, as a rule, limited to very few, and those few are of easy cultivation.

Lilium longiflorum.—Perhaps the most popular of all lilies for the supply of cut flowers is Lilium longiflorum, whose silvery-white trumpets are admired by everyone. Under the name of Lilium Harrisi a form of this lily may be obtained as dormant bulbs in the month of August, and if potted at once they can, of course, be had in bloom much earlier than those which reach here from Japan in November and December. Closely running Lilium longiflorum in popularity as a favourite lily for growing in pots comes

L. speciosum, represented by both white and coloured forms. This blooms naturally towards the end of the summer and in early autumn, but by keeping it in a warm structure flowers may be had earlier if desired. It is a lily rarely troubled by insect pests, whereas Lilium longiflorum is often attacked by green-fly. Though a decidedly erratic lily, the

Golden-rayed Lily of Japan (Lilium auratum) must on no account be passed over as a pot plant, as when it does its best the blossoms are so magnificent as to gain the admiration of everyone. Of late years these three lilies above-mentioned may be often seen in flower more or less throughout the entire year. This is effected by retarding the bulbs in refrigerators till their season of growth is past, and bulbs so treated will commence to grow as soon as they are placed under favourable conditions. There is now quite an extensive trade in these retarded bulbs. Beside these many other easily-grown lilies are amenable to cultivation in pots, but they are not much grown in this way. Of them especial mention may be made of Lilium Browni, croceum, davuricum, elegans, Hansoni, testaceum, and tigrinum.

### Lilies in the Open.

It is in the open ground that many lilies can be seen at their very best, be the garden that of prince or peasant; indeed, the Madonna lily, so much admired by everyone, is often seen flourishing in cottage gardens, whereas in more pretentious establishments it frequently fails. The following lilies can all be recommended for outdoor culture where no exceptional conditions prevail.

L. auratum.—As above-stated, this is erratic, but too grand a lily to be omitted. It is seen at its best when associated with rhododendrons that are not too old or too closely planted. A moderate amount of peat suits it well, and it is greatly benefitted by a good sprinkling of clean silver sand around the bulb when planting.

L. Browni.—No better example of the high decorative value of this lily and its adaptability for outdoor culture can be mentioned than the illustration of the bed of the species at Kew, which appeared in the Gardeners' Magazine for August 17. It will be observed that the bed is carpeted with low-growing heaths, which serves to show that a soil with at least a fair proportion of peat suits it well.

L. candidum.—The Madonna lily often falls a prey to disease, to check which various suggestions have been made, but a complete cure has yet to be found. The most favourable conditions appear to be planting in a clean loamy soil, without peat, leaf-mould, or manure, taking care not to put the bulbs too deep, and if transplanting is necessary, to remove them in August, but when once established do not shift them unless compelled to do so.

L. chalcedonicum.—Given a good, deep, loamy soil, and a season or two to establish itself after planting, this, the scarlet Turk's cap, will prove an object of beauty about the end of July. The blooms, from the thick wax-like nature of the segments, remain fresh and bright longer than do the flowers of most lilies.

L. croceum.—This, the old orange lily, has long been grown in British gardens. It is a loam lover, and will thrive in the ordinary herbaceous border, where, about the end of June, the rich orange-red, upright flowers are borne in great profusion. A short time since I saw a large bed in which clumps of this lily were alternated with blue delphiniums, and the effect when the two were in bloom was very striking.

L. davuricum.—Another border lily of much merit, especially when those forms known generally as Lilium umbellatum are included with it. All bear upright heads of showy flowers, most of them being of some shade of red or terra-cotta. Among the best are erectum and fulgidum. Both can be obtained at a cheap rate when dormant.

L. elegans (also known as L. Thunbergianum).—This is remarkable in most varieties for its lowly stature, and for the wide range of colour to be found in the different forms. In alutaceum the flowers are of a buff tint, and in Van Houttei deep crimson. A sandy loam suits this lily best.

L. Hansoni.—This species is noteworthy among the members of the Martagon group from the fact that it flowers well the first season after planting. It starts into growth very early, hence it is necessary to protect it by neighbouring shrubs. Dwarf rhododendrons or azaleas are very suitable as the soil conditions just meet the requirements of this lily.

L. Henryi.—A tall-growing Chinese lily that has proved to be of a very accommodating nature in this country. It is somewhat weak in growth, and is best associated with rather tall-growing shrubs.

L. longiflorum.—Grown under similar conditions to L. Browni, this lily does well, and it may be associated with bright-coloured flowers, from which the spotless trumpets of this lily stand out in a very conspicuous manner.

L. martagon.—This species, in its several varieties, is a loam lover, and seldom gives satisfactory results the first season after planting, but then it improves yearly.

L. pardalinum.—This, the panther lily, pushes up its six to eight-feet stems among rhododendrons, the conditions there suiting it well. The scarlet and yellow flowers are very showy.

L. pyrenaicum.—A Turk's cap, with dull yellowish flowers. It will grow in the herbaceous border, and is the first lily to flower in the open ground.

L. speciosum.—Equally as useful out of doors as when grown in pots this lily, given fine weather towards the end of August and in September, forms a striking feature.

L. testaceum.—The nankeen lily, as this is commonly called, is in its peculiar buff or nankeen tint quite distinct from all other lilies. It is withal a very beautiful and stately lily, and does well in the open border.

L. tigrinum.—The tiger lily is well known as a good garden lily, and is often to be seen in cottage gardens. Besides the common kind there is a variety—splendens—with brighter-coloured flowers and larger blotches, and Fortunei, that blooms very late.

Though the lilies enumerated above form but a small percentage of those in cultivation, they will produce a succession of bloom from the flowering of pyrenaicum till speciosum and tigrinum Fortunei feel the effects of the cold nights in autumn.

W. T.

## THE POTATO CROP IN SCOTLAND.

A trip through the principal potato-producing districts of Ayrshire, in the closing days of July, revealed the fact that the bulk of the earlier sorts of the valuable tuber were then raised, and for the most part disposed of. These are grown chiefly in the warm, sandy soil lying along the western sea-board of the county, and the culture entailed provides employment for a large number of persons, who are brought from far distant places to assist in the work, more particularly that of raising the crop.

The early spring, owing to its dryness and the consequent friability of the soil, was extremely favourable to the planting of the tubers; while after-growth, when it appeared above the surface, was but little affected by frosts or other very adverse weather conditions, so that, in many instances the crops were ready for market quite a fortnight earlier than usual. Not much credence can, as a rule, be taken of the stated weight per acre and market value of these very early crops, as accounts of such that from time to time appear seem rather sensational, though, in all probability, correct. Later or second-early crops of fully-matured tubers are, however, more easily estimated, and such during the past week or two have been put at an average of fifteen tons per acre, which must constitute a record, even in this much-favoured district. In private gardens, and upon rich, deeply-cultivated soils, all kinds of early and successional varieties of potatoes have given exceptionally good returns, the tubers being very numerous, large, and uniform in size, and so far free from disease; while, in regard to quality, this could hardly be excelled.

Late kinds and field crops in general have until now, August 12, maintained a very promising appearance, the haulm being extra vigorous and tall, reminding one of the Champion in its most palmy days. The effect the recent wet weather and cloudy skies may have upon crops is impossible to foretell, but among growers of long experience much apprehension exists lest, should a change to drier and warmer atmospheric conditions not soon come, disease in virulent form may set in.

Garlieston. James Day.

**Populus lasiocarpa.**—A comparatively new species from China, which stands out from all other members of the genus by reason of its huge ovate cordate leaves, measuring in some instances nearly a foot in width. In colour they are bright green, while the leaf-stalk, midrib, and principal veins are red.—W.

# HYACINTHS IN THE FLOWER GARDEN.

Hyacinths are subjects of great possibilities in the flower garden, and yet, when wrongly used, they are not only uninteresting, but productive of effects the reverse of pleasing. Some object to them because of their stiffness of growth and artificiality of appearance, and there is something to be said for their point of view. When, however, all has been said which can be said in support of it, the fact remains that, in some respects, the hyacinth is one of the hardiest and most easily-grown of our spring flowers, and, next to tulips, perhaps the most attractive, so that it is not likely to be supplanted in popular favour. The question for us to consider is the best way to use it in the flower garden, so as to obtain the most beautiful and effective results.

A CHARMING COMBINATION OF PINK HYACINTHS AND WHITE ARABIS

In the Gardens of Hampton Court in April last.

First, and perhaps mainly, we will deal with the use of

## Hyacinths in Beds,

which will include any border or plot in which they are the main feature. One most commonly sees hyacinths growing in rows in bare earth, and it is then that they are uninteresting and artificial, the soldier-like rows and the bare ground being alike unnatural. Another wrong method is the indiscriminate mixture of colours, for some of the pink and red shades are very crude, the latter especially, and cannot be put in juxtaposition with the dark blues and purples. If there is a good proportion of white and yellow varieties in the mixture the clash of colours is minimised, but beds of blue and red varieties only, as one often sees in public parks and gardens, are almost offensive to anyone with a good colour sense. The variety of shades is so numerous that anyone who professes to be a colourist can find full scope for the display of his taste in planning harmonies and contrasts. It is well to bear in mind Ruskin's dictum that "the character of everything is best manifested by contrast," for the full beauty of some of the delicate shades of starch blue, for instance, can only be realised when they are shown up by others of a pale yellow colour as a foil.

Another matter that needs scarcely less consideration than the arranging of the colours of the hyacinths is the selection of carpeting plants, or those of low growth, for planting amongst them. In a state of Nature one never sees bulbs flowering in a setting of bare earth unless in thick woods, where only spring-growing plants can survive. The surfacing plants on hyacinth beds should be beautiful in themselves and enhance the beauty of the bulbs by their setting, while from October to March they should transform what would otherwise be bare earth into neatly-planted beds. To give the plants a fair chance in the spring the bulbs should be planted rather further apart than is usually done when they are the only occupants of the beds. The double white arabis is always good for this purpose—and so is the single, as it flowers earlier—no matter what the colour of the principal subject, and when the brighter reds are used it is perhaps the best surfacing plant that can be grown, as it helps to tone them down. A pretty little annual that answers very well for the same purpose is Limnanthes Douglasi, or its variety grandiflora, the yellow and white flowers being very effective amongst the pinks and reds, and also the blues, when good strong plants are obtained in the autumn. Other good surfacing plants for certain colours of bulbs are Silene compacta, Myosotis dissitiflora, red and white daisies, primroses, aubrietias, some of the earlier-flowering violas, and small bulbs, such as grape hyacinths, Scilla sibirica, and chionodoxa. These last-named bulbs make capital edgings for hyacinth beds of suitable colours, and are not only very effective in themselves, but serve to lessen the abrupt transition between the turf and the comparatively tall growth of the hyacinths. When other bulbs are planted amongst the latter different surfacing subjects should be used with them as well, in order to relieve the bareness of the beds in the winter.

A method of growing hyacinths in beds, which appeals to some on account of its apparent greater nearness to Nature, is to combine them with other things, so that instead of being hyacinth beds primarily other plants, etc., are of equal importance in the scheme. Those who object to the stiffness in the appearance of a bed of hyacinths alone, even when it is well surfaced, may relieve it, e.g., by mixing narcissi or tulips with them. Here again is an opportunity for study in colour, a bed of starch blue and chamois or salmon hyacinths, mixed with yellow tulips or narcissus, producing a feast of colour of which the eyes do not tire, but it needs care in the selection of the varieties to have them in flower at the same time, for if the hyacinths are beginning to fade, even after the tulips have been out a week, the duration of the prime effect is lessened by at least half. A mixture of hyacinths and wallflowers—a pretty good range of colour here also—has the advantage that the growth of the latter as flowering proceeds gradually overspreads the former, and so conceals the untidiness after flowering, which is one of the drawbacks to hyacinths. A similar effect is produced by the use of the Leopard's bane known as Harpur Crewe, though, as this plant is only effective in clumps, the hyacinths must be planted in clumps also. A variative of this plan, which is suitable for large beds or borders, is the planting of small shrubs, either singly or in groups, with clumps or patches of hyacinths amongst them.

### Hyacinths in Mixed Borders.

As regards the use of hyacinths in mixed borders, this, to the Nature-lover, is the best method of growing them, and it has the merit of being inexpensive, for, while new bulbs must be bought every year for bedding, if the best results are to be obtained, those which have done a year's service in beds may be used for the general decoration of the less formal parts of the garden, if they are given a fair chance to ripen off either before or after being lifted from the beds. In soils of a heavy character, where hyacinths soon die out in an ordinary way, they will last for years, and even increase, if planted amongst perennials, in shrubbery borders, by woodland walks, etc., where the soil is kept open round the bulbs by the roots of plants and trees, so that they are kept dry in the summer, and free from excessive wet in the winter. Bulbs should be planted in such situations in groups of three or four, when they will soon make clumps carrying a dozen heads, which, though small compared with those from good new bulbs, will yet be very effective in the mass, and possess a beauty of form and grace of habit quite unlike that of the massive flower spikes usually seen in beds. The perennials amongst which they are planted will soon begin to hide their foliage in May, and thus lessen their untidy appearance.

One of the best attempts at semi-wild gardening I ever remember seeing was a nut walk where hyacinths took part in the struggle for existence with daffodils, tulips, primroses, foxgloves, and the like, showing that, in favourable circumstances, hyacinths may be almost naturalised. They grew in this position for years without being touched, except as far as was necessary to keep down the worst of the weeds, and formed large clumps. By reason of their longer and more slender stems they helped to supply the demand for cut flowers for the house. When one takes up more bulbs out of the spring bed than one knows what to do with, it is not a bad plan to put clumps or patches amongst the gooseberry and currant trees, where they will probably do well for the reason stated above, and produce telling patches of colour in the spring. Digging is not, or should not be, done in such positions, and if the hoe is not used from late November till March they will not be disturbed.

ALGER PETTS.

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**Nerines.**—These beautiful bulbous subjects are now commencing to show their flower-spikes. Water should not be given until the spikes are four inches high. They should then be moved from their resting quarters and placed in the conservatory and given water. The leaves will be seen to be advancing on some of the bulbs, and such bulbs are not likely to bloom. When the leaves are three inches high, and no flower-spikes can be seen advancing, the plants should be given water and treated as though they had flowered.—L. S.

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## BULBS FOR THE ROCK GARDEN.

It has been my practice to utilise bulbs in combination with rock plants in order to maintain as much beauty and as many pleasing blends of colour as it is possible to get, and to achieve these results means a study of the decorative values of rock plants and bulbs. Many gardens, singularly rich in rock plants, are weak in bulbous plants, and thereby miss much of the colouring of spring. Also, in many cases, bulbs may be grown amid a carpeting of plants, so that they break through a groundwork of greenery, and give the benefit of their beauty before their associates are showing the promise of bloom.

The list of bulbs available would entail much space if I were to detail varietal forms, but I will confine myself, as far as possible to the varied groups. These include snowdrops, crocuses, scillas, chionodoxas, brodiæas, camassias, ixiolirions, muscari, fritillarias, calochorti, iris of many types, puschkinias, narcissi, hyacinthus, tulip species, erythroniums, and many others.

I may briefly allude to a few successful forms and groupings. A mass of the dark-crimsoned foliage of Thymus coccineus throws into charming relief the golden, black-veined blossoms of Crocus Susianus. Crocus Imperati, blue and silver, comes through a silvery carpet of Antennaria tomentosa. With Crocus biflorus is massed the close-growing Aubrietia A1, which follows later in blossom. A roving mass of Sedum album will cover the bulbs of Narcissus moschatus and Muscari Heavenly Blue. The effect of the rich green and bronze-veined foliage of the sedums, as an undergrowth to these exquisite bulbs in blossom is a picture of delight. One can also combine the two forms noted, or replace N. moschatus with N. Queen of Spain, grouping them fairly closely, and the effect will be wonderfully pleasing. It is well that the majority of late-flowering sedums and other plants of like nature should have early-flowering bulbs amongst them. One should always include Muscari azureum, as its delightful touches of blue are charming, especially if near the early golden saxifragas, of which S. apiculata, S. sancta, and S. pseudo-sonata are so conspicuous. The quaint Muscari monstrosum, with its mauve plumes of blossoms, is best against a mass of white.

Another good combination is the dainty yellow Waldsteinia trifoliata, with a drift of the soft blue Puschkinia libanotica running through it. In another instance, the scented Tulip sylvestris, with its showy yellow blossoms, rises from a cool bed of Tiarella cordifolia. In low drifts by the pathways Fritillaria meleagris and its forms may be massed in quantity. Few spring flowers hold more charm than the nodding, chequered bells of F. meleagris, and few are more dainty than the best forms of alba, its white variety. The reader would do well to note the fine varietal forms known as Cassandra, Pomona, Orion, Emperor, Triton, etc.; these are large in blossom and very dainty and distinct in colouring. Camassias, of course, require moisture, and any low rock bed where Primula rosea and P. cortusoides, or the dodocatheons flourish, there also will Camassia esculenta, C. Cusicki, and C. Leichtlini find a home.

The sun-loving Californians, the brodiæas and dwarf calochorti, I usually give a well-drained, warm position, where cold and damp does not affect them to any great degree. The exquisite grace of the calochorti, and the wide range of colouring of the brodiæas, should commend them to all lovers of floral beauty. Hyacinthus amethystinus should always be included in plantings, and may be grouped with Phlox subulata, the pink-flowered aubrietias, or the yellow of Alyssum montanum or A. rostratum. The white form of the foregoing is also of much value, while the white, pink, and blue scillas are worthy of note where a goodly range of subjects are required.

A very pleasing drift of blue may be obtained by using Anemone blanda, A. Robinsoni, and A. apennina, which rise prettily among low-growing veronicas, sedums, and similar subjects. The white of A. apennina alba and A. nemorosa alba plena are also of great service, and, with the preceding blues, are valuable for streaming through a colony of small ferns. Bulbous irises may be grown with many subjects, though a favourite plan is to associate them with dwarf flag irises. Of the latter I do not favour the pumila forms as greatly as the vastly improved intermediate varieties, which last season gave me two displays of blossom. Of these intermediates I may note Diamond, Dauphin, Dorothea, Ivorine, Odin, Freya, Bride, and Bosniamac. Throughout the groups of intermediates I would advise running drifts of such bulbous irises as I. alata, I. tuberosa, I. filifolia, I. Danfordiæ, I. pavonia major, I. reticulata, I. Heldreichi, etc. Such sterling dwarfs as I. orchioides, I. Bucharica, I. Tubergeniana, etc., should always be kept to the forefront of the rock garden in a warm, well-drained position.

One might go further and note the value of dwarf liliums for the larger rock gardens and pretty groups of erythroniums near to the footways. Alliums, such as A. Ostrowskyanum and A. azureum, the glorious blues of such chionodoxas as C. gigantea, C. sardensis, and C. Luciliæ, the snowy heads of the ornithogalums, the starry tritelias, the varied ranunculus, especially the scarlet of R. asiaticus, the many fine galanthus (snowdrops), and the bright blue of Ixiolirion Pallasi, all assist to swell the beauty of the rock garden, while, if space can be found for Sternbergia lutea, the colchicums, and the autumn-flowering species of crocus, a supply of late bulbous blossom is readily assured. These bulbs may be carpeted with mossy saxifrages, gaining thereby spring blossom and a perennial surfacing of delicate greenery. From the foregoing notes the reader will perceive the wealth of bulbous material at hand, and there remains but one thing more, namely, to use it, and in the best possible manner.

P.

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**Veronica longifolia** and its varieties form a group of hardy perennials, whose value during July is not readily overestimated. This species is of more than ordinary interest, in that it produces four distinct varieties, differing only in the colour of the flowers; in other respects, the good qualities of the type are faithfully reproduced in each. In the type the flowers are a rich, deep shade of blue, and are borne in upright branching spikes on stems some 24 to 30in. high; another form yields flowers of a much paler shade, probably best described as lavender, while there is also a pure white form, and the variety incarnatus produces flowers of a most desirable shade of pink; the last-named variety is less vigorous than the others, and averages in height some 18 to 24in. Veronica longifolia and its forms are hardy perennials, succeeding in any ordinary garden soil, and show to conspicuous advantage when planted in rather broad masses of a variety. The stiff, erect stems call for little or no artificial support.—THOMAS SMITH.

## INEXPENSIVE DAFFODILS FOR EXHIBITION.

The rapid extension of the exhibition side of daffodil culture has given rise to much enquiry with regard to the relative merits of varieties that produce flowers which will render good service in a close competition, and can be purchased at a moderate price. The question of price is a very important one to amateurs of moderate means because, to enable the cultivator to exhibit flowers of any particular variety on a given date, at least half a dozen bulbs will be necessary, but those who plant not less than one dozen of each will be in a much stronger position. It has been suggested by several successful exhibitors that a selection comprising three or four dozen varieties, of which bulbs are obtainable at a price not exceeding seven shillings and sixpence each, would be most useful to the many lovers of daffodils who are commencing their culture for exhibition purposes. The following selection has been made in accordance with these suggestions, and as many of the varieties as possible that can be obtained at prices ranging from half a crown to three shillings and sixpence per bulb, have been included. This selection will also be found useful to those who may desire to grow a representative set of varieties of a much higher standard than those so generally used for massing in beds and borders.

### Trumpet Varieties.

Duke of Bedford.—A handsome bicolor, the flowers large, refined, and of good proportions, the perianth pure white, and the trumpet bright yellow.

Florence.—A beautiful bicolor, remarkable for its elegant pale yellow trumpet.

Glory of Noordwijk.—A noble flower similar in colour to Empress, but of much larger size and finer form.

Hamlet. — A remarkably handsome variety, somewhat resembling Emperor, but the flowers are of larger size and more highly finished. The broad, flat perianth is primrose-yellow, and the trumpet rich yellow.

Lady Audrey.—A large, finely-formed flower with white perianth and long primrose-coloured trumpet.

King Alfred.—A large-flowered variety of much merit; form and substance are alike good, and the colour golden-yellow.

Lord Roberts.—A robust and handsome variety, the flowers of large size and superb form, and the colour rich yellow.

Madame de Graaff.—A white trumpet of great merit, and cheap enough to be planted in quantities for garden decoration. The flowers are of large size, fine form, and good substance, opening pale primrose, passing as they attain full development to cream-white.

Monarch.—A distinct and handsome variety with flowers of large size and superb form, and of the richest yellow.

Mrs. H. J. Veitch.—A large, superbly-formed flower remarkable for its fine finish; the perianth primrose-yellow, and the trumpet rich yellow.

Sir Francis Drake.—A bold and handsome flower of the Emperor type, but more refined and the colour of both perianth and trumpet deeper.

Weardale Perfection.—A grand bicolor that has long occupied a leading place in its class; the flowers are of large size and superb form; the perianth cream-white, and the trumpet soft primrose colour.

### Incomparabilis Varieties.

Chancellor.—A remarkably fine variety, the flowers large with broad, ivory-white perianth segments, and an open, bright yellow crown.

Gloria Mundi.—A medium-sized flower of much merit, the perianth segments rich yellow, and the large spreading cup bright orange-red.

Homespun. — A superb variety; the flowers rather large and of exquisite form; perianth and crown rich yellow.

WEARDALE PERFECTION.

One of the most handsome of the Trumpet daffodils, perianth creamy-white and the trumpet pale yellow.

Lady Margaret Boscawen.—One of the finest varieties in its class. The flowers are of large size and grand form; the perianth segments white, and the large expanded cup rich yellow.

Marigold.—A beautiful variety. The flowers are of large size and finely formed; the perianth segments rich yellow and the large cup deep red.

Solfaterre.—A distinct and handsome flower of large size and remarkable for its refinement; perianth and cup lemon coloured.

Wagtail.—A finely-formed flower above medium size; perianth segments white, and the long cup bright yellow.

### Barri Varieties.

Aftermath.—A beautiful variety. The flowers of rather large size and distinguished by their refinement; the perianth segments ivory white, and the cup yellow with red margin.

Alton Locke.—A large and handsome flower, with broad, overlapping white perianth segments, and citron-coloured cup margined with orange-red.

Armorel.—An early-flowering variety of much merit. The flowers are of large size and the perianth segments are white and the cup apricot-coloured.

Circlet.—One of the finest in its class. The flowers large and of superb form; the perianth segments pure white, and the large cup pale yellow with brilliant scarlet margin.

Genial.—A distinct and highly attractive variety; the flowers are of moderate size, stout, and with fine outline; the perianth segments white and the cup lemon-yellow with red margin.

Incognita.—A handsome variety with large flowers of good form; the perianth segments white, and the shallow cup rich orange.

Southern Gem.—A large and pleasing flower; the perianth segments white, and the large frilled cup lemon-colour.

### Leedsi Varieties.

Dewdrop.—An exquisitely beautiful variety, the flowers of large size and fine form, the perianth segments white and the cup suffused apricot with orange margin.

Evangeline.—A beautiful variety, flowers large for its class, of superb shape, and pure white.

White Lady.—A charming variety with medium-sized flowers of fine outline, the perianth segments pure white, and the frilled cup pale yellow.

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NARCISSUS ARMOREL.

A beautiful variety belonging to the Barri section, with white perianth and orange-coloured cup.

White Queen.—A superb variety; the flowers of relatively large size, with broad, smooth perianth segments, and large cup, frilled at the edge, the former white and the latter citron-tinted, passing with age to white.

White Slave.—In the way of White Lady, but a great improvement on that variety, and well deserving the attention of those to whom cost is a secondary matter. The bulbs of White Lady may be obtained for four or five shillings per dozen, while those of White Slave cost seven shillings and sixpence each.

G.

## PLANTING CHOICE DAFFODILS.

It might be said, with some degree of force, that whether daffodils are so plentiful as to be obtainable at a price not exceeding a few shillings per hundred, or so rare that the cost of single bulbs has to be reckoned in guineas, they should be grown under the conditions favourable to their attaining the highest degree of development. Such a view as this is quite sound, but in practice it is not possible to do all that one could wish in cultivating plants, and some compromise has, in many cases, to be made. In the case of daffodils, it is found necessary, in the majority of gardens, to grow the cheap daffodils that are planted in large numbers for the production of colour effects in the flower garden under the most satisfactory conditions that are practicable, and to devote special attention to the cultural requirements of those which are scarce and expensive.

Varieties that are not sufficiently plentiful to be planted in quantities for the embellishment of the flower garden, or are intended for the production of flowers for exhibition, should have a position where they can be grown in beds so arranged as to readily admit of their being attended to at any time, and where they will receive some shelter from easterly winds in the spring, and also enjoy slight shade, artificially or otherwise. I have for some years past grown my choice daffodils in convenient positions in the kitchen garden, and the practice has much to recommend it. The bulbs can be given a change of soil from time to time, and the plants can be readily sheltered from cold winds when making their new growth, and the flowers be screened from bright sunlight when in process of development.

Daffodils require for their full development a deeply stirred and moderately rich soil. The soil should not be enriched immediately before planting with such manures as those obtained from the stable and farmyard, the contact of the young roots with comparatively fresh animal manures not being conducive to their welfare. To avoid this, and at the same time have the soil liberally stored with plant food, it is my practice to make such arrangements as will enable me to form the new beds in one of the quarters from which a crop of early potatoes has been taken. When the ground is liberally manured and trenched in the course of the previous winter, and a crop of early potatoes taken off during the summer, the bulbs can be planted in August or September without any considerable amount of preparatory work being necessary. All that is done in my case is to spread evenly over the surface bonemeal at the rate of about 2oz. to the square yard, and give a light dressing of newly-slaked lime. Just sufficient to well whiten the surface may be regarded as a light dressing of lime.

Should it not be convenient to take a crop of early potatoes off the ground in the year in which the beds are to be formed it will be necessary to prepare it by applying dressings of bonemeal and lime and double digging. The lime is used in the same quantity as before, but the bonemeal is increased to 4oz. to the square yard. In all cases the ground should be prepared sufficiently early to enable the soil to settle down before the bulbs are planted. Beds 3½ feet wide are the most convenient, especially when the daffodils are grown for the production of blooms for exhibition, and when several beds are arranged parallel with each other a two-feet alley should be allowed between them.

From the middle of August to the middle of September is an excellent period in which to plant choice daffodils, and it is a safe rule to complete the planting operations before September is far advanced. The bulbs should be arranged in rows across the bed, and with ten-inch spaces between them. Sometimes the rows are formed lengthwise of the bed, but this is not a good arrangement, inasmuch as the surface of the spaces between the rows should be stirred at intervals for the purpose of keeping down weeds and aerating the soil. With the rows lengthwise those who use the hoe have to walk between the rows, whereas with the rows across the beds, the hoe can be readily used from the alleys between them. From four to six inches is a good depth at which to plant the bulbs in ordinary garden soil, the depth being determined by the size of the bulbs of the respective varieties, the larger the bulb the greater the depth required. On light soils the depth may be increased about one inch. From four to six inches is also a good distance at which to arrange the bulbs apart in the rows, the stronger growers requiring the greater space.

W. G.

## SOME NEW DAFFODILS.

"Of the making of books there is no end," said Solomon, some hundreds of years B.C. The same remark applies to the making of daffodils in these days. Each year scores of beautiful new seedlings make their appearance at the spring shows, and these are only the "select" of thousands which are not quite as good. And yet the possibilities of further development seem to be greater than ever.

In the matter of size we seem to be only in the first stages, to judge by the huge Ajax forms which were exhibited by the Rev. G. H. Engleheart this year. Some of his blooms were nearly 5in. across, and had stems of 24in. in length.

This is a development that I am sorry, personally, to see. One of the great charms of the daffodil is its grace, but these ungainly giants, though very wonderful, are anything but graceful. I hope the day is very far off when we shall buy daffodils by the square inch!

A more remarkable development, however, may be expected in the colouring of daffodils. One was almost startled to see in some exquisite little white seedlings, shown by Mr. Engleheart at Birmingham, distinct traces of indigo blue in the centre of the eye. They were only traces, it is true, but even a blue shadow is something quite new in a daffodil, and we may yet live to see the Blue Daffodil, of a recent novel, an accomplished fact; though, I fear, that we shall take some time to get used to it if it ever comes.

Yes, indeed, there is no end—to the quantity—of new daffodils but there are only a few—I was going to say increasingly few—that will "stay." The number of really great flowers is very limited, and only time will prove which these are.

It is much to be hoped that seedling raisers will turn their attention to improving the constitution of their new varieties. Many of the delicately-formed and coloured varieties are, alas! delicate in constitution also, and we do not want the daffodil, which is essentially a hardy outdoor plant, to become a tender greenhouse subject.

The season of 1912 was one of the most trying on record. The continued drought and heat of last summer, and the repetition, in most parts of the country, of similar conditions during the flowering season, had their effect, and the new daffodils of this year made their appearance under great disadvantages. This makes it difficult to review them justly, and I am sure that there are many that are not mentioned in these notes that are well worth notice, but which were not seen at their best.

Mr. A. M. Wilson exhibited some of the finest of the new varieties. Avalon is one of these; a most striking white incomparabilis of his own raising, with a poeticus-white perianth 3½in. across, and flat cup ⅞in. in diameter, soft canary-yellow with a sharply-defined broad band of brilliant red colouring round the edge.

Crœsus, which obtained a F.C.C., is another, and a really great daffodil. It is a giant incomparabilis with a quite circular perianth of great substance, a delightful shade of palest primrose; the cup, very large and expanded, is of rich deep red; a strikingly handsome variety, raised by Mr. J. C. Williams.

A flower of another type which gained an A.M. is Pedestal, raised by Mr. Ernest Crosfield, and shown by Mr. Wilson. This is a huge incomparabilis with pure white perianth segments, very solid, and having a long, straight cup of rich clear yellow; a flower of fine build and balance.

Neptune, raised by Mr. Copeland, and shown by Messrs. Cartwright and Goodwin on the same occasion, is a flower of much the same type, which ran Pedestal very close.

On the same date Mr. Wilson again secured an A.M. for Killicrankie, a noble pale bicolor of refined character and of improved Weardale Perfection colouring and form. This again just beat a very fine flower of rather the same type—Onslaught—shown by Messrs. Cartwright and Goodwin.

Robespierre—a daffodil to remember—also gained an A.M. It was raised by Mr. P. D. Williams, and is a brilliant flower, measuring 4in. across the ivory-coloured perianth, with a fiery-crimson crown well over an inch in diameter.

I believe that Rubellite, shown by Mr. Wilson, is the first of the new brilliantly-coloured Poetaz varieties to be honoured with an Award of Merit. It is a strikingly beautiful flower, bearing several good-sized blooms on a stem, the white perianth throwing up the rich all-red eye in vivid contrast. Another fine Poetaz variety is Scarlet Gem.

Red Macaw and Sealing Wax are two telling exhibition flowers. The first has a shapely white perianth with flat eye of pale yellow, heavily margined with brilliant

NARCISSUS HELIOS.
An exceptionally beautiful Incomparabilis variety. The perianth segments rich yellow, and the finely frilled cup is deep orange. Introduced by Mr. C. Bourne, who received an A.M. for it at the R.H.S. Meeting, April 19, 1912.

red. The second is aptly named, having a large, solid bright red flat eye, and very white perianth—the earliest of its section to flower.

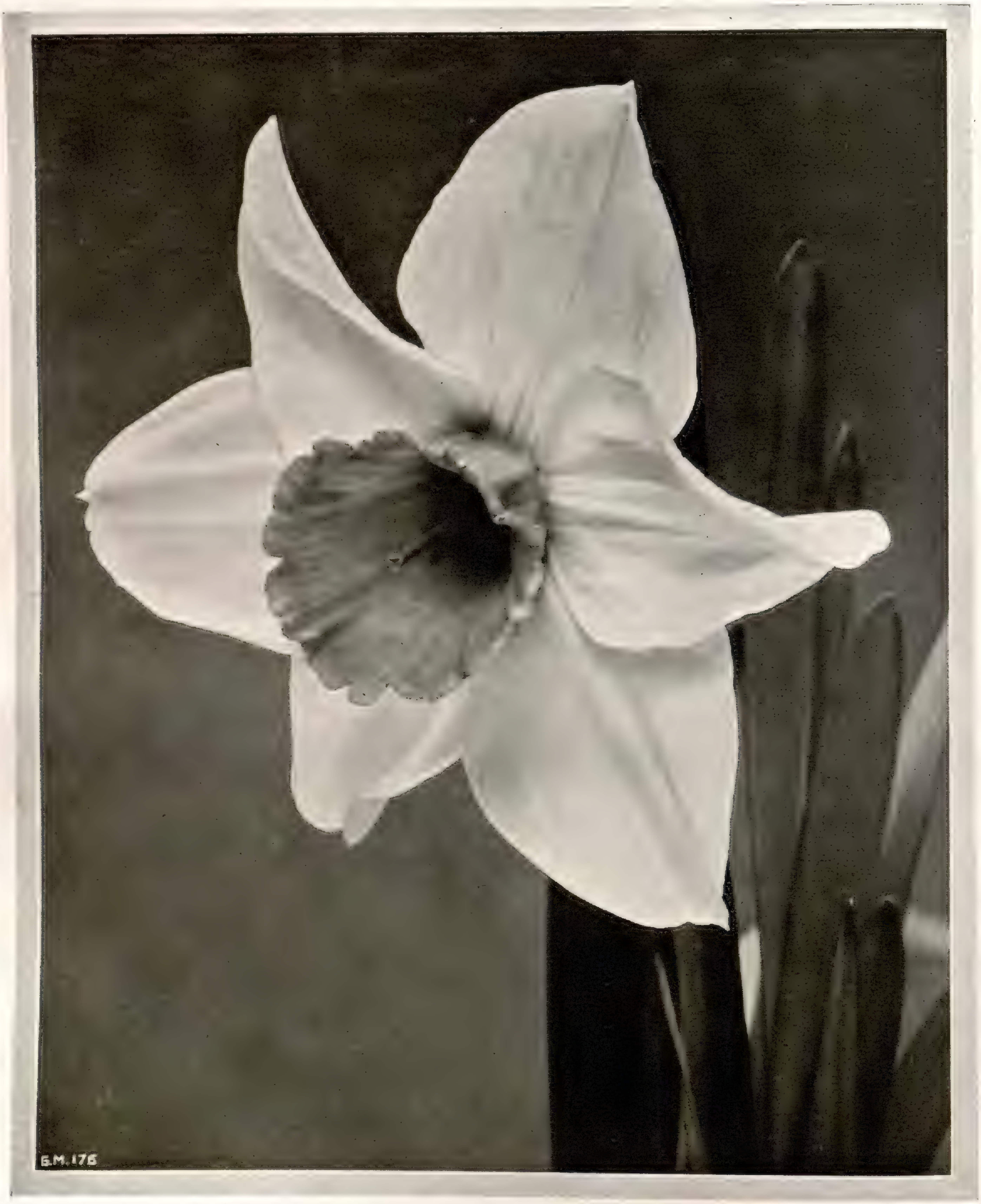
Another striking example of the giant red-cupped flowers that always attract so much attention is Seville. This flower, shown by Mr. Phillips, also gained an A.M. It has a large, firm, over-lapping perianth and huge, disc-like eye of bright orange-red; it should make a fine garden plant when the price is low enough.

Perhaps the most notable incomparabilis of this year is Helios. I have some hesitation in saying this, as I had the pleasure of showing it for the first time. However, I have parted with the stock to Mr. Walter T. Ware, and I am only repeating the opinion of the experts who saw it at the shows, where it gained an A.M., and in my grounds. It was raised by Mr. Engleheart, and is a very noble giant incomparabilis with smooth perianth segments of fine form, great substance, and of rich butter-yellow colouring. The large expanded cup—perhaps better described as short, wide trumpet — is beautifully frilled and of rich, translucent orange-copper, tinged with flame colour. Though the whole flower is large, it is perfectly proportioned, and has no trace of coarseness. It flowered with me at Simpson fully three days after Henry Irving.

It is refreshing to turn from these gorgeous fiery flowers to those of a "cooler" type. Madonna, for instance, is perhaps the finest of the pure white triandrus hybrids raised by Mr. Engleheart. The whole flower is of intense whiteness, and of exquisite grace. I believe it was bought by Mr. Chapman, who raised another of the flowers which gained an A.M.—Silver Spangle. This is a lovely and refined flower of medium size with very broad snow-white perianth segments, and large, pleated flat cup of clear lemon-yellow; the colouring is delightfully refreshing.

Among the many lovely seedlings shown by Messrs. Barr and Sons, Athene is, to my mind, one of the most beautiful and interesting flowers shown this year. It is of Ajax form, but has a triandrus for one of its parents, and is unique in being the first self-yellow triandrus trumpet yet shown, the colour being a soft sulphur-yellow throughout; a flower of very refined character. King Arthur, also shown by Messrs. Barr and Sons, is a beautiful smooth-petalled yellow trumpet of fine form and large size.

Another very distinct yellow trumpet is St. David, which I had the pleasure of introducing. This is a huge flower with



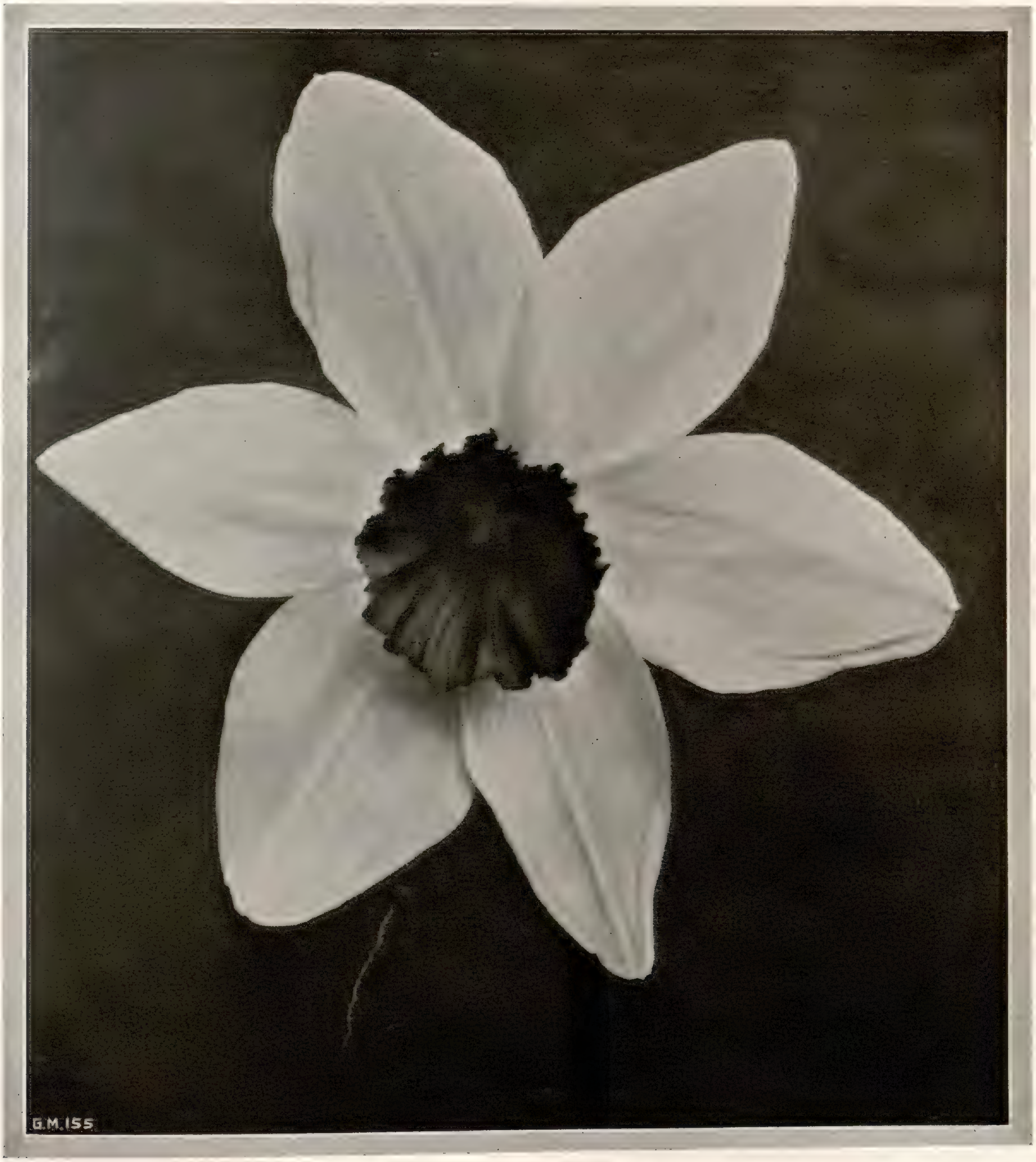
NARCISSUS BRUNHILDE.

A very fine trumpet daffodil introduced by Messrs. Barr and Sons. The perianth segments creamy-white and the trumpet soft yellow.

well-formed and smooth perianth segments, and very expanded trumpet, deeply frilled at the brim, and of a distinct soft pale yellow throughout, not seen in any other trumpet variety. It flowered two days before Henry Irving.

A remarkable advance in the white Ajax section is seen in Mrs. Ernst Krelage, a noble flower named after the raiser's wife. This magnificent and refined flower comes from Holland, and gained a well-deserved A.M. The bloom is large and of good substance, and carried on a good stem; the colour is creamy white, and the form is that of an improved Madame de Graaff without the rolled-back mouth of the trumpet; a flower with a great future.

To those who, like myself, have a love for the delicately-coloured, smaller flowers, Little Joan, with its snow-white perianth and open cup of old ivory daintily tinged with shell-pink round the edge, will appeal.



NARCISSUS ROBESPIERRE.

A distinct and handsome Incomparabilis variety raised by Mr. P. D. Williams. The perianth segments are creamy-white, and the cup brilliant orange. A.M., R.H.S., April 19, 1912.

Alpine Snow is another perfectly white flower, which attracted a good deal of attention at Birmingham this year. It is an exquisite example of Mr. Engleheart's raising, beautifully proportioned with rounded perianth and globular cup of intense glistening white. Black Prince, also of Mr. Engleheart's raising, is a remarkable "break" in the Poeticus section; a flower of medium size, it has an eye of very dark crimson throughout (the colour of the perpetual carnation Black Chief); it marks the beginning of a new race of Poeticus, and should be invaluable to hybridists.

There are others which I should like to mention, but if I described them all the Gardeners' Magazine would have to be enlarged. I hope I have not omitted any of the "upper ten." Some wonderful varieties were shown under numbers, but until these are named it is impossible to review them. Many of them will doubtless be described next year—if they are not all drowned by the incessant rains we are having during the planting season.

Christopher Bourne.

**Vallota purpurea.**—Within the last ten years or so immense numbers of this South African bulb have been sent to this country from their native home, and occasionally a rather distinct form crops up among them. Indeed, there have been rumours of a white-flowered variety, but I have not yet had the pleasure of seeing it. I do not think that these quantities of imported bulbs have led to any improvement in the vallotas as grown in this country, for very few of them are the equal of the good old-fashioned type. These South African bulbs are by no means easy to establish, while they are, as a rule, taller and weaker in growth, and with more starry flowers than the vallotas one occasionally meets with in old gardens.—T.

## BULBS FOR MASSING.

In dealing with varieties of spring-flowering bulbs that are specially adapted for massing and are capable of producing splendid colour effects in the garden, we are reminded of the fact that even in these days many gardeners are apt to distribute a large quantity of bulbs over a big area by arranging them in puny groups or thin planting. It is, of course, quite permissible to arrange small colonies in the rock garden, herbaceous border, and by the water-side, and few, indeed, are the varieties in any family of spring-flowering bulbous plants that fail to produce a charming effect so placed.

In dealing with the narcissi it matters not whether the furnishing of large beds, big stretches of border, or great breadths in the grass be considered, the following kinds will be found unsurpassed for our purpose. Of vigorous constitution, the flowers are supported by fairly tall and stout stems, and the price is by no means prohibitive. The merits of Emperor, Empress, and Sir Watkin are recognised and acted upon, but I cannot understand why Princeps, an early-flowering bicolor, is not more extensively employed for massing. Bulbs of first-rate quality can be had for 10s. per 1,000, and, as will be readily seen, a glorious colony or series of colonies can be formed for a couple of pounds. No more reliable or effective variety can be found than Horsfieldi, and how well it associates with almost any spring-flowering plant or bulb. Of great merit, too, are Telamonius plenus (Van Sion), Frank Miles, Golden Spur, Incomparabilis Stella superba, Maximus, Henry Irving, Katherine Spurrell, Beauty, Victoria, Autocrat, Madame Plemp, Grandis, Figaro, Ard Righ, Barri conspicuus, poeticus ornatus, rugilobus, Duchess of Westminster, and varieties of Phœnix.

In speaking of tulips, those which are usually termed standard varieties are eminently adapted for our purpose, and great is the pity that the more uncommon kinds are not planted upon a more extensive scale.

The early-flowering tulips with single flowers are of immense value for massing, as they produce rich displays of colour early in the spring, when bright colouring is much appreciated, and the early period at which they bloom admits of their being removed well in advance of the time for the preparation of beds and borders for their summer occupants. Scarlet varieties that are specially useful comprise Artus, Couleur Cardinal, Crimson King, and Vermilion Brilliant. Rich orange-red varieties that should have attention include Prince of Austria and Thomas Moore. Yellow varieties that can be strongly recommended are Golden Queen, Montresor, and Ophir d'Or. Wouverman may be mentioned as one of the best of the rich purple varieties, and Snowflake and White Swan are two of the finest of the white early tulips.

It is difficult to understand why the ordinary double tulips are not more extensively planted en masse. I am alive to the fact that many varieties present a flat and uninteresting appearance when brought together in large numbers, but it cannot be said to apply to such varieties as Titian, Gloria Solis, and Murillo. Vuurbaak, too, cannot be beaten for extreme brilliance, and forms a fitting companion to Rose Blanche (of snowy whiteness). Yellow Tournesol, Yellow Rose, Blue Céleste, Duc van Haarlem, and El Toreador are each and all superb.

The value of the various Darwins when massed has been clearly demonstrated at Kew in recent years, where we have seen them arranged in the formal beds close to the palm-house, each bed holding a distinct variety; also in mixture, the sole occupants of a border extending over 200 feet in length. In each case it may be said that nothing attracted so much attention in their season. Wonderfully handsome and effective varieties are found in Donders, rich crimson, with violet and white base. Clara Butt, in soft rose, is well known; and the same applies to Europe, which boasts glowing salmon and scarlet colouring; Antony Roozen, rosy-blush; Madame Krelage, rose margined blush white; Philip de Comminet, glossy-brown maroon, a great beauty; Erguste, heliotrope with silvery shading; and White Queen, a large, globular flower in creamy-white.

Then we have the varieties known as Cottage or May-flowering tulips, and it is gratifying to know that they have become very popular for garden decoration. Notwithstanding the fact that they bloom late in spring, a good deal of space is devoted to them in the bedding arrangements, and the effect created when massed is exceedingly beautiful and artistic. T. elegans and its variety alba, with reflexed and rose-edged petals, are altogether first-rate, whilst the Inglescombe varieties in scarlet, pink, and white, must be written down as very desirable. At Battersea Park last season I noted a bed containing Picotee, and was much impressed with its elegance and refined beauty, and it was very clear that it found many admirers. The same applies to a glorious display at Kew a couple of years ago. Perhaps the best for massing, in addition to those mentioned above, are named Caledonia, a fine red kind; Fulgens, a tall, crimson sort with reflexed petals; Snowdon, the flowers creamy-white; White Swan and Didieri alba, which speak for themselves. Gesneriana

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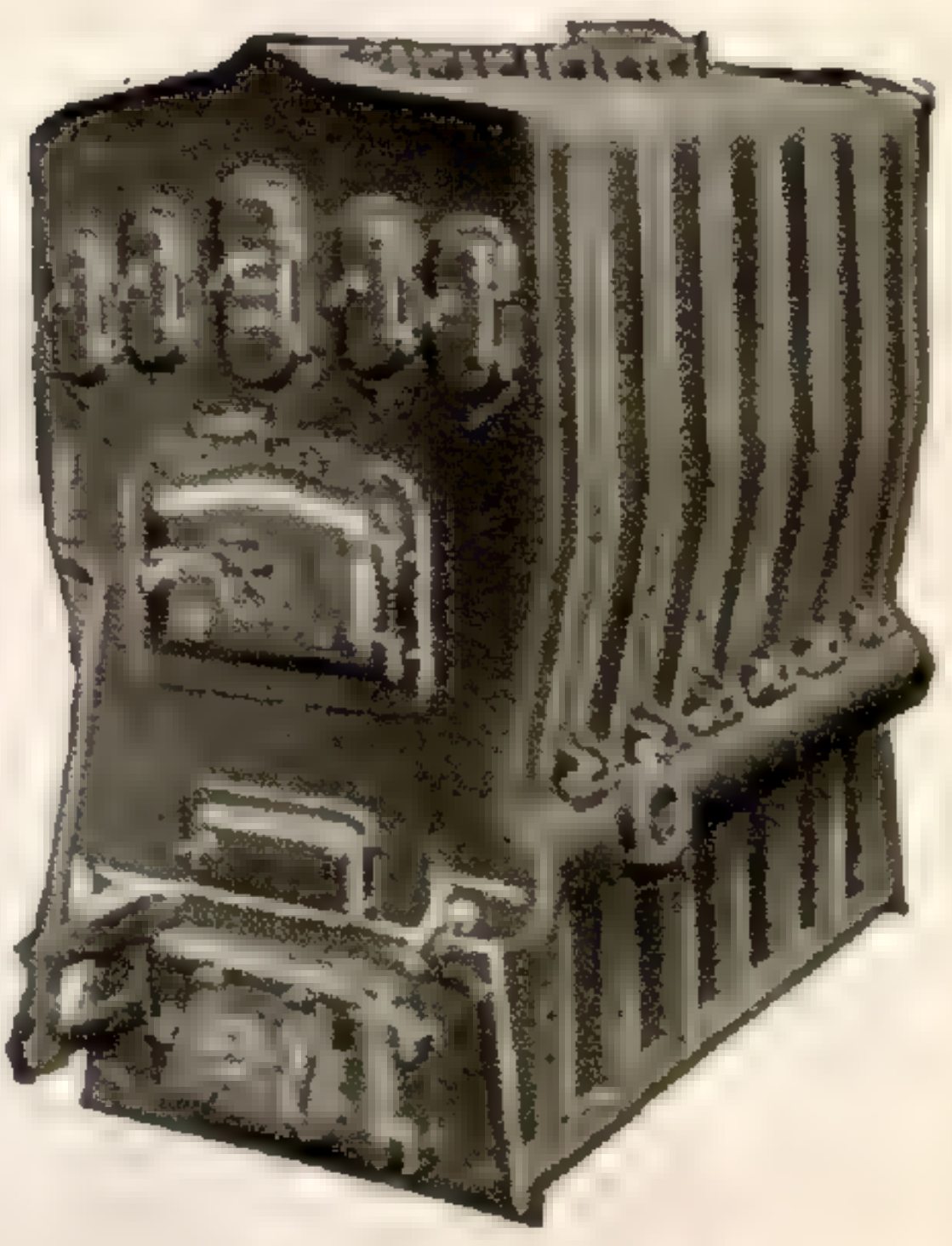

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spathulata major is a superb thing in dazzling scarlet with blue-black base. Ranging from pale primrose to deep yellow are Mrs. Keighley, lutea, Bouton d'Or, Mrs. Moon, Illuminator, and retroflexa.

Considerable diversity is also noted as to the decorative value of hyacinths, and this is very pronounced when arranged in masses in large numbers. Amongst dark blue kinds we have nothing to equal King of the Blues and Marie, whilst the most effective amongst those in light shades are Regulus, Czar Peter, Leonidas, Pieneman, Electra, Blondin, and Enchantress. Scarlet and dark shades are finely represented by La Victoria, Linnæus, Roi des Belges, Stanley, and Robert Steiger; and I hardly think that alba maxima, Blancheur à Merveille, l'Innocence, and Snowball have any superior amongst white kinds. I have nothing but praise for Yellow Hammer, Bird of Paradise, City of Haarlem, and Obelisque for this work, not forgetting Gigantea, Pink Beauty, Rose à Merveille, and rosea maxima in shades of rose and pink.

It is quite superfluous to dwell upon the merits of crocuses, snowdrops, scillas, and other of the smaller bulbous plants for massing; and, pretty as small colonies undoubtedly are, we should aim at a Kew standard, more especially with regard to the Siberian squill, whose wondrous beauty is the delight of visitors in spring.

Walter H. Aggett.

## BULBOUS IRISES.

The bulbous section of the beautiful family of iris provide us with some of the most welcome and useful flowers of early spring. Even during the winter months the lovely Scorpion Iris (I. alata) may be had in bloom in sheltered positions, with a covering of glass to protect it from the weather. On a sunny border in the months of February and March there is a no more welcome and charming sight than little groups of these early-flowering species like I. stenophylla, with its beautiful blue and white flowers, or the dainty little I. Danfordiæ, with its yellow blooms. For cultivation in pots or pans the smaller ones are indispensable for the cold greenhouse, brightening up the house with their beautiful shades of colour. In the rock garden, too, these little bulbous plants may be used with great advantage planted in groups in sheltered corners, or between low carpeting plants, which will form a background for them when in flower.

Most of the early-flowering kinds come from Asia Minor, the country from which so many bulbs like the Glory of the Snow (Chionodoxa) and scillas come, to give us such sheets of blue in the grass and border in early spring. Others, like I. orchioides and the closely-allied I. bucharica, with I. Warleyensis, come from farther east in Turkestan. The later-flowering I. tingitana and I. juncea come from Northern Africa, while the indispensable English and Spanish iris are natives of Southern Europe.

Apart from the English and Spanish irises, which flourish in any good garden soil, and are not particular as to position, most of the other kinds are best suited in a warm position in the rock garden, or slightly raised sunny border. They like a root run of light, well-drained, sandy soil, with which has been mixed plenty of broken bricks or sandstone. All irises of the persica or Juno group (well characterised by their two ranked leaves) produce thick, fleshy, permanent roots, which serve as storehouses of food. These penetrate deeply, hence the need of an open, well-drained soil to carry away surplus water quickly during the resting period. The following are some of the more showy and easily-grown kinds.

I. alata.—The Algerian iris is a charming winter-flowering member of the Juno group, and in mild seasons is often in bloom in mid-winter. These beautiful irises, however, need protection against the weather, which destroys their beauty at that time of the year. A handglass, or even a piece of glass, is sufficient to throw off the heavy rain. The flowers are large and vary much in colour from a deep blue to pure white. It grows well in light soil in a warm border, but the chief difficulty is to get the bulbs ripened sufficiently to produce flowers the following season. They must either be taken up, or kept dry by a covering during their resting period.

I. Danfordiæ.—On account of its earliness this is one of the most charming little plants of the family, with its bright yellow flowers. It is quite hardy, and does well on sunny borders, but it is worth growing in pans for the alpine house. The bulbs should be potted up early in the autumn in light, rich soil, and then may be plunged in ashes in a cold frame, or even outside. As soon as the bulbs show signs of growth they may then be taken into the house. After flowering the pots should be re-plunged in a sunny place to ripen off the bulbs, using the larger bulbs for potting up, and planting out the smaller ones.

I. juncea can be grown in any warm border. The bulbs are small, and produce slender stems with long leaves, while the flowers are about four inches across, and golden-yellow in colour, the falls being very broad and long, marked with carmine on the keel. It is an Algerian plant, and looks better when growing amongst some low-growing plants to form a background for it. There is also a pure white variety of this species in cultivation.

I. orchioides is a valuable hardy plant, and one of the best of its section. It grows freely, and increases when planted in good, loamy soil, with plenty of broken brick and mortar rubbish mixed with it. The bright yellow flowers are produced freely in March and April. A closely-allied and beautiful species is I. bucharica, with similar habit, growing about a foot high. It has flowers which are pure white in the upper portion, with golden-yellow falls and crest. Both are good plants for growing in pans.

I. persica.—A native of Asia Minor, that has the distinction of being t. 1 in the "Botanical Magazine." It is less hardy than many of the others, but may be grown with a little protection in winter. On account of its exquisite colouring it is well worth a little trouble.

I. reticulata.—This favourite plant is so well known that it needs no description. There are several forms of it, of which the variety major has the largest flowers. I. r. histrioides, which comes from Syria, is an early-flowering form of great beauty, varying much in colouring and size of flowers. It is one of the hardiest for the border, as well as being of great value for use in pans. The flowers, which are produced in March, have their falls mottled with white and rich lilac spots. There is also a pale blue variety known as var. cyanea. I. r. var. Krelagei is an early-flowering form, with somewhat dull-coloured flowers. All are valuable for use in the cold greenhouse.

I. Sieheana, from Asia Minor, also known as I. Haussknechta, is a charming little bulb with flowers of a curious mixture of silver-grey and purple.

I. sindjarensis is one of the taller-growing kinds, with arching leaves and somewhat yellowish-white flowers. It is very hardy, and does well in the border.

I. stenophylla (I. Heldreichi).—A very distinct species of the persica group, with very large flowers on stems about three inches high. The standards are of a soft blue shade, the falls intense blue, bordered with white.

I. Tauri is a closely allied plant, also from Asia Minor, with deeper violet-purple flowers of various shades, tinted in various parts with gold or bronze.

I. tingitana.—Except in the more southern counties the Tangiers iris does not flower so freely as one could wish. It is very beautiful, with the habit of the English iris, and large flowers of a pale blue merging into pale purple, with a keel of golden-yellow. To succeed with it the bulbs must be well ripened off, either by lifting and storing, or by covering them up from wet. It should be planted in rich, well-drained soil on a warm south border.

I. Vartani is a winter-flowering kind from Palestine, with pale blue flowers.

I. Warleyensis is a member of the orchioides group from Eastern Bokhara, very free flowering, and one of the easiest to grow. The flowers vary from pale to deep violet, with deeper-coloured falls, which, again, are margined with white. Another closely allied kind is I Willmottiana, from Eastern Turkestan ,with lavender-coloured flowers, having blotches of white on the fall.

I. xiphioides.—The English iris is much larger than the Spanish iris, and comes into flower about a fortnight later. It prefers a somewhat heavy and moist soil, and may be naturalised in fern borders or similar places where the necessary conditions of moisture obtain. The garden forms of this iris are numerous, and many are of great beauty.

I. xiphium (Spanish iris).—This well-known iris embraces many beautiful forms, which are of great value in the garden. They are of easy cultivation, and do well in somewhat dry soils. From the numerous varieties of all shades of colour that are offered in catalogues it is easy to make a good selection.

W. I.

## THE ASTURIAN CROCUS.

The crocuses of autumn are very welcome, and are generally very beautiful as well. They come with the shortened days, and give us a foretaste of what we may expect when spring comes round, and the almost flowerless days of winter give place to those of the gladsome spring.

There are many valuable and beautiful autumn-flowering crocus species, but none is more easily grown than the Asturian crocus (Crocus asturicus), a showy and pretty one from the Asturias mountains. It has the merit—for those with slender purses, at any rate—of being comparatively cheap; while as some dealers sell it in distinct shades, groups of different tints can be formed for the garden. The range of colours is not large, but it is sufficient to give a change, although even a group of mixed Crocus asturicus is beautiful in its way. What is known as the typical C. asturicus has flowers of a kind of purple-lilac, striped with darker marks towards the base.

Then there is a pretty blue variety, called C. azureus, which makes a pleasing group in the rock garden, on grass, or in the border. In atro-purpureus we have a fine variety of a distinct and handsome deep purple, and one of the most effective of the group. A pleasing crocus, with nice, soft, lilac flowers, is called lilacinus, and variety is given by a mauve one named pallidus. All these crocuses should be planted, as early as they can be procured, at a depth of an inch or two.

D.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

ODONTOGLOSSUMS.—The spring and early summer-flowering members of this genus are the most popular of all the cool-growing orchids. The remarkable degree of popularity to which the members of this most beautiful family have attained is sufficient proof of their great value. The species O. crispum, O. Pescatorei, O. Halli, O. Harryanum, O. triumphans, O. luteo purpureum, O. cirrhosum, and their very numerous hybrids and varieties, are all extensively cultivated, and they can be successfully grown together n a cool, well-ventilated structure. Odontoglossums require a constant and regular circulation of air. Owing to the great humidity of the outside atmosphere, and the small amount of sunshine experienced during the present season, no great difficulty has been experienced in maintaining a suitable cool and moist atmosphere.

REPOTTING is an important detail, for upon it largely depends the success achieved. The early autumn is generally regarded as the most favourable season for this operation, the cool nights and moist atmospheric conditions which prevail at this season being favourable to their becoming re-established before winter sets in. No time should be lost, therefore, in proceeding with these operations. When the young growths are seen to be pushing roots from their base, which will soon enter the new compost, the plants receive the slightest check possible.

SPECIMENS that have been left undisturbed for some years, and are showing signs of exhaustion, should be given attention. Shake away the old potting material from the roots, and remove old and useless pseudo-bulbs. Use pots just large enough to accommodate the roots for one season only. Those growing vigorously and in need of more root space may be shifted without disturbing the ball beyond picking out the loose and decayed material. Return them again to receptacles large enough for their proper development for two seasons' growth.

WATERING.—Supply water to plants that have been newly potted with care, and regulate atmospheric conditions by the judicious damping of the floors and the bare surfaces about the plants. Shading will be needed on bright days, and the plants may be slightly sprayed overhead twice daily on favourable occasions.

PROPAGATION.—Odontoglossums may be increased by means of the pseudo-bulbs, which have been removed in repotting. Select the bulbs, label them, and place them together on a bed of sphagnum moss, in a box close up to the roof glass in a cool house. If in good condition the bulbs may also be put in small pots and placed on a shelf, and kept on the dry side, when many will soon make breaks and useful plants. Another method is to sever the rhizomes between the pseudo-bulbs whilst growing in the pots. If these divided portions have bulbs with leaves they soon make breaks and root readily.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

IMPATIENS SULTANI. — This bright-flowering exotic balsam is of easy cultivation, and by inserting cuttings at intervals an almost perpetual display of flowers may be had. Cuttings root readily at any season, and the present is a good time to insert a batch for raising plants for winter flowering. We usually sacrifice a few of the largest plants about this time, cutting them down to the ground level and selecting the strongest shoots for propagating purposes. These we put singly in 2½in. pots. When rooted they are transferred to either large 60's or 48's, in which size they are flowered. Over-potting should be avoided, as when this happens the plants grow vigorously and produce but few flowers. It is far better to restrict the roots of winter-flowering plants generally, and feed them well as may be found necessary. Given good culture these make fine specimens by the early part of the winter, and are of great value for house decoration. During summer they thrive in the conservatory, but I know of no plant more susceptible to cold, sunless weather, or draughty rooms, than this.

ACALYPHA SANDERIANA.—The plants will now be developing their crimson inflorescences, and should be placed where they will have rather less atmospheric moisture than was advised previously. Watch closely for the dreaded red spider, and when it makes its appearance sponge the leaves carefully with soapy water. It is indeed a good practice to do this occasionally as a preventive measure. Shade only during the hottest part of the day, and continue to give periodical applications of liquid manure alternated with a little artificial manure until the majority of the tassels are developed, when only clear water should be given.

WATERING AND SHADING.—The cold, sunless weather experienced for the last few weeks has necessitated very careful watering of all pot plants. During such abnormal weather great care should be exercised, it being far better to err on the dry side. See that the water used is of about the same temperature as the structure in which the plants are grown. Fortunately it seldom happens that such a note of warning is necessary at this time of year, but it will be seen that this is a matter of great importance. Careful regulation of the shading is of equal importance; in many instances it can be dispensed with altogether, merely having it at hand should we have a return of brighter weather. The material should be light and open, and only put on for 2 or 3 hours in the middle of sunny days.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

MELONS.—The dull, sunless weather, and the continuation of rain for the past few weeks, has not been favourable to late crops of melons, and it has been necessary—and will be more so from now onwards—to maintain a steady bottom heat, ranging from 70 to 75 deg., with a temperature in the house of about the same. Admit an abundance of air, night and day, when the weather is favourable, and stop all sub-laterals at the first leaf. Keep the roof glass absolutely clean, so that the foliage may be exposed to all the sun and light possible. Without this, it is impossible to grow good-flavoured fruits at this season of the year. Water and stimulating manures should be administered to the roots with great care, for if the soil becomes too wet, the plants will probably collapse some weeks after the fruits have set. At the same time, moisture at the roots must be supplied at all times as required, or otherwise red-spider wil be sure to make its appearance, and much labour and patience will be required to eradicate it. The supply of water can, however, be diminished at this season of the year, when the fruits are ripening, exercising care that this is not withheld in such a manner as to check the full development of later fruits. Spray the plants with clean water on fine days, after closing the house in the afternoon. Any fruits that are ripe should be immediately cut and placed in the fruit room, where they will keep in good condition for a few days, if not required for immediate use.

EARLY VINES.—The soil in the borders of the house or houses required for very early forcing should be allowed to become fairly dry to induce an early rest. The current season's side growths should be cut back to within five or six leaves, and all the side shoots cut clean away with a sharp knife; this will materially assist the back buds to break, and also the vines will receive a complete rest sooner than would otherwise be obtained. It is very essential to attend to these small details, where the vines are required to be started early in November.

PEACHES AND NECTARINES.—All the fruits having been gathered from the permanently planted trees under glass, give plenty of air night and day, and dispense with fire-heat. Give copious supplies of clean water to the roots. Where any trees are making too much wood at the expense of fruitfulness, the work of root pruning and careful lifting should be done any time from the beginning of September. We find that it is advantageous to the trees next season where this operation can be taken in hand at the latter part of this month or the early part of next. Much depends upon the weather. If the sun is bright and powerful the glass should receive a light shade, and the foliage kept well syringed for a week or ten days. After this work has been accomplished the roots should receive a good soaking with rain water, and the young growths be untied from the wire trellis.—Henry R. Farmer, Cardiff Castle Gardens.

# CHRYSANTHEMUMS.

## Treatment of Late-flowering Varieties.

Owing to the weather having during the past few weeks been so cold and rainy, and the lack of sunshine, late-flowering chrysanthemums will need extra care during the period between the present time and the commencement of the shows. The wood of these cannot be too well ripened, and if any of the varieties were a week or more in showing their flower-buds in the early part of August, the plants should be placed in a very exposed position by themselves, and given twice as much room as is necessary in an ordinary season. Of course, some protection from very strong winds is essential.

Some cultivators put their late-flowering plants under glass very early in order to make up for lost time. It is certainly necessary to place them in the houses in good time, but it is essential to success that the wood be properly matured first. A long sojourn under glass is conducive to a rather sappy growth when the buds are quite small at the time of housing. Stems bearing buds well advanced are not affected much by early housing.

### Injudicious Feeding.

The application of strong stimulants at the time of housing in the case of late varieties bearing small buds on immature wood is not beneficial but harmful. Nitrate of soda and sulphate of ammonia cause a too free growth, and valuable time is passing, so that such forced growth will not bear the deep blooms at the desired time—during the first half of November. It is much better to allow the wood to ripen slowly at first, and then assist the full development of the flowers with nitrate of soda judiciously applied twice or thrice after the flowers are half open. Less stimulating foods may be given before this stage. Nitrate of soda has a bad effect on the cuttings which are relied upon for the next year's stock of plants if given very freely. At first the suckers grow very luxuriantly, and then seem to fail suddenly, and if subjected to even a slight frost, the edges of the leaves will turn brown.

### Specimen Plants.

These, too, must be given more than the usual space at this season, so that all the shoots will be well ripened. Some cultivators partly plunge the pots in the ground to steady them and prevent winds from blowing them over. Where any plants are so plunged they must be at once placed on boards or ashes. Geo. Garner.

## MAY-FLOWERING TULIPS.

The striking popularity of May-flowering tulips at the present day provides a full testimony to their wonderful value for garden decoration. One should include in the group of tulips known as "May-flowering" the Cottage tulips, the old-world favourites of English, Scotch, and French cottage gardens; the many fine late-flowering tulip species; the wonderful breeder tulips, of which the Darwin and Rembrandt groups; and the English exhibition tulips, known to us best in their sectional divisions of byblœmens, bizarres, and roses. One will observe that the May-flowering tulips comprise a veritable host of varieties, and that they cannot all have justice done them in one article; therefore, no reference will now be made to the breeds, exhibition varieties, or species.

Of their utility for garden decoration there is no question, for, in form, height, and colouring these tulip groups are of splendid value. They are grand in the beds and the May borders, especally if one arranges them to come through a carpet of lowlier plants, which should provide a contrast to the glow of the tulips, in addition to covering the bareness of the soil. One can use for this purpose saxifrages (preferably white, mossy varieties), myosotis, alyssums, violas, or other suitable subjects. For informal groupings in the wild garden, or in the grass, or on sloping ground above the waterways, these tulips are capable of fine effects, while for decorative purposes when cut they are first-rate, whether used in variety, or whether simple colours are contrasted one with another.

To those whose taste tends to decorative work, let me commend a study of the colour values of the mauve, silver, maroon, and pink-hued Darwins, and the whites, yellows, and rosy colours to be found amongst the Cottage tulips, some pleasing contrasts and delightful effects can be achieved with a little trouble.

Intending planters of the May-flowering tulips should, if possible, do their planting in October, or, failing this, the early part of November. "Earlier" or "later" one is placed at a disadvantage. A good loamy soil suits the tulips well, and for the sake of the extra strength and substance of the flowers I would prefer it inclining to heaviness, rather than too light. A good planting depth is four inches on heavy land, to six or seven on light.

If manure is necessary it should be worked into the soil several weeks previous to planting the bulbs, for, in my opinion, fresh manure is often detrimental to the vigorous growth of the young rootlets. Plantings should always be arranged for effect, and one should be able to obtain close proximity of the blossoms by means of well-placed paths or footways.

The tall, bold-flowering Darwins deserve first place in our notes, being grand at all points. In height they average twenty-five or more inches, and, the stems being strong and stiff, no supports are necessary.

A selection of varieties is a tax upon the suggestive powers of any one, for who can discriminate where all are so good? A few splendid garden forms would be Clara Butt, a lovely soft pink; Dream, a silvery-heliotrope; Antony Roozen, a soft rose; Madame Krelage, a nice shade of rose; Duchess of Westminster, darker than Clara Butt; Claude Gillot, a brilliant vermilion-red; Europe, a first-rate scarlet; Farncombe Sanders, a study in dark crimson; Fra Angelico, a grand maroon-black; Henner, a shapely crimson-maroon; King Harold, a fine ruby-crimson; La Candeur, creamy-white; La Tulipe Noire, the famous Black Tulip; Loveliness, rosy-pink and white; and Margaret, rose, with a blue base.

I would commend also the crimson-maroon, Millet; Phyllis, a lovely rosy-lilac; Pride of Haarlem, a tall scarlet-crimson; Rev. H. Ewbank, one of the best heliotropes; Sultan, a good dark variety; Van Poortvliet, rosy-salmon; Viola, a splendid violet-crimson shade; and the bronzy-gold Yellow Perfection.

May I ask the reader to note the following Cottage tulips? They are pre-eminent for beauty and garden decoration: The golden-yellow Afterglow should be secured; Flame, for a touch of orange-scarlet; Eurasian is a tall, dainty strawberry-pink; Feu Ardent, a fiery-scarlet, will attract greatly; the Inglescombes, for effect and a poor soil, Pink, Scarlet, and Yellow, are all good; Kathleen and Mrs. Moon are two grand yellows; Marksman, a good new orange-scarlet; Orange King is a fine tall orange; Red Standard, a magnificent crimson; The Fawn is a charming fawn and apricot-hued variety; Walter T. Ware, a splendid orange-yellow; Scarlet Emperor, a glowing scarlet of merit; while the coral-shaded La Merveille, the fine varieties of Gesneriana, together with Primrose Beauty and Amber Crown, are worthy of note. Novelties like Norman Knight, orange-scarlet; Great Dane, a pale orange; Beau Brummel, scarlet; and Coralie, near to La Merveille in colour, are, with others, deserving of attention.

The Rembrandt tulips, to give them just a brief reference, are Darwin tulips which, instead of retaining the self colours of the group, have broken into a series of marked and flamed varieties, and retain these markings perfectly fixed under cultivation. They have not the fine finish of the English flamed and feathered tulips, being marked more unevenly, but their rich colours, fine stems, and general good character, warrants them due notice at the hands of English growers. One will hear more of them, but unless tulip fashions change they can hardly expect the same meed of public favour as the self-coloured Darwins.

P. S. Hayward.

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**Erica cerinthoides.**—While we have a great number of greenhouse heaths that flower in the spring, there are comparatively few that bloom towards the end of the summer. One of them is Erica cerinthoides, which forms an upright plant, whose shoots are thickly furnished with deep green leaves. The flowers are borne in a terminal head or cluster, and are tubular, about an inch long, and of a bright crimson-scarlet colour. It forms a very pretty feature in the greenhouse.—K.

**Stenoglottis longifolia.**—Terrestial orchids are at the present day thought much less of than the epiphytal ones, though some of them well merit more attention than they now receive. Among them may well be included this stenoglottis, which, early in the autumn, flowers freely in the cool house. From a foliage point of view alone it is very pretty, as it forms a rosette of narrow, deep green leaves, about six inches long, and prettily undulated on the margins. The slender flower spikes reach a height of about eighteen inches. They are quite erect, and bear on the upper half a large number of pleasing rosy-purple blossoms, dotted more or less with a deeper tint. This stenoglottis grows well in a mixture of loam, leaf-mould, sphagnum moss, and sand, and must at no time of the year be kept quite dry; while during the growing season it needs a liberal amount of water. It is a native of Natal. —S. W.

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## EXHIBITIONS AND MEETINGS.

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### Royal Horticultural Society.

AUGUST 27.

The exhibition held by the Royal Horticultural Society on Tuesday was extensive, and remarkable for the high order of excellence that was characteristic of the greater proportion of the various contributions. Visitors were reminded of the fact that we are now near the close of summer by the liberal contributions of dahlias and the remarkable fine collections of fruit trees and gathered fruit.

#### FLORAL COMMITTEE.

A splendid bank of cut flowers of Buddleias came from the Hon. Vicary Gibbs, Aldenham House, Elstree (gardener, Mr. E. Beckett, V.M.H.). The finely-developed flower spikes were arranged in huge vases, and attracted much attention. The varieties were B. variabilis Heliotrope, B. v. Distinction, a glorious spike; B. v. Delight, very pale lavender; B. v. gigantea, and B. v. Lovely; also the orange-flowered species known as B. globosa.

Messrs. Dobbie and Co., Edinburgh, exhibited dahlias of the collarette type in large variety, arranged in vases and stands. The most conspicuous varieties were Henri Furman, Diadem, Balmoral, Prince de Venosa, Princess Louise, Comtesse Icy Hardegg, and Antwerpia.

From Messrs. W. Fells and Son, Hitchin, came a natural rock garden and a collection of violas. The latter were well coloured, but exhibited signs of the unfavouable weather of late. A collection of saxifragas, sedums, etc., added interest to this exhibit.

Messrs. James Veitch and Sons, Lim., Chelsea, had an exhibit of a miscellaneous character, which included tall standard fuchsias, comprising good examples of Thalia, Richmond Lass, Charming, and Mrs. Rundle. Cannas were included, and were remarkably well grown, the most striking being J. B. van der Schoot Meteore, W. Saunders, Ottawa, and Frau D. Hultzsch; while the streptocarpuses in clear, well-defined colours, were much admired.

From Mr. Amos Perry, Hardy Plant Farm, Enfield, came a fine bank of delphiniums backed with some well-coloured acers. The most attractive delphiniums were King of Delphiniums, Persimmon, Amos Perry, Perfection, Mrs. Creighton, and Lizzie.

Messrs. W. Wells and Co., Lim., Merstham, exhibited hardy flowers in quantity, among others being delphiniums and some fine phloxes, the best of the latter being Le Mahdi, Rose Queen, Arthur Raane, and Selma; while Viola cornuta purpurea and its white form were in excellent condition; while from Messrs. G. Bunyard and Co., Lim., Maidstone, also came a collection of herbaceous flowers. The best among other good features were those formed by delphiniums, autumn-flowering anemones in variety, phloxes, and tritomas.

Messrs. J. Piper and Sons, Bishop's Road, Bayswater, had a fine display of liliums of the speciosum type interspersed with Gypsophila paniculata fl. pl., the whole being backed with palms, chiefly kentias and cocos.

Mr. James Box, Lindfield, Sussex, occupied a corner of the hall, with a large and attractive arrangement of hardy flowers comprising phloxes of high quality. These were arranged in tall columns, and were most effective, especially the varieties Le Mahdi, Selma, Mrs. J. Harkness, Gloire du Marc, and Iris. A clump of Gladiolus America was most pleasing, with the blue variety Blue Jay. Other notable subjects were liliums, pentstemons, tritomas, and gaillardias.

. From Messrs. W. Cutbush and Son, Highgate, came an attractive group of hardy flowers arranged on the floor of the hall.

Messrs. H. Cannell and Sons, Swanley, exhibited single begonias in a good variety of colours, also giant single dahlias and some collarette varieties. From Messrs. James Stredwick and Sons, St. Leonards-on-Sea, came a number of new cactus dahlias the most attractive being Pegasus, Royal, Wild Rose, and Nantwich.

Mr. A. Ll. Gwillim, Canbud Nursery, Sidcup, contributed some very fine double begonias, remarkable alike for their size and brilliant colours. Mrs. A. P. Brandt, Lady Cromer, Margaret Gwillim, and Pride of Eltham being the best.

The Rev. L. C. Chalmers Hunt, Willian Rectory, Hitchin, contributed a display of asters, roses, and early-flowering garden chrysanthemums. The asters were large, but had been treated badly by rain and wind.

Mr. Cobb, gardener to R. R. Cory, Esq., Duffryn, Cardiff, exhibited a collection of dahlias chiefly of a decorative character. They embraced collarettes, pæony-flowered, pompous, and singles. The whole would have produced a better effect with a little more finish, nevertheless the flowers were well grown.

Messrs. H. B. May and Sons, Upper Edmonton, staged an effective exhibit of ferns, dracænas, and ixoras. Among the ferns were noted Nephrolepis Marshalli compacta, an elegant form; N. exaltata superba, and Adiantum Farleyense gloriosum. The ixoras included well-flowered plants of I. Fraseri, I. Prince of Orange, I. Westi, and I. Williamsi.

Messrs. H. Cannell and Sons, Swanley, had a large and attractive display of dahlias comprising cactus, collarette, decorative, and giant single varieties. The finest examples of cactus were Mrs. Douglas Flemming, H. L. Brousson, New York, and Coral, and the most striking collarettes were Negro, Albert Maumene, and Vicomtesse de Monts. The same firm also had some fine double begonias.

On the steps of the northern annexe were fine bowls of nymphæas from Mr. L. de Rothschild, C.V.O., Gunnersbury House, Acton (gardener, Mr. James Hudson, V.M.H.). These included N. stellata, Berlin var., N. pulcherrima, a very fine stellate form, and N. gigantea var. Hudsoniana.

Mr. Ernest Dixon, Putney, exhibited delphiniums, pentstemons, phloxes, and violas with a smart edging of Viola cornuta purpurea.

Messrs. J. Cheal and Sons Crawley, contributed an exhibit of dahlias in which all sections were represented. The pæony-flowered varieties were especially bright, while the single varieties were also very good. Such varieties as Betty, Brilliant, Fugi San, and Kitty standing out well, while the collarette section was well represented.

## ORCHID COMMITTEE.

Messrs. Sander and Son, St. Albans, exhibited a small group of orchids, in which were to be seen numerous examples of Cattleya Atalanta, C. Lord Rothschild, C. nobilis, a finely-flowered example of C. Portia, with Cypripediums Rossetti and Franconia, also charming pots of Burlingtonia fragrans, each carrying numerous spikes, and the quaint Bulbophyllum virescens. Mr. H. T. Pitt, Rosslyn, Stamford Hill, N., had a small and interesting group, in which were some choice cypripediums, Cattleya Dowiana, Odontioda Charlesworthi, Catasetum fimbriatum, and Miltonia. From Messrs. A. J. Keeling and Sons, Westgate Hill, Bradford, came a few choice specimens, such as Cypripedium Ultor and Penelope, Vanda cærulea in varying shades of colour, and the quaint Eria Rhyncostyloides. Messrs. J. and A. McBean, Cooksbridge, contributed a few choice examples, in which the outstanding features were Vanda Sanderiana with two fine spikes, Cattleya Dowiana, and several odontoglossums.

A charming group was that staged by Mr. E. H. Davidson, Borlases, Twyford. It was largely composed of odontoglossums, cattleyas, and cypripediums, O. Helene and O. Nathaniel being most conspicuous, and presented a fine appearance, being lightly arranged. From Messrs. Charlesworth and Co., Haywards Heath, came a small but choice exhibit, especially good being Ærides Lawrenceæ, var. Sanderiana, Cœlia macrostachya, Cattleya Gaskelliana alba, and Pescatorea Rœzli superba.

Messrs. Stuart Low and Co., Bush Hill Park, also had a choice exhibit of orchids, the backgrounds being formed with oncidiums, while a central plant of Lælia crispa was a source of much attraction. Læliocattleya Callistoglossa, C. Vulcan superba, and C. Hardyana were also highly meritorious.

## FRUIT AND VEGETABLE COMMITTEE.

On this occasion Messrs. Geo. Bunyard and Co., Lim., Maidstone, made one of their most successful efforts, and they had a magnificent collection of fruit trees in pots, all loaded with fruit of the highest quality. They also staged large finely-finished apples and pears in baskets, with a collection of filberts and crabs on dishes. The trees in pots included well-coloured, developed fruits of apples Wealthy, St. Martin, Emperor Alexander, Peasgood's Nonsuch, Baumann's Red, Winter Reinette, Gascoyne's Scarlet, Allington Pippin, and Jeanne Hardy. The plums were really remarkable, especially Monarch, President, Coe's Golden Drop, and Late Orange. The pears were beautifully clean and well developed; while the fruits in baskets attracted general admiration, as did also the remarkable collection of nuts.

Messrs. H. Cannell and Sons, Swanley, exhibited a nice collection of apples, pears, and plums. The apples were clean and bright, while the plums included such varieties as Japanese Burbank, Goliath, River's Late Orange, Cox's Emperor, Washington, Kirke's Blue, Monarch, and Jefferson's. Mr. J. Gray, Sandy, staged a collection of carrots which were well developed and of good type. The roots were fine examples of cultural skill and true to type.

Messrs. Jas. Veitch and Sons, Lim., Chelsea, occupied a large space with fruit trees in pots, which were very fine, not only in the crop, but in the colour and development of the individual fruits. Apples, pears, and plums were all represented. The apples included fine examples of Christmas Pearmain, Col. Vaughan, Tyler's Kernel, Wealthy, Worcester Pearmain, and Lady Sudeley. The pears were well represented by Conference, Souv. du Congrès, Charles Ernest, and Marguerite Marillat. Messrs. Stuart Low and Co., Bush Hill Park, contributed a good collection of fruit trees in pots. The figs were a feature here, including figs in a high state of development.

A meritorious collection of plums in boxes were shown by the Hon. Mrs. Merry, Danesbury Park, Welwyn (gardener, Mr. G. Kelf); all were well grown, but the best examples were those of Late Orange, Jefferson's, Prince Englebert, Angelina Burdett, Green Gage, Monarch, and Belgian Purple. Mary Countess of Ilchester, Holland House (gardener, Mr. C. Dixon), sent a collection of ornamental crabs, which attracted much attention, and certainly called attention to this class of fruit for ornamental purposes. A collection of beans and peas came from the Rev. L. C. Chalmers Hunt, Hitchin. The examples of runner beans, Prizewinner, Best of All, White Giant, and Scarlet Emperor being excellent, while fine dishes of peas, as Duke of Albany, Centenary, and Gladstone were to be seen.

Mr. G. W. Miller, Clarkson's Nurseries, Wisbech, had a fine exhibit of his Red Victoria apple. The fruits were very regular and grand in colour; while examples of the growth loaded with fruits stamp it as a very free-cropping variety.

## MEDALS AND AWARDS.

Gold Medal.—To Messrs. G. Bunyard and Co., for fruit trees in pots, and collection of fruits.

Gold Hogg Memorial Medal.—To Messrs. Jas. Veitch and Sons, Lim., Chelsea, for fruit trees in pots.

Silver-gilt Flora Medal.—To Mr. E. H. Davidson, Twyford, for group of orchids.

Silver-gilt Banksian Medal.—To Mr. Jas. Box, Lindfield, for phloxes.

Silver Flora Medal.—To Messrs. H. Cannell and Sons, for dahlias; to Messrs. W. Cutbush and Sons, for hardy plants; to Mr. L. de Rothschild, for nymphæas.

Silver Knightian Medal.—To Messrs. S. Low and Co., Bush Hill Park, for fruit trees in pots.

Silver Flora Medal.—To Messrs. Sander and Sons, St. Albans, for orchids.

Silver Banksian Medal. — To Mr. Pitt, Rosslyn, Stamford Hill, for orchids; to Messrs. S. Low and Co., Bush Hill Park, for orchids; to Messrs. Charlesworth and Co., Haywards Heath, for orchids; to Messrs. H. Cannell and Sons, Swanley, for collection of fruit; to the Hon. Mrs. Merry, Welwyn, for collection of plums; to Messrs. G. Bunyard and Co., Lim., for herbaceous plants; to Messrs. J. Cheal and Sons, Crawley, for dahlias; to Messrs. Pipers, Bayswater, for liliums; to Messrs. Jas. Veitch and Sons, Lim., Chelsea, for miscellaneous flowering plants; to Messrs. H. B. May and Sons, Upper Edmonton, for miscellaneous plants; to the Hon. Vicary Gibbs, for buddleias.

Bronze Banksian Medal.—To the Rev. A. L. Chalmers Hunt, Hitchin, for collection of peas and beans; to Mr. R. R. Cory, Cardiff, for collection of dahlias; to Mr. A. Ll. Gwillim, Eltham, for begonias.

First-class Certificate.—For Melon John Massey, from Messrs. W. Rowlands and Co., Liverpool, and for Cotoneaster divaricata, from the Hon. Vicary Gibbs, Elstree,

Award of Merit.—For Odontioda Enterprise, Davidson's var.; for Odontoglossum Helene; for Lælio-cattleya Amabilis Borlases var., all from Mr. E. H. Davidson, Twyford; for Angræcum O'Brienianum, from Mr. J. S. Bergham, Hampstead; for Læliocattleya Golden Fleece, from Sir Geo. Holford; for collarette dahlia Princess Louise, from Messrs. Dobbie and Co., Edinburgh; for Cactus Dahlia, Edith Carter, from Mr. H. Shoesmith, Woking; for single dahlia Leopold, from Messrs. J. Cheal and Sons, Crawley; for single dahlia, Marion and for pompon dahlia Irene, from the same exhibitors; for cactus dahlia Pegasus, from Messrs. Jas. Stredwick and Sons, for collarette dahlia Antwerpia, from J. B. Riding, Chingford.

A Cultural Commendation was granted to Sir G. Holford for a plant of Cattleya Euphrasia, and to Mr. Roger Leigh for Brown Turkey figs.

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## General Bulb Growers' Society of Haarlem (Holland).

The following awards were made to gladioli at the recent meetings of the Gladiolus Committee of this society:

First Class Certificate. — Glory of Noordwijk, flowers soft yellow, pure; Red Emperor, syn. Meteor, flowers scarlet-red, shaded brownish-red; Panama, flowers of an exceedingly fine form, colour pink, shaded lilac, imported; Sieger, flowers orange-vermilion, the lower petals lilac with white.

Awards of Merit.—Darling, flowers violet, spotted white; Eldorado, flowers clear yellow, spotted reddish-brown; Loveliness, flowers creamy-white, shaded rose and pink; Pfitzer, flowers orange-scarlet, spotted velvety red; Apollo, flowers dark crimson-rose, shaded carmine; Badenia, flowers clear lilac-blue, striped, the spot is dark blue; Johanna, flowers dark brown-red; Martha, flowers purplish-violet; L'Immaculée, flowers white, the lip yellow; Princepine, flowers bright scarlet-red, with a large white spot, from America; Sulphur King, flowers clear yellow, imported from America; Carmen, flowers dark violet, imported; Dr. Dotter, flowers clear sulphur-yellow; Scheybeek, flowers orange-red, spotted white and carmine.

The following awards were made by the Floral Committee at the same meetings:

First Class Certificate.—Cactus Dahlia Richard Box, flowers soft creamy-yellow, very large.

Awards of Merit.—Cactus Dahlia Florid, flowers bright scarlet; Cactus Dahlia Flossi Wells, flowers violet-red; Cactus Dahlia Stability, flowers lilac-rose; Pæony-flowered Dahlia White Lady, flowers white, in the centre creamy-yellow; Montbretia Fire King, flowers bright scarlet, shaded orange, raised by E. H. Krelage and Son, of Haarlem.

## Shrewsbury Floral Fete.

(Continued from page 656.)

### NON-COMPETITIVE.

The trade displays alone would have provided an exhibition far above the ordinary, both in extent, variety, and quality; consequently they formed a fine setting for the competitive contributions, and added materially to the size and interest of the fete.

Messrs. Dicksons, Chester, displayed splendid sheaves of Gladiolus America, G. Lafayette, Lilium auratum rubro-vittatum, Romneya Coulteri, montbretias, roses, early chrysanthemums, phloxes, and other useful flowers. A large exhibit of ferns from Mr. H. N. Ellison, West Bromwich, contained a fine collection of nephrolepsises, Adiantum Glory of Moordrecht, and the new Pteris Parkeri. Mr. Ellison also contributed a very interesting collection of cacti for Mr. F. Adolphe Haage, of Erfurt.

Messrs. Bakers, Wolverhampton, filled a large space in the large fruit tent with phloxes, delphiniums, Lilium tigrinum, pæony dahlias, gladioli, and early chrysanthemums, set out in bold masses. Messrs. Caldwell and Son, Knutsford, displayed a rather crowded lot of phloxes and other useful hardy border flowers. Messrs. John Forbes, Hawick, made up a capital display with choice phloxes, a fine selection of carnations and picotees, and a specially fine set of beautiful pentstemons, among which Mrs. Michie and Sir Dighton Probyn were of great merit.

Picked fruit and fruit trees in pots, splendidly grown and cropped, were finely set up by the King's Acre Nursery Co., Worcester. Glou Morceau, Le Lectier, pears; Black Hamburgh, Alnwick Seedling, and Black Alicante grapes; Mère de Ménage, Emperor Alexander, Cellini, Cox's Orange Pippin, Peasgood's Nonsuch, and The Queen apples, were the pick of a grand lot. The same firm also contributed roses and hardy flowers. In the display of hardy flowers from Messrs. G. Gibson and Co., Leeming Bar, the varieties of Chrysanthemum maximum named Princess of Wales, Wynyard, and Mrs. F. Daniel stood out prominently among many good things. A little collection of alpine plants was tacked on to a very large and bright exhibit of select border flowers set up by Messrs. Isaac House and Son, Westbury, Bristol; the over boxes from this firm were particularly good.

A very effective exhibit came from Messrs. E. Webb and Sons, Wordsley, Stourbridge. Liliums, astilbes, and early chrysanthemums formed a fine background for fine specimens of the firm's specialities in melons, tomatoes, peas, potatoes, beans, onions, etc., and the whole was decorated with arches of sweet peas and carnations. A very interesting collection of cacti was submitted by Messrs. S. S. Thompson, Alfred Road, Handsworth, the mamillarias being particularly good. Mr. Edwin Murrell, Shrewsbury, put up a very interesting and clean lot of roses, and staged many of the latest novelties.

Messrs. Dobbie and Co., Edinburgh, exhibited sweet peas, roses, and collarette dahlias; the former were quite fine for the season, and such dahlias as Queen Anne, Antwerpia, Balmoral, Queen Mary, and Princess Louise stood out conspicuously. The Cosmos and African marigolds were equally fine. Floral designs of great beauty and distinction were displayed by Messrs. Jones and Sons, Shrewsbury; the baskets of roses, liliums, and carnations were very attractive. Choice nephrolepsises and a selection of carnations and violas came from the same firm.

The Royal Horticultural Society's exhibit of forty-two bunches of grapes from the Wisley Gardens was a great attraction to the fruit specialists, as the varieties staged included many not in general use, but of great excellence, as well as some of great attractiveness but little table merit. The varieties were Duke of Buccleuch, Buckland's Sweetwater, Lady Hutt, Mrs. Pearson, Directeur Tisserand, Prince of Wales, Muscat Champion, Black Prince, White Tokay, Lady Hastings, Trebbiano, Golden Champion, Chasselas Napoleon, Madresfield, Appley Towers, Syrian, Foster's Seedling, Gros Maroc, Black Hamburgh, Alnwick Seedling, Duchess of Buccleuch, Bowood Muscat, Muscat Hamburgh, Grizzley Frontignan, and White Frontignan. The whole formed a most creditable and interesting collection.

Messrs. Sutton and Sons, Reading, put up a first-rate exhibit of flowers, fruits, and vegetables. The background was composed of asters, antirrhinums, liliums, and begonias, and formed a capital setting for splendid melons and tomatoes, fine onions, potatoes, carrots, cucumbers, beet, aubergines, marrows, peas, endives, cauliflowers, etc., the whole forming a most attractive exhibit. Messrs. Hobbies, Lim., Dereham, filled a crescent-shaped space with a very large collection of roses, and collarette cactus and pæony-flowered dahlias. The roses were very fresh, and represented the best varieties for garden decoration, and they were used here to flank the high stands of brilliant dahlias.

Messrs. Gunn and Sons, Olton, displayed phloxes in their usual splendid fashion, and set up glorious heads of bloom in great sheaf-like stands, presenting the finest varieties in fine style. Messrs. R. Wallace and Co., Colchester, presented their striking novelty Montbretia Star of the East, together with choice gladioli, kniphofias, etc

Messrs. Dickson and Robinson, Manchester, put up a beautiful lot of Lilium longiflorum, L. auratum, L. speciosum, fine sheaves of perpetual carnations, and a capital set of finely grown vegetables, their peas being perfect. Messrs. Aldersey and Marsden Jones, Tilston, Malpas, staged sweet peas; and Mr. Robert Bolton, Warton, Carnforth, showed sweet largely and grandly, his R. F. Felton, Chas. Foster, Mrs. C. W. Breadmore, Thos. Stevenson, etc., being particularly good. Messrs. Young and Co., Hatherley, Cheltenham, displayed perpetual carnations in capital style, showing large vases of Mrs. Greswolde Williams, Lady Neeld, Cheltonian, Mikado, Britannia, Enchantress, and other good varieties.

Messrs. Fred Smith and Co., Woodbridge, set up a particularly fresh and attractive contribution of hardy flowers, their gladioli, scabious, phloxes, gaillardias, and montbretias being especially good. Messrs. Rich and Co., Bath, also contributed hardy flowers, and made up a fine show with Gladiolus America. Messrs. Jarman and Co., Chard, submitted good vegetables, dahlias in abundance and in great variety, roses, zonal pelargoniums, and their charming sweet sultans. Messrs. Barr and Sons, Covent Garden, put up a first-rate selection of well-grown vegetables, and staged their produce in a most attractive manner.

Lyon Rose, George Dickson, Lady Ursula, Mrs. Fred Straker, and Irish Fireflame, were conspicuously good new roses in an exhibit from Messrs. A. Dickson and Sons, Newtownards. Mr. W. Ferguson, Dunfermline, put up large stands of Lyon, Frau Karl Druschki, and other good roses. Messrs. Hewitt and Co., Solihull, sent hardy flowers in season; and Mr. W. A. Manda, St. Albans, exhibited the beautiful Polypodium Mandaianum, and a very elegant and light asparagus named A. elongatius. Messrs. Felton and Sons, Hanover Square, W., demonstrated the decorative value of imported blooms and leaves of Nelumbium speciosum.

The gladioli from Messrs. Hogg and Robertson, Dublin, were in first-rate condition, and Messrs. Webb and Brand's stately hollyhocks, from Saffron Walden, made a brave show. Messrs. S. Bide and Sons, Farnham, had a fragrant and effective exhibit of the finer varieties of sweet peas, and Mr. R. Prichard, Wimborne, and Mr. J. H. Marsden, each contributed groups of hardy flowers. Very bright and gay were the showy gaillardias set up in goodly numbers by Messrs. Harkness and Son, Bedale. Messrs. Hugh Dickson, Lim., Belfast, were large exhibitors of beautiful roses, their stands of George Dickson and the Lyon showing up finely. Mr. Vincent Slade sent brilliant cut pelargoniums from Taunton, and Mr. A. W. Thorpe, Lichfield, made a fine display with large bunches of first-rate early-flowering chrysanthemums.

Mr. E. Beckett, V.M.H., Aldenham House Gardens, Elstree, put up one of his surprisingly fine exhibits of splendidly-grown vegetables, the quality, variety, and fine staging of the large numbers of kinds and varieties leaving nothing to be desired. Messrs. Clibrans, Altrincham, had a large and meritorious contribution of well-grown vegetables set out in most skilful and attractive manner; if one subject could be selected as of outstanding excellence it would be the celery.

Fruits, picked, and growing on pot trees, from Sawbridgeworth, thoroughly sustained the reputation of Messrs. T. Rivers and Sons; their Cox's Orange Pippin, Rival, and Peasgood's Nonsuch apples were marvels of fine culture, and the pears, chiefly of their own raising, with oranges, plums, peaches, and nectarines, combined to make a striking exhibit of great educational interest. Mr. Albert Myers, Sutton Lane, Shrewsbury, brought forward the best of new and old zonal pelargoniums, and set up plants and cut flowers in splendid style. Mr. Patterson showed violas in his usual good style; and Robert Sydenham Limited, Birmingham, made a good show with floral decorations in rustic stands.

Messrs. H. B. May and Sons, Edmonton, brought up a first-rate contribution of ferns, and put up their group in fine style. Large davallias, adiantums, and platyceriums formed a fine background for Adiantum Glory of Moordrecht, gold and silver gymnogrammas, Nephrolepis todeaoides, N. Marshalli, and other beautiful plumose forms. Of special interest was the display of twenty fronds, showing the varieties that have been evolved during recent years. Two plants of the rare Platycerium Wallichi were included in this exhibit. A brilliant exhibit from Mr. L. Russell, Richmond, consisted of several hundred beautifully-grown plants of Celosia plumosa; scarlet and yellow were the colours chiefly displayed, but there were a few purplish-rose ones also. A few baskets of hardy fuchsias added further interest to this display.

Mr. Amos Perry, Enfield, was a large exhibitor, and he occupied a large half-circle in the large group and plant tent. In the centre of his space was a raised water lily pool of rectangular shape, the front and sides being planted up with choice hardy ferns, while along the back, just beyond the water, Lilium auratum, L. Browni, and L. speciosum rose among bamboos, reeds, and other elegant moisture-loving plants. The circumference of the display was filled in as a broad flower border, with six great masses of blue, lavender, violet, and purple delphiniums, with masses of Artemesia lactiflora, astilbes, phloxes, hollyhocks, heleniums, etc., in between. The whole formed a very bold and striking exhibit that attracted a great deal of attention.

In reporting on the exhibits of dahlias we were only able to give the names of the winners of the first and third prizes in the class for collections, owing to the entries being somewhat scattered. We are now in a position to say that the second award was made in favour of Mr. J. Walker, Thame.

## Royal Horticultural Society of Aberdeen.

AUGUST 22-24.

Favoured with three of the best days experienced in August, this society held its annual show in the Duthie Public Park, Aberdeen. Than this beautiful park no more ideal situation for such an exhibition could be found in Scotland. As may be supposed, the spell of bad weather experienced this season has had a very serious effect on flowers and plants. Everything is in a very backward state, and the effect was to a great extent reflected here. Notwithstanding these untoward circumstances, however, there was a great floral display.

The entries amounted to over 1,600, and the exhibits were displayed in three large marquees, which were, as usual, laid out in a very tasteful manner. Lady Cowdray of Dun-Echt, Aberdeenshire, gracefully performed the opening ceremony, and the worthy secretary, Mr. J. B. Rennett, assisted by a large committee, capably carried out all the arrangements.

### PLANTS.

There was an exceedingly fine display of plants, the fuchsias, begonias, gloxinias, pelargoniums, and early-flowering chrysanthemums being of great excellence. It was very pleasing to observe here that the majority of the exhibitors found some place in the prize list Mr. William Dick, gardener to Alexander Ledingham, Esq., S.S.C., Queen's Road, Aberdeen, had a very meritorious win for the four best plants in flower. Mr. A. Brebner, gardener to Colonel W. S. Gill, Dalhebity, Aberdeenshire, took first and second places for best specimen plant in flower with well-grown examples of Disa grandiflora. The foliage plants proved a very attractive feature. Mr. A. Brebner, Dalhebity, had a capital win for ferns, his Adiantum cuneatum and A. gracillinum and Nephrolepis Whitmani being greatly admired. Dracænas and asparagus were well shown. Here Mr. Elder, gardener to Professor Baillie, of Norwood, Aberdeen, had a capital win. For the best specimen foliage plant, Mr. J. W. Brechin, Ardo, Belhelvie, Aberdeenshire, deservedly gained first place. Hardy ferns were well shown, and Mr. A. Duncan, gardener to Lord Provost Maitland, had some capital specimens. Zonal pelargoniums formed a very attractive class, and here the honours were deservedly awarded to Mr. Brechin, Ardo, Belhelvie, Aberdeenshire. Mr. W. Dick, gardener to Mr. Ledingham, Queen's Road, Aberdeen, led finely for pelargoniums and begonias (single and double), and Mr. James Burnett, gardener at Summerfield Hospital, Aberdeenshire, had premier honours for fuchsias and petunias, all well-grown specimens. For best six plants for dinner-table decoration Mr. John Petrie, gardener to Sir Thomas Burnett, Bart., Crathes Castle, Aberdeenshire, took first and second places in fine style; Mr. Douglas, Kepplestone, being third.

### CUT FLOWERS.

It was in this department where the chief effect of the adverse weather was most noticeable. Yet some capital collections were shown, especially in the professional classes. The silver challenge cup presented by Messrs. James Cocker and Sons, Springhill Nurseries, Aberdeen, for best eighteen roses, distinct, was finely won by Mr. A. Brebner, Dalhebity. Mr. John Petrie, Crathes Castle, and Mr. Lockhart, Craigiebuckler Cottage, Aberdeen, divided the honours in the other rose classes with Mr. James Burnett, Summerfield Hospital. For a long period one of the outstanding features of this show has been the fine display of sweet peas. Mr. Petrie, Crathes Castle, had a very fine collection, the colouring of the blooms being remarkably good. Very fine were his flowers of Scarlet Empress, Dobbie's Cream, Rosabelle, Thomas Stevenson, Edrom Beauty, R. F. Felton, and Hercules. Mr. J. A. Grigor, gardener to Mrs. Dunbar Dunbar, of Seapark, Forres, N.B., made a good second, and R. A. Grigor, gardener to Mr. T. Ranken, Dalswinton, Dumfries, was third. For the best six bunches, however, the last-named was first, Mr. McKinnon, gardener to Lord Aberdeen, Haddo House, being second. Mr. A. Cumming, Rubislaw, Aberdeen, had also some choice entries, his honours being well deserved. Mr. J. W. Brechin, Ardo; Mr. J. M. Dunn, Aberdeen; and Mr. W. Lockhart, Craigiebuckler, had leading honours for dahlias, which were much admired. The first-named gardener also led for asters and gladioli with flowers of high quality. Marigolds were a good class. For twenty varieties of cut flowers and fine foliage bedding plants Mr. W. Dick, Queen's Road, Aberdeen, worthily gained first place with a very meritorious collection. Carnations were well shown Mr. Lockhart, Craigiebuckler Cottage, leading; while for begonias, Mr. J. McCombie Brown, Park House, Aberdeenshire, obtained the premier award. Phloxes, stocks, pansies (show and fancy), violas, and chrysanthemums were well shown, leading places being taken by Mr. Brechin and Mr. John Garden, Inverurie.

### FRUIT.

Mr. W. Harper, Tulliebelton, Perthshire, was first for a collection of hardy fruits. Mr. John Grigor, gardener, Seapark, Forres, proved a very good second. Neither apples nor pears were numerous, and here the leading places were taken by Mr. Harper, Tulliebelton, and Mr. H. B. Smith, Burdshaugh, Forres. Grapes were better shown than for some time, and Mr. R. A. Grigor, Dalswinton, Dumfries; Mr. Petrie, Crathes Castle; and Mr. McKinnon, gardener to Lord Aberdeen, divided the honours.

### VEGETABLES.

This section was one of the outstanding features of the show, the excessive moisture conducing not a little towards this end. For the best collection, Mr. R. A. Grigor, gardener to Mr. T. Ranken, Dalswinton, led the way. For salads, Mr. Scorgie, Springhill, was unquestionably first. Mr. Harper, Tulliebelton, Perthshire, was very successful, his cauliflower and carrots being much admired. Onions were very fine, and peas and leeks were specially good. The leaders here were Mr. W. Harper and Mr. R. A. Grigor. The great feature in this section was, as usual, formed by the potatoes. They were of great excellence, and, where all were so good, it would be invidious to particularise; but it must be remembered that such well-known growers as Mr. Brebner, Dalhebity; Mr. James Ferguson, Linton Gardens, Cluny; Mr. J. McCombie Brown, Mr. J. W. Brechin, and Mr. John Yule were among the prize-takers.

### NURSERYMEN'S CLASSES.

The contributions to these were of much merit, and proved a great source of attraction to the many visitors. For the fourth time in succession, Messrs. James Cocker and Sons, Springhill Nurseries, Aberdeen, carried off the silver cup for the best thirty-six rose blooms. Messrs. Adam and Craigmile, Fernielea Nurseries, Aberdeen, were second. For wreaths, the last-named firm won grandly with a most artistic production. For bouquets—hand, spray, and shower—floral designs, and ladies' sprays, Mr. Alex. Burns, jun., New Market, Aberdeen, and his eldest daughter, Miss Burns, Victoria Road, Torry, had matters entirely their own way.

### AMATEURS.

Here there was a remarkably creditable display in all departments. In the section for pot plants, Mr. John Davidson, Hardgate, Aberdeen; Mr. Alex. Gillespie, Northfield Place, Aberdeen; and Mr. Alex. Kemp, Stoneywood, near Aberdeen, divided the principal honours with capital entries. For cut flowers the competition was very keen, and some fine entries were shown, chief among which were those sent in by Mr. George Harper, Huntly, Aberdeenshire; Mr. G. Maclennan, Forres, N.B.; Mr. W. Farquharson, Cults, Aberdeen; Mr. John Davidson and Mr. John M. Dunn, Aberdeen; Mr. J. McLaren, ditto; and Mr. R. Marnock, Kintore, Aberdeenshire.

Needless to say, the exceedingly fine weather which prevailed throughout the whole three days, and the fine band of the Gordon Highlanders, lent not a little to the marked success which the show attained financially, as well as horticulturally.

### NON-COMPETITIVE.

There were some very fine displays made by local nurserymen and seedsmen, and these were distributed throughout the various marquees Undoubtedly the finest in the show was that made by Messrs. James Cocker and Sons, Springhill Nurseries, Aberdeen. This firm had an exceedingly fine collection of herbaceous and hardy perennials, roses, etc. One of the most interesting and attractive exhibits in the show was that of Messrs. Benjamin Reid and Co., Pinewood Park Nurseries, Aberdeen, which included a number of new and rare plants. Messrs. W. Smith and Son, of Burnside and Silverhillock Nurseries, Aberdeen, had a very brilliant display, their prominent exhibits consisting of perpetual-flowering carnations, roses, gladioli, sweet peas, and herbaceous flowers. Mr. M. H. Sinclair, seedsman, Aberdeen, had a very fine collection of cut flowers. Mr. James Robertson, seedsman, Aberdeen, staged a capital collection of flowers of herbaceous plants, and also well-grown plants of various kinds. Messrs. Leslie and Macdonald, West End Nurseries, Aberdeen, had a large exhibit of very useful decorative plants. Mr. P. McHardy, Green, Aberdeen, had on exhibition a very attractive display of plants, etc.

## National Hardy Plant Society.

SECOND ANNUAL CONFERENCE.

The second annual conference of the above society was held at the George Hotel, Shrewsbury, on Thursday, August 22. Mr. W. H. Paine presided over a large attendance. A letter was read from the chairman, Mr. A. J. Macself, regretting his inability to be present.

Mr. T. W. Sanders, F.L.S., gave a most interesting paper on "Are Flower Shows Advancing Hardy Plant Culture as they might and ought to do?" in which he came to the conclusion that horticultural societies and flower shows were not doing justice to hardy plants, and that substantial prizes should be offered to the trade, professional, and amateur growers. When the prize money given for bouquets, sprays, table decorations, and other side classes was considered with the amounts now offered for hardy flowers, the point was quite clear. Shows were apparently fond of following the beaten track, and he should like to see more initiative in new classes, and in this direction the National Hardy Plant Society had been already of some assistance with their model schedule, and no doubt might help further in the future. He should like to see, in these days of herbaceous borders in colour schemes, a prize for a collection of hardy flowers, staged in various colours, say, six of each colour, but, of course, details could be worked out if a start was only made. Such a class would be of more use to people who went to shows for the purpose of seeing plants to add to their borders than all the present classes. Then, again, there were plenty of groups of inside plants, very similar to what one saw ten years ago. Why not work out a class for a group of hardy plants? Classes for rock plants, grown in cool houses, would show the amateur what a wide field of beautiful subjects lay to hand for a trifling cost, and without any expense for heating.

The lecturer also dealt fully with the present methods of showing and judging, and pointed out many improvements which might be made.

In the course of the discussion, Mr. John Collingridge agreed with the suggestion that hardy plants were very much neglected in schedules to-day. Large prizes were often given for plants which were grown by a few people only. The principle was wrong, and he thoroughly endorsed the lecturer's remarks. Mr. G. Gibson, whilst agreeing with most of the suggestions thought that with regard to the colour scheme, there would be a difficulty in carrying it out, owing to the limited number of colours available in one month at one time. Mr. J. Harkness thought that the difficulty as to a colour scheme could be surmounted. There was never more interest than now in hardy plant flowers. The schedules should be absolutely definite, and in the big classes he thought the money should be pooled, and allotted to all the exhibitors by points. Culture should be first, decorations second.

Mr. Edginton thought that the large classes of hardy plants were badly defined, and, as framed, it was impossible to stage on 300ft. for natural effect. He criticised that wording and the judging of several classes at recent shows, and instanced as examples of natural effect Gladiolus America in May, and Lilium umbellatum cut down to six inches in height. He thought that rock gardens would be more natural with 600ft. and two facings, with the same number of plants at present crowded into 300ft. Background of bamboos should be discarded. Mr. T. R. Hayes agreed with the lecturer, and also endorsed Mr. Edginton's remarks, and thought that the society should communicate with the Shrewsbury Committee as to more clearly defining their group class, whilst recognising the start that had been made.

Mr. Bouskell agreed with Mr. Sanders, and thought, from the exhibits at Shrewsbury that day, that any large grower could have had arranged a colour-scheme class with the material he had at the show. He pointed out that the model schedule had already borne fruit, and he read particulars of Class I. at Messrs. Robinson's Birmingham Show, on August 28, which was a great advance on any previous class that he had noticed. He urged individual members of the society to endeavour to influence shows in their district, which the society as a whole could not get in touch with at once. Mr. Quick thought that it would be a step in the right direction if non-competitive exhibits were judged on their merits, the same as competitive.

The Chairman said that the best argument that hardy flowers were popular was that nurserymen found them pay. There was a more artistic arrangement to-day. It was no good beating about the bush, and they should demand proper treatment for hardy flowers. Gladiolus America exhibited in May was not advancing hardy plant culture who would regard the group as typical of plants in bloom at the period. He should like to see a class for delphiniums, twelve spikes of each staged for natural effect. With regard to the framing of a class, he thought it would be better to have given a number of sorts with a given number of spikes of each; and if a prize were offered for judges of hardy plants, it might have a stimulating effect.

On the proposition of Mr. Bouskell, seconded by Mr. Gibson, a hearty vote of thanks was accorded to the lecturer for coming up from Aberystwith to give his paper. Mr. Sanders, in reply, said that the discussion had justified his title. He should like to see a class for hardy orchids at the Temple Show and classes for veronicas, primulas, etc., at other shows.

There was a discussion on the herbaceous species of the genus veronica, about fifty species and varieties being exhibited. The confusion in the nomenclature was pointed out by Messrs. Bouskell and Paine, who had made a list of every species exhibited at the show, many of which appeared under several names. It was resolved that Messrs. Sanders, Paine, and Irving, with the hon. secretary, be appointed a committee to correspond and report at a future meeting. The Hon. Secretary (Mr. Frank Bouskell), Market Bosworth, Nuneaton, will be glad to receive specimens of any species or varieties or, preferably, a small plant to bring before the committee.

### AWARDS.

Awards of Merit.—To Erica cinerea atrococcinea, from Messrs. Hayes, Keswick; to Bidens dahlioides, a fine form, with pink flowers, quite hardy at Sheffield, from Messrs. Artindale and Son; to Gaillardia Mrs. Mackellar, very fine habit, large yellow blooms with carmine centre, from Messrs. Harkness and Co., Bedale; to Primula japonica autumnale, a new local race from Japan, flowering in the autumn, robust habit, and fine flower trusses; to Lobelia Glory of St. Anns and Lobelia Glow, from the Tully Nursery, Kildare; and Thalictrum dipterocarpum, from Messrs. J. Veitch and Sons.

Lobelia W. H. Paine was exhibited, and considered the finest recent introduction. As only one spike was exhibited the Council asked for it to be staged again. Messrs. Kelway exhibited some fine spikes of delphiniums second bloom, which the Council desired to see again.

## PROPOSED CITY ROSE SOCIETY.

A short time ago correspondence appeared in the Gardeners' Magazine suggesting the formation of a rose society exclusively for the City of London people. Coming as it did from that ardent horticulturist and rosarian, Mr. A. E. Protheroe, the suggestion is well worthy of consideration, the only possible objection to the idea being that horticultural societies are so very numerous that an undue increase in their numbers must be discouraged, and the addition of even a single new society should not be countenanced until it is conclusively proved that its formation will be the means of advancing some phase of plant culture or of doing really good work that is not already being done by existing societies.

Mr. Protheroe convincingly shows that the National Rose Society and the Royal Horticultural Society do not meet the exact requirements of the many enthusiastic rosarians to be found among men engaged in the City of London, whose business ties prevent them devoting a day to exhibiting at or visiting a rose show. Nor can the London dweller compete with provincial growers, although a set-off to the latter objection is the fact that the N.R.S. schedule contains classes restricted to London growers. The expenditure of time and money is undoubtedly the great consideration, and yet no society or show can be carried on without this expenditure.

It may not have occurred to those who suggest the new society that there exists, with headquarters in the City, a society called The National Amateur Gardeners' Association, in connection with which regular meetings and small evening shows are held almost in the heart of the City as well as a larger annual show on a Saturday afternoon in the height of the summer season.

Would it not be possible for our rose-loving City friends to throw in their lot with this established society, joining hands with it on the clear understanding that both at the evening shows and the annual exhibition they, as City rosarians, should have classes to meet their needs and approval? It seems to me this would in many ways be preferable to starting another new society. The N.A.G.A. could well do with increased support, and the rosarians would find it possible, by having small classes at each evening show throughout the summer and autumn, to pursue their particular pleasure, and enjoy several opportunities for exhibiting or inspecting roses at a comparatively small cost.

A. J. M.

**Pilea muscosa.**—Plants of a dwarf mossy character that may be easily grown in small pots are in many gardens in considerable demand, especially such as can be readily renewed when, after being employed for various decorative purposes, they become shabby. Such a plant is this member of the nettle family, a native of the West Indies. In a warm house it strikes root, and grows without any trouble. Popularly it is termed the Artillery Plant, from the fact that, when moistened, the flower buds expand forcibly, and discharge their pollen like tiny puffs of smoke.—K.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

ORCHIDS.—A. J., Bristol: I am much interested in orchids, and I am very pleased to say that I find the Gardeners' Magazine most helpful to me in their cultivation. I am now writing to ask whether you will kindly answer the following questions? What is the meaning of the term insigne as applied to cypripediums and other orchids, and from which species, varieties, or hybrids did Cypripedium Clinkaberryanum originate? —The term insigne is the Latin for remarkable, and as applied to orchids it is intended to indicate that the plants are remarkable for their beauty. The parents of Cypripedium Clinkaberryanum were C. Curtisi and C. philipinense.

CERTIFICATE FOR EFFICIENCY IN PRACTICAL GARDENING. — Would you kindly tell me how I can obtain a certificate of efficiency in practical gardening? At the present time I have an excellent situation as gardener to a gentleman, and he helps me very much by lending me books on gardening and botany. I have studied these subjects for five or six years, and practical gardening since my school days. Apart from my master's books, I have been a subscriber to the Gardeners' Magazine for a long time, and have found it of immense value in my endeavour to become thoroughly proficient, both in the practice and science of horticulture.—We regret our inability to give our correspondent, whose reference to the Gardeners' Magazine we much appreciate, the information he seeks. So far as we are aware, there is no society or other body that undertakes examinations in the practice of gardening. The annual examination in horticulture held by the Royal Horticultural Society includes a number of questions relating to the practical work of the gardener,

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and you would probably find the preparation for that examination, and also sitting for it both interesting and useful. You will be able to obtain particulars from the secretary of the Royal Horticultural Society, Vincent Square, and for a small sum you can procure a copy of the papers set for several examinations.

FITTING AND PLANTING CONSERVATORY.—A Twenty Years' Reader: Will you please advise me on the following points relating to the fitting-up and planting of a conservatory? My employer is having a conservatory erected, adjoining the dwelling-house. It is to be iron, 24ft. long, 12ft. wide, and about 16ft. to top of lantern. We are situated in a very exposed position, open to the east and south-westerly winds. It will be slightly heated from the north, and is to be heated by an extension of pipes from the radiators (or house service), which are heated by an efficient boiler. Do you think that a 4in. flow and return pipe carried all round the house would be sufficient? Sometimes I am in a mind to recommend a fountain, about 5ft. in diameter, for the centre. How could it be constructed, and what would it be likely to cost? I intend making a rockwork underneath the staging for ferns, and use a few creepers mixed with them. I also intend growing a pair of lapagerias, tacksonia, plumbago, and stephanotis against the back wall and angles. Will you please give your opinion of the above at your earliest convenience?—Your views with regard to the arrangement of the conservatory are very good; but the floor space is not sufficient for a fountain 5ft. in diameter. If you have a fountain, the basin should be smaller than you suggest, and it should have as a centre-piece a marble figure, suitable for a glass structure contiguous to the house. A flow and return 4in. pipe round the house would enable you to keep the inmates safe from frost, but, as the pipes will have to be placed below the level of the floor, it will be preferable to have two flows and one return to enable you to maintain the desired temperature in severe weather without difficulty. There will hardly be sufficient warmth for the stephanotis, but a bougainvillea would succeed and prove very attractive.

ROSE NOT BLOOMING.—J. F., Kettering: We hope to be able to reply to your question in our next issue.

FLOWER SHOW CONDITIONS.—Chas. S. Prideaux, Dorchester: Will you kindly answer the following question? "A prize is offered for a collection of fruit and vegetables to be competed for as follows: Eight distinct varieties of vegetables (one dish of potatoes only); eight varieties of fruit (pines and bananas excluded). In the rules there is one which reads as follows: In collections of fruit, black and white grapes count as distinct varieties. Would this rule be broken by a competitor staging a collection comprising the following: Three dishes of grapes (one black, and two white), two dishes of peaches, two dishes of nectarines, and one melon?"—A competitor who stages a collection in which the fruits shown are as you suggest would incur no risk of breaking the rule you quote. It is open for him to exhibit eight varieties of grapes if he chooses, but, whether it would be wise for him to do so is another matter. The rule has no bearing whatever upon the competition for the prizes for the collection referred to, and we fail to understand the purpose it is intended to serve. No rule is necessary to allow black and white grapes to count as distinct varieties. They always have been distinct, and are always recognised as distinct. Evidently the compilers of the schedule had kinds in their minds, but failed to differentiate between kinds and varieties when engaged in the work of compilation. Grapes, peaches, nectarines, and melons are, for example, distinct kinds, and it is customary to state in the conditions governing the competition in the classes for collections of fruit of so many kinds that black and white grapes will, for the purpose of the competition, be regarded as distinct kinds. As varieties are alone mentioned, the rule does not apply to the competition, and it really has no meaning.

PRIMULA OBCONICA POISONING.—F. H. B., Merton Park: Having from time to time heard and read of cases of poisoning caused by Primula obconica, these occurrences appear to be frequent. The sufferings of a neighbour induce me to enquire whether any readers of the GARDENERS' MAGAZINE can give, through your columns, the means of combating this poison. Primula obconica is a choice plant, and many people are unaffected by its poisonous nature; but where it is grown, susceptible persons are liable to suffer. Hence, the need for a widespread knowledge of any known preventive or cure.—We shall be pleased to give publicity to the particulars of any means by which those who are liable to being poisoned when the leaves of Primula obconica come into contact with their skin can be rendered immune, or of some preparation by which the effects of the poison may be quickly repressed. The effect of the poisoning varies considerably in the case of those who suffer from handling plants of this primula. In some cases it is light, and in others it is so serious as to endanger the life of the person poisoned. The most recent case that has come under our notice was so serious that, although the patient was under two or three medical men of the highest eminence, his illness was very acute, extending over several weeks, and his recovery was very slow. Hence the importance of a really efficient preventive, if known, having the greatest possible publicity given to it.

## OBITUARY.

### Mr. E. M. Eversfield.

With much regret we record the death of Mr. E. M. Eversfield, of Denne Park, Horsham, which occurred somewhat suddenly at Killiecrankie, Scotland, a few days since. Mr. Eversfield, who was in his seventieth year, has long been one of the leading amateur rosarians in the South of England, and many are the prizes that he has won at the exhibitions of the National Rose Society and elsewhere. His greatest triumph as an exhibitor of roses was the winning of the Amateurs' Champion Trophy at the metropolitan exhibition of the National Rose Society in July last.

## FORTHCOMING ENGAGEMENTS.

TUESDAY, September 3.—Scottish Horticultural Association.

WEDNESDAY, September 4.—Carlisle Horticultural Society; two days.

Northern Counties Fruit Show and Congress at Carlisle; two days.

Glasgow Centenary Show; three days.

British Association Meeting at Dundee.

THURSDAY, September 5.—Dundee Horticultural Society; three days.

SATURDAY, September 7.—French Horticultural Society of London.

Waterhouse Flower Show.

MONDAY, September 9.—National Chrysanthemum Society; Floral Committee at three o'clock.

United Horticultural Benefit and provident Society.

TUESDAY, September 10.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m., on "Cape Pelargoniums," by Miss Troyte Bullock; Scientific Committee at 4 o'clock.

A book of timely interest is Sanders' "Bulbs and their Cultivation" (2s. 10d. post free from the Publisher, 148, Aldersgate Street, London). Written by an expert whose advice is always practical, it is a volume in which gardeners will find all they want to know about the culture of bulbs. The book is admirably illustrated.

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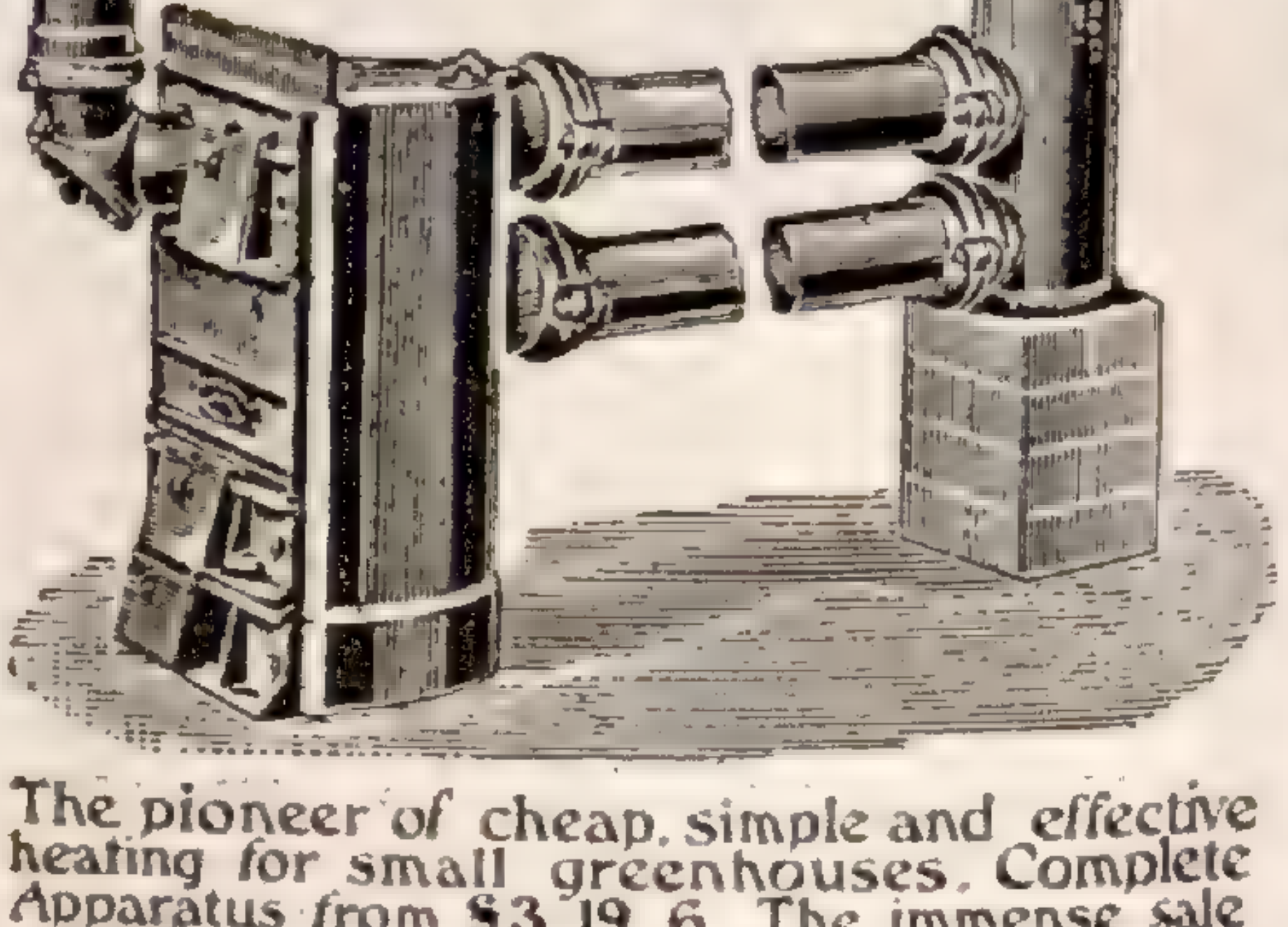

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# Employment THE GARDENERS' MAGAZINE Register.

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**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

C. PAXTON, Branches Park Gardens, Newmarket, highly recommends YOUNG MAN as Rose Grower and Assist in Pleasure Grounds in a large establishment; smart, civil, and obliging; 7½ years' experience here; desires a change; age 31.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

G. BATES, Head Gardener to A. D. ACLAND, Esq., Digswell House, Welwyn, Herts, can thoroughly recommend strong LAD, age 17, as IMPROVER (Inside); two years' experience; Bothy preferred.

GENTLEMAN recommends LAD (17½) as Improver; understands Kitchen and Flower Garden; anxious to learn greenhouse work; good reference; Bothy preferred. Apply, 2,842, Office of this Journal.

GARDENER (Head).—Advertiser offers his services to any Lady or Gentleman requiring a thoroughly practical man; life experience in first-class establishments, including Leonardslee; present situation four years as Head; disengaged September 7; age 35. G. W. WYATT, Stonehurst Gardens, Ardingly.

GARDENER (Single-handed or Second on large place); life experience, Inside and Out; excellent references; age 32; married, boy nine years. EASTER, St. Leonards, Tring, Herts.

GARDENER (Head Working); thorough and practical in all branches of up-to-date gardening; 28 years' good references; Land and Stock if required; no family. FOOTE, Adsdean, Chichester, Sussex.

GARDENER (Head, where another is kept), life experience; 14 years in last place; single; Good reference; age 39; family gone abroad. G. TYERS, 5, Letchford Terrace, Hatch End.

GARDENER, age 25, married, seeks SITUATION (Single-handed, or where two or more are kept); experienced in all branches; good references. Apply, EATON, Alderton Road, Tewkesbury, Gloucestershire.

GARDENER (Head of three or more), life experience; good recommendations from present and previous employers; age 29; married when suited; first-class certificate from the Royal Horticultural Society. G. BOWLES, 10, Devonshire Road, Mottingham, Eltham, Kent.

GARDENER (Head); life practical experience in all branches; disengaged when suited; six years' good reference from present employer. KETTLE, Violet Cottage, Whitstone Road, Pen-y-lan, Christchurch, Newport, Mon.

GARDENER (head of two or three), good knowledge of Herbaceous, Alpine, Aquatic, Bedding Plants, etc.; 3½ years Foreman to Captain Dallas Yorke, Esq.; highly recommended; abstainer; married when suited. MORRIS, Walmsgate Hall, Louth, Lincs.

GARDENER (Head working, where three or more are kept; married, no family; age 49; experienced in Vines, Peaches, Melons, Cucumbers, Tomatoes, Stoves and Greenhouse Plants; Flower and Kitchen Garden and Pleasure Grounds, House and Table Decoration; 5 years in present place; good reference. W. SCOTT, Bulwick, Wansford.

GARDENER (Head Working, where two or more are kept); life experience, Inside and Out; Fruit, Flowers, Vines, Vegetables, etc.; married, no family. BLAGBURN, Sherwood Farm, Mitcham.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Single-handed, or with help); experience inside and out; vines and poultry; good references; married, one child (boy, 8½); age 39. C. H. SMITH, 44, Ravenbourne Road, Catford. (No circulars.)

GARDENER (Head Working).—Mr. COLLETT, Kirtlington Park, highly recommends H. STEDMAN where three or more are kept; life experience Inside and Out; Vines, Fruit, Flowers, Kitchen Garden; age 35; married, two children; life abstainer; good references. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GARDENER (Head Working); age 34, married, no family, seeks SITUATION where one or two are kept; 18 years' experience, Vines, Peaches, Vegetables, etc. H. HOUSMAN, 36, Nelson Street, Gainsborough, Lincs.

GARDENER (Head Working), age 32, seeks SITUATION( where two or three are kept; thoroughly experienced in Fruit, Flowers, and Vegetables, Roses, and Herbaceous Plants; 8½ years' excellent reference from present situation. T. H. ORAM, Grangehyrst Lodge, Grange Hill, South Norwood, S.E.

GARDENER (Head where two or three are kept); life experience in all branches; good testimonials; age 31.—LEMON, Alveston, Stratford-on-Avon.

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GARDENER-FOREMAN (chiefly Inside), age 25; 11 years' experience all departments; six years Inside and Out; five years Inside; abstainer. H. BROWN, North Lane, Roundhay, Leeds.

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GARDENER seeks SITUATION (Single-handed); experienced (Inside and Out), or good Kitchen Gardener; good references; married; age 32. E. REYNOLDS, 93, London Road, Maidstone, Kent.

GARDENER, age 27, seeks SITUATION (Inside and Out, or Kitchen Garden); 14 years' experience; disengaged; good references; married. A. SHONE, High Street, Oxted, Surrey.

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LORD ESME GORDON LENNOX recommends his GARDENER as Head Working; life experience in all branches; Hothouse, Fruit, and Flower specialist; age 29; married, one child; disengaged September 14th. T. JAMES, Hamsey House Gardens, Lewes.

MR. C. PHILLIPS, The Gardens, Leybourne, Witley, Surrey, can highly recommend E. FERRETT as JOURNEYMAN (First, Inside); age 23; leaving through place being sold.

MRS. WALTON WILSON, Shotley Hall, Northumberland, can highly recommend H. WRIGHT to any Lady or Gentleman requiring a capable and trustworthy Head Working GARDENER; thoroughly up to his work both Inside and Out; 1st class certificate R.H.S., 1912; married, two children; 6 years present; leaving for no fault, and at liberty when suited. Apply WRIGHT, Shotley Hall Gardens.

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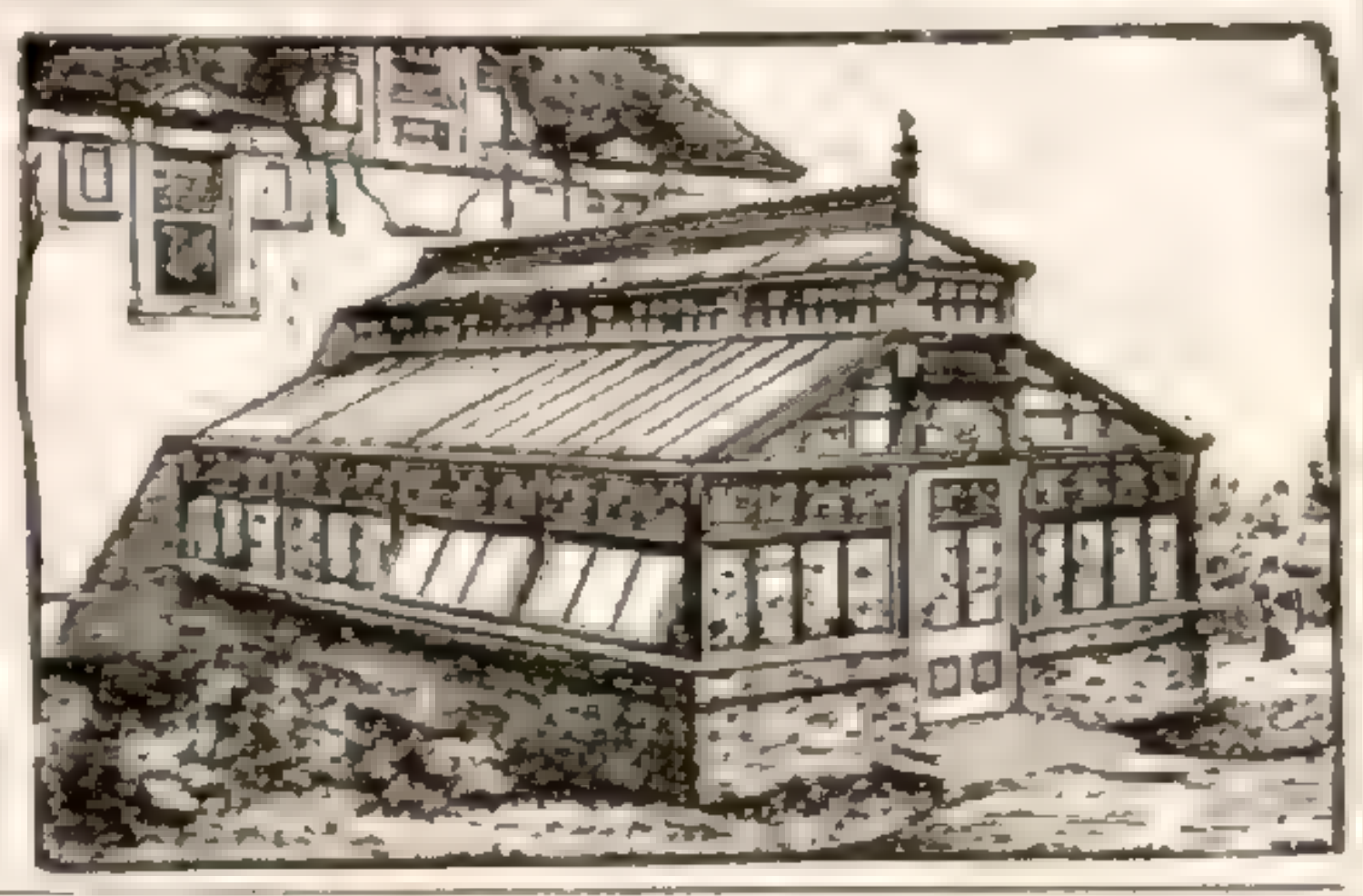

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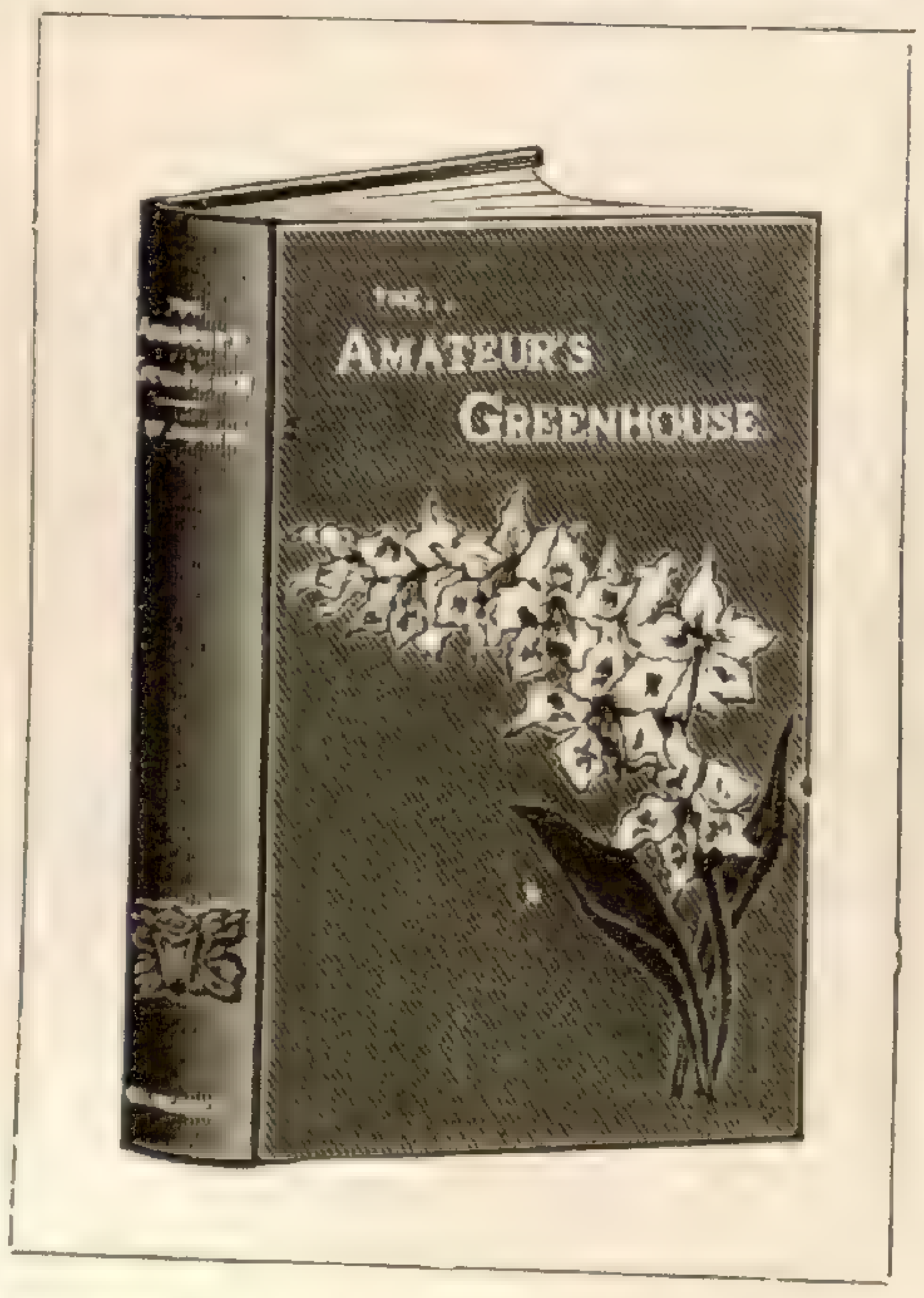

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SATURDAY, SEPTEMBER 7, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

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### Epiphytes and Parasites.

In the great struggle for existence which, in the course of incalculable æons of time, has led to the evolution of innumerable forms of plant and of animal life, the result, in the former, has been the production of many plants which live upon others, both as simple attachments or epiphytal ones, or as deriving their nourishment from their involuntary hosts, thus constituting true parasites. To the former class an enormous number of orchids, ferns, mosses, and other genera belong, their existence being fostered by congenial conditions of warmth and moisture, particularly the latter, which enables their seeds to germinate and develop without the presence of that soil which the great majority of plants require. The roots commence by penetrating crevices in the bark, and, as the plant develops, it often does so in such a manner that leafy debris accumulates around it, so that in time it derives sufficient nourishment in this way to form, in tropical humid regions and in forestal shade, huge and flourishing specimens, as are exemplified by many of our finest orchids. Most of these, in their native habitats, are found on trees in association with ferns and other epiphytes. Among the ferns of the epiphytal class, the most prominent are platyceriums, or stagshorn ferns, which bear two kinds of fronds, viz., large shield-like, barren ones, which grow perpendicularly, and are admirably adapted for the lodgment behind them of leafy debris, while the fertile ones are bluntly forked, and springing from the central axis of growth hang pendulously downwards, the better to scatter the spores with which the backs of these terminals are literally coated. Other kinds of ferns, such as davallias, cover the tree trunks with their creeping rhizomes, and, in particularly humid habitats, many species of filmy ferns do the same, not only on trees proper, but also on trunk-forming ferns as well. As is always the case in Nature however, there are grades and grades of evolution, and the epiphytal character varies accordingly in degree. Thus, in our own familiar ivy, we see adventitous roots developed, which assist it to cling to its support, though mainly dependent upon the soil for its nourishment, while an immense number of climbing plants use the robuster vegetation to aid their ascent, and produce no such roots, but only tendrils or clinging foliage, or by mere spiral twisting maintain their hold without being epiphytes at all in the accepted sense, which implies an entire independence of soil support. Epiphytes therefore indicate by their very nature the need for moist aerial conditions, and successful culture is, consequently, largely dependent upon such provision. Parasitic plants, on the other hand, demand no such environment, since their roots, or root equivalents, penetrate the substance of the host plants, and derive their nourishment, either partly or entirely, from the sap contained therein. The mistletoe, for instance, belongs to the former category, since it produces foliage containing chlorophyll, which enables the plant to contribute something to its own growth, though mainly dependent upon the host. The dodder, on the other hand, produces only rudimentary leaves, associated with an abundance of flowers, and derives its sustenance entirely from the unhappy plant which it invades. Other parasitic plants thrive upon the roots of the host plants, as does the orobanche, or broom rape, the lathræa or toothwort, and others. The most extraordinary example of this type is Rafflesia Arnoldj, a tropical parasite, which grows on tree roots, and produces no leaves at all, but only immense brown flowers, very fleshy, and as much as a yard in diameter. This is one of the most curious plants known, since it has a strong carrion-like odour, which induces deluded flies to lay their eggs in it, the resulting grubs being doomed to starvation by the absence of proper food, a double instance of plant tergiversation. A vast number of plants, mainly fungi, support themselves parasitically, in the form of diseases, the potato disease, for instance, being due to the attack upon, and permeation of, the tissues by a fungoid plant, Peronospora infestans, while another fungal host derives sustenance from dead plant material. These, however, belong to neither epiphytes nor parasites, but to the tribe of saprophytes to which living plants pay no toll, though it is suspected that some of these are not over-particular, and sometimes contribute to their larder by invading living tissues as well. Nature, in fact, never draws hard and fast lines between kindred organisms, and although man may classify her creations, there are always forms on the border lines he endeavours to define, which are not exactly either the one thing or the other, and baffle his ingenuity.

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MR. J. DUNCAN PEARSON.

**Mr. J. Duncan Pearson,** whose portrait we have the pleasure of giving herewith, is a member of the firm of Messrs. J. R. Pearson and Sons, whose activities at Lowdham are well known, not only in the United Kingdom, but far beyond its boundaries. As in the case of his two brothers, he combines a keen interest in horticulture with business aptitude of a high order, but while Mr. A. H. Pearson and Mr. C. E. Pearson have concentrated their energies on fruit trees, roses, and other classes of nursery stock of a similar character, Mr. Duncan Pearson has devoted his attention to bulbous flowers, and obtained for himself a prominent position among the leading authorities on this valuable class of plants. He has been specially identified with the development of the daffodil during the past twenty-five or more years, and during that period has done excellent work. Mr. Duncan Pearson began the raising of new daffodils early in the 80's of the last century, and has continued this interesting work until the present time. His first seedling of merit won a silver medal at Birmingham, but it failed to realise its early promise, and consequently was not introduced to cultivation. Alert, which is still a very good flower of the Tenby type, was one of his earliest efforts. The greatest success Mr. Duncan Pearson has achieved has been in the great Leedsi section, a cross effected between Minnie Hume and Madame de Graaff producing a remarkable break in this class of flower; Lowdham Beauty Capella, Norah Pearson, Mrs. Franklin, and Vega being some of the best. There were hundreds of other really good seedlings that were not named or distributed. Later on a cross between Minnie Hume and Weardale Perfection produced some more giant Leedsi of large size and good form, and of these Elfrida Pearson and Mavourneen are the best. Another variety of special merit is Florence Pearson, a large white trumpet daffodil, which is now well known to exhibitors. This was raised from a cross between Emperor and Madame de Graaff. Only five plants resulted from the cross, and this was one of them. Mr. Duncan Pearson has not entered into the raising of daffodils from seed on a large scale, but has made a few crosses between varieties which it was thought likely to give good results, and has achieved a remarkable success, having regard to the number of seedlings raised.

**Purchase of Palm Seeds.**—The Agent-General for New South Wales has received a telegram from the State Government advising him that the Department of Agriculture in Sydney desires to advise possible purchasers of seeds of Kentia palms in England, on the Continent, and in the United States of America, that the second Royal Commission has been appointed to inquire further into the control of the trade and prices, and that it is undesirable to book binding orders for any length of time with any persons until the result of the Commission is known.

**Plant Propagation.**—During the past month Professor Bayley Balfour, V.M.H., gave a course of Saturday evening lectures to the working classes of Edinburgh. The lectures were given in the lecture hall of the Royal Botanic Gardens, and among the several subjects dealt with was that of plant propagation. In this lecture Professor Bayley Balfour dealt with the propagation of flowering plants from the side that is of most interest to the gardener. At the outset the difference in result from propagation by seed, involving the inheritance of mixed characters from two parents, was contrasted with that from vegetative propagation, by which pure transmission from one parent is secured. Vegetative propagation alone was, he said, to be trusted for the perpetuation of definite races. All plants could be propagated vegetatively, although statements in a contrary sense were often made. The gardener must learn from Nature the essentials for his artificial propagation of plants, and the two dominant factors in the process were adequate water supply and adequate food supply. Nature's method of propagation by layering, as in the strawberry, and by separable buds and shoots, as in bulbous plants and plants like the potato, was shown to be the prototype of ordinary gardening operations. The formation of callus, primarily as a healing tissue consequent on wound stimulus, but with the capacity to produce roots and shoots, was the foundation of the whole practice of propagation by cuttings. The problem the gardener prepared for himself when making a shoot cutting was to preserve the vitality of a part which he separated from its source of water supply until such time as callus formation on the cut surface provides an absorptive mechanism of new roots. The effect of the wound stimulus in promoting callus formation was often excessive, and exuberant callus might mean no rooting of the cutting. This might be corrected by further application of the wound stimulus by paring the callus, which induced root formation. Some plants rooted as cuttings readily if the cutting was made at the node of the shoot; others must be cut through the internode. The ease with which soft-wooded plants could be propagated by cuttings, as compared with hard-wooded plants, was a consequence of the greater water content of the former. The lecture was freely illustrated by lantern slides, and proved of much interest.

**Shrewsbury Floral Fete.**—Considering the uncertainty as regards the weather during the week in which the flower show at Shrewsbury was held, it is gratifying to record the fact that during the two days the sum of £2,548 13s. was taken at the gates. Of this sum £931 18s. 1d. were taken on the first day, and £1,616 14s. 11d. on the second day. The total considerably exceeds that of last year, when the takings were seriously affected by the railway strike then in progress, but it is less than the total of 1910, when the takings at the gate amounted on the first day to £1,070 16s., and on the second to £2,034 19s. 1d., making a total of £3,105 15s. 1d. These amounts are exclusive of the receipts from the sale of tickets at a cheap rate.

**Bulb Culture in Moss Fibre.**—Several classes for bulbs grown in moss fibre will, as usual, be provided in the schedule of the bulb show that will be held, under the auspices of the Royal Horticultural Society, at the Horticultural Hall, in March next. The classes will be for six single hyacinths, grown in separate vases, six vases of tulips, and six vases of narcissi. The dates of the bulb show are March 4 and 5.

**The Magnificent Collection of Butterflies** which was formed by the late Mr. H. J. Adams, of Enfield, has been removed to the Natural History Museum, and is regarded as one of the most valuable gifts of its kind that has yet been received. Mr. H. J. Adams, who died in April last, left his collection of butterflies and moths upon trust, with the consent of the residuary legatees, for the use of the nation. It is believed that Mr. Adams spent upwards of £40,000 in the acquisition of the collection, which consists of about 150,000 specimens, arranged in 68 handsome mahogany cabinets, and includes specimens of about 200 species described by Mr. Adams. It need hardly be said that the collection contains many rare species, but it should be mentioned that the colours of the more attractive species are very bright.

**Exclusion of Plant Diseases from America.**—The Secretary for Agriculture in the United States has intimated his intention of prohibiting the importation, from the 16th inst., of four species of pine from Great Britain and other of the leading countries in Europe. The object is to prevent the introduction of the white pine blister mite into the United States. He has also announced that the importation of potatoes from Great Britain, Australia, and several other countries will be prohibited as from the 20th inst., with a view to prevent the introduction of the wart disease into America.

**Forestry in Wales.**—With a view to the improvement of forestry in Wales a scheme has been issued by the Board of Agriculture under which the North Wales University College will undertake advisory work in forestry for the whole of the Principality. The appointment has been sanctioned by the Board of Professor Fraser Storey, of the University College, Bangor, to the position of Advisory Officer under the scheme. Professor Storey will retain his professorship at Bangor, and Mr. T. Thomson, B.Sc., has been appointed assistant lecturer under him.

**National Rose Society.** — This society will hold its autumn show in the Horticultural Hall, Vincent Square, Westminster, on Thursday next, the 12th inst. With reference to the prospects of the exhibition, Mr. E. Mawley, V.M.H., writes under date of August 30: "Should fine weather set in before the show, there ought to be at the exhibition a magnificent display of autumn-flowering roses; and, after all, these are by far the best and most satisfactory roses to grow, and those that have made the greatest advances in recent years."

**British Gardeners' Association.**—A meeting of this association will be held at the Goold Hall, St. Andrew Square, Edinburgh, on Wednesday next, September 11. The chair will be taken at seven p.m., and the speakers will include Mr. James Harris, of Liberton; Mr. W. B. Little, of Carlisle; and Mr. Cyril Harding, secretary of the association.

**A Novel Use for a Vegetable Marrow.**—St. John's Hospital, Twickenham, adopted this summer a new method of adding to its fund. A large vegetable marrow was displayed in the window of a shop in Twickenham, and passers-by were invited to pay a penny and to guess its weight. In the result the marrow went to the most successful guesser, and the money to the hospital.

**Tobacco Culture in England.**—The experimental culture of tobacco for commercial purposes is being carried on, with the permission of the Government, in Norfolk and Hampshire. The largest of the farms on which the tobacco plant is grown is at Church Crookham, Hampshire, and is situated on the estate of Mr. J. A. Brandon. Some fifteen acres are under tobacco, and, notwithstanding the unfavourable weather conditions, the crop presents a promising appearance. Mr. Brandon considers that part of Hampshire in which the farm is situated as suitable for the cultivation of tobacco on commercial lines, and also that where hops will grow tobacco will thrive. The principal part of the crop consists of Virginian tobacco, but Mr. Brandon is cultivating some thirty other varieties at the request of a member of the Development Commission. With reference to the commercial side of tobacco culture, Mr. Brandon is of the opinion that a yield of between 1,500 and 1,600 lbs. per acre would pay well. Last year he obtained 800 lbs. per acre, and sold the crop to a firm of tobacco manufacturers, who have offered to purchase the whole of the crop produced this year.

**Horticulture in Manchester.**—We are pleased to learn from the "Manchester Courier" that a movement is on foot for the purpose of bringing about a revival in horticulture in the district of which Manchester is the centre, and to make the Royal Botanical and Horticultural Society of Manchester even more famous than it was in its palmiest days. Time was when the city of Manchester was one of the chief centres of horticultural activities, and its exhibitions such as to command the attention and evoke the admiration of all who were interested in competitive gatherings. Many years have elapsed since the Whitsun exhibitions of the society were anticipated with not less interest than are those annually held in the gardens of the Inner Temple, and for a considerable period but little has been done at Old Trafford of direct horticultural interest. Now we are told "The society is about to place the district where it should be in the matter of holding a great horticultural show with others for the season, and with the wide co-operation and the enlistment of many interests, is about to take a desirable lead in that direction, and assume its proper position." We trust this promise may be fulfilled in the interests both of the city and the society, for it appears to us little short of lamentable that a great and wealthy centre of industrial activity such as Manchester unquestionably is should be doing nothing beyond its public parks to encourage a taste for flowers among those who reside within its boundaries. According to our contemporary, "There are few areas more capable alone of supporting a vast display of fruits, plants, flowers, and produce, few with demesnes richer in glasshouses, few with more skilled cultivators of the best of all things. With such a nucleus to attract, the kingdom would come and compete on a level." There is no occasion for questioning these statements, but we do not attach much importance to the fact that the society has expended £100,000 in the encouragement of horticulture. If the society is once more to take a leading position among the horticultural organisations of the country and place the district "where it should be" in matters horticultural, but little reliance must be placed upon the traditions of the past. What will be found necessary to ensure success is a scheme of work, not based upon what was done during the second half of the last century, but so prepared as to fully meet present-day requirements. Procedure on the old lines is not likely to result in so high a degree of success as could be desired; but such change in the constitution as would enable it to become a two-county society (i.e., for Lancashire and Cheshire), and thus extend its operations over a wide area, could hardly fail to obtain the support necessary for carrying out useful work on a large scale. Among other work that may be undertaken with advantage is the provision of a Central Horticultural Hall for the two counties and a good library of works on gardening. It may not be possible to provide a hall and library at once, but these are objects that should be aimed at from the first.

## SHREWSBURY SHOW ON THE SECOND DAY.

### A Few Things Seen and Heard.

The International Show in London, of course, stands out as the leading horticultural event of the year, but we only have Internationals at rare intervals, and Shrewsbury comes every year, a grand show, immense crowds, and enthusiasm that is unequalled in the country. You may tell the annual visitor to Shrewsbury Show, who goes as regularly as he spends his holiday week at Blackpool, that Shrewsbury is the best show out of London, but he doesn't believe you, for he asserts, in face of all and any argument, that London is not in it, and Shrewsbury Show is the best in the country. In some respects I am inclined to agree with him.

On the first day Shrewsbury is not unlike a metropolitan exhibition. There are judges who are familiar at London shows—and I think Shrewsbury might change its judges a bit more frequently without casting any reflection on their ability, because changes of this kind are always good—there are the reporters, the exhibitors in force, the officials, and all the big-wigs connected with this wonderful society who attend on the first day. All these good folk predominate on the opening day, but on the second they seem to have vanished from the scene, and the show becomes the property of the cheap tripper.

By a means of its own, the Shrewsbury Committee has persuaded railway companies to run the cheapest of excursions from all parts of the country, and early on Thursday morning the people come in, a happy, rollicking crowd, some of whom have travelled a hundred miles or more with fourteen in the carriage, and they protest that they have enjoyed the experience. The Shrewsbury crowd seems to come from everywhere. They are mostly working folk out for the day, and if you listen you hear the broad dialects of the North and Midland shires, and rub shoulders with the cotton spinner from Lancashire, the cutler from Sheffield, the potter from Hanley, the farm labourer from Salop, and the collier from Wales, and ten to one most of them have been to Shrewsbury many times before.

They haven't all the same object in view, and one man in the carriage in which I travelled informed me that he was going to hear the music, and if anybody wanted to find him during the day, he would not be far from the bandstand. It was true, and several times I noticed him, oblivious to everything except the music of the band of the Coldstream Guards, and it was the same with hundreds of others who sat for hours near to the bandstand sublimely happy. It struck one that this love for good music is a fine trait in the character of British human nature, and Shrewsbury Show without its music would be destitute of one of its great attractions.

It doesn't seem to matter which of the many attractions the crowd likes best, every unit of it seems to make a rule of going through the tents. In fact, the Shrewsbury crowd is one that intends to have its shillingsworth, so it does the show tents in a business-like manner; thousand after thousand they press through, good-humoured, and laughing if they get stuck at a tight corner, and seeing as much as they can of the fruit and flowers as they are carried along. I have been more than once in an aristocratic crush at a Temple Show, but for real good humour on the part of those who are crushed, give me the second-day crowd at Shrewsbury.

I rather admired the attendants at the trade stands, who were there, of course, to do business. They smiled quite patiently as the crowd cracked jokes at their expense, and I paused in front of a big rose exhibit at a moment when the crush was not so great. The attendant was in conversation with a man, addressing him with "Yes, sir," and "No, sir," just as he would a real live lord at a Temple Show, pointing out to him the merits of this rose and that, and taking down an order in his book. "Thank you, sir, where shall we send them to?" when the transaction was finished, and as I listened it transpired that the man ordering the roses—and quite a good order, too—was a coal miner from the Forest of Dean. He would have looked a bit out of place at a Temple Show, but then Shrewsbury on the shilling day is a cosmopolitan gathering, and it contains florists as keen as any who paid their two guineas to see the International.

I noticed one lady from Yorkshire—you can tell where most of the people hail from if you listen to their talk—helped herself very freely to the literature on the different trade stands, and by the time she had finished she had got quite an armful. "What has ta got theer, Mary?" said another lady, apparently an acquaintance whom she met at the exit of the tent. "They wor givin' 'em away," said the former, as she held up for inspection a dainty little order booklet with a small pencil attached by a silken cord. "I thought they'd be so nice for th' children; they'll be mighty pleased wi' 'em, and you must tak' 'em summat back wen yer go out for t' day." Such is one of the uses to which the literature distributed by nurserymen at shows is put.

I think I only saw one man who looked as if he had received a shock of disappointment. He stood before Messrs. Blackmore and Langdon's splendid exhibit of tuberous begonias, and his face was blank with astonishment. He had evidently never been to a big show before, and after he had recovered himself, he turned round to his companion, and said, "Bill, I'm done; I thought I could grow begonias, but I think I'll throw my whole lot away wen I gets whoam. Bill, aren't they grand?" Away in a little, probably home-built, greenhouse, not far from a Lancashire cotton mill, that man grows begonias, and is a local champion. He had come to Shrewsbury to find that someone else could grow them better, and the shock was great to him. "Come your ways on," said the man addressed as Bill, as he tugged at the arm of his companion. "You won't be so cocky about yer begonia growin' after this, th' baloon ull be goin' up in a minit, and I doan't want ter miss it."

"Call them dahlias!" said another horny-handed son of Sheffield or somewhere in that locality. "Whatever are things comin' to?" The man was looking at a big display of the modern Collarette dahlias, but, instead of admiring, a look of the most intense disgust spread over his face. He was evidently a dahlia grower, and perhaps an exhibitor of the old school, and to see what his favourite flower had been brought to troubled him. He moved on, and the next time I saw him he was standing before a stand of show dahlias exhibited, I think, by Mr. J. Walker, of Thame, as happy as a sand-boy, looking, after all, as if the world was not lost, and it was a real study to watch him critically examining first one flower and then another, before he drew from his waistcoat pocket a bit of pencil about half an inch long, with which he proceeded to write down a few names on the margin of the programme of events that he carried in his hand.

It is to the credit of the Shrewsbury Committee that, while its show has grown to such gigantic proportions, it still encourages the cottagers, and one tent was devoted to their exhibits, but I think the society might do something more to educate its cottagers in methods of exhibiting. When inside the marquee I might have been hundreds of miles away from the famous Shrewsbury Show in some little village that was holding its first exhibition. Not but what the produce was good, but there were all the things that are so painfully and regretfully characteristic of cottagers' shows, such as asters exhibited in paper collars, Phlox Drummondi adorned in the same absurd way, twelve pansies occupying positions of stately solitude on a board big enough for a dozen Japanese chrysanthemums, and big, ungainly bundles of garden flowers which the card underneath described as "nosegays." Surely one expected better things than this at Shrewsbury, even in the cottagers' tent, and one wonders how many years the judges in this department have officiated, and whether they have ever made a report to the committee suggesting improvements in the methods of exhibiting.

It is interesting to note how the personality of a man follows him. I have said that Wednesday at Shrewsbury is the day for the notabilities of the gardening world, and so it is in a general way, but on Thursday afternoon I espied one well-known figure, none other than the genial Mr. S. T. Wright, of Wisley, and evidently some people had the idea that, as he is generally managing shows, he must have been managing Shrewsbury, for one exhibitor approached him and asked him a question as to the arrangements that had been made for removing the exhibits. As for Mr. Wright, he answered just as genially as he did after the day and night work at the International, but, poor fellow, he doesn't manage every show he goes to, and one thought that they might have left him alone at Shrewsbury.

The closing of the tents is an exciting time on the second day at Shrewsbury. The balloons have gone up, the bands have finished, the acrobats are packing up their traps, the boxing kangaroo has doffed his gloves, the horse-jumping is over, and there is nothing left but the fireworks. The trips are due out, at least some of them, and a few odd thousands of people suddenly remember that they must take something back with them. So they crowd to the tents again just when the police are trying to clear them, and the exhibitors have not the least difficulty in getting rid of flowers, or, in fact, anything else for which they have no further use. You see them later wending stationwards, dozens of them with the spoils of the show in the shape of bunches of flowers, etc., the same rollicking crowd that arrived in the morning, and the quaint old Shrewsbury streets are like a fair. They climb back into the carriages, perhaps a dozen in one the same as they came, they shout farewell to those left behind, and sit down to discuss the adventures of the day. They have been to Shrewsbury Show once more, and will come again next year if they are alive and well. This is how the great event maintains its popularity. H.

# HORTICULTURAL EDUCATION IN FRANCE.

(Continued from page 621.)

## Superior Primary Schools.

It is not only for an elementary primary school that the school-garden is extolled, and rightly, for its agricultural and horticultural instruction, but also, and much more so, for the superior primary school.

The instruction has been carefully set out by the Ministerial decree of August 18, 1893, which states precisely, in a very clear manner, in which way and with what developments it is most convenient to carry them out, and also what amount of time ought to be devoted to agriculture and horticulture respectively during the three years' training.

By the terms of Article III. of this decree, the programme and time-table of the professional sections (amongst which agriculture figures) ought to be fixed for each establishment by the academy inspector upon the suggestions of the manager or manageress, after first consulting with the masters and mistresses, taking into account to a very large extent the local needs.

Just as the general directions say, the instruction in manual work in a superior primary school ought to have, like the elementary primary school, an educative character. In the superior primary school it would at all times assure for the pupils, by more varied lessons and by more extensive application, all the necessary knowledge for practice in life.

Here again the school-garden allows of demonstrations, applications, and lessons, which together form a sound horticultural training.

Normal Schools for Masters and Mistresses.—It is mostly at the normal school—that is to say, in the nursery—where elementary masters and mistresses are trained in what is important to assure for them the necessary instruction and agricultural education. The better the master, as a pupil who is to become a teacher, is prepared for his task upon the subject of agriculture, the better he will appreciate the beauty and utility of it, and the more successful and productive of good results will be his efforts once he enters upon the field of teaching.

The theoretical course of agriculture is entrusted to departmental professors who are responsible for it in all parts of France. (Note.—In each department of France there is a normal school for masters and also one for mistresses.)

Horticulture forms an integral part of this important course. In some normal schools (such as those of Clermont-Ferrand, Dijon, and Melun) a special professor and ex-pupil of the National School of Horticulture at Versailles is always engaged for the horticultural section.

One can understand how useful this latter organisation is in diffusing the science of garden culture. Thus instructed, however zealous the professor of agriculture may be, he cannot displace a specialist in the teaching of such a special branch as horticulture represents, and which, to be successfully taught, requires special knowledge.

For this reason it is to be hoped that there will be an increase in the appointments of special professors of horticulture.

This point is not the only one upon which there is ground to persist in connection with agricultural and horticultural training in normal schools.

A recent revision of the syllabus of studies for these schools fixes the examination for the "brevet supérieur" (or higher grade certificate) for the end of the second year; as a consequence of this alteration the courses of agriculture and horticulture are carried forward into the third year (which is called the "year of application") and shortened somewhat. So that the study of these matters, in spite of their great importance, remains at the present time without any certification, which is very regrettable.

The manner in which practical instruction is given in the garden of the normal school lays itself open also to some criticism. More often than not it consists rather more in purely manual work, with the object of rendering immediate help to the steward, than in judicious applications, well thought out, and really worthy of the name. It is, however, very necessary that future masters should be initiated and trained practically in the various horticultural operations of primary importance, such as planting seed-beds and plantations, cutting out suckers, layering, taking cuttings, and pruning trees, shrubs, etc., etc.

It should be necessary, moreover, in order to complete it, that the practical instruction should be certified to by a special and thorough examination immediately before leaving.

## Horticultural Instruction for Young Girls.

What has just been said about primary schools of every kind—i.e., primary elementary schools, primary higher grade schools, and normal schools—applies to those for young girls as well as to those for boys—that is, so far as relates to the official syllabus. The persons who drew these up appear to have considered that instruction in gardening is at least more important for the former than for the latter.

In all country gardens, in fact, and more particularly in the modest allotments, which are much the more numerous, and, one may say, also the more worthy of interest, it is the mistress of the house, as housekeeper, who assumes the care of the garden. Hence the necessity for giving instruction in horticulture to young girls.

Gardening figures as a subject for professional tuition in the syllabus of January 18, 1887, for higher-grade primary schools for girls in the "Physical Education" section, under the headings of "Manual Work," "Work in the Garden," "The Fruit Garden," "The Kitchen Garden," "Notes on the Cultivation of Flowers."

The same subjects are prescribed for the primary normal schools for mistresses.

Gardening has figured for the first time amongst the subjects for tuition in these schools in the syllabus of August 4, 1905 (for two hours per week, usually on Thursdays in the third year).

This includes the cultivation of the principal vegetables, the pruning and treatment of fruit trees, making seed-beds, removal of suckers, etc., etc.

## Schools of Housekeeping.

If tuition in gardening is to have any place at all, it should be included in the syllabus of schools of housekeeping, and more particularly in those schools which are situate in agricultural districts.

One cannot too much insist upon this point, since it is so singularly important for the future mistress of a household to know how to manage her garden, which is so closely connected with rural life and household management.

Also does horticulture hold a sufficiently important place in the science of household management? Though only recently organised in France, in the neighbouring countries like Switzerland, Belgium, etc., the teaching of agricultural household management has been mostly given in ambulatory schools, to which at present, in France, an almost exclusive preference seems to be given, yet these ambulatory schools only very imperfectly answer their intended object—that is, to give to a young girl an education with professional instruction sufficient to put her in a position to fulfil the important rôle which devolves upon her on a farm.

Then near us there exist already at least twenty movable schools of housekeeping, whereas one finds only three or four stationary schools of this kind, and these are all devoted to the teaching of dairy work.

In the movable schools, where the full course lasts only three months, tuition in gardening can only be theoretical, and this is precisely one of the points where these schools, which are excellent from all other points of view, fail.

# GROWING BULBS IN FIBRE FOR HOUSE DECORATION.

The growing of hyacinths in water used to be, and still is, very popular with a large number of amateurs who have no other facility for cultivating them successfully. Growing bulbs in fibre is only a modified form of the water cultivation. Under both methods successful flowering is due entirely to the nourishment the bulbs receive from the water. I have never been able to see much beauty in a hyacinth flowering with its roots visibly dangling in a glass of water, and, in my estimation, the fibre method of cultivation is in every way to be preferred. If ordinary care is exercised from the time the bulbs are placed in the receptacles, there need be no fear of failure. It is surprising how many varieties of bulbs will flourish in fibre—narcissi, tulips, crocuses, liliums, fritillarias (the latter, perhaps, make the prettiest bowls of all), iris, lily of the valley, spiræas, etc., all do exceedingly well. I have occasionally had a bowl of freesias do very well, but, on the whole, culture in soil is to be preferred for these flowers.

One or two well-defined rules may be laid down, which should be observed rigidly.

1. Pot at the right time.
2. The bulbs must all be good large specimens of the variety (except hyacinths, see below).
3. The bowls must be of the requisite depth to suit each section of bulbs.
4. Always keep the fibre sufficiently moist.

I make it a rule to pot up Roman hyacinths about August 20, and these bulbs may be flowered any time from early in November to Christmas. If freesias are to be grown in fibre, it is imperative that they be potted not after, say, August 15, for if potted later, the flower scapes almost inevitably go blind. There is one other point about freesias which should not be overlooked—never cover the bowls with any material, as is generally done with most other bulbs; if covered, it is surprising how quickly the bulb breaks and throws up a weak top growth, which frequently leads to the flower scapes being more or less imperfectly developed.

At any time from September 1 to 15, I pot up a batch of narcissus, hyacinths, crocus, and fritillarias. These bulbs all suffer more or less from exposure to the atmosphere, and it is advisable to pot them not later than the date named. I may say here that I prefer what are known as Miniature or Dutch Roman hyacinths to the larger bulbs for growing in bowls. Six to nine bulbs of Miniatures in a bowl will throw medium-sized spikes of flowers which are decidedly more graceful and decorative than three to four heavy, massive spikes of large flowers. The Miniatures, for some reason, are also much more certain in flowering, and if one variety only is grown in each bowl instead of a mixture of colours, the effect is decidedly more pleasing.

About October 1 to 15, experience has proved to be the best time for potting tulips. These bulbs do not start into root growth nearly so early as the foregoing kinds, and if potted too early in fibre, are liable to an attack of a green fungoid growth which reduces the vitality of the bulbs, and frequently destroys them altogether. Tulips should therefore only be potted in fibre just before root action will commence.

The choice of fibre for potting is entirely a matter of cost. I prefer cocoanut-fibre to moss fibre, if obtainable at the same price, as cocoanut-fibre takes and retains the moisture more evenly and remains perfectly sweet at all times. Whether it is necessary to put shell with the fibre is very doubtful, although I have not actually put it to the test.

The method of procedure in potting is as follows: Shoot the fibre on the floor, or, if only a small quantity, put it in a box, and gradually moisten with water as it is being turned over. The fibre should be just moist enough to cling together a little when squeezed in the hand without water actually dropping from it. Have broken charcoal at hand, and place a few pieces in the bottom of each bowl, then fill the bowls with fibre to within about one to one and a-half inches of the rim, according to the size of the bulb being potted, but, in any case, let the bowls be quite full and fairly firm when finished. I have noticed bowls that have had the fibre and bulbs too far below the rim, and scarcely any fibre covering the bulbs; that is quite a mistake. It is better for the crown of the bulbs to be rather above the rim of the bowl than below it, and the bulbs should be well covered with fibre. I frequently round up the fibre quite an inch above the rim of the bowl; it affords extra root-run, and it is quite a common thing for the roots to come out all round the edges of the bowls, the roots being so strong and healthy. I have also found from experience that tulips require a deeper bowl than do narcissus or other bulbs; a bowl of less than four and a-half to five inches in depth is too shallow for tulips, six inches is a much better depth. If put in shallow bowls they frequently go "blind," or if they do bloom, the flowers are invariably very small.

TULIP WHITE POTTEBAKKER.
As grown in fibre.

I mention the latter point because there is a tendency amongst manufacturers and dealers to offer for sale quite shallow bowls that look pretty, but are of little use for bulb culture. As soon as the bulbs are potted they should be put in a cool, dark place; I usually put them in a cold frame and cover with fibre to a depth of four inches, and let them stay there usually until the end of December, until they are placed in a warmer temperature to bring them into flower. The bowls containing crocuses should not be covered after potting, neither should they be forced at all. They do much better if allowed to grow naturally. A cool cellar is a good place in which to put them, and they need not be covered if it is fairly dark. Never put them in a close, warm cupboard, as that will make the growth weak and spindly.

Attention should be paid to watering from the beginning. As soon as the bulbs begin to make root, the fibre should be kept regularly moist, too much water will do very little harm, but if allowed to become dry, the roots shrivel, and, with shrivelled roots, failure must ensue.

It seems almost unnecessary to say that when top growth commences the bowls should be placed where there is plenty of light and fresh air. A friend of mine said last spring, "Why don't my hyacinths succeed? They seem to make no progress." They were in a room thirteen feet from a window, where they had very little air, and yet were expected to grow like mine, which were not more than a foot from the glass and had an abundance of air. Light and air are essential to success. The following is a list of my favourite varieties of the several kinds for growing in bowls, those which have proved to be always a success over a period of years.

Narcissus. — Aspasia, Autocrat, Campanelle odorus, Elvira, Emperor, Empress, Golden Spur, Lulworth, Mont Cenis, Ornatus, Princeps, Rugulosus, Sir Watkin, Vesuvius, Victoria.

Tulips. Couleur Cardinal, Duchesse de Parma, Fabiola, Keizerskroon, King of Yellows, La Grandesse, La Reine, Prince of Austria, Rose Gris de Lin, Rose Luisante, Thos. Moore, Van der Neer, Vermilion Brilliant, White Pottebakker. Darwin varieties.—Bartigon, Clara Butt, Dream, Europe, Isis, King Harold, Maiden's Blush, Mr. Farncombe Sanders, Pride of Haarlem, White Queen, William Copeland.

Crocus.—King of the Whites, Dorothea, Purpurea grandiflora, Yellow, Sir Walter Scott.

Miscellaneous Kinds.—Chionodoxas, muscari, Fritillaria meleagris, Spanish iris in great variety, Iris reticulata, and spiræas.

W. G. L.

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## RAMBLING NOTES ON ROSES.

Being an ardent lover of flowers in general, and roses in particular, my greatest pleasure is to walk among, and, I might almost say, commune with, the varied forms of garden roses. An early-morning stroll is simply delightful, and it has been my pleasure to enjoy this more than usual during the present rose season.

The glorious colourings of such varieties as Mrs. Arthur Waddell, Mrs. Aaron Ward, Theresa, Rayon d'Or, Madame Ravary, Souvenir de Stella Gray, Jacques Vincent, Margaret Molyneux, Senateur Mascurand, James Coey, A. R. Goodwin, and Marquise de Sinety are almost indescribable. Then we have Lady Hillingdon, Duchess of Wellington, and Lady Pirrie, that seem to be even surpassing themselves just now.

I had intended a brief description of most of these varieties, but it is difficult to select any without omitting those of almost, if not quite, equal merit.

Theresa is simply glorious as seen growing in small beds upon well-kept turf. The deep, clear orange-apricot flowers, beautifully splashed with carmine and madder-pink, carried in great profusion upon a bronzy-red foliage, produce an effect that is unique, but when backed by green turf the effect is heightened. I cannot imagine anything more showy and charming than this rose well cultivated under such conditions. It is only semi-double, but very free and lasting, while its perfume is very noticeable as one approaches, and though similar to Madame Ravary, Madame Abel Chatenay, and Madame Pol Varin-Bernier, I can distinguish the presence of Theresa from its perfume without the plants being visible.

Theresa is a new rose, sent out from Newtownards in 1909, and this is the second season I have seen it in quantity out of doors. It is a hybrid tea, and must not be confused with Theresa Bevan, another rose with beautifully shaded coppery-yellow and carmine flowers. This last is a tea-scented variety, large, double, and very free flowering, altogether distinct from Messrs. Dickson's Theresa, and I mention it because of its similarity of name having caused confusion in more than one instance known to me. Both are excellent and indispensable in the garden.

The depth of colour in Messrs. Pernet-Ducher's roses is truly remarkable, and that found in Mrs. Arthur R. Waddell (1908) catches the eye immediately. In the bud stage it is a glowing rosy-scarlet, opening into reddish-salmon, with more scarlet upon the reverse of its petals. The buds are very long, and the blooms only a little more than semi-double, but they stand much longer than most of this class, and they are wonderfully helped by the deepest of green foliage and copper-red thorns. We have a sport from this that is almost as deep a yellow as Rayon d'Or, and I am pleased to find it good again this year—the third year of its existence.

Rayon d'Or is in its happiest mood just now, and very intense in its colouring, being the deepest yellow we have. The distinct shade of carmine found in its earliest bud stage is charming; but what I most value it for is the persistent shade of yellow, never fading but rather intensified by age. In this useful characteristic I must also include Miss Alice de Rothschild, which has a decidedly deeper yellow as the flowers develop, whereas the majority of the yellow roses are apt to fade into almost creamy-white with age.

Senateur Mascurand is another deep golden-yellow, that produces exhibition

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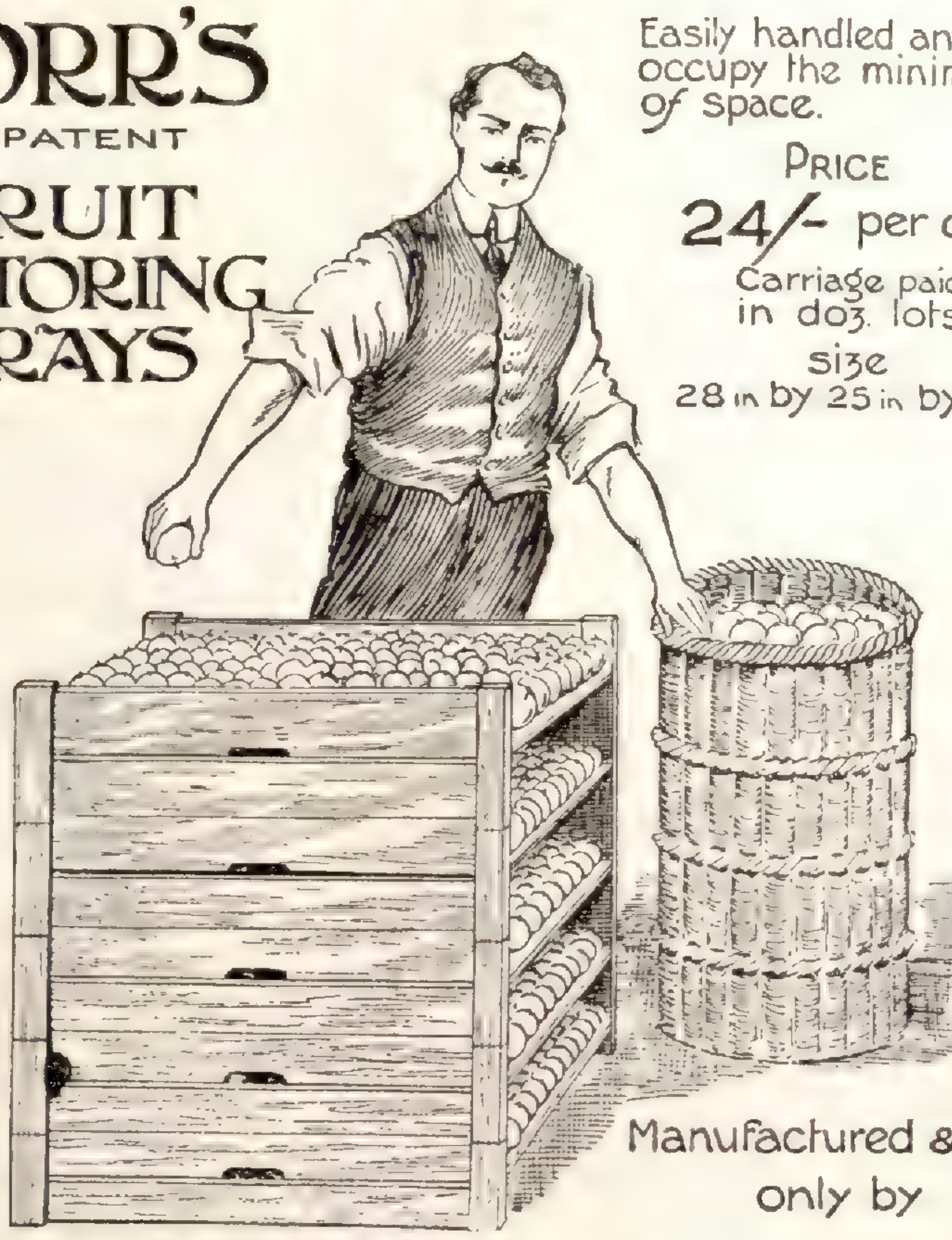

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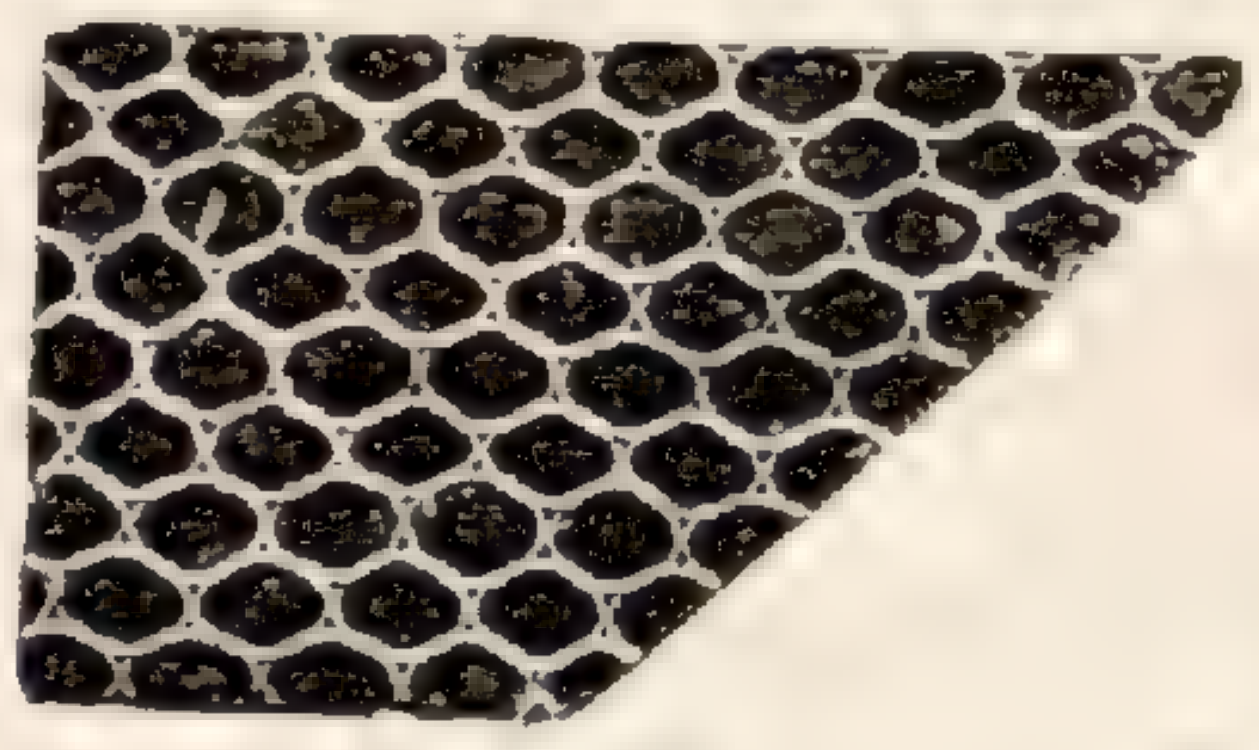

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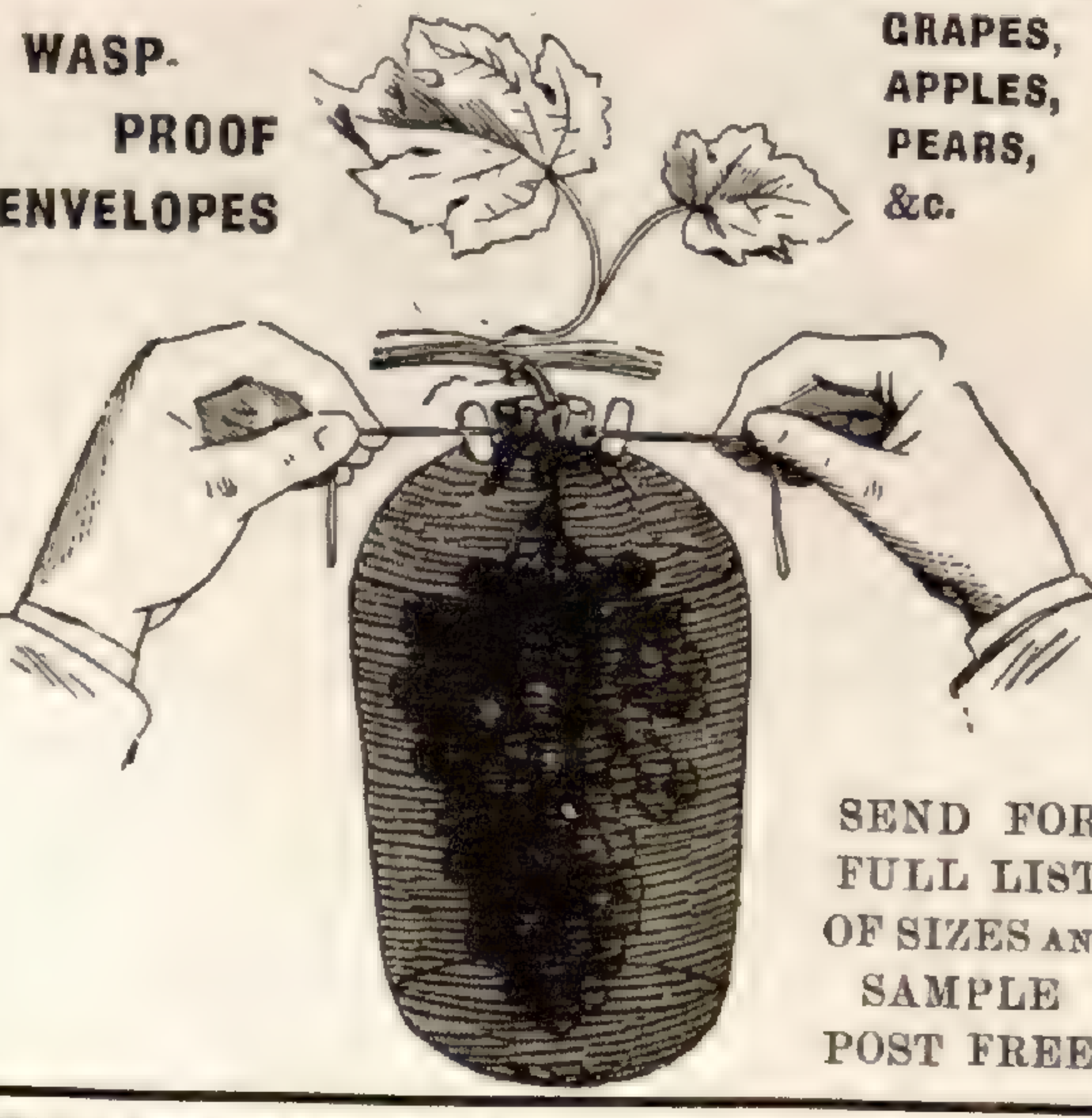

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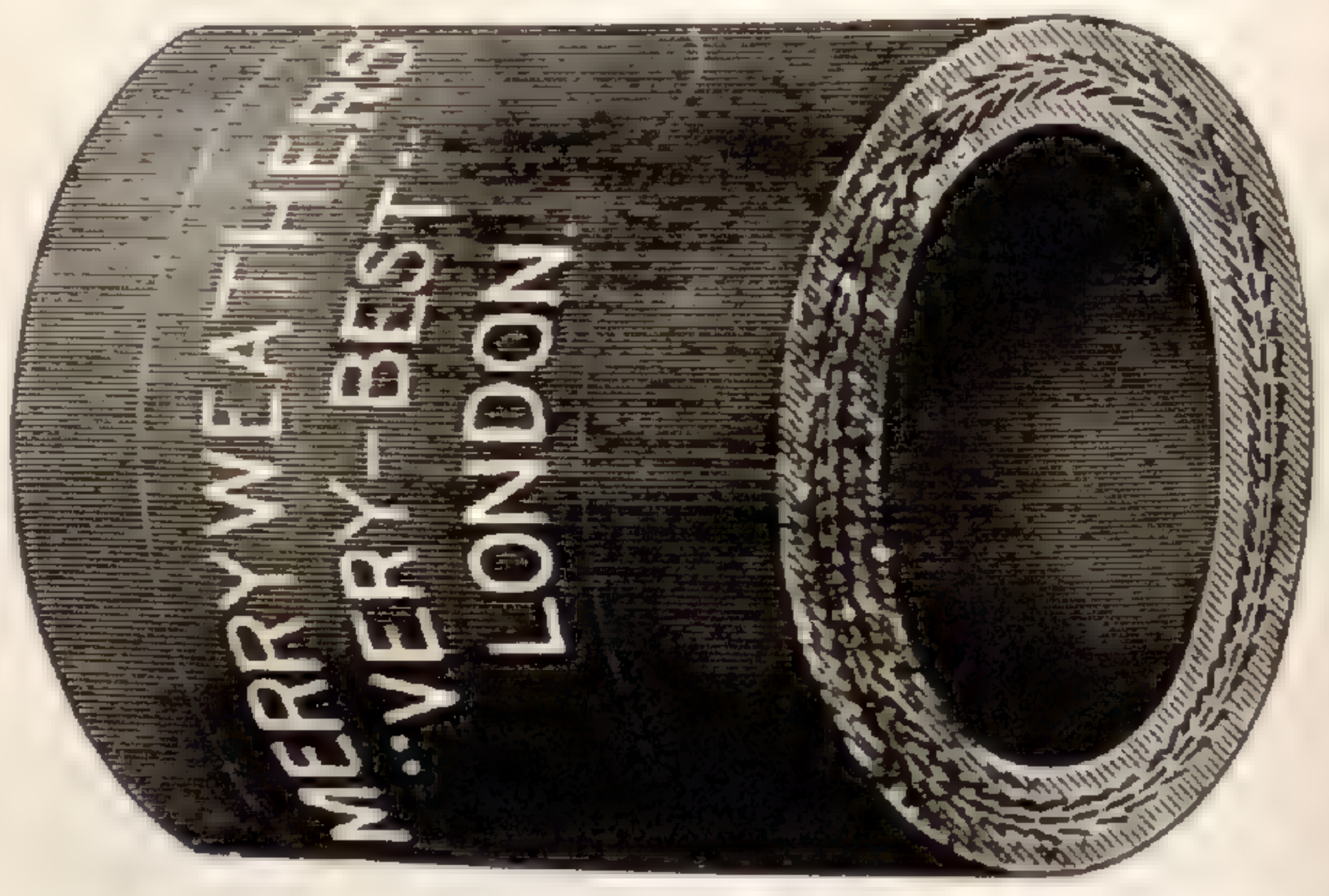

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GOLDEN PRINCEPS NARCISSUS, very fine large bulbs, ready for boxes or pots for Christmas flowering, price 10s. per 1,000, 3,000 for 28s.; carriage paid for cash; 50,000 to sell. J. HANDSCOMBE, F.R.H.S., The Nurseries, Feltham, Middlesex.

RARE ALPINES CHEAP, profits devoted to patriotic objects. Apply for list. LADY C., The Abbey, Much Wenlock, Shropshire, and please enclose fully addressed and stamped envelope.

flowers in great quantity, and borne well above the foliage. This and James Coey are exceptionally clear yellows, as seen this season. Indeed, it is difficult to pass on to others, much as the vivid distinctness of Lieutenant Chaure's velvety crimson-red draws one. In this we have a really beautiful red hybrid tea, and one that retains the peculiarly satisfying perfume of our dark hybrid perpetuals. Referring to dark roses, Chateau de Clos Vougeot is almost black in the intensity of its velvety-crimson. This does not burn in the same objectionable way as do so many of our darkest during bright sunshine. Edward Mawley and Commandant Felix Faure are others that escape injury from brilliant sunshine. Chateau de Clos Vougeot is a good but very erratic grower, throwing out so many unevenly-balanced side shoots after the manner of Madame Abel Chatenay, and although this is not so noticeable in a large mass, it has a somewhat bad effect in small beds.

Dorothy Ratcliffe (McGredy and Son, 1911) is a more ideal bedder than Lyon Rose, which it greatly resembles in its younger stages. Although not quite so deep as Lyon Rose it is equal to it, because of its better habit and more hardy constitution. Jacques Vincent (1908) has been perfect with me under glass since I possessed it three years ago. This rose has Souvenir de Catherine Guillot for one of its seed parents, and possesses much of the delicate art shades found in that rose. It is a much stronger grower, carrying large, well-formed flowers of deep coral-red, with salmon and yellow-shadings. A very hardy, spreading, and free-flowering rose.

We have a real advance among the rose-coloured flowers that are rather too numerous in André Gamon, a beautiful deep rose shaded with cochineal and carmine. The flowers are very deep and high centred, after the form of Pharisaer, altogether one of the clearest flowers of its particular shadings, and exceptionally free in both bloom and growth.

Messrs. Soupert et Notting have given us a fine rose in Madame George Serrurier, raised from a cross between G. Nabonnand and Mrs. W. J. Grant. It favours both parents about equally, and I need say little more than that it is as free and constant as either parent, with exceptionally long buds, and almost all of the substance found in a well-finished Mrs. W. J. Grant. It well deserves a place in every garden. Fortunately it does not appear to have inherited the rather tender constitution of Mrs. W. J. Grant.

George Reimers, a reputed seedling from Richmond, crossed with Etoile de France, will prove a grand, fiery-red bedder; it is large, well-formed, and very free. It is a decided advance upon both of its parents, and I have every confidence of it coming to the front among bedders of its colour. A promising seedling from Marie Van Houtte and Caroline Testout, named Madame Léon Simon, at once attracts attention. It has very long and pointed flowers, and is evidently free blooming, and of ideal growth. The colour is a dark rose, with a distinct yellow centre, and crimson on the reverse side of the petals. Margaret Molyneux still advances in favour. A changeable rose, being saffron-yellow with apricot and peach when young, and passing to almost a canary-yellow when fully opened. The blooms are carried in large, spreading trusses, and, although only a little more than semi-double, stand well, and are exceptionally showy up to the time of falling.

In complete contrast to these art colours is the deep maroon-scarlet of Sarah Bernhardt, which I admire more and more. It should be made a note of by all who do not possess it, more particularly where a dark semi-climber or pillar rose is wanted. A rose well worth growing, if only for its usefulness as a coat flower, and its exquisite perfume, is Madame Pol Varin-Bernier. The flowers are deep yellow when young, opening to a pale straw-yellow. Although this variety pales much with age, it is so clear as to actually heighten the effects of its younger blooms, which are produced in upright trusses. The exceptional beauties of Jessie, Orleans Rose, White Pet, Mrs. W. H. Cutbush, Katherine Zeimet, Eugene Resal, and the aptly-named Canarienvogel, with its trusses of clear canary-yellow, should receive a full share of attention.

I must not forget Mrs. Arthur Munt, one of the most reliable hybrid teas, and a truly delightful rose for any purpose. The raisers' description of "suffused peach on deep cream, becoming creamy-ivory as the flower develops," is very good. Large flowers, with a perfectly-formed high centre. A. P.

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**Antholyza paniculata.**—This is very pretty in flower out of doors, and attracts attention from its distinct character. In general appearance somewhat like a tall-growing montbretia, it has branching panicles of red and yellow flowers.—T.

NARCISSUS PRINCEPS.

A well-known, rich yellow trumpet daffodil of much value for indoor culture in fibre.

## FERN VARIATION.

Although throughout the plant world we find innumerable instances of marked departures from the normal type—that is, the particular and prevalent form which botanists have determined upon as representing the species—there would certainly appear to be a greater tendency to such aberration in ferns than in flowering plants. In this comparison we can, of course, only consider the foliage, and not the inflorescence, since as regards the latter it is a remarkable fact that throughout all the genera and species of ferns, numerous as they are, and diversified in habit, size, and make, the same type of microscopic inflorescence practically prevails throughout, while in flowering plants, as we know, the diversity is infinite. We can therefore only compare the leaf and the frond, and when we do so, we find that though the forms of foliage proper, i.e., the true leaves of flowering plants, are wonderfully diverse, those of the fern frond, including varietal sports, are not only equally so, but in some respects far more curious.

Thus, for instance, leaves vary in size and shape and arrangement according to their species, and vary wonderfully in the way of sports, so that at Kew we may see scores of oaks of precisely the same species, but with leaves aping those of other and different trees altogether, and playing furthermore a sort of fantasia on the oak leaf theme as well in the matter of size and shape. In the acacia we may see the simple leaf merging into a pinnate one, and so on; and in the cacti and euphorbias the foliage consists of mere rudiments, or the antipodean briar may present it in the guise of prickles only. Amid all these diversities, however, we never find one particular type of variation into which all species of ferns seem capable of sporting, namely, that of forming tassels at the tips of the fronds and their subdivisions. This faculty would appear to be correlated with the fact that the frond and its subdivisions develop apically, that is, the cellular growth is engendered at the extreme tip.

AN ATTRACTIVE BOWL OF CROCUSES.
The bulbs grown in fibre.

If we examine the incipient bud of a tree we shall find it to consist of a compact bundle of young leaves, which when the bud bursts, emerge and grow, so to speak, all over, expanding in all directions, so that the outline alters but little except as regards expansion. A fern frond at the same stage is a small, fleshy knot, devoid of any indication of foliar structure; it is, in fact, only a rudimentary stalk, tipped with a mass of gummy cells. By means of these cells the stalk lengthens, and an incurved top is formed, within which a process of division and redivision goes on to the extent determined by the form of the frond, simple or decompound, until, if decompound, all the parts of the frond in a small and delicate form may be found to exist in the still curled-up terminal at the top of the now long stalk. After this it grows all over, leaf fashion, and, as it does so, the coil unrolls, the parts straighten themselves, and ere long we see the broad, flat frond full size and mature. Obviously this mode of development is more compatible with tasselling at the tips than that of the leaf, since all that is necessary is that the rest of the formative cell work in the coils being completed, the terminal cells split up and finish off with more points than the normal one.

All the same, however, we must rank this occurrence with the many other natural marvels, when we consider that in the more highly-developed crested or cristate forms in which the smallest subdivisions are tasselled, as well as the largest, this means that many hundreds, or even thousands, of formative cells, which normally would, as it were, fix the last brick on the pinnacle, unanimously take it into their heads, so to speak, to pile up a few more on the top as a sort of radiating finial. This eccentricity is the more remarkable as no specie shows it as a normal character, thought it must be assumed to occur sporadically on most species, seeing that out of about 44 native species of ferns only about a dozen have so far failed to yield examples of crested forms to the varietal fern hunter. In many instances the tendency to split up is developed erratically in the form of irregularly branched and tasselled fronds; while in some cases it so predominates over the normal tendency to produce a flat frond, that the whole fern is a bunch of tassels so closely set as to resemble a ball of moss or selaginella.

Here, then, is a whole range of frond forms which have no counterpart at all in leaf forms. The extra foliose or plumose type of fern variation, embracing the fringed and frilled section of the Hartstongues cannot be so clearly distinguished from some of the abnormal leaf types in flowering plants, such as we see in some cyclamen sports, where the fringed or butterfly type of flower is associated with a frilled and fringed edge to the very large leaves. Many of the more beautiful examples of fern variation, however, belong to this section, which superficially may be said to be represented by Todea superba, though since ferns have been subjected to cultural selection, even that gem of emerald vegetation has been excelled by the divisilobe plumosums of Polystichum angulare, and more recently by those marvels of dissection, Nephrolepis exaltata Whatmani and Marshalli compacta. To these extremely dissected and exuberant types we have no parallels in true leaves, although, curiously enough, they have been derived from merely pinnate or bipinnate specific forms, which some leaves could easily surpass.

The most extraordinary example of the twisted type is a form of the Common Bracken, known as Pteris aquiline glomerata, in which all the leafy subdivisions and terminals curl up so tightly as to twist the stalks into knots and form balls, the fronds presenting thus a most weird and unnatural appearance. In the revolute forms the fronds form tubes instead of being flat, and the side divisions are convex, and, together with the frond tip, are spirally twisted owing to the fact that the rolling up of the frond tends to bring the under surface upward instead of the upper; and as the latter is better adapted to receive the light, a compromise, as it were, results in the twist in question. It is curious that a natural sport of this description should really be in conflict with the law that a leaf or its equivalent is so arranged as to catch directly as much light as the environment permits. In that very peculiar tree, Liriodendron tulipiferum, or the Tulip Tree, the broad leaves are peculiar in terminating squarely, the midrib slightly projecting as a thorn, and it is a very curious fact that while this, we believe, has no parallel in flowering plants, at any rate, as being a constant specific character, several of our native fern species present precisely the same feature in wild varietal forms—viz., the Hartstongue, Lady Fern, Lastrea filix-mas, L. montana—and we have also received the same type of variation from the United States in Polypodium hexagonopterum truncatum. In all these the unrolling frond or fern division suddenly ceases to develop the leafy portion on each side of the midrib, though that continues for a short distance as a bristle or thorn-like point.

Chas. T. Druery, V.M.H., F.L.S.

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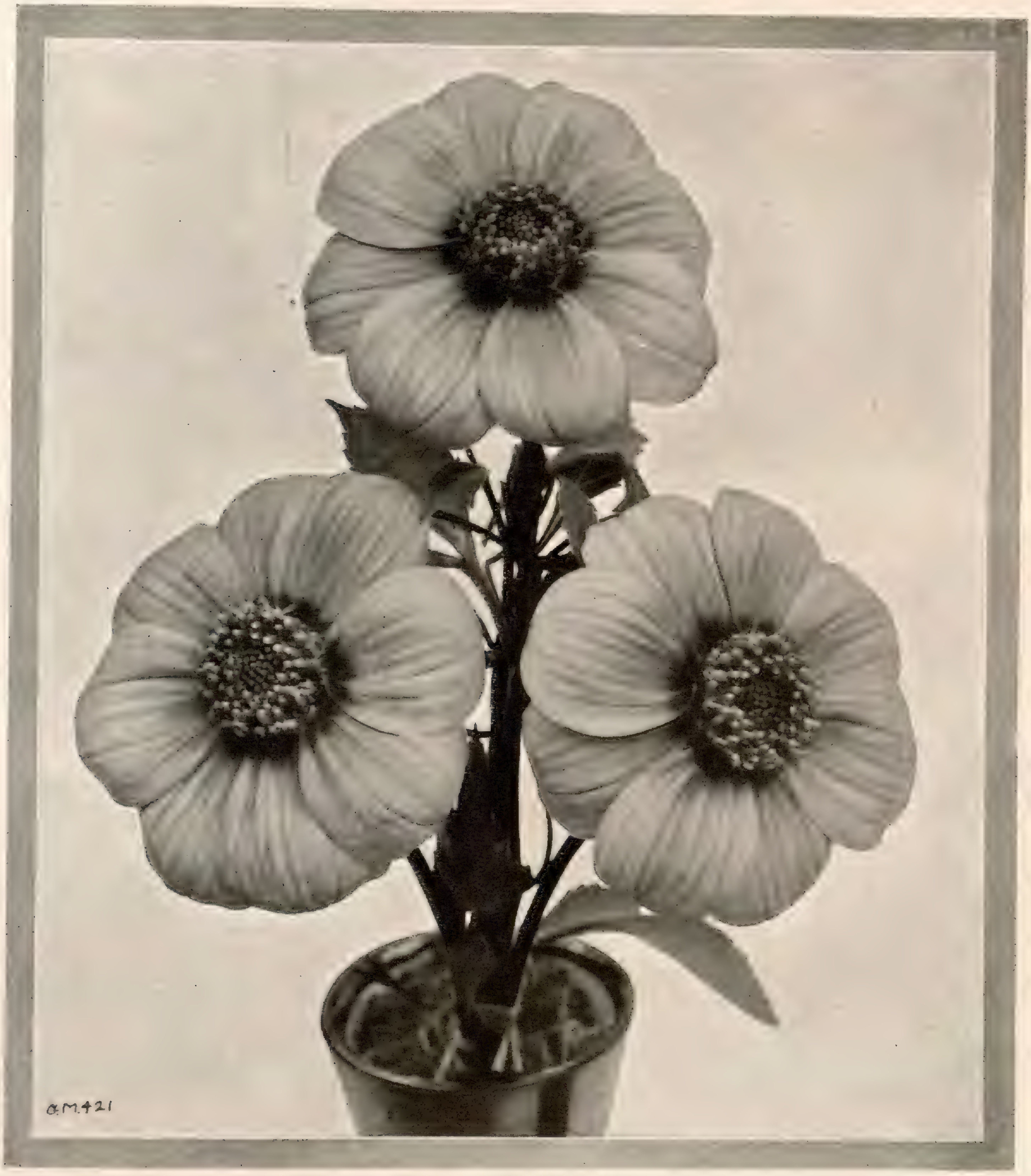
**Lantanas.** These have of late years been used for bedding purposes to a much greater extent than was formerly the case. Last year they did remarkably well during the almost tropical weather we then experienced, while this season, with its cloudy skies and heavy rainfall, they are still bright and cheerful.—W. T.

## NEW PLANTS, ETC.

### ANGRÆCUM O'BRIENIANUM.

A distinct species that is at once attractive and interesting. It is vigorous in growth and free in flowering, the plant shown bearing six racemes. These latter are of medium length, and the flowers are pure white, the spurs tinted with reddish-brown. A native of Western Uganda. A.M., R.H.S., August 27. J. S. Bergheim, Esq., Belsize Court, Hampstead (gardener Mr. H. A. Page).



NEW SINGLE DAHLIA MARION.

Buff, suffused rose, with deep rose-coloured zone. A.M., R.H.S., F.C.C., N.D.S., August 27. Messrs. J. Cheal and Sons, Crawley.

### ODONTIODA ENTERPE DAVIDSON'S VARIETY.

A free-flowering and attractive hybrid obtained from a cross effected between Odontoglossum Uro-Skinneri and Cochlioda Noezliana. The flowers are of average size, the sepals and petals deep red, and the lip bright red, with a light zone on the apical lobe. A.M., R.H.S., August 27. E. H. Davidson, Esq., Borlases, Twyford.

### LÆLIO-CATTLEYA AMABILE, BORLASES VARIETY.

A beautiful form of a fine hybrid obtained by the inter-crossing of Cattleya Luddemanniana and Lælio-cattleya Fascinator. The flowers are of large size and fine form; the broad sepals and petals are pearl-white, and the well-expanded lip rich purple. A.M., R.H.S., August 27. E. H. Davidson, Esq.

### LÆLIO-CATTLEYA GOLDEN FLEECE.

A distinct and beautiful hybrid derived from L.c. Golden Gem and Cattleya Dowiana. The flowers are of medium size, and of a rich yellow hue, with markings of deep red on the lip. A.M., R.H.S. Lieut-colonel Sir George Holford (grower, Mr. H. G. Alexander).

### ODONTOGLOSSUM HELENE.

A remarkably beautiful form of the O. Lambeauanum type. The flowers are of large size, and the sepals and petals nearly covered with large claret-coloured blotches on a white ground, the front lobe of the lip white. A.M., R.H.S., August 27. E. H. Davidson, Esq.

### COTONEASTER DIVARICATA.

A handsome evergreen shrub from China, of dwarf, spreading growth, with rather small, deep green foliage, and bearing with great freedom comparatively large, oval, brilliant crimson fruits. These latter are erect, and, standing well above the foliage, are very effective. F.C.C., R.H.S., August 27. Hon. Vicary Gibbs, Aldenham House, Elstree (gardener, Mr. E. Beckett, V.M.H.).

### DAHLIAS.

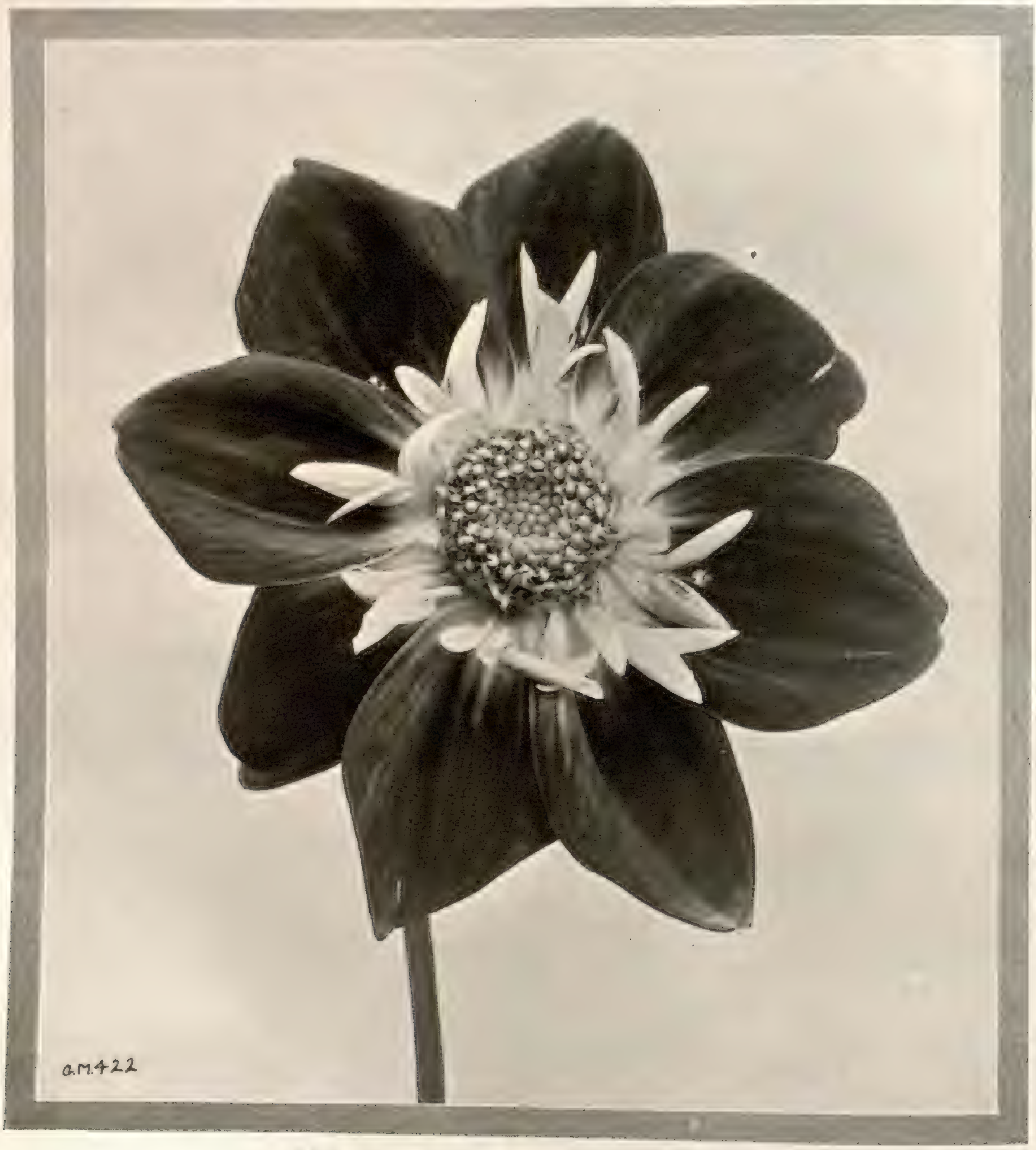
Marion.—A beautiful single variety, the blooms of medium size, fine substance, and perfect in form; the colour pale buff suffused rose, with deep rose-coloured zone. A.M., R.H.S., F.C.C., N.D.S., August 27. Messrs. J. Cheal and Sons.

Edith Carter.—An attractive cactus dahlia, with elegantly arranged florets, which are rich yellow at the base, passing to bright rose-red on the upper half. A.M., R.H.S., F.C.C., N.D.S., August 27. Mr. H. Shoesmith, Woking.

Pegasus.—A distinct and attractive cactus variety of high quality, the florets are slender and elegantly curved, and are bright rose marked with spots and stripes of crimson. A.M., R.H.S., F.C.C., National Dahlia Society, August 27. Messrs. J. Stredwick and Sons, St. Leonard's-on-Sea.

Antwerpia.—A distinct and attractive variety; the blooms are of fine form, and the colour is bright red crimson, with yellow collar. A.M., R.H.S., F.C.C., N.D.S., August 27. Mr. J. B. Riding, Chingford.

Princess Louise.—A remarkably handsome collarette variety the blooms large and of high finish, the florets deep crimson, and the collar light primrose. A.M., R.H.S., F.C.C., N.D.S., August 27. Messrs. Dobbie and Co.



NEW COLLARETTE DAHLIA ANTWERPIA

Red-crimson with yellow collar. A.M., R.H.S.; F.C.C., N.D.S., August 27. Mr. J. B. Riding, Chingford.

Leopold.—An effective single variety with blooms of medium size, fine substance, and colour rich crimson. A.M., R.H.S., F.C.C., N.D.S. Messrs. J. Cheal and Sons, Crawley.

Irene.—A distinct pompon, with medium-sized blooms of exquisite form, the colour rose-mauve. A.M., R.H.S.; F.C.C., N.D.S., August 27. Messrs. J. Cheal and Sons.

### ALOE STEUDNERI.

A handsome species, which was first described by Dr. Schweinfurth in 1894, and subsequently introduced to cultivation by Professor Penzig, of Genoa. A native of Abysinnia, this aloe is rather bold in habit, and produces its bright and yellow flowers on erect spikes, which rise to a height of about three feet. It is rather shy in flowering, but worthy of a place in a select collection of succulents. "Bot. Mag.," t. 8,448.

### HYDRANGEA SARGENTIANA.

A Chinese species discovered by Mr. E. H. Wilson at Hsing-Shan-Hsien, Western Hupeh, in 1907, when collecting for the Arnold Arboretum. It is of strong growth, has large leaves, and bears dense-flowered corymbs, the fertile flowers pale violet and the relatively few sterile flowers white, lightly tinted violet. The hardiness of this species has not, as yet, been satisfactorily determined at Kew. Several young plants succumbed there to the winter conditions of 1909-10, and since then the remaining plants have received protection in severe weather. "Bot. Mag.," t. 8,447.

### MUEHLENBECKIA COMPLEXA.

An interesting New Zealand plant, which was introduced to cultivation by the Rev. W. Colenso, who, about seventy years ago, sent plants to the Royal Gardens, Kew. It is a dwarf-growing climber or trailer, and has small, orbicular leaves, and bears clusters of greenish-white flowers. It is only suitable for gardens in the more favoured parts of England, as elsewhere it is liable to injury from frost. "Bot. Mag.," t. 8,449.

### AGAVE DISCEPTATA.

An interesting species, with rather long lanceolate leaves, and bearing pale green flowers, rose-purple at the margin, arranged in a loose spike, which rises to a height of between five and six feet. "Bot. Mag.," t. 8,451.

### MELON JOHN MASSEY.

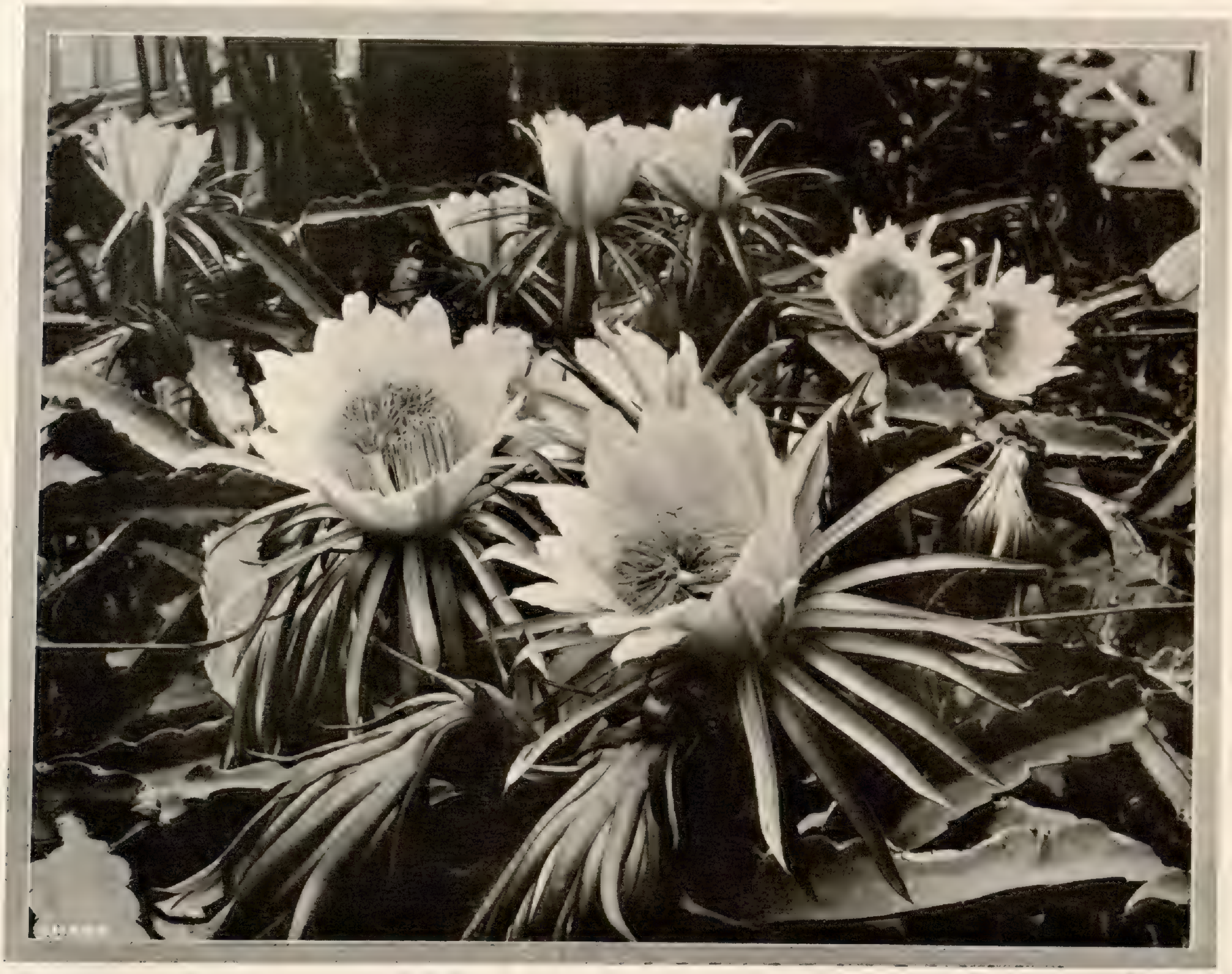
A scarlet-fleshed fruit, remarkable for its distinctness, handsome appearance, and rich flavour. It has been grown for trial at Wisley, and the fruits are of rather large size, oval in shape, and have a finely-netted, greyish-green skin; the flesh rich and melting and bright in colour. F.C.C., R.H.S., Messrs. W. Rowlands and Co., Liverpool.

### APPLE, PADNALL SEEDLING.

A culinary variety of much merit; the tree has a vigorous habit, and is a heavy cropper. A.M., R.H.S., August 27. Mr. R. Roberts, Chadwell Heath.

## THE NIGHT-FLOWERING CACTUS AT KEW.

For many years past one of the features of the large Succulent House at Kew has been the fine healthy specimen of Cereus triangularis trained on wires near the roof, which, during the summer months, produces large numbers of its extremely handsome flowers. During bright weather these open in the evening and close again as soon as the sun reaches them, usually between 7 and 8 a.m. Should dull weather intervene the blooms will remain expanded up till eleven o'clock. This has occurred frequently of late, and on several occasions as many as thirty flowers have been open together. The Kew specimen has produced over 200 flowers this season up to the present.



[Photo by C. P. Raffill.

THE NIGHT-FLOWERING CACTUS (CEREUS TRIANGULARIS) AT KEW.

The flowers are about ten inches in diameter when fully expanded, and are rather sweetly scented. The tube is some six inches long, and an inch to an inch and a-half in diameter. The inner petals are pure white, and an inch in diameter, the outer ones, gradually changing to yellowish-brown sepals, and becoming shorter and narrower, until those at the base of the tube are pale green and only an inch or so long. The stamens which fill the whole of the centre of the flower are supported on long slender, creamy-white filaments. The whole flower is chaste and beautiful, but unfortunately only opens once and then closes and fades.

The whole plant covers an area of six by eight yards, and is planted out in a narrow strip of open soil placed on the stage. The stems are triangular, rich dark green in colour, are freely armed with short spines, and send off at intervals clusters of aerial roots. This cactus is of very easy culture, thriving under quite diverse conditions. I am informed that it thrives equally as well under the moist, tropical conditions on the coast in the West Indies as it does under the cooler conditions of the Succulent House at Kew. This species has been in cultivation in this country for well over 200 years, having been recorded as being grown at Hampton Court in 1690.

There are several other species of night-blooming cacti in cultivation, all of which bear white, or creamy-white flowers, of large size, and are of slender climbing habit. The commonest of these are C. grandiflorus, C. Macdonaldiæ, C. nycticalus, and C. rostratus. They do not thrive or flower so freely as the species herewith illustrated.

C. P. Raffill.

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**Passiflora cærulea.**—Despite the fact that this passion flower is a native of Brazil, it is much hardier than many consider it to be, and in different parts of the country it is justly valued as an outdoor climber. Not the least desirable feature possessed by it is the length of time over which the season of blooming extends, while the blossoms are totally distinct from anything else in our gardens. The white-flowered variety, Constance Elliot, is also equally hardy with the type. In the more favoured parts the egg-shaped fruits, which are suspended on long stalks, and become yellow when ripe, form another attractive feature. From these fruits seedling plants may be raised, while it can also be very readily raised from cuttings.—W. T.

## HIBISCUS SYRIACUS.

This shrubby member of the mallow family is in many places flowering with great freedom; perhaps the exceptional heat of last year had something to do with it. Complaints are sometimes made that in the northern parts of the country this cannot be depended upon, but in the southern portion at least it is a valuable late summer and early autumn-flowering shrub. It succeeds best in a deep, well-drained soil, and a sunny spot. There is quite a long list of varieties, but though tastes differ, I prefer those with single rather than double flowers. Of the single-flowered varieties a particularly good pure white form was, under the name of Snowflake, given an award of merit last year by the Royal Horticultural Society. The rich violet-blue variety Cœleste is another beautiful single flower: while Painted Lady, whose petals are white, or nearly so, with a crimson blotch at the base of each, is also very effective. In the double kinds there is a wide range of colour, and these are admired by many. These varieties are grown in a wholesale manner in some of the Continental nurseries, being grafted or budded on to seedling stocks of the typical kind. They are in this way disposed of at a very cheap rate.

S. W.

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**Cyrtostachys renda.**—This is an uncommon palm, and one more particular in its cultural requirements than many of the others. It is a native of the Malay Archipelago, and needs a moist stove for its successful culture. The foliage is handsome, but the most prominent feature is the bright red leaf stalks, from which circumstance it has been referred to as the rhubarb palm.—K.

# WORK FOR THE WEEK.

## CONSERVATORY AND GREEN-HOUSE.

WINTER-FLOWERING CARNATIONS.—The time has now arrived when the plants growing in frames should be removed to the houses. They will not need any heat at present, and must have abundance of air. Especially should those growing in pots have attention. The growths should not be stopped after this date, but be looped up with raffia to the centre stake. Give the houses a thorough scrubbing and cleaning throughout, and the walls should receive a good coating of lime-wash. The pots in which the plants are growing ought also to be washed. Plants that have grown well, and have their pots full of roots will be benefited by a little help from stimulants. There are many good fertilisers on the market, and the one that has proved the most beneficial should be used. Sheeps' droppings also make an excellent liquid manure for carnations. They should be collected and put in a sack, and the latter placed in a tub of water and allowed to soak for a fortnight. The liquid can then be used once a week to commence with. Soot water is also a good fertiliser, and if the soot is placed in a sack in the same way as the sheeps' droppings, and the liquid used alternately once a week, it greatly improves the colour of the foliage. Those growers who prefer the bench or planting-out system must now clear out the old plants that have done service for the past year. After a thorough cleaning make up new beds with fresh compost, and set the plants out a foot apart, and press the soil firm about them.

PRIMULAS AND CINERARIAS.—These will now be growing freely, and should be shaded during bright sunshine. If the lights are pulled off in the evening and replaced in the morning the plants will be greatly assisted by the heavy dews we shall now experience. The lights must be kept on, however, if heavy rains set in, or the soil will soon become sour and water-logged.

BOUVARDIAS AND SOLANUMS that are growing in the open should now be lifted, potted, and placed in a frame, where they can be kept close for a time.

GENERAL REMARKS.—Should the sunless days and cold, wet nights continue, fires will have to be started, or many of the flowers in the conservatory and greenhouse will quickly damp. Very little artificial heat by day will be required for some time, but a little warmth in the pipes in the evenings and continued during the nights will be most beneficial to the plants in bloom.—Lewis Smith, Norwich.

## THE ORCHID HOUSES.

TEMPERATURES.—In the warm departments it will, owing to the dull, sunless weather, be advisable to maintain the summer temperatures during this month, as an inducement to the plants to complete their growths as quickly as possible. With the additional amount of fire-heat necessary to maintain the temperatures, it will be possible to admit more air. Light and air are the essential elements in the ripening or maturing of all plants and orchids. The cool house must, during the present month, be kept as cool as possible, both night and day. The moist night air will, if admitted to the structure, do an enormous amount of good.

SHADING must only be used during the hottest part of the day, and then no longer than is absolutely necessary to prevent burning or scalding of the foliage. The same remarks apply also to the cool house.

ATMOSPHERIC MOISTURE may be maintained at about the same level as previously recommended, as, with the additional ventilation, evaporation will be more rapid, and the houses will, therefore, dry more quickly. The two things to avoid are a hot and dry, and a low, temperature, both being highly injurious.

PREPARING FOR WINTER.—We have now passed through the greater part of the growing season of this year, and we must begin to make preparations for placing the different kinds in their winter quarters. The plants, houses, and, indeed, everything appertaining to them should be made scrupulously clean, and those fastidious kinds which succeed only in particular positions be placed where, by experience, they have been found to grow most satisfactorily. A careful examination of the heating apparatus should be made, and any defects made good. It is also advisable to examine the roofs of the houses for damaged squares of glass, which, although not a source of trouble at the present time, may become so later on, by causing drip, which may occasion the loss of a valuable plant.

WATERING will from now onwards require more judgment than when growth is vigorous. The watering of orchids cannot be treated collectively, or by any rule of thumb methods. Each plant should have its requirements satisfied, and no more. The wants of the different species, and the condition of their growth, have to be considered individually, and the treatment varied accordingly. The pseudo-bulbs of many will have finished their growth; others will be fast completing their bulbous stems. To these sufficient water should be given to avoid weakening the older bulbs, even when the new ones have completed their growths. All terrestrial kinds, with strong, persistent roots that are growing freely, will require ample supplies of water.—J. T. Barker, The West Hill Gardens.

## THE KITCHEN GARDEN.

CABBAGE.—The plants intended for late spring and early summer use should be put out without delay, or should the onion crop not be quite cleared off, defer the operation for a few days. Here we find the onion bed an ideal site for the maincrop cabbages. It is just forked over to a moderate depth, and a dressing of burnt garden refuse, strewn over its surface. The plants are given various distances, and the strong growers, as Sutton's Flower of Spring, are allowed a space of two feet between the rows, and twenty inches from plant to plant. The smaller kinds, as Harbinger, Ellam's Early, and Sutton's April, are given eighteen inches each way. Should slugs be troublesome, place a ring of cinder ashes around each plant to save needless worry and extra time in filling up gaps at a later date.

MUSHROOMS.—Beds should be made up as early as possible, as I fear very little dependence must be placed on the September meadow crop. The ground will not contain the warmth necessary for outdoor mushrooms. Place the required amount of horse droppings with the small particles of straw, into a heap in a covered shed. Turn the heap over every other day so as to prevent it drying. When the heat has receded to 80 deg., form the beds, making them fifteen inches in depth, and fill in evenly and firmly. When it is found that the temperature is still falling, insert pieces of spawn two inches deep, and ten inches apart, and finally cover the bed with fine soil and make it firm.

CAULIFLOWERS. — The preparation of the crop for a spring supply must now be taken in hand. Make a sowing at once, and a second one about the 20th of the present month. The first sowing can be made on an outside border that has been well worked for a previous crop. Give a dressing of wood ashes, and sow the seeds thinly and evenly, rake over and net at once to keep the seeds safe from birds. The later sowings should be made in an unheated frame, the soil being about three inches deep, and resting on a hard ash bottom. It will be found that when raised on a bed thus prepared the plants will be hard and dwarf. The lights should be only placed over the seeds during very wet weather, or till frosts appear. The seedlings from the outside sowings, when large enough will need pricking off into frames, and treated exactly as advised for the seedlings from the second sowing. With an occasional dusting of soot, and the picking off of decayed leaves, very little attention will be needed for some time to come. The following varieties are excellent for these sowings: Early London, Magnum Bonum, White Queen, and Walcheren.

POTATOES.—The lifting of the main crop should be proceeded with during favourable weather. Disease will be rife amongst them, particularly on heavy soils, therefore care should be taken of the tubers. Scatter a good dressing of lime over them at storing time, as this will help to preserve them, besides improving their flavour. — George Ellwood, Swanmore Park Gardens.

## HARDY FRUITS.

PLANTING BUSH FRUITS.—Where new plots are to be formed the ground should be prepared as soon as possible. It will need to be deeply stirred and liberally manured, particularly where the soil is of a poor character. Gooseberries, currants, and raspberries require conditions different to those under which apples and pears thrive, these being much better without manure in close contact with the roots. The site should be dug two spits deep, adding plenty of well-rotted manure with each layer of soil. Dig a trench one yard wide and one spit deep at one end of the plot, and wheel the soil to the other end for filling in when the trenching is completed. In the bottom of the trench spread a good layer of manure, and proceed to dig this in, well mixing the manure with the soil. Then mark off another strip of ground one yard wide, and, after manuring the surface, turn the top spit with the manure on the freshly dug soil in trench No. 1, and so on throughout the plot. If the second spit of soil is deemed good enough to bring to the surface, the first trench should be taken out two spits deep at the outset; in this case it is a good plan to break up the bottom spit, using a digging fork for the purpose. This amounts to trenching three spits deep. It is not desirable to make the third spit too rich with manure, but the addition of a good layer of old rubbish heap material that has been laid by for a couple of years, will improve the soil, and with retentive soils assist free passage of water and air.

PEACH AND NECTARINE TREES that are now cleared of their crops should, if infested with red spider or other insect pests, be thoroughly cleansed by means of a suitable insecticide; every effort should be made to keep the foliage clean and healthy right up to the time of ripening. Old fruiting wood which can be spared should be removed to allow a better opportunity for the ripening up of the young shoots. Continue to give attention to the training of young trees, and see that the fast-swelling growths are not suffering from too tight ligatures. Fruits approaching the ripening period should be daily examined, and carefully gathered when ready. If intended for packing the fruits must be firm and not over-ripe; for home use two or three days in the fruit-room will improve the flavour of the fruits.

GATHERING FRUIT.—Figs ripening on open walls should be looked over daily, gathering those that are ripe and storing them in a cool fruit-room until required. Birds and wasps are particularly fond of figs, and it may be necessary to net the trees to keep off the birds. The ripening fruits of apples and pears should be gathered as they become fit. Careful handling is especially required in dealing with these, as the flesh is, in most cases, softer than the later varieties. Most early varieties are soon past their best, and great care is necessary in selecting fruits for the table that they are in just the right condition, neither under nor over-ripe.—W. Messenger, Woolverstone Park Gardens, Ipswich.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE EXHIBITION OF
EARLY CHRYSANTHEMUMS
will be held at the CRYSTAL PALACE on
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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE, AUGUST 27.

Present: A. E. Bowles, Esq., M.A., F.L.S. (in the chair).

SWEET PEAS FROM MR. DIPNALL.—The specimens submitted to the committee were damaged by the "Streak" disease Thielavia basicola. Many of the leaves and parts of the stem had also patches of Botrytus cinerea growing on them. The roots were poorly developed, and showed signs of some check earlier in the season, probably overwatering in the early summer. It is suggested as a method of preventing the attack, deep and early-autumn cultivation of the ground intended for next season's crop of sweet peas, a very moderate use of organic manure, thin seeding, and frequent use of the Dutch hoe in place of watering during early droughts.

EPIDENDRUM LATERALE. — Mr. O'Brien showed for Mr. Neal, Penarth, a plant of Epidendrum laterale (Central America), and remarked that the infloresence is produced on a rudimentary pseudo-bulb, as in E. Stamfordianum (probably the only similar case), a peculiarity that seems to show that the normal mode of flowering is from the base of the mature pseudo-bulb. A Botanical Certificate was awarded to this plant on the proposition of Mr. O'Brien.

MUMMY PEA.—Mr. A. Sutton showed a series of photographs illustrating several crosses with the so-called Mummy pea, Pisum umbellatum.

LILY FASCIATED. — Mr. Bowles showed a remarkable photograph of Lilium candidum showing a fasciated double form, a condition figured in Dr. Masters' "Teratology."

ARMENA ABNORMAL.—Mr. Van der Wyre sent specimens of thrift with abnormal pollen and petals. Referred to Mr. Hill for report.

VARIATION.—Rev. Geo. Henslow wrote with reference to non-scented musk, a condition due to the cold and wet weather. Mr. Henslow also drew attention to the tendency to variegation in aspidistra when removed from a partly-shaded position to the full light of a conservatory.

PEAR WITH AXIAL GROWTH. — Mr. Ockenden sent a pear with elongated axis, showing the formation of three fruits, as a result of the elongation. Messrs. Bunyard sent a drawing of a pear fruit showing a similar elongation, resulting, however, in a tuft of leaves beyond the fruit.

## Messrs. Robinson Bros.' Horticultural Show at Edgbaston.

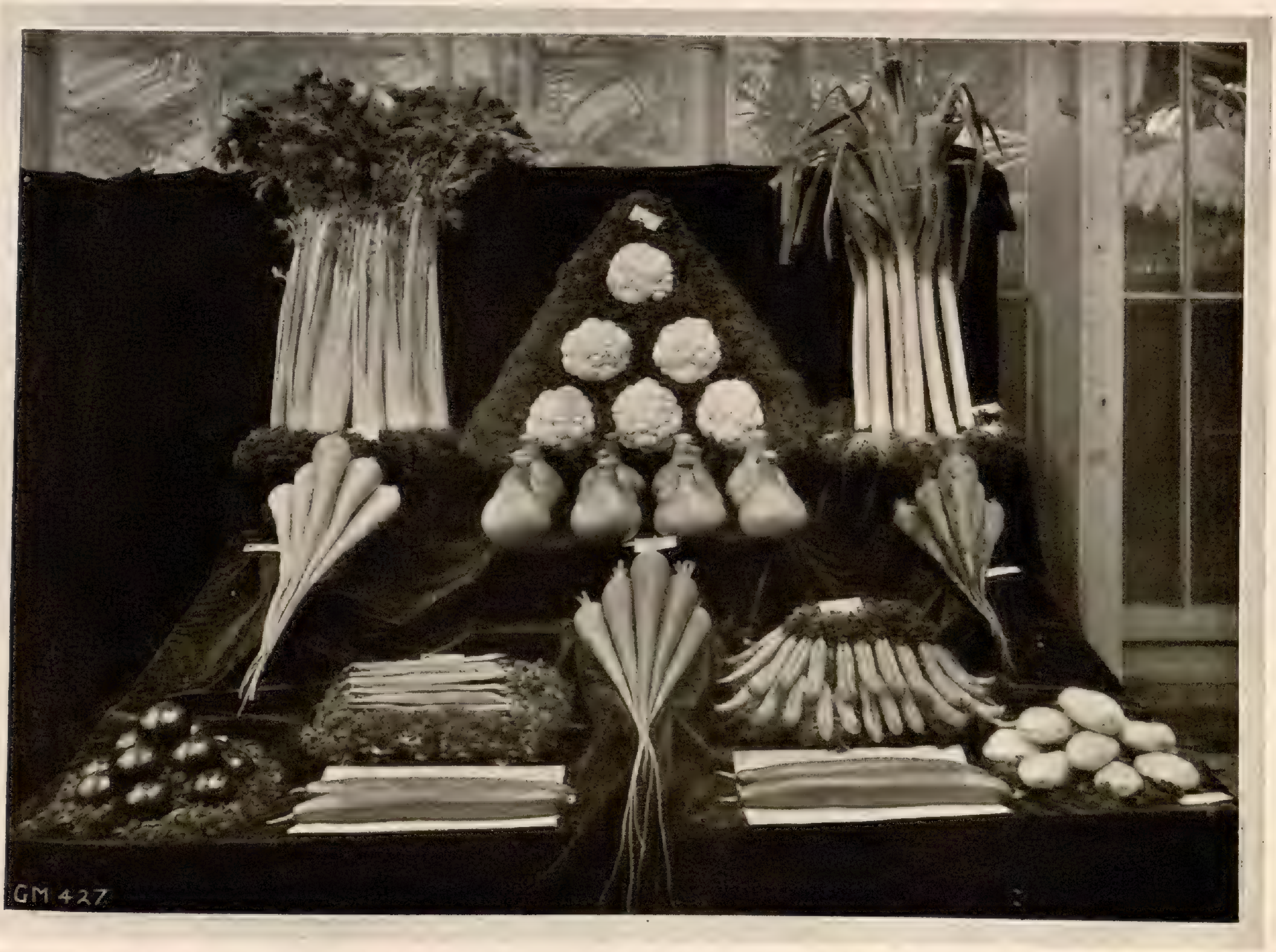
Considerable interest, not unmixed with curiosity, has for some time past been evinced in the prospect of a horticultural show on a large scale being held for commercial reasons by a firm of horticultural sundriesmen. The enterprising firm who undertook by means of an exhibition to show the public the excellence of the produce that can be grown by the aid of their various specialities are Messrs. Robinson Bros., Lim., Ryders Green, West Bromwich, who engaged the Botanic Gardens, Edgbaston, Birmingham, and held the show on August 28 and 29.

From all points of view the show was a brilliant success. With a schedule of considerable extent, and cash prizes of unusual value, exhibitors were drawn from all parts of the country, and quite a number of the giants among exhibitors came down in force and competed in the big classes for flowers, fruits, and vegetables, the result being a display of which any horticultural society might well be proud.

The vegetables formed, undoubtedly, as fine a display as could be produced at any August show, and in the flower section the border exhibits of hardy flowers were a pattern to those who frame schedules, and pointed the way to the most effective arrangement possible of the lovely flowers that adorn herbaceous borders. The tables of fruit, the roses, and the large tentful of decorated dinner tables were all of a very high order of merit, and even in the cottagers' classes there were vegetables of really good quality. Everybody was in great good humour, and at the excellent luncheon provided for judges and exhibitors many compliments were paid to the firm of Messrs. Robinson Bros., to their manager (Mr. A. W. Evans), and his able helpers (Messrs. Fleming and Hadden).

### OPEN SECTION CUT FLOWERS.

The leading class in this section was for a collection of border flowers arranged on a space of 20ft. by 8ft., to represent as nearly as possible, a growing border. It was certainly a fine class, and the general comment was that this style of exhibiting was a great improvement on the orthodox arrangement on tables. The winning exhibit contributed by Mr. Frank Bouskell, Market Bosworth, was a delightful arrangement of choice, well-grown flowers. Among many good things in the foreground were Potentilla Gibson's Scarlet, varieties of Veronica elegans, Achillea alpina, and several other dwarf plants of merit, whilst the central portion was tastefully filled with phloxes, helianthuses, double



FIRST PRIZE COLLECTION OF VEGETABLES SHOWN BY MR. J. GIBSON AT MESSRS. ROBINSON BROTHERS' EXHIBITION.

gypsophila, some good spikes of Astilbe Davidi, and Montbretia rosea. A hybrid echinops and several choice verbascums also played their part in a capital exhibit.

Messrs. G. Gibson and Co., Bedale, who were second, had a number of choice phloxes and gladioli, and there were also a few uncommon plants, such as Echinops Tournefortiana, Lobelia Milleri, new hybrid verbascums, etc. Third prize went to Mr. J. H. Marsden, Malvern Link, who lost points through cutting his flowers with short stems, which gave a dwarf, flat appearance.

The winners of the first prize for forty-eight roses, distinct, were Messrs. Perkins and Sons, Coventry, whose best flowers were Mildred Grant, Madame Eugène Verdier, Earl of Warwick, Frau Karl Druschki,and The Lyon. Mr John Mattock, New Headington, Oxford, was a good second, showing nice fresh flowers. Mr. W. H. Frettingham, Beeston, Notts, was third. Mr. Mattock led for six bunches of roses, showing, among others, Lady Hillingdon, Mdme. A. Chatenay, and Hugh Dickson. Messrs. Perkins and Sons followed, Mr. Frettingham again coming third. For a bowl of roses Messrs. Perkins and Sons scored with a very tasteful arrangement in shades of yellow and buff. Mr. J. Mattock was a close second with Lady Pirrie and Irish Elegance. Mr. W. T. Mattock, Barton End, Oxford, third.

Sweet peas were not as fine as they have been at earlier shows, but for the season must be called good. The winning exhibit in the class for twelve vases was staged by Mr. G. Bowness, Riverside Nurseries, Busby, near Glasgow, and they were excellent flowers of up-to-date varieties on long, strong stems, well set up, and a credit to the grower. Mr. J. Dorell, Uphill, Warwick Road, Acocks Green, was second; Mr. W. J. Godwin, Hill Nursery, Four Oaks, Sutton Coldfield, third.

Mr. J. Mattock was awarded first for twelve gladioli, and Messrs. Keynes, Williams, and Co., Salisbury, led for eight varieties of cactus dahlias, followed by Mr. H. Woolman, Shirley, and Mr. G. Bowness, Busby, in the order named. Early-flowering chrysanthemums were well shown by some half-dozen exhibitors, who staged twelve bunches, distinct varieties. The highest honours were taken by Mr. H. Woolman, Shirley, Birmingham, whose flowers were really excellent; Mr. W. A. Ballard, Abbey Lane, Leicester, and Mr. Bowness, Busby, were second and third respectively.

### FRUIT.

The tables of fruit decorated with flowers and foliage occupied one end of the large hall, and were a centre of attraction. Mr. J. Gibson, gardener to the Duke of Portland, Welbeck Abbey, is to be congratulated on winning first prize in a closely-contested class. His dishes were Muscat of Alexandria and Prince of Wales grapes, Triomphe de Vienne pears, Washington apples, Ringleader melon, Brown Turkey figs, Crimson Galande peaches, and Pineapple nectarines. The decorations were carried out with liliums, carnations, and francoa. Mr. A. Searle, gardener to the Marquis of Northampton, Castle Ashby, Northampton, was a close second, his grapes being simply superb, and his other fruit all of good quality, but the floral decorations lacked the finish of those of the winning table. Mr. Hilliar, Mount Pleasant, Darlington, was third.

Mr. Gibson was also first for eight bunches of grapes, showing good Madresfield Court, Mrs. Prince, and Buckland Sweetwater in excellent form. Again for two bunches of black, Mr. Gibson was the leader with a pair of bunches of Madresfield Court. Mr. A. Jenkins, gardener to J. Horton, Esq., Fern Hill, Moseley, was a good second with Black Alicante, Mr. Hilliar coming third. For apples and pears the chief awards were secured by Mr. J. Gibson, Messrs. Plowman and Son, Market Harboro', coming second in each class. Messrs. Whateley and Son, Kenilworth, being third for apples, and Mr. W. A. Sarsons, 92, Trafalgar Road, Moseley, for pears.

### VEGETABLES.

The outstanding feature in the schedule was the class for a collection of twelve dishes of vegetables, in which the first prize was £20. Mr. J. Gibson, Welbeck, was the fortunate winner, and it may be said that his vegetables were models of perfection. The cauliflowers, leeks, and celery made a grand background to beet, onions, carrots, cucumbers, parsnips, peas, potatoes, runner beans, and tomatoes of the highest excellence. Mr. J. Hudson, Mostyn Street, Leicester, followed closely for second place with a collection that was only about two points behind that staged by Mr. Gibson. The other prizes in the class were awarded to Mr. D. Gibson, The Gardens, Ford Manor, Lingfield, and Mr. A R. Searle, Castle Ashby, Northampton.

A strong class was that for twelve onions, Mr. H. Wheeler, The Gardens, Wenvoe Castle, near Cardiff, scoring with beautiful specimens of good weight, even size, and clear, nicely finished skin. Mr. D. Gibson, Lingfield, was second, and Mr. J. Hudson, Leicester, third. The competitors whose names have already been mentioned were highly successful in the classes for potatoes, tomatoes, leeks, celery, and cucumbers, other successful exhibitors in various classes being Mr. T. Avery, Loudwater, Rickmansworth; Mr. Bannister, Marston Green; and Mr. J. Hilliar, Mount Pleasant, Darlington.

In a special section set apart for market growers, Messrs. A. and G. North, Meadow Nursery, Northfield, won first prize for a basket of tomatoes, the fruits being even, smooth, and of fine condition. He was followed by Messrs. H. J. and A. Hughes, Grange Nursery, Water Orton, Mr. Hudson, Leicester, being third. Messrs. Plowman and Son, Market Harboro', had the best brace of cucumbers, Mr. Hudson coming second, and Mr. J. Carlsson, North Lancs Vineries, Poulton-le-Fylde, third. Both black and white grapes in this section were won by Mr. Hilliar.

### TABLE DECORATIONS.

The table decorations were not only numerous but were of more than ordinary merit, every table being treated in a truly artistic manner. The premier award was taken by Mr. W. Harper, 104, Warwick Street, Leamington, the dominant feature being oncidium flowers lightly disposed in rustic receptacles. Gloriosa superba was skilfully intermixed, with just sufficient asparagus and selaginella to provide a setting without heaviness. Mrs. Greaves, The Cottage, Warmington, near Broadway, Worcestershire, was second.

### AMATEURS' SECTION.

In the amateurs' class for twelve bunches of herbaceous flowers there were six entries, Mr. F. Bouskell being the leading exhibitor. His stand contained a fine bunch of Montbretia rosea, and also good bunches of Sanguisorbia canadensis, Lilium tigrinum splendens, Lupinus polyphyllus roseus, and the true type of Veronica spicata. Mr. A. J. Bastock was second, the strongest bunches in his stand being Liatris spicata, Chelone barbata and Phlox Sheriff Ivory; the third-prize exhibit, from Mr. John Bland, Welland Bank, Market Harboro', was also remarkably good. Mr. F. Dennison, Cranford, Leamington, led for eighteen roses, being very closely followed by Mr. Gulliver Speight, Market Harboro'.

The amateur's class for six dishes of vegetables was a strong class, with seven entries. The winner was Mr. T. Jones, Penylan, Ruabon, who is as strong a competitor with his vegetables as with his sweet peas. He had Sutton's Queen cauliflower, Pink Perfection celery, Sensation potato, Webb's Ailsa Craig onion, Perfection carrots, and Quite Content peas. Mr. E. Deakin, Hay Hall, Birmingham, was an excellent second, and Mr. D. W. Bedford, The Braes, Berkhamsted, third.

Non-competitive exhibits included a remarkably fine collection of perpetual carnations from Messrs. Young and Co., Hatherley, Cheltenham. The collection was tastefully arranged, and included the finest of both old and new varieties in a high state of development.

A very elaborate and attractive stand was occupied by Messrs. Robinson Bros., Lim., West Bromwich, for the purpose of displaying their "Guaranteed Gardenalities." These, as most of our readers will have learned from the advertisement pages, consist of Carmona fertilisers, Clift's manurial insecticides, Velvas lawn sand, and other chemical preparations, as well as the well-known Alpha spraying machines and Pine Spray syringes which have often been mentioned in our show reports.

## Chester Flower Show.

AUGUST 28.

This flower show, held in conjunction with the Cheshire Agricultural Society's exhibition on the Roodee, was fully equal to the average, excepting the cut flowers which showed evident signs of the heavy and continuous rainfall during August.

### PLANTS.

In the class for the group of miscellaneous plants, twelve feet by nine feet, and arranged for effect, Mr. C. H. Creasey, Oxton, Birkenhead, led with a very pleasing arrangement of well-grown plants. Mr. T. Gilbert, gardener to T. G. Frost, Esq., Mollington Hall, was a close second, followed by Mr. B. Cromwell, Hunts Cross, Liverpool, and Mr. J. Breen, Tattenhall, for third and fourth places. The premier award in the class for six stove or greenhouse plants was made in favour of Mr. B. Cromwell, who had fresh, medium-sized specimens; Mr. A. Ellams, gardener to A. Tyrer, Esq., Chester, and Mr. C. H. Creasey shared the remaining awards. Four ferns: Mr. H. Randles, gardener to A. E. Hall, Esq., Abbotsfield, Chester, won with good examples, followed by Mr. E. Palin, gardener to Mrs. Butt, Chester. Mr. A. Ellams' four pelargoniums won with large specimens, well flowered. In competition for the prizes for a single specimen, Mr. A. Ellams won with a good Goniophlebium subauriculatum, Mr. Cromwell followed closely for second place, and Mr. M. Brennan, gardener to Sir Foster Cunliffe, Bart., Wrexham, was third.

### CUT FLOWERS.

In competition for the prizes for twelve cactus dahlias, Mr. P. Miller, Hartford, was the winner with good blooms, and for six Mr. S. Salisbury, Wallasey, obtained premier honours. Mr. A. D. Pitcairn Campbell, Bangor-on-Dee, had the best twelve asters, and for twelve roses Mr. Bernard J. Sanby, Sandiway, led in a strong competition. Annuals were well shown by Mr. L. N. Brooke, Heswall, and Mr. J. L. Maddock, gardener to G. W. Gossage, Esq., Great Saughall, had the best bouquet of wild flowers.

In the class for twelve bunches of hardy herbaceous cut flowers, Mr. John Dean, gardener to G. R. Darsee, Esq., Newton House, occupied the first place, and Mr. A. D. Pitcairn Campbell had the best six bunches. Sweet peas were poorly represented, but Mr. John Wynne, Rowton, who had the leading twelve vases, and Miss Roberts, Wrexford, who staged the best six, had flowers of good quality. Mr. Thomas Saunders, gardener to Captain Townsend Currie, Christleton, won Messrs. Webb and Sons' special prize for six vases; and Mr. J. Bapscott, Heswall, Messrs. McHattie's special for six vases.

### FRUIT.

This section was well filled with fruit of good quality. For two bunches of black grapes Mr. W. Pilgrim, gardener to Sir G. Merrick, Bart., Anglesey, won with well-coloured Madresfield Court; and Mr. W. H. Faulkner, Caldy, second. In the corresponding classes for white grapes, Mr. R. Jones, gardener to J. Amphlett, Esq., Colwyn Bay, was successful in obtaining the premier award with fine bunches of Muscat of Alexandria; Mr. Joseph Stoney, gardener to Lieut.-Colonel Jas. Gaskell, Woolton, was an excellent second in this class. The winner of the first prize for six peaches was Mr. H. Young, gardener to P. H. Ashworth, Esq., Gresford, with Exquisite, highly-coloured; for six nectarines, Mr. W. Pilgrim was first Humboldt.

## Glasgow Centenary Flower Show.

The Centenary Flower Show of the Glasgow and West of Scotland Horticultural Society was held in the West End Roller Skating Rink at Bunhouse, on September 4, 5, and 6. Though under the entries at the show held in the Scottish National Exhibition Grounds at Kelvingrove last year, they were in excess of the records for the St. Andrew's Hall shows by about 200. Notwithstanding the very dismal, sunless weather which has prevailed during the season, the quality of the exhibits was excellent, and, although some of the grapes showed a lack of finish, and some of the other fruits showed some signs of the want of sun, these were exceptions. Both cut flowers and vegetables made a fine display, and the traders' exhibits generally were very fine, and most of the leading firms throughout the kingdom were represented. A deputation of five members of the Royal Horticultural Society were present, and awarded a number of cups and medals to the exhibits.

### POT PLANTS.

For the group of miscellaneous plants, arranged on the ground, in a space 15ft. by 10ft., variety, quality, and effective arrangement to be considered (gardeners and amateurs), there were five entrants, and the first prize of £7, and a special prize of £5 and memorial medal, presented by the trustees of the "Veitch" Memorial Fund, was awarded to Mr. Adam Knight, gardener to Sir Wilfrid Lawson, Bart., Brayton Hall, Carlisle. Crotons were the main foliage plants in the group, and orchids and Lilium lancifolium the principal flowering subjects. The foliage plants were splendidly-grown specimens, and the arrangement of the group, tied down as it was to a hard and fast oblong, was excellent. The second prize of £5 fell to Mr. John E. Davis, gardener to Colonel Stewart Richardson, of Ballathie, Perth, whose arrangement was almost as good as Mr. Knight's, but the quality of the plants was not quite so high. Crotons and elegant bamboos were the chief foliage subjects, and there was a considerable variety of flowering plants in the group. Mr. John Hood, gardener to T. G. Bishop, Esq., Dalmore, Helensburgh, was placed third, and Mr. Andrew Kelly, gardener to W. Beattie, Esq., Dineiddwg, Milngavie, was placed fourth.

For the group of stove or greenhouse plants, arranged on the ground in a circle, 8ft. in diameter, variety, quality, and effective arrangement to be considered (gardeners and amateurs), there were three entrants, and Mr. Knight was again placed first, gaining the prize of £5. Mr. Davis, to whom the second prize of £3 was awarded, was again a close runner-up. Mr. Wm. Ferguson, gardener to Colonel Gray Buchanan, Eastfield House, Cambuslang, was placed third. In Mr. Knight's arrangement crotons and liliums again figured prominently.

Mr. Jas. Templeton, gardener to Mrs. Alex. Rose, Richmond House, Glasgow, was placed first for one specimen palm (open); Mr. Alex. McMillan, gardener to the Right Hon. the Earl of Home, Douglas Castle, Lanarkshire, second; and Mr. J. E. Davis third. Mr. Templeton was also placed first for three palms (gardeners and amateurs), and Mr. McMillan and Mr. John Davidson, gardener to John Reid, Esq., Ardincraig, Rothesay, were placed second and third respectively.

For three stove or greenhouse plants, distinct varieties, at least two in bloom (gardeners and amateurs), Mr. McMillan was the only entrant, and was awarded the first prize. His plants were Statice brassicæfolia, petunia Mrs. Ellis, and Begonia Wiltonensis.

For two greenhouse plants (amateurs), Mr. James Swan, Railway Buildings, Lennoxtown, was awarded first prize, and he also carried off first honours for two ornamental foliage plants. For four ornamental foliage plants (gardeners and amateurs), Mr. McMillan was placed first, and Mr. Templeton second: Mr. John Sutherland, Victoria Nursery, Largie, was the only entrant for two gleichenias (open), and was awarded first prize. Mr. D. Halliday, gardener to W. Mackay, Esq., Ascog, Rothesay, was placed first for one orchid (gardeners and amateurs), and also for three orchids (gardeners and amaturs).

For twelve plants for table decoration, distinct varieties (open), Messrs. Malcolm Camp-Bell, Lim., Glasgow, were placed first; Mr. Knight second, and Mr. Alex. L. Davidson, gardener to A. H. Pettigrew, Esq., Lanark, third. For six plants of the same class (gardeners and amateurs), Mr. Jas. Thomson, Broomfield, Giffnock, was first, Mr. Knight second, and Mr. Davidson third. Mr. Thomson was also first for three plants of this sort confined to amateurs. Mr. Templeton was placed first for three dracænas, distinct varieties, in pots not exceeding 9in. (gardeners and amateurs), Mr. John Davidson second, and Mr. A. L. Davidson third.

Mr. Charles Pattison ("The Village Blacksmith"), Linwood, Paisley, took first place for six dwarf British ferns in pots, not exceeding 6in. (gardeners and amateurs); Mr. Thos. Nelson, Muirbank House, Rutherglen, was second; and Mr. James Swan third. Some of the varieties in Mr. Pattison's lot could scarcely, however, be considered truly dwarf. For three exotic ferns, distinct varieties (gardeners and amateurs) there were only two entrants, and Mr. McMillan was placed first; Mr. Archibald D. Hughes, gardener to J. R. Cochrane, Esq., Calder Glen, Blantyre, being second. Mrs. Chas. Pattison was placed first for three British ferns, distinct varieties (gardeners and amateurs), for which there were only two entrants; and Mr. Thos. Nelson second. Mr. James Wilson, Duntilbae, Kirkintilloch, took first place for one exotic fern, Messrs. Nelson and Alex. Bryson, Edinburgh, being second and third respectively. For two British ferns, distinct varieties (amateurs), Mr. Pattison was first; Mr. J. Mason, Pollokshaws, second; and Mr. T. Nelson third. In the class for ferns for table decoration, six distinct varieties, in pots not exceeding 6in. (gardeners and amateurs), Mr. McMillan took first place, and Messrs. Nelson and Swan were placed second and third respectively.

Mr. McMillan also took first place for three stove or greenhouse plants, distinct varieties, exclusive of specified varieties for which prizes were offered (gardeners and amateurs), with three splendid plants, consisting of Maranta zeberina, Alocasia metallica, and Phyllotinium Lindeni. Second honours fell to Mr. Knight, whose plants were Maranta insignis, Dieffenbachia Bausei, and Anthurium leuconeurum. Messrs. Nelson, Walter M. Robb, and Swan were awarded first, second, and third prizes respectively for one zonal geranium (amateurs).

### CUT FLOWERS.

For twenty-four spikes gladioli (open) there were two entries, and the first prize fell to Messrs. Geo. Mair and Sons, Prestwick, for a magnificent lot. The spikes were simply superb, some of them having about a dozen perfect flowers opened out. This was also awarded a Silver Banksian Medal of the Royal Horticultural Society. The only other entrant was Messrs. Alex. E. Campbell and Son, Gourock, who were a good second. In the class for six spikes in at least three varieties (gardeners and amateurs), Mr. James Stewart, gardener, Alloa, took first place with a very fine lot, and Mr. R. S. Aitkenhead, Gourock, was second.

For the collection of roses, in a space 8ft. by 5ft. (open), Mr. W. Ferguson, Dunfermline, Messrs. J. Cocker and Sons, Aberdeen, and the Killermont Nursery Company, Bearsden, entered, and the first place was awarded to Mr. Ferguson, who was also awarded a Silver Banksian by the R.H.S. for a very fine collection. Messrs. Cocker were placed second, and the Killermont Nursery Company third.

In the classes for decorative roses in vases, Mr. Ferguson was first for eight vases (open), Messrs. D. Robertson and Co., Helensburgh, being second. For six vases (gardeners and amateurs), Mr. John Finnie, Summerhill, Shandon, was the only entrant, and was awarded first prize. For six vases roses, six varieties, five blooms of each (open), Mr. Ferguson was first, Messrs. Cocker second, and Messrs. D. Robertson and Co. third. Mr. P. Kenyon, gardener to J. M. Clark, Esq., Troon, was first for three vases roses (gardeners and amateurs), and Mr. John Russell, Newton Mearns, second. In the single vase classes for gardeners and amateurs, Mr. Russell was first for any pink, for any other colour than white, red, or pink, and for vase artistically arranged with any foliage. For amateurs, Mr. James Ker, Stewarton, was first for the single vase with six blooms. Messrs. Jas. Cocker and Sons were first for thirty-six blooms, distinct (open), Mr. Ferguson was second, and the Killermont Nursery Company third. In the twenty-four bloom class (gardeners and amateurs), Mr. Wm. Virtue, gardener to Hugh Renwick, Esq., Castle Park, Lanark, was first, Mr. Joseph Barclay, gardener to Chas. C. Mann, Esq., Gourock, was second, and Mr. P. Kenyon third. Mr. Robt. Borrowman, Bargeddie, was first in the class for twelve blooms (amateurs), Mr. Aitkenhead second, and Mr. James Kerr, Stewarton, third.

For the collection of dahlias, in a space 9ft. by 5ft. (open) Messrs. M. Campbell and Son, High Blantyre, were placed first, and they were also awarded a Silver Flora Medal by the R.H.S. The collection, which was largely cactus, was a very fine one. Mr. Geo. Bowness, Busby, was second. Mr. D. Barbour, Lochwinnoch, was first for twelve blooms, show or fancy dahlias (gardeners and amateurs), Mr. Wm. Jenkins was second, and Mr. Alex. Welsh, Castlecary, third. For the twenty-four blooms of cactus dahlias (open) Mr. Geo. Bowness was first, Mr. R. Sutherland, Kirkintilloch, second, and Messrs. Alex. Lister and Son, Rothesay, third. In the vase classes Mr. J. Findlay, Cambuslang, was first for one vase collarettes.

For the collection of border carnations in a space 8ft. by 5ft. (open), Messrs. M. Campbell and Son were first, Mr. James Nicol, gardener to Allan Kirkwood, Esq., Darnley, Nitshill, was second, and the Killermont Nursery Company third. Messrs. M. Campbell and Son were first for twelve vases border carnations (open), Killermont Nursery Company second, and Mr. J. Nicoll third. Mr. Nicoll was also third for three vases (gardeners and amateurs).

Mr. John Fletcher, Auchenheath, Lanarkshire, carried off the first prize for a collection of sweet peas in a space 9ft. by 5ft. (open) with a very fine lot of blooms, for which he was also awarded a Silver Flora Medal by the R.H.S. and a silver cup presented by a private donor. Second place was taken by Mr. J. H. Crosley, Comrie, and Mr. John Smellie was third.

Mr. Geo. Bowness was first for eighteen vases sweet peas (open), Messrs. Guthrie Brothers, Ladybank, Fife, second, and Mr. Wm. McLaughlan, Kirn, third. For twelve vases (gardeners and amateurs) Mr. John Fletcher was first, Mr. James Paul second, and Mr. Geo. A. Turnbull, Garelochhead, third. Mr. Fletcher was also first for six vases, Mr. Paul being second, and Mr. P. Skellon, Eaglesham, third. Mr. John G. Williamson was first for three vases, Mr. Fletcher for one vase scarlet (Red Star), one vase lavender (Mrs. Heslington), and one vase pink (Elfrida Pearson), and Mr. J. Paul for one vase flaked (May Campbell).

Early-flowering chrysanthemums made a fine show. First honours for the twelve vases, distinct (open), went to Mr. Thomas Robertson, Thornliebank, and Mr. R. Sutherland being second. Mr. John Smellie was first for twelve vases (gardeners and amateurs).

In the classes for single-flowered chrysanthemums (open), Mr. Smellie was first for twelve vases, and Mr. A. McMillan second. For six vases Mr. R. Sutherland was first, and Mr. Jenkins second.

Mr. Charles Pattison carried off the first prize for the collection of flowers, cut from the open border, and arranged in a space 8ft. by 5ft. (gardeners and amateurs), and he was also awarded a Silver Banksian Medal for the exhibit, which was a very fine one, from the R.H.S., and also the Gold Medal presented by Mr. Whitton for the most meritorious display in the cut flower section. Mr. Robt. McLelland, gardener to Alex. Murray, Esq., Duncryne, Alexandria, was second with a very meritorious lot also.

Messrs. Gemmell Bros., Kilwinning, were first for twelve pentstemons (open), and Mr. John Richardson, Manor, Peebles, for six spikes. Mr. A. Laird, Johnstone, was first for twelve spikes of antirrhinums (gardeners and amateurs), and also for six spikes (amateurs). Mr. J. S. Ritchie, Denny, was first for six spikes phloxes (gardeners and amateurs); and in the following single vase classes open to gardeners and amateurs. Mr. Fletcher was first for French marigolds. Mr. Paul for Scotch and African marigolds, Mr. D. Galbraith for quilled asters, Mr. Ballantyne, Biggar, for Comet asters, and Mr. J. McIntyre for Victoria asters. Mr. A. McMillan was first for twelve vases annuals (gardeners and amateurs), and Mr. J. Fletcher for six vases annuals (amateurs). Mr. R. Watson, Kilsyth, was first for twelve begonia blooms (gardeners and amateurs). There was a fine show of pansies, especially the fancy section. For forty-eight blooms, fancy, distinct (open), Mr. C. Kay, Gargurmock, carried off the first prize, Mr. J. McKillop, Uphall, being second, and Messrs. A. Lister and Sons third. Mr. Kay was also first for twenty-four blooms (gardeners and amateurs) and twelve blooms (amateurs). Mr. Paul was first for twenty-four blooms show pansies (open), closely followed by Mr. Kay; and the latter was first for twelve blooms (gardeners and amateurs). Mr. John Macgrory, jun., Campbeltown, was first for forty-eight blooms violas, distinct (open), Mr. Kay being second. Mr. Paul was first for twenty-four blooms (gardeners and amateurs), Mr. Jas. McKillop second, and Mr. R. Hunter third. For twelve blooms violas (amateurs) Mr. A. Molloy, Campbeltown, was first, Mr. McKillop second, and Mr. Jas. Paul third.

## FRUIT.

For the table of dessert fruit, 10ft. by 4ft. 6in., decorated with plants in pots or cut flowers or foliage, or any combination of these, not more than sixteen dishes (gardeners and amateurs), the first prize of £6 for fruit was awarded to Mr. J. Gibson, gardener to the Duke of Portland, Welbeck, and this exhibit was also awarded the Veitch Memorial Medal. His fruit consisted of grapes, one bunch Madresfield Court, one bunch Black Hamburgh, one bunch Muscat of Alex. andria, and one bunch Buckland Sweetwater; peaches Sea Eagle and Barrington, nectarines Spencer and Pine Apple, pears Marfuerite Marillat and Souv. du Congrès, apples Washington and Cox's Orange, figs Negro Largo and Brown Turkey, and two seedling melons. Mr. Gibson was awarded the second prize for decoration. Mr. James Small, gardener to John Graeme Thomson, Esq., Norwood, Alloa, was second for fruit and third for decoration; and Mr. D. Kidd, gardener to Lord Elphinstone, Carbury Tower, Musselburgh, was third for fruit and first for decoration, which consisted of roses and francoa with selaginella. Mr. Gibson was first for the collection of twelve dishes of fruit, distinct varieties (gardeners and amateurs); Mr. J. Brown, gardener to A. A. Hagart Spiers, Esq., Houston, Renfrew, was second; and Mr. Small third. Mr. John Finnie, Summerhill, was first for the collection of six dishes (gardeners and amateurs); Mr. H. MacSkimming, gardener to W. T. Maclellan, Esq., Auchenault, second; and Mr. Gibson third.

In the principal grape class for eight bunches, decorated, not more than two of any variety (gardeners and amateurs), Mr. Jas. Dixon, gardener to Lord Rowallan, Rowallan, Kilmarnock, was first. His bunches were Madresfield Court (two), Muscat of Alexandria (two), Black Hamburgh (two), Muscat Hamburgh (two), and he was awarded 63½ points out of a possible 74. Mr. Dixon was also awarded the silver centenary cup bunches were very fine, and well finished. Mr. Robt. Glen, gardener to R. W. Donaldson, Esq., Blairvaddoch, Row, was a good second, with 59 points out of a possible 72. The third prize well to Mr. D. Halliday, Ascog, and the fourth to Mr. J. Middleton, Callendar Park, Falkirk. For four bunches of grapes, two white and two black, Mr. MacSkimming was first, and Mr. J. Finnie second. Mr. MacSkimming and Mr. Finnie were also first and second for two bunches Black Hamburgh grapes. Mr. J. Middleton was first for two bunches black grapes (other than Black Hamburgh), and Mr. D. Halliday second. Mr. MacSkimming was first for two bunches White Muscat grapes, and Mr. Finnie second. For two bunches white grapes other than Muscats, Mr. J. Dixon was first, and Mr. J. Brown second. For a bunch of grapes with finest bloom Mr. John Middleton first, and Mr. D. Halliday second. Mr. Halliday also secured first prize for the heaviest bunch of grapes, and Mr. Middleton was second.

For the collection of apples, twelve varieties, four of each (gardeners and amateurs), Mr. R. Greenlaw, gardener to H. J. Younger, Esq., Benmore, was first; Mr. A. T. Harrison was second, and Mr. J. Small third. For the collection of pears, six varieties, four of each, Mr. A. Harvey, gardener to Miss Hamilton, Rozelle, Ayr, was first Mr. Gibson second and Mr. R. Greenlaw third. For the collection of plums, six varieties, nine of each, Mr. D. Campbell, gardener to H. A. S. Gladstone, Esq., Copenoch, Dumfries, was first, Mr. Harrison was second, and Mr. Harvey third. For twelve plums, two varieties, six of each, Mr. J. Russell, Prospect House, Newton Mearns, was the only entrant, and was awarded first prize. For two melons, one green or white and one scarlet, Mr. Greenlaw was first, and Mr. Jowett was second.

For twelve pears, two varieties, six of each, Mr. T. A. Dunlop was first, and Mr. Russell second. For twelve peaches, two varieties, six of each, Mr. J. Ferrier was first, Mr. Finnie second, and Mr. Campbell third. For twelve nectarines, two varieties, six of each, Mr. Greenlaw was first, Mr. Harrison second, and Mr. Small third. For twelve figs, Mr. D. Halliday was first, Mr. A. McMillan second, and Mr. J. Brown third. For twelve apples, three varieties, four of each, Mr. W. Campbell, Alexandra, was first, and Mr. Russell second. For twelve dessert apples, three varieties, four of each, Mr. J. Gibson was first and Mr. D. Nicoll, gardener to J. H. Bell, Esq., Rossie, was second. Mr. Gibson also obtained the silver medal presented by the Highland and Agricultural Society of Scotland, along with the first prize. For twelve cooking apples, three varieties, four of each, Mr. D. Macgregor was first.

## VEGETABLES.

For collection of vegetables, in thirteen varieties (gardeners and amateurs), prizes presented by Messrs. Sutton and Sons, Mr. Gibson was first, Mr. C. Shaw, Kippen Station, was second, and Mr. H. Jowett was third. Mr. Gibson was also awarded a Silver Knightian Medal by the R.H.S. For collection of vegetables in nine varieties (gardeners and amateurs), prizes presented by Messrs. Webb and Sons, Mr. Shaw was first, Mr. J. Devey, Stranraer, was second, and Mr. J. Grey, Uddingston, was third. For collection of vegetables in thirteen varieties, confined to Scotland (gardeners and amateurs), first prize, with Hunter Memorial Medal, presented by Messrs. Austin and M'Aslan, was won by Mr. C. Shaw, Mr. H. Jowett being second, and Mr. W. P. Bell, Bothwell Castle, third. For collection of vegetables in nine varieties (amateurs), the first prize, presented by three of the directors of the society, was awarded to Mr. J. Devey, Mr. G. Watson, Kippen, being second, and Mr. J. Gray third. For the collection of salads, for which the Highland and Agricultural Society presented a silver medal, to be awarded along with presented by the Glasgow Seed Trade. The first prize, Mr. C. Shaw was first, Mr. R. Glen second, and Mr. Harrison third.

## BASKETS, BOUQUETS, ETC.

Mr. John Hood, Dalmore, whose chief decorative subject was Irish Elegance rose, was first for the floral decoration for a dinner table, 8ft. by 4ft. (gardeners and amateurs); Mr. J. Donaldson, Myrtle Bank, Kirn, second; Mr. A. Knight third; and Mrs. R. Drummond, Sanquhar, fourth. Mr. Hugh MacSkimming was first for a hand basket of cut flowers and foliage (gardeners and amateurs), and for a vase of early-flowering chrysanthemums. Mr. Hood was first for hand basket of early chrysanthemums (gardeners and amateurs), and for hand basket of carnations (gardeners and amateurs). Mr. J. Davidson, Ardencraig, was first for a vase of liliums (gardeners and amateurs). Mr. Donaldson was first for an epergne of sweet peas (gardeners and amateurs); and Mrs. Grace Bryan was first for a similar epergne (confined to ladies), and also for a hand basket of cut flowers and foliage, and for ladies' sprays and coat bouquets. Messrs. Arthur S. Ritchie and Co., Belfast, were placed first for two shower bouquets (bride and bridesmaid's) (open), and Mr. MacSkimming was a good second. For one shower bouquet (gardeners and amateurs), Mr. MacSkimming was first, and Mr. Knight second. Mr. MacSkimming was also first for the shower bouquet of roses (gardeners and amateurs).

## NON-COMPETITIVE GOLD MEDALLISTS.

The following were awarded Gold Medals in the non-competitive section: Messrs. Austin and M'Aslan (flowers, fruit, and vegetables); Messrs. Sutton and Sons, Reading (flowers, fruits, and vegetables); Messrs. Blackmore and Langdon, Bath (begonias); Messrs. Jas. Veitch and Sons, Chelsea (stove and greenhouse plants); Messrs. E. Webb and Sons, Stourbridge (flowers, fruits, and vegetables); Messrs. Dobbie and Co., Edinburgh (cut flowers); Messrs. Malcolm Campbell, Lim. (table plants); Messrs. Clibrans, Manchester (cut flowers).

## ROYAL HORTICULTURAL SOCIETY'S AWARDS.

The following were the awards by the Royal Horticultural Society:

Gold Medals.—Messrs. J. Veitch and Sons, for stove, etc., plants; Messrs. Sutton and Sons, Reading.

Cups.—Messrs. Malcolm Campbell, Lim., for table of fruit; Messrs. Dobbie and Co., for roses, peas, dahlias, etc.; Messrs. May and Sons, for ferns; Messrs. Blackmore and Langdon, for begonias.

Silver Hogg Medal.—Lord Rowallan (gardener, Mr. J. Dixon), for grapes.

Silver-gilt Knightian Medal.—Messrs. Clibrans, for vegetables.

Silver-gilt Flora.—Messrs. Austin and M'Aslan, for stove plants.

Silver-gilt Banksian Medal. — Messrs. Webb, Wordsley, for sweet peas, fruits, etc.; Mr. D. G. Purdie, for stove plants; Messrs. Hugh Dickson, Lim., for roses.

Silver Flora.—Colonel Stewart Richardson (gardener, Mr. J. E. Davies), for group of plants; Messrs. Cutbush, for carnations; Messrs. M. Campbell and Son, for dahlias; Mr. John Fletcher, for sweet peas; Mr. J. Smellie, for dahlias and chrysanthemums.

Silver Banksian Medal.—Messrs. Webb, for cut flowers; Messrs. Cunningham and Fraser, for cut flowers; S. A. Jones, for gladioli; Messrs. Young and Co., for carnations; Messrs. G. Main and Son, for gladioli; Mr. C. Pattison, for collection of flowers; Messrs. Austin and M'Aslan, for vegetables; Mr. W. Ferguson, for roses.

# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention correspondents are requested to distinctly mark the paragraph.

PLANTING BORDER CARNATIONS.—M. J. B., Hants: Towards the end of July I layered a considerable number of border carnations, and I am pleased to find that the layers are rooting most satisfactorily. As I only commenced the cultivation of these beautiful flowers less than a year ago, I am not well acquainted with the details of their cultivation, and am rather perplexed with regard to the most suitable time for planting the rooted layers in the beds in which they are to bloom. Some of my friends tell me they should be planted in the autumn, while others assure me that the most satisfactory results are obtained from spring planting. —The "best time" for planting border carnations is determined by the character of the soil in which they are to be grown. If the soil ranges between that which is light and a well-drained substantial loam, the most satisfactory results will be obtained from layers that are taken off and planted during the present month. When the planting is done in September or early in October, the roots push freely in the new soil, and, as they do not suffer during the winter, the plants become so well established as to make a vigorous growth as soon as there is a revival of activity in the spring. On the other hand, should the soil be naturally tenacious in texture and cold, there is a risk of the roots being more or less injured by the unfavourable conditions to which they are exposed during the winter, and of some perishing. Therefore, in heavy soil, the best course is to put the layers in pots during the current month, winter them in an unheated pit or frame, and plant them out early in March. In our next issue we shall publish a comprehensive article on the cultivation of border carnations, written by one of the most eminent amateur cultivators of the present day, and we advise you to take advantage of the information it contains.

SEMPERVIVUM DONCKELAARI. — C. W. Garner, Bedford: We are much obliged by the photograph of the fine specimen of Sempervivum Donckelaari that you have recently flowered, and we regret the photograph is not suitable for reproduction.

WINTERING CALADIUMS. — S. M., Kent: As my employers greatly admire the richly-coloured leaves of these handsome plants, I grow them largely, and it may be added most satisfactorily. There is no difficulty in growing them, but keeping the corms during the winter is a constant source of perplexity. I follow the practice of the gardener under whom I served as foreman immediately before being appointed to my position as head gardener. He was, and indeed still is, considered to be a good plantsman, a reputation he well deserves. A similar difficulty was then experienced to that with which I have now to contend. My practice is to turn the soil out of the pots a short time after the leaves have died down, take out the corms, and put them in flower pots with dry silver sand shaken down among them, a piece of cardboard being put in the bottom to prevent the sand filtering out through the hole provided for the escape of water. The pots, as they are filled with corms and sand, are placed on a shelf in the plant stove, where they remain throughout the winter, without, of course, their receiving any water. When the time arrives in the spring for repotting the corms, a considerable proportion are found to be in a state of decay and worthless. I am anxious to avoid this, and shall be obliged by your advice.—Your experience is that of many other cultivators, who adopt the mistaken practice of storing the corms in sand. The proper course of procedure is to leave the corms undisturbed in the pots in which they were grown until it is desired to start them into growth, and to lay the pots on their sides in a convenient part of the plant stove, but not near the hot-water pipes because of the excessive drying of the soil that follows their occupancy of such position. Stored in this manner, the corms will be found sound and plump when shaken out of the soil, and wholly free from the dry rot that does so much damage when storage in dry sand is resorted to. The pots must be kept in the stove, for in a lower temperature than is usually maintained therein many corms will decay.

WART DISEASE OF POTATOES.—An Anxious Reader: I am sending you some potato tubers that are affected with a disease that has not previously come under my notice. I should like to know what it is, and the best means of combating it.—The potatoes that you have sent us are infected with Black Scab or Wart Disease (Synchibrinum endobioticum) which appears to be slowly but steadily spreading in some parts of England. This is one of the notifiable plant diseases, and we advise you to at once give notice to the Board of Agriculture, as you will incur the risk of a fine not exceeding £10 for withholding such information. In digging the crop be careful to gather up the whole of the tubers, and to destroy all that show signs of infection by burning them. If they are thrown on the rubbish heap the decaying matter will become contaminated with the spores, and when used may be the means of infecting quarters that are at present quite free from the disease. You should not crop the infected ground with potatoes for two or three years.

STORAGE OF FILBERTS AND COB NUTS.—R. M. H., Sussex: We have this year very heavy crops of both filberts and cob nuts, and I should like to obtain trustworthy information with regard to the best way of keeping them in good condition for the table over a considerable period.—We have tried various methods of keeping nuts during the winter, and the most successful results have been obtained by packing them in large, wide-mouthed jars, and placing the latter in a cellar. When gathered the nuts should be spread out on the shelves of the fruit-room or some other suitable place for the husks to become dry. If you have no cellar at your command the jars may be placed on the floor of the fruit room, but we do not consider such position equal to a cellar.

STERILISATION OF SOIL.—F. B., Yorkshire: There has been a considerable discussion about the sterilisation of soil in relation to the cultivation of ornamental plants and useful crops, and I should like to know from an authoritative source whether it is good practice. Will you kindly state your opinion with regard to the matter.—There can be no doubt as to the advantages of soil sterilisation, but as yet the matter is in an experimental stage. It has been determined both in the laboratory and the garden that the sterilisation of the soil is distinctly beneficial, but the methods by which it can be the most satisfactorily carried out by the general body of cultivators require further investigation. To show the manner in which sterilisation is useful as an aid in cultivation, it is necessary to state that there are two classes of bacteria, one which is beneficial by the work it accomplishes, as for example, the fixation of atmospheric nitrogen, and the other which is harmful by keeping in check the useful kinds. The object of sterilisation is to bring the bacteria under control, and the researches of Dr. Russell and Dr. Hutchinson at Rothamsted have proved that some degree of control is possible. By subjecting the soil to the various processes of partial sterilisation, such as heating or treatment with antiseptics, like chloroform or toluene, the bacteria which interfere with the activities of those doing useful work by breaking down the nitrogen compounds to the state of ammonia, are kept in check. Heating the soil to the temperature of boiling water for two hours has had the effect of doubling its productivity, and such a process has been found profitable in the cultivation of various crops under glass. Market growers of cucumbers and tomatoes prepare very rich composts for the plants, but such rich soils, while very rich on analysis, become in a few years incapable of growing satisfactory crops. Partial sterilisation, by eliminating the injurious organisms, restores the fertility of the soil, and renders profitable culture again practicable.

R.H.S. RULES FOR JUDGING.—A. B., Cosheston, Pembroke: Kindly favour me with the address of the publisher of the Royal Horticultural Society's Rules for Judging flowers, with the price, inclusive of postage. Is there a similar publication for vegetables ?—The price, post free, of the R.H.S. Rules for Judging is 1s. 6d., and, if you send a postal note for that amount to the Secretary, R.H.S., Vincent Square, Westminster, S.W., the publication will be supplied to you through the post. The judging of vegetables is fully dealt with in the rules.

GREEN SWEET PEA.—C. S. P., Croydon: I shall be extremely obliged if you will kindly let me know whether there is such a plant as a green sweet pea, and, if so, will you give me the name of the pea.—We are not aware of there being a sweet pea with green flowers.

HYDRANGEAS.—W. H., Hampshire: Retiring from an active business life, I have taken a house with a large garden in a pleasant part of Hampshire, and not far distant from the sea. For a long period the hydrangeas have been favourites of mine, but in my garden, some distance north of London, I was not able to grow them satisfactorily in the open. I am therefore desirous of knowing whether they can be planted in the open in my new garden in Hampshire, with the assurance of their growing into large bushes and blooming freely.—The distinct and handsome Hydrangea paniculata grandiflora may certainly be planted, for it is quite hardy in this country, and the beautiful H. Hortensia, to which we assume you allude, may also be planted with the assurance of growing vigorously and blooming profusely. Generally speaking, it is wise in the outdoor culture of the latter to select a warm, sheltered position, because of its liability to

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injury from severe frosts, and, as a rule, it should be planted along the front of a shrubbery facing south or near a wall. In the southern counties of England it may be planted in bold groups on the lawn with the most satisfactory results. The stations should be well drained, and the soil be moderately light and rich. Very little pruning will be required, and usually the removal of a few of the most weakly shoots and taking the tops off the stronger ones will alone be necessary. The robust H. paniculata grandiflora, which produces huge pyramidal flower heads, can be successfully grown in the open on both heavy and light soils. You will find it singularly effective both in large masses on the lawn and in bold groups in the shrubbery border. When grown in groups the shoots produced in the previous season should be cut back to within a few inches of the soil.

### NAMES OF PLANTS.

M. C., Corbridge-on-Tyne.—Your plant is Calceolaria chelidoaifolia.

S. M.—The crested form of the Royal Fern, Osmunda regalis cristata.

T. S.—1, Sanchezia nobilis variegata; 2, Athyrium filix-fœmina Craigi; 3, Tillandsia tesselata; 4, Sericographis Ghiesbreghtiana.

S. K., Brighton.—1 Berberis stenophylla; 2, Clerodendron trichotomum; 3, the fruit of Pyrus baccata; 4, Cotoneaster horizontalis.

F.—1, Casuarina sumatrana; 2, Aotus gracillima; 3, Coronilla glauca variegata; 4, please send when in bloom; 5, Lotus peliorchynchus.

W. B., Yorkshire.—We are unable to undertake the naming of florists' flowers; the blooms of perpetual carnations you send are so out of character that it would not be possible to recognise them.

AMATEUR.—The shrub which you saw growing on the west side of the rock garden at Kew and bearing a heavy crop of brilliant orange-red berries is Cratægus Lelandi, and is one of the best of the berry-bearing shrubs for culture in small gardens.

### NAMES OF FRUIT.

L. F.—1, Dartmouth Crab; 2, Transcendent Crab.

W. R. H.—1, Farleigh Prolific damson; 2, Shepherd's Bullace.

YOUNG GARDENER.—1, Washington; 2, Kirk's Blue; 3, Reine Claude de Bavay; 4, Pond's Seedling; 5, President.

F. W. S. G.—1, White Transparent; 2, Warner's King; 3, Ribston Pippin; 4, Newton Wonder; 5, Royal Jubilee; 6, Old Winter Nonpariel.

J. W.—1, Lord Grosvenor; 2, Lane's Prince Albert; 3, Ecklinville; 4, Beurre d'Avalon, also known as the Glastonbury pear; 5, Bergamotte d'Esperen.

## CATALOGUES RECEIVED.

MESSRS. SUTTON AND SONS, READING.—As usual the bulb catalogue issued from Reading is remarkable for its comprehensive character and attractive style. Interspersed with the carefully-prepared lists of the various kinds are numerous illustrations showing the use of bulbs in the garden, and in addition there is a finely-executed coloured plate illustrating the charming effect produced by the combination of blue and yellow hyacinths.

MESSRS. E. WEBB AND SONS, WORDSLEY, STOURBRIDGE.—The attractively-illustrated catalogue of bulbs that we have received from Messrs. E. Webb and Sons will be found of a high degree of utility in the preparation of lists of the most noteworthy varieties of the several kinds of bulbous plants, whether required for beautifying the conservatory or flower garden, or for obtaining honours at the exhibitions. All the finest varieties are enumerated and briefly described, and not a few illustrated.

MESSRS. BARR AND SONS, 11-13, KING STREET, COVENT GARDEN, LONDON, AND TAPLOW NURSERIES, BUCKS.—The two catalogues issued by this firm are of special interest to those who appreciate the importance of bulbous plants as aids in beautifying the flower garden and plant houses. In the catalogue of daffodils all the finest of the new varieties, and the best of the old varieties, and they are many, are described, and in such manner that their distinctive characteristics are readily understood. Not less remarkable is the comprehensive catalogue of bulbs other than daffodils.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Flowers from the open ground have been so damaged by the rain that more attention is being given to glass grown flowers.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Arums | per doz. | 1 6 | to | 2 0 |
| Adiantum cuneatum | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Asters, white | per doz. bun. | 1 0 | | 2 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 0 6 | | 2 0 |
| ,, | per doz. bun. | 6 0 | | 12 0 |
| ,, Malmaison | per doz. | 3 0 | | 8 0 |
| Cattleyas | per doz. | 9 0 | | 12 0 |
| Chrysanthemum maximum, | per doz bun. | 0 9 | | 1 0 |
| Chrysanthemums | per doz. bun. | 2 0 | | 3 0 |
| Coreopsis | per doz. bun. | 0 6 | | 1 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 4 0 | | 6 0 |
| Eucharis | per doz. | 2 0 | | 2 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 0 6 | | 1 0 |
| Gardenias | per doz. | 2 0 | | 2 6 |
| Gladiolus | per doz. | 1 0 | | 4 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Lapageria | per doz. | 1 0 | | 2 0 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 0 | | 1 3 |
| ,, longiflorum | per doz. | 1 6 | | 2 0 |
| Lily of the Valley | per doz. bun. | 10 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 0 | | 4 0 |
| Mignonette | per doz. bun. | 4 0 | | 5 0 |
| Montbretias | per doz. bun. | 4 0 | | 5 0 |
| Odontoglossums | per doz. blms. | 2 0 | | 3 6 |
| Pelargoniums | per doz. bun. | 2 0 | | 6 0 |
| Roses | per doz. | 0 9 | | 1 6 |
| Scabious | per doz. bun. | 2 0 | | 3 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Statice | per doz. bun. | 2 0 | | 2 6 |
| Sweet Peas | per doz. bun. | 1 0 | | 2 0 |
| Sweet Sultan | per doz. bun. | 1 0 | | 3 0 |
| Stephanotis | per 6 doz. blms. | 1 6 | | 2 0 |
| Tuberoses | per doz. | 0 4 | | 0 5 |
| Violas | per doz. bun. | 0 9 | | 1 0 |

### Fruits.

The supplies are fairly good, and the demand steady.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English | per bush. | 2 0 | to | 5 0 |
| Bananas | per bun. | 7 0 | | 12 0 |
| Figs | per doz. | 1 0 | | 2 6 |
| Grapes, English | per lb. | 0 9 | | 4 6 |
| ,, Belgian | per lb. | 0 6 | | 1 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 6 |
| Greengages | per ½-sieve | 9 0 | | 12 0 |
| Lemons | per case | 12 0 | | 30 0 |
| Melons | each | 0 6 | | 2 0 |
| ,, Cantaloupe | each | 1 0 | | 3 0 |
| ,, Valencia | per case | 6 0 | | 9 0 |
| Nectarines | per doz. | 2 0 | | 12 0 |
| Oranges | per case | 10 0 | | 20 0 |
| Peaches | per doz. | 2 0 | | 12 0 |
| Pears | per bush. | 3 6 | | 6 0 |
| Pears, French | per box | 2 0 | | 5 0 |
| Pears, English | | 3 0 | | 5 0 |
| Pineapples | | 2 0 | | 5 0 |
| Plums | per ½-sieve | 3 6 | | 5 6 |

### Vegetables.

The supplies are fully equal to the demand, and prices are rather low.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 1 0 | to | 1 6 |
| Aubergines | per doz. | 2 0 | | 2 6 |
| Beans, Runner | per bush. | 1 3 | | 2 0 |
| Beet | per bush. | 1 6 | | 2 6 |
| Cabbage | per tally | 3 6 | | 3 6 |
| Carrots | per doz, bun. | 2 0 | | 3 0 |
| Cauliflowers | per doz. | 1 0 | | 3 0 |
| Cucumbers | per doz. | 1 6 | | 2 6 |
| Endive | per doz. | 1 6 | | 3 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per score | 0 9 | | 1 0 |
| Marrows | per doz. | 0 9 | | 2 0 |
| Mint | per doz. bun. | 2 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per bush. | 3 6 | | 6 0 |
| Parsley | per doz. bun. | 2 0 | | 3 0 |
| Peas | per bush. | 3 0 | | 5 0 |
| Radishes | per doz. bun. | 0 9 | | 1 0 |
| Shallots | per doz. lbs. | 2 0 | | 2 6 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 3 0 | | 3 6 |
| ,, Guernsey | per doz. lbs. | 2 6 | | 3 0 |
| Turnips | per doz bun. | 1 6 | | 3 0 |
| Watercress | per doz. bun. | 0 4 | | 0 6 |

### LONDON POTATO MARKETS.

The wet weather so greatly interfered with marketing potatoes that the supplies are moderate, and prices are rather higher.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per ton | 85 0 | to | 90 0 |
| Kents | per ton | 90 0 | | 100 0 |
| Lincolns | per ton | 90 0 | | 100 0 |
| Blacklands | per ton | 80 0 | | 85 0 |

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. Aug. 25 to Aug. 31. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Aug. 25—Sunday | 2 30 | 61 | 57 | 64 | 52 |
| ,, 26—Monday | 0 42 | 53 | 53 | 61 | 53 |
| ,, 27—Tuesday | 4 36 | 53 | 50 | 60 | 49 |
| ,, 28—Wednesday | 4 36 | 54 | 51 | 63 | 42 |
| ,, 29—Thursday | 5 48 | 59 | 59 | 67 | 54 |
| ,, 30—Friday | 2 30 | 60 | 57 | 66 | 55 |
| ,, 31—Saturday | 7 30 | 56 | 52 | 64 | 46 |
| Means | (total) 28 12 | 56 | 54 | 64 | 50 |

| Date. 1912. Aug. 25 to Aug. 31. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Aug. 25—Sunday | 0·54 | 60 | 59 | 59 | 48 |
| ,, 26—Monday | 0·27 | 60 | 60 | 59 | 51 |
| ,, 27—Tuesday | trace | 59 | 59 | 59 | 46 |
| ,, 28—Wednesday | 0·07 | 58 | 59 | 59 | 38 |
| ,, 29—Thursday | 0·17 | 60 | 58 | 59 | 55 |
| ,, 30—Friday | 0·02 | 60 | 59 | 58 | 51 |
| ,, 31—Saturday | 0·06 | 59 | 59 | 58 | 40 |
| Means | (total) 1 13 | 59 | 59 | 58 | 47 |

## FORTHCOMING ENGAGEMENTS.

MONDAY, September 9.—National Chrysanthemum Society; Floral Committee at three o'clock.
United Horticultural Benefit and provident Society.

TUESDAY, September 10.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m., on "Cape Pelargoniums," by Miss Troyte Bullock; Scientific Committee at 4 o'clock.

WEDNESDAY, September 11.—Royal Caledonian Horticultural Society; two days.
East Anglian Horticultural Club.

THURSDAY, September 12.—National Rose Society's Autumn Show at the Royal Horticultural Hall, Westminster.

SATURDAY, September 14.—Armathwaite Floricultural Society.

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COACHING BY CORRESPONDENCE CLASS for the R.H.S. Exam. Gardeners should write for prospectus, with past successes. MEDALLIST, Pightle, Letheringsett, Norfolk.

ADVERTISER, wishful to lay out quaint old English Garden in Harrogate, about three-quarters acre square and flat, asks for designs. Ten Guineas given for accepted design.

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Wath-on-Dearne, Yorks.

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

C. PAXTON, Branches Park Gardens, Newmarket, highly recommends YOUNG MAN as Rose Grower and Assist in Pleasure Grounds in a large establishment; smart, civil, and obliging; 7½ years' experience here; desires a change; age 31.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

G. BATES, Head Gardener to A. D. ACLAND, Esq., Digswell House, Welwyn, Herts, can thoroughly recommend strong LAD, age 17, as IMPROVER (Inside); two years' experience; Bothy preferred.

GARDENER (Head Working, or good single-handed); life experience; last five years Head; excellent references; age 32; married, one child. TYLER, Dalton House Gardens, Watford.

GARDENER (Head), age 32, married, one child, aged 4½; seventeen years' practical experience in carnations, chrysanthemums, fruit, stoves, house and table decorations, etc., seeks SITUATION where five or more are kept; six years as head. Apply, G. MOWBRAY, The Gardens, Tansor Court, Oundle, Northants.

GARDENER (Head Working). — Mrs. MACLEAN recommends H. MITCHELL as above; life experience; age 30; married, one child. Cottlewell Cottage, Otford, Kent.

GENTLEMAN strongly recommends GARDENER (Head Working); thorough practical man; life's experience in all branches of up-to-date gardening; 28 years' good references; Land and Stock; no family. FOOTE, Adsdean, Chichester, Sussex.

GARDENER (Working, with or without help), thoroughly understands his business in all its branches; Flowers, Fruit, and Vegetables, Vines, Peaches, Orchids, Ferns, Tennis, Herbaceous Plants and Shrubs; a good grower of Chrysanthemums. J. M., Box 2,594, Office of this Paper.

GARDENER (Head).—Advertiser offers his services to any Lady or Gentleman requiring a thoroughly practical man; life experience in first-class establishments, including Leonardslee; present situation four years as Head; disengaged September 7; age 35. G. W. WYATT, Stonehurst Gardens, Ardingly.

GARDENER (Head Working), age 32, seeks SITUATION( where two or three are kept; thoroughly experienced in Fruit, Flowers, and Vegetables, Roses, and Herbaceous Plants; 8½ years' excellent reference from present situation. T. H. ORAM, Grangehyrst Lodge, Grange Hill, South Norwood, S.E.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Single-handed, or with help); experience inside and out; vines and poultry; good references; married, one child (boy, 8½); age 39. C. H. SMITH, 44, Ravenbourne Road, Catford. (No circulars.)

GARDENER seeks SITUATION (Single-handed); experienced (Inside and Out), or good Kitchen Gardener; good references; married; age 32. E. REYNOLDS, 93, London Road, Maidstone, Kent.

**Read what our Advertisers write re "Gardeners' Magazine."**

"Glad to say that H. S. has got a situation in Norfolk, and I beg to thank you, and on behalf of S."

Yours, etc.,
J. A.

"I beg to say the youth has found an engagement through your paper. Thanking you for your assistance," Yours, etc.,
W. T.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Head Working, or good Single-handed); highly recommended by late employer; good experience with Fruit, Flowers, and Vegetables; married, no family; excellent references; disengaged. SAUNDERS, 41, Sussex Road, Tonbridge. (No circulars.)

GARDENER (Head Working, where several are kept); life experience in all branches of the profession, both Inside and Out; especially well up in Hardy and Herbaceous Plants, Bog and Water Gardens; excellent references; married, no family. A. T., 70, Peel Road, North Wembley, Middlesex.

GARDENER (Head Working); thorough and practical in all branches of up-to-date gardening; 28 years' good references; Land and Stock if required; no family. FOOTE, Adsdean, Chichester, Sussex.

GARDENER (Head); life practical experience in all branches; disengaged when suited; six years' good reference from present employer. KETTLE, Violet Cottage, Whitstone Road, Pen-y-lan, Christchurch, Newport, Mon.

GARDENER, age 27, seeks SITUATION (Inside and Out, or Kitchen Garden); 14 years' experience; disengaged; good references; married. A. SHONE, High Street, Oxted, Surrey.

GARDENER (Head Working).—Mr. COLLETT, Kirtlington Park, highly recommends H. STEDMAN where three or more are kept; life experience Inside and Out; Vines, Fruit, Flowers, Kitchen Garden; age 35; married, two children; life abstainer; good references. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GENTLEMAN recommends LAD (17½) as Improver; understands Kitchen and Flower Garden; anxious to learn greenhouse work; good reference; Bothy preferred. Apply, 2,842, Office of this Journal.

H. DE LA RUE, Esq., Six Mile Bottom, wishes to recommend W. SCOTT, Gardener (Head Working, where two or more are kept); experienced Inside and Out; married, no family; middle age; disengaged. Apply, SCOTT, Bulwick, Wansford.

TWO YOUNG MEN seek SITUATION; ages 20 and 25; 2½ and 5 years' experience, Inside and Out; Kitchen Garden and Pleasure Ground preferred; good references. A. H. FORSEY, Winsham, Chard, Somerset.

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YOUNG MAN seeks SITUATION as GARDENER, Inside and Out; had experience since school days in gardening; good references. G. W. BENTON, 161, Duke Street, St. Helen's, Lancs.

YOUNG MAN (23) seeks SITUATION in or near Surrey, as CHAUFFEUR-GARDENER, or Groom-Gardener; can ride and drive well, single or pair. Apply BOATWRIGHT, The Gardener's Lodge, Alton Lodge, Roehampton, S.W.

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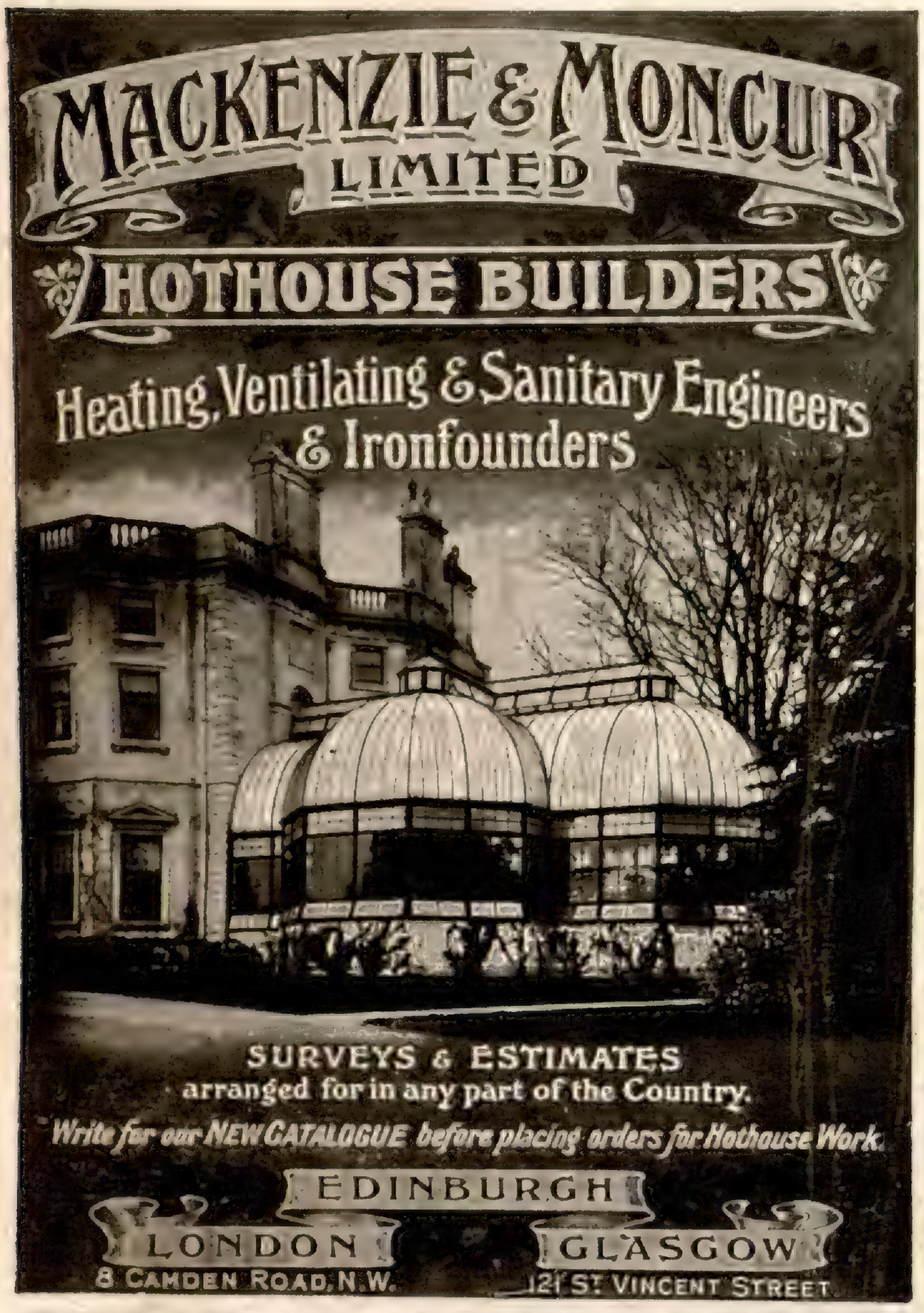

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**EDINBURGH FLOWER SHOW.—Full Report.**

# THE GARDENERS' MAGAZINE.

No. 3,072. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.) SATURDAY, SEPT. 14, 1912. (10/6 per Ann. Post Free. To Foreign Countries, 14/-.) **Twopence.**

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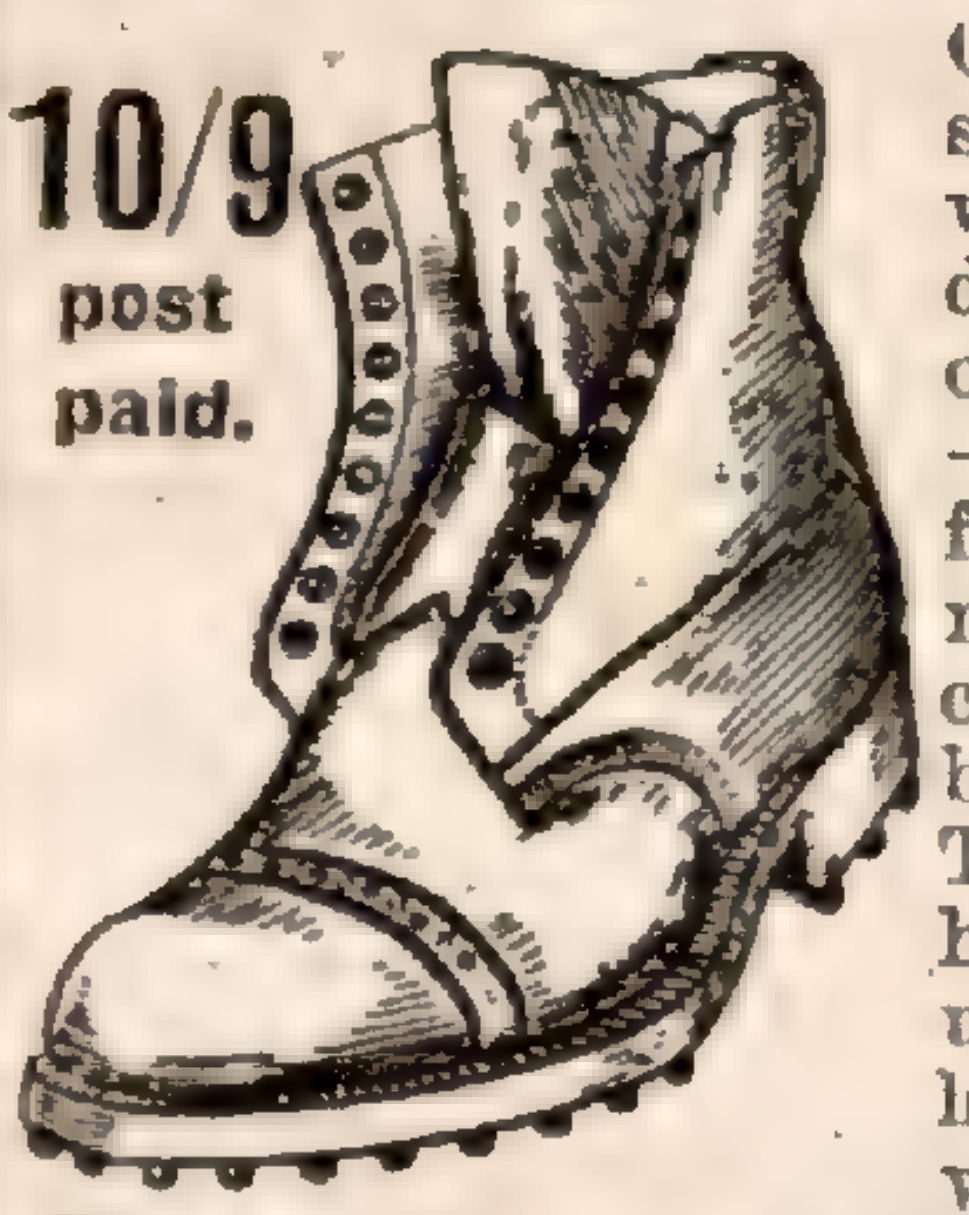

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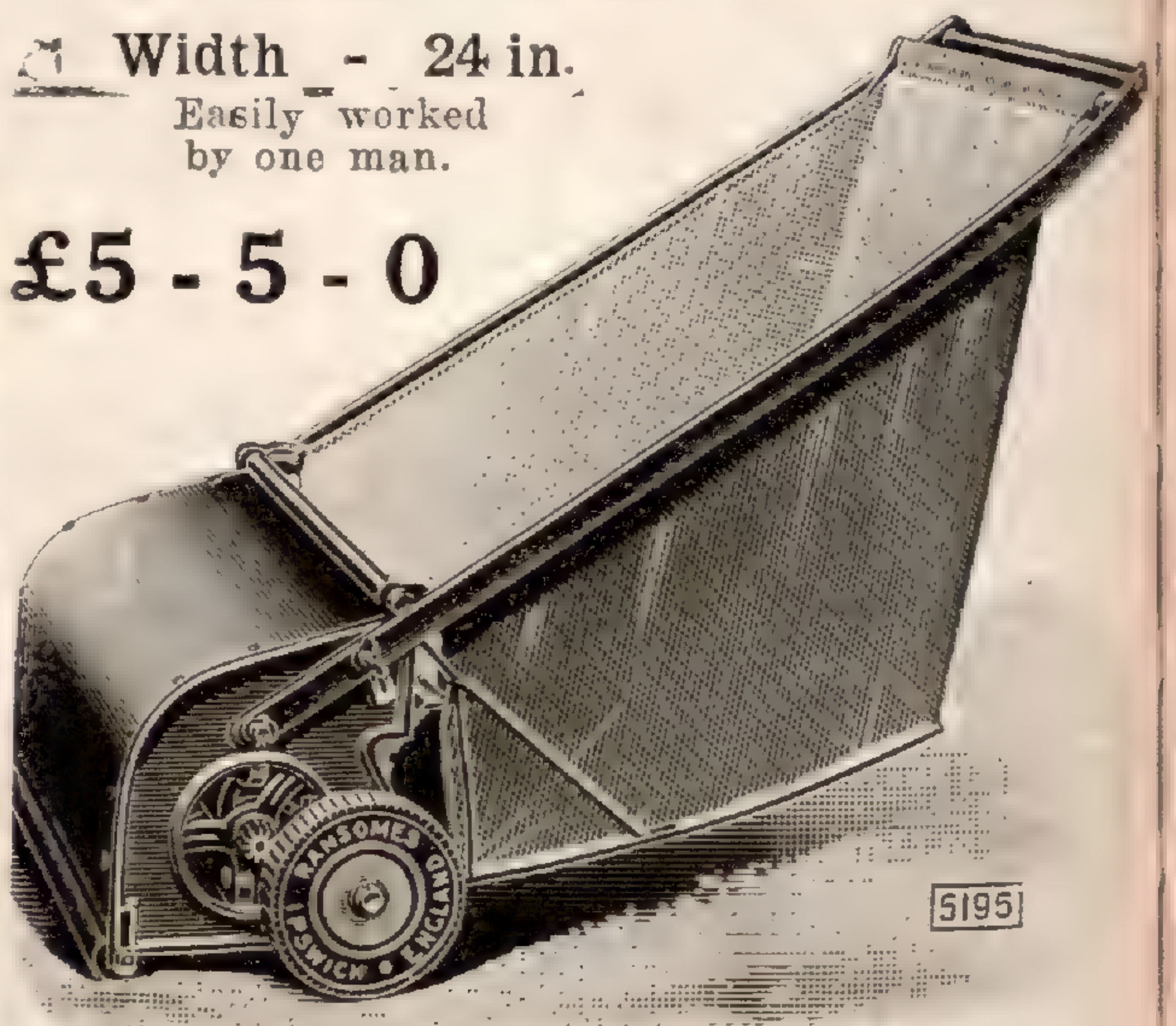

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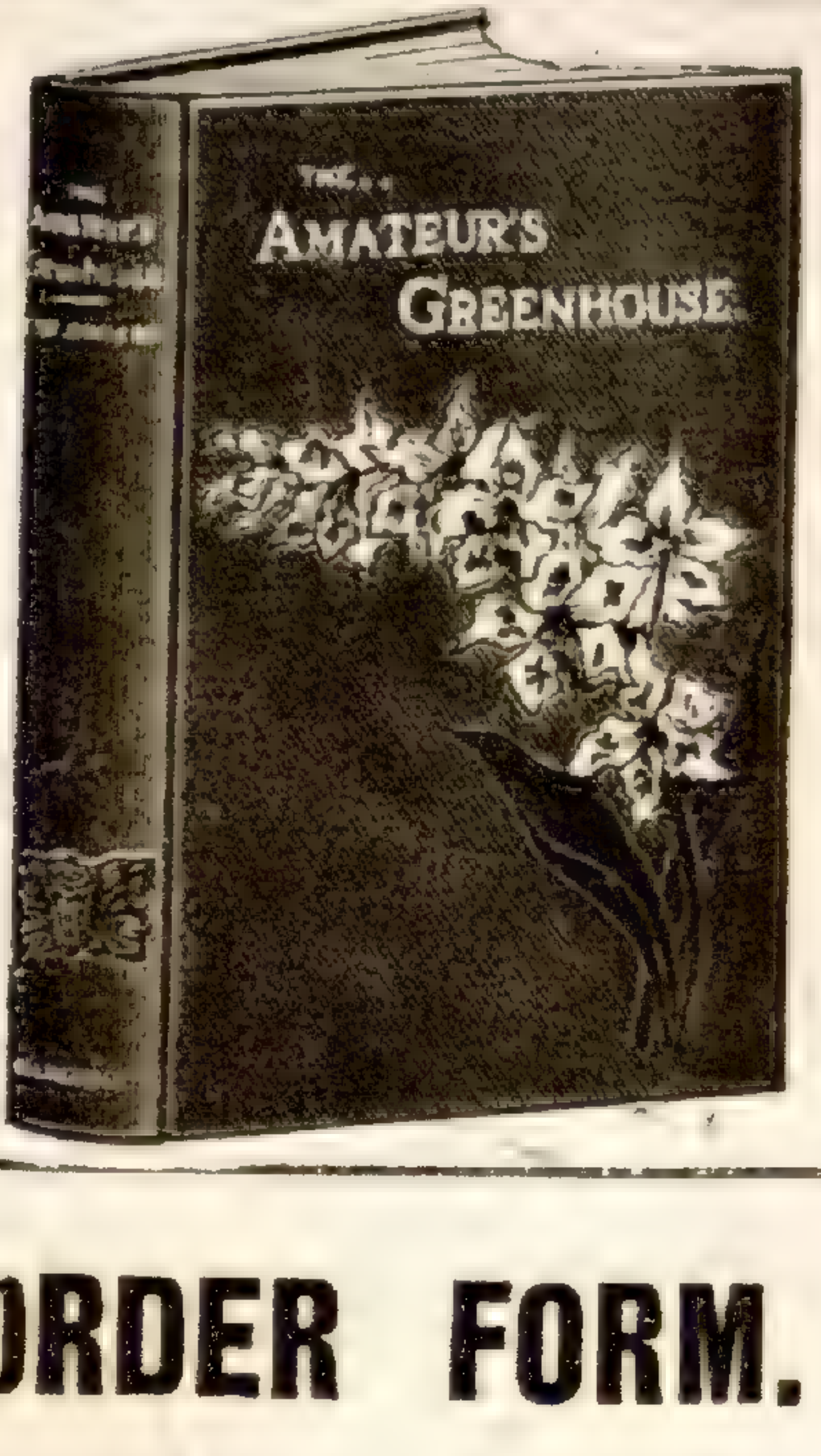

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VOL. LV.—No. 3,072. SATURDAY, SEPTEMBER 14, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Spontaneous Generation.

Professor Schäfer's opening address to the British Association must, we imagine, have struck many of his audience, and eventually many of his scientific readers, as representing a great retrograde step in evolutionary teaching. In the last century the doctrine of spontaneous generation, i.e., the development of life from inorganic material without a previous egg or germ, was practically demolished by innumerable experiments undertaken by Professor Tindall and other eminent scientists, who conclusively proved that, however fitted for nutrition a material might be, unless access were given to it, after thorough sterilisation, of living germs, such material developed no organisms. It was simultaneously proved also that the air we breathe was so laden with germs that the minutest quantity of it, if admitted to the material, was capable of conveying germs of life, which then profited by the opportunity, and multiplied exceedingly. In the old days, when the theory of creation involved the idea of the creation of even highly organised beings, including even man himself, from mere clay, spontaneous generation was naturally widely accepted, and the appearance of grubs in decaying flesh and innumerable other unexplained developments of life, were naturally imputed to a simple transformation of the nutriment direct into organisms fitted to devour it. Many scientific observers, however, declined to accept this theory, and by experiment demonstrated in all cases that if the all-essential egg or spore, already derived from a living organism, were excluded, no life appeared, and "omne vivum ex vivi" became the established motto. Despite all this, however, we are now informed that, in all probability, ultra-microscopic development of primary life germs, i.e., germs invisible even with the highest powers of the microscope, may be, even under the present conditions of the world, evolving themselves directly from inorganic material. A theory which is that of spontaneous generation pure and simple, since the production of such germs or primary forms of life, must result, if it means anything at all, in an evolution which would eventually bring their progeny within the realm of visibility, as evolution clearly shows us must have been the case in the primary germs or cells which started the life cycle of the world as we are now enabled to study it in the shape of fossils and existing organisms, simple and complex. Such study forces us to conclude that, however the primary cell was engendered, it must have had within it the power of not merely reproducing its own primary form, but of changing that form in response to its environment, and thus become more and more complex to fit more complex conditions until, as a result, we see the wonderful world around us filled with a practical infinity of organic adaptations and endowed with a faculty of progression on wider and wider lines. A primary cell, i.e., one produced by mere chemical combination of nutritious elements, if not so endowed would be useless as an evolutionary factor, and how can we impute such an endowment to merely chemical action? We know, as regards plants, that, although they are only provided with a few elements for their nutrition and growth, they are capable of associating and recombining these into such an infinity of different substances, that members of one and the same genus may yield products of the most opposite character, boons or banes, as the case may be. We also know that all this work is done by means of cells, which research has shown to be of an inconceivably complex character, despite their apparent simplicity. Professor Schäfer, however, unless we sadly miscontrue his words, considers that if our chemists could absolutely determine the constituents of the cell formation, they could synthetically construct a living cell, i.e., induce spontaneous generation. Here, however, the all-important point is overlooked, viz., that the cell is not merely a sac containing a glutinous liquid, which the chemist might, and indeed can, imitate very closely, but there is also the wonderfully endowed nucleus, the "creative" centre, in which, though but a microscopic bundle of fibres, lies all the potencies of the race it sprang from, plus, probably, future ones. What sort of nucleus would the chemical elements contrive? There are no potencies to inherit, and therefore none to transmit when the chemical molecules start on the difficult and non-chemical course of reproduction by means of a dividing wall, itself a mystery of cell formation, which can only be formed by the directive impulse of the "nucleus" itself. We are indeed confronted in this connection with a metaphysical difficulty. Accepting the nebular hypothesis, that our earth was originally a glowing mass, which slowly cooled down and formed a crust divided by oceans on or in which life then appeared, the materialist argues that such life must have had a spontaneous commencement as a subtle combination of inorganic matter in which a vital spark was engendered under the conditions then existent. This, of course, is beyond proof, as indeed, is any other theory regarding the origin of life. The non-materialist argues, on the

MR. ROBERT MORTON.

other hand, that the evidence of plan and design, and the wondrous adaptations among which we live, and of which we form part, indicate some creative guidance, and that of a benevolent, omniscient, and omnipotent character. This doctrine, though it involves conceptions far and away beyond human capacity, is certainly the more comforting of the two, and appeals more deeply than one which argues that all the world's beauty, charm, and more especially the intellectual enjoyment it provides, is the mere outcome of blind laws minus a Law-giver.

**Mr. Robert Morton,** who has for some years occupied a leading position among the large body of amateurs who devote some portion of their leisure to the cult of the border carnations, evinced a strong affection for these delightfully fragrant flowers quite early in life, and before he was out of his teens he entered on their cultivation. He, however, considers that it was not until 1897 that he began to grow them seriously. Since that year he has devoted much time and attention to his favourite flowers, and, as the result of unremitting attention and a keen appreciation of their cultural requirements, has from the first achieved much success. His success induced him, some eight years since, to exhibit at the exhibitions of the National Carnation and Picotee Society. In 1908 Mr. Morton was successful in winning the Divisional Cup in the second division, and this achievement he repeated at the exhibition held by the society in July last. In 1910 Mr. Morton competed for the Martin Smith (or Amateurs') Cup, and was placed second. His failure to obtain the coveted award evidently stimulated him to further endeavour, for in 1911 and the present year he was successful in winning this trophy. Evidently, Mr. Morton has a decided preference for border carnations that are shown more or less naturally, for he confines himself to the classes for undressed flowers, and has not at any time competed for the prizes for dressed flowers shown on cards. Mr. Morton attributes much of his success to the many kindnesses and hints on the cultivation of the plants that he received from the late Mr. James Douglas, who, as so well known, was ever ready to encourage amateurs in the cultivation of these and other flowers, and to assist them in any difficulties with which they had to contend, owing to their not being conversant with some of the details essential to success. Mr. Morton evidently fully utilised the advice he received, and in the interest of border carnations we trust he may long continue to take an active interest in the work and the exhibitions of the National Carnation and Picotee Society, for his success as a cultivator and exhibitor can hardly fail to have a stimulative effect upon those entering on the cult of his favourite flowers. We have been fortunate in inducing Mr. Morton to describe his method of procedure in the cultivation of border carnations for exhibition, and we commend his contribution, which appears in another part of this issue, to those of our readers who are interested in these flowers.

**The Mendelian Method.**—In the presidential address given by Professor Keeble at the opening meeting of the Botanical Section of the British Association special reference was made to the great value of the Mendelian method in biological research. If, as he believed was the case, the greatest gift which an experimental science could receive was a new, serviceable general method, then to no man were biologists more indebted than to Mendel, for such a method he gave to their science. The supreme importance of Mendel's contribution to science consisted in this, that instead of mixing anything with anything, he had taught them the value of the method of genetical analysis of individual characters. Thus the first part of the Mendelian restatement of the old problem of heredity read, "Investigate one by one the modes of inheritance of the several characters of an individual. Choose for this purpose organisms which are as far as possible alike in all respects except for the character under investigation. Carry the experiment to its conclusion, even to the third or fourth generation. If uncertain results are obtained, ascertain before discarding the method whether the uncertainty may not be due to the interference of other characters not to be suspected a priori of exercising an influence upon the expression of the character under investigation." Who, for example, would suspect a morphological character like thickness of stem of exercising an influence on the time of flowering of a plant? Yet such was the case with the pea (Pisum sativum), and there was evidence that when this disturbing influence was removed, inheritance of time of flowering followed Mendelian rules.

**Foreign Horticultural Exhibitions.**—An international horticultural exhibition will, as already announced in these pages, be held at St. Petersburgh in April, 1913, and a great chrysanthemum and fruit show at Nantes, November 12-17 of the present year. The President and Council of the Royal Horticultural Society have been asked to suggest some names of gentlemen willing to act on the jury of one or other of these exhibitions. They will consequently be glad to hear from any British horticulturists intending to attend either of them. They should, of course, write to the Rev. W. Wilks, Vincent Square, Westminster, S.W.

**The Wisley Viola Trial.**—The trial of violas has this year been so successful, particularly in the late spring and early summer, that it has been suggested (and the council have accepted the suggestion) that the trial should be continued in 1913 for the purpose of determining the date of the flowering of the various varieties. Growers, amateurs as well as trade, are therefore requested to send three rooted cuttings of each variety (old as well as new) so that they may be planted before the third week in October. Address by post, The Superintendent, R.H.S. Gardens, Wisley, Ripley, Surrey.

**R.H.S. Daffodil Show,** 1913. — The Royal Horticultural Society's daffodil show will next year be held on Tuesday and Wednesday April 15 and 16. The schedule of prizes may be now obtained from the Secretary, Royal Horticultural Society, Vincent Square, Westminster, London, S.W.

**Northern Fruit Congress.**—The conference on fruit culture that was held at Carlisle on the 3rd and 4th inst., under the auspices of the North of England Horticultural Society in conjunction with the exhibition of the Carlisle Horticultural Society, was attended with a fair amount of success. At the afternoon meeting on the first day Mr. Chisholm gave a demonstration of the most approved method of fruit bottling. This was followed by an address by Mr. G. P. Berry on "Soils in Relation to Fruit Growing." Professor F. V. Theobald was to have given at the evening meeting on the first day a lecture on "The Spraying of Fruit Trees," but was unable to attend, and his place was taken by Mr. Somers Rivers. The programme of the meetings held on the second day included a fruit bottling demonstration by Mr. W. B. Little, a lecture on "Canker and Other Bark Diseases," by Mr. F. J. Chittenden, and a demonstration of pruning fruit trees and bushes.

**The British Potato Crop,** which was very promising over a wide area in Great Britain until about the middle of July, has suffered so severely from the wretched weather that has been experienced since then, as to suggest one of the least satisfactory of the yields of late years. The disease is rife over the whole of Great Britain, and, in many instances, it has done much damage. In some instances large areas of potatoes have been under water, and the soil is in a saturated condition. According to the official returns which have recently been issued, the area under potatoes in England and Wales amounts to 463,007 acres, or an increase of 33,835 acres, as compared with last year's crop.

**Mr. E. A. White's Visits to Ottawa and Stockholm.**—An interesting sequel to the Royal International Horticultural Exhibition held in May last has been afforded by the recent visits of the honorary managing director, Mr. Edward White, to Ottawa and Stockholm. At the former city he was called upon by the Dominion Government to advise upon the laying out of the ground adjoining the Parliament Buildings acquired for the purpose of the erection of extensive new departmental buildings. At Stockholm Mr. White was commissioned to give advice concerning the arrangement of the gardens at the Royal Palaces at Stockholm and Wrottningholm. The latter is the Windsor Castle of Sweden, and it is hoped to be able to restore, to a certain extent, the magnificent gardens which were planned when the Palace was designed more than two hundred years ago by the famous Swedish architects—father and son—Tessin.

**Endowment of the South London Botanical Institute.**—Mr. Allan O. Hume, C.B., formerly of the Bengal Civil Service, and a well-known botanist and ornithologist, who died at the end of July last in his 83rd year, left his collection of heads and horns of Asiatic animals to the trustees of the British Museum. He also confirmed a settlement, dated January 10, 1907, of £10,000 2½ per cent. stock for the endowment of the South London Botanical Institute, and also the provision of an indenture by which he gave his premises, 323, Norwood Road, S.E., for the purposes of the Institute. He left all his books on botany and ornithology and dictionaries upon trust for the Institute to encourage the study of botany and (especially British botany) in the County of London south of the Thames, and also the part of his herbarium not already transferred to the Institute.

**North of England Horticultural Society.**—The next meeting of the N. E. H. S. will be held on the 18th inst. in the Queen's (Midland) Hotel at half-past six p.m., when Mr. W. Dyke, of Cranbourne Nursery, Ware, Herts, who is a recognised expert on commercial manuring, will lecture on "Commercial and General Manures." It is hoped there will be a good attendance of market growers. The show fixed for the 18th inst. is postponed for many causes over which the executive have no control. The reports of gardeners and others are in favour of concentrating on the two-days show, October 17 and 18, when a very fine exhibition of fruits, orchids, etc., is anticipated.

# EDINBURGH FRUIT AND FLOWER SHOW.

An extensive exhibition, and one of very varied interest, was held by the Royal Caledonian Horticultural Society in the Waverley Market, Edinburgh, on September 11 and 12. The general quality of the display was good, but some allowances have to be made for a season that has been lacking in brightness and sun-heat. Grapes were very fine again, and so were vegetables and roses; gladioli and early chrysanthemums were also of fine quality. Dahlias were fewer than usual, and so were pansies and violas.

GM431
FIRST PRIZE

FIRST-PRIZE TWELVE SPIKES OF GLADIOLI.
Exhibited at Edinburgh by Mr. J. Stewart, jun., Woodend Cottage, Whins, Alloa.

Apart from the chief grape class there was little of outstanding interest, or anything that could be described as of superlative merit; on the other hand, there were very few exhibits of poor quality, competition being fairly close throughout.

The Waverley Market is a fine place in which to hold an exhibition, but it is not a place in which an exhibition can be made a spectacular success because of the dead level of all the massive girders that carry the roof and its roof garden. The solid floor, however, permits heavy carts and vans to draw in right up to the sites of the exhibits during the eve of the show, and this is a matter of great convenience in such a large place. How large a place the Waverley Market is, is only fully appreciated when one has paced up and down it a score of times and gone quite round it a few times. We always feel that the fine exhibitions of the Royal Caledonian Horticultural Society are never seen to the fullest advantage; a loftier roof and different staging would make a world of difference, but, then, probably, if these advantages could be secured, some of the present advantages would be lost. Mr. Donald Mackenzie and his committee make the best of circumstances, and their efforts are greatly appreciated.

Trade exhibits bulked largely on this occasion, and they were of varied character, and, on the whole, good.

Fine weather prevailed throughout the opening day, and there appeared to be an excellent attendance. It may be of passing interest to mention that, though the entries were a few below the number reached in 1911 (when apples were so largely shown), they were more than on the occasion of the Centenary Show, when they were 1,492, as compared with the 1,500 of the present year.

## DESSERT TABLE CLASS.

Here, as at Shrewsbury, there were three competitors in the class for a table of dessert fruit. A table 10ft. by 4ft. 6in. is provided, and exhibitors have to stage not more than sixteen dishes of fruit, selecting their kinds from a list scheduled. The prizes were offered by the Corporation of the City of Edinburgh, and the chief award fell to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, with a fine lot of fruit and decoration of Lilium speciosum, Francoa ramosa, and white larkspurs. The dishes were of Cox's Orange Pippin and Washington apples, 6, 5½; Negro Largo and Brown Turkey figs, 5, 4½; Madresfield Court, Black Hamburgh, and Gros Colmar grapes, 7, 7, and 6½; Muscat of Alexandria grape, 7½; Golden Eagle and Princess of Wales peaches, 6, 6½; Pineapple nectarines, 6½; Marguerite Marrillat and Triomphe de Vienne pears, 7, 7½; Jefferson plum, 4½; Scarlet Seedling and Countess melons, 7, 6½; beauty of flowers and foliage, 5; harmonious blending of colours, 5; general arrangement for effect, 4; total, 114½ points out of a possible 143. Mr. W. Galloway, gardener to the Earl of Wemyss, Gosford, secured second place with a total of 105½ points, his best dishes being Black Hamburgh and Muscat of Alexandria grapes, Humboldt nectarines, Moor Park apricots, and Marguerite Marrillat pears, the latter beautifully coloured and of good size. Mr. G. Mackinlay, gardener to the American

Ambassador, Wrest Park, Bedford, third, with 91½ points.

## SCOTTISH TROPHY CLASS FOR GRAPES.

A large amount of interest centred around this class because if Mr. Dixon came out top he would hold the splendid Scottish Challenge Cup (presented by Mr. W. H. Massie) for good. Consequently, as the judges came near the finish of their work, excitement ran high, and most people seemed glad that Mr. Dixon, gardener to Lord Rowallan, Kilmarnock, won premier place again, and for the third time. Eight bunches of grapes, not more than two of one variety, were demanded, and each collection had to be decorated with flowers and foliage. There were four competitors. Mr. Dixon's bunches were: 1, Muscat Hamburgh, 7½ out of 9; 2, Madresfield Court, 8 out of 9; 3, Muscat of Alexandria, 8 out of 10; 4, Black Hamburgh, 6 out of 9; 5, Black Hamburgh, 6 out of 9; 6, Muscat of Alexandria, 7 out of 10; 7, Madresfield Court, 8 out of 9; and 8, Muscat Hamburgh, 7 out of 9; total, 57½ out of a possible 74. Francoa ramosa, montbretias, and berberis foliage were used as decorations. The judges could not be accused of over-pointing. Mr. J. H. Goodacre, Elvaston Castle Gardens, gained 50½ points out of 74, and his varieties were Black Hamburgh, Madresfield Court, Muscat Hamburgh, and Muscat of Alexandria; Mr. David Halliday, gardener to W. Mackay, Esq., Ascog, Bute, gained 53 points out of 71, and secured third prize, showing Muscat of Alexandria, Madresfield Court, Mrs. Pince (fine), Alicante, and Appley Towers. Mr. G. Mollison, gardener to P. J. Horne Rigg, Esq., Tarvit, Cupar, Fife, fourth with 42½ points out of a possible 74; his varieties were Muscat of Alexandria, Mrs. Pearson, Black Hamburgh, and Madresfield Court.

FIRST - PRIZE DECORATED DESSERT TABLE AT EDINBURGH.

Exhibited by Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby.

## GRAPE CLASSES.

Four competitors entered in the class for four bunches of grapes, and the fight was a keen one. Mr. J. J. Wann, gardener to Lord Balfour of Burleigh, Kennett, Alloa, led with Muscat Hamburgh, Mrs. Pince (fine), Muscat of Alexandria, and Alicante; Mr. S. Gordon second; and Mr. W. G. Pirie, gardener to C. W. Cowan, Esq., Dalhousie Castle, third.

The series of ten classes provided for special varieties of grapes invariably proves interesting, especially as the competition is generally good throughout. There was little to complain of in regard to the quality, though there were evidences that a little more sun heat would have improved matters. Mr. Wm. Campbell, gardener to the Earl of Seaforth, Braham Castle, Ross-shire, led for two bunches of Muscat of Alexandria with finely-coloured bunches; Mr. T. MacPhail, Archerfield, Direleton, second; and Mr. S. Gordon, gardener to Sir H. E. Maxwell, Bart., Monreith, Whauphill, third.

The Black Hamburgh class, two bunches, brought out five competitors, Mr. W. Galloway, gardener to the Earl of Wemyss, Gosford, taking the lead with fair-sized, large-berried, deeply-coloured clusters of this most popular grape; Mr. MacPhail and Mr. J. Wood took the remaining awards. Mr. MacPhail came to the front again in the class for one bunch of Muscat of Alexandria, defeating four other competitors, with a medium-sized bunch, ideal in colour and bloom; Mr. W. Campbell and Mr. G. Anderson, gardener to the Right Hon. A. J. Balfour, M.P., Whittinghame, second and third respectively. Nine single bunches of Black Hamburgh were staged, and here Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, came to the front with a densely-berried bunch, and he was followed in order by Mr. Middleton, gardener to W. Forbes, Esq., Callendar, Falkirk, and Mr. J. Wood, Larbert.

Alicante proved a popular grape, and brought out thirteen entries. A large bunch secured the premier award for Mr. M. Middleton, and an even larger bunch, that would have been the better for more thinning, won second place for Mr. D. Halliday, gardener to W. Mackay, Esq., Ascog, Bute; Mr. S. Gordon third.

Mr. S. Gordon was easily first for Alnwick Seedling, a variety not now grown very largely in the South; his was a very fine bunch. Mr. M. Stewart, Mollance, Castle Douglas, second; and Mr. J. MacPhail, third. A neat little bunch of deeply-coloured Gros Colmar gained first prize for Mr. Lewis Moodie, gardener to Miss Carse, Spring Gardens, Musselburgh; and easily defeated the big red-berried clusters of many competitors. Mr. J. Wood, second; and Mr. J. Shiells, Carstairs, third. Lady Downes was best shown by Mr. D. Kidd, gardener to Lord Elphinstone, Carberry Towers, Musselburgh, and his was a long, finely-berried cluster. Mr. Galloway and Mr. Middleton came second and third respectively. Mr. G. Andrews scored for Appley Towers, and Mr. Middleton was a close second.

## CHOICE FRUITS.

The best dozen dishes of dessert fruits were staged by Mr. William Hunter, gardener to the Marquis of Tweeddale, Yester, Haddington, with Muscat of Alexandria and Black Hamburgh grapes, Stirling Castle and Bellegarde peaches; Moor Park apricots; Humboldt nectarines, Jefferson plums, Brown Turkey figs, Pitmaston Duchess pears, Royal Sovereign melon, and Peasgood's Nonsuch and Emperor Alexander apples. Mr. D. Kidd, gardener to Lord Elphinstone, Carberry Towers, Musselburgh, came second with good grapes and a good dish of Souvenir du Congrès pears.

For a dozen dishes of orchard house fruits, Mr. G. Mackinlay, Wrest Park, gained first prize, and was the only exhibitor. Peaches were good, and Mr. J. H. Goodacre scored with fine examples of Princess of Wales. Mr. Pirie led for apricots, among no fewer than eight contestants, and his variety was Large Early.

Plums were quite good, especially the display of Magnum Bonum from Mr. R. G. Sinclair, Congalton Gardens, Drem; of Pond's Seedling, from Mr. J. Duff, gardener to Colonel Gordon, Threave House, Castle Douglas; of Black Diamond, from Mr. J. Barrowman, Stevenson House, Haddington; and the collection of dessert varieties shown

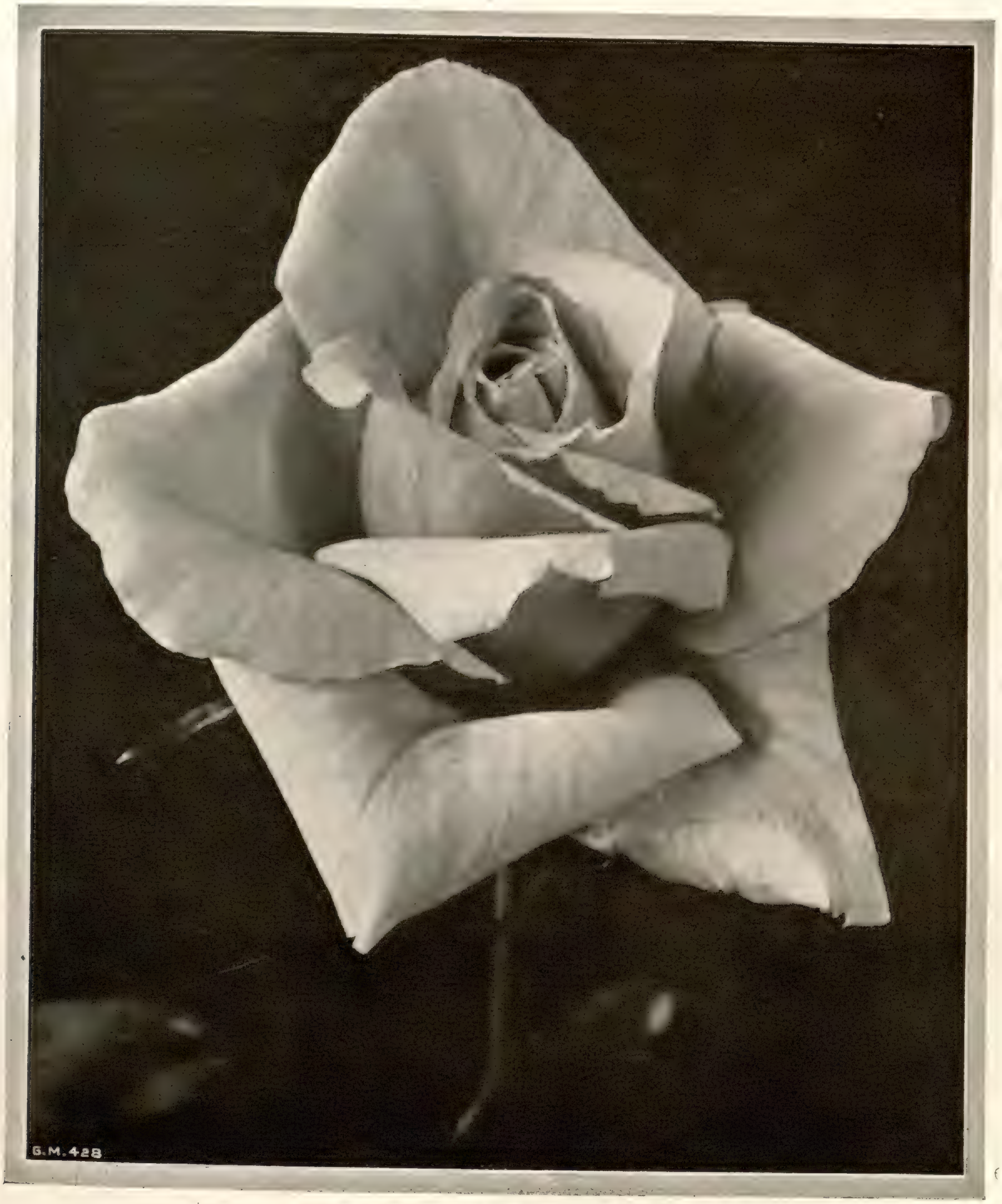
(Continued on page 713.)

## ROSE SUNBURST.

Few roses have of late years been so freely discussed as the beautiful hybrid tea of which we give an illustration herewith. The question at issue was not the merits of the rose, for they were recognised as being of a high order by those who had an opportunity of seeing plants in bloom; but whether the committee of the National Rose Society for judging new roses should, when the variety was submitted to them, have suspended the regulations for making awards to novelties. Under the regulations exhibitors had to submit with the blooms a plant lifted from the open ground, and the exhibitor, overlooking the fact that the plant must have been grown in the open ground, showed one in a pot. In consequence of this mistake, the committee were unable to consider the variety, and those who thought they should have made an award were apparently oblivious of the fact that regulations of the National Rose Society, as of other bodies, can only be altered by the governing body after due notice has been given. When in July last it was shown in strict accordance with the regulations, it received the distinction of a silver-gilt medal, an award that, if not the highest that could have been given, is such as to show that the rose possesses merit of a high order.

Sunburst is one of the several highly-coloured roses that have been raised by M. J. Pernet-Ducher, and was distributed in the spring of the present year. The raiser describes the variety as a very strong grower, but from what we have seen of the variety we should hardly regard the growth as "very strong." The time has not, however, been long enough to give a definite opinion upon this point, but it is evident that the rose has a good constitution, and that the growth is free and the shoots stout and erect. Sunburst appears to possess the good qualities characteristic of a bedding rose of the highest class, and it may be anticipated that it will show a considerable advance in every way next year, because the plants that were bedded out last spring will have become well-established, and, in the case of young plants, it will be possible to bed them out at a somewhat earlier period, and thus give them a longer time for becoming established before the commencement of the season of flowering.

For the production of flowers under glass Sunburst has much value, for both in the forcing pit and cool house it grows freely and blooms profusely and continuously. The flowers are of medium size, of the form indicated in the accompanying illustration, and the colour is cadmium yellow, orange in the centre, and passing to rather pale yellow at the margin of the petals. The leaves are bronzy-green, and form a fine setting to the richly-coloured and elegant flowers.



NEW HYBRID TEA ROSE SUNBURST.
Colour, cadmium yellow, orange in the centre, and paler at margins of petals.

## BORDER CARNATIONS.

Having been asked to state how I grow and show border carnations, I can only say that I have little to add to the information which has been printed on the subject. There are some points, however, in the culture of the border carnation on which I hardly agree with the older writers, and, perhaps, I ought to say that those who wrote about carnations forty or fifty years ago were advising for those who grew only the white-ground bizarres, flakes, and picotees. During the last twenty or twenty-five years, however, the principal border carnations have been the selfs, fancies, and yellow-ground picotees, and we have to thank that great raiser of new varieties, the late Mr. Martin R. Smith, for the grand flowers which now adorn our gardens and our tables.

I grew carnations as a mere boy in my native county, Ayrshire, when only bizarres, flakes, and white-ground picotees were to any extent known. True, there were selfs also in those early days, but such were only the sports of red, crimson, or purple, which had arisen from the said bizarres, flakes, etc., and in nearly every case such selfs were very different to those now in existence, being much more delicate in constitution than those of the present day.

Since the days of Mr. Martin R. Smith, however, we have not only had a new race of selfs, but also of fancies and yellow-ground picotees, and the grand colouring of these has as yet not even been approached by the many raisers of the newer kinds of perpetual-flowering carnations.

Although I admit that the perpetual-flowering carnation possesses many points in advance of the border race, notably in the fact that it may be had in flower at any time of the year, and that its stem is much stronger, and therefore more useful for indoor decoration, I must say that the border varieties far outstrip the perpetuals in varied colouring, as well as in hardiness during our trying winters.

### Layering.

The culture of the border carnation may be said to commence at the layering time, which is usually towards the end of July, but, owing to the early season through which we are passing, we commenced this year rather before the middle of the month, in the South of England at any rate.

Layering is one of the important operations in carnation culture, and such should not be put off until the grass has become hard and brittle, and it should generally be practised when the plants are in flower or immediately after. The best layers only should be selected, and all small and poor "grass" be cut away. It stands to reason that, unless the stronger layers are selected, the stock must gradually lose vigour, and in time become valueless. I never layer from a weak-growing plant, and if I have not good stock of any variety, I send to a specialist for it. The advice is frequently given to cut up through a joint, and bring the knife out accordingly, but for those who practice this I say emphatically insert the knife above the joint, and cut down through it, and the saving in time, as well as plants, will soon be apparent.

### Planting and Potting.

After layering, six weeks to eight weeks ought to elapse before the layers are detached from the parent plants, and those who wish to grow them in the open garden should prepare the ground beforehand by digging it deeply and enriching it about twelve inches under the surface with some good fresh stable or farmyard manure, according to the character of the soil. If heavy, use stable manure, but if light use cow manure.

I do not believe in well-rotted manure, either for border planting or pots, and this is where I differ from most of the older authorities on the subject. My experience of growing carnations in pots with fairly fresh manure is that you may kill one in twenty-five or thirty by doing so, but, those which stand such treatment are far stronger and better plants than those which are grown in a mixture of loam and well-rotted manure. I, therefore, plump for fairly fresh loam as well as fairly fresh stable manure for pot plants.

For exhibition culture in pots I advise taking up the layers two months after layering, and putting them into medium or large 60-sized pots, according to the strength of the layer. But those who wish to minimise space in the winter should put two plants well apart in either a small or large 54-sized pot. I generally find that two plants in a 54-sized pot surpass those in 60's by the time of the final potting in spring. The reason for this, I believe, is that the newly-rooted layer likes its roots against the side of the pot, and there is no doubt that layers put against the side of the pot root more surely, and are usually better than those put in the middle of the pot.

Another important point is to see that the young plants are not over-watered during the winter months. It is very seldom that I give water between the middle of November and the middle of January, and if the pots are stood on ashes, either in cold frames or the greenhouse bench, the young plants will obtain plenty of moisture from the ashes underneath. Any leaves near the base of the plants which turn sickly and yellow should be immediately removed, and every attention be given to cleanliness in all stages of the plant's growth.

### Spring Potting.

I usually commence potting about February 1, and like to have all my stock put into their final pots by the end of that month, as growth becomes active by that time. The compost I use is as follows: Five parts loam, one part each of leaf-mould and manure, and to this mixture I add a quarter-part each of coarse silver sand and medium-sized crushed oyster shell, as well as a similar quantity of good mortar rubble from between the bricks of an old building, preferably a chimney. A little soot is also a safe and useful ingredient, but it is not necessary. The two main ingredients are the loam and manure, both fairly fresh.

After the final potting give a good watering, and see that all the plants growing in the small pots are fairly damp before potting. See also that the soil is rammed tightly in the final pots, but take care that the compost used is a trifle dry, rather than damp, or the ramming will be injurious. The pots I use are mainly 16's, and into these I put three plants, but I also put four plants in a 12-sized pot, and two in a 24-size. I do not advise using smaller pots, such as 32's, even for a single plant, as they dry up much too quickly in the hot summer days, and require a great deal more attention as regards watering.

### Summer Quarters.

Potting over, I stand most of the big pots in span-roofed frames on ashes, and, after a week or two at the most plenty of air ought to be admitted, both at the top and sides of the frames. The frames I use are constructed with ventilators, both at the sides and ends, and this is very necessary for wintering, as well as for spring cultivation.

As soon as the plants are fairly established in their big pots, remove the top sashes of the frames during dry weather, and let the plants have all the air and light possible, but in wet weather keep the top lights on, admitting plenty of air by raising them with wooden blocks. In these frames I keep most of my selfs and fancies, as they will stand any amount of exposure until they spindle for bloom, which is generally in May, but the yellow-ground picotees are put into the cold greenhouse somewhat earlier, as I consider them less hardy, and the rains which fall in April and May would tend to make the foliage turn yellow and sickly, while the plants would suffer in consequence.

### Disbudding and Staking.

As the plants spindle for bloom, see that they are neatly staked and tied up loosely to keep the bloom stems straight and regular. I like the green-painted stakes, 3½ft. in length, as many varieties require more than a 3ft. stake. Many growers use thin bamboo cane points, but for neatness they do not compare with the round, green-painted wooden stakes.

Disbudding should be commenced by exhibitors as soon as the buds can be easily removed, but this is a matter which requires knowledge of the variety to be operated upon. The yellow-ground picotees give the best results disbudded to the top or crown bud, and so do many of the selfs and fancies, but in order to prevent a few of the selfs, and rather more of the fancies bursting their calyces, I always leave several side buds to develop, as well as the crown bud. With such disbudding the crown bud is left so as to have at least one foot of stem to it, leaving three or four of the lower buds on in order to keep the top bud safe from splitting. This means that the second, third, and fourth buds need to be taken away, leaving, say, the fifth, sixth, and seventh buds to develop.

I do not believe in feeding with artificial manures in any form, as these tend to produce rank growth, and the flowers from artificially-fed plants do not last on the plants, or when cut, more than a third of the time that naturally-grown flowers do. Although I do not practise natural liquid manure feeding myself, relying entirely on the rather strong stuff I use for my compost, I see no objection to such being used in a moderate way. The safest and best liquid manure is a mixture of fresh cow and sheep droppings put into a small sack, and left to soak in at least fifty gallons of rain water. Of course, soot water is also highly beneficial, as well as safe.

When the crown buds are three-parts grown it is advisable to put elastic bands round them to prevent bursting. Most of the filbert-shaped buds, however, such as the yellow-ground picotees develop, are quite safe without bands, but, as a precaution, it is best to use a band, even with them. A good few of the selfs and fancies have round and fat buds, and some of them must be tied with raffia to prevent them bursting; I use green raffia-tape, as it is much more easily split and worked than the ordinary raffia.

A greenhouse for carnation growing should not be too high at the ridge, and every sash on both sides ought to be made to open, as well as both sides of the roof. The doors also should rarely be closed, as all the air possible ought to circulate among the plants. Another important matter is the shading, and I strongly advise lath blinds in preference to cloth or scrim. Lath blinds are so constructed that there is a space of about ½in. between each lath, and, therefore, the shading is not so dense as that of cloth or scrim, and my experience is that the lath blinds keep the house cooler also. As regards cost, the lath blinds are little more expensive than cloth ones, and if the laths are properly prepared with wax there is no need to paint them.

Most of the blooms which I showed this year on July 23 had been out for a fortnight, and I attribute my success to the fact that I do not use liquid artificial or natural manures, and that I keep my blooms longer in condition than many, because I use lath blinds.

I hope that the hints I have given in this rather lengthy epistle may wake up some of those who have not followed the same plan as myself, and induce them to try other ways of growing their plants, and I may add, for those who are about to enter the field for exhibition, that they had better not pin too much faith to what they read in some of the older books on the subject, but aim, firstly, at strong plants; secondly, at cleanliness; and, thirdly, at giving plenty of room, as well as fresh air, and they are sure to succeed on the exhibition tables.

### Varieties to Grow.

I conclude by naming what I consider good reliable varieties in the three classes which I cultivate, although there are doubtless many omitted which other growers would advise. Most of the varieties mentioned I have had personal experience of, although a few of them are now being sent out for the first time. I might also add that my selection is for those who show them as grown:

Selfs.—Mrs. Eric Hambro, Mrs. Henwood, Furthest North, Crystal, and Attraction, white. Daffodil and Solfaterra, yellow. Mrs. Guy Sebright, Lady Hermione, and Rosy Morn, pink and rose. Miss Willmott, Cardinal, and Etna, scarlet. Mrs. George Marshall and Agnes Sorrel, crimson. Elizabeth Shiffner, maize; Mrs. G. A. Reynolds, buff; and Splendour, purple.

Fancies, Yellow, and Buff-ground.—Lord Steyne, Pasquin, Erl King, Linkman, Renown, Queen Eleanor, Donald McDonald, John Ridd, Forester, Mrs. Penton, Mandarin, and Rony Buchanan.

White-ground Fancies.—Nizam, Bride, Delicia, Hon. Dorothy Legge, Millie, Lady Gay, and Mrs. Andrew Brotherstone.

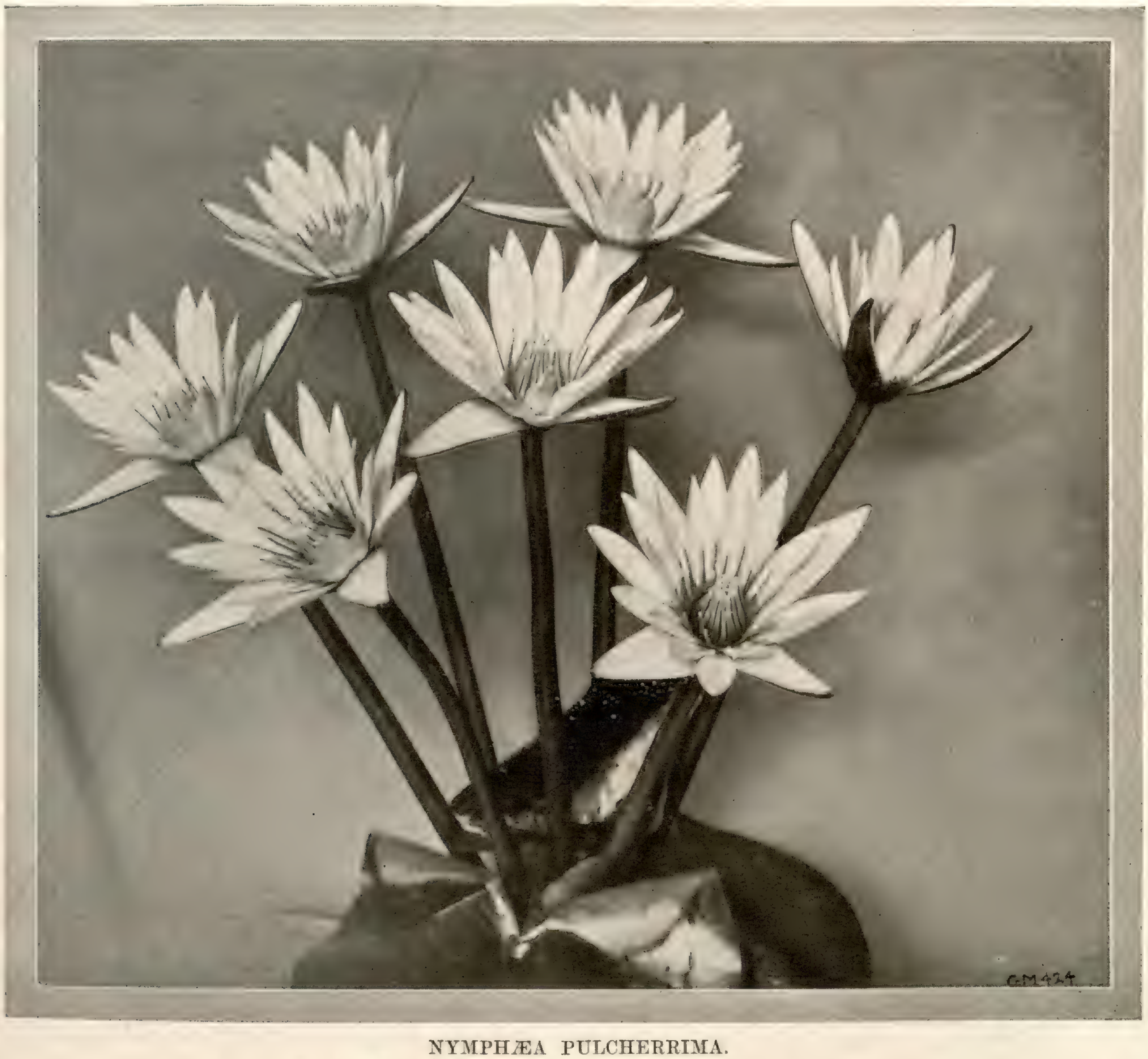
Yellow-ground Picotees.—John Ruskin, Onward, Togo, Santa Claus, Exquisite, Her Majesty, Mark Twain, F. W. Goodfellow, Neil Kenyon, Margaret Lennox, Agnes, and Constance.

R. Morton.

Grange Dene, Woodside Park.

## NYMPHÆA PULCHERRIMA.

This very beautiful water lily was very finely exhibited by Mr. James Hudson, V.M.H., gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton, at the meeting of the Royal Horticultural Society held at Westminster on Tuesday, August 27. The large, handsome flowers, blue, with a mass of yellow stamens, attracted a good deal of attention because they were larger and finer than those of N. stellata, of which N. pulcherrima is probably a variety. The blooms staged were from the open, but, as has been shown previously in these columns, the water in which they were produced is warmed as necessary by means of a small hot-water pipe. All the blue water-lilies are strikingly beautiful, as they raise their lovely blooms well above the water level, and form a distinct class from the Marliacea and similar groups. There are many gardens where, at very little expense, these fine aquatics might be grown out of doors with a little assistance in the way of artificial heat. At Kew N. stellata is grown in a pool of water that escapes, warmed, from the engines at the pumping station. In many instances a few yards of 3in. pipe attached to the nearest point of the heating apparatus would be all that is needed to produce the warmth requisite by N. stellata and its near relatives.



NYMPHÆA PULCHERRIMA.
A beautiful blue-flowered water-lily with a central mass of yellow stamens.

# CHOICE DAFFODILS IN THE GRASS.

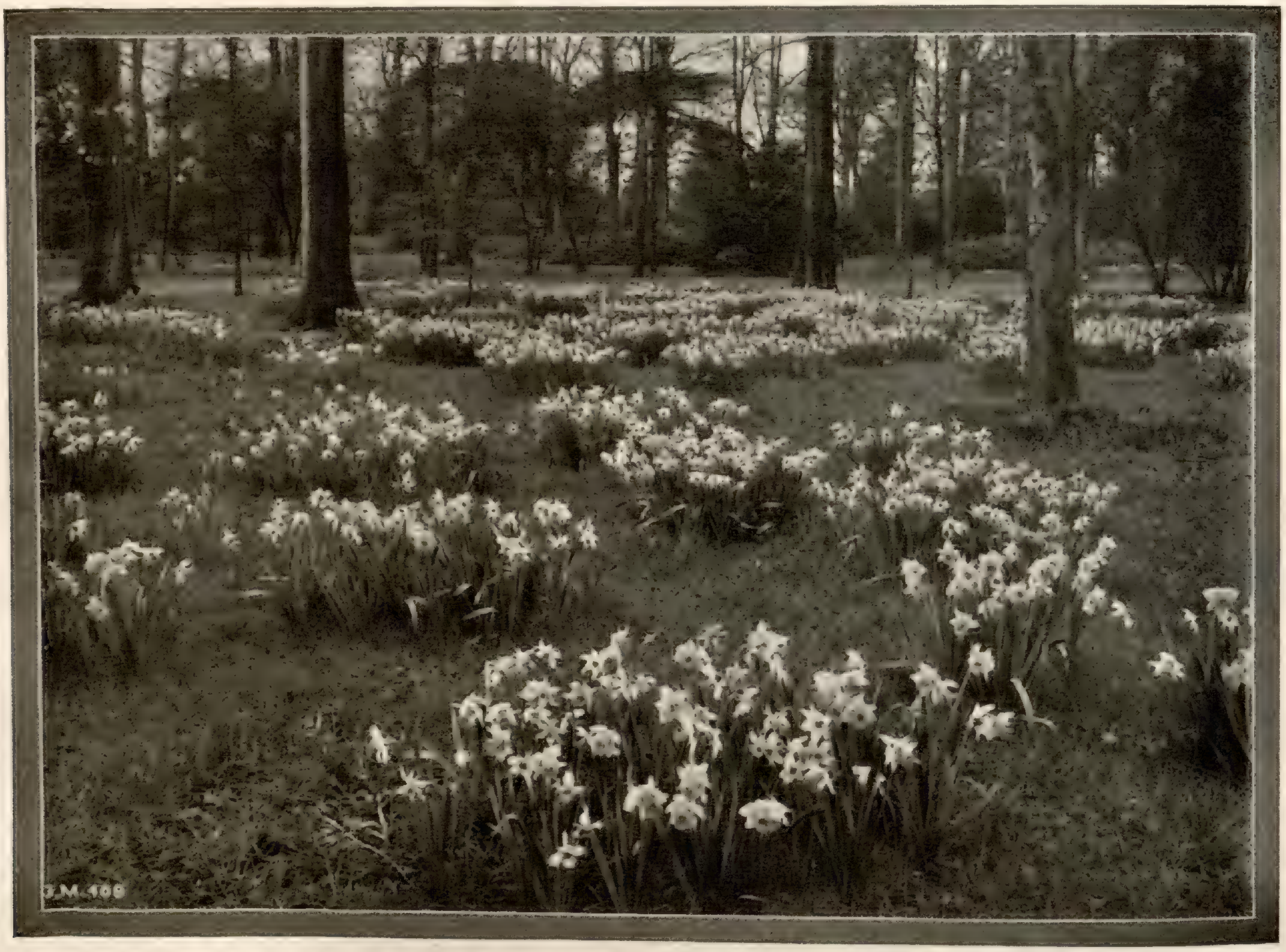
When enjoying, during the spring season of the present year, the exceedingly beautiful arrangement of daffodils which has been made in the arboretum at Kew within recent years, I was much impressed by the great value of the object-lessons it afforded the many thousands of visitors who crowded this part of the gardens that they might enjoy, as did Wordsworth in Lakeland:

> "A host of golden daffodils
> Beside the lake, beside the trees,
> Fluttering and dancing in the breeze."

The object-lessons that were to be derived from a close inspection of the flowers were two in number, and these differing but little in importance. It has, in the past been too much the practice in the cultivation of daffodils in the grass to plant the bulbs so thickly as to produce an effect more suggestive of a bulb ground of an extensive nursery or a field of a flower farm than of a part of the pleasure grounds of a private residence. Some visitors to gardens in which daffodils are grown in large and crowded drifts may, in describing what they have seen, have a feeling of satisfaction in being able to say with Wordsworth:

> "Ten thousand saw I at a glance,
> Tossing their heads in sprightly dance."

Such displays are impressive at first sight, and remain fresh for a long period in the memory of those whose opportunities for seeing large breadths of daffodils in the grass are but few. But the effect produced by great crowds of flowers extending over large areas is not such as to satisfy those whose artistic perceptions are of a high order, and even those who enjoy to the full great masses of colour soon lose their interest in them.



A SUGGESTION FOR PLANTING CHOICE DAFFODILS IN THE GRASS.

In the planting of daffodils in the grass as in their culture in the garden, they should be so arranged as to give the various varieties an opportunity of showing the individuality of the growth, as well as of the flowers. While the flowers are necessarily the predominating feature, much interest centres in the habit of growth, and, if this is hidden by overcrowding, much of the interest associated with daffodils is lost. Hence it appears to be a matter of considerable practical importance to direct attention to the method of planting which has of late been adopted by the Kew authorities with so much success. As will be seen from the accompanying illustration, the bulbs are irregularly arranged in clumps at sufficient distances apart to allow of their having a breadth of grass between them. This style of planting not only ensures the individuality of both flowers and foliage being preserved.

In walking among the flowers when they were in the full flush of their beauty, the delightful grouping suggested that the time had come when we should no longer be satisfied with the present method of devoting a large grass area to one variety. The practice had much to recommend it when the number of suitable varieties that could be obtained at a low price was small. But with a great increase in the varieties available, a considerable modification in the method of procedure might be made with advantage. The Kew example herewith illustrated suggests the formation of daffodil gardens in which each group is formed with a distinct variety, or two or more groups of one variety where the space is very large. But in the majority of gardens it will not be possible to find room for more than one group of a variety if an endeavour be made to fairly represent the several sections, that are adapted to grass culture. Nowhere do daffodils appear to greater advantage than when springing from a carpet of green grass, and nowhere could they be more readily seen and their many attributes of beauty enjoyed.

Where the pleasure grounds are comparatively small, the daffodil garden could be limited to the trumpet, the incomparabilis, the Barri, or the Leedsi varieties as the owner may prefer. Two or three sections may be grown in association, but the practice appears to be less desirable than having a representative selection from the trumpets or one other of the sections. The following will form a good selection of trumpets for a small daffodil garden in the grass, namely, Captain Nelson, Colleen Bawn, Cornelia, Duke of Bedford, Glory of Leiden, Golden Bell, King Alfred, Madame de Graaff, Monarch, Mrs. Buchanan, Mrs. Morland Crosfield, Rhea, and Weardale Perfection. From the Incomparabilis section may be selected Barn Owl, Blackwell Bountiful, Fireflame, Gaiety, Gloria Mundi, Homespun, Lady Margaret Boscawen, Lucifer, Queen Sophia, Strongbow, The Rival and Will Scarlet. A selection of Barri varieties should include Albatross, Armorel, Branston, Cresset, Firebrand, Incognita, Orange Frill, Oriflamme, Rosella, Seagull, Southern Star, and Vivid. The following may be selected from the Leedsi varieties with advantage: Amazon, Duchess of Westminster, Fairy Queen, Lucia, Peach, Phyllis, Salmonetta, Sylvia, Una, White Falcon, and White Lady. Some of the best of the older varieties may, of course, be associated with those enumerated if desired to have a larger number of varieties than those suggested.

G.

## VANILLA-SCENTED DAFFODIL.

The time being at hand when orders for bulbs are usually compiled, I am pleased to be able to direct attention to the qualities possessed by the above-named trumpet daffodil. Complaint is often heard that some of the new high-priced daffodils are not sufficiently distinct from one another to warrant the charges made, which, however, does not apply to the one under notice, and as it is listed by the Raynes Park firm at a comparatively moderate rate, it will undoubtedly be largely grown in pots and vases, both for room decoration and the conservatory, and the delicious perfume much appreciated by most persons. Apart from this, the fully-expanded flowers —for size, colour, and length of stem— are equal to the majority of noted sorts, thus giving a fine effect amid a cluster of ample foliage.

NARCISSUS DUKE OF BEDFORD.
A handsome bicolor of strong growth, the flowers large, with white perianth and yellow trumpet.

From three to five bulbs planted in soil or fibre, within the confines of a six-inch pot, and brought gradually on to the flowering stage, will be found when in bloom to emit sufficient aroma to make their presence known in a large room or entrance hall. In the future scented narcissus will probably be more prominent in the open garden than in the past, thus adding another charm, and enhancing the present popularity of this greatly varied family.

James Day.

## HARDY FUCHSIAS.

The fact that some of our hardy fuchsias are very pretty has been long recognised, but that there is such a great variety among them as actually exists is not so generally known. At the meeting of the Royal Horticultural Society, on August 13, a most interesting collection of fuchsias was shown, as stated in your report, by Mr. L. Russell. Some eighteen varieties of hardy fuchsias were included, and twelve or twenty of each variety were staged, and in this way their distinctive characters and general effect could be well seen. Of course, some of the varieties were familiar ones, but, on the other hand, some were decidedly uncommon. They were, for the most part, in five-inch pots, and had all passed the winter plunged outside. Some of them were raised many years ago by M. Lemoine, of Nancy, namely, Enfant Prodigue, a tall grower, with semi-dark-coloured flowers, a cross between one of the garden varieties and an original species; Elysée, another from the same source, of a decidedly erect habit of growth, with single, dark-coloured blossoms; Myrtifolia Minos, a compact, bushy plant, little more than a foot high, with a great profusion of semi-double flowers, with red sepals and purple corolla; Drame, a rather tall grower of compact habit, with a single bluish-purple flower; and Florian, of a sturdy, free growth, with a long purple corolla. Another very distinct variety was Brightoniensis, which forms a globular specimen about a foot high, and profusely laden with pretty distinct flowers, in which the rosy-purple corolla stands out crinoline fashion. Others were the old Fuchsia gracilis, F. gracilis variegata, F. globosa, F. Riccartoni, F. Thomsoni, like a small form of gracilis; Tricolor, pale rose sepals and lilac-purple corolla, suggesting somewhat a small-growing form of the old Rose of Castile; Madame Cornellison, with a white corolla; pumila, a dense, twiggy, upright plant, with tiny pointed leaves, and a profusion of very small dark flowers; virgata, like a strong-growing gracilis; and Corallina, a good old well-known kind. S. W.

## EARLY POT ROSES.

Where pot roses are grown it is generally to supply a few early blooms to come in a little before the climbers upon the walls of greenhouses. In order to secure this it is necessary to prepare the plants during August and September. Those which have flowered under forced treatment during last winter, and have been properly attended to since, will now need careful examination. Having been growing from January onwards, they have had quite time enough to make sufficient growth for our purpose, providing they were judiciously treated, and not allowed to become dry or starved at the roots, as is too often the case with forced roses immediately after their most useful crop of blossoms has been realised. My own plants have been standing out of doors since the middle of June, and are now rather more than three parts ripened. As usual, the hybrid perpetuals are the ripest. We can seldom get the whole of the growths upon the teas and their hybrids quite ripe until frost aids us, and even in the open ground it needs a considerable period of frost and colder weather before these are properly ripened.

When a plant has been in a pot for a couple of seasons it is wise to turn it out and remove as much of the old and worn-out soil as possible, without too much injury to the roots. Even when it is returned to the same sized pot, the presence of some entirely fresh soil is of immense benefit, in fact, is absolutely necessary to secure the best results. The best compost is a strong turfy yellow loam, helped by suitable manures. But this is hard to obtain, and not absolutely necessary. A good compost can be made as follows: Good loam and well-decayed vegetable refuse, one-third each, and the remainder made up of road sweepings, well-decayed manure, and a little sand. Do not use road sweepings from tarred highways, which is all the more deadly from the presence of petrol through leakage and waste from motor cars. Stable manure, unless thoroughly rotted, leaves the compost too loose as it decays, and I prefer that from a farmyard, or even a few pieces of dried cow manure, to the looser material from the stable. Do not have the compost broken up so finely as most use it. So long as some of it can be worked among the roots the remainder may be coarse, and will be better so if pressed down firmly. Too finely riddled a compost sets down hard from successive waterings, and soon stagnates. The roots must not be cramped nor bunched to one side of the pot, and if the plant can be potted a trifle deeper than it was before it will be better, as this will encourage lower growths that are stronger than those breaking higher up the plant.

Roses require a considerable amount of water, and the pots must be well drained. There is not nearly so much drainage material needed as many use, and I do not approve of crocks or pieces of pot alone supplying the drainage. Two or three pieces properly placed are ample, a few half-inch bones and coarser soil being added before the ball of the plant is set into the pot. Add a little of the prepared compost at a time, and press firmly with the fingers, or a piece of wood.

After potting stand the plants upon the shady side of a hedge or wall, and sprinkle the growth freely two or three times a day during fine weather. This will not only guard against any undue shrivelling, but prevent the growth from drawing all needed moisture from the roots for a short time. By the end of September the roots should have worked freely into the new soil, and the eyes upon matured wood will have plumped up and be ready to break into new growth as soon as put under cover once more.

Do not introduce the plants to heat hastily, but let them come along naturally as they will for a time when brought under glass again, afterwards giving just sufficient heat to keep the growth on the move until the flower buds appear, when it is generally safer to hurry them a little. Little pruning is needed; simply cut away weak growths, and shorten back the stronger rather less than would be practised upon the same variety in the open; but always keep the centre of the plants from becoming crowded. ROSARIAN.

## THE MIXED BORDER.

The numerous illustrated gardening books which issue from the press in a never-ending stream accustom us to pictures in which we see the whole of a mixed border one blaze of colour from end to end. Whether it is intended that we should believe them to represent the normal condition of a successfully managed border at any time during the height of the summer or no, the fact is that they are apt to make us very discontented with our own comparatively poor efforts. But a little reflection will show us that a border which in early June is a magnificent display of irises, tree lupins, eschscholtzias, and Oriental poppies, will present but a dull appearance from July to September, while a border which at the end of the same month has towering spikes of delphiniums, groups of white or orange lilies, and masses of the Dropmore anchusa, may be rather an eyesore in two or three weeks' time.

These picture-book effects are very fine for the visitor to admire, but for the man who wants to enjoy his garden from April to September, and even another month at each end, they are a mistake, unless he has so much space that he can afford to give up beds and borders to each season of the year, and, after a blaze of two or three weeks at midsummer, be content to expect little more from them for the rest of the summer than moderate tidiness.

The most that can be done with borders which are filled with perennials to produce a great effect for a short time is to use the spaces among the plants for bulbs to make a display before the perennials grow up, and with them may be associated such early-flowering spring plants as primroses, auriculas, leopard's bane, short-spurred columbines, wallflowers, and the like, by which means the great display of the summer may be preceded by a good deal of brightness early in the spring. Borders of this sort which are not expected to make any great show during some part of the height of the summer should not be located in the most prominent parts of the garden, notwithstanding their brave show when at their best, unless they are planted with subjects which are at least of neat and prosperous appearance after they have flowered, as is the case with Chinese pæonies, tree lupins, iris, erigerons, etc.

The average man, however, with a garden of moderate size, wants the whole of that section of it which is given up to flowers to be fairly presentable from May to September, and in such cases compromise must be the rule, though where the owners are away for the same period of the summer or autumn each year the scheme of planting will naturally be influenced by this, for it will be a bad arrangement to have a great show of perennial sunflowers, heleniums, rudbeckias, Japanese anemones, and so on, when the family is away the greater part of August and September each year, especially as such a display is necessarily at the expense of the effects in the height of the summer.

With this consideration borne in mind, the scheme adopted must be one in which there are always some effective subjects in flower in a given border during the season the garden is used, arranging it so that it is at its best when it is expected to be most seen and appreciated. Plants in flower should be surrounded by others which are full of growth and promise, those which have had their season, and are finished with, being so planted that later-flowering plants may grow up in front of them, or, in some cases, even spread over them, so that the sense of prosperity and general well-being may not appear to be on the wane until August is at least well advanced. To keep a mixed border fairly presentable all through the summer, and not without beauty in the spring and autumn, requires more thought than any other phase of open-air gardening, but it can be done if two or three general principles are borne in mind.

The first is that a stock of plants must always be kept in reserve to fill up any gaps which occur as the summer advances. These may be either plants in pots, or clumps in the open which can be easily lifted any time during the summer when the weather is damp, such as early-flowering chrysanthemums, annual asters, snapdragons, Michaelmas daisies, or even young plants which it is desirable to put in their flowering positions for the following year so as to avoid moving them late in the autumn, such as the Dropmore anchusa, Caucasican scabious, tree lupins, hollyhocks, and the like.

Another principle to be acted upon is that plants which, though making a great show, are soon over, and are untidy afterwards, must not be put in such a prominent part of the garden as the choicest mixed beds and borders usually occupy, but should be put where, while given full opportunity to display themselves, their subsequent untidiness will be of little consequence. Oriental poppies, delphiniums, and Madonna lilies may be treated in this way. This applies to many annuals, though some of the latter may well be grown in patches in the mixed borders, and their place taken by reserve plants as soon as they are getting untidy.

Still another useful principle to adopt in the management of such borders is that of having a group or two, at least, of some plants which make a good show during the greater part of the summer, such as gaillardias, Coreopsis grandiflora, pentstemons, violas, snapdragons, geums. French and African marigolds, etc., which form an excellent stand-by while other things come and go.

With a similar object in view, all mixed borders should contain at least some small-growing shrubs or shrubby plants, which, while beautiful in themselves, may act as a setting and a foil to give some little beauty to the border even through the dead season. Among many such might be mentioned lavender, rosemary, some of the shrubby veronicas, hypericums, and cistuses, santolina, myrtle, and young shrubs of laurustinus and Berberis Darwini.

ALGER PETTS.

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**Linum grandiflorum rubrum.** —The different annuals contribute no small share to the embellishment of our gardens during the summer months, when all is gay and bright. Of this class a great favourite of mine is the linum above mentioned, with flowers of a rich ruby-red colour, and a darker centre. When the sun shines on them they are quite dazzling in their intensity. Seed is very cheap, and can be readily harvested.—W.

# SUMMER BEDDERS IN REGENT'S PARK.

Compared with last year the summer-bedding at Regent's Park possesses far more cheerful surroundings than in 1911, when the trees and grass, owing to the tropical weather we then experienced, presented a most unhappy appearance. Now they are both of the richest green, and serve admirably as a setting to the many brightly-hued blossoms.

Owing to the moist and cool summer, some of the flowers are not seen at their best, while, on the other hand, some of them simply revel in the prevailing conditions. Cannas show the want of warmer weather, and so do some of the stove plants, of which a great number of different kinds are plunged outside during the summer months. The moist weather we have experienced has led to pelargoniums of all kinds growing with unwonted vigour, while their floral display has not been in keeping with the growth of the plants.

Among the subjects that are seen at their very best this season a foremost place must be assigned the

### Fuchsias.

Regent's Park has long been famous for fuchsias, and this season they are, as usual, freely represented both as large plants sunk singly in the turf, or disposed in extensive beds, being edged with some of the smaller-growing kinds. The good, old, and well-tried varieties form the principal part of the collection, prominent among them being Mrs. Marshall, Mrs. Rundell, Display, Madame Cornellison, Abd-el-Kader, Beauty of Exmouth, Empress Eugenie, Scarcity, Mrs. E. G. Hill, and Ballet Girl. The dwarf-growing Alice Hoffmann, with a pure white corolla, has become a general favourite, not only here but wherever summer-bedding is carried out.

Of the more uncommon varieties especial mention must be made of The Doctor, which I have only met with in Regent's Park. It is somewhat in the way of Mrs. Rundell, but is more floriferous, while the blooms are stouter and more highly coloured. Another attractive variety is Lena, sent out by the late Mr. William Bull, of Chelsea, about a dozen years ago. The flowers of this have the tube and sepals white, flushed with pink, while the semi-double corolla is of a bluish-violet colour. A very pretty bed is planted with upright specimens, about a yard high, of this variety, and the bright red Scarcity, disposed alternately, underneath which is the yellow-leaved Golden Treasure, while the entire bed is carpeted with lobelia and Harrison's musk. This last, which is somewhat extensively used, is everywhere in particularly fine condition, the moist conditions that have obtained throughout the past summer being favourable to its full development.

### Vases.

Some of these are very large, and always form a feature of the summer display. Much the same arrangement is followed as in previous years, that is to say the large ones are furnished with plants so disposed as to form a dense cone, the bottom part consisting of Tropæolum Lobbianum and ivy-leaved pelargoniums, above this, zonal pelargoniums and fuchsias, the apex being formed with Abutilon Thompsoni and Eucalyptus globulus. Some of the smaller vases are planted with ivy pelargoniums, one variety only in a vase. Particularly noteworthy among these are the deep pink-flowered Galilee, sent out by M. Lemoine in 1887, and Abel Carrière, one of the oldest of the present-day race. This has rich purple-coloured flowers. Souvenir de Charles Turner is, of course, also represented.

### Succulents.

As Regent's Park possesses many large agaves as well as a fair collection of succulents generally, the material for an extensive bed of this class is ready to hand. What is more, a good use is made of it, and the succulent bed situated in the angle formed by two walks forms a very striking feature. It is a large, somewhat triangular-shaped bed, and is sufficiently extensive to be thrown up into several mounds. Each mound is topped by a large, well-furnished specimen of Agave americana, the space underneath as representing the upper part of the mountain, being carpeted with different greyish-toned or silvery-leaved subjects, chief among them being Cerastium tomentosum, Mesembryanthemum cordifolium variegatum, Lotus peliorhynchus, and Nepeta glechoma variegata. On the lower plane are disposed various succulents, such as opuntias, cereuses, echeverias, mesembryanthemums, etc.

### Mixed Beds.

The large palms and other warmhouse plants have for long proved to be a feature of the summer bedding at Regent's Park. Though still attractive, such subjects as crotons, acalyphas, and others of this class are not seen to the same advantage this year as when the summer is warmer. What may be regarded as the rank and file of the different flowering subjects for furnishing the mixed beds are, of course, freely represented. Included among them are such well-known kinds as calceolarias, lantanas, begonias, heliotrope, celosias, cupheas, hydrangeas, Solanum jasminoides, Streptosolen Jamesoni, Plumbago capensis, etc.

### Silvery-leaved Plants.

Of late years there has been a considerable increase in the employment of silvery-leaved subjects for bedding purposes. When used as dot plants, as they often are, the soft, neutral tone of colour serves as a foil to brightly-tinted blossoms. Those which are extensively used in this way at Regent's Park are Calocephalus (Leucophyton) Browni, which, both as dwarf and tall plants, is much appreciated; Artemisia arborea, whose prettily-cut leaves are of a pronounced silvery hue; Gnaphalium microphyllum, Gnaphalium lanatum, and raria maritima.

### Bedding Violas.

A very large, irregular-shaped bed is devoted to a collection of bedding violas, which make a goodly show. Brought together in this way not only can their distinctive features be readily compared, but the wealth of blossom that they maintain over a lengthened period can be easily seen. Prominent among the varieties represented are Blue Diamond, bright blue; Maggie Mott, yellow; Sunset, purple and gold; J. B. Riding, purplish rose; Bridegroom, pale lavender; Lilacina, lilac; Primrose Dame, primrose-yellow; White Beauty, white; and Endymion, lemon.

### Herbaceous Plants.

The long herbaceous border which runs on one side of the flower beds contains a good and varied selection of plants. The number of yellow-flowered composites now in bloom serves as a warning that the autumn season is fast approaching.

S. W.

# THE SCHIZANTHUSES.

There are few, if any, annuals that surpass the schizanthuses for conservatory and greenhouse decoration during the spring and early summer months. During recent years they have made rapid strides in public favour, and have become immensely popular. They are admirably suited to pot culture, and also highly appreciated for the supply of cut flowers. Not long ago they were looked upon as hardly worth cultivating, but at the present day they are regarded as quite indispensable.

Some considerable improvement has taken place among them during late years, and now excellent varieties are to be obtained which are much superior to the old ones. It is really astonishing what a wealth of blossom a well-grown plant will produce. Again, they yield such a vast range of colours in the most lovely shades imaginable. Apart from the graceful habit of the growth, and the beauty of the flowers, their simple and inexpensive culture should highly recommend them. Besides being so useful for pot culture, the schizanthuses are splendid subjects for growing in baskets to suspend from the roof. The worst enemies one has to contend with in the cultivation of schizanthuses are mildew and dampness, which are readily overcome. The old style of growing them was to place three plants in a pot, but by far the best results are obtained when they are grown singly.

To secure a batch of plants to flower in April the seeds are best sown during the last week in August, or, at the latest, the first week in September. For later flowering seeds are sown in January. Six-inch pots will be found most useful for the purpose of seed-sowing, and they should be filled with a compost consisting of two-thirds loam and one-third leaf-soil, with a liberal addition of sand. Sow the seeds thinly, and merely cover them with fine soil. A cold frame or greenhouse is the most suitable place for the seeds to germinate in, shading them to prevent too rapid evaporation.

When the seedlings are of sufficient size to handle, transplant them to seed boxes, using the same kind of compost, and place them in a cold frame. Here they should be kept as near the glass as possible, and shaded until recovered from the disturbance. After becoming established free ventilation must be afforded to promote a healthy, sturdy growth, and on favourable occasions the lights should be taken off during the middle of the day. Pot the plants immediately they are large enough into 2½in. pots. After potting frame culture is still the best if favourable weather prevails, but if very wet and damp the top shelf in a cool greenhouse is the most suitable place for them.

It must be borne in mind that schizanthuses ought not to be subjected to high temperatures at any time; 40 to 45 deg. at night is ample during the winter. As a rule, repotting is necessary early in January, for at this period growth will advance rapidly. Six-inch pots are best for this purpose, and a compost consisting of half loam, with the other half made up of equal parts dried cow droppings and leaf-soil, adding sufficient sand to keep the whole open. Guard against too hard ramming, as the soil should only be made firm. There can be no hard and fast rule made regarding the stopping of the growths; this must be left entirely to the discretion of the grower. Some plants will produce side growths, and form well-shaped plants naturally, while others must be induced to do so by pinching out the top of the growth.

As growth advances, and the pots become full of roots, eight-inch pots should be provided for the last potting, using the same kind of soil as for the previous shift. On no account must they be allowed to remain in a root-bound condition during the growing period, or premature flowering will result. One stake will be quite sufficient to support the whole plant, and should be placed in position when the final potting takes place. As growth proceeds all the shoots must be looped to this stake before they become heavy. The tying operations will require frequent attention to ensure well-formed specimens. Watering must be carried out in a very careful manner, for excessive moisture is most disastrous. Should mildew appear at any time, a dusting with flowers of sulphur will check it.

For basket culture the plants are grown in the six-inch pots until they are ready, when they are planted in the baskets. The number required for each basket will be governed by the size of the latter. A twelve-inch basket will hold four plants.

Regarding varieties suitable for pot and basket culture, there are grandiflorus hybrids, an excellent strain in every way; grandiflorus maximus, with large flowers, and a splendid range of colour; S. retusus and S. retusus albus, two of the older kinds, and, although both are suitable, they are quite out-classed by the two first-mentioned; S. Wisetonensis is of good habit, and very free-flowering.

Gnaton Gardens. E. C. Pooley.

## IXORAS.

Though large specimen plants are at the present time not grown to anything like the same extent as they formerly were, there does not seem to be any decline in the popularity of the ixoras, as among their desirable features is the fact that they will flower freely in a comparatively small state, at least most of them, for I. macrothyrsa or Duffi is only seen at its best when grown strongly, as the huge heads of brilliantly-coloured flowers demand the energies of a large plant for their development. On the other hand, the numerous garden forms derived from Ixora coccinea may be flowered freely in pots from five to seven inches in diameter, and they serve to render the cool part of the stove gay during the summer months. The different varieties bear flowers of, for the most part, some shade of orange, scarlet, or salmon, but there is one very distinct form, namely Ixora coccinea lutea, whose flowers are of a clear, soft yellow. Those of I. Westi are pink; while I. odorata has pure white blossoms. Exception is sometimes taken to ixoras on the ground that they take much trouble to keep them clean, but if in a healthy state this is in no way difficult. Thrips can be readily kept down by a free use of the syringe, and this will also prevent mealy bug from being at all comfortable. A bottle of methylated spirit and a small brush kept handy may be used at the first appearance of the latter pest with advantage. W.

**Pentstemon Newbury Gem.**—It may not be generally known that this showy pentstemon, which is so popular for bedding purposes, is regarded as a true species, for it is considered to be identical with Pentstemon Hartwegi, a native of Mexico, and introduced therefrom in 1825. It furnishes one of many instances of a good old plant, which, lost for a time, becomes very popular when re-introduced.—W.

## THE POSSIBILITIES OF A SCHOOL GARDEN.—III.

### A Field for Nature Study.

It dawned upon education authorities some years ago that while children in village schools went through a certain routine of education, more or less mechanically, and left after they had passed the sixth standard, say, in possession of a certain number of facts, they were not encouraged to observe anything, and the great and fascinating book of Nature was closed to them simply because the opening of it was no part of the curriculum of the elementary school. Here and there, it is true, you came across a teacher who was a naturalist, a botanist, or a student of Nature himself, who introduced Nature study into his school simply because it was natural for him to do so, and he couldn't help it, but, apart from such exceptions, children looked upon birds' nests as something to rob, flowers as something to pick, insects as something to kill, but as for making any study of the natural and animal life round about the school, well, the children could tell you much more about the polar bears in the Arctic regions or the elephants in India.

In view of all this, the introduction of Nature study was a good thing, though it has to be admitted that a certain amount of so-called Nature study was wrongly named altogether. It came suddenly, this new subject in the schools, and its coming found a good many teachers as ignorant of it as the children. They set out to teach Nature study without knowing Nature themselves, and they had to resort to one or other of the handbooks that came out with remarkable rapidity, and while some of them were very helpful, others failed to serve the purpose for which they were intended, not so much because the author was at fault, but because attempts were made to teach Nature study from the handbook alone.

I say that the introduction of Nature study into schools was a good thing, even if it did nothing more than encourage children to use their eyes and observe, but, apart from this, it did not, in many cases, lead up to anything, nor have any bearing on the economic side of life. As an illustration of what I mean, in how many schools, I wonder, do you find glass jars in which the children watch toad-spawn develop into tadpoles, and from that stage into the complete toad, which is afterwards liberated, or consigned to the tender mercies of the school cleaner, with the result that its fate is doubtful, and the study comes to an abrupt conclusion.

The advent of school gardening opened up a field for Nature study that had never been thought of before, and it is a Nature study that carries one much further than mere observation, because it has direct bearing on cultivation, and is as essentially a part of gardening as operations like digging, sowing, and planting. You have only to take the adult rural population to learn that it is mostly ignorant of the insect life to be found in fruit garden and orchard. "Blight" is the comprehensive term that is applied to the various pests of crops, and some extraordinary ideas are held as to the origin of these pests. Dozens of people in the country know nothing of the way the balance of Nature is maintained by one insect feeding on another, and, in their ignorance, they not infrequently destroy their best friends in the garden and orchard under the mistaken idea that because they are insects they must all necessarily be pests. Is there any reason whatever why this appalling ignorance should exist respecting the ways and habits of the living creatures which abound in gardens? None whatever, and yet one knows what a difficult matter it is to instruct grown-up people in these matters, and induce them to alter their views in respect of "blight." Obviously, the place to begin is the school, and the apt teacher may obtain abundance of material for all the Nature study he has time to teach without going beyond the limits of his school garden, or the nearest fruit plantation.

As a matter of fact, the school garden has many phases of Nature study to offer. There is the soil, to begin with. It offers itself for numerous simple experiments that are not only interesting and useful, but they are Nature study in its purest form, and boys can be taught, not only how the soil is formed, and what it is composed of, but also how it can be improved in order to render the maximum amount of service to the person who cultivates it. Plant life is a generally accepted phase of Nature study, and surely we have it in the garden. It is just as easy to study the habit, method of propagation, progress, and reproductiveness of a cultivated plant as it is of a wildling from the hedgerow, and infinitely more useful, as the child gets into close acquaintanceship with subjects that he may have to do with when his schooldays are over. Even the weeds of the garden have their uses in Nature study, and by learning how they increase, multiply and protect themselves, the boy also learns the best means of eradicating them.

One day, in a school garden, I noticed a boy was extremely careful not to injure a ladybird on one of his crops, and, at the same time, he was just as diligent in searching for, and destroying, the larvæ of the ladybird. The fact was, of course, that he knew the ladybird, and had been told that it was a friend, but he knew not the larvæ, and, simple because he didn't know it, he came to the conclusion that it was something injurious, and must therefore be destroyed. This is probably just what the boy's father would have done, because he would not have known any better, but surely also this is where the value of the garden as a field for Nature study comes in. How many cottage gardeners and allotment holders, I wonder, who see the white butterflies hovering over their cabbage beds, and notice the caterpillars feeding on the leaves, also know the story of the ichneumon flies, that follow in the wake of the above pests, prey on them, and prevent them doing anything like the damage they would if Nature provided no such means of keeping them in check.

Perhaps in rural districts the most striking thing is the ignorance that prevails in respect of the pests of fruit crops, and though, perhaps, in a large number of school gardens there is not sufficient material to study them, the teacher will have no difficulty in obtaining ready access to an orchard or garden at hand where they abound, and in the spring and early summer will find material in abundance for Nature study. This phase, too, mind you, has something more to offer than bare observation, because the rural education of to-day will not be complete if it turns out a generation of country dwellers and workers, who look upon the various injurious pests of fruit crops as merely "blight," and protests, as many do now, in spite of everything you may say, that this "blight" is spontaneous in appearance, or is brought in clouds on the wings of easterly winds. H.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CYPRIPEDIUMS.—C. Charlesworthi will be in flower, or pushing up its flower spikes, according to the temperature in which it has been grown. It is a rather small and slow growing species, but is very free in producing flowers when its requirements are properly understood. It succeeds best in a shady position at the cool end of the intermediate house. Like all cypripediums, it is especially fond of moisture during the growing season. After flowering the plants will not be so active until February, therefore they should be kept drier during the winter months, but should not be allowed to become quite dry. Where this cypripedium is grown in quantity, there will be found a great diversity of form and colour among the flowers. The late autumn and winter flowering cypripediums of the intermediate section all bloom with remarkable freedom, making them of special value during the dull season of the year. No other orchids will produce flowers in such abundance, or provide such a display at that season, and undoubtedly the great popularity these plants enjoy is due to this, and to the length of time the flowers last when cut. The section includes C. insigne and its numerous varieties, both yellow and spotted; C. insigne Sanderæ is still amongst the best of the former, and C. i. Harefield Hall the best of the latter. These are often recommended to be grown cool, but I have not yet seen plants growing satisfactorily under these conditions the whole year round. They delight in an intermediate house temperature at all times.

SEEDLINGS.—At the present time it is undoubtedly the ambition of everyone who cultivates orchids to raise seedlings, and, as cypripediums are the easiest of all to succeed with, many start with them. The present is a suitable time to repot seedlings that have become root-bound, or require new rooting material, the general atmospheric conditions being favourable to root action. Small seedlings may also be removed from the seed beds, placing several together in small pots. For these the rooting material should consist of equal parts of peat fibre from which all the fine particles have been taken, and sphagnum moss. Place the soil moderately firm in the pots, and to encourage the small seedlings to take root-hold quickly and without check, a warm, moist, and shady position, where the rooting material will keep moist, with occasional waterings, should be found for them. Slight sprayings overhead on favourable occasions will be beneficial, but must be done with caution. The tiny plants must not receive an excessive amount of water at the roots at any time.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

CALADIUMS. — These handsome foliage plants will now be passing to rest, and will require less water than hitherto. Let the drying process be carried out gradually, for the corms still have to complete proper development. Place them in a sunny position in a warm house or pit, with air passing through in order to ripen the corms thoroughly, and when this is complete store them in the pots which should be laid on their sides in a warm house away from drip. Damp and cold during the resting period is fatal to caladiums.

ABUTILON SAWITZI.—Plants that have become leggy, or ill-shapen, may be cut down, and the strongest shoots used for the increase of stock. Insert the cuttings round the sides of small pots filled with light, sandy soil, and place in the propagating frame. When rooted put them singly in small 60's, and grow on freely on a shelf near the roof-glass. These will make strong plants before winter, and will prove useful for house and table decoration in the small pots, or they may be shifted into larger pots for specimens. In the former case no stopping should be done, but if to be grown on pinch out the leading shoot when strong enough.

CLERODENDRON BALFOURI.—Whether grown on the roof or pillars of the stove, or on a trellis in pots, the plants should have all calyces pruned away as they fade; also all weak shoots should be shortened in order to concentrate the energies of the plant on the development of the stronger growths, which will produce flowers next year. No time should be lost in placing them in a position where they will receive the maximum amount of sun and air before going to rest. Allow the plants to become on the dry side before applying water, and then give only sufficient to keep the wood plump.

OTHER CLIMBERS, such as allamandas, stephanotis, bougainvilleas, and dipladenias, require similar treatment at this season to ensure ripening of the wood, without which a wealth of flowers cannot be expected next year.

PLANTS IN COOL HOUSES.—Many occupants of plant stoves will bear a few week's sojourn in the conservatory in the majority of summers, but this year great care will have to be taken not to leave them too long, unless the structure is kept heated, or the plants will suffer much injury. Generally speaking, it is better not to risk them in such structures in seasons when the prevailing temperature is much below the average. —H. T. Martin, Warren Wood Gardens.

## THE FLOWER GARDEN.

HEATHS.—Many of these are making a showy display, and, when naturalised in large, irregular masses on rough banks and other open spaces, they create a pleasing feature. When once established they require little attention beyond weeding, and having the long, straggling growths shortened back after flowering. The various hardy ericas can be planted during the autumn and winter months, and they are not so particular about soil as is sometimes imagined. It is important to thoroughly cultivate the ground for their reception, and to let it settle down well before planting. Where the soil is heavy and retentive, incorporate a liberal supply of leaf-soil and coarse sand with it; and when planting, press the soil very firmly around the roots.

VIOLETS.—Plants that have been grown in the open to lift and plant in frames for flowering during the winter should now be placed in their permanent quarters. They succeed best in brick pits when planted in good turfy loam with a little leaf-soil and road grit mixed with it. Plant them firmly, and keep them well up to the glass. Give water as required, and give air on all favourable occasions. Keep the glass clean, so that the plants may derive the maximum amount of light during the dull days.

BORDER CARNATIONS. — When the layers are well rooted it is beneficial to sever them from the old plants a few days before they are taken up. In damp, cold districts, it is by far the better plan to pot them up and house in cold frames for the winter. Use a light, open compost containing plenty of coarse sand. Pot firmly in three-inch pots, and give a good watering, after which it is preferable to allow them to become moderately dry before giving more water. Remove the lights entirely during favourable weather, but afford adequate protection in case of frost. When they are planted in the open, beds should be prepared in a sunny and well-drained position, so that they will not remain too wet during winter. The ground should be well broken up, and have some old mortar rubble and wood ashes incorporated with it, and it must be made moderately firm before planting. Allow eighteen inches between the rows and fifteen inches between the plants. It is beneficial to dust a little soot around them occasionally to guard against slugs.

SEASONABLE WORK.—Cuttings of pentstemons should be inserted now, and they can either be placed in a cold frame or in boxes filled with a light, sandy compost. Give a good watering with clean water, and syringe them over on bright days; also keep the frame close until the cuttings are rooted. Later on they must be carefully protected from frost. Violas are readily propagated in the same manner, and will root easily if carefully treated. When it is desired to increase choice varieties it is an advantage to pot up the old plants, from which cuttings can be obtained in the early spring. Do all that is possible to keep the herbaceous borders gay and attractive by removing dead flower stalks, and keeping the later flowering subjects well tied. Delphiniums and herbaceous phloxes can be increased from cuttings inserted now, and rooted in a cold frame. Subjects like pyrethrums can be lifted and divided when it is necessary to increase the stock. Cuttings of roses will root readily in the open ground at the present time if inserted in soil containing plenty of coarse sand.—J. Gardner, Batsford Park Gardens.

## FRUITS UNDER GLASS.

LATE GRAPES.—It being essential that the berries of late grapes should be well coloured by the end of this month, plenty of air should be admitted to the house night and day. When the weather permits, artificial heat can be dispensed with on bright, sunny days, but during dull, sunless weather, and at night sufficient heat must be used to maintain a fairly dry atmosphere. Give copious supplies of water to the roots as required, with occasional applications of liquid farmyard manure. This operation should be done early in the morning, so that the atmospheric conditions of the house may become fairly dry before night. Pinch all laterals at one leaf, and do not on any account allow the growths to become unduly crowded and confused before undertaking this work. Wasps have been very troublesome here this season, and every effort should be made to allocate their nests and destroy them. We find it necessary to use a "wasp destroyer" in the house upon the berries that have been attacked. This remedy can be obtained from any sundriesman.

RIPE GRAPES.—Where the greater number of bunches in any of the houses have been used, the remainder should be cut and placed into bottles of water, in a fairly dark room, and also where sufficient heat can be maintained to dispel the damp. The bunches should be cut with a good length of young wood attached, and the end placed in the bottles containing water; ordinary wine bottles are excellent for this purpose, and means must be used so that the berries will not rub against the bottles, consequently they must be securely fixed in a slanting position. Examine the bunches occasionally, and remove any berries that show the least sign of decay, or if this is neglected the bunch will soon become disfigured and spoilt. The borders should be given several good soakings with liquid manure.

FIGS.—Trees that are carrying good crops of late fruits which will be swelling freely, will require a good supply of water to the roots. No hard and fast rule can govern the amount of water that should be given, but the best rule to observe is to give the borders sufficient water that the roots will take up. The soil, whether in pots or borders, should not be allowed to approach dryness at any time, but, on the other hand, sufficient care must be exercised not to allow the soil to become sour and stagnant through overwatering. Trees that are not over vigorous, and are swelling their fruits, will be benefited with weak doses of liquid manure. Keep a sharp look-out for red spider, and use the syringe freely among the foliage on fine afternoons. When the fruits begin to ripen the syringe must be dispensed with, and drier atmospheric conditions must prevail in the house. Admit plenty of air at all times, and reduce the supply of water to the roots, but not in such a manner as to cause the tissues of the plants to suffer.—Henry R. Farmer, Cardiff Castle Gardens.

# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

SEPTEMBER 10.

The exhibition held by the Royal Horticultural Society on Tuesday was fully equal to the average for this season of the year. The hall was well filled, and dahlias, in their diversity of form and colour, constituted the most prominent feature.

### FLORAL COMMITTEE.

Messrs. Hobbies, Lim., Dereham, staged a large collection of pæony-flowered and collarette dahlias, with a broad band of cactus varieties in front. The pæony-flowered section was represented by large masses of Red Indian, Dr. Hogg, The Geisha, Leveller, and London; while the most attractive of the collarette section were Diadem, Ville de Schildt, Goldstein, Meteor, Souvenir de Bernadeau, and Comte de Nodler. From Messrs. Barr and Sons, Covent Garden, came a fine display of hardy flowers, the phloxes being especially fine for the season; the heliums, too, were excellent, while asters, lobelias, and early-flowering chrysanthemums were in fine form, and a collection of gladioli was most attractive, especially such sorts as Madame Terrel des Chenes, Victory, Dawn, Glory, etc. The Misses Hopkins, Shepperton-on-Thames, presented a nice exhibit of rock and alpine plants. A very bright exhibit of hardy flowers came from Messrs. G. Bunyard and Co., Lim., Maidstone. The early-flowering asters formed the leading feature; these were brightened up with delphiniums, montbretias, phloxes, and liliums, the whole forming a pleasing display. Mr. Amos Perry, Hardy Plant Farm, Enfield, occupied a large space on the floor of the hall with hardy flowers. A central group of Artemesia lactiflora was most striking, while the new Achillea Perry's White reminded one of a carpet of snow; it is certainly the best white achillea to date. Delphiniums were also attractive, while the quaint Serratula atriplicifolia attracted much attention from the visitors.

Roses and carnations from Messrs. S. Low and Co., Bush Hill Park, made a bright patch of colour. The best roses were Jessie, Frau Karl Druschki, Beaute de Lyon, Rayon d'Or, Juliet, and Duchess of Westminster; while Carnation Lady Alington was in fine form. Messrs. W. and J. Brown, Stamford, staged a small collection of hardy flowers, making Dianthus Napoleon III. their chief item; these were particularly good, as were also pentstemons and gaillardias..

Messrs. Carter Page and Co. occupied the entire end of the hall with a fine collection of dahlias, in which all sections were represented. From Mr. L. Davidson, Borlasses, Twyford, came a small collection of decorative dahlias. Messrs. Felton and Sons, Hanover Square, had a display of nelumbiums tastefully arranged in baskets and bowls. The exhibit was at once unique and much admired. A fine group of dracænas was staged by Messrs. W. Cutbush and Son, Highgate. These were chiefly large specimen plants, and included Dracæna Veitchi superba, D. lentiginosa, D. australis variegata, and D. Bruanti variegata.

A fine collection of phloxes came from Mr. Jas. Box, Lindfield, Sussex. The varieties were massed in separate colours, the most prominent being Gloire du Marc, Le Mahdi, Iris, Asia, Rynstroom, Jules Cambon, Elizabeth Campbell, and General Von Hertz. The whole bank was well arranged. Mr. L. R. Russell, Richmond, had an effective group of clematises in pots, backed with vitis in variety, and edged with a collection of hardy fuchsias. Mr. A. Ll. Gwillim, Cambria Nursery, Sidcup, presented some very fine tuberous begonias arranged in their various colours, the exhibit being broken up at intervals with asters, which were certainly early, the fringed varieties in pink and salmon shades being especially attractive.

Hardy flowers were staged by Messrs. G. and A. Clark, Lim., Dover, in great variety, while similar flowers were also arranged by Mr. G. Reuthe, Hardy Plant Nursery, Keston. Messrs. W. Paul and Son, Lim., Waltham Cross, gave us a fine autumnal display of roses, tastefully arranged in baskets. Some of the most attractive were Marquise de Sinety, Beaute de Lyon, Madame Leon Pain, Paul Ledè, Lady Hillingdon, Juliet, Nerissa, and Lady Downe.

Mr. Chas. Turner, Slough, had a capital table of dahlias, which included some fine examples of the pæony-flowered type, collarette, and cactus forms. Some of the most striking varieties were Sunstar, Bayard, Eleanor, Bertram, and Elfrida; while the most striking of the collarette varieties were Antwerpia, Madame Poirier, Diadem, and Gallia. Messrs. Gunn and Sons, Olton, had an attractive table of phloxes, arranged in masses of colour, the result being excellent; the massing was carried out with good effect, a few of the best being Sheriff Ivory, Lady Stewart, George A. Stroehlein, Ellen Willmott, and Selma; while Mr. E. Dixon, West Hill Nurseries, Putney, was represented by a display of hardy flowers, which included some very good violas.

A really fine and most interesting exhibit of hardy shrubs and trees was staged by Messrs. J. Cheal and Sons, Lim., Crawley. This included many of the ornamental crabs, cratægus in variety, with quite a number of acers, in their autumn colours; Pyrus aria vestiba, ceanothuses in several varieties, also a number of berried plants. The same firm also staged a capital collection of dahlias, which included some attractive decorative kinds, while the cactus varieties were also in great form. Needless to add the singles were of the firm's well-known type, the best being Leander, Owen Thomas, Mrs. Joynson Hicks, Amy, and Mrs. Miller.

Messrs. B. R. Cant and Sons, Colchester, exhibited a beautiful assortment of garden roses. These were arranged chiefly in pyramidal form, and the cool atmosphere seemed to suit them admirably. A few of the best were La Tosca, Lady Hillingdon, Harry Kirk, W. R. Smith, and Beaute de Lyon.

From Mr. S. Mortimer, Rowledge, Farnham, came a large collection of dahlias, of the show and fancy types, also some well-grown cactus forms. A few of the most striking varieties in the former section were Tom Jones, Pleasaunce, Penelope, Gaiety, Standard, Virginale, W. Powell, Twilight, and Arthur Rawlings; these were grown with Mr. Mortimer's well-known skill.

Messrs. T. S. Ware, Lim., Feltham, contributed a bright display of hardy flowers, and a capital collection of dahlias. The cactus varieties were well developed, especially Conquest, F. Wenham, Mrs. D. Flemming, Golden Eagle, Florid, Pride of Essex, Richard Box, and Florrie Wells; the same remarks were equally applicable to the pæony-flowered varieties.

A large and varied collection of dahlias came from Messrs. H. Cannell and Sons, Swanley. The collarette section was very bright, the best being Henri Farman, Negro, A. Maumene, Vicomtesse des Monts, and Madame Pile. The decorative section was also well represented, some of the finest being Le Grand Maniton, Queen Mary, Mons. Capron, Madame F. Mollard, and Papa Charmet.

Messrs. Whitelegg and Page, Chislehurst, staged a bright collection of hardy flowers, the pentstemons being quite a feature, while the violas bore evidence of the cool weather we have experienced; while the Misses Price and Fyfe, Grove Park Nursery, Lee, staged a small collection of early-flowering chrysanthemums, which were nicely displayed with asters. Some of the most conspicuous were Leslie, Elstob Yellow, Nellie King, Golden Glow, and Touraine.

Mr. J. T. West, Brentwood, had a large exhibit of dahlias, which comprised many fine pæony forms, some of the brightest being Holman Hunt, Mrs. G. Gordon, Liberty, Turner, and Hebe; Mrs. Pearson, John Woolman, Marquise Purrier, and Fulgent being the most attractive cactus, while the pompons were represented by a large collection.

From Messrs. H. B. May and Son, Upper Edmonton, came a table of hybrid veronicas, edged and backed with ferns. Sweet peas were represented, and the exhibit of Messrs. S. Bide and Sons, Farnham, demonstrated the value of the flower in autumn by staging some fine vases, in which were noted Thomas Stevenson, Tarina, Isobel Malcolm, Mrs. R Haliam, and Mrs. W. J. Unwin.

### ORCHID COMMITTEE.

Messrs. Sander and Sons, St. Albans, exhibited a small group of orchids, in which were to be seen Vanda cærulea, carrying two spikes, one with eighteen developed flowers of a fine colour, also Renanthera Lowi, with racemes of flowers at least six feet long and with flowers the whole way. Lælio-cattleya Venusta and L.-c. Fred Gott were also noteable.

Messrs. S. Low and Co., Bush Hill Park, had a small but attractive exhibit. Some fine plants of Oncidium macranthum, O. incurvum, and O. variocosum were noted at the back, while there were good specimens of Cattleya Harrisonæ, C. aurea, and Brassocattleya Maronæ, with Stanhopea graveolens.

A very effective table was that arranged by Mr. T. W. Thurgood, gardener to H. T. Pitt, Esq., Rosslyn, Stamford Hill. This was rich in cattleyas, cypripediums, and odontoglossums. In the latter were to be seen O. King of Britain, a very fine form; also O. punctatum and a quaint masdevallia named Doris.

Mr. E. Davidson, Borlasses, Twyford, staged a few nice specimens, which included Odontoglossum Aurora, a very fine crimson-red colour, also Lælio-cattleya Nebus, the sepals being bright orange with a dull red lip.

A small collection also came from Messrs. Charlesworth and Co., Haywards Heath. Here were to be seen Cattleya Circe, a very dark variety; Dendrobium Dearei, with three good racemes, also Cypripedium leyburnense magnifica.

Mr. H. S. Goodson (gardener, Mr. G. E. Day), Fairlawn, Putney, also sent a few choice specimens such as Cattleya Memoria H. A. Tracy, a fine bold flower; also C. Atalanta var. Illuminator, with others.

From Mr. H. A. Tracey, Amyand Road, Twickenham, came a small collection of cypripediums such as C. Curtisi with seven flowers; C. Massianum, C. Jas. H. Veitch, and C. Lord Ossulston; also two well-marked odontoglossums.

### FRUIT AND VEGETABLE COMMITTEE.

A nice collection of fruit came from Mr. A. W. Merry, Danesbury, Welwyn (gardener Mr. G. Kelf), who had arranged his exhibit most attractively. The grapes were placed in single bunches, the best being Black Alicante, Muscat of Alexandria, and Madresfield Court. The boxes of plums were very fine, especially Pond's Seedling, Monarch, Transparent Gage, Jeffersons, Rivers' Late Orange, Coe's Golden Drop, Kirke's, and Autumn Compote. Melons were well represented, as were also apples and pears, filberts in variety, and alpine strawberries. A few light foliage plants and trails of smilax added the necessary finishing touches. Mr. Thos. Coomber, gardener to Lord Llangattock, The Hendre, Monmouth, staged a splendid smooth Cayenne pine. A whole table was occupied with an exhibit of fruit from H. B. Brandt, Esq., Nutfield (gardener, Mr. T. Heron), who certainly has reason to be proud of his collection. The grapes were arranged along the back, and included fine examples of Appley Towers, Lady Downes, Prince of Wales, Diamond Jubilee, very fine, in berry and bunch: while the apples and pears were spaced out by coloured foliage in trails. The whole of the dishes were clean and well-grown. Two dishes of apples, Warner's King and The Queen, came from Mr. H. V. Woodgates, Old Malden House, Worcester Park, which were not only large, but of splendid colour.

### MEDALS AND AWARDS.

Silver-gilt Flora.—To Messrs. Carter Page and Co., for dahlias; to Mr. Jas. Box, for phloxes, etc.

Silver-gilt Banksian.—To Messrs. Hobbies, Lim., for dahlias; to Mr. A. Perry, for hardy flowers.

Silver Flora Medals.—To Mr. W. T. Pitt, for orchids; to Messrs. H. Cannell and Sons, for dahlias; to Messrs. B. R. Cant and Sons, for roses; to Messrs. J. Cheal and Sons, for trees and shrubs; to Messrs. Gunn and Sons, for phloxes; to Messrs. W. Paul and Son, for roses; to Messrs. Felton and Sons, for nelumbiums.

Silver Knightian Medals.—To Mr. Brandt, for fruit; to Mr. Merry, for fruit.

Silver Banksian Medals.—To Messrs. Barr and Sons, for hardy flowers; to Messrs. G. Bunyard and Co., Lim., for hardy plants; to Messrs. W. Cutbush and Son, for dracænas; to Mr. A. Ll. Gwillim, for begonias; to Messrs. H. B. May and Sons, for ferns and veronicas; to Mr. S. Mortimer, for dahlias; to Mr. L. R. Russell, for flowering plants; to Mr. C. Turner, for dahlias; to Messrs. T. S. Ware, Lim., for dahlias; to Miss Walters Anson, for painting of nelumbiums.

Bronze Flora.—To Mr. J. T. West, for dahlias.

First Class Certificates.—To Cattleya Memoria H. A. Tracey, from Mr. H. S. Goodson; to Dendrobium Schutzei.

Awards of Merit.—To Odontioda Devosiana Fowler's var., from Mr. J. Gurney Fowler; to Lælio-cattleya St. Gothard, from Mr. C. J. Phillips, Sevenoaks; to Chrysanthemum Crimson Polly, from Messrs. W. Wells and Co.; to Helianthemum autumnale rubrum and Achillea Perry's White, both from Mr. Amos Perry; to Dahlia Queen Mary, from Messrs. H. Cannell and Sons; to Dahlia Crawley Star, from Messrs. J. Cheal and Son; to Collarette Dahlias Ideal and Albert Maumene, both from Mr. J. B. Riding; to Dahlia Selma, from Mr. C. Turner; to Dahlias John Riding, Nantwich, and Dolly, from Messrs. Jas. Stredwick and Son; to Pentstemon Gaddesden Gem, from Mr. A. G. Gentle; to Dahlia Papa Charmet, from Messrs. Hobbies, Lim.; to Potato The Diamond, from Messrs. Barr and Sons; to Potato The Conquest, from Messrs. Dobbie and Co.; to Potato James Gibson, from Mr. T. Staward; to Strawberry Merveille de France, from Messrs. G. Bunyard and Co.

## Dundee Horticultural Association.

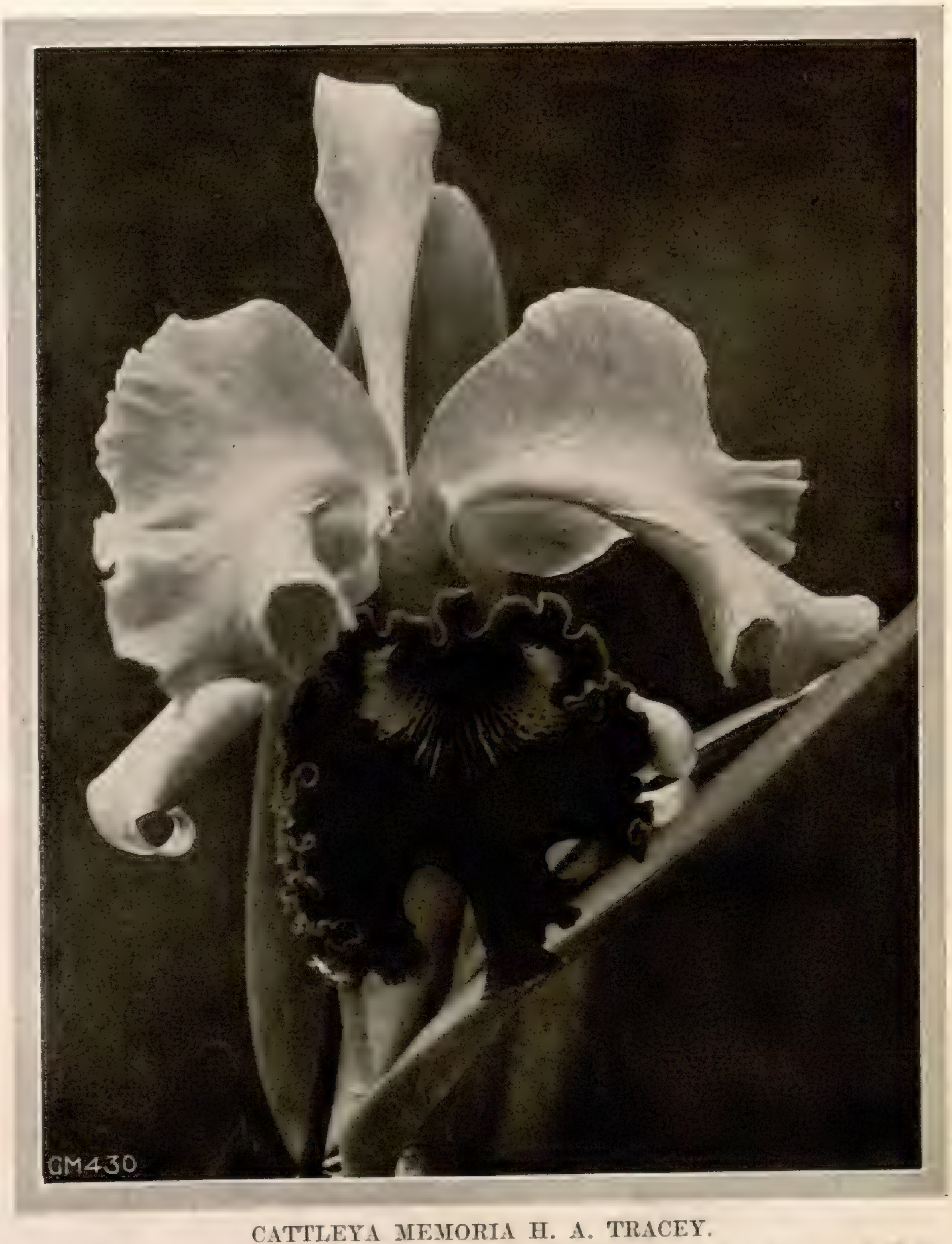
SEPTEMBER 5—7.

The annual exhibition of this society was held on the historic Magdalen Green, Dundee, and, synchronising with the meeting of the British Association in the city, a very special effort was put forth to make it worthy of the occasion. Right well did the effort materialise; no show produced better or more meritorious work; and this was all the more gratifying when one considers that it was the visit paid by the British Association to Dundee in 1867, and the handsome donation that learned body then contributed to the funds, which first placed the society in a position of stability, and enabled it ever since to hold an annual exhibition. On this occasion the British Association handed to the society the handsome sum of £100, and the very judicious manner in which, with the other prize money, this sum was utilised, brought out results which reflected the highest credit on the administrators. The entries this year were extremely satisfactory, amounting to no less than 2,600, being 350 over those of last year. The interiors of the spacious marquees presented to the thousands of visitors combinations of great beauty, and the admirable arrangements of the worthy secretary, Mr. W. F. Hill, left nothing to be desired. Once again the Countess of Strathmore opened the show in the presence of a large and fashionable gathering of ladies and gentlemen.

### PLANTS.

This section has ever been an outstanding feature at Dundee, and on this occasion there was, as usual, a capital display. Groups of plants, to be judged for quality and effective arrangement, were well shown. Mr. James Beats, gardener to Mrs. Boase, Binrock, Dundee, was a capital first, his arrangement being chiefly composed of capitally-grown crotons, chrysanthemums, pink clerodendrons, and Lilium auratum, with various fine foliage plants. Let it be noted here that this is the eleventh time Mr. Beats has taken premier honours at the Dundee show for groups of plants, surely a record of which any gardener might be well proud. Mr. James Bethel, gardener to C. G. Gilroy, Esq., Grange, Monifieth, Dundee, was a very good second; Mr. George Scott, gardener to A. Sinclair, Esq., Seathwood, Dundee, was third with a really excellent group. For nine stove or greenhouse plants, distinct, flowering and foliage, Mr. James Kinnear, Fernbrae, Dundee, made a very fine first, his chief foliage plants including same capitally-grown crotons, while clerodendrons and ixoras were the leading flowering plants; Mr. George Reid, Invertay, West Ferry, Dundee, was a capital second, his leading foliage plant being an exquisitely-grown dasylirion, and his flowering plant a statice; Mr. Beats was third here. Ferns, always a striking feature at Dundee, were well represented, the honours for exotics being divided between Mr. George Reid and Mr. James Beats. The begonias, both single and double, shown by Mr. George Scott, Seathwood, deservedly placed him in the first place; while in both classes Mr. Thomas C. Brown, Balcairn, Dundee, proved a worthy second.

For liliums and flowering chrysanthemums nothing could approach the fine specimens sent from Seathwood. Dracænas were a capital show, and Mr. William Grieve, Hazlewood, Broughty Ferry, Dundee, well earned the honours here. Pelargoniums, single and double, made a fine display, and Mr. John G. Clarke, Elmslea, Dundee, and Mr. James Beats lead finely in the respective classes. Mr. John G. Clarke, for three well-grown coleus, was deservedly first. For six stove or greenhouse plants (three foliage and three in flower), Mr. George Reid, Invertay, was first; Mr. Beats and Mr. Kinnear followed.



CATTLEYA MEMORIA H. A. TRACEY.
Flowers large; sepals and petals, rose-pink; lip, deep crimson. F.C.C., R.H.S., September 10. H. S. Goodson, Esq., Fairlawn, Putney.

Mr. W. T. Morrison, Gowrie House, Perth, had the best four British ferns, and also best six dwarf British ferns; while Mr. Reid, Invertay, led for best tree fern with a much admired specimen. For palms, the honours were divided between Mr. Beats, Mr. Kinnear, and Mr. James Bethel, Grange, Monifieth. Mr. Morrison, Gowrie House, had the best twenty alpines, distinct. Cockscombs were few, and Mr. Beats was first with fine examples. Mr. George Reid, Invertay, obtained premier honours for six exotic ferns, distinct, with capital specimens.

### CUT FLOWERS.

It was in this section, if anywhere, where the effects of the disastrous season experienced were most observable. The leading prize in this section was given by the British Association, and was awarded for the best display of cut flowers in vases, orchids excluded. There was a brisk contest, and the premier award was made in favour of Mr. George Scott, Seathwood, liliums in variety, finely-grown chrysanthemums, and beautifully-coloured sweet peas being the leading flowers shown; Mr. James Beats, Binrock, was second with an arrangement in which the carnations were especially noteworthy; Mr. James Bethel was third with a fine group. Mr. Beats was first for decorated dinner-table, bouquet of roses, basket of flowers, and wreath, with admirable entries. Sweet peas were an outstanding feature, and here Mr. John Machar, gardener to Mr. W. T. J. Stewart Fothringham, of Fothringham, won the Corporation challenge cup for a table of these flowers, judged for quality, variety, and effectiveness; Mr. J. A. Grigor, gardener to Mrs. Dunbar Dunbar, of Seapark, Forres, was second; and Mr. James Fairweather, Airlie Park, West Ferry, Dundee, was third.

For the special prizes open to nurserymen and florists the entries were not numerous, but the quality was exceedingly good. In the class for a table of roses, Messrs. James Cocker and Sons, Aberdeen, obtained premier honours; and Messrs. D. and W. Croll, Dundee, showed a very fine table for second place. For twelve vases decorative roses the last-named firm showed a superb collection. Messrs. Adam and Craigmile, Aberdeen, were first for six baskets of roses, distinct. For the best display of herbaceous flowers on table, Messrs. Cocker and Sons, Aberdeen, gained leading honours. For chrysanthemums Mr. Scott, Seathwood, was awarded the first prize for four vases and six vases, being closely followed by Mr. John Fraser, Dryburgh House, Lochee, Dundee, and Mr. James Bethel, The Grange, Monifieth. For six varieties of cactus dahlias, in bunches, one distinct, Mr. David Keilor, Seabourne House, Broughty Ferry, was first; and for pompon dahlias the chief honours went to Mr. John P. Summers, Ashcliffe, Perth Road, Dundee.

In the class for cut flowers of stove or greenhouse plants, Mr. A. Duncan, Carbet Castle, occupied the first place with a fine exhibit. Roses were well shown by Mr. William Grieve and Mr. John Simpson.

### FRUIT.

Considering the sunless summer, the display of fruit was worthy of the highest praise. The British Association prize in this section was given for six bunches of grapes, and was keenly contested. Mr. James Beisant, Castle Huntly, was successful in winning the handsome cup with a collection in which Muscat Hamburgh and Muscat of Alexandria were especially well represented; Mr. John G. Clarke, Elmslea, was second, his entry including grand clusters of Black Hamburgh; the third place went to Mr. Scott, Seathwood, who had also a fine collection. In the class for twelve distinct varieties of apples, the leading award was made in favour of Mr. Walter Staward, Aston Hall Gardens, Oswestry, Shropshire; Mr. Wm. Benvie, Murie Gardens, Errol, and Mr. Scott, Seathwood, followed. Mr. D. Nicoll, Forgandenny, staged a superb collection of orchard house fruit; and Mr. J. Farquharson, Kinfauns Castle, Perthshire, had a meritorious collection of hardy fruits, grown in the open air.

### VEGETABLES.

These were well shown, and the British Association prize given in this section fell to Mr. James Kinnear, Fernbrae, Dundee, for a capital collection of twelve distinct kinds; Mr. W. Harper, Tulliebelton, Perthshire, was second with fine produce.

### AMATEURS' CLASSES.

It was indeed refreshing to see the fine products staged in all the sections, and not a little credit attached to those who, in their spare time, could obtain such excellent examples of cultural skill. In competition for the Amateur Corporation Cup, offered for the best display of cut flowers arranged on a table, Mr. Alexander Easton, Lochee, Dundee, won finely with a beautiful arrangement, sweet peas predominating; Mr. D. Smith, 10, Cleghorn Street, Dundee, was second, with a fine entry. Plants in pots were remarkably good here, and the leading class in this section was for six stove or greenhouse plants, distinct, and the premier prize was worthily gained by Mr. William Robertson, 6, Blyth Place, Dundee; Mr. A. Easton, Lochee, and Mr. John Fairbairn, 96, Dens Road, Dundee, being second and third. In the class for display of vegetables, the leading prize went to Mr. Alfred Drummond, Fowlis, Crieff, for a collection which reflected much credit on the exhibitor; Mr. Peter Donaldson, Dunning Station, and Mr. John Hepburn, West Huntingtower, Perth, were second and third with meritorious products.

### NON-COMPETITIVE.

The nurserymen and florists in the Dundee district made a special effort this year, and one that earned for them the warmest praise. Messrs. D. and W. Croll, Dundee, contributed a superb display of roses, begonias, and sweet peas, and a choice collection of vegetables. Messrs. Harley and Sons exhibited floral arrangements, and the designs shown were beautiful and effective. Messrs. Laird and Sinclair had an excellent show, the dominating feature being a very fine ornamental rockery. Messrs. Thyne and Son exhibited a collection of hardy annuals, comprising over 100 varieties, all in a high state of development, and also hardy flowers and sweet peas. Messrs. Storrie and Storrie had a collection of fruit, comprising plums, pears, and apples, in a high state of development. Mr. David Nicoll, gardener to Messrs. Bell, Rossie, Forgandenny, exhibited fine baskets of pot-grown apples, the fruit of James Grieve and Emperor Alexander being of special excellence.

Altogether the show was a magnificent one, and did full credit to all concerned.

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## Bournemouth Gardeners.

At the meeting of the members held on September 3, there was a very nice exhibition of pot plants and cut flowers. The principal exhibits staged were table plants, by Mr. Charles Pearce, gardener to Mrs. Ormond, who had almost perfect specimens of Aralia elegantissima, Dracæna elegantisimma, and Pandanus Veitchi. Mr. Evans, gardener to G. J. Fenwick, Esq., had cut roses and carnations; Mr. G. H. Heath, gardener to G. G. Russel, Esq., cactus dahlias; and Mr. Povey, coleus plants.

Mr. Evans was chairman at the meeting, which was addressed by Mr. Nippard, of Ashton Court Gardens, who gave his "Impressions of the International Exhibition." He said it was scarcely possible for him to tell others in one short address what the exhibition was really like. Gardeners would come away with different impressions as their various interests would claim attention. He would only refer to things that interested him most. The six acres of rockwork was a charming sight, but, in his opinion, one otherwise perfect rockery was marred by the use of cut flowers at the back. The orchids he went to look at first, and said that Sir George Holford's were, undoubtedly, grand, and formed the chief feature of the show. The staging of the plants, which were all specimens, was a perfect work, every plant being seen to the best advantage. The miltonias and odontiodes attracted his attention most. The amaryllis were remarkable for strength of growth, freedom of flowering, and size and colour of blooms. The advance made in the improvement of these plants was very great. The groups, each occupying about one hundred square feet, were most imposing. He was much attracted by the collection of selaginellas, and the hybrid anthuriums, the spathes of many of the latter being about 1ft. long. The begonias, dahlias, roses, carnations, sweet peas, and zonal pelargoniums were very good. The melons showed high cultivation, and the apples from last year, which had been in cold storage, looked as fresh as if they had only been gathered twenty-four hours. He did not consider that the rhododendrons were anything beyond very ordinary, and the annuals were poor. Mr. Nippard dwelt in much detail on the subjects above-named, and said that the dust would not have been troublesome if the authorities had put down a small quantity of short straw or bracken fern, and lightly damped it. Both the lecturer and the chairman received hearty votes of thanks at the close of the meeting.

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## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 3rd inst. Mr. Massie, the president, was in the chair, and there was an attendance of eighty members. Mr. John Highgate, Hopetoun Gardens, read a paper on "How to produce effective displays with hardy plants." There was no doubt, he said, that the use of hardy plants for garden decoration was yearly becoming more popular. No other plants gave such a variety of form and colour, and they could be had in bloom from February to November; but he did not believe that their use involved a saving of labour or expense. They required constant attention in the way of dividing and replanting, and it was generally the gems which required renewing. For formal bedding, however, the pelargonium, calceolaria, and lobelia were indispensable, and it was doubtful if in this kind of decoration we had improved much on the fine ribbon border displays of twenty years ago. In most cases the class of hardy plants to be grown would depend on the size of the place, or of the borders or beds to be furnished. No one, for instance, would dream of growing gunnera or some of the larger senecios in a garden of very limited size.

In some large places it was becoming the fashion to have borders devoted to a single colour. He had never been impressed by this arrangement. Another, and a more popular, style was to plant in patches of one variety, but it did not admit of such a great variety as in the more common mixed style. Good-sized clumps, with a large variety of subjects, so as to prolong the season of flowering as as much as possible was recommended, as in this way one could have a much better selection than if planted in patches, and, when possible, edgings should be formed of alpines like small linarias, thymes, sedums, or Erinus alpinus, instead of the more formal box edging. Another style which was becoming popular, and deservedly so, was to introduce Japanese maples, buddleias, Prunus Pissardi, roses, etc., in order to relieve the flatness of the herbaceous border. One could scarcely imagine anything more handsome than a few good plants of Spiræa ariæfolia, with its long plumes of white flowers, dotted along the back of the border, and against these such plants as Prunus Pissardi and Acer negundo variegata could be effectively used as dot plants. Golden privet could also be used effectively in this way. Then the roses could be used in a variety of ways, but perhaps the most common, and certainly the most effective, way to use them was against rustic poles or espaliers behind the border.

Other old favourites which could be used with advantage were the hardy fuchsias and the improved form of Monarda didyma called Cambridge Scarlet. For masses of colour the last-mentioned was certainly of much value, but it required to be replanted every year, or at most every two years, as it quickly exhausted the soil. A plant which was an acquisition for the herbaceous border was Artemisia lactiflora. It produced white flowers in autumn, and flowers of this colour were scarce then, but, like monarda, it required frequent replanting. Senecio Wilsoniana was another gem. For the backs of borders, or for planting by streams, it was a real acquisition. For late season effect a bed of Japanese maples and Lilium auratum with an edging of hardy heaths, gave great satisfaction. But the most imposing display one could imagine was one produced by bold groups of roses, with or without a background, and in this connection he stated that one was apt to get tired of the repetition of Dorothy Perkins and Crimson Rambler, and that there were many other varieties, such as Conrad Meyer (one of the finest of all when trained on a rustic pole), which could be used in this way. A simple and exceedingly pretty arrangement on the lawn was a bed of the little Phlox Regulus, with standard Hydrangea paniculata grandiflora as dot plants, and an edging of Cerastium tomentosum. On the motion of Mr. Fortune, Mr. Highgate received a very cordial vote of thanks for his interesting paper.

At the meeting on October 1 the secretary will give a paper on "Edinburgh's park and other trees" (with lantern illustrations).

## Edinburgh Fruit and Flower Show.

(Continued from page 700.)

by Mr. J. H. Goodacre, and of culinary varieties from Mr. S. Gordon, the latter especially good.

### APPLES.

The Malcolm Dunn Memorial Medal for a collection of twelve varieties of apples grown out of doors in Scotland was won by Mr. J. Duff, Threave House Gardens, Castle Douglas, with a good set of Duchess of Oldenburgh, Worcester Pearmain, The Queen, Gascoyne's Scarlet, Warner's King, Peasgood's Nonsuch, Stirling Castle, Baron Wolseley, Norfolk Beauty, Lord Suffield, Cox's Pomona, and Ecklinville; Mr. R. G. Sinclair, Drem, second; and Mr. A. Johnston, Annfield, Stirling, third. In the open class for twelve dishes of apples the prizes fall in order to Mr. R. Whiting, Mr. Caddick, and Mr. Mackinlay.

In the single dish classes some capital apples were shown. As the varieties are selected largely for their usefulness in Scotland we give the names of those required by the schedule, together with the name of the first-prize winner; Chas. Ross, Mr. R. Whiting, Credenhill, Hereford; Gascoyne's Scarlet, Mr. J. Duff, Threave House, Castle Douglas; Irish Peach, Mr. W. Galloway, Gosford; James Grieve, Mr. Caddick, Ross; Lady Endeley, Mr. Caddick; Worcester Pearmain, Mr. M. Stewart, gardener to J. Neilson, Esq., Mollance, Castle Douglas, fourteen entries; Beauty of Kent, Mr. R. Whiting; Bailie Neilson, Mr. A. Johnson, Annfield, Stirling; Bismarck, Mr. Caddick; Cellini, Mr. Caddick; Duchess of Oldenburgh, Mr. R. Whiting; Ecklinville, Mr. R. Whiting; Emperor Alexander, Mr. E. W. Caddick; Golden Spire, Mr. J. Duff; Grenadier, Mr. J. Duff; Lane's Prince Albert, Mr. Caddick; Lord Derby, Mr. Caddick; Lord Grosvenor, Mr. G. Mackinlay; Lord Suffield, Mr. R. Whiting; Peasgood's Nonsuch, Mr. Caddick; Pott's Seedling, Mr. Caddick; Stirling Castle, Mr. Whiting; Warner's King, Mr. Caddick; and Wellington, Mr. Whiting.

The best dish of dessert apples was of Ribston Pippin, from Mr. A. Robb, Dysart House, and the best dish of culinary apples, Credenhill Beauty, a crimson-cheeked variety shown by Mr. R. Whiting.

### PEARS.

Pears were not so fine as usual, either in size or colour. The best collection of twelve dishes came from Mr. R. R. Greenlaw, gardener to H. J. Younger, Esq., Benmore, Kilmun, whose best varieties were Doyenne du Comice, Pitmaston Duchess, Louise Bonne of Jersey, and Marguerite Marrillat; Mr. Mackinlay second, and Mr. R. Whiting, Credenhill, Hereford, third.

For a collection of six varieties of pears, grown in Scotland, Mr. W. Galloway, Gosford, was to the front, and his varieties were Beurre d'Amanlis, Williams' Bon Chretien, Beurre Hardy, Mdme. Treyne, Marguerite Marrillat, and Souv. du Congrès; Mr. J. Chisholm, gardener to the Marquis of Lansdowne, Meikleour House, Perth, came second with Clapp's Favourite, Beurre d'Amanlis, Dr. Jules Guyot, Beurre Diel, Marie Louise, and Margaret Marrillat, The latter pear was capitally shown by many competitors, and is of proved merit.

In the single dish classes Mr. R. Greenlaw, Kilmun, scored for Beurre d'Amanlis and for Conference; Mr. T. Smith, Coombe Court Gardens, Surrey, led for Doyenne du Comice; and Mr. P. MacAndrew, gardener to the Earl of Home, Coldstream, scored with Durondeau. Mr. W. Williamson, Trinity, had the best Jargonelles, and Mr. Greenlaw showed the best dish of Louise Bonne of Jersey. Pitmaston Duchess and Souv. du Congrès were best shown by Mr. Mackinlay, Williams' Bon Chretien by Mr. W. Cormack, Haddington.

The four dishes of orchard house pears, shown by Mr. A. Harvey, gardener to Miss Hamilton, Rozelle, Ayr, were grand examples of Pitmaston Duchess, Doyenne du Comice, Durondeau, and Beurre Superfin; Mr. D. Nicoll, gardener to J. Harriott Bell, Esq., Forgandenny, came second.

### CUT FLOWERS.

Sweet peas were fairly good for the time of year, and the kind of season experienced, but there was scarcely a bunch which did not contain some spikes showing evidence of cold and rain. Mr. J. Herbert, Auchenheath, Lanarkshire, scored for a dozen bunches, and his best varieties were R. F. Felton, Edrom Beauty, Elsie Herbert, Wenvoe Castle, Elfrida Pearson, and Purity; Mr. W. F. Landreith, Coldstream, was second with spikes largely run to stem; Mr. G. Wilson, Ashley, Raltho, third; five entries. Mr. Fletcher was also ahead with six bunches in a class where grasses and light foliage were allowed; a pale cream variety named Paragon provided his best bunch; Mr. Landreith second. Mr. J. Fletcher led for a bunch of a variety not in commerce, showing the large maroon and purple Mrs. Cowdy, which Mr. R. Bolton is sending out this coming season.

Mr. T. M. Whitehead, Selkirk, showed a fine set of twelve bunches of carnations, but practically every one of his clean flowers, chiefly yellow-ground fancies, were wired; he was awarded first prize.

Eighteen bunches of chrysanthemums formed a fine class, and there were three competitors. When Mr. J. Smellie, Busby, Glasgow, competes, he is hard to beat, and on this occasion he scored with ease, winning the chief prize with splendid bunches of beautiful flowers of Abercorn Beauty, Caledonia, Hector, Elstob Yellow, Cream Perrier, Mdme. C. Perrier, Polly, Touraine, Mrs. A. Willis, Dolly Reeves, White Masse, Improved Mdlle. Masse, Nina Blick, Galatea, Leslie, Mrs. W. Sydenham, Holmes' White, and Fée Parisienne. Messrs. Mason and Co., Arthurstone Nursery, Jameston, second.

Messrs. George Nair and Son Prestwich, staged gladioli finely, and were first for two dozen spikes; Snow Wreath and Prestwich Gem (pink) were very fine, and carried flowers of wonderful size and substance; Messrs. A. E. Campbell and Son, Gourock, second. Amateurs showed gladioli well also, and we were especially struck by the fine twelve spikes exhibited by Mr. James Stewart, jun., Woodend Cottage, Whins, Alloa, who staged his flowers boldly in a semi-circular stand that provided a variation from the usual three rows of four spikes each. Mr. A. Brydon, Tweedbank, Innerleithen, scored for six spikes of these handsome autumn flowers.

Mr. G. Pirie, Dalhousie Castle, scored for six bunches of perennials with Montbretias Prometheus and George Davidson, Helianthus multiflorus, Chrysanthemum maximum Moonlight, Chelone barbata, and Anemone japonica; Mr. J. Sheills, Carstairs, second.

### ROSES.

In the rose classes some capital flowers were shown, and there was a good competition in most of them. Messrs. Jas. Cocker and Sons, Aberdeen, won premier place for thirty-six blooms, and showed the Lyon Rose, Marchioness of Londonderry, Gloire de Chedane Guinoisseau, and Mrs. T. Roosevelt very well; Messrs. A. and W. Croll, Dundee, second; and Mr. W. Ferguson, Dunfermline, third. Mr. R. C. Ferguson, Dunfermline, annexed first prize for eighteen hybrid tea roses, and Mdme. Melanie Soupert and Lyon Rose were very good and of lovely colour in his stand; Messrs. Adam and Craigmile, Aberdeen, second; and Mr. W. Ferguson third. For eighteen tea roses Messrs. D. and W. Croll scored with Mrs. Alfred Westmacott, Nita Welldon, and Medea in fine form.

### VEGETABLES.

Vegetables were good, but in the open class for eighteen dishes the subjects were not staged with that taste and care one expects nowadays in a very important class. Mr. W. Young, gardener to Mrs. Fleming, Hamilton, Craiglaw, Kirkcowan, won the first prize with capital leeks, red and white celery, Windsor Castle and Snowball potatoes, Ailsa Craig onions, beet, tomatoes, Quite Content and Gladstone peas, runner beans, cucumbers, very fine Maltese parsnips, Intermediate carrots, Golden Ball turnips, Winningstadt cabbage, Masterpiece cauliflowers, and King of Cauliflowers; Mr. J. E. Davis, gardener to Colonel E. R. Stewart Richardson, Ballathie, Perthshire, second. Mr. E. Shaw, gardener to Stephen Mitchell, Esq., Kippen Station, scored well in the class for a display of vegetables, twelve dishes, grown in Scotland. This was a particularly fine set, consisting of Solid White celery, Purity cauliflowers, Prizetaker leeks, grand Ailsa Craig onions, New Red Intermediate carrots, Sutton's Black beet, the Gladstone peas, Matchless dwarf beans, Satisfaction potatoes, Matchless cucumbers, Best-of-All tomatoes, and Golden Ball turnips. Mr. W. P. Bell, gardener to the Earl of Home, Rothwell Castle, came second, and showed very fine Sutton's Mammoth cauliflowers and Dobbie's Selected parsnips; Mr. R. Stuart, gardener to Lord Lauderdale, Thirlestane Castle, Lauder, third; five competitors.

### PLANTS.

Plants are not made the most of at Edinburgh, and though fairly largely shown they never seem to form a really serious part of the exhibition. The flat staging does not help matters, and rarely does a competitor use pot or block to raise his hindermost specimens. Mr. A. Millar, gardener to the Earl of Home, Douglas Castle, led for four foliage plants with large examples of alocasias, marantas, anthuriums, dieffenbachia, and Phyllotænium Lindeni. For half a dozen specimens in pots not exceeding nine inches in diameter, Mr. Millar again scored with similar subjects. Mr. A. Knight, gardener to Sir Wilfred Lawson, Bart., Brayton, Carlisle, had a very fine Croton Russelli in his pair that won first prize. In the orchid classes Mr. A. Findlay, gardener to A. Dryburgh, Esq., Gogar Park, led for cypripediums and for one orchid the latter being Lælio-cattleya Bletchleyensis with seven flowers. Mr. A. Jeffs, 17, Blacket Place, had the best four orchids, his kinds being Cypripedium Lord Derby, Odontoglossum grande, O. crispum, and Oncidium incurvum.

The best four stove and greenhouse plants in flower were two statices, an ixora, and a begonia, staged by Mr. J. McNiell, gardener to Major Thorburn, Craigerrie, Peebles; Mr. G. McKenna, gardener to Sir Robert Usher, Bart., Ratho, came second here, but he was first in some other classes.

Mr. W. T. Galloway, gardener to Mrs. Dewar, Drylaw House, was invincible with double and single begonias. Mr. G. Telford, gardener to Sir R. Somerville, Eskbank, had things all his own way with fuchsias; while for chrysanthemums in pots, six specimens, Mr. W. Page, Gilmerton, led the way with fine bushes of early sorts.

### NON-COMPETITIVE.

One of the largest, and, at the same time, one of the most noteworthy of the trade displays was that contributed by Messrs. Dobbie and Co., Rothesay. At one end they had a brilliant array of collarette dahlias, including many of their own raising, and, if one is to judge from the interest taken in these flowers by the visitors, the section is sure of a great future. Next followed early chrysanthemums, set up in bold pyramidal masses, and then followed roses, in bunches, representing the best of the autumnal bloomers, and, finishing the display, came beautiful sweet peas finely staged, with pyramids of white, pink, and red varieties of Cosmos as a graceful background. Messrs. Tillie, Whyte, and Co., Edinburgh, were large exhibitors of gladioli, asters, and well-grown vegetables in variety.

Messrs. Webb and Sons, Stourbridge, showed a fine collection of well-grown vegetables and fruits, their melons being especially good. With these were sweet peas, asters, liliums, spiræas, and chrysanthemums, all very tastefully disposed. Opposite this display was a bank of hardy flowers from Messrs. J. Cocker and Sons, Aberdeen, and collections of perpetual carnations, orchids, and apples from Messrs. Stuart Low and Co., Enfield. Gladioli from Mr. David W. Thomson, George Street, Edinburgh, made a brave show; Empoclus, Velocity, Prince of Orange, J. Lewis Childs, Baron Hulot, Royalty, and Duke of Richmond were a few of the best. Messrs. John Forbes, Lim., Hawick, exhibited dahlias, phloxes, pentstemons, border flowers, and carnations, the latter quite good for so late a date, and therefore attracting a good deal of attention.

Messrs. Young and Co., Hatherley, Cheltenham, were represented by perpetual carnations staged over ferns and green moss; Mrs. Greswold Williams, May Day, Queen (primrose), and Montgomery were some of the best. Messrs. G. Gibson and Co., Leeming Bar, Yorks, had a bold bank of hardy flowers that included Aconitum cæruleum, Blue Jay, and a fine lot of gaillardias. Mr. D. M'Omish, Crieff, displayed hardy flowers, largely using the fine Chrysanthemum maximum Etoile d'Anvers as a central feature.

An array of chrysanthemums from Messrs. Mason and Co., Jamestown, was almost too suggestive of November, but the pansies saved the situation. Close by Mr. R. C. Ferguson, Dunfermline, put up a goodly set of fragrant roses. Mr. Jones, Kilkenny, exhibited gladioli largely, and made a special feature of the purple-blue Baron Hulot. Other exhibitors included Messrs. T. Kennedy and Co., Dumfries, hardy flowers and dahlias; Mr. G. W. Miller, Wisbech, violas and apples; and Mr. H. N. Ellison, West Bromwich, choice ferns in great variety and lily of the valley.

Messrs. Storrie and Storrie, Glencarse, contributed a fine lot of pot fruit trees, apples, pears, and plums, carrying first-rate fruits, clean and highly-coloured; the celosias were also very fine, the colouring being unusually bright. Phloxes from Messrs. Gunn and Sons, Olton, were shown in the usual fine style this firm adopts. A large table of apples from Messrs. Little and Ballantyne, Carlisle, showed how well a large number of varieties succeed in the border district. Montbretias and gladioli made up the bulk of a large exhibit contributed by Messrs. R. Wallace and Co., Colchester, and, needless to say, Montbretia Star of the East was the outstanding and striking novelty.

Very fine were the begonias from Messrs. T. S. Ware, Lim., Feltham, who filled the centre of their bold display with a group of the exquisite pink Lady Cromer. Messrs. Thyne and Son, Dundee, contributed a selection of annuals and border flowers, as well as sweet peas, phloxes, etc. The pæony-flowered dahlias from Messrs. Bakers, Wolverhampton, attracted no little attention; Geisha, Faust, Turner, and Codsall Gem were especially striking among many showy varieties. Messrs. W. Wells and Co., Merstham, filled a large space with a selection of phloxes, and an admirable collection of early chrysanthemums, including their new variety named Crimson Polly.

Messrs. George Fairbairn and Sons, English Street, Carlisle, presnted a very fine lot of cactus dahlias, on boards, with stands of pompon, collarette, pæony-flowered, and cactus varieties behind the boards; Geisha, the new deep heliotrope carnation, was also well shown by this firm. Messrs. Cunningham, Fraser, and Co., Comely Bank, Edinburgh, presented border flowers and roses in excellent style, and also put up a very bold group of evergreen shrubs, choice hollies, and cypresses being the chief subjects. Messrs. R. B. Laird and Sons, Lim., Edinburgh, contributed a big group of golden cupressus and variegated yews.

A little group of choice orchids from Messrs. Sander and Sons, St. Albans, provided an item of special interest and beauty; Cattleya Adula perfecta, Lælio-cattleya Hiawatha, Brasso-cattleya Leemanæ, Cypripedium Cæsar, and Cattleya Suavoir were a few of the gems. Mr. D. McLeod, Manchester, also showed orchids. Very fine grapes and tomatoes, the former including the big-berried Diamond Jubilee variety, were largely shown by Messrs. Thomson and Sons, Lim., Cloverfords. A bright and artistically arranged group of stove foliage plants, including the newer ferns, was submitted by Mr. John Downie, Edinburgh, who also set up a group of begonias. From the King's Acre Nurseries, Hereford, came a splendid group of fruit trees in pots, the crops being remarkable for their development in size and colour; Allington Pippin, Rival, and Emperor Alexander apples, and Pres. d'Osmanville, and Glou Morceau pears were ususually fine. Liliums, particularly L. auratum and L. speciosum, were used with great liberality by Messrs. Thos. Methven and Sons, Edinburgh, in a large and effective group, in association with palms and ferns, begonias, clematis, and heliotropes. Mr. L. R. Russell, Richmond, had a conspicuously good exhibit of variegated tree ivies grown in various shapes and sizes. Messrs. W. Cutbush and Son brought up a great exhibit of hardy flowers from Highgate, and made special features of gladioli, pentstemons, kniphofias, and polyantha roses.

Mr. R. Bolton showed Hercules, R. F. Felton, Melba, Wenvoe Castle, Red Star, and other new sweet peas. Mr. E. F. Fairbairn and Sons, Edentown, contributed an effective collection of the better varieties of phloxes.

### MEDALS.

Gold.—Messrs. Dobbie and Co., Edinburgh.

Silver-gilt.—Messrs. Thomas S. Ware, Lim., Feltham; Messrs. E. Webb and Sons, Stourbridge; Messrs. Young and Co., Hatherley; King's Acre Nurseries, Hereford; Messrs. Wm. Cutbush and Son, Highgate; Messrs. Cunningham, Fraser, and Co., Edinburgh; Messrs. Thyne and Son; Messrs. Storrie and Storrie, Glencarse; Mr. D. W. Thomson, Edinburgh; Messrs. Wm. Thomson and Sons, Edinburgh; Mr. John Downie, Edinburgh; Messrs. Little and Ballantine, Carlisle; Messrs. Sander and Sons, St. Albans.

Silver.—Mr. S. A. Jones, Kilkenny; Messrs. R. Wallace and Co., Colchester; Bakers, Wolverhampton; D. M'Omish, Crieff; Messrs. J. Forbes, Lim., Hawick; Messrs. G. Gibson and Co., Leeming Bar; Messrs. Tillie, Whyte, and Co., Edinburgh; Mr. L. R. Russell, Richmond; Messrs. Thomas Methuen and Sons, Edinburgh; Messrs. R. B. Laird and Sons, Edinburgh; Messrs. Stuart Low and Co., Enfield; Messrs. W. Wells and Co., Merstham; Messrs. James Cocker and Sons, Aberdeen; Mr. W. Muir, Linlithgow (cypripediums); Mr. W. McLeod, Manchester; Mr. H. N. Ellison, West Bromwich.

Bronze.—Messrs. G. Fairbairn and Sons, Carlisle; Messrs. J. Mason and Co., Jamestown; Mr. Robert Bolton, Carnforth; Messrs. E. F. Fairbairn and Sons, Edentown; Messrs. Thomas Kennedy and Co., Dumfries; Mr. G. W. Miller, Wisbech; Mr. R. C. Ferguson, Dunfermline; Messrs. Gunn and Sons, Olton, Birmingham; and the East of Scotland College for bottled fruits, etc.

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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

---

INSECTS ON BEGONIA AND CYCLAMEN LEAVES.—Halifax: Could you tell me, through the pages of the Gardeners' Magazine, what is wrong with my seedling begonias, and whether I can do anything to restore them to health? My seedling cyclamens appear to be attacked in the same way; specimens enclosed.—Both begonias and cyclamens are suffering from an attack of "rust," and we refer you to the answer to "J. H. C., Duffield," for the remedy.

FAILURE WITH CARNATIONS.—H. T., Stone: I shall be much obliged if you can tell me what has caused my carnations to lose their foliage so badly. I have them in a cold frame, and they were potted into 8in. pots in June. While they were flowering in the 48-sized pots I was obliged to have them in the greenhouse, which had permanent shading on its roof. I have wondered whether this heavy shading had anything to do with the loss of foliage.—Excessive shading would undoubtedly have a distinctly detrimental effect upon the plants, and if potting and exposure to full light followed immediately upon their sojourn in the heavily shaded greenhouse then the sudden and severe change of conditions would largely account for the failure. Beyond all this, it seems to us, if we interpret your letter aright, that, under the circumstances, the shift from a 48-sized pot to one eight inches in diameter was too large.

PEACH FOR NAME.—B. T., Swindon: Enclosed in box I am sending you a peach, which I hope you will be able to name for me. The variety is a bad one for dropping its fruits just before colouring, but the ripe fruits are of good quality.—We despair of ever receiving a peach in condition for identification. The specimen sent was hopelessly mixed up with the cotton wool. For purposes of identification a peach should be sent before it is ripe; a few leaves should also be sent, and particulars be given of the size and colour of the flowers, and the conditions under which the tree is growing.

RUST ON BEGONIA LEAVES.—J. H. C., Duffield: I should be much obliged if you could tell me the cause of the rusty appearance of the enclosed begonia foliage. The plants grew to a fair size, and then seemed to stop growing. I have several varieties, but all are more or less affected.—The rusty appearance of the begonia foliage is due to the presence of a tiny mite, a species of Tarsonymus, which chiefly attacks the under surface of the leaves, thus preventing the plant from properly fulfilling its functions and thereby causing failure or death. Dusting with tobacco powder at frequent intervals will stop an attack if the matter is taken in hand before the trouble is widespread, but when the attack has assumed the proportions indicated by the specimens sent a more drastic method must be adopted. Take a good handful of soft soap and knead into it a quantity of flowers of sulphur; then dissolve the soap and sulphur compound in a gallon and a-half of warm soft water. In this solution dip the plants, and repeat the operation once a week until the pest is disposed of. The need for regular dipping at short inter-

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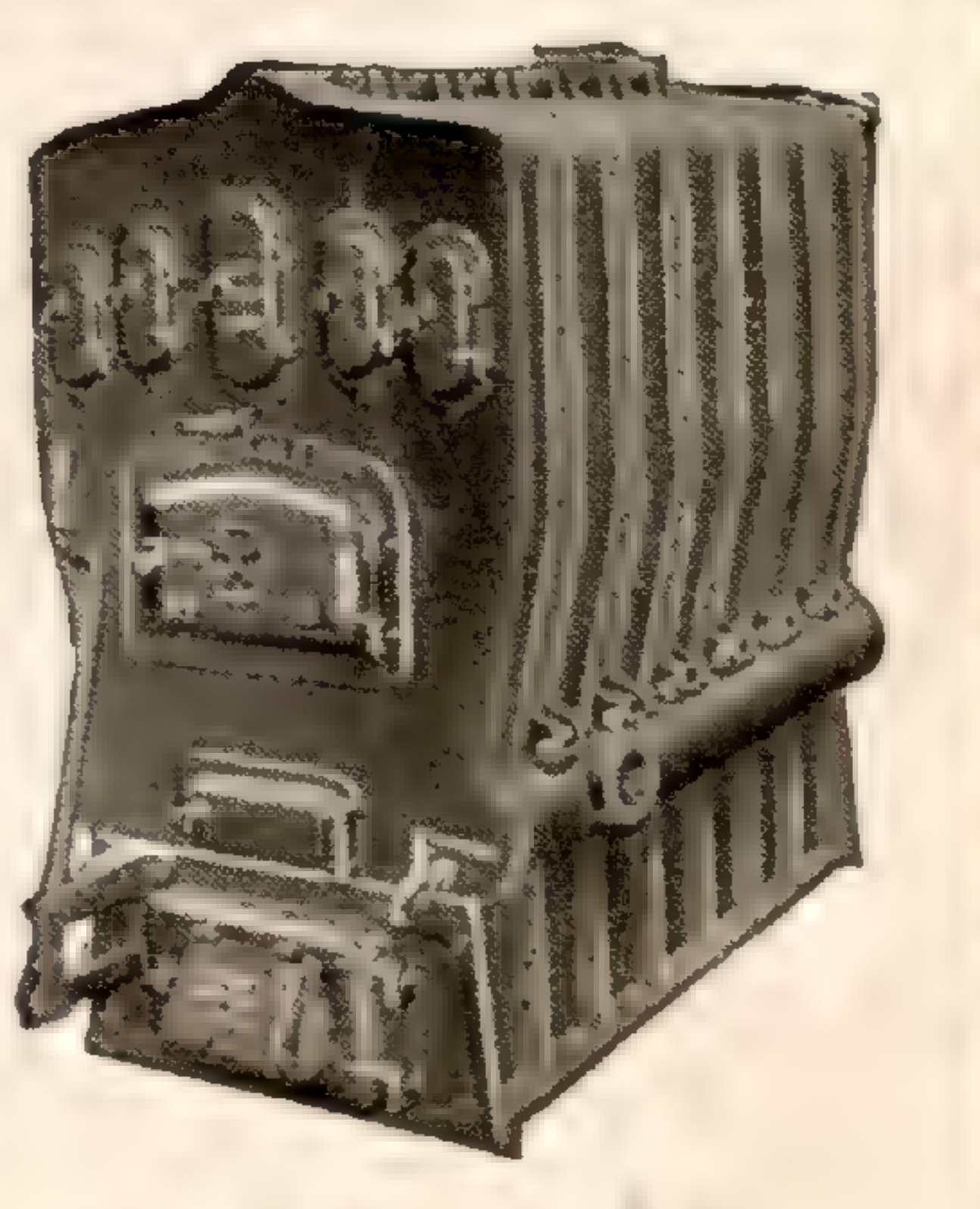

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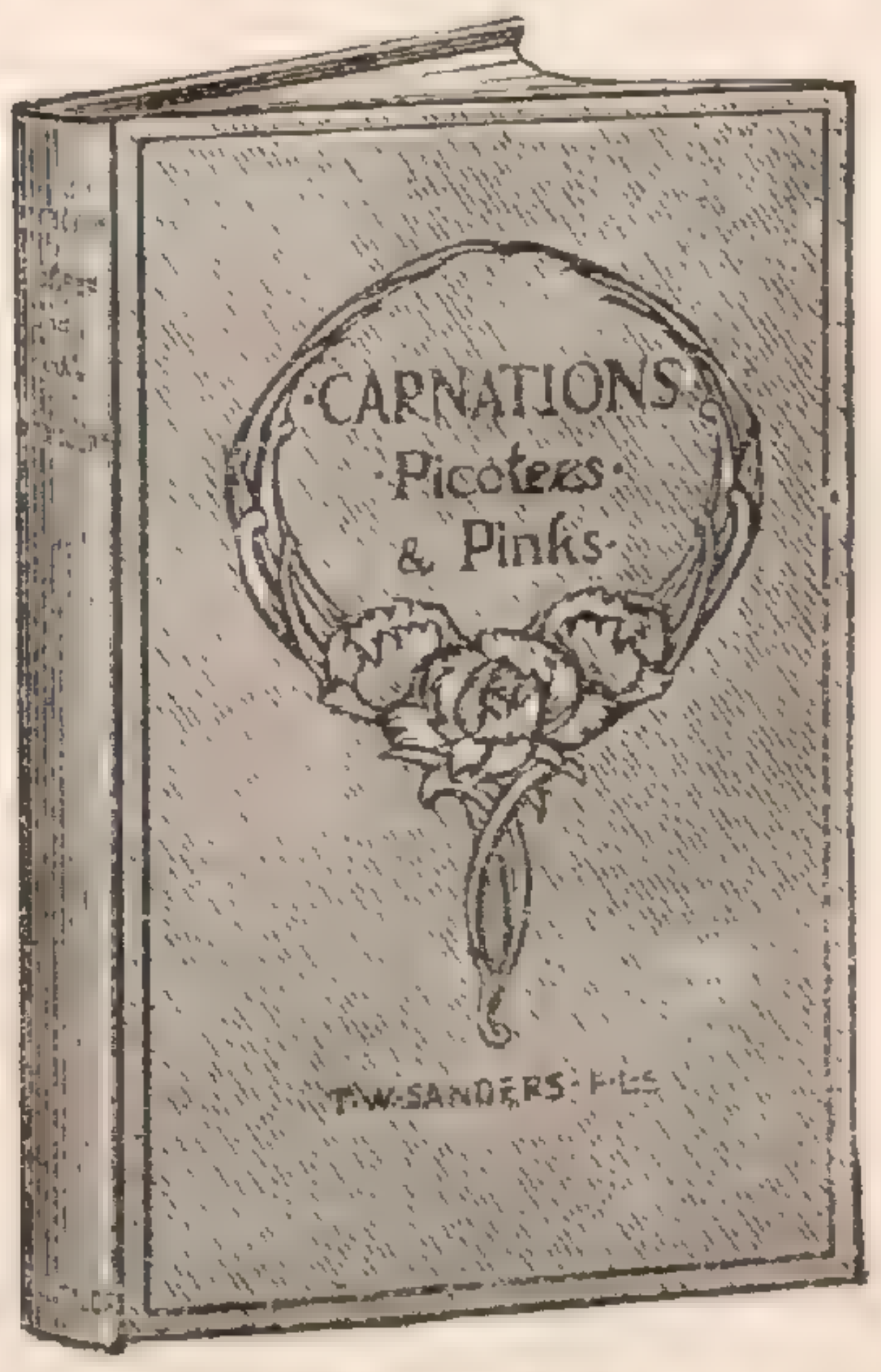

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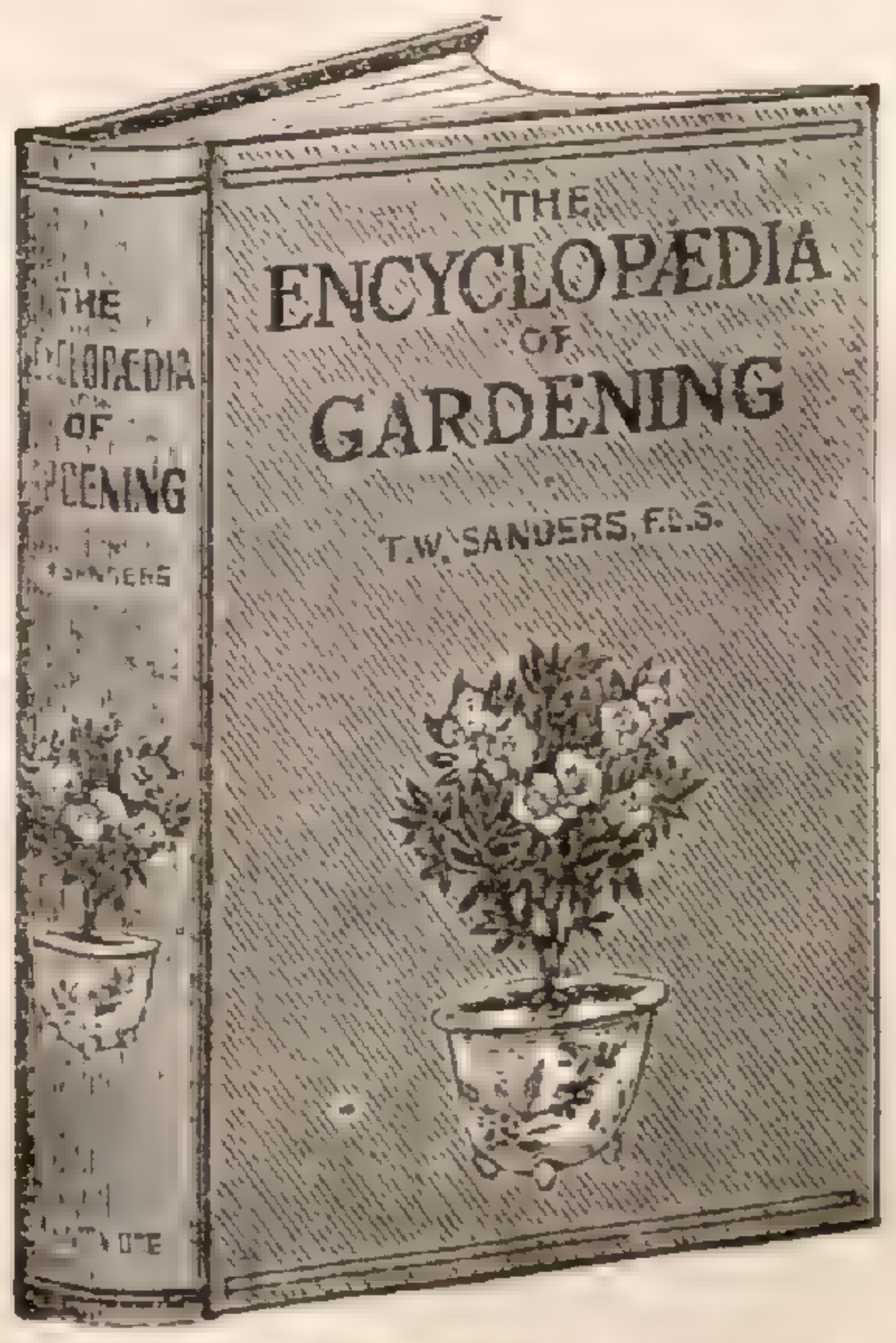

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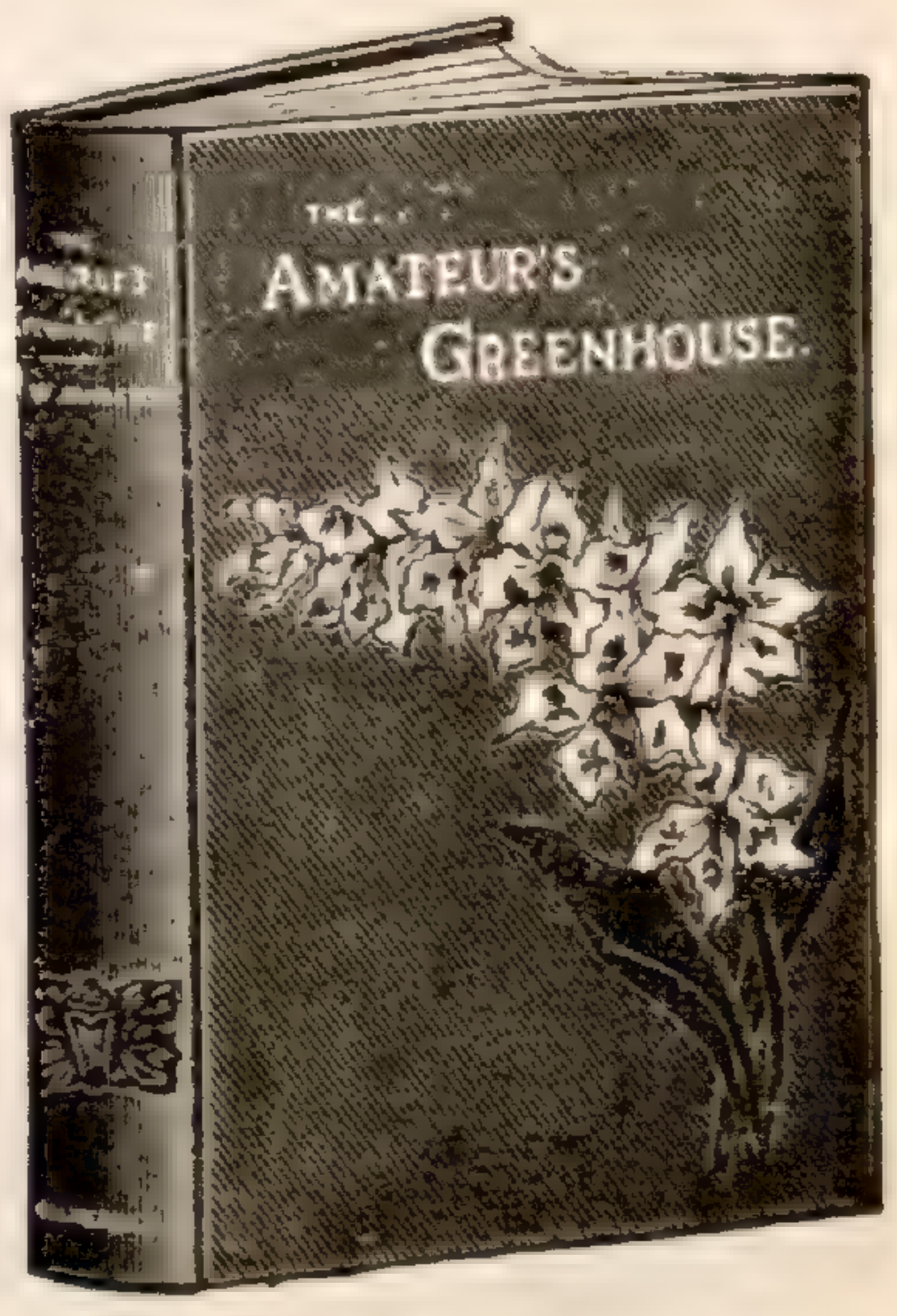

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vals is great because, while the solution is deadly to the living mites it does not dispose of the eggs, so that one or two dippings may not suffice to eradicate the trouble.

BREWERS' YEAST AS A FERTILISER.—A correspondent asks whether any preparation of brewers' yeast can be used as a fertiliser in horticultural practice.—So far as we are aware, brewers' yeast is not put to any use as a soil fertiliser, and we very much doubt whether any preparation from it would be commercially successful. Yeast has a very complex chemical composition. About 7 per cent. is reducible to ash, the rest is combustible. Yeast ash, according to Mitscherlich's analysis, consists mainly of phosphoric acid (54 to 59 per cent.), united with potash (28 to 40 per cent.), magnesia (6 to 8 per cent.), and lime (1 to 4 per cent.).

SCHEDULE OF THE NATIONAL DAHLIA SOCIETY.—G. S., Neath: Please tell me where I can obtain a schedule of the forthcoming exhibition of the National Dahlia Society.—A schedule and full particulars concerning the work of the National Dahlia Society may be obtained from Mr. E. F. Hawes, the hon. secretary, Ulysses, Fortune Green, London, N.W.

SWEET HERB GARDEN.—C. W. P., New market: I propose to make a sweet herb garden, and should be glad if you would inform me where I can obtain suitable quotations for each of the various subjects that such a garden would include. Any information would be greatly valued.—In our issue of March 30, 1907, we published an article entitled "A Bunch of Herbs," which you would find useful. Such books as "The Shakespeare Flora," by Leo. H. Grindon (Simpkin, Marshall, and Co.); and "Bards and Blossoms," by F. E. Hulme, F.L.S. (Marcus Ward and Co.), would give you plenty of opportunity for the selection of appropriate quotations.

ANTHOLYZA PANICULATA.—S. W., Bristol: Will you be kind enough to give me some information concerning a plant named Antholyza paniculata, which I am told is a beautiful subject for autumn flowering?—Antholyza paniculata is a South Africal bulbous plant that bears tall spikes of bright scarlet flowers in the autumn. It is by no means common in gardens, and is only a success in specially-favoured localities, though it is hardy in most parts of the United Kingdom. Though the flowers are quite different in their form, the plant as a whole at once suggests resemblance to a montbretia. Corms should be planted six inches deep and six inches apart in groups in a warm border, and the ground thus occupied should be covered with a little rough cocoanut-fibre refuse, or ashes during the winter. Planting should be done as soon as corms can be obtained, and once planted there is no need to disturb a colony until over-crowding is evident.

FRUIT GROWING IN WESTERN AUSTRALIA.—R. F. H.: I have been reading about the possibilities of fruit-growing in Western Australia, and the openings the industry offers for young men. I have a liking for outdoor life, enjoy very good health, and have a few hundred pounds at my command. Would you advise me to go to the colony for the purpose of engaging in fruit-growing?—Advising a young man on a matter of this kind involves so much responsibility that we cannot undertake to give definite advice, especially when we have no personal knowledge of those seeking information. So much depends upon the capacity of the individual for the acquisition and utilisation of knowledge for both the production and sale of fruit, and for business methods that it is extremely difficult even when acquainted with the enquirer to say whether he is likely to succeed in fruit culture for market. We must leave you to decide whether you will go or not, but if you determine to emigrate we strongly advise you not to part with one penny of your money in the hire or purchase of land or orchards until you have worked for two or three years in an establishment in which the growing and marketing of fruit is carried out in accordance with the most modern methods. This will give you an opportunity of becoming acquainted with the soil and climate of the colony, the fruits most suitable for planting in the several fruit-growing areas, and the methods of marketing.

NIPPLE WORT.—D. P., Guernsey: I have been asked to obtain plants of the Nipple wort, but do not know any subject that bears this name, and no books to which I have access afford me any help. Can you tell me the correct name of the plant? — There are two native plants that are occasionally referred to as Nipple worts. The true Nipple wort is Lapsana communis, found from Orkney to the Channel Islands; it is a slender, erect, branching annual, with heads of yellow flowers, and it belongs to the Composite Order. Arnoseris pusilla, another composite, is a small, yellow-flowered annual, known as Swine's Succory, as well as the Dwarf Nipple wort. This has not such a wide distribution as Lapsana communis. The latter was formerly eaten as a salad.

### NAMES OF PLANTS.

H. T., Stone.—Spiræa Douglasi.

Halifax.—A clematis; please send flowers.

G. W. B., Ipswich.—1, Jasminum simplicifolium; 2, Eranthemum Andersoni; 3, Hedychium flavum.

S. E. J., Weymouth.—1, Escallonia macrantha; 2, Berberis Wallichi; 3, Nandina domestica; 4, Bougainvillea glabra; 5, Santolina incana; 6, Leycesteria formosa.

W. W. L., Farnborough.—The specimens were not particularly good ones; 1, Fuchsia corallina; 2, F. gracilis. The other plants were Phygelius capensis and a sedum we do not recognise.

## TRADE NOTE.

We have received from Mr. E. J. Wootten, Fairoak, Eastleigh, a very handy little two-ended hoe, which is called Wootten's Patent Moss and Weed Destroyer. The purpose for which this little implement is designed is to remove all moss and weeds growing in pots, and to keep the surface of the soil in the pots free and open. The larger end of the two is suitable for use on chrysanthemum pots, perpetual carnation pots, and others of a large size; while the smaller end is convenient for anything from a "60" pot upwards. With the hoe comes also a small triangular file for the purpose of keeping a keen edge on the blades. We consider that, at the reasonable price Mr. Wootten offers the two articles, there should be a good demand from carnation growers, and in fact, all classes of plant growers.

## CATALOGUES RECEIVED.

MESSRS. E. H. KRELAGE AND SON, HAARLEM, HOLLAND.—The comprehensive catalogue issued by this firm is of special interest for the full lists of tulips it contains.

ROBERT VEITCH AND SON, EXETER.—A concise, yet excellent, guide to the selection of bulbous plants for the production of rich displays of colour in the conservatory and flower garden is the catalogue of bulbs we have received from this well-known firm.

MESSRS. DICKSON AND ROBINSON, CATHEDRAL STREET, MANCHESTER.—The catalogue of bulbs that is being issued by this firm is comprehensive, interesting, and attractive, and will be found useful both in selecting and carrying out the cultural details.

MESSRS. WILLIAM PAUL AND SON, WALTHAM CROSS, LIM.—From this well-known firm, who have long been closely identified with bulbous plants, we have received their catalogue of bulbs, which is comprehensive, and remarkable for the judgment with which the lists of the several kinds has been prepared. The catalogue is additionally interesting owing to the inclusion of the list of varieties of camellias, that form the famous collection of these flowers at Waltham Cross.

ANT. ROOZEN AND SON, OVERVEEN, NEAR HAARLEM.—Although the autumn publication of this firm is, as usual, described as a catalogue of bulbs, it might well be regarded as a handhook, for such it assuredly is, of bulbous flowers. It contains lists of all the bulbous plants generally grown for the production of displays in the flower garden and conservatory, and a comprehensive list of miscellaneous kinds, which, although not largely known, are of great beauty. Messrs. Ant. Roozen and Son's general agents for Great Britain are Messrs. Mertens and Co., 3, Cross Lane, St. Mary-at-Hill, E.C., from whom the catalogue may be obtained.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. SEPTEMBER 1 TO SEPTEMBER 7. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Sept. 1—Sunday ...... | 0 18 | 56 | 55 | 63 | 51 |
| ,, 2—Monday ..... | 4 6 | 54 | 53 | 60 | 52 |
| ,, 3—Tuesday...... | 0 54 | 54 | 50 | 62 | 41 |
| ,, 4—Wednesday.. | 7 0 | 62 | 59 | 66 | 54 |
| ,, 5—Thursday.... | 5 42 | 54 | 49 | 60 | 46 |
| ,, 6—Friday........ | 6 48 | 53 | 49 | 60 | 44 |
| ,, 7—Saturday..... | 6 18 | 54 | 49 | 63 | 45 |
| Means .. | (total) 31 6 | 55 | 52 | 62 | 48 |

| DATE. 1912. SEPTEMBER 1 TO SEPTEMBER 7. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Sept. 1—Sunday ...... | 0·02 | 60 | 59 | 59 | 48 |
| ,, 2—Monday ...... | — | 60 | 59 | 59 | 48 |
| ,, 3 Tuesday...... | trace | 57 | 59 | 58 | 35 |
| ,, 4—Wednesday.. | — | 59 | 58 | 58 | 54 |
| ,, 5—Thursday.... | | 58 | 59 | 58 | 40 |
| ,, 6—Friday........ | — | 56 | 58 | 58 | 39 |
| ,, 7—Saturday .... | — | 56 | 57 | 58 | 39 |
| Means ... | (total) 0 02 | 58 | 58 | 58 | 43 |

## FORTHCOMING ENGAGEMENTS.

TUESDAY, September 17.—National Dahlia Society Exhibition at the Crystal Palace; two days.

WEDNESDAY, September 18.—North of England Horticultural Society: Meeting at Leeds, with lecture by Mr. W. Dyke on "Manures."

MONDAY, September 23.—National Chrysanthemum Society: Meeting of Floral and Executive Committees.

Harby Flower Show.

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## Situations Wanted.

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E. MILLER MUNDY, Esq., Shipley Hall, Derby, high recommends A. HARRIS as GARDENER (Head) in good establishment; six years as General Foreman; experienced in all branches, Inside and Outside. A. HARRIS, Shipley Hall, Derby.

G. BATES, Head Gardener to A. D. ACLAND, Esq., Digswell House, Welwyn, Herts, can thoroughly recommend strong LAD, age 17, as IMPROVER (Inside); two years' experience; Bothy preferred.

GARDENER (Head), age 32, married, one child, aged 4½; seventeen years' practical experience in carnations, chrysanthemums, fruit, stoves, house and table decorations, etc., seeks SITUATION where five or more are kept; six years as head. Apply, G. MOWBRAY, The Gardens, Tansor Court, Oundle, Northants.

GARDENER (Second of six), requires similar position, or manage smaller place; no fault, estate being sold; age 27.—E. DAMANT, Kenwick Hall, Louth, Lincolnshire.

GARDENER (Single-handed) seeks SITUATION; age 26; 12 years' good all-round experience (Inside and Outside); good references; abstainer; married when suited; near London preferred.—A. F., 39, Flash Walk, Hampstead, N.W.

GARDENER (Head Working, where three are kept); life experience Inside and Out; 12 years' good references; age 32; single. H. WARD, Woodrising Hall Gardens, Hingham, Norfolk.

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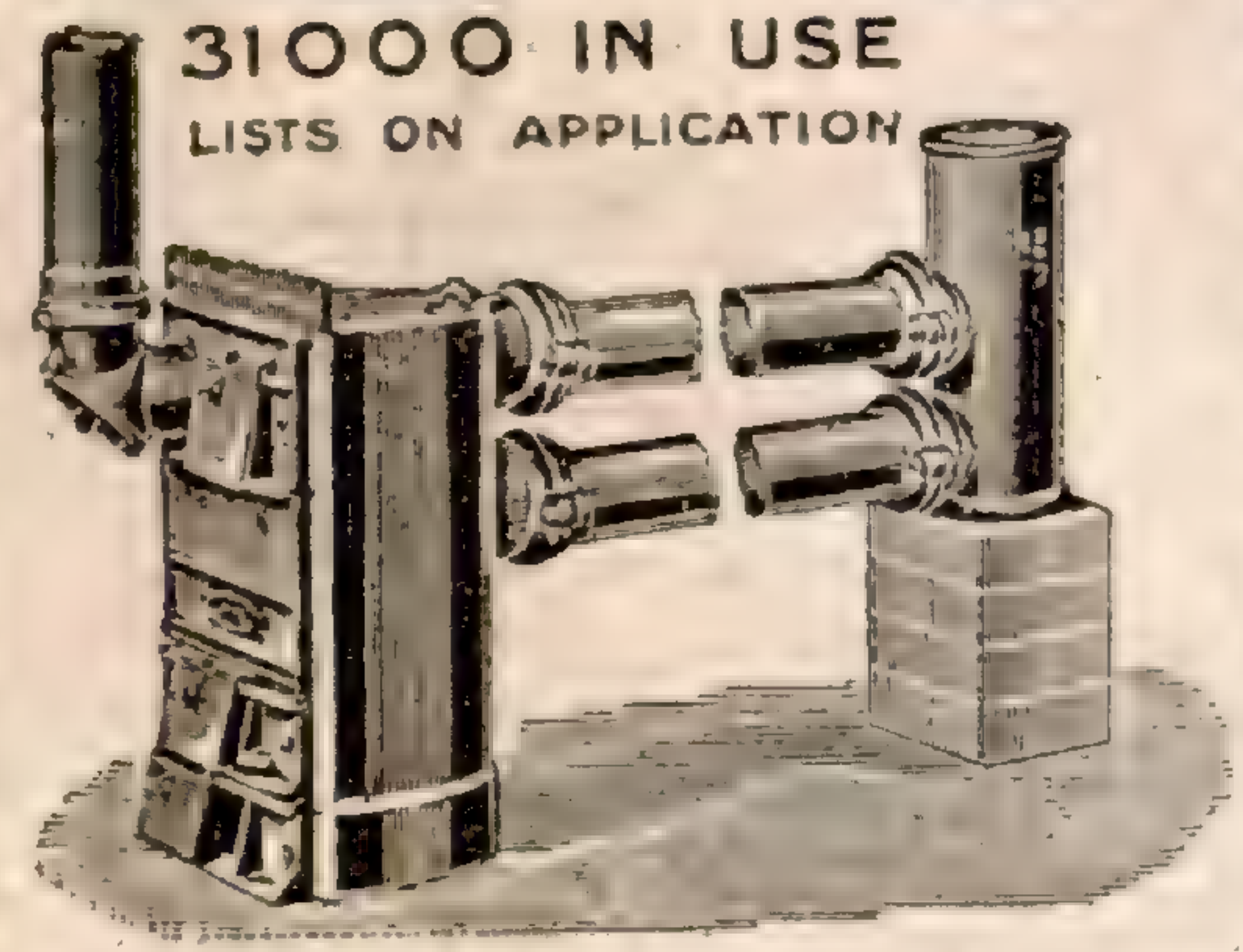

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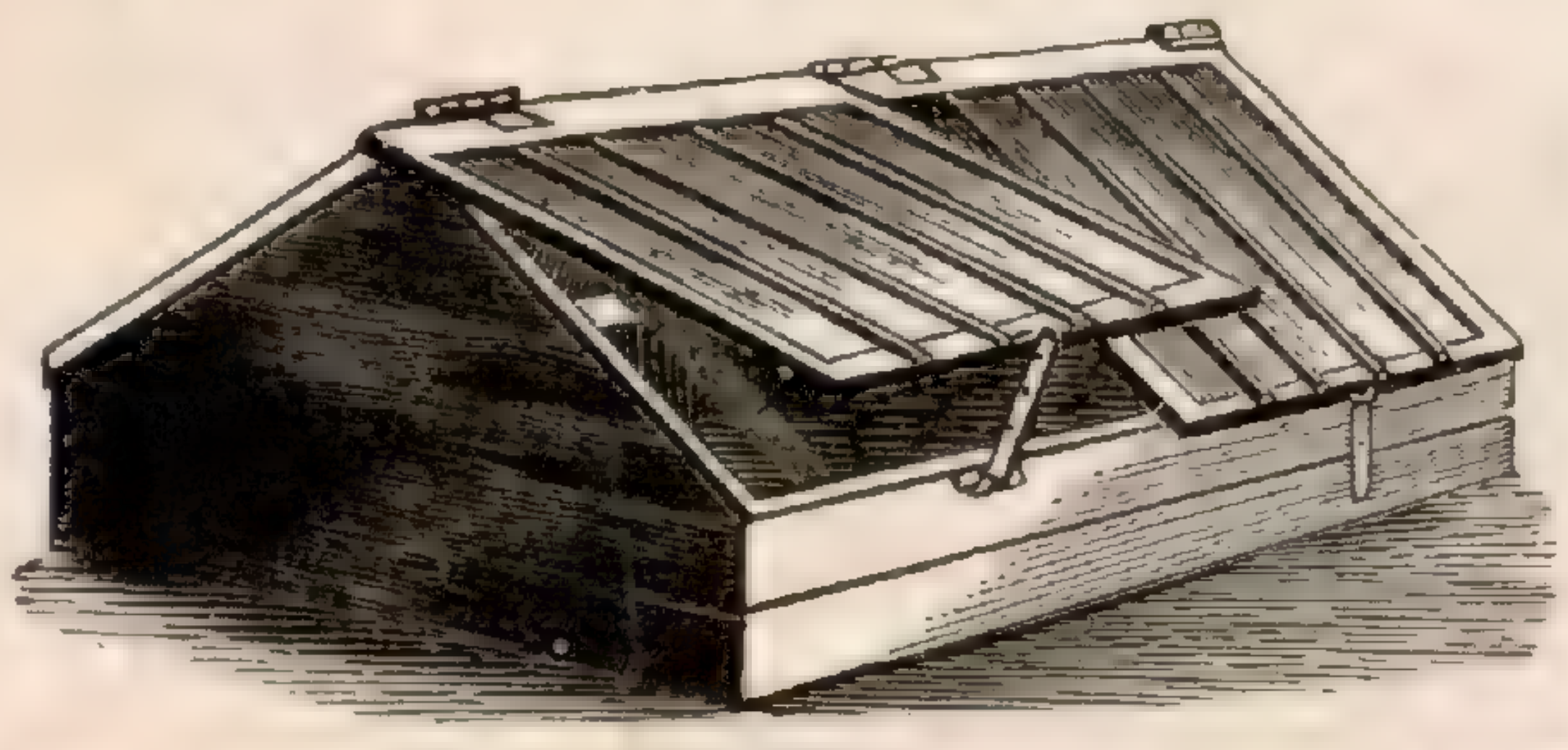

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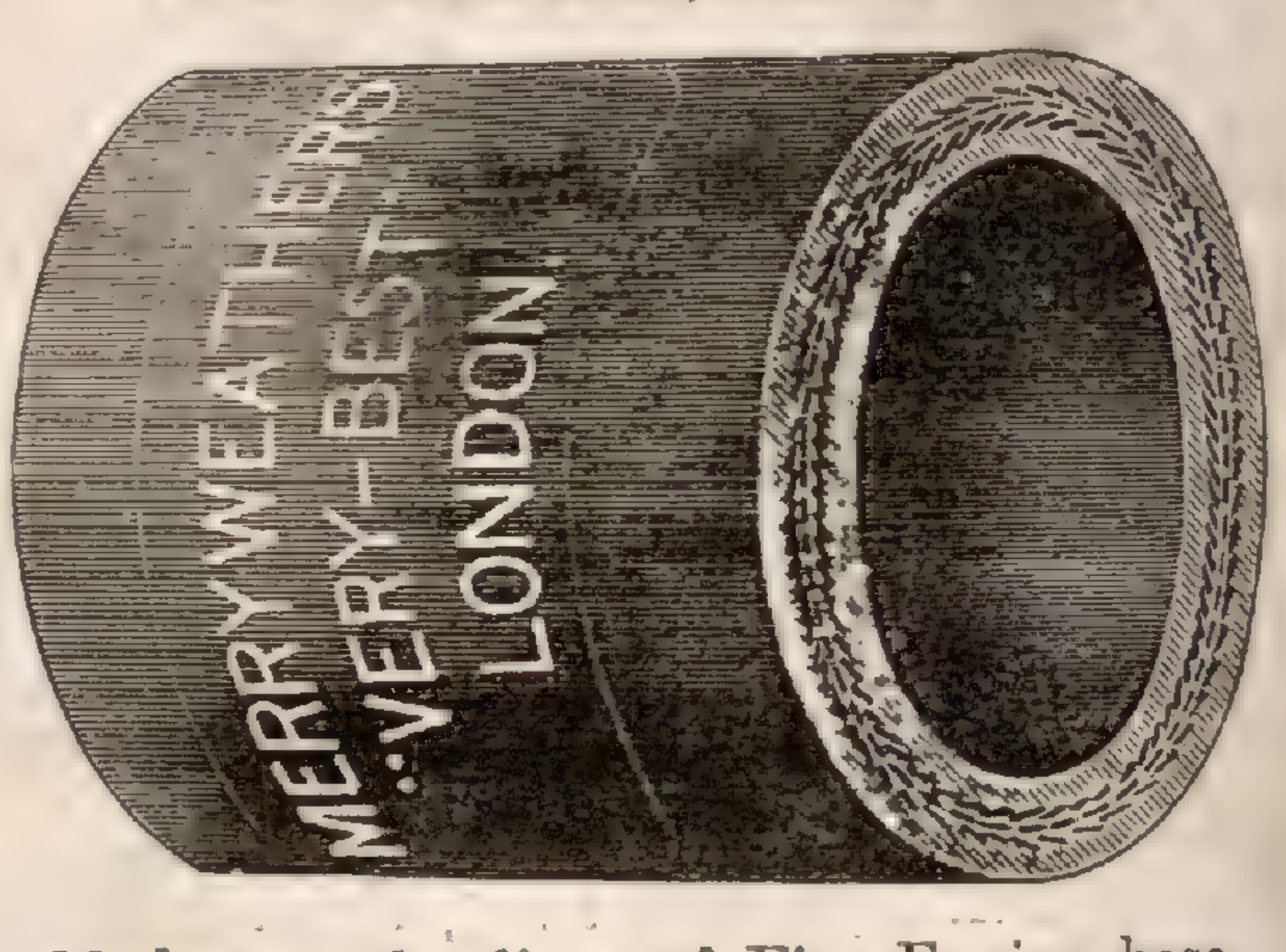

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THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Storage of Potatoes.

So appreciably does the keeping properties and the quality of potatoes grown for winter and early spring use depend upon the manner in which the tubers are stored that at all times it is of much importance that careful attention should be given to them when lifted. In a season such as this through which we are now passing, with the soil in many instances heavily charged with moisture, and a considerable proportion of the tubers infected by the disease caused by Phytophthora infestans, special care is necessary to reduce the losses in the store to a minimum. Our readers will be well acquainted with the fact that the effects of an attack of this fungus are seen first in the form of brown patches on the leaves; and that when the conditions are favourable to its development, as in a wet summer such as the one through which we have just passed, the mycelium rapidly passes through the tissues of the haulm, destroying it in its course, and penetrates some of the tubers. A portion of these are so badly infected that there is no difficulty in at once recognising their diseased condition, while others receive so light an attack as to be able to pass a close scrutiny undetected. These latter give rise to much anxiety among those who are acquainted with the fact that when the tubers are subjected to the warmth and moisture incidental to newly-formed clamps, the disease spreads through them, thereby causing their decay, and, it may be, bring about an infection of the sound tubers. When the cells have been invaded by the mycelium of the phytophthora, certain bacteria obtain an entrance and effect the decay of the tubers, which is commonly known as "wet rot." Moreover the fungus known as Nectria solani, which causes winter rot, is able to more readily attack diseased tubers than those which are quite sound. If these facts are borne in mind, there will be no difficulty in understanding the desirability of removing, as far as practicable, all the diseased tubers from those that are sound when the crop is lifted. With regard to this important operation, it cannot be too generally known that there is no advantage in leaving potatoes in the ground after the haulm has died down. There cannot be any increase in the bulk, or an improvement of the tubers after this stage has been passed; but there may be additional losses from the ravages of the disease. From this time onward, whether the haulm has died down or is quite green, the lifting of the crop should be proceeded with as rapidly as circumstances will permit, and dry weather should be taken full advantage of. When the work has to be proceeded with in showery weather, the tubers should be dried by being spread out on the floor of a dark shed, and the ventilation be so regulated that a current of air will pass over them. Should a dark shed be not available, spread the tubers on the floor of a light one, or of a fruit house that may be free, and cover with a layer of dry straw about twelve inches in thickness. Placed somewhat loosely on the potatoes, the straw will exclude the light, and allow the moisture to escape. If the weather is dry the tubers may be allowed to lie on the surface a few hours before being gathered up, but previous to storing it will be advisable to keep them in a dry shed for a few weeks. Moisture in the store so seriously impairs the flavour of potatoes as to fully justify whatever labour may be necessary to have them dry at the time they are placed therein. Moreover, it is so favourable to the spread of disease among them that considerable losses may follow a neglect of this precaution. In all seasons there is more or less objection to storing potatoes in wide clamps, but in those such as this it is most essential that the clamps be quite narrow. Three and a half feet in width at the base will be the most suitable, for they will hold a goodly quantity of tubers in proportion to their length; while the bulk will not be so large as to occasion much apprehension with regard to either moisture or temperature. Unless the ground is naturally dry it will be advisable to have the base of the clamp level with the surface, if not somewhat above it, and not, as in ordinary seasons, considerably below the general level. The practice that sometimes obtains of completely covering with soil the straw laid over the tubers immediately the clamp is formed is not a good one. There is in all cases a certain amount of "heating" and "sweating" for some time after the tubers have been clamped; and when the moisture cannot escape there are losses from diseases or a deterioration of quality, both of which should as far as possible be avoided. Covering the ridge with straw only for a time is probably best, for, while allowing the moisture rising from the tubers to escape, there is no danger of the rains finding their way into the clamp, provided the straw is laid on carefully. In four or five weeks it will be safe to complete the earthing up, and before this is done insert drain pipes along the ridge at intervals of a few feet for the purpose of securing sufficient ventilation. This practice is one that can be adopted in the most favourable of seasons, but at the present time its adoption will be found so advantageous as to merit it

MR. EDWARD LAXTON.

receiving the strongest recommendation. For a long period we have, in seasons in which there has been some difficulty in storing the tubers in so dry a state as could be wished, sprinkled a small quantity of fine lime among them during the process, and have found it most beneficial in its effect. Newly-slaked lime has been used with most excellent results; but, according to some experiments that were carried out at the Leeds University, ground quicklime is preferable to slaked lime, but it has not the advantage of being so readily obtainable. The lime not only keeps the sound tubers safe from infection, but prevents any deterioration in their quality, a matter of some consequence when the potato crop has been lifted under conditions that are distinctly unfavourable.

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**Mr. Edward Laxton,** who, with his brother, Mr. W. Laxton, carry on the business of nurserymen and seedsmen, as Messrs. Laxton Bros., Bedford, is one of the most capable and enterprising of the younger generation of horticultural traders. He was trained by his father, the late Mr. Thomas Laxton, and has carried on the work of raising new fruits and vegetables with great vigour and success. As raisers of new strawberries the Laxtons stand pre-eminent, and probably no strawberry has ever had such widespread popularity as their Royal Sovereign. Much time and space are devoted to strawberry culture and to raising and testing new varieties, and many thousands of seedlings have to be raised and grown for several years before such varieties as The Laxton, Bedford Champion, Laxton's Latest, New Connoisseur, Reward, Rival, The Queen, and King George V. can be placed on the market. The most careful records are kept of all crosses made, and of the results secured. Mr. Laxton has raised new red and black currants, new raspberries, and the quite new Laxtonberry, a strong-growing, free-cropping fruit that may be described as a coreless, raspberry-flavoured loganberry. Hybrid and cross-bred fruits of many kinds have been raised at Bedford by Mr. Laxton and his brother, and many are passing through severe tests before making their bow to the public. Fruit trees, roses, etc., are grown extensively under Mr. Laxton's supervision, and culinary peas are another special feature, the firm having long been famous for their fine varieties, of which Gradus, Thomas Laxton, and Alderman may be mentioned as examples. Mr. E. Laxton and his brother have not only sustained the reputation their father made, but have made reputations for themselves, and, being in the early prime of manhood, there is every prospect that new fruits to come will add further lustre to their achievements.

**Sweet Peas.**—In our issue for the 28th inst. we shall give several special articles and illustrations relating to sweet peas, with a view to assist cultivators in the fullest possible manner in carrying out the cultural details requiring attention at this season of the year. The articles will deal with such important matters as new sweet peas, sowing sweet peas in autumn, culture for exhibition, and sweet pea culture under glass.

**Monument to M. Ernest Calvat.**—It will be remembered that soon after the sudden death of the great French chrysanthemum raiser, Ernest Calvat, of Grenoble, a movement was started to raise a fund to erect a monument to his memory. The fund, contributed to by growers all over the world, amounted to a considerable sum, and a handsome bronze medallion, designed by M. Chorel, was the result. Quite recently, in the presence of a few members of the family, and of the representatives of the societies to which M. Calvat belonged, the inauguration took place in the cemetery at Grenoble, where his remains were interred. On behalf of the French Chrysanthemum Society M. Philippe Rivoire regretted the premature end of the great raiser, who had done so much for the honour of French horticulture, but rejoiced in the fact that the world at large had participated in raising a lasting memorial to his honour. Thanks were returned on behalf of the family by M. Calvat's son-in-law, Captain Douillet.

**The National Sweet Pea Society** will hold its London Exhibition of 1913 at the Royal Horticultural Hall, Westminster, on July 17. It is hoped that a Northern Provincial Exhibition may be arranged for the second week of August, 1913. The Society's annual meeting will be held this year on October 17, at the Hotel Windsor, Victoria Street, Westminster, and will be followed by a conference.

**New Pleasure Grounds for Penrith.**—The Penrith Urban Council has received the sanction of the Local Government Board to borrow £1,800 for the purchase of the ruins of the castle and grounds for conversion into public pleasure grounds. The total area of the site is seven and a-half acres, and the purchase price was £2,000, but an offer of £200 towards the cost rendered the borrowing of the whole amount unnecessary. The Penrith Castle Acquisition Committee have guaranteed £1,000 for laying out the grounds. The castle was erected by Ralph Neville, Earl of Westmorland, in 1397, and dismantled by the Royalist Commandant during the Civil War.

**French and Italian Flowers.**—The cultivators of flowers for market in certain parts of Italy are at the present time perturbed by the restrictions that have been placed upon the importation of some of their products into France. The growers at Ventimiglia held a meeting the other day, at which it was resolved to petition the King of Italy to ask the French Government to repeal the decree which is in force prohibiting the importation of Italian flowers into France. It was further resolved that, should the French Government refuse to repeal the decree, the flower growers of Liguria would boycott all flowers coming from Nice and Provence. The controversy between the flower growers in the two countries in question has arisen from the prohibition by the French Government early in the year of the importation of cut flowers from Italy, because of the silkworm breeders of Provence fearing that the insect pest known as Diaspis pentagona, which was prevalent in Liguria, might attack their mulberry trees.

**Botany of the Abor Expedition.**—Mr. J. H. Burkill, who occupied the position of Government botanist to the Abor expedition, delivered a semi-popular lecture in Section K (Botany) of the British Association, in which he described the forests of the Abor hills in Eastern Himalaya. He said forest was the natural clothing of these hills, where it obliterated the clearings of man very quickly. The forest of the plains, like all tropical rain forests, had a great variety of foliage. The vegetation was in three layers—giant trees, which were small-leaved, the seeds being wind-dispersed; lesser trees, which were large-leaved and animal dispersed; and the ground vegetation. On the north slopes in the lower hill region ruled a most distinct and characteristic forest composed chiefly of a tree called by the Abors "Sling-keng." Above the base of the hills oaks appeared, and ruled in places; and on very steep slopes a giant bamboo ruled. Grasses were very rare in the whole countryside. The climate was so humid all the year round that it was only on the bluffs and south slopes of the hills that deciduous trees were found bare for more than a month after their leaves had fallen.

**The National Chrysanthemum Society's Meetings** for the ensuing season will be held either at the Crystal Palace or Essex Hall, Strand. At the former place there will be exhibitions on October 2 and 3, and October 29, 30, and 31. The Floral Committee will meet at one o'clock on the first day of each exhibition, and at three o'clock at Essex Hall, on September 23, October 21, November 11, November 20, and December 2. On November 20 there will be an exhibition at Essex Hall, and this will be open at one o'clock and at seven p.m. A conference will be held.

**A Flower Show Problem.**—We are pleased to find that our views on the importance of effecting a reduction in the number of local horticultural societies for the purpose of a concentration of effort on a few of those most favourably situated with a view to their holding exhibitions that are worthy of the present position of horticulture is finding favour. With reference to this matter, the "Oxford Chronicle" observes: "One of the most striking developments in the history of horticultural societies is the growing tendency to transform the modest show of garden produce into a popular fête, with attractions of a quite irrelevant character in the shape of sports and other amusements. The presence of the public is naturally essential to the success of any show, but is not the adoption of such methods a confession of weakness? It is surprising to what an extent, outside the small coterie of enthusiastic horticulturists, the actual show is neglected. Many persons do not trouble to enter the exhibition tents at all, or are satisfied with a very cursory survey. The wisdom, or otherwise, of these 'side shows' is a matter on which some considerable difference of opinion exists, but if they are necessary then it may be suggested that the fact proves that we have more flower shows than enthusiasm for floriculture warrants. Shows at this period of the year are innumerable, and it is questionable whether so many in a comparatively small area serve any really useful purpose. A remedy might be found in the amalgamation of various societies, and a series of shows might be arranged at, say, intervals of a month during the summer. Flower shows would then be flower shows, and not miscellaneous fêtes, and one fancies that the public would appreciate the change."

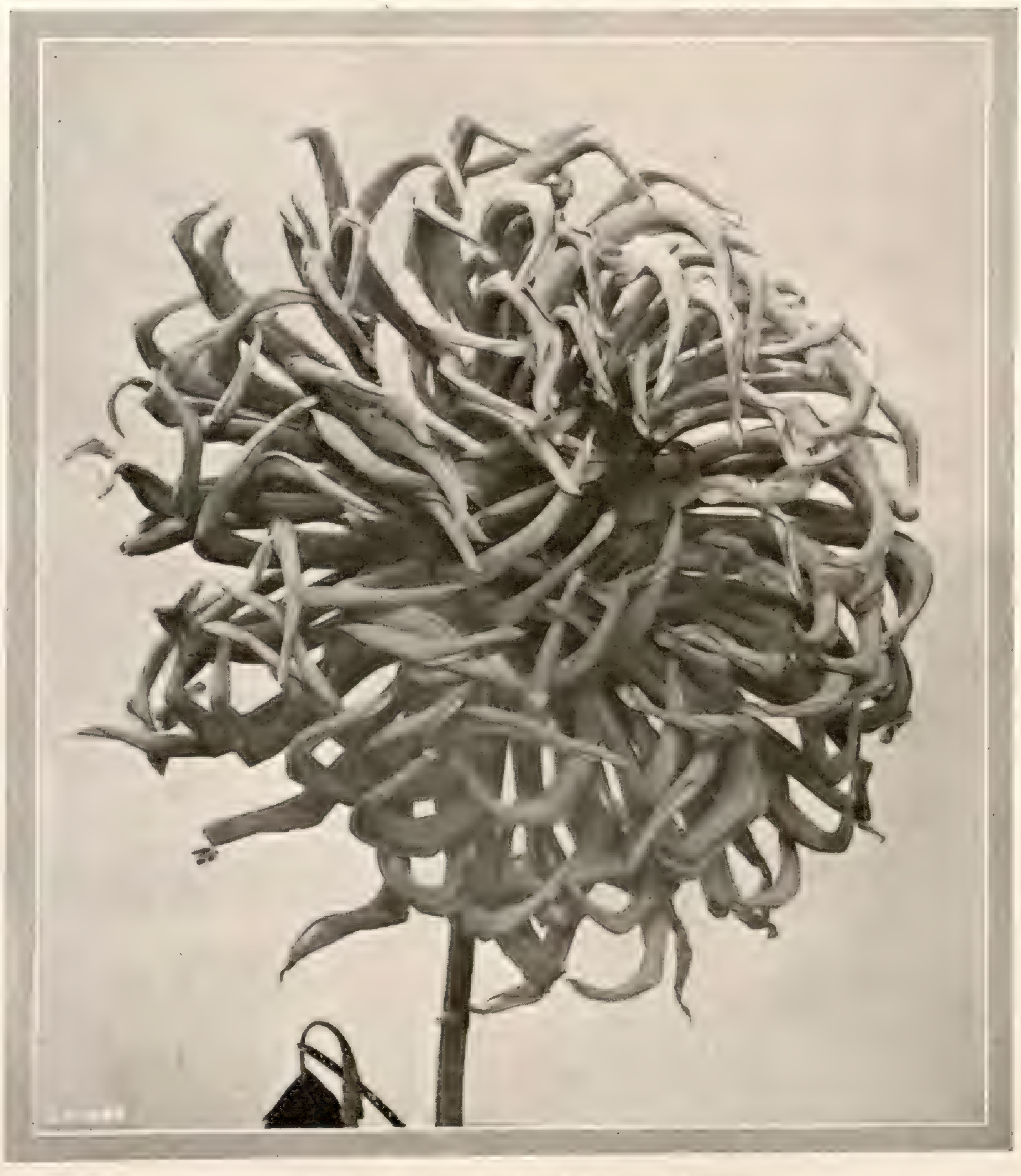
**Sale of Seedling Daffodils.**—Some time previous to the commencement of the planting season for daffodils we directed attention to the advantages that would result to both raisers and growers of these flowers were the practice adopted by raisers of distributing, through the usual trade channels, seedlings of high quality that for some reason or other it would not be desirable to distribute under name. We pointed out that when the varieties of exceptional merit had been selected for distribution under name from seedlings that had been raised from carefully made crosses, there must remain many of great beauty. We therefore suggested that the same practice might be adopted in the case of daffodils as had given such good results in the case of tuberous begonias. It was hardly to be expected that all the raisers would be in agreement with our advocacy of so wide a divergence from the orthodox practice, but we are pleased to find that several of the leading firms who are closely associated with the daffodil cult are this season offering unnamed seedlings. For example, Messrs. J. R. Pearson and Sons, of Lowdham, Notts, offer seedlings obtained from their highly-successful crosses between Madame de Graaff and Minnie Hume, that gave Lowdham Beauty and several other notable varieties. Messrs. Cartwright and Goodwin, Kidderminster, also offer seedlings of the Leedsi type; and Messrs. Barr and Sons, of King Street, Covent Garden, W.C., give growers an opportunity of obtaining selected seedlings that have been obtained from the intercrossing of such fine trumpets as King Alfred, Weardale Perfection, and Madame de Graaff. We mention this new departure as a matter of general interest to growers of daffodils, and shall watch its development with much interest.

**The Japanese Larch and Drought.**—The planting of Japanese larch in preference to European larch has been advocated in recent years on account of its superior growth when young, and its resistance to disease, and hitherto the only reason against its cultivation has been the lack of knowledge as to whether the Japanese variety will attain the size of the European as a timber tree at the age of 70 to 100 years. Japanese larch, however, seems, according to the "Quarterly Journal of Forestry," to have suffered more from the drought of 1911 than the European variety. The latter, therefore, seems a far safer tree to plant under unfavourable conditions as to rainfall, and under the worst conditions would probably have to be filled up to the extent of only 25 per cent., as against entire replanting of a Japanese crop. However, under a moderate setback the Japanese variety seems to throw out a new leader, stronger, better, and more quickly than the European, and, taking into account the disease-resisting power of the Japanese variety, and the exceptional character of the weather of 1911, it may be well worth planting, and among a strong growth of bracken, or for planting up clear-cut coppice woods, provided there is a reasonable amount of moisture in the soil, it may be more useful than European.

**Nicotine as an Insecticide.**—A recent issue of the "Journal of Economic Entomology" contains a report on some experiments that were carried out to test the efficacy of a solution of pure nicotine as compared with tobacco extracts of various strengths. The pure nicotine used was a 10 per cent. solution, and the extracts were of strengths containing 8 per cent., 25 per cent., 30 per cent., and 40 per cent. of pure nicotine, and in addition a 7 per cent. solution of nicotine sulphate made from pure nicotine was tried. Four different dilutions were made of all the solutions, the dilutions containing respectively 0.50, 0.75, 1, and 2 per cent. of pure nicotine. Insects (Cimex lectularius) were immersed in the solutions for one minute, and then taken out and examined after five days. It was shown that the effects of the treatment were not due to drowning, since insects immersed in water for one minute were unharmed. Practically the whole of the insects were killed by the 2 per cent. dilution of each solution tested, the number killed in each case decreasing with the decreasing strength of the dilution. Pure nicotine appeared to be quite as efficacious as the four tobacco extract preparations, and to be superior to the nicotine sulphate solution. Of the extracts the 40 per cent. solution (the strongest) was the most effective.

## NATIONAL DAHLIA SOCIETY.

On September 17 and 18, the National Dahlia Society held its exhibition at the Crystal Palace, the scene of so many brilliant horticultural displays. This exhibition was a large one, but it was by no means one of the best the society has held. The cold, wet weather of this season has not been favourable to high-class dahlia blooms, although it has not been a bad season for dahlias as considered solely from the point of view of garden decorations. Cultivators who have had in view the production of exhibition flowers have had some difficulty in managing their plants this year. The competition was not keen, save in some of the smaller classes for amateurs; indeed, there was very little of that bustle and excitement an hour previous to the time of judging, on September 17, so characteristic of, say, a rose or a sweet pea show.



NEW CACTUS DAHLIA GIGANTIC.
Colour, old gold. F.C.C., N.D.S., September 17. Messrs. J. Stredwick and Son, St. Leonards.

The committee was sparing in its awards to new varieties, but it granted a First Class Certificate to Gigantic and George Schofield, two cactus varieties, from Messrs. J. Stredwick and Son; to Kathleen, garden cactus, and Johnnie, pompon, from Mr. J. T. West, Brentwood; to Autocrat, a yellow show variety, from Messrs. Keynes, Williams, and Co., Salisbury; and to Mrs. A. Brown, the soft yellow single variety, staged originally as Yellow Prince, and exhibited by Mr. A. Brown, Grange Road, Leagrave, Beds.

### NURSERYMEN.

There was but one entry in the class for forty-eight blooms, distinct, of show dahlias, and this secured the first prize for Mr. E. Mortimer, Rowledge, Fareham, whose set was a good one, and contained fine blooms of Penelope, Crimson Globe, Florence Tranter, Pleasaunce, Model, Primrose, David Johnson, and Mrs. Langtry. Mr. Chas. Turner won first place for two dozen show blooms, and especially good were his Perfection, Jas. Cocker, Mrs. Langtry, Chieftain, Marjorie, and Arthur Rawlings; Messrs. J. Cheal and Sons, Crawley, were placed second, but it must have been a close fight between them and Messrs. W. Treseder, Lim., Cardiff, who were placed third.

Mr. S. Mortimer was first prize-winner for eighteen fancy dahlias, and here the best specimens were of Gaiety, Duchess of Albany, and Fanny Short. For a dozen fancy dahlias Mr. Chas. Turner was a good first, followed by Messrs. W. Treseder, Lim., and Mr. M. V. Seale. Fancy dahlias were not, however, up to best form.

The Silver Challenge Cup for eighteen bunches of cactus dahlias, distinct, six blooms of each, was won by Messrs. J. Stredwick and Son, St. Leonards, with finely-grown specimens of H. H. Thomas, Rev. A. H. Lowe, Mrs. Randle, Scorpion, Heroine, Moonlight, Golden Wave, Conqueror, F. W. Fellows, Frances White, John Riding, Mrs. D. Fleming, Gigantic, Miss Stredwick, Carrie Hammond, Emu, and Phyllis; Messrs. J. Cheal and Sons, second, and Messrs. J. Burrell and Co., Cambridge, third. Mr. Seale was the only exhibitor of twelve bunches of cactus dahlias, his best being Harold Peerman, H. H. Thomas, and Enchantress.

Messrs. Keynes, Williams, and Co., Salisbury, were first for forty-eight cactus dahlias, on boards, winning with a beautifully even set that included Olympia, Golden Crown, Clincher, Lacemaker, Cavalier, Dr. Roy Appleton, New York, Esther, and Flossie Ridout in fine form; Messrs. J. Stredwick and Son second and Messrs. J.

Burrell and Co., third. Premier award for two dozen cactus dahlias, distinct, staged on boards, fell to Messrs. W. Treseder, Lim., Cardiff, for a good set of bright clear blooms of Ivernia, Mrs. Brandt, Johannesburg, Evening Star, Miss Stredwick, Red Admiral, New York, Florrie Wells, etc.; Mr. M. V. Seale, second.

The class for a dozen bunches of garden cactus dahlias, the flowers staged with grasses and autumn foliage, is of great interest. Messrs. J. Cheal and Son led with Duchess of Marlborough, Coral, Mrs. Forester Paton, Helene, Lustre, Hon. Mrs. Greville, Mrs. Freeman Thomas, Miss A. Dyer, and Mrs. Landell; Mr. M. V. Seale second.

Premier award for two dozen pompon varieties, ten flowers of each, fell to Mr. Chas. Turner, Slough, who had very neat, bright flowers of Mary, Glow, Ideal, Adela, Nelly Broomhead, Ganymede, Emily Hopper, Jessica, and Donald; Messrs. J. Cheal and Sons, Crawley, was second; and Mr. M. V. Seale, Sevenoaks, third. For a dozen bunches of pompon varieties, Messrs. J. Burrell and Co., Cambridge, gained the first prize with a charming set of neat blooms; they were the only exhibitors in the class.

Messrs. J. Cheal and Sons led for twenty-four bunches of single dahlias, ten blooms of each, with a very gay set of Mrs. Joynson Hicks, Kitty, Cardinal, Mrs. Miller, Fugi San, Winona, Miss Morland, Bridesmaid, Glencoe, Royal Sovereign, Leopold (a new crimson-scarlet), Snowdrop, Rosemary Bridge, Brilliant, Lady Bountiful, Sunray, Lunder, Flambeau, Leslie Seale, Flora, Princess of Wales, Elaine, Owen Thomas, and Miss Roberts; Mr. M. V. Seale second.

For pæony-flowered dahlias six varieties, six blooms of each, Mr. Chas. Turner was first prize-winner with Orlando, Bertha von Statner, Salome, Liberty, Sunstar, and Bayard; Messrs. J. Cheal and Sons second, and Mr. J. Emberson third. Mr. Chas. Turner showed a fine set of twelve bunches of collarette dahlias, winning with Leistern, Corbeille de Feu, Prince de Venosa, Diamant, Mdme. Gyga, Souv. de Bernardin, Maurice Rivoire, Pres. Viger, Mdme. Porier, Henri Farman, Antwerpia, and Gallia; Messrs. J. Cheal and Sons second, and Mr. M. V. Seale third.

### AMATEURS.

Mr. S. H. Cooper, Chippenham, won the Silver Challenge Cup offered for the best twenty-four show and fancy dahlias; he had a very even set of good blooms, and showed Shottesham Hero, R. T. Rawlings, Mr. C. Clark, J. Cocker, Mrs. J. Downie, and M. Fellowes in fine form; Mr. H. Tysoe second, and Mr. G. Densley third. For a dozen show varieties the awards fell in order of mention to Mr. H. Tysoe, Mr. Densley, and Mr. S. H. Cooper, these being the only three exhibitors.

Only one competitor came forward with six varieties of garden cactus dahlias, six stems of each, staged in vases with suitable foliage, etc., and this was the Rev. A. Bridge, Worth Rectory, who had handsome vases of White Ensign Mrs. Lordale, Mary Purrier, Sweet Briar, Hon. Mrs. Greville, and Arthur Pickard, pleasingly associated with grasses and autumn foliage. The Crystal Palace Company's silver cup was the prize in this class.

The silver challenge cup for nine varieties of cactus dahlias, three flowers of each, was secured by Mr. F. W. Fellowes, The Lane House, King's Walden, Hitchin, with fine examples of Indomitable, Mrs. Douglas Fleming, Ivernia, Glory of Wilts, Mrs. Stephens, Red Admiral, Jupiter, Richard Box, and Miss Stredwick; Rev. A. Bridge, Worth Rectory, Three Bridges, second; and Mr. F. Densley, Nags Head Hill, St. George, Bristol, third. The best two dozen cactus blooms, on boards, were from Mr. H. Peerman, Glencross, Nantwich who scored with clean, fresh, but somewhat small flowers of popular sorts; Mr. G. Densley second. The awards for a dozen cactus dahlias, on boards, fell in order to Mr. F. W. Fellowes, Mr. G. Davidson, Bensham Manor Road, Thornton Heath; and Rev. A. Bridge. Indomitable, Red Admiral, Mrs. D. Fleming, Ivernia, Dr Roy Appleton, and H. H. Thomas, were capital blooms in the winning stand.

A silver cup was offered for the best dozen varieties of pompon dahlias, six blooms of each, and this was won by Mr. H. Brown, Dahlia Dene, Havelock Road, Luton, with Jessica, Marietta, Nerissa, Little Winnie, Emily Hopper, Sylvia, Best of All, Violet, Nellie Broomhead, Lessie, Bacchus, and Nora Reynolds; Mr. A. P. Ironsides, The Hamlet, Chippenham, second; and Mr. S. H. Cooper, third.

The Rev. A. Bridge led for a dozen bunches, six blooms each, of single dahlias, and presented beautiful blooms of Columbine, Leslie Seale, Owen Thomas, Lady Bountiful, Mrs. Joynson Hicks, and Rosebank Scarlet; Rev. S. S. Pearce, Coombe Vicarage, Oxon, second.

### SMALLER AMATEURS' CLASSES.

Mr. C. Luckin, Apsley, Thakeham, Pulborough, scored for a dozen show and fancy dahlias, and was followed by Mr. A. Robbins, Prospect Place, Keynsham, and Mr. R. C. Unwin, The Green, Histon, Cambs. Mr. Luckin; Mr. T. W. Bunnage, Burrell Street, St. Neots; and Mr. R. C. Unwin secured the awards for six show and fancy dahlias in the order given. Two bunches of garden cactus dahlias found Mr. C. Luckin to the fore with Mary Purrier and Mrs. D. Fleming well displayed with berries, grasses, and autumn foliage; Mr. A. F. Tofield, Holmesdale, Chandlersford, second, and Mr. W. Mitson, Anerley, third.

Mr. C. Luckin and Mr. A. Longridge were first and second respectively for six varieties of cactus dahlias, in bunches, while for a dozen blooms, on boards, Mr. A. H. Farmer, Kitchener Road, Walthamstow, led the way, followed by Mr. J. Hicks, Thornton Heath, and Mr. R. C. Unwin. Messrs. C. Luckin, Mr. J. Hicks, and Mr. Tofield won for six blooms in eleven entries.

The amateurs showed pompons well, and there were six entries of six bunches, Mr. A. Robbins, Prospect Place, Keynsham, annexing the leading award with Nerissa, Darkest of All, Sylvia, Phœbe, Jessica, and Marietta; Mr. A. Brown, Grange Road, Leagrave, second, and Mr. C. Luckin third. Mr. C. Luckin and Mr. A. Brown were the only exhibitors of six bunches of single dahlias and they gained awards as placed, Mr. Luckin staging Rosebank Scarlet, Mrs. Joynson Hicks, Owen Thomas, Columbine, Snowdrop, and Winona.

In the classes for those who had not previously won a prize at the National Dahlia Society's shows, Mr. A. Jefferies, Langley Burrell, Chippenham; Mr. J. J. Jenner, Manor Park, Sutton; Mr. A. W. Bower, Queen's Road, Dalston; and Mr. R. P. Brown, Bensham Manor Road, Thornton Heath, were the leading prize winners. Mr. H. Edwards, Norton Priory Gardens, Chichester, led for a vase of twelve blooms, with salmon-pink cactus blooms, set up with grasses and bracken; Mr. R. P. Brown second, with yellow, white, and crimson flowers; Mr. J. J. Jenner third.

### OPEN CLASSES.

Messrs. J. Burrell and Co. led for a dozen bunches of pompon cactus dahlias, with neat flowers of Minima, Lena, Martha, Nora, Agnes, Nain, Sweet, Argus, Bessie, Atala, Nancy, and Mrs. Marshall; Mr. M. V. Seale, second; and Messrs. J. Cheal and Sons third. For six blooms of one cactus dahlia Mr. C. Luckin scored with Snowdon, and Messrs. Stredwick and Son came second with big blooms of F. W. Fellowes; ten entries. Messrs. W. Treseder, Lim., led for six of any one show or fancy dahlia with Duchess of York; Messrs. Keynes, Williams, and Co., Salisbury, second, with Tom Jones; and Mr. S. H. Cooper third with R. S. Rawlings.

Messrs. W. Treseder, Lim., gained first prize for a dahlia bouquet and for a basket of dahlias, the latter being a fine effort in gold and crimson-maroon cactus varieties. Mr. J. Emberson, Grove Road, Walthamstow, scored for a vase of pompons, and Mr. A. Brown came second.

Messrs. J. Cheal and Sons, Crawley, scored for a dozen fancy single dahlias, and Messrs. J. Stredwick and Sons led for six bunches of fancy cactus dahlias with Orion, Magpie, Uranus, Jupiter, Pierrot, and Cygnus; Mr. W. V. Seale second. Premier place for six bunches of decorative dahlias fell to Mr. Chas. Turner who staged beautiful flowers of Delice, Papa Charmet, Yellow Colosse, Attraction, Mdme. Van der Dael, and Mdme. Lumiere; Mr. J. Emberson second.

### NON-COMPETITIVE.

Mr. J. T. West, Tower Hill, Brentwood, secured a Gold Medal for his handsome exhibit of pæony, cactus, show, and pompon dahlias. Dorothy Vasey, a new pink pæony variety; Useful, a mauve-pink, stiff-stemmed decorative sort; and Kathleen, purplish-mauve garden cactus variety, were specially attractive. Brentwood Yellow was also very much in evidence. In tall stands, Messrs. Hobbies, Lim., Derham, staged pæony-flowered and collarette dahlias in large numbers; Exposition de Lyon, Maurice Rivoire, Meteor, Diadem, Henri Farman, Joseph Goujon, and Gallia were well displayed, and two huge baskets of autumn roses were not the least attractive part of the exhibit; Silver-gilt Medal.

Messrs. H. Cannell and Sons, Swanley, made a fine display with dahlias set up in large triangular bunches. Decorative, pæony, collarette, cactus, and single sorts were all well represented, and among the latter Cannell's Favourite, Mrs. Walter Jackson, Marie Corelli, Dr. Hickin, and White Cloud were large, effective varieties. A Gold Medal was awarded. Mr. J. Emberson, Hoe Street, Walthamstow, was an exhibitor of pæony-flowered, cactus, and single dahlias, and received a Silver-gilt Medal; he had a fine stand of Attraction, M. Silvent, and Le Colosse.

Mr. J. B. Riding, Chingford, submitted a large collection of dahlias, pæony-flowered and collarette varieties predominating; of the latter there were such new sorts as Mdme. Legrange, Orphée, A. Maumene, and B. Siegfurth. A circular group of choice cactus and pæony-flowered dahlias, set over ferns and edged with asters, was a conspicuous exhibit from Messrs. Jas. Carter and Co., Raynes Park, and merited a large Silver-gilt Medal.

Messrs. T. S. Ware, Lim., Feltham, contributed pæony-flowered dahlias in great variety, as well as a selection of cactus varieties, and they also displayed a wonderfully fine lot of begonias, both plants and flowers. Messrs. Spooner and Son, Hounslow, presented a fine collection of apples, pears, etc., and well deserved the Gold Medal awarded.

**Cypripedium Leeanum,** with its most beautiful varieties, of which perhaps C. L. Clinkaberryanum and C. L. giganteum are the best known, are among the most beautiful and useful members of the genus. The flower buds are now prominent in the new growths of the earliest plants, and, as the days shorten, these orchids should be raised as close to the glass as possible, so that they may receive all the light. Shading must only be given when strong sunshine prevails. As the flower spikes extend they should be neatly tied to thin stakes, and in an upright position. These plants require a liberal supply of fresh air at all times whenever the conditions are favourable, even in the depth of winter. They must have liberal supplies of water both at the roots and in the atmosphere until the flowers are developed. Root-bound specimens may have an occasional application of weak liquid manure until the flowers commence to expand, but after this stage clear soft water only should be given. I do not, as a rule, recommend the feeding of orchids. It is advisable, before the plants come into bloom, to thoroughly clean them and their surroundings.—J. T. Barker.

# EARLY-FLOWERING TULIPS FOR BEDDING.

Prominent among the several classes of bulbous plants that are available for the production of colour effects in the flower garden during the spring months are the early-flowering tulips in their wondrous diversity of colour. They should not be planted to the exclusion of other kinds of proved excellence, such as the daffodils and hyacinths, but it must be admitted that in no other class of bulbous plants flowering during the earlier months of the year do we find such varied and brilliant colouring as in the flowers of the tulips, This is a point of some importance, and to large numbers of flower lovers it is not less important that the bulbs of a considerable number of highly meritorious varieties can be purchased at a price which places them within the reach of owners of gardens of all classes. Hence it is that they should be fully utilised in arrangements of spring flowers in the garden. The finest of the varieties of recent introduction should be purchased and planted by those to whom the cost is not a matter for serious consideration because of the pleasure that may be derived from them, but for the production of distinct and beautiful displays of colour either alone or in association with hyacinths and daffodils, it is not necessary to have varieties costing more than seven or eight shillings per hundred, and a goodly number of tulips of much merit for bedding purposes can be obtained at prices ranging from four to six shillings per hundred. Reference is made to this point for the purpose of suggesting that where the amount to be expended is limited the cheaper varieties should be obtained, so that the bulbs can be planted at the proper distances apart for the production of a really satisfactory display. In many instances the more expensive varieties are purchased, and the bulbs planted so far apart as to render it impossible for them to produce a really satisfactory effect.

AN EFFECTIVE BED OF TULIP WOUVERMAN AT KEW.
The flowers of this variety are of large size, and in colour are rich claret-purple.

The selection of varieties is a matter that requires rather more attention than is usually given. It is, of course, essential they should be of good quality, and the colours suitable for carrying out the colour scheme that has been prepared, but this fact is so fully recognised that there is not much cause for criticism. It is, however, sometimes overlooked that not only should the height of the flower stems and the colour of the flowers be such as to properly fit into the scheme, but the varieties used in carrying out a design should bloom simultaneously. Therefore in selecting tulips for a geometric or other scheme varieties that bloom about the same time should alone be included. When they are required for filling beds occupying more or less isolated position, or for forming groups in the mixed border the exact period of flowering is not a matter of any consequence.

The earliest of the tulips to bloom are the Van Thols, but for bedding arrangements they need not be taken into consideration. Putting these on one side, the remaining varieties may, so far as regards their flowering, be formed into three groups. The periods of flower development are relative rather than actual, but the date is immaterial provided those used in a design bloom simultaneously, or nearly so. The earliest of the single tulips to bloom after the Van Thols include the following, which can be strongly recommended for bedding purposes; Bacchus, dark crimson; Belle Alliance, brilliant scarlet; Crimson King, scarlet-crimson; King of the Yellows, rich yellow; Mon Tresor, another fine yellow variety; White Hawk, pure white. The mid-season varieties are more numerous than the foregoing, and the following may be mentioned for their high merit: Artus, scarlet; Chrysolora, deep yellow; Cottage Maid, pink shaded white; Duchesse de Parma, bright orange-red with yellow margin; Joost Van Vondel, rose-crimson; Keizerskroon, scarlet with bright yellow margin; La Reine, white tinted rose; Ophir d'Or, rich yellow, very fine; Pottebakker, scarlet; Prince de Ligny, deep yellow, rather tall; Prince of Austria, rich orange-scarlet, fragrant, very fine in colour; Snowflake, pure white; and Wouverman, purple-violet, very distinct and useful for the contrast of colour it affords. The most useful of the late varieties comprise: Couleur Cardinal, deep scarlet; Rose Grisdelin, rose shaded white; Thomas Moore, orange-red; and White Swan, pure white.

Tulips should be planted as early in October as the beds and borders can conveniently be prepared for their reception. Three inches is a good depth at which to plant the bulbs, and they should be planted five or six inches apart each way. The accompanying illustration of the beautiful bed of the deep claret-purple Wouverman, which, with a number of others formed, flanked the broad walk in the Royal Gardens, Kew, in the spring of the present year, is of interest as showing the splendid effect produced when the bulbs are planted rather close together, as here advised. When tulips are grown in association with the golden alyssum, the white arabis or wallflowers of suitable colours, the bulbs may be allowed more space, but when grown in beds wholly devoted to them thin planting is a mistake. G.

# EARLY-FLOWERING GLADIOLI.

This section of the gladioli family has become immensely popular during late years, and for providing a quantity of cut flowers the several species and varieties are quite indispensable. The old G. Colvillei alba has been a great favourite for some time, its pure white flowers being highly appreciated both for garden decoration and for cutting, and it is grown extensively for the latter purpose. A vast improvement has taken place lately among the early-flowering gladioli, and there are now some beautiful varieties obtainable, usually at a cheap rate. The rich colouring of the flowers, with the vivid blotches on the lower segments, almost rivals the colouring of orchids. The blotches are usually surrounded by a shading quite distinct from the ground colour, and this enhances the beauty of the flowers.

Not only on account of their beauty are these plants recommended, but also for the ease with which they may be cultivated. They adapt themselves to pot culture equally as well as they do to the borders, and when grown in pots they are of great value for conservatory decoration during the spring. Their natural period of flowering outdoors is June and July, but by growing them in pots and gently forcing them flowers are to be obtained in May, and at this season they are highly appreciated, for the daffodils are practically over then, and the supply of flowers for cutting is none too plenteous. These early gladioli are wonderfully free in flowering, and also have great lasting properties when in a cut state, for every bud opens quite to the end of the spike. It is impossible to say too much in favour of these easily-grown and lovely flowers, and they certainly deserve to be extensively cultivated. The section comprises varieties of the G. nanus and G. ramosus groups, as well as such fine sorts as G. Colvillei, G. Colvillei alba, G. byzantinus, and G. cardinalis.

### Outdoor Culture.

A well-drained border is necessary for the successful cultivation of early gladioli, and one that is sheltered from cutting winds, and slightly shaded from the midday sun. The soil should be of a light, friable nature, enriched with well-decayed manure, and should be thoroughly prepared some time before being planted. The corms may be planted at any time from the beginning of September until the end of October, for preference the earlier date, as growth commences soon after the foliage has died down. They should be planted from four to six inches deep, in rows about twelve inches apart, allowing six inches' space between each corm. During severe weather the growths will need some protection from frosts. Bracken will be found to be a most suitable protective material, as it is light and airy, and does not become so heavy and rotten as straw litter. This should be lightly laid over the border on the approach of sharp weather, and removed altogether in March.

During dry spells in the winter it is beneficial to lightly loosen the protecting material to allow it to dry up, and if this is occasionally attended to there will be no fear of the soil becoming sour. In the favoured districts of the south and south-west, where the winters are mild, protection is not necessary in any shape or form, and beyond the initial work of planting there is hardly any labour attached to their cultivation. A good mulching in the late spring will greatly improve the flowers and lengthen the spikes, and an occasional watering with weak liquid manure during dry weather will do good.

### Pot Culture.

Five-inch pots will be found the most convenient size in which to grow these gladioli, and from four to six corms may be placed in each pot, according to their size. The potting compost should consist of two-thirds loam and one-third well-decayed manure, adding to this a sprinkling of sharp sand. When the work of potting is completed the pots should be placed in a cold frame, withholding water until growth commences. Free ventilation must be allowed at every opportunity, only closing the frame when absolutely necessary; in case of frost protect with mats. In the early part of the year the plants may be placed in a cool greenhouse, where they will grow steadily. On no account should there be any attempt at sharp forcing; a high temperature must be avoided at all times, or there will be complete failure.

### Varieties.

A good selection includes Ackermanni, Crimson Queen, Delicatissima, Lord Grey, Ne Plus Ultra, Peach Blossom, Prince Albert, Queen Victoria, Queen Wilhelmina, Rosy Gem, Salmon Queen, The Queen, and Zimmerman. E. C. POOLEY.

Gnaton Gardens.

# THE AUTUMN COLOUR OF LEAVES.

Although we are inclined to associate the rich autumnal tints of the foliage of certain deciduous trees and shrubs with bright, sunny weather, we are now and then brought face to face with the fact that sunshine is not the only or principal factor at work in the production of colour. In this year of cold and rain there is every indication at present, mid-September, that the colour of the foliage of some subjects will be superior to that of last year, which was one of record sun. This may be due to the fact that the leaves are better nourished after a damp summer, for there is nothing to be seen at present of the flabbiness and partly dead leaves which were prevalent on many trees in 1911.

There does not appear to be much difference between a dry and wet summer in the date when the leaves commence to colour, for, although a dry time causes leaves to fall before their proper time, such leaves are usually minus showy colouring matter, and at their best are but a dingy yellow or brown. Perhaps the years when colour has been most brilliant are those when a moderately wet early summer has been followed by a fine late summer and an early autumn, for it appears that to obtain good colour there must be no check to the plants during the season of growth.

The effects of autumn are usually first noticed on Ampelopsis Veitchi, for as early as the middle of August the leaves have often changed from green to scarlet, bronze, or dark red. Fortunately, the leaves do not fall quickly after changing colour, their brilliancy often extending over a period of from four to six weeks. Vitis Coignetiæ, which in Japan is credited with being one of the most showy of all shrubby plants in autumn, is rather disappointing in this country, yet it promises to be really good this year, for many leaves are already brightly coloured. There are many vines that are worth planting for the sake of their autumn effect. The large-leaved species, which is usually grown in gardens as Vitis Thunbergi, is one, whilst V. Henryana, V. armata, V. Thomsoniana, V. Romaneti, and V. serianæfolia are other good kinds. Several sorts of deciduous euonymuses are very beautiful in autumn, although their attractive qualities do not appear to be fully appreciated. E. alata is dressed in orange and scarlet, the leaves of latifolius and americanus turn red, planipes changes its colour from green to purple and deep red, and the common E. europæus often colours well. Added to the colour of the leaves is the ornamental appearance of the bright-coloured fruits in most cases. This is an instance of a group of plants making up in autumn for the insignificance of their flowers in spring. The same may be said of the American Tupelo, Nyssa sylvatica, for its leaves are very highly-coloured previous to falling.

The leaves of some of the cornus take on a good deal of colour, but perhaps the most showy of all is the Californian C. Nuttalli. At its best, in September, the foliage is red. Unfortunately, it is not largely grown here, but from American descriptions it has few equals for showy colouring in its particular region. Some of the barberries colour very prettily, perhaps the most noticeable one being Berberis Thunbergi, the colour in this case being scarlet and gold. Liquidambar styraciflua is easily one of the most showy of tall-growing trees, for the leaves are made up of numerous shades of red, bronze, and yellow. The hickories, as a rule, are conspicuous by reason of golden leaves in autumn. Of the several species, Carya tomentosa is easily the most attractive. Amongst the maples are many effective kinds, for rich colouring is observed from the dwarf-growing varieties of Acer palmatum and A. japonicum to such large-growing sorts as A. rubrum and A. darycarpum. Perhaps the most conspicuous of all is A. Ginnala, for in this case the leaves are vivid scarlet.

Ribes aureum, although usually grown as a spring-flowering shrub, is decidedly attractive in autumn, for the foliage assumes a rich reddish-purple hue. Oxydendron arboreum, a member of the Ericaceæ, changes to scarlet, whilst the enkianthuses, which belong to the same order, assume the same colour. Deciduous rhododendrons are amongst the most attractive of all shrubs in autumn, for their leaves give us almost as many shades of colour as their flowers do earlier in the year. The rhus family is renowned for bright foliage in autumn, the most beautiful of all, perhaps, being R. cotinoides. In this case, the colour is orange and scarlet, the various shades being very delicately blended.

Pyrus, both of the pear and apple groups, give numerous decorative examples, whilst there are also many showy thorns. Of the latter Cratægus prunifolia is perhaps the most conspicuous of all. The snowy mespilus, Amelanchier canadensis, is another low-growing tree, which colours well in autumn, whilst in the allied genus Cotoneaster frigidus is very conspicuous. Such deciduous conifers as Pseudolarix Kæmpferi, Ginkgo biloba, and Taxodium distichum are very attractive, the two former by reason of their golden leaves and the latter by its rich brown foliage.

Amongst British trees the beech is, perhaps, the most showy, for its leaves are brown in colour. Oaks and elms are, however, showy, whilst the birch is also conspicuous. Although bright colour is to be seen in many more instances those mentioned are sufficient to direct attention to the value of autumn tints as an aid to the embellishment of garden and woodland.

W. D.

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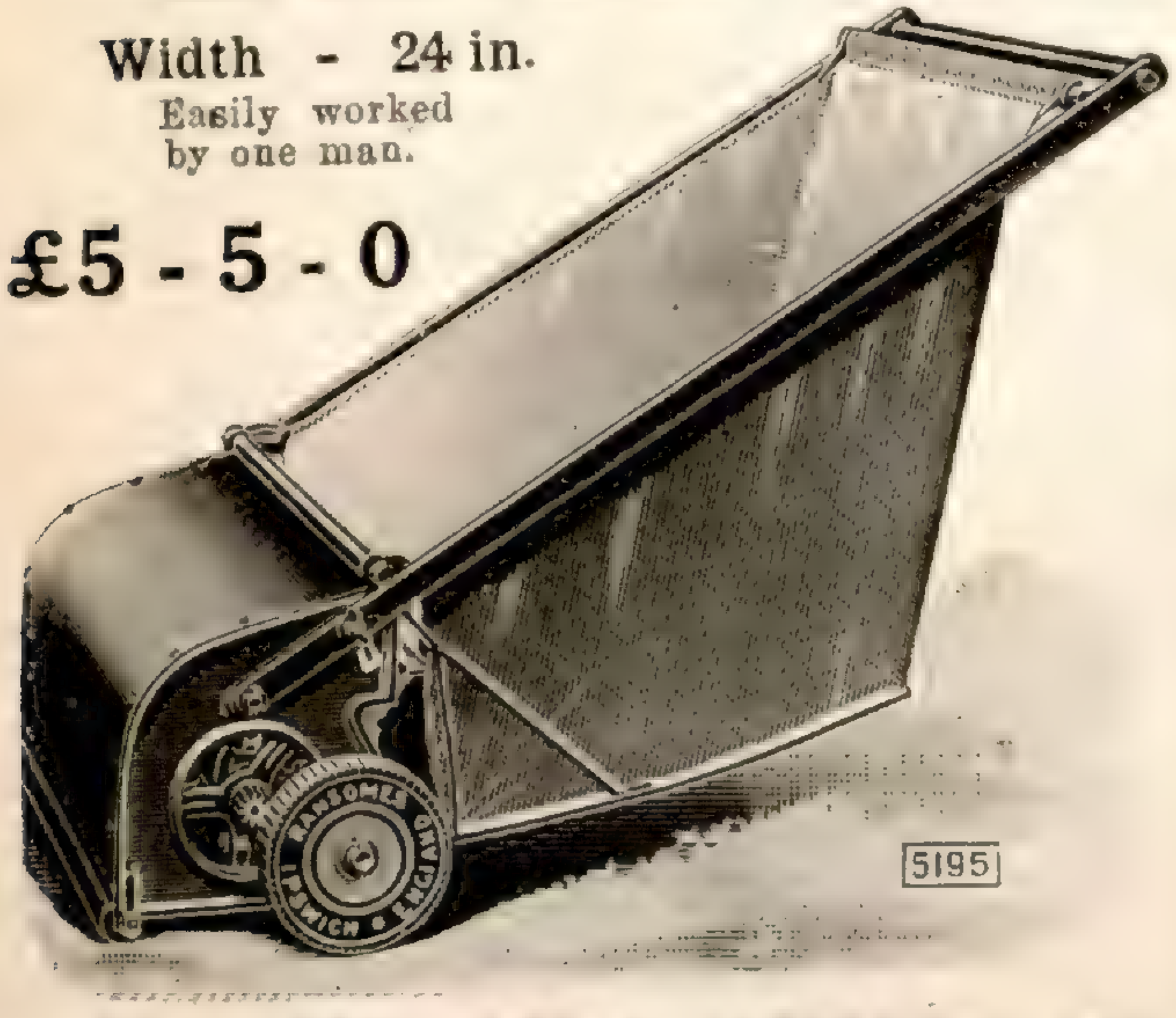

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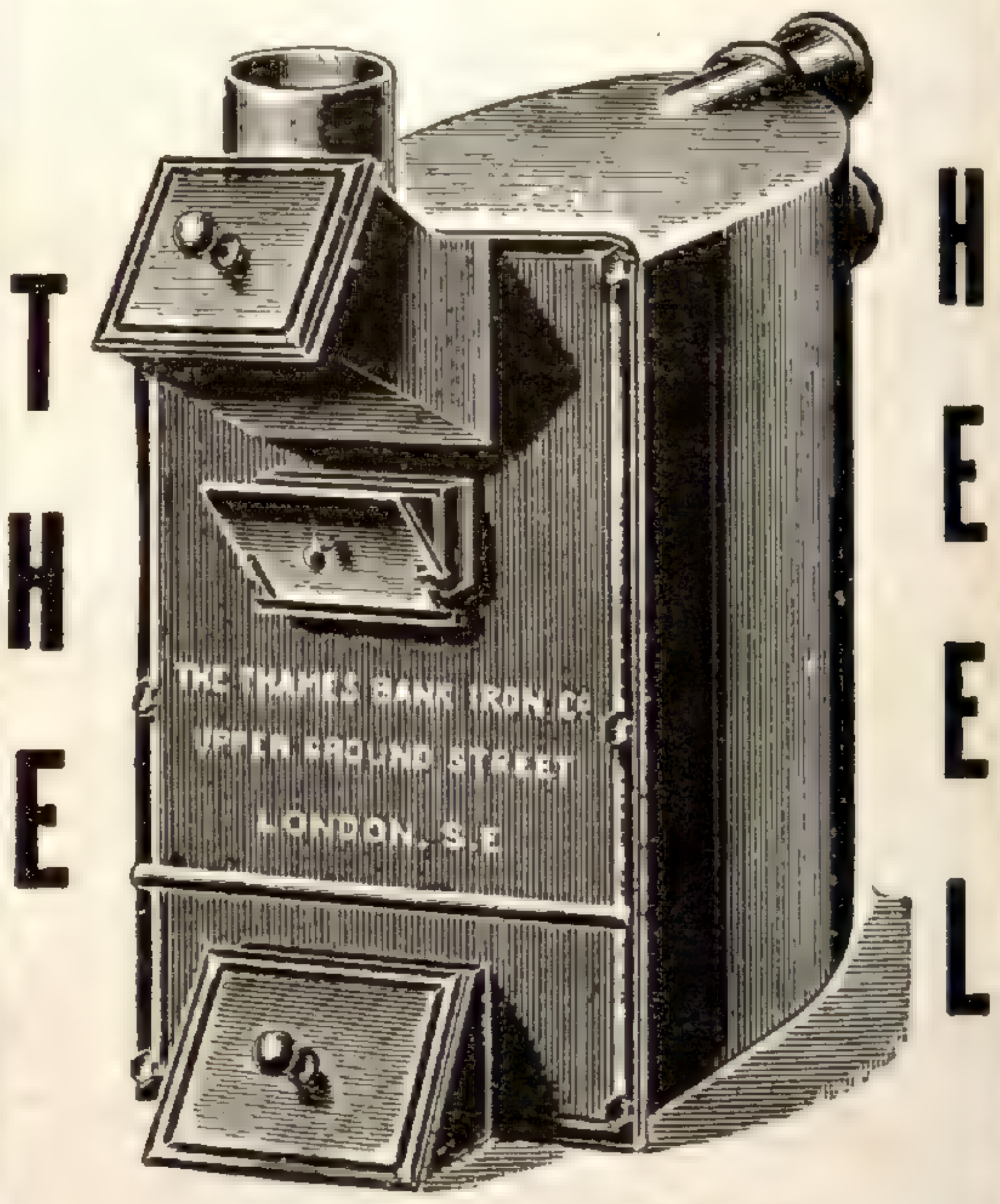

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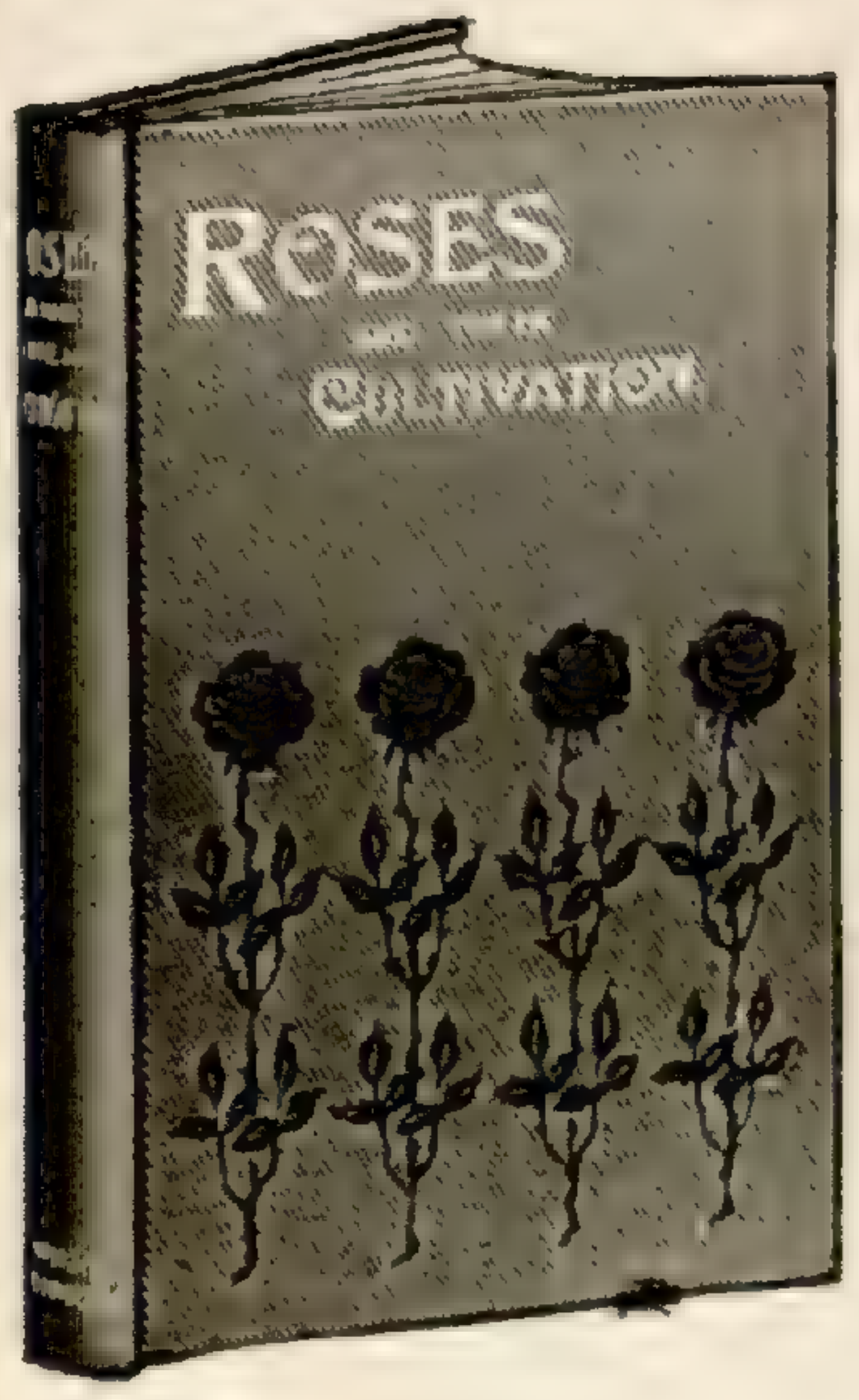

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## ASTER SATURN.

Prominent in the large and exceedingly beautiful collection of hardy flowers exhibited by Messrs. G. Bunyard and Co. at the meeting of the Royal Horticultural Society held on the 10th inst., was the handsome Aster Saturn, of which an illustration is given herewith. This fine addition to the Michaelmas daisies originated in the nurseries of the firm, and is equally deserving of attention for its robust growth, free-branching habit, and abundant production of flowers. The portion illustrated is but a small spray, and that reduced in reproduction, and those who are familiar with the Michaelmas daisies will have no difficulty in understanding that a bushy specimen bearing a crowd of such sprays must present a highly attractive appearance throughout the season of flowering. The flowers are mostly semi-double, about one and a-half inches in diameter, while the colour is very pleasing, and may, perhaps, be best described as lavender-blue. Apart from its merit, this aster is of special interest, as evidence that Messrs. G. Bunyard and Co. do not devote the whole of their attention to fruits and fruit trees as might be assumed from the success they have achieved in connection therewith. So far from this being the case, they have had for many years past a collection of perennials so extensive and meritorious that, were it not for the overpowering influence of their culture of hardy fruits the nurseries would have been regarded as famous for hardy flowers.

## BRITISH FERN NOMENCLATURE.

As the hon. secretary of the British Pteridological Society, to which reference is made in your leader of August 24 (the annual report of which appears on p. 657 of the same issue), I venture to solicit a little space for a reply to the very kindly and sympathetic remarks and suggestions made in the above connection. I also avail myself of this opportunity of thanking the Gardeners' Magazine for the support to the cult which it has given for the past quarter of a century at least, and to my efforts to restore to our beautiful native ferns the popularity which it is now generally recognised they so fully merit. I cannot but agree that the names given are in many cases very long ones, but it must be conceded that if a descriptive name can be given to a plant, it must perforce be better than a purely fanciful one, which conveys nothing at all without the aid of the description which accompanies it in the florist's catalogue.

Taking the daffodil as the example quoted, though numberless flowers are so varied as to render this example one of a legion, I would point out that there is little or no parallel between the cases. With a flower which, by virtue of selection, crossing or hybridising, yields eventually hundreds of varieties, characterised by often small differences of form, tint, and size, which it is impossible to define beyond a certain limit, fancy names, personal, local, or other, must inevitably be adopted, but with our native ferns it must be remembered that they stand alone in the fact that all the varieties have originated from wild sports, which at the time of their discovery, were certainly entitled to be descriptively named on botanical lines, and being referred to the botanist or fern experts of the time, were treated accordingly. It is due to this that we inherit, as it were, varietal names thus given to the extent to take Lowe's list as an example, of nearly two thousand. As time went on by selection from the spores of these wild plants and their progeny, other varieties arose, and their distinctive differences from their parents were indicated by additions to the parental names. The result, I admit, is in many cases cumbrous, but it is not to be forgotten that this is partly due to the fact that the specific names themselves are often lengthy, such as Polystichum angulare, P. aculeatum, Athyrium filix-fœmina, and others, and hence when these are cut down to P. ang., P. acul., and A. f. f. much of the evil disappears. Mr. Lowe did an immense service to the cult by dividing the varieties of the more variable species into sections, each embracing a predominant character, and in practice this greatly facilitated naming on descriptive lines. Personally I have found that new disciples to the cult find little difficulty in grasping these principles, and I have never come across one who has been frightened away by the names when once he or she, as the case may be, has obtained a few fine varieties, and thus acquired a visual acquaintance with their charms. Furthermore, for the beginner there exists sufficient simple English names for his guidance; let him send an order to one of the trade for a selection, say, of frilled and tasselled or crested hartstongues, plumose, and tasselled lady ferns, tasselled male ferns, and plumose and tasselled shield ferns, and I am perfectly sure that the attachment thereto of labels bearing the accepted Latin names will form no handicap to his admiration. Moreover, even the Latin names are mostly so indicative of the English ones—congesta, cristata, minus, etc., etc., as to be easily interpreted and speedily learnt. In short, my experience has taught me that once a taste for the cult has been acquired, the name difficulty disappears entirely, or becomes so unimportant, in comparison with the plants concerned, as to be ignored; while, as I have indicated, those of the public who are content to see their gardens decorated with fine varieties without taking up the cult as a hobby, can quite well do so by using the common names of the species when giving their orders.

I may say, on behalf of the society with which I am associated, that it is our earnest desire to simplify names, as far as possible, but we cannot see our way to the adoption of the daffodil style of nomenclature, which conveys usually nothing but compliments to those whose personal names are given to the plants, and thus loses all scientific interest. Another point is that the term "garden varieties" is most inappropriately applied to the large number of our native fern forms which have originated as perfectly wild "sports," and form the foundation of the cult; in daffodils and other flowers this peculiar factor is non-existent, and no true fern-lover could agree to rechristen such "sports" with commonplace names of persons, places, etc. We have inherited them, and must retain them as the basis of our nomenclature.

One point which the society has adopted nowadays is to refuse to name any but such forms as are distinct improvements and perfect in make. In old days the most imperfect, irregular, and inconstant types were christened, regardless of merit; these are now ignored.

Chas. T. Druery, V.M.H., F.L.S.

ASTER SATURN.
Flowers semi-double, lavender-blue. Introduced by Messrs. G. Bunyard and Co., Maidstone.

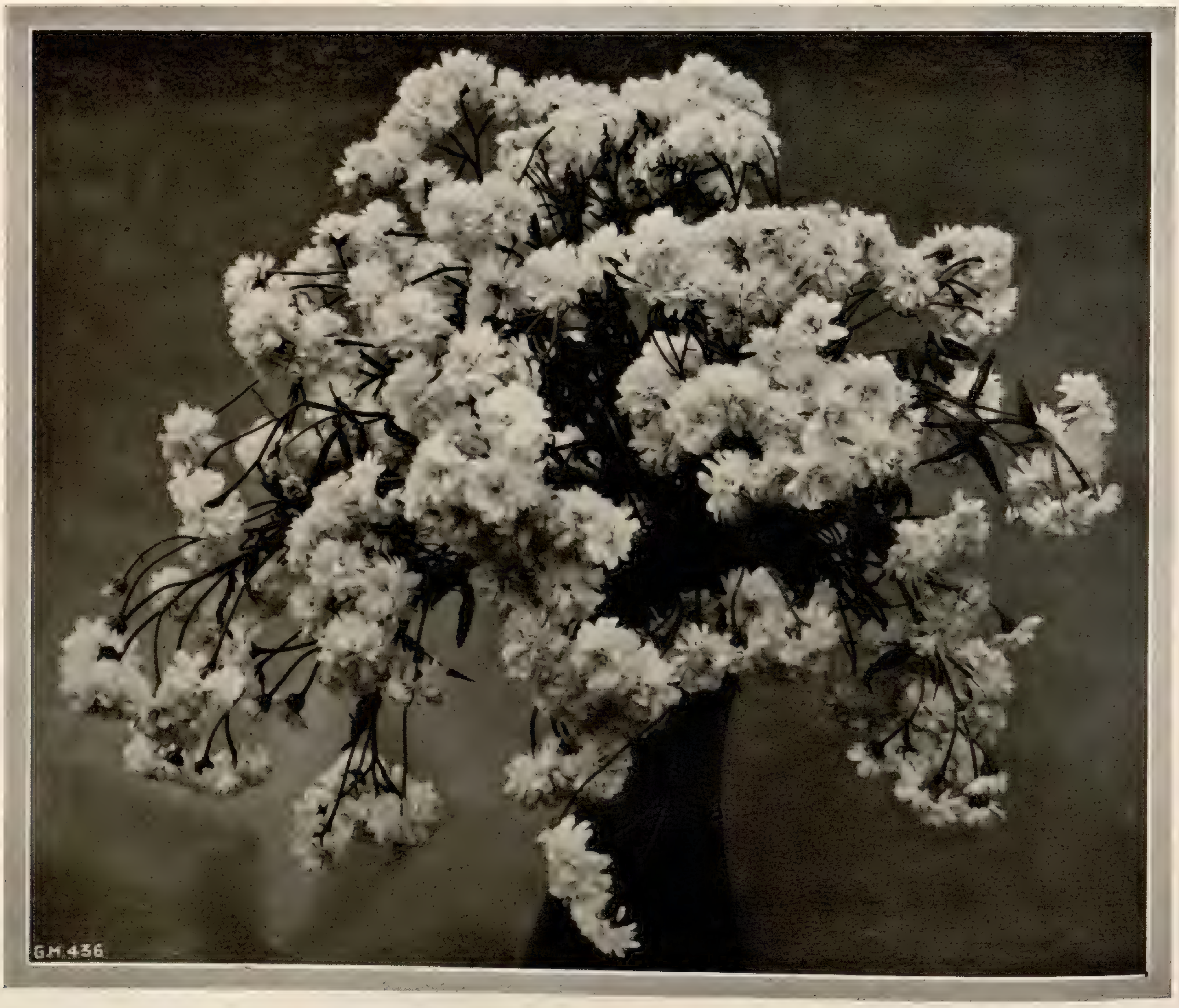
## NEW PLANTS, ETC.

### LÆLIO-CATTLEYA MEMORIA H. A. TRACEY.

This must rank among the largest and finest of lælio-cattleyas. In size, shape, and substance it is of exceptionally high class. The white sepals are tinted with light rosy-lilac, and the wide petals are deep rose with paler margin. The lip is crimson-purple with yellow markings, and is most attractive. F.C.C., R.H.S., September 10. H. S. Goodson, Esq. (gardener, Mr. Day, Fairlawn, Putney.

### LÆLIO-CATTLEYA ST. GOTHARD, GLEBE VARIETY.

The inflorescence of one parent, i.e., Cattleya Hardyana, is very evident in this hybrid. The flowers are large and handsome, the fine ruby crimson, yellow-marked lip being well set off by the deep lilac of the sepals and petals. A.M., R.H.S., September 10. C. J. Phillips, Esq., The Glebe, Sevenoaks.



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ACHILLEA PERRY'S WHITE.
Flowers white. A.M., R.H.S., September 10. Mr. Amos Perry, Enfield.

### ODONTIODA DEVOSSIANA, FOWLER'S VAR.

A strong-growing form of the hybrid between Odontoglossum Edwardi and Cochlioda Noezliana. It carried a tall, branching spike of deep red flowers, each bloom having a yellow base to the lip. A.M., R.H.S., September 10. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

### DENDROBIUM SCHUTZEI.

Of rather dwarf habit, rarely exceeding a foot in height, this fine new species bears some likeness to D. formosum giganteum. It is a native of the Philippine Islands. The flowers are carried four or five together on a sturdy spike, and are white, save for some green marks on the lip. The flowers are well expanded, and very effective. F.C.C., R.H.S., September 10. Messrs. Sander and Sons, St. Albans.

### CHRYSANTHEMUM CRIMSON POLLY.

Polly is a well-known, early-flowering chrysanthemum, and Crimson Polly is similar in every respect, save colour. The fairly large flowers are bright chestnut-crimson, with an old gold reverse to the florets. A.M., N.C.S., September 9. Messrs. W. Wells and Co., Merstham.

### ACHILLEA PERRY'S WHITE.

This should prove a most useful flower for the herbaceous border, as it is a far finer thing than A. ptarmica The Pearl, the flowers being much larger and of the purest white, and it blooms somewhat later. A.M., R.H.S., September 10. Mr. Amos Perry, Enfield.

### HELENIUM AUTUMNALE RUBRUM.

A distinct variety, bearing a profusion of deep brownish-red flowers. A useful addition. A.M., R.H.S., September 10. Mr. Amos Perry, Enfield.

### PHLOX RIJNSTROOM.

A beautiful and effective variety, the large, rounded blooms coloured soft rose, paling slightly to the centre. A bold and showy phlox. A.M., R.H.S., September 10. Mr. James Box, Lindfield, Sussex.

### PENTSTEMON GADDESDEN GEM.

A handsome pentstemon that carries large finely-formed flowers of the florist's type in stately spikes, and are bright scarlet with white centre. A.M., R.H.S., September 10. Mr. A. G. Gentle, Little Gaddesden, Berkhamsted.

### DAHLIAS.

Ideal.—A very handsome collarette variety, deep crimson, with yellow collar florets. A.M., R.H.S., F.C.C., N.D.S., September 10. Mr. J. B. Riding, Chingford.

Albert Maumene. — A large and showy variety with broad, mauve flowers, having a pale lilac collar. A.M., R.H.S., F.C.C., N.D.S., September 10, Mr. J. B. Riding, Chingford.

Papa Charmet.—This is an effective decorative variety with very large, rich crimson-maroon flowers, borne on stout, stiff stems. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. Hobbies. Lim., Dereham.

Queen Mary.—A charming decorative dahlia of fine form, and a lovely shade of rose-pink. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. H. Cannell and Sons, Swanley.

Selma.—A charming little pompon variety, buff-coloured, with deeper shading as the flowers attain age. A.M., R.H.S., F.C.C., N.D.S., September 10. Mr. Charles Turner, Slough.

Crawley Star. — This distinct variety scarcely conforms to any recognised section, but it is a capital garden dahlia of deep, rosy-mauve colour. The flowers are of medium size, and have two rows of ray flowers, the inner row shorter than the outer, and alternating with it, so as to form an elegant and yet substantial bloom. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. J. Cheal and Sons, Crawley.

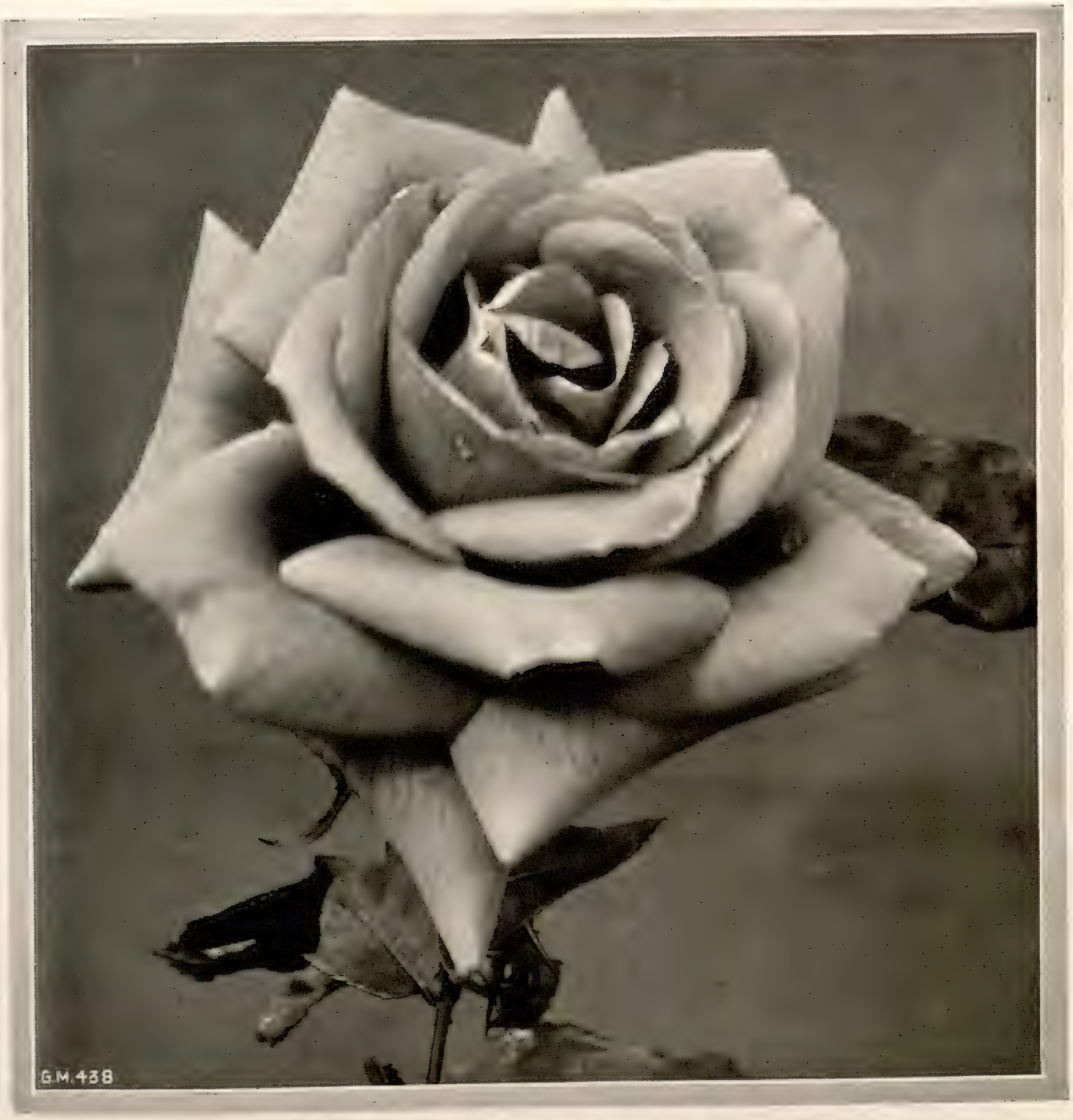
John Riding.—A bright red cactus variety with long incurving florets. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. J. Stredwick and Son, St. Leonards.

Nantwich.—A pale-yellow or buff-coloured cactus variety, the incurving florets sometimes shaded with bright red. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. J. Stredwick and Son, St. Leonards.

Dolly.—A shapely cactus dahlia, and of fair size; scarlet, tipped with white. A.M., R.H.S., F.C.C., N.D.S., September 10. Messrs. J. Stredwick and Son, St. Leonards.

ROSES.

British Queen.—A lovely and shapely H.T. rose of good size and substance, and cream-white colour; it is an altogether charming rose, a trifle pointed in shape, and sweetly scented. Gold Medal, National Rose Society, September 12. Messrs. Samuel McGredy and Son, Portadown.



NEW HYBRID TEA ROSE MRS. C. E. PEARSON.
Flowers bright golden-salmon. Gold Medal, National Rose Society, September 12. Messrs. S. McGredy and Son, Portadown.

Mrs. Chas. E. Pearson.—A H.T. rose of glorious colouring, and with effective round-petalled flowers. It is the Lyon out-Lyoned, and has all the brilliance of the gold-yellow and salmon of that popular variety without the rose shading. Exquisitely beautiful. Gold Medal, N.R.S., September 12. Messrs. S. McGredy and Son, Portadown.

Little Dorrit.—A charming tea rose of beautiful shape and free habit. The broad petals are salmon-pink, the outer ones deeply edged and flamed with rose and rosy-crimson. Silver-gilt Medal, N.R.S., September 12. Messrs. Paul and Son, Cheshunt.

Sunburst.—This is a beautiful H.T. roses, of pretty cadmium-yellow variety, tinted with orange and salmon; long-stemmed and long buds. Gold Medal, N.R.S., September 12. J. Pernet-Ducher, Venissieux les Lyon, France (shown by Messrs. G. Beckwith and Son, Ware Road, Hoddesdon, Herts. (See page 701.)

Queen of the Musks.—A very elegant and pretty cluster rose, sweetly scented, carrying neat semi-double flowers in great profusion. The colour is blush with yellowish-centre. Silver Medal, N.R.S., September 12. Messrs. Paul and Son, Cheshunt.

PYCNOSTACHYS DAWEI.

An attractive winter-flowering Labiate, first discovered in Uganda in 1898 by the late Mr. A. Whyte, and introduced to cultivation by Mr. M. T. Dawe who sent seeds to Kew in 1905. In cultivation P. Dawei forms a somewhat straggling shrub, and at Kew is grown under the same conditions as Coleus thyrsoideus, which also was received from Uganda, and is now in general cultivation. The blue flowers are produced in short dense spikes, and are liable to injury from the fogs experienced in town districts. "Bot. Mag.," t. 8,450.

## ROOT PRUNING FRUIT TREES UNDER GLASS.

The necessity for checking the too exuberant growth on certain kinds of fruit trees, but more particularly those familiarly classed as stone fruits, will now be apparent to the observant cultivator. The sooner this work is performed after the gathering of the crops, the more probable will be the beneficial results accruing therefrom during the ensuing year. How best to achieve the end in view may differ somewhat in very diverse cases and situations, but, as a rule, the simple process of lessening the excessive flow of sap by severing a fair proportion of the stronger roots, whereby growth for the season is considerably reduced and maturity of the shoots accelerated, is generally most conducive to success. In all cases care must be taken that the operation is not carried out too severely, especially in the case of young trees in full vigour, but which probably show but little or no sign of changing the colour of their foliage in the way of ripening.

## Peaches and Nectarines.

These, in respect to the matter under consideration, are identical, and the same treatment answers equally well for both. These, too, more often than any other kinds of fruit grown under glass, stand in need of some assistance to induce fruitfulness, which attained, is often sufficient of itself to keep the tree or trees in normal condition without any root manipulation being necessary. Many trees, however, are not of this type, and to such, to induce fertility, some means of limiting growth by way of checking root action, must be employed. In the case of a young tree having a root-run of a border several feet in depth and area, through which strong feeders are suspected of extending at the present time, root pruning is best for giving a check. Commencing at about four feet from the stem, a trench of convenient width for working and of sufficient depth to ensure the strong, lower roots being reached, may be taken out. Into this trench the soil about the roots may then be worked, using by preference a garden fork for the purpose until the tree stem is closely approached, taking care in the operation that as few as possible of the smaller and more fibrous roots are damaged.

NEW TEA ROSE LITTLE DORRIT.

Salmon-pink, flamed rose-crimson outer petals. Silver-gilt Medal, National Rose Society, September 12. Messrs. Paul and Son, Cheshunt.

For safety, one-half of the root medium only should be thus treated at one time, more particularly when the subject is a young and very vigorous specimen, the remaining portion being similarly treated in future, according to resulting effects. Having laid bare the roots these should have all damaged portions cut away, and several of the more strong-growing be reduced in length, say, to about three feet from the base of the tree, and these, if bare of fibrous roots, may be notched at intervals with a knife to aid the emission of these to the subsequent assistance of the tree. In a case of this kind it may be presumed that the soil is good in quality, hence any addition by way of new loam would be superfluous, but if the staple is lacking in lime moderate quantities of this obtained from old buildings, and free from pieces of lath or other objectionable matter, might with advantage be added as the refilling of the excavation proceeds. In doing this, the aim should be to keep the roots near the surface, but if the tree in the first instance was planted deeply, the difficulty of carrying this out is correspondingly increased.

Having refilled the excavation to the proper level, spread out the roots evenly, and in such a way that when finished these very gently slope downwards from the base of the tree. A little fresh soil—good fibrous loam is best—may with advantage be used between and about the roots to encourage the formation of fresh fibres, and press all firmly as the work proceeds. Apply water freely to settle the soil, and damp the foliage at frequent intervals according to the weather to maintain health and vigour and to prevent this flagging in bright sunshine.

## Plums, Cherries, and Apricots.

These, though less addicted to excess of vigour, especially so when the fruiting stage is reached, are nevertheless often benefited by having their root system restricted, which, being attended to in good time, may counteract the evils of gumming of the branches, which is almost sure to follow upon the too free use of the pruning knife in the removal of rank sappy shoots. These remarks, it may be observed, refer principally to young trees, as it is with such that very severe measures should not be taken, because of the risk of causing a check to the growth from which it may take them a whole season, or more, to recover. Should, however, a repetition of the work be necessary in future, this may be carried out in comparative safety owing to the presence of numberless rootlets resulting from the first or previous operation. A slight shade applied to the roof glass is commendable in very bright, warm weather, but this, alas! is not much in evidence this season. JAMES DAY.

Galloway House, Garlieston.

## SEEDLING DELPHINIUMS.

Most people are well acquainted with delphiniums and the fine effect they produce in the herbaceous borders during the summer months, for when well grown the long spikes of flowers tower above everything else. This season, in many places, old clumps that were planted in well-prepared borders, and allowed plenty of room to develop, have done remarkably well, throwing up their spikes from eight to ten feet high. It is when grown thus that they show themselves to advantage. By the end of July, however, most of the varieties have ceased to bloom, and unless other provisions are made to extend the usefulness of these plants, their flowering period will be of but short duration.

To have plants to bloom early a batch may be potted up in the winter and brought forward under glass, as the protection of a cold frame is all that is needed to induce them to make early growth, but it is not to these that I wish to draw special attention at the present time, but to the raising of seedlings to succeed those that are planted out. Where a gentle heat can be provided there should be no difficulty in raising a batch early each year. The seed should be sown in boxes early in February, which should afterwards be placed in a gentle heat, either on a hotbed or in a house where a temperature of from 50 degrees to 55 degrees can be maintained. Here the seed will soon germinate, and when the plants are large enough to handle they should be pricked off into other boxes, and grown on until it is safe to transplant them in the open ground. Choose a plot in a sunny position, which should be liberally manured and deeply dug. Here the plants should be put out from a foot to fifteen inches apart each way, when, if well looked after in the way of watering and keeping free from weeds, they will commence to produce their flower spikes early in August, and continue to bloom until late in the autumn.

The other day my attention was drawn to a large batch of seedlings that had been treated in this manner. There were several hundreds of them raised from seed saved from some of the finest named varieties. The plants had grown remarkably well, some of them producing spikes from five to six feet high, of all the various shades of blue one could imagine, both double and single. By growing batches in this manner each season, and selecting the best varieties thus produced, a very fine strain has been obtained, giving flowers of large size and varied colours. Delphiniums seed very freely, and as it ripens in July, those who have not the convenience to raise plants in heat in spring would do well to sow the seed as soon as ripe in well-prepared soil either in the open or in a cold frame.

New seed germinates very readily, and would produce nice little plants by the autumn, which, if pricked out singly about two inches apart in a cold frame would be ready to start into growth as soon as the weather is favourable in spring. Delphiniums are most useful for the supply of cut flowers, especially those varieties producing pale blue flowers on loose spikes, as there are but few flowers of that colour on long stems, especially late in the season. Where cut flowers in large quantities are required in the autumn long spikes of these will be found very useful, and when they can be produced in such abundance with so little trouble a quantity should be grown for that purpose. Where large conservatories have to be kept furnished plants of these in pots will be found most useful, especially seedlings having one spike, as such could be arranged in groups of various shades to suit the tastes of the most fastidious. But to have fine spikes the plants will need to be well looked after during the growing season, never allowing them to suffer for want of moisture at the roots.

H. C. P.

## PHLOXES FOR GARDEN COLOUR.

During the interval between the summer and autumn seasons of rose blossom, the herbaceous phlox is of especial value in the garden, and should be far more lavishly planted to meet this serious need of colour. No other flower is equally suitable.

In a Midland garden the best dwarf phloxes are alternated with dwarf roses, twenty inches distant from them, and it is found that in rich, deep soil, with recourse had to liquid feeding and chemical dressings, the roses not only do not suffer in the least, but are actually benefited by the shade to their lower stems and the ground above their roots that the perennial phloxes afford. This method enables an infinite variety of exquisite colour combinations to be arranged; white roses with salmon phlox, white phlox with orange-scarlet roses, mauve with lemon, blush with maroon, cream with carmine, vermilion with gold, purple with rose-pink, and so on through the wondrous range of hues.

Though early winter is the time for phlox planting, the clumps that exist in the garden, if of sufficient size to divide advantageously, should be broken up, and replanted in small portions in semi-shady borders, as soon as they have ceased to bloom. By this method vigorous young specimens are gained for final removal in October or November, whereas if clumps were divided, then winter would be upon them before they had time to develop; and several months' less growth would have ensued before the next year's florescence. Rich ground is essential for the nursery borders or beds; if preferred, a trench across vegetable land will suffice, without semi-shade, if left with sides raised six inches or so to left and right of the row of plants. Old cow-manure is the best to use at the base of the soil for phloxes in dryish ground, but horse-manure will answer the purpose fairly well if mixed with leaf-mould. At all periods of growth the phlox needs humus in great quantity, which is why it seldom shows at its best in hurriedly-made new gardens, but luxuriates in old borders by cottages or farmhouses. Of course, new land can be made perfectly satisfactory by the incorporation of turf-loam, leaf-mould, and vegetable ashes in addition to manure.

During summer notice should be taken of the colours that phloxes actually are, and these compared with those of any roses that they are to accompany. Catalogue descriptions are apt to be confusing, if not absolutely false. For example, the familiar Coquelicot is called bright scarlet with purple eye, but from a slight distance the magenta-maroon eye in question entirely destroys any vermilion of the whole mass, rendering this an unsuitable flower for use among vermilion roses. There is another admirable method of making phloxes supply garden brilliance while roses are resting. This is to alternate beds of each, or surround the rosery with borders of the herbaceous plants.

Early-flowering dwarf varieties of Phlox suffruticosa blossom during June and July, while the later varieties of Phlox decussata begin in late July and continue until October. The former are less common than the latter, but probably even better adapted to the garden's needs. Excellent named sorts cost but sixpence a plant. Snowdon and Lady Napier are pure whites, while White Swan is extra floriferous. Oberon, Rose of Castille, Miss Mima, and Mrs. Leekie are all rose-eyed whites. Walter Anderson is a charming rose, flaked with white, while the Rev. Dr. Hornby is a white, striped with rose, with a purple eye, a most effective flower.

Pale tints obtain most among the early varieties, but Mrs. Miller is magenta-purple; so, too, is Col. Flatter. Chas. Dawnie is deep lilac-rose, and E. L. Lewan a beautiful pale mauve. Of late-flowering varieties only dwarfs will be mentioned here, the tall kinds being far more known. Jocelyn is the best scarlet, Profusion a magnificent rose-pink, other self-coloured beauties being Naine Bébé, pale magenta; Ouragan, violet-blue; Souvenir, violet-purple; Terra Neuve, grey-lilac; Suffrage, salmon-rose; Tapis Blanc, white; Francillon, deep pink; and Burnous, crimson-scarlet.

Well-manured borders against house walls may be kept gay all the summer and autumn months by massing them with phloxes from both classes, a pyramidal effect being easily gained from a plant that has one-foot tall Tapis Blanc and the three to four-foot orange-scarlet Aurore among its members. Phloxes by the water-side flourish exuberantly. Phloxes on rockeries will revel in deep soil pockets between stones. As hedges in front gardens, against outer railings or dividing the tradesman's path from the small lawn, the tall varieties are magnificent; a shaded range of colour should be planned, starting from white by the gate, through blush, pink, rose, pale magenta, carmine, to magenta-purple, and finally claret maroon against the gray or white walls of the house. A red-brick building would require the phloxes to be of salmons, scarlets, with perhaps lavenders and blue-violets.

Phloxes can be chosen freely to create bold colour groups in shrubbery clearings, and will thrive even in woodlands. M. H.

**Tamarix pentandra.**—One frequently meets with this tamarisk under the names of Tamarix hispida astivalis and Tamarix Pallasi rosea, as well as that at the head of this note. Though opinions may vary as to the name, there is no question that it is a most desirable flowering shrub, which is at its best during the latter part of the summer, and often well on into the autumn. Seen in a bed or mass, the rich pink feathery inflorescences are particularly striking, and anyone unacquainted with it in this form would, at a little distance, be puzzled as to the identity of the charming flowers.—K.

**Pancratiums.** — Large, established bulbs will now be flowering, and should be placed in a light position in the intermediate house or pit. When the flower spike is well advanced cease overhead syringing, but give copious waterings at the roots. New growth will commence soon after flowering is over, and this is a capital time to repot or topdress where required. It should be borne in mind that pancratiums are impatient of much disturbance of the roots, and if the soil remains in a sweet condition once in two or three years is often enough to repot. At the same time the drainage should be examined, and a top-dressing of good, loamy soil applied occasionally. They delight in abundance of water at the roots, a humid atmosphere, and frequent applications of an approved manure during active growth. I prefer to grow the bulbs singly in 32-sized pots, and when repotting is necessary carefully remove all side bulbs, and pot these three in a pot for growing on for increase of stock.—H. T. Martin.

## PLANTS IN RELATION TO SOILS.

It has often occurred to me that one of the best object-lessons gardeners and all those engaged in the cultivation of plants could have of the requirements of the different forms of vegetable life would be obtained in the course of visits to localities of varying geological formations and geographical and atmospheric conditions. By this means the kind of soil to secure a healthy, vigorous growth in certain subjects would be manifest, and the sickly appearance of the same species of plants under cultivation in another composition accounted for. To reap the full benefit of excursions of an educational nature of this kind, it is necessary that those participating in it should possess a knowledge of our native plants in a more or less degree, and be able to make their own deductions from what came under their notice.

If botanical societies would add geological and geographical to their names, and combine the three sciences in their outings of research, some real benefit would be more likely to result from their usual annual excursions. Under such conditions, the members would know that, if they found one of the butterworts growing in a peat bog it would not grow in lime, or on a dry rockery. Practical teaching on these lines is likely to lead to the avoidance of many failures among some of our commonest garden flowers, and arouse a keener thirst for safer guides to the successful cultivation of favourite plants.

The daffodil is familiar to almost everyone, and yet how few, judging by results, know its geological requirements, or can give any reason for some varieties giving way to weakness and disease. Upwards of twenty years ago I found about three acres of daffodils in a wild state in robust health, growing on a limestone formation, and was able to profit by the "wrinkle" in after years. Since then I have not had any sickly plants, as I have always provided an ample supply of this mineral plant food within the reach of the roots. Violets, also, are lime-loving, and, although they will exist on soils deficient in this important constituent of fertile mediums, yet strong, free-flowering plants are only found on ground where an ample supply of lime is available. The dog-violet will betray a limestone soil in spring by carpeting the surface with its pale blue flowers.

These facts go to show that for all lime-loving plants an abundant supply of lime is indispensable to their health, and its absence, or scarcity, is bound to cripple their vitality, and foster weakness and disease.

Then, again, there are plants that have a decided aversion to an excess of lime in soils, and whose presence will indicate its absence, or presence only in infinitely small quantities. Heaths, and all peat-loving plants, dislike lime, and attempts to grow them on a formation containing a high percentage of it cannot fail to lead to disappointment. Some other plants have a preference for potash. Rhubarb is a specially gross feeder of potash compounds. Holly luxuriates where it is in abundance; the herbaceous plant, Heuchera sanguinea, blooms profusely on potash soils, and the colours of all flowers are most decided where this mineral ingredient is a distinguishing part. Weak growth, feeble efforts in flowering, and washed-out colours in the blooms are sure indications of an insufficiency of potash in the soil for potash-loving plants.

Besides these factors in plant growth, which may be taken as a guide to the composition of soils, there is another of equal importance where the aim is the production of fruit, viz., phosphates. All soils in which phosphates are plentiful and available to plant life will help fruit-bearing plants in the formation and maturation of their fruits. Well-developed heads of grasses and large sound seeds of weeds may be taken as a criterion of an ample supply of phosphates in the soil. Clover is very partial to phosphates, and will only luxuriate in compositions abundantly provided with these valuable constituents of a fruit-producing soil. The absence of phosphates is manifested by the mere existence of clover, small seeds of the natural herbage, and a softness in the growths of plants. In such a condition, plants are not equal to resisting severe strains of an adverse climate, or the attacks of fungoid and other diseases, and, sooner or later, have to yield the ground they occupy to vegetation suitable to the soil.

It is by noting the relations of plant life to soils that much is learned as to the special needs of certain plants, and this can only be done by covering a wide area containing variety in geological formations, knowing their composition, and closely observing the vegetation upon them. Armed with information obtained in this manner, the plant cultivator will be in a position to make his own deductions regarding the subjects he wishes to grow, and, at the same time, avoid the pitfalls in the path of the uninitiated.

Hibernia.

## POT-HERBS IN THE GARDEN.

We can obtain some idea of the fragrance of the old gardens of our ancestors where pot-herbs and salads ran riot amid the wild beauty of the old-fashioned flowers that have now disappeared, from the contents of the old herbals or books on plants, written by Gerarde and others in the sixteenth century and onward. But, like the flowers of the long borders, tall, stately, and delicious in scent and colours, where are the herbs of a century ago, with their delightful aroma? The answer is obvious—"the old order changeth, giving place to the new." And there are probably few or no gardens where we should find a complete series of the herbs of the gardens of the eighteenth century. Moreover, it was not until the sixteenth and seventeenth centuries that we really had in our garden those staple vegetables which now form so important a part of the modern outdoor establishment. The parsnip was introduced, for instance, in 1548, the potato after the discovery of the new world, and so on. Even in the seventeenth century cabbage, cauliflower, turnip, carrot, parsnip, peas, and rape were rarely cultivated, and largely brought over from the Continent. Lying to hand amongst our wild plants, moreover, are the wild cabbage, carrot, parsnip, celery, seakale, and asparagus, amongst others, which have been introduced into use here by foreigners as a rule.

In the absence of such well-adapted plants for vegetable use, others have been used as pot-herbs. Probably the majority of folk would connect this term with but three or four common plants—mint, sage, thyme, and parsley. But, though not in general usage to-day, there are a few others of fairly frequent use here, and still better known on the Continent where good cooking is a sine qua non with the gourmand and the epicure. Thus one may find the leaves of pilewort eaten in some parts as a relish.

In addition to the universal parsley, mint, etc., we find the sweet-scented cicely eaten as a salad or boiled, in soups, especially in Germany, where the celebrated sour krout is a common dish. Chervil is more often than not found in the garden as a pot-herb. Alexanders, cultivated for the ointment for which it was famous, is still to be found in a few old haunts. Sweet marjoram, aromatic as it is, is more frequently cultivated than some others. Goosefoot and mercury are nearly always to be found on cultivated ground. The latter is an excellent spinach, but is not so often cultivated as it used to be. Star of Bethlehem is to be found here and there in the garden, kept for its bulbs, which are very nutritious when boiled. Spiked ornithogalum is also eaten as asparagus in some localities in the South of England, where it grows wild. In the same way Solomon's seal owes its presence in our gardens to the fact that the root is eaten dried and ground. The roots of sea holly were candied more frequently in Shakespeare's day, when they were known as "kissing comfits."

Formerly much employed as a drug, fennel, which is used as a condiment with fish, is often grown in the garden as a valued herb, and so also was smallage, little used now. Clary was nearly always to be found in the garden till recently as an eye-salve. In the same way house-leek may almost be regarded as a pot-herb, being used for ointments, and commonly cultivated all over the kingdom in its own particular habitat, a thatched roof. There are also many country gardens where balm and hyssop are to be found at the present day, where they are used as herbal remedies.

Burnet, so useful as a spice in wines, tansy used in cakes, and ox-tongue, were often used, and still linger here and there. Borage is still used for cooling tankards, and the way in which it lingers around the house and garden in the case of old properties shows how prevalent it was formerly. For the same reason bugloss may often be detected in the shrubbery, where it is quite a straggler from the garden, and it may still be found in some old-fashioned kitchen gardens along with its close allies comfrey and borage. Purslane may be used as a pickle, too, here and there, with others of the same kind.

Then many gardens, besides the purely domestic pot-herbs, one also furnished with others that are used as herbal remedies for different complaints, a practice which is becoming the vogue again. Amongst these we may refer to horehound (white or black), which is very largely used to-day for herb-beer. Of course, peppermint must not be overlooked. Dill water was once much more frequently used than to-day, but it is still employed for the same purpose. Caraway, moreover, is purely artificially dispensed with as being an escape from the garden, where it is yet grown for flavouring, etc. Valerian, again, was once commonly grown as a herb, but not now so frequently. Mallow, rue, chamomile, and the now rare elecampane, are all old-fashioned herbal remedies for various complaints, used formerly in some abundance, but more rarely now in the garden along with the true pot-herbs.

Leicester Museum. B. R. Horwood.

**Phœnix Roebelini.** — It is somewhere about twenty years since this pretty dwarf-growing form of Phœnix was introduced into cultivation. For a long time after that it remained a rare palm, but within the last decade or so large quantities of seed have been sent to this country, the result being that pretty little examples can now be purchased at a cheap rate. It is in a small state by far the prettiest of the date palm family.—S. W.

## RED ROSES IN AUGUST.

"In the sun red roses blush and blow."

So writes Christina Rossetti, through whose poetry, touched as it is with the sadness and evanescence of life, there glows a true sense of the beauty of nature, especially as it manifests itself in flowers, and more especially in the rose. In another poem, she writes:

"Sunlight cheers the rose."

This quotation brings me to the object of this little paper, which is to tell of those red roses whose bright flowers cheered our dripping gardens, although deprived of their usual meed of sunshine throughout the inclement month of August.

If my reader will allow me, I will take him round my garden, and show him what red roses were blooming there during the past month. As we enter a little gate on the south side and at the far end of the garden we see, on either side of a broad grass path, clumps of Ecarlate and Marquise de Salisbury. Ecarlate was very gay with its brilliant but thin blossoms as nearly scarlet as any rose I have come across, while the dusky Marquise de Salisbury only showed a few of its deeper red flowers. A big standard of Grüss an Teplitz and another of J. B. Clarke made bright patches of colour in the background, while in the distance a pillar of Hiawatha, which is shaded from the western sun, was covered with its brilliant trusses of bloom. The new Excelsa, though even more brilliant in its early flowering, was before the close of the month deprived of its old wood and neatly tied up ready for next year's inflorescence; so has the dark red early-blooming Diabolo.

In walking up this grass border we come to some groups of China roses, and here Charlotte Klemm was the most effective among the reds. It is a big rose for a China, not very shapely, but exceedingly bright and free flowering. A group of Richmond claimed a full share of attention—it was almost too densely covered with its light crimson flowers, at that period of the year lacking in the form and brightness of colour they have early in summer. Looking across to another bed we saw a bloom or two of Liberty, but to find them at their best we had to walk on to a little lawn on a lower level, where in semi-shade some plants of this variety were putting up big sprays of good red flowers. As a friend pointed out to me, there is a sort of soft bloom on the red of Liberty, which gives it the appearance of being looked at through a mist, and is in decided contrast to the clear red of Richmond.

Some tall straggling sprays across the lawn bore aloft the fine blooms of Hugh Dixon, almost the only red H.P. which was flowering on August 23, though earlier in the month we had some well-nigh perfect specimens of Victor Hugo. Two young plants of the new climber, Sheilagh Wilson, are justifying their claim to be perpetual by putting forth new fresh buds and flowers; they seem a little prone to mildew, and their flowers have more the soft rose-red tint of Morgenrott (which, by the way, flowered freely in August on an 8ft. pillar) than of the more brilliant but short flowering Carmine Pillar.

Some bushes of the single crimson rugosa Carmen, kept up a supply of their fragrant blooms throughout August, but the rugosas generally add to the red tints in the early autumn garden, not so much by their flowers as by their brilliant red berries. A big bush of Fedschenkoana crossed with rugosa is smothered with its dazzling red fruits, and little Nitida had covered itself with orange-red berries before the end of the month, and its dark green leaves were changing to the brown and red tints that make it such a decorative autumn shrub.

But here my readers will remind me that I am straying a little from the red roses, and they may, perhaps, point out to me I have written nothing of General MacArthur, a rose which is said to be very perpetual. Let us look at our group of it, which we have had planted in the dampest and heaviest soil we can find in this gravelly garden. Its strong, dark foliage was in August rather badly affected with mildew, and the stiff spikes of deliciously fragrant flowers were not nearly so attractive, to my eye, as those of either Richmond or Liberty. But it is worth a place in the garden, and so, also, I think, is the newer Mrs. Edward Powell. This variety has equally good dark foliage, which here seems immune from mildew, and its very bright crimson flowers keep their colour and shape far better than those of General MacArthur do. The fragrance, however, though sweet, is not so refreshing and satisfying as that of most red roses. From a little round bed we have of this variety we could pick any morning a nice shapely buttonhole rose.

Before ending these notes I must leave our own garden, and go nearer to London just to tell of a very fine display of the H.T. Grüss an Teplitz I saw a few days ago growing in the well-kept grounds of Finsbury Park. Here there is a bed some fifty yards long, I should say, in which were blooming scores of plants of this bright red fragrant rose. The superintendent is to be congratulated on the very good effect he has obtained by massing these roses together in the way he has done; he evidently understands the requirements of this particular variety as to soil, pruning, etc., for the whole group was bright with hundreds of crimson blossoms, and the foliage looked wonderfully fresh and healthy.

This brings me to an end of my list of real crimson roses that I noticed blooming freely in the past, and very wet, August. But there are two other roses which were very effective in the garden and though they can hardly be called crimson, yet they certainly are red roses. These are Laurent Carle and G. C. Waud. Laurent Carle may perhaps best be described as claret colour. The petals have a satiny surface, and the flowers, of good size and shape, are borne on strong upright stems. It continues flowering till quite late in the autumn.

G. C. Waud is of a brilliant carmine, flushed with orange-vermilion. At its best it is a wonderful colour. The flowers appear almost as if they were lit from within. It is free flowering, and when of a good shape makes a fine exhibition rose. Unfortunately, many of the blooms come quartered. Neither of these roses have the "real rose" scent, which we expect from a red rose, the possession of which goes a long way to make the crimson rose the most beloved of all English flowers. This delightful fragrance is to be found in a marked degree in many of the roses mentioned here, namely, in Richmond, Liberty, General MacArthur, Grüss an Teplitz, and Hugh Dixon, while Victor Hugo is as remarkable for its delicious scent, as for its superb colour.

White Lady.

CHRYSANTHEMUMS.—For full instructions on the Culture of Early-flowering Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of CHRYSANTHEMUMS FOR GARDEN AND GREENHOUSE, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## WORK FOR THE WEEK.

### THE ORCHID HOUSES.

MASDEVALLIAS are not grown at the present day, owing, perhaps, to their small pecuniary value, as extensively as they deserve. Yet they include many most beautiful, curious, and interesting species and hybrids. Many produce most brilliant coloured flowers, and it is very questionable whether such species as M. Veitchiana, M. amabilis, M. ignea, and the many varieties of Harryana are surpassed for the brightness and richness of their blooms. When well grown they bear an abundance of flowers, and produce a splendid effect when arranged with the white flowers of odontoglossums. There are other distinct species well deserving of cultivation, such as the pure white M. tovarensis, the yellow-flowered M. Davisi, M. rosea, the orange-red M. racemosa, besides several attractive and useful hybrids. Amongst the most beautiful are M. Chamberlainiana, M. Gairiana, M. Courtauldiana, M. Rushtoni, M. splendida, M. Chelsoni, M. Stella, M. Curlei, and many others. Among the dwarf-growing kinds is the remarkable M. muscosa, with its extremely sensitive lip, and the still rare M. xipheres, which never fail to attract attention whenever in bloom.

CULTURE OF MASDEVALLIAS.—Well-grown plants of these floral gems, when in bloom, are always appreciated. The dwarf growers should be suspended in a damp situation in the cool house, the stronger growers, such as M. Harryana, and M. Veitchiana, are best accommodated on the stages. They should not be allowed to become dry at the roots, neither should they be kept in a saturated condition, or the dreaded black spot will appear upon the leaves; and should this not appear, there is still the danger of many of them damping off.

CLEANSING.—This month is always considered to be the best in the year to overhaul masdevallias, and thoroughly cleansing both the plants and the house, both inside and outside. No half-hearted measures should be allowed in the means adopted in the cleansing of plants and bushes at this season.

POTTING.—If any of the plants need more pot room, or old, overgrown masses require breaking up, they should have attention at once. The winter-flowering M. tovarensis, M. Davisi, and M. ignea should not be disturbed at the present season, unless they are in an extremely bad condition, but left over until they are seen to be pushing roots early in February. Masdevallias form many roots, therefore they should be given a fair amount of root run, and, owing to the large amount of water required when in full growth, the drainage must be ample. Exhausted and worn-out plants that have few roots should be divided, and put into pots that will just accommodate them for one season, and when thoroughly re-established they may again be placed in one receptacle.

COMPOST.—Masdevallias will succeed in a similar compost to odontoglossums, and when repotting, the base of the plant should be kept on a level with the top of the pot, and the compost should be worked carefully between the roots. The plants should be potted with moderate firmness, as the compost keeps sweet, and in a healthy condition much longer if placed in the pots or pans firmly, than when in a loose condition.

WATERING.—As with most other orchids, the critical time with masdevallias is during the first two or three months after repotting, and great care should be taken in the application of water to the roots. It is an easy matter to overwater them, especially in the winter months. All the masdevallias will succeed in the cool house, some at the warm, and others at the cool ends.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

MALMAISON CARNATIONS. — Plants raised from layers in July will now be sufficiently rooted to be potted. Most of them can be accommodated in 3½in. pots for the present, and these must be clean with one piece of crock placed in each. The compost most suitable at this stage will be one formed with two parts loam, one part leaf-mould, and one part coarse sand, with some fine mortar rubble. The plants should be lifted with a ball of soil and be properly labelled. In addition to the number of plants required, a few of each variety should be potted up to allow for losses during the winter. After they are potted the plants should be placed in unheated frames, and the pots stood on an ash bed, placing each variety together. Where the growth is of some length stake at once, using neat sticks 9in. long. This will prevent the growths being bent and probably broken. Water will not be needed for some time, but the plants will be benefited if the lights are removed at night, so that they may have the full advantage of the heavy dews that occur at this time. They must not, however, be subjected to heavy rains or the leaves will become badly spotted. In about three weeks after lifting they will have filled their pots with roots, and will be ready for shifting into 32's. The compost should consist of two parts fibrous loam, one part leaf-soil, one part coarse sand, and to this mixture should be added a liberal sprinkling of soot, wood ashes, and lime rubble, and an approved fertiliser, the latter at the rate of a 5in. potful to a barrowful of soil. When repotted place in the carnation house. If it is a span-roof the large plants should be stood on the centre stage and the smaller ones on the side stages. Abundance of air must be admitted night and day. The plants should have water only when they require it, generally keeping them on the dry side.

TUBEROUS-ROOTED BEGONIAS. — that have passed their best should be encouraged to pass into the resting stage by gradually withholding water. After they have died down the pots should be stored in a dry place for a time. The bulbs may then be shaken out, if room is limited, and placed in boxes in sand and leaf-mould. If some are required to maintain a succession of bloom a little longer they should be fed regularly. Seedlings in borders for testing should be labelled forthwith if not already done, for frost may cut them down at any time now. Should this occur the bulbs must be lifted at once and placed in boxes to mature, their labels being placed with them.

HOUSING PLANTS.—The time has now arrived when practically all greenhouse plants ought to be housed, and preparations for carrying out this work must have attention. Chrysanthemums take up much room, and the plants that have occupied the houses during the summer must now make way for them. It will be necessary to propagate many of the latter, and as they are moved out they should be cut down and the cuttings be utilised for the increase of stock. The houses should be cleared one at a time, the shading, if permanent, cleaned off, all woodwork inside thoroughly scrubbed with strong, hot soda water, to which has been added a quarter of a pint of paraffin to every pail of water. This is a very important matter, for cleanliness is absolutely necessary to the well-being and health of the occupants. Soft-wooded plants such as primulas, cinerarias, salvias, and zonal pelargoniums, will be arranged in the plant houses, and chrysanthemums also, if possible, but very often they have to be placed in an early vinery.. They must have plenty of air.—LEWIS SMITH, Norwich.

## HARDY FRUITS.

PLANTING OF BUSH FRUITS.—Gooseberries and currants in variety may be planted as bushes for supplying fruit for ordinary purposes. The bushes should have long, clean stems—with the exception of black currants—as the fruit is not then so liable to be splashed in rainy weather. For dessert supplies, gooseberries are decidedly best grown as cordons, and trained to walls, wire trellis, or fences; if a wall with a northerly aspect is available, a late supply both of currants and gooseberries may be ensured. Raspberries, both summer and autumn fruiters, yield the best crops when trained to wire trellises. Bush currants and gooseberries may be planted in rows six feet asunder, and six feet apart in the rows; single cordons one foot apart, and triple cordons three feet apart. Raspberries trained to trellises should be allowed a distance of three feet between each stool and five feet between the rows, if tied to stakes allow three feet to three feet six inches to each stool in the row and from four to five feet between the rows.

VARIETIES OF BUSH FRUITS.—Black currants, Boskoop Giant, Baldwin's, and Lee's Prolific are the best varieties. New Dutch, Raby Castle, and Scotch are good red varieties. Dutch or White Grape and Transparent are select white varieties. A selection of twelve varieties of gooseberries useful for every purpose is as follows: May Duke, Crown Bob, Rifleman, Warrington, Whinham's Industry, Langley Gage, Whitesmith, Keepsake, Leader, Leveller, Greengage, and Red Champagne. Raspberries: Superlative is decidedly the best, other good varieties being Baumforth's Seedling, Carter's Prolific, and Fillbasket. For a yellow raspberry select The Guinea. Autumn raspberries: Belle de Fontenay, November Abundance, and that fine new variety, The Alexandra, are good varieties.

PEACHES AND NECTARINES.—The end of this month or early in October is a good time to effect any necessary operations in the way of root-pruning, lifting, and replacing in same position, or transference of young trees from nursery quarters to their permanent positions. By carrying out the operation before the foliage ripens, root action at once becomes active, and the trees will receive but a slight check. Trees making a too luxuriant growth should be root pruned. To do this, dig out a trench clear of the radius of root action, carefully remove the soil towards the tree to avoid injury to any fibrous roots which may be found, and cut away any thong-like roots which are causing too rank a growth. It may be necessary to almost entirely lift the tree to find the roots of the latter class. This is a matter, however, in which the operator must use his own judgment. After pruning the roots, carefully spread out the fibrous ones on some fresh loam, to which add some old lime rubble and wood ashes, and cover with similar material. It is imperative that the soil should be thoroughly consolidated to induce the formation of fibrous roots. Established trees showing signs of failing vigour may often be rejuvenated by entirely lifting them and replacing the worn-out soil with fresh loam, wood ashes, and lime rubble. Possibly the drainage may be faulty, and may require attention. This is an important point, for the peach requires a well-drained rooting medium. Should the foliage flag, syringe the tree two or three times during the day, particularly towards the latter part of the afternoon afford a slight shade during bright weather. The soil should be thoroughly moistened after the operation of lifting, etc., is completed.—W. MESSENGER, Woolverstone Park Gardens, Ipswich.

## THE KITCHEN GARDEN.

BEETROOT.—Seasonable weather having at last visited us, this crop should be carefully lifted without delay. Nothing whatever is gained by leaving the roots in the ground, but many of them may become coarse and inferior. Should, however, some have failed to grow to a convenient size, examine the bed and carefully draw only those that are large enough. This thinning out will assist the air and sun in completing the development of the later plants. When lifted a sharp twist in the hand is all that is needed to remove the tops, leaving the roots to lay on the ground for a few hours till fairly dry. They can then be gathered up and stored in a clamp, on the north of a wall for preference, covering them with sand when finished. Treated thus they will remain firm and fresh till late in spring.

PARSLEY.—If there is any doubt about a sufficiency for winter and spring supplies sow more seed at once in an unheated frame in a sheltered and sunny situation. A good compost should be used to ensure a quick and robust growth. The plants raised from this sowing will be found very useful early in the spring, when those outside have been almost stripped.

TURNIPS. — The crop raised from seed sown recently will need every assistance in the way of Dutch hoeing, thinning, and dusting at times with soot. Take up turnips that are large enough for use and store as advised for beet.

CARROTS must be treated in the same way as beetroot, the difference, if any, will be in drawing or digging the whole crop, and sizing them for storing. Do not store any roots that are cracked, but use them up at once, or utilise them as food for cattle. The smaller carrots could be laid in lines on damp sand, and used for some time as freshly-drawn, small carrots, thus saving for use later on the small roots that were raised from seed sown specially for the production of late supplies. For this purpose those who have failed with the late-sown Short Horns can still sow in a frame with a good chance of success. The carrots grown for the maincrop have a tendency to decay, therefore every care should be taken in drying and storing them. Apply a dusting of fine lime over them before the final earthing or sanding.

CELERY.—The late plantations will now need a slight earthing after removing side growths and decaying leaves. A good application of soot when earthing will be beneficial. Continue paper blanching for exhibition sticks, proceeding with this operation about every ten days.—GEO. ELLWOOD, Swanmore Park Gardens.

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**Crocus medius.**—A very beautiful species is Crocus medius, one of the autumnal-flowering crocuses which help to give a charm to the best of gardens, and which endear themselves by their beauty to all lovers of flowers. Not so cheap as some, it is yet within the reach of most gardeners, even if one has to content oneself with a single corm, or two or three, until the corms increase and a little group is formed. Even one flower gives a feeling of delight as we look upon the large bloom of an exquisite rich violet colour, but prettily veined with deep purple towards the base, and ornamented with the brilliant orange-red stigmata, which forms a fittting culmination to the graces of this flower. It has been well said that C. medius is in the first rank of autumn crocuses, and those who want to have the élite of the species in their gardens should not be without this kind. It is as easily grown as any if planted in light, sandy soil at a depth of an inch or rather more—up to two inches is a depth the writer prefers in light earth. Like all the crocuses, it should be as short a time out of the soil as possible.—S. ARNOTT.

**Russelia juncea.**—Introduced from Mexico as long ago as 1833, this Russelia was at one time more popular in gardens than it is now, being in the olden days often grown into large specimens. It is very interesting as being a member of the order scrophularineæ, though in general appearance widely removed from its immediate relatives. It forms a mass of long, slender, rush-like branches, the minor ones being of a pendulous nature. The tube-shaped flowers are about an inch long, and bright scarlet in colour, so that a well-flowered specimen forms a very pleasing and graceful feature. —K.

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# EXHIBITIONS AND MEETINGS.

## National Rose Society.

The finest autumn show yet held by this society filled the Royal Horticultural Hall on September 12 with beauty and fragrance. Many flowers showed evidences of the wet and wind of recent days, but the blooms were large, and of good substance, and lasted well. The competition was first-rate, and the attendance quite unusually large.

### NEW ROSES.

Five new roses secured recognition, and these are described under "New Plants, etc."

Gold Medals were granted to Sunburst, from M. J. Pernet-Ducher, Venisseux les Lyon, France; to Mrs. Chas. E. Pearson, from Messrs. S. McGredy and Son, Portadown; and to British Queen, also from Messrs. McGredy.

Silver-gilt Medal, to Little Dorrit, from Messrs. Paul and Son, Cheshunt.

Silver Medal, to Queen of the Musks, from Messrs. Paul and Son, Cheshunt.

### NURSERYMEN.

There were nine competitors in the class for three dozen exhibition roses, distinct varieties, staged in boxes, and first prize was won by Messrs. Hugh Dickson and Co., Lim., Royal Nurseries, Belfast, whose leading varieties were Leslie Holland, Mrs. Foley Hobbs, Frau Karl Druschki, Mrs. Mawley, Caroline Testout, Mrs. Maynard Linton, Alex. Hill Gray, W. R. Smith, Miss Cynthia Ford, Lyon Rose, Lady Pirrie, Mrs. D. McKee, Chas. de Lapise, and Gloire de Chedane Guinoisseau. Second prize fell to Messrs. J. Jefferies and Son, Cirencester; third, to Messrs. Jas. Cocker and Sons, Aberdeen; and fourth, to Messrs. Adam and Craigmile, Rubislaw, Aberdeen. Twelve blooms, distinct varieties, of exhibition tea and noisette roses, proved an attractive class, there being seven contestants, and Mr. Henry Drew, Longworth, scored with W. R. Smith, Maman Cochet, Mdme. Constance Soupert, Mrs. E. Mawley, F. von Marschall, etc.; Mr. G. Prince second, and Mr. J. Pigg, Royston, third.

### ROSES IN BASKETS.

The display of roses in round baskets has proved far more successful than the method of staging blooms in bamboo stands. The class for nine baskets of roses, in as many varieties, each basket to be fourteen inches inside diameter, brought out but one entry. The successful exhibitor was Mr. John Mattock, who staged beautiful blooms of Mdme. Jules Gravereaux, Mrs. Sharman Crawford, Mrs. D. McKee, Frau Karl Druschki, Hugh Dickson, Caroline Testout, Bessie Brown, Pharisaer, and Mrs. Wakefield C. Millar.

Another basket class, open to nurserymen, was one for a dozen blooms of any exhibition rose, and here Messrs. Frank Cant and Co. scored with Frau Karl Druschki in fine form; Messrs. Hugh Dickson, Belfast, second, with Hugh Dickson; and Messrs. S. McGredy and Son, Portadown, third, with the pretty Mrs. Herbert Stevens.

In the class for nine baskets of perpetual decorative roses, the entries numbered five, the winning set coming from Messrs. Hugh Dickson, Belfast, who showed fine sets of Irish Elegance, Betty, Harry Kirk, Reine Marie d'Halie, Lady Pirrie, Dorothy Page Roberts, Gen. McArthur, Mdme. Melanie Soupert, and Mrs. Chas. E. Allan; Mr. J. Mattock, New Headington, second; and Messrs. S. Bide and Sons, Alma Nurseries, Farnham, third. The easier class, for five baskets of decorative roses, brought out five entries, Messrs. W. Spooner and Son, Woking, leading, with Joseph Hill, Gen. McArthur, La Tosca, Mdme. Abel Chatenay, and Orleans; Mr. J. Crossling, Penarth, S. Wales, second, his Marie Van Houtte being especially good; Mr. H. Drew, Longworth, third. For one basket of one variety, Mr. S. W. Burgess scored in the amateur section with Frau Karl Druschki; Miss B. H. Langton coming second, and Mr. G. Clare, Meadowside, Twickenham, third.

### NURSERYMEN'S DECORATIVE ROSES.

A good class is that for eighteen distinct varieties of roses, not more than seven stems of each, shown in vases, the vases, in sizes, being respectively 9½, 8, and 6½ inches high. There were but two entrants, and first prize was won by Mr. J. Mattock, Headington, with Teresa Bevan, Bardou Job, Marie Van Houtte, Mons. P. Lede, Lyon Rose, Mrs. Aaron Ward, and Dorothy Page Roberts, etc.; Messrs. Frank Cant and Co., Braiswick, Colchester, second. Nine distinct varieties, not more than seven stems of each, staged in vases, were set up by six competitors, the chief prize-winner being Mr. E. J. Hicks, Twyford, Berks, whose Rayon d'Or, Pharisaer, and Lyon Rose were charming; Mr. Will Taylor, Hampton, and Messrs. G. and H. Burch, Peterborough, took the remaining awards.

The decorative value of autumn roses is fairly well demonstrated by the class for two dozen distinct varieties, not less than three or more than seven trusses of a variety, the whole arranged on a space 8ft. by 3ft. Mr. J. Mattock, Headington, gained first prize, and showed pretty bunches of La Tosca, Lady Hillingdon, General McArthur, A. R. Goodwin, Irish Elegance, Mons. Paul Lede, and Lady Pirrie; Messrs. Frank Cant and Co., Colchester, second; and Mr. J. Pigg, Royston, third.

Under similar conditions, but to fill a space 5ft. by 3ft., and to consist of twelve varieties, another class was provided, and here there were five entries, the best being from Messrs. W. Spooner and Son, Arthur's Bridge, Woking, who showed Gustave Regis, General McArthur, Lady Pirrie, La Tosca, Souv. de M. de Zayas, Miss Dorothy Mocatta, A. R. Goodwin, Irish Elegance, Jessie, Trier, and Orleans; Mr. G. Prince second; and Mr. E. J. Hicks, Twyford, third.

The best set of twelve dwarf polyantha roses, six trusses of each, came from Mr. G. Prince, Oxford, whose selection was Orleans, Petit Constant, Perle d'Or, Madame N. Levavaseur, Jessie, Jean d'Arc, Cecile Brunner, Edward VII., Mrs. Cutbush, Leonie Lamesch, Roseland, and Phyllis; Messrs. W. Spooner and Son, Woking, second; Mr. B. R. Cant and Sons, Colchester, third.

### GROUPS OF ROSES.

An area of 150 square feet is allowed for a representative display of roses, arranged on the floor. In this class pot plants and cut flowers variously arranged, but not in exhibition boxes, are required. Ferns and foliage plants are permitted as edging and background. The gold medal and first prize was awarded to Messrs. Hobbies, Lim., Dereham, for a pleasing arrangement of weeping standards, arches of ramblers, and a central basket bed of the pretty polyantha rose Jessie. Around and among these subjects were stands and vases of Lemon Queen, Lyon Rose, Lady Ursula, Madame Abel Chatenay, and other good roses. Messrs. Paul and Son, Cheshunt, gained second prize with a somewhat low arrangement of good blooms massed in vases and baskets under tall standards.

The most effective class in the whole exhibition is the one in which the schedule requirements are "A representative group of cut roses to be placed on the staging. To be shown in plain glasses, vases, jars, baskets, etc., but not in exhibition boxes. Space occupied by exhibit not to exceed 18ft. by 6ft. The four entries were all good ones, but it was unfortunate that one exhibit had to be placed in an annexe while the others were staged against the wall opposite the main entrance. The gold medal and first prize fell to Messrs. Gunn and Sons, Olton, who had charming arches of white, pink, and red roses, supported by pillars of Madame Abel Chatenay, Lyon, and other fine sorts. In the front centre the Lyon Rose was massed finely between arching stands of Lady Hillingdon, and on either hand were fine stands and vases of Frau Karl Druschki, Lyon, Betty, Liberty, Gruss an Teplitz, etc., the whole making up a most delightful exhibit of lovely flowers. Messrs. W. and J. Brown, Peterborough, came second with a very high, bold design of arches and pillars at the back, and low arches and baskets of Lyon Rose, Lady Hillingdon, Hugh Dickson, Frau Karl Druschki, etc., in front. There could have been no great difference between first and second prize groups in this case. Each display was a credit to the exhibitors and to the society. Mr. George Prince, Longworth, was third, and his chief features were bold stands of Rayon d'Or, Lyon Rose, and Frau Karl Druschki.

Scarcely of less interest was the class for a similar display, but arranged on a space not exceeding 60 square feet. Messrs. R. Harkness and Co., Hitchin, annexed the leading award here with a charming display of fine blooms. The stands they used were of varied height and shape, and the principal varieties of roses used were Rayon d'Or, Frau Karl Druschki, Irish Elegance, Harry Kirk, Lady Hillingdon, La France, Madame Abel Chatenay, and Lyon Rose. Mr. F. M. Bradley, Peterborough, secured the second award with a pretty exhibit that was a trifle thin at the back; Mr. G. Jackman and Son, Woking, third.

The best set of three dozen distinct varieties of roses, not fewer than three trusses of each, was from Messrs. Frank Cant and Co., who set up grand bunches of Hugh Dickson, Madame Ravary, Madame Melanie Soupert, Rayon d'Or, Lady Hillingdon, Lyon Rose, Frau Karl Druschki, Papa Gontier, Gottfried Keller, A. R. Goodwin, Comtesse de Cayla, Gustave Nabonnand, Marquis de Sinety, General Gallieni, etc.; Mr. J. Mattock was second with a splendid exhibit; and Messrs. J. Jefferies and Son were third with very clean blooms and foliage; six entries.

### AMATEURS.

In the open amateur class for eighteen blooms, distinct, the best of seven entries was the one from Mr. Conway Jones, Gloucester, who staged fine flowers of Mdme. Wagram Comtesse de Turenne, Florence Pemberton, Lyon Rose, Lady Ursula, and Earl of Warwick; Mr. F. Dennison, Cranford, Leamington, second; and Mr. W. Boyes, Middleton, Yorks, third. Growers of fewer than 2,000 plants had a class for a dozen distinct varieties, and here the premier award fell to Mr. G. Speight, Market Harborough, whose best flowers were of Mdme. C. Soupert, H. Dickson, and J. B. Clark; Rev. F. Page Roberts, Strathfieldsaye Rectory, Mortimer, second; and Mr. W. O. Times, Bedford Park, Hitchin, third. Nine entries.

A class for nine blooms, distinct, was provided for growers of fewer than 1,000 plants, and the winner was Mr. G. Moules, Hitchin, who had a good set of Mildred Grant, Frau Karl Druschki, Mrs. Mawley, Caroline Testout, W. R. Smith, Mdme. V. Verdier, W. Shean, Bessie Brown, and D. Cordell; Mr. E. B. Lehmann, Crawley, second; and Mrs. H. Balfour, Langley Lodge, Headington, third. For six blooms, open to growers of fewer than 500 plants, Mr. W. Panckridge, Petersfield, scored, followed by Rev. L. Chalmers Hunt, Hitchin, and Mr. P. T. Davis, North Warners, Burgess Hill. Nineteen entries. Growers of fewer than 200 plants had a class for six blooms in not less than four varieties. Mr. L. P. Roberts, Westcott, Dorking, was first; Mr. H. F. Matthews, London Road, Stevenage, second; and Rev. R. F. Cobbold, Stony Stratford, third. Nineteen entries.

The best nine blooms, teas or noisettes came from Mr. Conway Jones, whose set consisted of White Maman Cochet, Mrs. E. Mawley, Mrs. Foley Hobbs, Maman Cochet, Souv. de P. Notting, Boadicea, W. R. Smith, Medea, and Mdme. Constant Soupert. Mr. Slaughter second, and Rev. F. R. Burnside third. Seven entries. Mr. Conway Jones, Hucclecote, Gloucester, was first prizewinner for seven vases of roses, seven stems of each variety, and led with Mdme. Jules Gravereaux, Mons. J. Hill, Mr. Foley Hobbs, Earl of Warwick, Hugh Dickson, Frau Karl Druschki, and White Maman Cochet; the Rev. J. H. Pemberton, Havering, came second; and Mr. E. B. Lindsell, Hitchin, was third. Six entries.

For five varieties, five stems of each, in vases, the leading prizewinner was Mr. W. P. Panckridge, Petersfield, whose Mdme. Jules Gravereaux was fine; Rev. F. R. Burnside, Stambridge Rectory, Essex, second; and Miss E. B. Langton, Raymead, Hendon, third. Six amateurs came forward with three baskets of roses, representing three varieties, and Mr. Conway Jones led with White Maman Cochet, Auguste Comte, and Hugh Dickson; Mr. G. A. Hammond, Burgess Hill, coming second with Lady Ursula, Mdme. Melanie Soupert, and Frau Karl Druschki; Rev. J. H. Pemberton third.

The best dozen varieties, three trusses of each, came from Mr. Conway Jones, who had a grand set of popular sorts; Rev. J. H. Pemberton second; and Mr. H. R. Darlington, Potters Bar, third. Mr. Conway Jones led for twelve varieties of decorative roses, not fewer than three or more than seven trusses of each variety; W. A. Richardson, Mdme. Antoine Marie, and Marie Van Houtte were very good; Rev. J. H. Pemberton second. The best six varieties of decorative roses were from Miss B. H. Langton, Hendon, who showed Trier and La Tosca finely; Mr. H. A. Gerhold, Penarth, second; and Mr. E. Mawley, Berkhamsted, third.

DECORATIVE EXHIBITS.

The table decoration class was accommodated in the lecture hall, and the competition was excellent. Mrs. Robinson, Park Hill, Carshalton, won first prize with a combination of Irish Elegance and the Lyon Rose; Mrs. Hale, Virginia Lodge, Warminster, was second; and Mrs. J. W. Smith, Bushey Heath, third. First prize for a bowl of roses fell to Mrs. L. Courtney Page, Earldoms, Enfield, for a beautiful arrangement of Kaiserin Augusta Victoria; Mrs. E. M. Burnett, Westwood Road, Southampton, second, with Irish Elegance; and Mrs. J. Walker Smith, Sparrows, Herne Hill, Bushey, third, with Gustave Regis and Rayon d'Or. Mrs. J. W. Smith led for a decorative basket of roses with a bold design of Irish Glory; Mrs. E. Williamson, Wilstead, Canterbury, second; and Mrs. C. Hale, Virginia Lodge, Warminster, third; ten competitors. Mrs. F. H. Cooke, Birch, Colchester, led in the open bowl class for lady members with Frau Karl Druschki; Mrs. J. W. Smith second, with Irish Elegance; and Miss Maud West, Firth Dene, Reigate, third.

SILVER MEDAL ROSES.

The Silver Medal blooms in the trade section were as follows: Best tea rose, Mrs. Foley Hobbs, shown by Mr. George Prince, Longworth; best hybrid tea rose, Miss Cynthia Ford, and the best H.P. rose, Gloire de Chedane Guinoisseau, both exhibited by Messrs. Hugh Dickson, Lim., Belfast. In the amateurs' section the best H.P. rose was Frau Karl Druschki, staged by Mr. F. Slaughter, Steyning; best H.T. variety, Mdme. Wagram Comtesse de Turenne, shown by Mr. Conway Jones, Gloucester; and the best tea rose, White Maman Cochet, also shown by Mr. Conway Jones.

## French Horticultural Society of London.

On Saturday week quite a large party of young French gardeners visited, under the guidance of their excellent president, Mr. George Schneider, the newly-constructed premises at Raynes Park belonging to the well-known firm of James Carter and Co.

The party was received by Mr. Harold Beale, and after a full inspection of the offices, warehouses, the trial seed grounds, etc., they were entertained to an excellent lunch at which Mr. Harold Beale presided. Speeches were made by Mr. George Schneider, thanking the firm for their great hospitality to his young countrymen, and by Mr. Beale in reply.

After lunch a further round of inspection was made, and then a substantial tea was provided. The party left Raynes Park about six p.m., after being photographed on the front steps of the entrance, and were well pleased with the most enjoyable and instructive visit.

## Finchley Chrysanthemum Society.

A special meeting of the society was recently held at the Railway Hotel, to bid farewell to Mr. J. Kirkwood, on his leaving Finchley to take up an appointment as head gardener to Lord St. Ceryes at Walington, Lymington, Hampshire; and also to present him with a handsome timepiece to mark the society's appreciation of the splendid services rendered by him as an exhibitor and a member of the committee.

Mr. J. J. Ward, the president, in making the presentation, said it gave him the greatest pleasure to offer Mr. Kirkwood the small token of respect. But it was with the deepest regret he had to say good-bye to such a horticultural expert. He knew wherever Mr. Kirkwood went he would attain the highest position possible, and the respect of all he came in contact with. Mr. S. Wildash, treasurer, said he was very delighted to hear of Mr. Kirkwood's success, but was extremely sorry for the loss the society would sustain. Councillor Pateman said he had been connected with the society for more than twenty years, and he never felt a loss more keenly than he did the present. He had opportunities of knowing the respect with which Mr. Kirkwood was held, and he considered there never was a better or more unassuming exhibitor.

The presentation was suitably acknowledged, and, after passing a hearty vote of thanks to the President, the remainder of the evening was spent in pleasant harmony.

## Bristol Gardeners' Association.

The monthly meeting of this association was held on August 29 at St. John's Parish Rooms, Clifton. Mr. Theoday presided over a large attendance, and a paper was read by Mr. Rich from Bath on "Hardy Flowers." The lecturer said that some plants may be grown from seed and others propagated by division. He recommended using well-decayed manure, and, as the plants soon draw the nutrient matter from the soil, he advised when they are coming into bloom giving some of the choicest of them a little artificial manure. He showed how useful some plants are for cutting purposes, and how some can be made to grow on walls, etc. With the aid of the many species of plants, flowers may be had in beds and borders from March to November. He also mentioned the more useful bulbs such as the narcissi and tulips, and showed how they can be successfully grown. Mr. Rich was awarded a special certificate for a magnificent arrangement of flowers. The prizes given by Mr. J. C. House for four bunches of phlox were won as follows: Mr. Woodward first, Mr. Scott second, and Mr. Curtis third.

## United Horticultural Benefit and Provident Society.

The monthly committee meeting of this society was held at the Royal Horticultural Hall on Monday, September 9, Mr. C. H. Curtis in the chair. Thirty-four new members were elected, making a total of nearly 400 since July last. The committee have arranged to hold special meetings, so as to give every gardener an opportunity of making "the United" his approved society. The sick pay for the month amounted to £27. Two members, having reached the age of 70, withdrew from their deposit accounts the sums of £68 and £49 10s. respectively, still leaving a balance of £10 for their nominees. This being the last occasion on which Mr. W. Collins would officially act as secretary, he took the opportunity of thanking the committee for their kindness to him, and regretted his inability to further carry on the work. The Chairman, on behalf of the committee, expressed high appreciation of Mr. Collins' long and valued services, and hoped that Mr. Collins would long be spared to render assistance to the society. All communications should be now addressed to Mr. A. C. Hill, secretary pro tem., 35, Alexandra Road, West Kensington Park.

## Horticultural Trades Association.

The annual gathering of nurserymen and seedsmen took place this year at Scarborough, and, though the numbers were somewhat reduced owing to the deplorable weather which has been general over the country, the meeting was a very successful one. The weather was very favourable for such a season, the only rainfall being on the afternoon of the day when no outside excursions were arranged, so that the party was able to visit the local nurseries (Messrs. Walshaw and Son) and gardens, and enjoy a sixty-mile motor run to Scampston Hall, Castle Howard, and the beautiful ruins of Rievaulx Abbey. One day was devoted to York, its glorious Minster and other buildings, and Messrs. Backhouse's nurseries. The world-famed rock garden, ferneries, etc., at Halgate, and the fine new nursery recently established ten miles out of town at Cattal were inspected and admired. The evenings were devoted to the discussion of trade matters, including the effect of recent legislation on the nursery business, the vexatious restrictions on foreign trade by the absurd regulations imposed during the phylloxera scare, the best methods of checking unfair and dishonest trading, and similar matters. Mr. W. J. Jefferies, of the Cirencester Nurseries, was unanimously elected as president for the coming year, in place of Mr. A. W. Paul, retiring in accordance with custom at the conclusion of his year of office.

## The National Vegetable Society.

On Wednesday, October 2, the annual exhibition of the National Vegetable Society will be held in the Clarendon Hall, Watford. The previous shows of this important society have been held in London, and they have demonstrated to what excellence vegetables are grown. On the present occasion it is anticipated that the produce staged will be greater in bulk and superior in quality to anything that has been seen in any part of the world. Not only will the society have the practical support of the members as in previous years, but all the most famous vegetable cultivators of Hertfordshire are rallying round, and will show visitors what can be done. The classes in the schedule number seventy-five, and the total prize money offered is, in round figures, £200. Intending competitors will find that, so carefully has the schedule been compiled, large and small growers have excellent and equal opportunities of showing their prowess. The cottagers of Hertfordshire will have their chance of winning some valuable prizes in a special class reserved for them, and doubtless the number and quality of the vegetables contributed by them alone will constitute a splendid object-lesson. Six distinct kinds of vegetables are required, and the prizes are 30s., 25s., 20s., 15s., 10s., and 5s. respectively. The president of the National Vegetable Society is the Duke of Portland, and the Earl of Clarendon has most kindly consented to open the show in the hall which bears his honoured name at 2 p.m. Entries for all classes close on Monday, September 23, and those who have not yet procured copies of the schedule should write immediately to the hon. secretary, Mr. E. G. Quick, Kelmscott, Locket Road, Wealdstone.

The small annual subscription of 5s. entitles a grower to free entry in all the classes in which he is eligible to compete, and to full information relative to the valuable educational trials annually conducted by the society.

### Messrs. Dickson and Robinson's Vegetable Show.

For some half-dozen years Messrs. Dickson and Robinson, the well-known Manchester seedsmen, have held an annual show of vegetables grown from their seeds. In the beginning the show was held in the firm's warehouse at Cheetham, but it was last year found desirable to engage premises in a more central spot, and, as we then recorded, that show was the largest and most successful of the series. This year we have to record still further advance. Entries came in so freely that it became necessary to engage a larger hall, and the Coal Exchange was selected as the venue of the show, which opened on September 12, and continued over the following day. It may at once be said that in every respect this year's exhibition was better than any of its predecessors, and the vegetables shown provided ample proof that the cold, wet season has, after all, not been a bad one for vegetables.

A special feature of Messrs. Dickson and Robinson's shows has always been a class for four bulbs of their Premier onion, which was introduced about eight years ago, and is a handsome globular bulb, with smooth, finely netted, straw-coloured skin.

There were fifty-nine entries in the open onion class, and in the entire show over 370 bulbs were staged, exhibitors coming from as far apart as Kirkcudbright and Cardiff, thus showing the widespread popularity of this excellent variety. There were, however, other big classes, that for beetroot mustering thirty-nine entries, and the carrots thirty-eight. In the open onion class first prize was secured by Mr. T. Avery, gardener to J. Kerr, Esq., Loudwater, Rickmansworth, who put up four beautifully-modelled bulbs of good size, and very well finished. Second went to Mr. H. Folkes, Gaddesden, his onions not being quite so even in size as the winner's. Mr. Wheeler, gardener to Mrs. Jenner, Wenvoe, came third, his bulbs not being as large as many of those shown, but of very fine quality and perfect finish. Mr. West, gardener to the Right Hon. Earl Curzon, Hackwood Park, Basingstoke, won fourth prize; Mr. Cook, gardener to the Hon. Mrs. K. Thornton, Hildersham, coming fifth; and Mr. Cobb, gardener to R. Cory, Esq., Cardiff, sixth. One of Mr. Cobb's onions was the most perfect specimen in the show, and quite a model of what an exhibition onion should be.

There was another class for onions open to growers north of Birmingham. Here Mr. T. Jones, Ruabon, scored with four excellent specimens, second prize going to Mr. Smith, gardener to Captain A. Briscoe, Newtown, the other prizes in the class going to Mr. Mills, gardener to Captain Lonsdale, Market Drayton; Mr. Haydock, gardener to E. P. Potter, Esq., Preston, and Mr. Keay, gardener to R. Crosfield, Esq., Ulverston. Six roots of Market Favourite beet made a big display, occupying a long table. The leading award was placed to the credit of Mr. Stannard, gardener to Countess Cowper, Hertford, his beet being grand in colour, and of beautiful shape. Mr. H. Folkes was second, and Mr. Bishop, gardener to the Right Hon. James Round, third. Carrots were exceptionally fine, the roots being of good size, fine form, and bright colour. In a keenly-contested class the prizes went to Mr. Jas. White, Bampton; Mr. H. Tysoe, Bedford; Mr. Stannard; Mr. Lloyd, gardener to Lord Willoughby de Broke; and Mr. W. Hooper, Barnet.

For so late in the season there were some excellent peas shown, there being two classes, one for thirty pods of Hercules, and the other for Lancastrian, both of which are peas of fine appearance and sound quality. The first prize for Hercules was taken by Mr. H. Tysoe, Bedford; Mr. W. Hooper, Barnet, being second; Mr. E. Winchester, Birmingham, third. The Lancastrian premier was won by Mr. Leakey, gardener to the Right Hon. Lord Bishop of Bath and Wells, second going to Mr. Brickell, and third to Mr. Jones, gardener to the Misses Howell, Berriew. Runner beans were shown in fine form, entries being numerous, and the beans of rare size, without roughness. Mr. H. Tysoe led, the second prize going to Mr. West, Basingstoke; and third to Mr. Young, gardener to C. E. Ellis, Esq., Lincoln. Messrs. Dickson and Robinson have a very good type of hollow-crowned parsnip, and prizes were offered for the best six roots. The winner was Mr. Bishop, gardener to Right Hon. James Round, his roots being very long, straight, and clear in skin. Mr. Stannard and Mr. Avery took second and third prizes respectively.

A PERFECT SPECIMEN OF "PREMIER" ONION.

Exhibited at Messrs. Dickson and Robinson's Show at Manchester

Among the principal awards in other classes were first for turnips to Mr. Mills, gardener to Captain Lonsdale, Market Drayton; first for savoys to Mr. Guy, gardener to C. L. Blundell, Esq., Ormskirk; and to Mr. T. Jones for three Standwell cauliflowers. Mr. H. Tysoe led for leeks, and Mr. E. Winchester for a bunch of Moneymaker tomato, a variety that maintains its excellent qualities as a good profitable sort. Altogether, there were somewhere over 400 entries in the sixteen classes in the show, nearly all the classes being allowed five prizes.

It was a capital display, and the attractiveness of the show was much increased by large banks of dahlias, phloxes, roses, and other flowers, which were brought from the firm's nurseries, and arranged in tasteful manner in groups about the hall. Messrs. Dickson and Robinson also showed onions from their own seed grounds, and specimens of mangolds, swedes, cabbages, etc., all of fine types and showing good cultivation.

## NOTES OF OBSERVATION.

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**Manettia bicolor.**—This has often been noted as a desirable climber for the warm greenhouse, especially if that structure is a rather small one, for it is not suitable for clothing lofty roofs, being, in fact, seen at its best when the bright-coloured flowers are brought near the eye. A most desirable feature possessed by this Manettia is that the small tubular flowers, scarlet and gold in colour, are borne nearly throughout the year.—S. W.

**Zonal Pelargonium Champion.**—This variety was recently given an Award of Merit by the Royal Horticultural Society, and bids fair to prove one of the best of all the pink zonals for bedding purposes, while it is also seen to considerable advantage when grown in pots. It is of a sturdy, freely-branched habit of growth, with good foliage, while the flowers are borne in bold trusses, and are of a bright rose-pink colour with a lighter centre.—K.

## SCOTTISH FORESTRY DEVELOPMENT.

Mr. William Dawson, lecturer in forestry, in opening a course for foresters at Aberdeen University, referred at some length to the present unsatisfactory position of forestry in Scotland, and to the slowness with which the long-looked-for developments were taking place. The present agitation in favour of State afforestation, or, at any rate, of some measure of State assistance in the matter, had been going on for several decades, though recently it had become more active. No doubt certain advances had been made in the time. Educational facilities had been increased, and, in some measure, wood management had improved, and public opinion had been educated, but till quite recently the State had refused to recognise the existence of this branch of rural industry.

Indeed, even now, when public opinion had greatly increased in favour of afforestation, it did not so far seem to have formed a very strong motive force with their members of Parliament. Evidence of this was to be found in the fact that even now, when money could legally be provided for purposes of afforestation (Development Act, 1909), they showed no great anxiety to help forward practical schemes for the afforestation of the magnificent timber land to be found everywhere in Scotland.

It was interesting to note that the indifference of the present day did not always exist in Scotland. Early in the fifteenth century they found Acts relating to the creation of woodlands, and even at that time they found reference to the existence of artificial plantations which then existed. In 1503 a further Act was passed calling on proprietors to plant areas where the country was bare. Such Acts were recorded periodically, and in 1661 they found an Act requiring heritors to enclose and plant four acres yearly for the next ten years, and in that case the Act went so far as to prescribe the kinds of trees to be planted. In this particular district, too, there were estate records showing that not only was natural wood maintained in the seventeenth century, but plantations were actually created. The indifference of the present day was thus a lapse from a higher state.

But the position was hopeful in the extreme, and great things were expected from the Scottish Board of Agriculture, which was now the authority in this matter in Scotland, and indications were not wanting that some substantial advance was likely to be made. Everyone was agreed that Scotland was the field for afforestation, and in light of this fact it was singular that both England and Ireland were already in advance of Scotland with their scheme for development. They in Scotland had a big distance to make up, and further delay could only do harm. All branches of industry were suffering from the ever-increasing price of wood, and there was no denying the fact that the price would yet become higher.

## FORTHCOMING ENGAGEMENTS.

MONDAY, September 23.—National Chrysanthemum Society: Meeting of Floral and Executive Committees.

Harby Flower Show.

TUESDAY, September 24.—Royal Horticultural Society: Meeting of Fruit, Floral, and Orchid Committees, noon; General Meeting at 3 p.m., with lecture by C. Hermann Senn on "How to Cook some of the Root Vegetables"; Meeting of Scientific Committee, 4 p.m.; Meeting at the Horticultural Hall of a Joint Committee of the Royal Horticultural Society and the National Dahlia Society for adjudicating on new dahlias.

TUESDAY, October 1.—Scottish Horticultural Association: Meeting, with lecture, by Mr. A. D. Richardson, on "Edinburgh's Park and Other Trees."

WEDNESDAY, October 2.—National Chrysanthemum Society's Exhibition of Early-flowering Chrysanthemums, at the Crystal Palace; two days.

National Vegetable Society's Exhibition at the Clarendon Hall, Watford.

SATURDAY, October 5.—Société Francaise d'Horticulteur de Londres meeting.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

FOREST AND ORNAMENTAL TREES FROM CUTTINGS.—C. G. and Co., Finsbury: Is there any known method of growing forest and ornamental trees from cuttings, that will assure approximate success with every kind or variety? Willows, we know, and believe mulberry and hazel, will form roots in damp soil, but most other trees will not, and it is these trees we want to know how to raise from cuttings, if that be possible.—There is no single method that will prove successful for the propagation of all kinds of forest and ornamental trees from cuttings. The majority of forest trees are raised from seeds, and not a few ornamental trees are raised in the same way. Special varieties are raised from cuttings, or propagation is effected by grafting and budding. Certain trees are best raised from cuttings of half-ripe growth, while others, like the willow, grow readily from cuttings of ripened, leafless growth. Further, cuttings of some trees grow well if placed in the open, whereas others need frame protection at this stage. If you will specify the kinds of trees you wish to propagate from cuttings we will do our best to assist you.

VARIETIES OF ANNUALS. — C. S., Northampton: When a schedule requires "Eight distinct varieties of Annuals," and an exhibitor sets up three vases of statice, but of distinct colours, would he come within the meaning of the schedule, or should he be disqualified? — In all probability this is another case of faulty wording, and we expect the committee desired "eight distinct kinds of annuals." If an exhibitor had shown eight distinct varieties of sweet peas, of asters, or of godetias, he could not have been properly disqualified. If the competitor referred to showed annual statices of distinct colouring, he was quite within the meaning of the schedule, though, perhaps, not within the intention of the committee.

HORTICULTURAL EXAMINATION. — T. P., Cheltenham: Please tell me to whom I should apply for information relative to an examination in horticulture for gardeners.—For particulars of the Royal Horticultural Society's examination in horticulture, apply to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, London, S.W. For particulars of the examination held by the British Gardeners' Association apply to Mr. Cyril Harding, Ulysses, Fortune Green, London, N.W.

HYBRID ORCHIDS.—T. W., Torquay: I am becoming much interested in orchids, and have already made a number of crosses, but I know quite well that hybrids have been raised from most species, and that secondary hybrids and varietal forms of cypripediums, cattleyas, lælio-cattleyas, and odontoglossums have been cross-fertilised freely. What I want to know is whether there is a pedigree book or stud book which gives a list of hybrids and parents. Such a book would be a great help.—On this particular subject the best book is the "Orchid Stud Book," by R. A. Allen and C. C. Hurst, and obtainable from F. Leslie and Co., 12, Lawn Crescent, Kew. The work contains an enumeration of hybrid orchids of artificial origin, with their parents, raisers, date of first flowering, references to descriptions and figures, and synonymy. There is also an historical introduction, a chapter on hybridising, and raising orchids from seeds, and the book is freely illustrated. No raiser of orchids can afford to be without the "Orchid Stud Book."

POT MEASUREMENTS.—C. S., Northampton: I recently exhibited in a class for pot plants, and the schedule stated that the pots should not exceed 10 inches in diameter. I used a No. 12 pot. Was I right or wrong? Kindly also tell me how the diameter of a flower pot is measured.—You were wrong. A No. 12 pot is 11½ inches in diameter at the top, measuring from the inside on one side to the outside at the opposite point. The Chiswick standard of sizes and measurements is as follows: Thimbles, 2in. diameter, 2in. deep; thumbs, 2½in. by 2½in.; 60's, 3in. by 3½in.; 48's, 4½in. by 5in.; 32's, 6in. by 6in.; 24's, 8½in. by 8in.; 16's, 9½in. by 9in.; 12's, 11½in. by 10in.; 8's, 12in. by 11in.; 6's, 13in. by 12in.; 4's, 15in. by 13in.; 2's, 18in. by 14in.

KIPE AND POT.—M. E. A., Cheltenham.—Can you tell me what are the correct dimensions of a pot and of a kipe, both of which are west country measures for garden produce?—A kipe is a round wicker basket, and should be 18in. wide at the top, 1ft. wide at the bottom, and 1ft. deep. The pot is a fairly popular measure, and should be a wicket basket of oblong shape, twenty-one inches in length, fourteen inches wide, and fifteen inches deep.

CODE DES COULEURS.—A. W. F., Rugby: The "Code des Couleurs" is by Klingseick and Valette, and its publisher is M. Klingseick, Paris, but the work can be obtained through Messrs. Wesley and Co., 28, Essex Street, Strand, W.C.

### NAMES OF PLANTS.

H. E., Everton.—Hoya carnosa.

L. E. A., Alnwick.—1, Solanum jasminoides; 2, Lonicera sempervirens; 3, Trachelespermum jasminoides.

B. M. R., Chippenham.—1, Helenium cupreum; 2, Polygonum Baldschuanicum; 3. Monarda didyma; 4, Pinus insignis; 5, Abies Nordmanniana.

P. J. F., Oswestry.—1, Armeria maritima; 2, Lysimachia clethroides; 3, Matricaria inodora; 4, Sempervivum arachnoideum; 5, Cratægus pyracantha Lelandi; 6, Rudbeckia laciniata.

R. P., Yorks.—We regret our inability to undertake the naming of florists' flowers; the correct naming of most varieties is only possible where a very large collection of any particular kind is grown, therefore it is always a good plan to sent a florist's flower, whether it be rose, dahlia, sweet pea, phlox, etc., to some nurseryman who specialises in the particular subject. In most instances a stamped addressed postcard, with the specimen and request, will ensure an answer. So far as we are able to judge, your dahlia is an old form, and represents a type of decorative dahlia not now in cultivation. This opinion we give assuming the flowers sent were of fair average quality.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

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A QUARTER Century's experience and study of horticulture; unimpeachable testimony of character and abilities; presentable; agreeable; intellectual; seeks Scientific, Experimental, Practical, or Educational work in Horticulture. RICHARDSON, F.R.H.S., Brook Bank, Onchan, I. of M.

C. PAXTON, Branches Park Gardens, Newmarket, highly recommends YOUNG MAN as Rose Grower and Assist in Pleasure Grounds in a large establishment; smart, civil, and obliging; 7½ years' experience here; desires a change; age 31.

COLONEL WARDE, M.P., highly recommends his FOREMAN, A. WHIBLEY, to any Lady or Gentleman wanting a good, all-round Man; 15 years' experience in all branches; House and Table Decorations; age 28; married when suited. Barham Court, Maidstone.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head); life practical experience in all branches; disengaged when suited; six years' good reference from present employer. KETTLE, Violet Cottage, Whitstone Road, Pen-y-lan, Christchurch, Newport, Mon.

GARDENER (Head Working), thoroughly experienced in Vines, Peaches, Melons, Cucumbers, Tomatoes, Stove and Greenhouse Plants, Kitchen Garden, Flower Gardens, and Pleasure Grounds; good references; married. G. F. HALL, Bagpath, Brimscombe, Stroud, Glos.

GARDENER (Head or good Single-handed); thoroughly experienced in all branches; married (aged 31); good references; disengaged. G. B., 145, Queen's Road, West Croydon.

GARDENER (Working, with or without help); thoroughly understands his business in all in branches; Flowers, Fruit, and Vegetables, Vines, Peaches, Orchids, Ferns, Tennis, Herbaceous Plants and Shrubs; a good grower of Chrysanthemums. J. M., Box 2,594, Office of this Paper.

GARDENER, age 27, seeks SITUATION as Head, where two more are kept; experienced with Vines, Peaches, Melons, Cucumbers, Tomatoes, Stove and Greenhouse Plants, Kitchen Garden, Flower Garden, and Pleasure Grounds. F. ATKINSON, Montreal Gardens, Riverhead, Sevenoaks.

GARDENER (Single-handed) seeks SITUATION; age 26; 12 years' good all-round experience (Inside and Outside); good references; abstainer; married when suited; near London preferred.—A. F., 39, Flash Walk, Hampstead, N.W.

GARDENER (Single-handed or with help); used to Vegetable and Flower Growing; good Nursery experience of Forcing and Growing under Glass; married; 10 years present situation. W., 144, Castlemain Road, Stourfield Park, Bournemouth.

GARDENER with confidence recommends smart Lad as IMPROVER; willing and anxious to learn; age 17; Bothy preferred. C. SLADE, The Gardens, Luccombe Lodge, Wrotham, Kent.

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Yours, etc.,
J. A.

"I beg to say the youth has found an engagement through your paper. Thanking you for your assistance," Yours, etc.,
W. T.

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YOUNG MAN seeks a SITUATION as IMPROVER (Inside or Inside and Out); Bothy preferred; good references; abstainer. ALBERT HOUSE, 29, Rowley Road, Reading, Berks.

YOUNG MAN seeks SITUATION as IMPROVER (trade or private); some experience; age 20. W. HOLBROOK, Trinity Place, Tewkesbury, Glos.

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YOUNG MAN seeks SITUATION as GARDENER (Under); age 21; four years' good reference; South Devon preferred.—H. COOK, Hailey Lane, Hertford, Herts.

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**For SEPTEMBER 28, 1912.**

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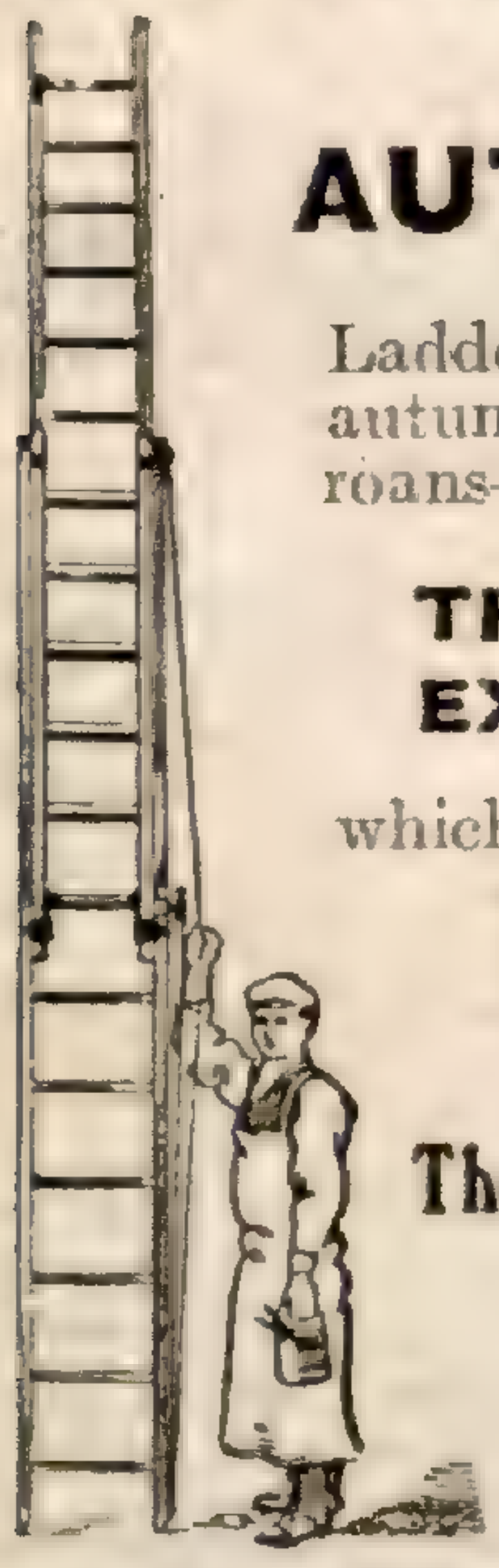

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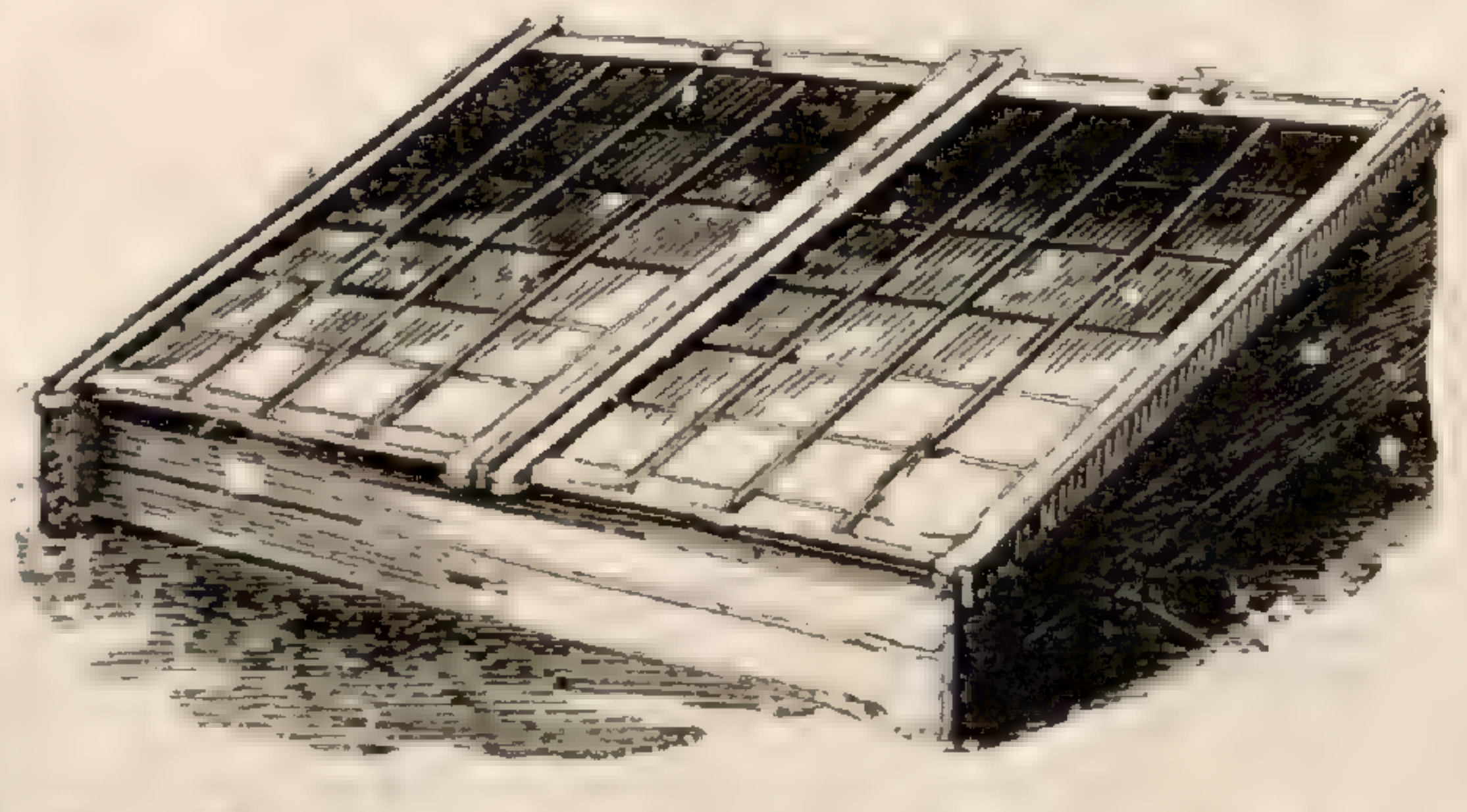

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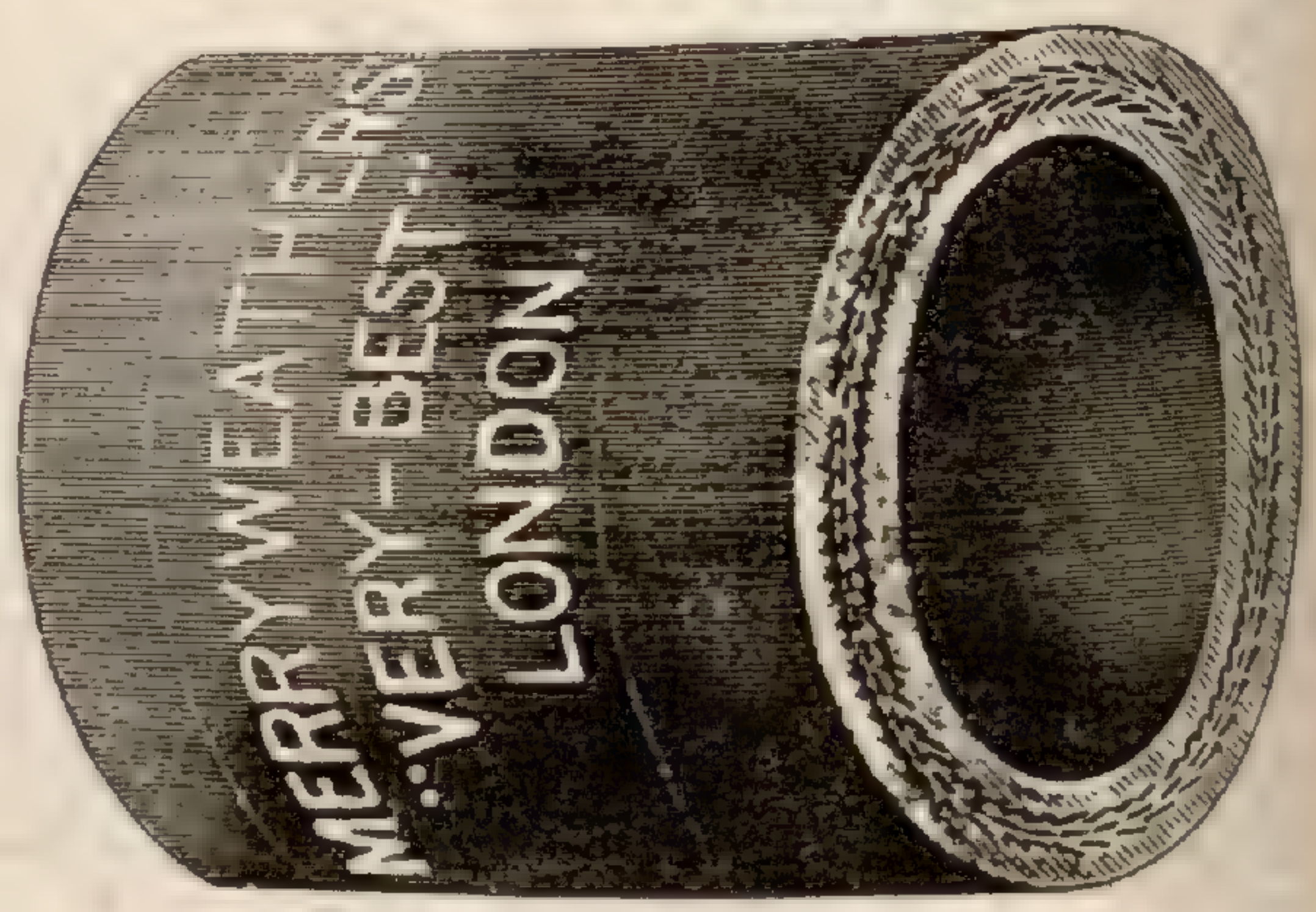

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# THE GARDENERS' MAGAZINE.

No. 3,074 Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

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THE BEST HANDBOOK PUBLISHED.

*Free on application.*

**T. H. DIPNALL, F.R.H.S.,**
THE SHELLEY SWEET PEA FARM,
HADLEIGH, SUFFOLK.

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| **Crocus,** 2nd size, in the finest mixture | 1 | 0 | 9 | 0 |
| **Scilla campanulata,** blue bells ... ... | 2 | 0 | — | |
| **Scilla campanulata,** white bells ... ... | 2 | 0 | — | |
| **Scilla campanulata,** mixed ... ... ... | 1 | 6 | — | |
| **Scilla sibirica,** rich blue .. ... ... ... | 1 | 6 | 14 | 6 |
| **Triteleia uniflora** ... .. ... .. ... ... | 1 | 0 | — | |
| **Irish, Spanish,** mixed... ... ... ... ... | 0 | 8 | 5 | 6 |
| **Narcis.,** single, in the finest mixture | 1 | 4 | 12 | 6 |
| **Narcis.,** Trumpet, in the finest mixture | 2 | 6 | 20 | 0 |
| **Narcis.,** double, fine mixture ... ... | 3 | 0 | 25 | 0 |
| **Narcis-Polyanthus,** finest mixed ... | 3 | 6 | 30 | 0 |
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| **Ranunculus, French,** double mixed ... | 0 | 9 | 7 | 0 |

**250 Bulbs of the same kind will be charged at the 1,000 rate; 25 at the price per 100; 6 at the price per 12.**

**Ask for Illustrated Price List & see the Collections.**

VOL. LV.—No. 3,074. SATURDAY, SEPTEMBER 28, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Gardening as a Hobby.

To any lover of Nature, even the most superficial, the question of the value of a garden as the object of a hobby can only be answered in one way, viz., that it ranks with the most delightfully interesting of all branches of natural study open to the mere amateur. It adapts itself to the pockets of both poor and rich, since even the smallest backyard, devoid of any apparent claims to be considered as a garden at all, is capable of accommodating in sympathetic hands quite sufficient material to evoke and stimulate its owner's interest from year's end to year's end, since, as we see in the well-known story of "Picciola," even a single plant may suffice therefor. In point of fact, we have often thought that a restricted collection of plants, where every individual becomes as it were a personal friend, where every phase of growth and development can be watched and noted, contributes more thoroughly to the hobby-rider's enjoyment than does an immense collection of innumerable kinds of plants, whose very extent involves a more superficial acquaintance with the individuals composing it. Here of course, comes in the question of the amount of leisure available for study, but for the ordinary amateur with whom such leisure is very limited, there is no doubt that a small number of choice plants, well within the scope of careful study, is capable of evoking and affording much more interest and consequent pleasure than mere numbers. It is in this direction naturally that the specialist scores who devotes his energies to some particular species of plant or plants adapted to the accommodation he can afford them, and in this way many a working man has obtained a reputation and carried off many prizes over the heads of wealthier competitors, purely by virtue of the personal concentration which he devotes to study and culture. In many towns and villages, more particularly in the Midlands, men of this class abound, who, instead of wasting the little leisure they have in public houses or futile amusement, devote it to their special hobby, and are thus at once better men and wiser ones, plus the happiness when success attends their efforts. As regards space, more than one lecture delivered of late at the Horticultural Club, and illustrated by most interesting lantern slides, has demonstrated what can be done in the gardening line under most unpromising conditions, and that, if only the "will" be present, the "way" can be found. We have a vivid recollection of a series of views taken at various seasons of a small suburban garden cramped up between the high walls of adjacent houses. Here, by careful study and judicious arrangement, an uninterrupted succession of beautiful plants was maintained throughout the year by means of perennials and annuals, arches, suspended baskets, and even prosaic butter tubs, whose crudeness was entirely veiled by the pendent foliage of ivy-leaved pelargoniums surrounding erect-growing flowering plants, and forming most attractive groups in corners and elsewhere. Another still smaller area was devoted to alpine plants, which, with a little care, adapt themselves splendidly to small spaces, and afford unlimited variety. It is, indeed, in this particular direction of variety that the gardening hobby stands supreme; there is no limit to the scope it affords for different tastes and environment, nor to the intelligent observer is there any limit to the material for observation which it, like every other natural hobby, provides. Furthermore, if the hobby-rider be a sociable man or woman, for gardening is as open to the fair sex as the so-called sterner one, what greater pleasure is there than consorting with one's fellows of like tastes and comparing notes, making exchanges, and vieing with each other in the same natural pursuits? In the garden there is ever something new to observe and note, every month brings its particular phase of development, every season demands its particular arrangements, not merely in its own special connection, but as regards preparation for future ones. The gathering of seed or its sowing, the planting of bulbs, propagating, repotting, or planting, and indeed a thousand and one matters of that kind, each and all of which involve study and care, and possess a particular interest of their own, as contributory to eventual success. The gardening hobby, in short, is one which brings its pursuer into immediate contact with Nature and all her infinite wonders, and by virtue of such infinity constitutes an inexhaustible fount of pleasure and instruction.

MR. H. MERRYWEATHER, J.P.

**Mr. H. Merryweather, J.P.,** the head of the firm of Messrs. H. Merryweather and Sons, Lim., whose portrait we have the pleasure of giving herewith, has long occupied a leading position in the horticultural trade of this country and enjoyed the esteem of the residents in the City of Southwell, which he has, in the course of his active life, done much to beautify. The Southwell Nurseries, of which a brief account is given in this issue, were founded about the middle of the last century by Mr. Merryweather's father, who was a keen horticulturist and gave his son the thorough training so essential to success in horticultural activities. Early in life Mr. Merryweather became connected with Dean Hole, who then lived at Caunton, near Southwell, and he served on the committee of the old Notts Horticultural Society, of which Dean Hole was then chairman. He was a contributor to the first National Rose Show, held in the fifties of the last century, at St. James's Hall in London. Of this show Dean Hole was the secretary. With the National

Rose Society Mr. Merryweather has been associated since its foundation, and, notwithstanding the immense amount of work involved in the development of the immense establishment of which he is the head, Mr. Merryweather has found time to take an active part in the administration of the affairs of Southwell, and he has held office on most, if not all, the public bodies connected with that City. During the past summer he was made a Justice of the Peace for the County of Notts, an honour that gave much pleasure to those who were acquainted with the splendid services he has rendered in the course of his public activities.

**Roses and Rose Culture** will be specially dealt with in our next issue (October 5), and among the articles for which arrangements have been made are new medal roses, the improvement of rose soils, the pegging-down method of rose culture, dwarf polyantha roses, and yellow outdoor roses. The issue will be freely illustrated, and prominent among the illustrations will be those of some of the finest of the new roses that have received distinction during the year.

**National Rose Society.**—The Council of the National Rose Society will, we understand, make a new departure next year, and hold a spring exhibition at the Royal Agricultural Hall, and the date will probably be Thursday, May 1. The metropolitan exhibition will be held on Friday, July 4, and the provincial show will be held at Bath about the middle of the month, and the autumn exhibition at the Royal Horticultural Hall in probably the third week in September. We are very pleased to learn that the society has decided to include a spring show in its programme, and should it prove the success we anticipate, it will be one of the most pleasant of the functions that will have a place in the society's programme. It is whispered that the September show may extend over two days, with a view to making such arrangements as will enable a much larger number of those who appreciate the beauties of the rose to enjoy the charms of the autumn flowers than is now possible. Owing to the cooler conditions that obtain in September, there is not the same objection to a two-days' show in that month as in June, July, or August.

**Congress on Electroculture.**—The utilisation of electricity in horticulture is receiving considerable attention in France, and a congress of an international character will be held at Reimes on October 24 and the two following days for the purpose of discussing the various questions relating to electroculture. The subjects arranged for discussion include the influence of atmospheric electricity on the growth of plants and the nitrification of the soil; the use of electricity artificially generated, and its influence on the plants, soil, and artificial and natural manures; the influence of electricity on the germination of seeds; and on the fungoid and insect pests. The use of electricity in protecting crops from the injurious effects of hailstorms and in accelerating the growth and flowering of plants, and the influence of the electric light will be discussed. Those who are interested in the subject may obtain programmes from the Secretary-General, 58, Boulevard Voltaire, Paris.

**The Oldest Vine in Scotland.**—Miss Isabella Duke writes, from Bearehill, Brechin: "I was much interested in the notice of our old vine, which appeared in your issue of August 10. Your correspondent, however, is not quite correct. My father, Mr. Duke (not Duthie), bought this property forty years ago, and the vine has been under the care of Mr. Tosh for thirty-eight years. It is a Black Hamburgh vine, and about 135 years old so far as we know. About seventeen years ago the house was doubled in size, and it is now quite filled, and the vine carries 450 bunches this year. I should be greatly interested to know if ours is the oldest vine in Scotland, and perhaps some of your Scottish readers may help me to find out whether it is or not."

**Birmingham Horticultural Society.**—The committee of this new society are able to announce a highly satisfactory result from their recent show, because, notwithstanding many difficulties and inclement weather, the profits amount to over £100. We are informed that the committee recently passed a sincere vote of thanks to the exhibitors, who made the show a success. The shortage of tent accommodation was due to an error on the part of the contractor, and is a matter that will be remedied in the future, and no effort will be spared to ensure the comfort and convenience of exhibitors. Mr. W. E. Carradine, the secretary, 84, Hamstead Road, Handsworth, will welcome any suggestions for future exhibitions.

**North of England Horticultural Society.**—The exhibition that will be held by this society in the Leeds Corn Exchange on October 17 and 18, promises to be a great success. We are informed that the committee of the Leeds Workpeoples' Hospital Fund are offering a challenge cup, of the value of 80 guineas, for the best exhibit in the show. This cup will remain the property of the donors, but will be held by the winner for the time being. This committee are also offering a 15-guinea challenge cup to the best exhibit from other than the members of the trade. Lady Barran will open the show at two p.m. on October 17, and the profits will go to the Hospital Fund. Mr. A. J. Allsop will be in charge of the arrangements.

**Propagation of Resinous Plants.**—In the course of one of his recent lectures on plant propagation Professor Bayley Balfour made special reference to the propagation by cuttings of resinous plants and plants with thick juices. Examples given were mostly drawn from the gymnosperms. Many of them, it was pointed out, do not callus freely—pine trees, for example, do not form stool shoots—because the healing by callus is replaced by healing by resin, and this may be cited as an argument against the suggestion that the retrogression of the gymnospermous type in the history of the world's plant covering is a consequence of the want of a protective callus. The two critical points in striking cuttings of such resinous plants are—to prevent the drain upon the plant resources through excessive outflow of resin when the cutting is made—which may be achieved by plunging in boiling water—and to provide easy exit for new roots by scraping off the protecting resin skin. Callused and rooted cuttings of pines were exhibited, special attention being directed to them because the striking of pines by cuttings is regarded by many as impossible. The cuttings were struck by Mr. Laurence Stewart, plant propagator of the Botanic Garden.

**The Farrer Cup for Rock Plants.**—The Council of the R.H.S. offer (subject to the general rules of the society, and the special regulations indicated below) a silver cup, presented to them by Mr. Reginald Farrer, to be competed for at the spring show, on May 20 and 22, 1913. The class requires six new or rare dwarf rock plants, naturally about nine inches in height, not less than six or more than twelve specimens of each. New colour forms of well-known plants admissible; double flowers excluded. Variety, novelty, interest, and correctness of name to rank above size of specimens. It is not essential that all, or even more than one, of any species should be in bloom, e.g., no one would expect to have six Saxifraga florulenta in bloom simultaneously, but a group of it with a flower spike should take precedence of another without. Every exhibitor must attach a card giving in print, or in very clear writing, the personal history of each set of plants (e.g., whence he obtained the plant, or through whom, and when, its habitat, etc.), and observation remarks (e.g., ease or difficulty of cultivation, suitable soil, positions and uses, method of propagation, peculiarities, etc.). Judging will be by points: Novelty and interest, 20; beauty, 20; garden value, 15; culture, 10; correctness of name, personal history, and quality of observation remarks, 20; rarity, 15. First prize, the Farrer Cup in silver. The Council will award suitable medals according to merit, at their discretion, to the exhibitor adjudged second, and possibly to the third.

**M. George Gibault.**—This gentleman, who is the highly-respected librarian of the National Horticultural Society of France, and an eminent writer on the historical and literary aspects of horticulture, has recently been appointed a corresponding member of the Royal Horticultural Society. Some of our readers will no doubt remember M. Gibault's latest addition to horticultural literature, his "Histoire des Légumes," a work involving much research, and the result of many years' literary activity.

**A New Park for Llanelly.**—Sir Stafford and Lady Howard celebrated the first anniversary of their wedding day by throwing open to the public a park that is to be called Parc Howard. This park, of twenty-five acres, was formerly known as the Bryncaerau estate, and contains a castle that has been converted into a museum, with reading and refreshment rooms. Parc Howard has been presented to Llanelly at a yearly rental of £5.

**Mme. Phillippe de Vilmorin.**—There are some of our readers who are personally acquainted with M. Philippe de Vilmorin and his charming wife, for they are not unknown in this country, where they have attended important horticultural functions at various times. The news has just reached us that the French Government has recently bestowed upon Mme. Ph. de Vilmorin the Cross of Chevalier of the Mérite Agricole for services she has rendered to French horticulture. We congratulate her and her husband upon this distinction, in which all their English friends will join unanimously.

**Scottish Railway Station Gardens.**—In announcing the awards for the best-kept platform gardens on the Glasgow and South Western Railway, Mr. D. Cooper, the manager, says that the directors view with satisfaction the efforts made in the way of station decoration, and informs the station masters that for next season the premiums will be increased from a gross of £100 to £150, and that they will be divided into five classes, with the prizes as follows: First-class, 12 of £5 each; second class, 10 of £4 each; third, 10 of £3; fourth, 5 of £2; fifth, 10 of £1 each. The principal awards this season fall to the following: First class, £6 each, Mr. W. B. Kirkpatrick, Dalbeattie; Mr. James Barr, Ruthwell; Mr. Robert Fisher, Dalrymple; Mr. Wm. Taylor, Dalmellington; Mr. John Rae, Carronbridge; and Mr. George Macdonald, Moniaive. Second class, £4 each: Mr. Andrew Morren, Annbank; Mr. William Yeudall, Sanquhar; Mr. George Hay, Paisley West; Mr. John Hamilton, Cunninghamhead; Mr. James Candlish, Southwick; Mr. W. R. Becket, Dunure; Mr. Thomas Gillies, Alloway; Mr. Peter Lawson, Holywood. There are four in the fourth class, and six in the fifth.

**American Gooseberry Mildew in Hants.**—According to a report presented to the Hants County Council, the American gooseberry mildew has been located in three additional parishes within the county. The report also stated that there are now 286 gardens in which the gooseberry bushes are infected, and that the area of these gardens is nearly 556 acres.

**Horticultural Congress at Ghent.**—Intending visitors to the Ghent Quinquennial Flower Show in May next may like to know that in conjunction therewith there will be held an International Horticultural Congress, to which foreign horticulturists are cordially invited. The fee payable to enter one's name as a member is five francs. The programme of subjects to be discussed has been drawn up and circulated, and in connection with the Congress, besides the practical work, there will be the usual round of festive gatherings. Forms of membership and all particulars can be obtained of the secretary, M. Ed. Rodigas, 79, Avenue Chazal, Brussels.

**Flower Shows for Children.**—For the encouragement of Nature study, and to supplement the efforts of teachers to encourage the study of botany and horticulture among scholars, the Manchester authorities provided about 25,000 plants in May and June, at a charge of twopence each. These plants were grown by the children throughout the summer, and when the schools reopened after the summer holidays about 9,000 plants were brought to the schools, and 2,500 of these were selected for exhibition at the chief centres. Medals, fern cases, etc., were awarded as prizes for the best plants, and all plants selected for the final display gained certificates for their juvenile owners.

**Sparkhill Horticultural Society** experienced a loss of about £100 in connection with their exhibition of August 17. This loss follows one of £75 6s. 3d. in 1911, so that matters are in a bad way financially. An appeal is being made to members and supporters for assistance, and a hope is entertained that a special fund will be raised to meet the heavy deficit.

**Large Fruits of Warner's King Apple.**—Mr. W. W. Yates, of Wrington, states that from a young tree of Warner's King apple he has gathered one fruit that turned the scale at 21½oz., and seventeen other fruits weighing in the aggregate 10½lb. The dimensions of the tree are not stated.

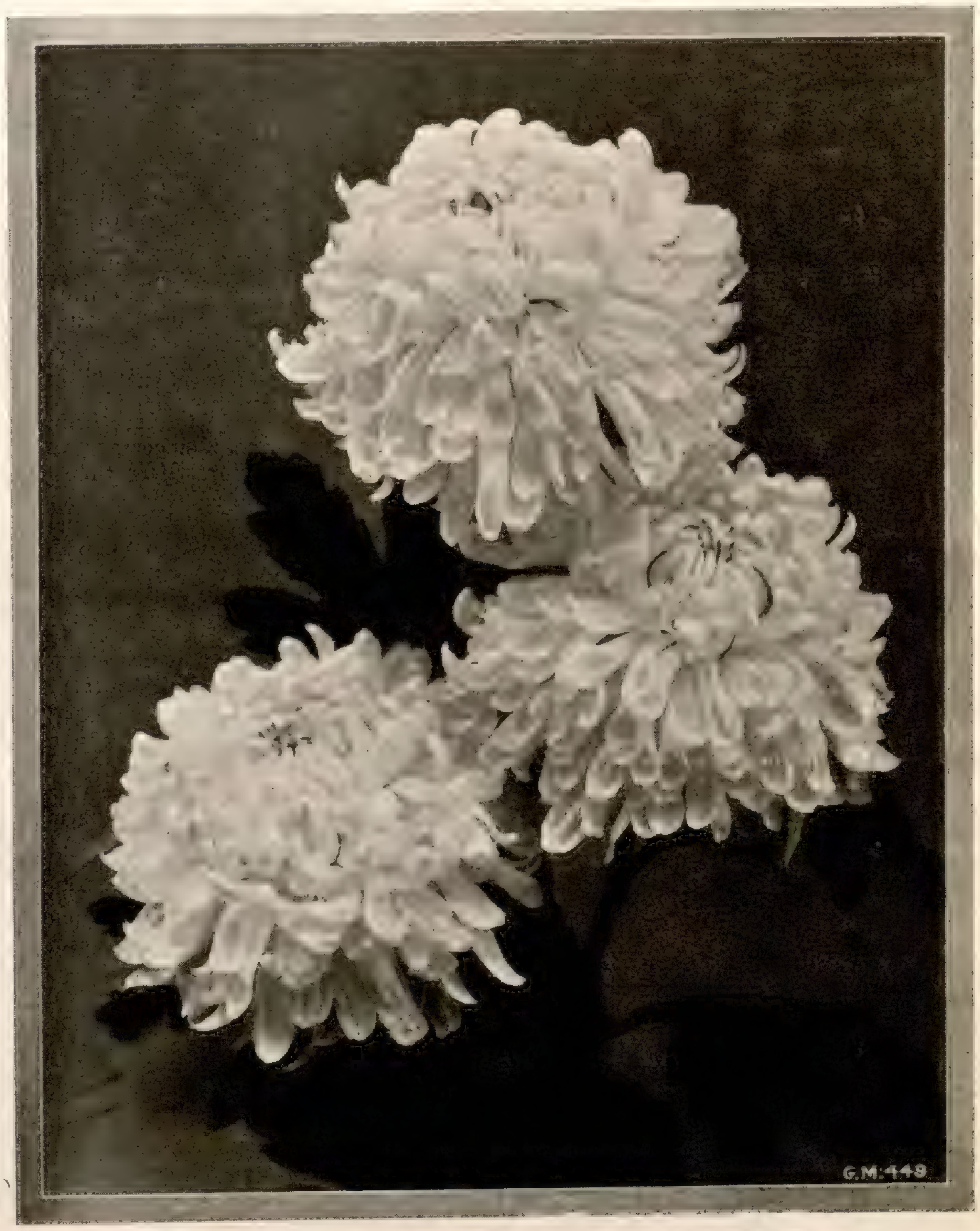
**Bacteria and Lime.**—In giving an account at one of the sectional meetings of the British Association of experiments which were designed to show how far the micro-organisms of the soil were affected by applications of caustic lime, Dr. H. B. Hutchinson said that the addition of small quantities of quicklime to field and garden soils stimulated general bacterial growth, but large quantities caused an initial depression in the numbers of bacteria and the destruction of certain large protozoa, and a cessation of all biological processes. Conversion of the lime from the caustic form into the carbonate or combination with soil compounds was followed by a great increase in the numbers of bacteria and increased ammonification of soil compounds. The length of the period during which bacterial growth was suspended would appear to be determined by the quantity of lime applied, the initial reaction of the soil, and the amount of organic matter present.

## NEW PLANTS, ETC.

◆

### CHRYSANTHEMUMS.

Framfield Early White.—A beautiful early-flowering variety of prettily incurving Japanese form, and yet by no means formal, because the outer florets droop a little and then curve at the tips. The flowers are of good size, four to six inches across, stoutly built, and of a lovely pearly whiteness. A splendid addition, and one that is already popular in Covent Garden Flower Market. (Section II., sub-section 1, b, N.C.S. classification.) F.C.C., N.C.S., September 23; A.M., R.H.S., September 24. Mr. Norman Davis, Framfield, Sussex.



CHRYSANTHEMUM FRAMFIELD EARLY WHITE.

Flowers pure white. F.C.C., N.C.S., September 23; A.M., R.H.S., September 24. Mr. Norman Davis, Framfield.

Mrs. J. Fielding.—A very bright and attractive early-flowering Japanese variety, with rather flattish flowers of vivid bronzy chestnut colour, the elegant florets lightly tipped with gold. (Section II., sub-section 1, b, N.C.S. classification.) F.C.C., N.C.S., September 23. Mr. J. Fielding, East Keswick, Leeds.

Alcade.—A wonderfully beautiful, long-stemmed Japanese variety of great value for market, and for general decorations. A grand sport from Almirante. The florets are even, pointed, and make up a substantial flower; while the brilliant chestnut-crimson colouring makes the variety eminently desirable. (Section II., sub-section 1, b, N.C.S. classification.) F.C.C., N.C.S., September 23. Messrs. Lowe and Shawyer, Uxbridge.

## SWEET PEAS UNDER GLASS.

The wonderful sweet peas that appear in the leading markets and horticultural exhibitions during the months of April and May, have doubtless aroused a sincere longing in the hearts of many. There are, however, those who argue that such flowers are out of season, but the gardener or grower who succeeds in bringing a crop to perfection weeks ahead of its natural period achieves some little renown if not pecuniary benefit. Modern glasshouses and heating apparatus enable a skilled grower to turn the seasons upside down; therefore it is not surprising that sweet peas are made to bloom ahead of their natural season, and, so far as market culture is concerned, it has been proved that the early blooms make the most money. To some it may appear incredible, but it is nevertheless true, that bloom spikes were sold in the open market in London at 15s. per gross, whilst some shipped to Paris realised 18s. during the early part of last May. It must be admitted, however, that the growers who can produce bloom early enough and good enough to make such prices are to be easily numbered upon the fingers of one hand. Scores there are who grow sweet peas under glass, but few indeed succeed in achieving a great success.

That things will improve, there is no reason to doubt, and I venture to think that the sweet pea, as an indoor flower, is as yet merely an infant. Indeed, I go so far as to say that the time will come when high-class blooms will be produced from December onwards. American growers have for years been producing sweet peas under glass from November till June, but the type of flower produced is not to English tastes.

### Sweet Peas for Glass Culture.

For some reason, the Zoolanck and Telemly varieties are not satisfactory here, yet in America the first-named type can be made to grow 10ft. or more, and produce 12 to 18in. stems, the flowers oftentimes selling wholesale at one dollar per 100 or more. American growers, however, admit that their flowers are not nearly equal to those produced under glass by British growers, but there is just the difference that America has sweet peas in November, whilst none worthy of the name are to be seen at home until mid-April or later. The reason is as stated; Americans grow the early Zoolanck type, while home growers depend upon the Spencer types. The difference between the two is that the early-flowering kinds are active all the time, and they run up without a check, while the Spencer, or late-flowering type, stand still after germinating, while they are breaking at the base, and any attempt to force them along ends in failure. The British public has been educated up to big blooms, and the small flowers of the Zoolanck type are not acceptable.

It is generally admitted that the early sorts already in existence are not satisfactory. Apart from their small size and hooded form, they are sometimes much mixed, but nevertheless I am convinced that the treatment generally accorded them is not conducive to their well-being. Owing to our dull winters the seed ought to be sown early in August instead of late September or October as is usually the case. Treated properly, the early types will flower weeks ahead of the ordinary forms, but no treatment will make them take on the size so much desired. We therefore must confine ourselves to the giant Spencers already in favour.

### The Most Suitable Structure.

To grow sweet peas under glass one must have a good and suitable house. It is useless to expect high-class blooms from plants grown in a house where sundry other things calling for a high temperature have residence. Neither can one expect big blooms and long stems from plants growing in 32 or even 24-sized pots. Excellent decorative plants may be grown in the latter, but nothing approaching the high-class exhibition flower, as grown outdoors, must be expected. Given a house to itself, the sweet pea is happy, but the ideal house must be light and airy. The American cultivators usually grow their crops in span-houses 30ft. to 50ft. wide, and I question whether any grower in this country produces choice exhibition flowers in a house less than 20ft.

### Raising Seedlings and Repotting.

The time is at hand when the seed must be sown, and they should be put in without delay. Three-inch pots filled with good loam, with a little sand and rotted manure added, should be the home for one seed only, and to ensure good and even germination, select the plumpest seeds available, and chip each with a knife if it happens to be dark. Cover with about a quarter of an inch of soil, and stand in a cold frame with the lights closed. White seeds may be merely pressed into the soil and lightly covered with sand. No watering is necessary if the soil is sufficiently moist. Tilt the lights well up as soon as the seedlings are through, and never let them want for air. If the leading growth keeps fat and succulent, let it alone, but, if any of the plants commence to plump up the lower eyes, and cause the leading growth to stand still, pinch out the top, and carry up the strongest shoot that follows. If the house is ready by December, prepare the ground by double digging and manuring, choosing, of course, the centre of the house.

A house 20ft. wide will allow for three rows of pots, with a pathway of about 24in. between each. A house with high eave-plates will allow for more, but it must be understood that if the roof is not 8ft. above the ground level there will be trouble. Prepare sufficient soil to fill the 12in. pots required, and it may be mentioned that the pots are to stand close to each other in the rows. Good holding loam, and well-rotted manure are the main things to have. Leaf-soil is unnecessary, but sufficient sand to keep the soil open should be added. Make the soil firm, and then stand the pots in the house. Bring in the plants and allow them to remain for a day or two until they are used to the change, but on no account shut off air. Heat is quite unnecessary. After a brief spell, turn out the plants, and set four in each of the big pots, allowing two on either side opposite each other. Set a trifle deeper than formerly, and make the soil very firm. Give a stake to each plant if necessary, and stand the pots in a position where they have full light. Avoid watering more than necessary, but if the weather becomes severe, turn on sufficient heat to keep out frost. Do not attempt to hustle the plants or they will soon become spindly, and have a bad attack of greenfly. Watch for this pest at all times, for it can do much damage.

### Arranging and Training the Plants.

When the plants are growing well, and the roots have taken good hold of the soil, it will be necessary to prepare the stations where the plants are to stand permanently. The soil in the house having been prepared beforehand will be in good trim, and trenches deep enough to take the pots to the level of the rim should be made. Stir a little well-slaked lime and soot in the bottom, and set the pots in position. Supports must be prepared at once, and there is nothing better for the single-stemmed plants than tall bamboos. Wires strained taut to uprights at each end of the house will give the canes the support they need.

Keep the plants well tied, and pinch out all laterals. About the middle of February more heat can be given, but never force up the temperature above 55 degrees; 50 degrees is really ample, and a drop of 5 degrees at night is more beneficial than otherwise. On sunny days give plenty of ventilation, but avoid draughts, or mildew may come along and spoil one's efforts. A syringing with clear water overhead at midday in bright weather is appreciated, but do not damp down at night. Never shut the ventilators at any time.

### Watering and Feeding.

A little liquid cow-manure may be given occasionally when the plants are about two feet or so high, but avoid nitrates or strong chemical manures. Sulphate of potash, about ½oz. to the gallon, will tend to keep the plants from getting too soft, and occasional waterings with permanganate of potash will keep the soil sweet. Dust the soil with slaked lime about once a fortnight, and do not allow the plants to become dry. Thoroughly soak the entire ground when watering.

Flower buds are usually slower at showing under glass than in the open, and it is not uncommon for the plants to be 4ft. before buds appear, and these early ones not infrequently fall off, but if the temperature and ventilation are attended to, there is little trouble in this direction. At this stage the plants will take plenty of feeding, and from April onwards a good supply of liquid manure may be given once or twice a week according to the growth. At this time of the year, all top, and often the side, ventilators, should be open on bright days and no artificial heat should be necessary during the day, except when the weather is damp or very dull. After flowering commences the plants grow at an amazing rate, and it becomes a problem how to give them head room. Sometimes one can pull them down a bit if the ties are not tight, but this has to be carefully done. Odd laterals that may appear can be carried up to replace any growth that has to be cut away, and if thinning has not been too thorough, one can usually obtain some good basal laterals.

### Why Grow in Pots?

Some may be disposed to ask why pots are necessary. They act as a check on rampant growth, and, further, they give the plants a better start as the soil keeps warmer, and air, not ground draughts, circulates amongst them before the pots are sunk. If planted out direct into the ground they are slower to get away, and later on, if the soil is highly fed, the plants will be against the roof before many flowers are produced.

The cultivator must aim at keeping his plants down without checking them, and here is where the skill comes in. Even when sown or planted rather closely, the plants will persist in going up. This past season I saw several houses with plants set out in the ground, which had actually reached the limit, and come over several feet, totalling, I should imagine, some 16ft. or more of growth.

As stated, very good blooms may be grown in 8in. or 9in. pots, not sunk, but two or three plants in each are ample. Giant exhibition blooms are, however, impossible, but anyone who has a use for neat flowers on 9in. or 10in. stems can get them. High feeding is necessary, but the life of the plants is short compared with those grown as described.

Diseases other than mildew do not affect plants under glass, at least I have never seen such. American growers, however, know only too well what havoc can be wrought by various diseases, including the twin brother of our own detestable "streak." Greenfly must be kept down by fumigation, but so long as the plants are grown hard this pest causes little trouble.

### Varieties.

Almost any variety will succeed under glass; indeed, some varieties, such as Afterglow and Stirling Stent, are better indoors than out. The average gardener needs but few colours, however, and I would recommend Moneymaker, white; Empress, mauve; R. F. Felton, lavender; Orange Perfection or Thomas Stevenson, orange-pink and orange-scarlet; Scarlet Emperor or Dobbie's Scarlet; Doris Usher, deep cream-pink; and Lady Knox, cream, tinted pink. It must be understood that while all varieties do well under glass, the colour is apt to be misleading. Avoid all the very pale or weak shades, for with few exceptions, all varieties come considerably paler under glass than outdoors. Shading is not necessary, and the plants must have all the light possible.

T. A. Weston.

# COMBINATIONS OF SPRING FLOWERS.

Bulbous and other hardy flowers that are usually grown in large numbers for the production of rich colour effects in the flower garden during the spring season are highly attractive when grown in separate beds, provided the contrast of colours is tasteful and the planting is so carried out that the space is well filled without being overcrowded. Many are the examples that could be mentioned in proof of this, but for the present purpose it must suffice to state that this is the case. This much must be readily admitted—that the planting of the several kinds in beds wholly devoted to a separate kind or variety, as is so frequently done, more particularly in the smaller gardens of amateurs, is not a practice that can be recommended.

A CHARMING COMBINATION OF HYACINTHS, TULIPS, AND VIOLAS AT HAMPTON COURT.

One of the chief objections to devoting each bed to a distinct kind or variety is the difficulty of obtaining in a colour scheme a soft tone of colouring that is so much appreciated at the present time, and a harmonious blending of colours is far more pleasing and satisfactory than the strong colour contrasts that enjoyed a considerable degree of popularity in the past, and are still met with in gardens, but, happily, in rapidly diminishing numbers. Another objection to the method is the bare appearance presented throughout the winter months by beds that are wholly devoted to bulbs. From the time of planting in the autumn until the leaves begin to pierce the earth in their endeavour to obtain the warmth, light, and air so essential to their full development, the beds are bare instead of being carpeted with green leafage as they might, and indeed should, be. There is no great difficulty in giving each bed its carpet of green during the winter, for the number of fibrous-rooted plants suitable for associating with spring-flowering bulbs is considerable, and the most useful of them are readily raised by means of seed or cuttings. The combination of fibrous-rooted plants, such as arabis, alyssums, and wallflowers with bulbs adds to the labour and attention involved in the production of displays of spring flowers, but this addition is not of great moment, having regard to the improvement in the appearance of the beds during the winter and the enhanced charm of the floral display in the spring.

Most beautiful combinations may be effected by the use of two or three colours of the same class of bulbs in one bed. These different shades must be provided, not with mixtures obtained at a cheap rate, but with separate varieties planted in due proportions. This method of planting can be most successfully carried out with hyacinths, as evidenced by the results that are annually obtained in the London parks and gardens that are open to the public. By planting such pink varieties as Gertrude, L'Ornement Rose and Rosy Gem, a much more pleasing effect is obtained than when any one of these varieties is planted separately. In like manner, Blondin, Count Andrassy, and Leonidas, in their various shades of light blue, produce a delightful effect. Certain of the early-flowering tulips may be associated with hyacinths with much success, as in the bed of which an illustration is given herewith. This bed contained a selection of two or three light blue hyacinths and a white tulip, probably Snowdrift, which attains a height of ten or twelve inches. Some of the soft yellow tulips may be associated with the light blue hyacinths, but in the writer's opinion, white tulips present the most pleasing appearance in association with blue hyacinths. For planting in conjunction with pink and red varieties of the last-named flowers, white, pink, and rose-coloured tulips are all suitable, and Cottage Maid, La Reine, Rose Grisdelin, and Snowflake may be mentioned for their usefulness for growing in association with hyacinths.

Whatever may be the method adopted of planting the chief classes of bulbs, fibrous-rooted plants should be grown in association with them for the purpose of carpeting the ground in winter and contributing to the floral display in the spring. Among the white-flowered plants suitable for carpeting the surface of beds and borders planted with bulbs, the double-flowered form of Arabis albida is pre-eminent.

The golden Alyssum saxatile and its lemon-coloured variety known as citrinum are both of much value in their respective shades of colour, and are especially useful for planting in association with the crimson-red, scarlet, and white tulips. Aubrietias, in their several shades of lilac and rose, form an admirable setting to hyacinths, but on cold, heavy soils they suffer more or less during the winter. Forget-me-nots are exceedingly useful for carpeting beds of white and blue hyacinths and white tulips, and should be taken full advantage of. Double daisies also possess much value as they bloom freely until the time arrives for preparing the beds for their summer occupants. Polyanthuses and wallflowers should be freely planted in combination with bulbs and other plants where spring flowers are appreciated. The strong colours of the wallflowers are most useful for association with tulips and daffodils, for they not only harmonise with them, but they continue to yield a profusion of their fragrant blossoms until the beds have to be cleared of spring-flowering plants. G.

# SOUTHWELL NURSERIES, NOTES.

The home of the "finest apple on earth," as Messrs. Merryweather and Sons style their well-known Bramley's Seedling, has for many years occupied an important place among the nurseries of Britain, and the Southwell Nurseries take rank to-day among the most extensive, best equipped, and ably managed of our horticultural establishments, a place where all who love gardens and admire beautiful trees, fruits, and flowers may take their fill of pleasure, and add much to their knowledge.

Southwell itself, with its fine old Norman cathedral, and the many historic associations with both the Norman and Roman periods that are still in evidence, is a place all Englishmen ought to visit, and gardeners above all should see both the city and its lovely surroundings of well-wooded slopes and prolific orchards, as well as the nurseries which are the subject of this review.

The dictionary defines a nursery as "ground for rearing trees, fruit, flowers, etc.," and verily the Southwell Nurseries justify this definition to the full.

The nurseries are three in number, separated a considerable distance apart, but in fine weather the drive from one to the other, and the ramble through each will provide a full day's enjoyment for anyone who is a plantsman or pomologist. The total acreage under fruit and general nursery stock cannot be far short of two hundred acres. Naturally, one sought first the famous apple already mentioned, Bramley's Seedling, and truly a wonderful sight it is to see both the vast "brakes" of young trees of all shapes and sizes, and the extensive orchards of magnificent trees in full bearing. The Bramley Orchard, situated on the opposite side of the road to the Brinkley Nursery, is indeed well called an ideal orchard. It was planted some twelve years ago with five and six-year-old trees, and these are about three feet in girth at the main trunk, and have a wonderful spread, the variety being exceptionally free-growing. It is characteristic of the whole establishment that appearances might lead one to think that the Messrs. Merryweather, by some magic charm, keep all pests and diseases at bay. The real secret, however, is that spraying with reliable fluids is persistently and systematically carried out, and good husbandry prevails in every detail. Last year the total crop of Bramley's amounted to something like one hundred and fifty tons, and although this year the crop falls short of this high figure, there are big crops on every tree. The many thousands of young trees of Bramley attaining saleable size convinced us that the Messrs. Merryweather must find an extraordinary demand for them. The big field of maidens, and the great breadths of two to four-year-old bush and standard trees were as fine as one could wish to see.

It must not be supposed that Bramley's Seedling is the only apple grown, for one finds big breadths of many other sorts, both culinary and dessert. Some bush trees of Cox's Orange Pippin on paradise stock particularly impressed us with their fine, healthy appearance. Four-year-old Charles Ross carried handsome highly-coloured fruit, and there were remarkably fine two-year-old Grenadiers and Lord Grosvenors, the latter being a splendid cooking apple. Cordons, too, are extensively grown, and also plums, with gooseberries, and currants in between the permanent apple trees.

Among ornamental trees, hollies occupy an important place, and it was good to see plenty of fine, shapely pyramids, and healthy young stock of such varieties as Hendersoni, Aurea Regina, Argentea Regina, Madeiriensis, Hodginsi, and Shepherdi, for these hollies are in great demand, as indeed they should be, for nothing can be finer in the pleasure grounds of a mansion than well-developed hollies. Trees for town planting, such as limes and sycamores, are grown on a big scale, the situation and soil of Brinkley Nursery being well adapted to the production of good growth and fine fibrous roots.

At Micklebarrow, the other branch nursery, it was very noticeable that all the golden and variegated shrubs and conifers attain exceptional brilliance, Cupressus Lawsoniana lutea, for instance, being brighter in colour and more elegant in appearance than usually seen. C. Lawsoniana argentea, the exceedingly handsome C. Lawsoniana Westermanni, with its distinct gold-tipped growths, and C. Lawsoniana alba spica, of conical habit were all beautifully coloured.

It is at Micklebarrow that the bulk of the roses are grown. Walking between the vast breadths of maidens in all the latest and best varieties, the first point that impressed one was that the average in budding successes was extremely high, there being row after row with scarcely a failure. Space limits forbid mention of many varieties, but a few that have proved themselves so particularly successful during this cold, wet season deserve notice. Edu Meyer, with its amber and coppery-red tints, was one of the first to be noticed, its colour being so charming, and its habit so free. Most people love a rich crimson rose, and several of very deep and glowing shades, included Chateau de Clos Vougeot, a beautiful variety despite the unhandy name; and Florence Haswell Veitch, vivid crimson shaded with scarlet. This is one of the newer roses, and has rendered a good account of itself this season. J. B. Clarke is more widely known because older, and it has proved itself a capital town rose. A few other roses were noted which make excellent bedders in town gardens, among which probably none can excel La Tosca, with its abundance of flesh and shell-pink flowers. Mrs. Wakefield Christie Miller, is another that Mr. Merryweather speaks of as deserving of inclusion in every collection; Rayon d'Or is also one of his special favourites, as indeed it must be with all who see it growing and flowering as it does in the Micklebarrow Nurseries. Charlotte Klemm, one of the best and most brilliant of the China section, flowered as though in competition for the production of the greatest quantity of blooms, and that is the kind of rose we want for bedding purposes. It has, however, a serious rival in the charming little polyantha named Jessie, which is one of Messrs. Merryweather's own introductions, and is grown in thousands, producing a truly glorious effect in the mass. We might easily go on naming roses that are deserving of the highest praise, but there remains so much else to write of. The pears, for instance, at Micklebarrow were, even on quite young trees, hanging in great quantities, and there were loganberries, plums, and bush fruits in thousands. A very choice collection of the finest lilacs and also of thorns will doubtless be largely drawn upon during the coming season, and another important feature of this nursery is the big collection of choice rhododendrons, which do extremely well in the natural soil, as also do the hardy heaths.

There is still the Home Nursery to deal with, and this alone would provide material for a very long article, although it may be said that a good deal of the same classes of stock was seen here as in the outlying branches. It is, however, in the Home Nursery that most of the pot plants are grown, and an important item is the collection of ivies. These have been worked up for years, and almost every variety worth having may be found at Southwell. Lee's Silver, and Silver Gem, Dentata aurea, with its handsome foliage, and the immense-leaved Rægneriana are but a few, and perhaps the finest varieties. Wistarias, too, are largely and well grown, W. multijuga being highly esteemed and strongly recommended. There is a good general collection of herbaceous and alpine plants, not consisting of the rarities that appeal only to specialists, but the most serviceable for the borders and rockeries in gardens where a good display of bloom is aimed at. One ought to dilate upon the roses here also, for there are the climbers, the Pernetianas, hybrid rugosas, and indeed the good old H.P.'s, to say nothing of the novelties as yet grown under glass. Along the roadside, too, there is a capital series of beds cut out in well-kept grass, each filled with one variety, and every bed a delight. This notice may well conclude with a word about the remarkable new damson known as The Merryweather. This invaluable fruit has already been illustrated and described in these columns, and the good opinion formed upon first acquaintance was confirmed by the excellent crop of large, handsome fruit not only on the original tree, now some years old, but even on two-year-old trees in the nursery lines, where tree after tree was cropped in the most remarkable manner—remarkable because with the ordinary damson one never expects or hopes to see fruit until the tree is a good many years old.

# SOME GOOD ROSES FOR STANDARDS.

In the past we had but few roses really suited for culture in standard form, as compared with the number now available.

It is not only the grand heads that can be readily formed by the climbing polyantha and Wichuraiana sections that have so vastly improved our standards, but we have a number of free-growing hybrid teas that soon form capital heads, and have the additional merit of being free and continuous in flowering.

To take a few of the Wichuraianas first. All of us know what beautiful heads Dorothy Perkins and its sports make, carrying long festoons of blossoms upon the lengthy rods formed the previous season, and never failing us if these growths are well matured. But grand as are the weeping standards, especially when grown upon extra tall stems, they have the great defect of only presenting us with one really good crop of blossoms during the season. The exceptions to this rule are Miss Alice Garnier and the original species, mostly spoken of as the type, which remain in bloom until severe frost stops flower production.

In such varieties as Gruss an Teplitz, Papillon. Trier, Allister Stella Gray, Perpetual Thalia, William Allen Richardson, Perle des Neiges, Madame Hector Leuillot, Madame Alfred Carrière, Gruss an Zabern, Celine Forestier, and Billiard et Barré produce good-sized heads that are full of flowers from early in July until frosts set in, and it is these which, except where weepers are wanted, afford us the most satisfying of standards.

A few of the best teas and their hybrids may also be mentioned. General MacArthur, Lady Ashtown, Viscountess Folkestone, Madame Ravary, Nance Christy, La Tosca, Gustave Grunerwald, and Augustine Guinoisseau being some of the best. These do not make quite such large heads as the last-named set, but are so free in growth and flowering as to retain the vitality so necessary among roses that are grown in standard form. I would limit a selection from the tea-scented section to the following: Corallina, Mrs. B. R. Cant, Madame Jean Dupuy, Marie Van Houtte, Molly Sharman Crawford, and Souvenir de Pierre Notting. Of the hybrid perpetuals, Ben Cant, Duke of Edinburgh, General Jacqueminot, Mrs. John Laing, Ulrich Brunner, Tom Wood, Dupuy Jamain, Frau Karl Druschki, and Mrs. R. G. Sharman Crawford are the most reliable.

I trust this list may be a help to intending planters, and will close with advising a more thorough preparation of the soil than is generally given for standards, more especially when planting them singly by carriage drives or upon the lawn.

A. P.

## STERILISATION OF SOIL.

In your reply to "F. B., Yorkshire," page 695, you there state that the sterilisation of the soil is distinctly beneficial, but the methods by which it can be the most satisfactorily carried out by the general body of cultivators require further investigation, and with this statement I am in full agreement. Perhaps it may be of interest to know the method we have adopted here, as the soil was so infested with eelworms that cucumbers, melons, tomatoes, and many other things were complete failures before half the season was over, owing to the destruction of their roots by the pest. As other means tried, such as soil fumigants, carbon bisulphide, etc., failed to prove satisfactory, we tried steaming in the following way:

A strong pitch pine chest, or tank, was made and connected to the injector pipe of the boiler used for driving the dynamo of the electric light installation. The tank is made of 2¼-inch plank of the following dimensions, inside measurement, viz., length 6ft. 2in., width 2ft. 1in., depth 2ft. 3in.; the ends are grooved into the sides and held in position by four iron rods or long bolts across each end outside, with a ⅜in. thick iron plate to prevent the heads of bolts and nuts cutting into the wood. There are also four iron bolts going through from the top edge to the bottom with nuts underneath on each side. The bottom and both ends are bolted through in the same way to prevent any movement or opening of joints from the pressure of steam.

Inside in the angle formed by the bottom and sides a 2½in. square piece of wood is fixed, the full length of the tank, also across each end; these act as bearers to take a very loose-fitting false bottom. When this false bottom is in position there is then a clear space, or chamber, underneath. Into this space, or chamber, the steam pipe is brought in at one end, and the pipe is taken about a foot into this space. The false bottom is of ordinary inch-thick deal, but this I find is not stout enough to carry the weight of soil, and is bored with ⅜in. holes all over at six inches apart, these holes giving the steam free access to all parts of the soil. There is a very close-fitting lid for the top. The tank is fixed outside, and stands about a foot from the ground on two brick piers; there is a fall of an inch at the end opposite to where the steam pipe enters, and here a tap is fixed to draw off any water formed by the condensed steam. There is a length of 45 feet of 1-inch steam pipe from the boiler; this distance was unavoidable on account of other buildings. The work was done by a local engineer, and the cost, including brickwork, etc., was about £6.

The apparatus has now been in use nearly two years, and has proved a great success, as, since using the sterilised soil I have not lost a plant of any kind from an attack of eelworm. When using the tank we fill it with loam, leaf-soil, or whatever the material may be, leaving a space of four or five inches at the top, put on the lid, and turn on the steam at about 40lb. pressure. Now, whether the above is the most practical method of sterilisation I cannot say; but it answers our purpose. I know everyone has not the advntage of a steam engine for the purpose, but it would be most instructive if other correspondents would give their views and experience on the subject, as I think, when the value of sterilised soil is better known, the means will be found for effecting its sterilisation. I must not occupy further space, or I might state the difference it has made in the growth, etc., of many things under my charge.

H. Reynolds.

Scratby Hall, Great Yarmouth.

[We shall be pleased to publish any further particulars on the sterilisation of soil that Mr. Reynolds may consider of interest, and also the experience of other of our readers. Ed., "G.M."]

## SWEET PEAS FOR EXHIBITION.

It has been my good fortune to be fairly successful as an exhibitor of sweet peas during the present year, at Reigate, Eastbourne, Hayward's Heath, and the National Sweet Pea Society's exhibition, but, after all, there is not very much to be said or written about methods of cultivation. The use of common sense, a love for the flowers, and the power to profit by close observation of the plants' behaviour, are of far more value than any elaborate details of cultivation or manuring, slavishly followed.

Ours is a simple procedure. We sow the seeds in pots during the second week of October, and winter the stock in cold frames, affording ample ventilation in all but the severest weather. The plot that is to carry sweet peas is trenched three feet deep in November, and plenty of rotten stable manure, with a fair sprinkling of bone-meal, are mixed with the soil in the two lower spits.

We have to deal with a heavy clayey soil that assumes the consistency of putty when wet, and bakes as hard as bricks when dry. We have, therefore, to take every advantage of good soil conditions, and the sweet peas are planted out as soon after the middle of March as weather permits. Double rows are planted, a foot between each row, and five feet between each double row. The plants are set out a foot apart, three growths only being allowed to extend from each, and those are kept free from side growths.

No feeding is given until the sweet peas are nicely in flower, and then soot water and liquid from the farmyard are given freely, with an occasional top-dressing of some approved fertiliser. For supports we use tall sticks with an accompaniment of stout bamboo rods. Tying is regularly attended to, but this is not a very serious business when the single-stem method of cultivation is practised. Under these conditions large quantities of fine flowers, borne on good stems, are produced over a long period, and these are suitable alike for exhibition or home decoration.

F. C. Beale.

Haversbrack Gardens, Uckfield.

SWEET PEAS AS GROWN IN THE HAVERSBRACK GARDENS.

# SOME OF THE NEWER SWEET PEAS.

A year ago there were many people pessimistic enough to forecast the decline in popular favour of the sweet pea, but up to the present there is no evidence of decline, if one can judge by the number of enquiries received as to which varieties, both new and old, are the best to grow for 1913. Certainly, the practice of autumn sowing is very much more general than it was even two or three years ago, which goes to show that the results obtained from such sowings are quite satisfactory, and it is this fact, no doubt, that induces the Editor of the GARDENERS' MAGAZINE to give his readers matter now which two years ago would have been reserved until after Christmas.

SWEET PEA MRS. CUTHBERTSON.
A beautiful light pink variety, introduced by Messrs. Dobbie and Co., Edinburgh.

Generally speaking, sweet peas have done better this season than in 1911, consequently we have been better able to judge the merits of the varieties, many of which have proved even better than was anticipated. Considerable advance is still being made in the matter of new varieties, though there is nothing so outstanding as in some seasons. But we must remember that the number of good varieties and colours that have been recently introduced makes it a matter of some difficulty to secure really distinct novelties, so that we must be satisfied if new varieties are really improvements on existing ones, without being distinct in colour. As a good instance of this I would here mention Breadmore's Reselected Countess Spencer, which, as I anticipated, is a distinct advance on an old favourite, and has proved one of the best and most continuous bloomers, giving considerably larger flowers than the original stock. As I have mentioned more than once, there is considerable room for an improvement in the whites. White King (A. Dickson and Sons) may prove the variety we want, but this we cannot have until 1914. And we must also wait for Constance Hinton (Dr. Hinton); this variety, though giving a shade of pink in the standard of the young flowers, is, I think, decidedly an improvement, and is quite white enough to show in a collection, the size and quality of the blooms being quite up to exhibition standard. White Queen (G. Stark and Son) must be our stand-by until we can have the two previously mentioned, and even then this will want a lot of beating, as it is exceptionally vigorous, and gives four good flowers on the stem practically every time, and always well placed.

Among cream varieties Dobbie's Cream (Dobbie and Co.) must take a very high position, being a sturdy grower, and giving good solid-looking flowers, but even now it does not surpass the popular Clara Curtis, which is a little deeper in colour and a little more frilled.

Crimson Giant (B. W. Deal) is a very fine crimson variety, not so much waved as Sunproof Crimson, but of a distinct shade of colour and very large, though not one of the best to give four blooms on a stem.

Recent introductions in the bright rose section are a decided gain to cultivators, and Edith Taylor (Sydenham and Holmes) is, I should say, one of the best peas introduced for the past three or four years. A. A. Fabius (Alsen) and Aggie Elder (Breadmore) are identical; under either name it is a very fine pea, the colour, a brilliant rose, being equally effective for decoration and exhibition. Kathleen (B. W. Deal) is even brighter than the three above-named, and may be described as cerise. Having grown this for two years, I cannot speak too highly of it. The blooms are not of the largest size, but the plant is a good grower and is very floriferous, while the colour is striking from quite a distance. It does not turn, neither are the flowers damaged by the bad weather to any serious extent. Mr. B. Deal has a more waved form of this. Very fine also is Bertrand Deal (B. W. Deal), the flowers rose-mauve.

There are, again, several additions to the cream-pink section, but, being so closely alike in colour, it is a difficult matter to recommend them individually. Queen Mary (Messrs. E. W. King and Co.) one of last season's introductions, is a veritable giant, and for exhibition purposes it is excellent, and might be described as an improvement on Mrs. Routzahn, though not so prone to give double standards. Another exceptionally good pale cream-pink is Lilian (Holmes and Sydenham); in colour it is between Zarina and Mrs. Routzahn. It is a good grower, makes an excellent bunch, and, though not so large in the flower as Queen Mary, it has the advantage of keeping rather longer in stem. Lady Miller (Dobbie) is a very beautiful pea in this section, and will prove one of the most useful for decorative purposes.

In the darker shades of cream-pink Minnie Furnell (Alsen) is, I think, rather better than Doris Usher, the colour and size of flower being a little in advance of it. Wenvoe Beauty, a variety I saw at Cardiff, is the brightest and best of all this section, but as I understand it is not yet fixed enough to distribute, it seems almost premature to speak about it, but it is too good a variety to lose sight of.

In addition to the really decided or defined shades of pink, there are several others of equal beauty, such as Andrew Aiken (R. Bolton), Grace Darling (E. W. King), Juliet (B. W. Deal), Winifred Improved (B. W. Deal), Fair Maid Improved (G. Stark and Son), and Mrs. Stewart Champion (S. Bide and Sons), all of which are distinct from one another, and certainly, if not quite up to exhibition standard in size of flower, they are among the very best for delicate decorative schemes. Zarina is such a well-known and distinct variety that the mere mention of a good Spencer form of it should be sufficient; this waved form is one of Mr. Holmes' raising, and is being distributed by Mr. Robert Sydenham.

W. P. Wright (W. J. Unwin), though only distributed last year, has already made a name for itself as the very best pale blue. It is one of the strongest growers, and when the plants are in good order it is difficult to find a stem with only three blooms, fours or fives being the usual number. It is certainly an acquisition, especially for those who like delicate shades of colour. Amethyst (Sutton and Sons) I noted as being a very good variety, and, though not quite a self blue, it will, I think, prove a useful addition to this section, as will also the same firm's Southcote Blue, which, if somewhat smaller in the flower, is a better blue, and is very like a seedling of Mr. Holmes' that I grew this year.

Marks Tey (Dobbie and Co.), though not a blue, has a certain amount of this colour in it, being almost a blue and bronzy-red bicolor; it is very pleasing in the bunch, a giant in growth and in flower, and should make a good exhibition variety. A sweet pea that pleases me very much, both for garden decoration and exhibition purposes, is Loyalty (G. Stark and Son), a blue flake, but of such colour in the bunch that it is well worth growing, even in a small collection. There are several varieties quite near this, but just lacking in the shade of colour that makes it so commendable.

Agricola is one of Mr. Bolton's novelties that received the Award of Merit of the National Sweet Pea Society this year, and is a variety of large size, being white with a flush of lilac or pale violet, and for those who like these tinted peas it is the one variety to grow. Birdbrook (R. Bolton) is also a very fine sweet pea, and for form and size is probably the best of the year, but as it is a flake (finely veined chocolate on a white ground), it may not become so popular as some of the self colours.

There is not a great deal fresh to record among the scarlets. Most of last year's introductions have turned out well, my own choice being in favour of Scarlet Emperor, but I think it probable that Dobbie's Scarlet will prove to be a little larger in the flower, while Premier (G. Stark and Son) is quite distinct in colour. As a decorative variety True Lavender (Dobbie and Co.) will no doubt take a prominent place, the colour being exceptionally soft, while the same firm's selected stock of Lavender George Herbert should provide us with our best exhibition pea in that colour. R. F. Felton, one of Mr. Bolton's last season's introductions, is a grand sweet pea, in fact, one of the best for exhibition purposes, provided it is not disbudded too freely; as this is distinctly a rosy-lavender, I think there is room for both of these fine varieties.

Mrs. Cuthbertson (Dobbie and Co.), a pink and white bicolor, well sustains the good opinion formed of it last season, and is easily the strongest grower and best flower in its class, though, like R. F. Felton, it must not be overgrown.

The variety Thomas Stevenson has been seen in such form and in such quantity this past season that it needs no comment from me, except to say that it will be interesting to test the two stocks, Holmes' and Dobbie's, to see which is actually the best under general cultivation. There seems to be nothing to challenge this variety's position at the head of its colour class at present, though in the Earl Spencer section there are several varieties that are said to supersede those already in commerce. Melba (Dobbie and Co.) and Barbara (Holmes) are both good flowers, and seem likely to keep their position until some clever cross-fertiliser of the sweet pea gives them to us in sunproof form. There are signs that this is coming, as I have seen one or two seedlings that appear sunproof, but a summer like 1911 might dispel all our hopes.

Inspector (Dobbie and Co.) gives a great number of double standard flowers, consequently it appears very bright, and makes a good bunch; the colour is similar to that of Earl Spencer. King Alfred (Breadmore) is an exceptionally large orange-pink variety, and might be described as between Anglian Pink and Anglian Orange in colour. Lady Curzon (Breadmore) is a decided improvement on Menie Christie, but it is more of a bicolor than a self. Rose Diamond (Aldersey and Jones) is a very bright pea, very similar in colour to Inspector. Anglian Fairy (E. W. King and Co.) is another of those very delicate sweet peas so useful for decoration, and may best be described as a Sybil Eckford Spencer, but the colouring is even a little more subtle than in that variety, a shade of green being distinctly noticeable in it.

Coronation (R. Bolton) is a variety not quite so well-known as Charles Foster, Dorothy, and Prince George, but it is nevertheless very well worth growing; it pleases me even better than the two latter; the colour is apricot, with a touch of rose or pink in it. It is very pretty, and after a few hours in water it makes an exceptionally good bunch. Annabella Lee (Alsen) is very similar to Dorothy, but, as growing here, it does not shorten in the stem so quickly, and the flowers come rather better spaced, the last-named often coming very much in pairs and close together.

SWEET PEA BERTRAND DEAL.

A beautiful variety, with large flowers of a rose-mauve colour, introduced by Mr. B. W. Deal, Kelvedon.

The dark varieties are augmented each season, and the three most noticeable novelties are Brunette (Dobbie and Co.), a deep mahogany self, and very distinct; King Manoel (G. Stark and Son), a very deep maroon of large size; and Mrs. Cowdy (R. Bolton), best described as an improved Black Knight Spencer. Either of these three should prove a welcome addition to any collection.

There are a great many more varieties listed, but it is much safer to speak of those seen, and safer still to speak of those actually grown, and if I seem to have specially lauded any of the foregoing varieties it is because they have stood out so much in front of those that I have been growing them with for comparison, that they deserve it, and I certainly think that the foregoing list comprises the best of the varieties seen during the season of 1912.

Thomas Stevenson.

Woburn Place Gardens.

**French Beans.**—Where warm pits can be spared a good sowing of beans should be made to carry on a continuous supply of this most desirable vegetable. Where early marrows, melons, and cucumbers were previously grown, little else will be required beyond levelling the beds, and making them quite firm for the seeds. Sow the seeds in lines eighteen inches apart. If from any cause the pits are not yet available, sow the seeds in boxes, and plant out when ready. Sutton's Plentiful and Superlative are two excellent varieties for this mode of culture.—G. E.

SWEET PEA AGRICOLA.
A distinct variety, suffused lilac on a white ground, introduced by Mr. R. Bolton, Warton.

## SOWING SWEET PEAS.

The time has now arrived for preparing to sow sweet peas, for it is now generally acknowledged that autumn sowings are best. Two different methods are practised, one is to sow the seeds in the open in the positions they are to occupy during the forthcoming summer, and the other is the more modern system of sowing the seeds in pots.

### Sowing in the Open.

Generally speaking, sweet peas will withstand any amount of frost, and perhaps no better test was ever provided than that which obtained during the early spring of the present year. A field of sweet peas was sown last October, in light soil, and owing to the fine open autumn the plants grew quickly, and soon reached a height of four inches. During the spring the weather was very severe, and just over the hedge adjoining this field 33 degrees of frost were registered. The plants, on the whole, withstood this severe test well, not more than 5 per cent. of them failing. The varieties differed, however, in their constitution, some of the lighter colours, especially the salmons, were cut badly, while the blues and maroons did not suffer in the least. One well-known grower, who always practises autumn sowing outside in the open ground, informed me he had suffered severely from frost last spring, and had lost numbers of plants owing to their being too forward.

I do not recommend outdoor sowing in the autumn, and never practise it, but those who still believe in this method should prepare the quarters the plants are to occupy at once, deeply digging the site and incorporating with the soil at the time of trenching plenty of well-rotted farmyard manure. If the peas are to be grown in clumps or rows a day should be chosen for sowing when the soil is dry, and works well. Before sowing the seeds should be soaked in paraffin oil for four hours, as this prevents the mice eating them. When the plants appear above ground, a strict look-out must be kept for slugs, which are fond of the young shoots, and will soon clear them off; a good dusting of slaked lime and soot is a preventive, but the best cure is to catch the slugs at night by the aid of a good acetylene cycle lamp and destroy them. When the plants are well up they should be destroyed with bushy twigs. Black cotton wound round the twigs will keep off the birds. I would advise those who intend sowing sweet peas outside to choose a warm spot, and especially a light soil, for where the soil is heavy and retentive the seeds will often rot.

### Sowing in Pots.

This is the practice that now obtains generally among all the best growers, and it can be most relied on. Owing to the bad season, the number of seeds in the packets of the novelties will probably be fewer than usual. The best date to commence sowing will be about October 14. A heap of soil should be prepared consisting of three parts sandy loam and one part coarse sand passed through a half-inch sieve. I do not advise the use of leaf-soil for sowing sweet peas, as fungus often arises from the bits of rotten stick, and spreads over the surface of the pots, strangling the plants. Four-inch pots are best for sowing the seeds in, and they must be clean. Place about four pieces of crock in the bottom of each, and fill with the compost to within one inch of the top, making the soil firm; the seeds should be placed evenly on the surface about five seeds in a pot, and covered with half an inch of the compost. Every pot should be correctly labelled at the time of sowing. The batch should then be placed in a cold frame on an ash base. No water will be needed until the seeds have germinated, which will be in about three weeks.

When the seedlings are showing through the soil the pots should be examined, and if any seeds have not germinated and are found to be hard, the outer shell or covering of the seed should be chipped slightly with a sharp knife; the seed will then quickly expand and grow. The pots should at all times stand as close to the glass as possible, so that the young seedlings may be encouraged to make strong, sturdy growth. Fresh air must be admitted at all times in abundance, and whenever the weather is favourable the lights are best pulled right off. The only exception should be when heavy rains prevail, or severe frost. I have never known frost to kill the young plants in frames, even if the soil is frozen hard in the pots, but this is best prevented by covering the frames at night with mats. Sweet peas detest coddling, and heat applied in any way is very injurious. So soon as the sweet peas have attained the height of four inches they should be potted off singly, using 3in. pots and a sandy compost. The pots must be clean inside, or the plants will not turn out well when they are required for planting. After potting stand them back again in the cold frame and encourage them to grow steadily until the time arrives for planting them out.

Lewis Smith.

Norwich.

## POETAZ NARCISSI.

The extremely powerful and aromatic fragrance of the bunch-flowered or Tazetta narcissi put these free-flowering varieties out of court for pot culture in many homes and gardens, and it unfortunately often happens that bad weather, which leaves a solid one-flowered daffodil practically unharmed makes a sad mess of the heads of closely clustering blossoms of a Tazetta variety.

These two weaknesses, if one may so call them, are absent from the newer and finer Poetaz narcissi, though I must not be too emphatic concerning the weather-resisting capacity of the varieties, because, so far, I have grown but few of them freely out of doors. As pot plants, however, and for cultivation in fibre in fancy bowls, there are no daffodils easier to manage and more likely to give general satisfaction in the home or the conservatory. I suppose everyone understands that the title of Poetaz is a hybrid one, indicating that the origin of the race is due to a combination of Tazetta with Poet's daffodils. One might be forgiven for imagining that Poetaz commemorated a hero of some picturesque eastern fable.

There is no difficulty in cultivating these free-flowering, strong-growing, beautiful varieties. Ordinary methods suffice, though it is worth remembering that the pots should not be crowded with bulbs, and that hard forcing is not desirable, owing to the rapid growth made and the consequent liability of the stems and leaves to elongate unduly under the influence of much artificial heat. Other things being equal, the Poetaz daffodils will require rather more water than the trumpet and poeticus sorts. It is a good plan to give each spike a very slender stick and a couple of ties by way of support, because some damage may be quickly done if a pot or bowl full of unsupported spikes is moved quickly from place to place when the flowers are ready to expand or have fully opened.

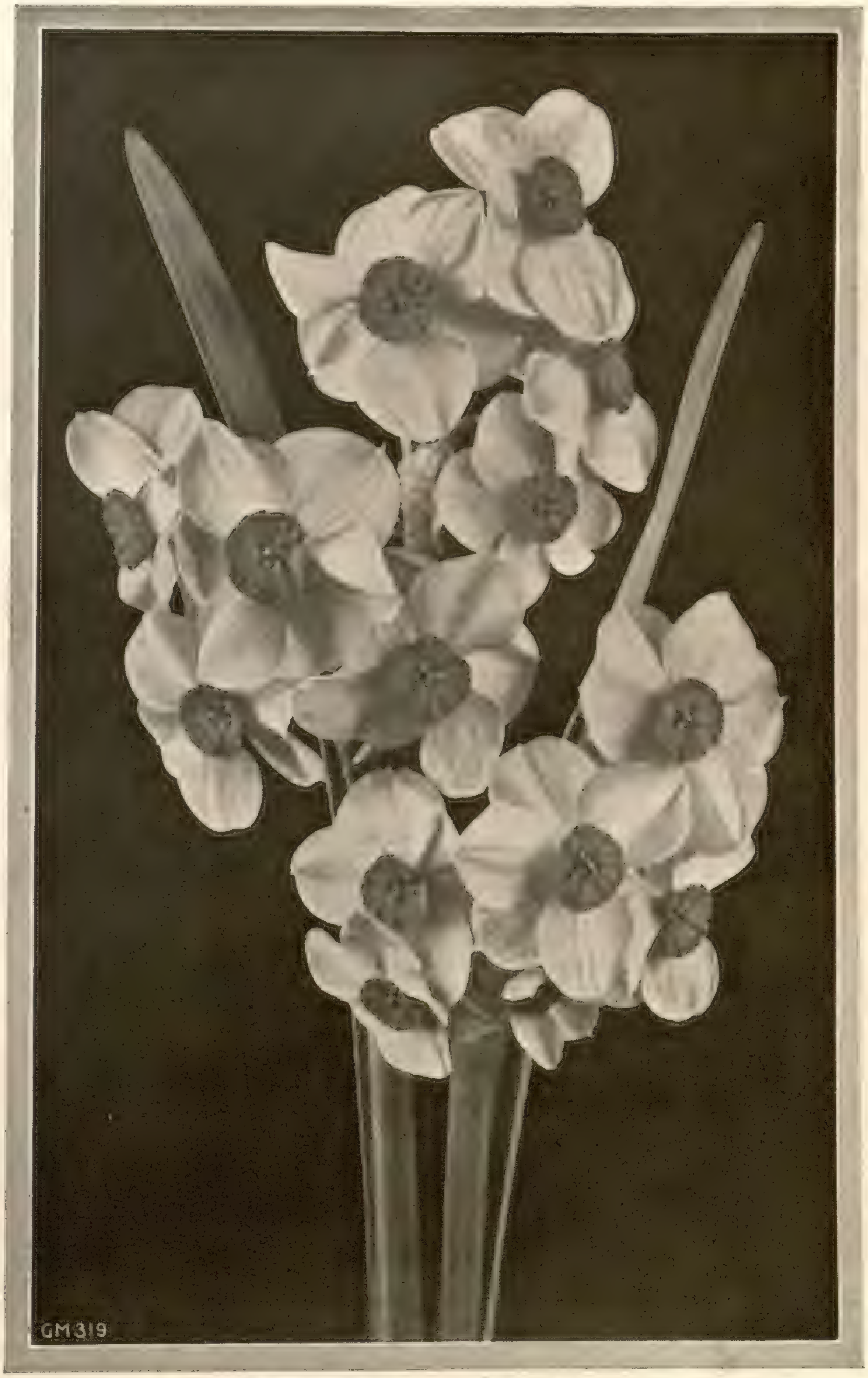
With very few exceptions, the Poetaz varieties are of Dutch origin, and the Messrs. Van der Schoot have been the leading raisers of this race. Mr. P. D. Williams has, however, produced a beautiful apricot-yellow, red-crowned variety named Scarlet Gem, but for the present I admire this afar, for the price is "too high for me, I cannot attain unto it." Mr. Engleheart is responsible for Orient, a beautiful variety with large white flowers, each with a red-edged crown. This is within reach, and so is Jaune à Merveille, the finest yellow variety, a rare beauty, carrying six or eight shapely blooms on a tall, stout stem. This is well illustrated herewith, from a photograph by Mr. G. W. Leak, representing spikes grown by Messrs. R. H. Bath, Lim., of Wisbech.

Three varieties that everyone ought to have, supposing they wish to grow Poetaz daffodils, are Aspasia, Elvira, and Klondyke. One cannot do better than make a start with these, whether on a large or small scale. Aspasia is white, with yellow crown, often grows 2ft. high, and its finely-formed flowers are borne in clusters of three or four. Elvira is of similar colouring, and has flowers of good size, particularly substantial and lasting. Klondyke is a yellow variety, producing large clusters of six or seven yellow, golden-crowned blooms. These three are cheap, and should make good subjects for bedding.

Other varieties, each possessing some good points, are Alsace, white and yellow, flowers large, usually in threes; Ideal, white, with deep yellow crown, generally six or seven flowers in a cluster; Irene, primrose, with orange crown, very free, a spike often carrying as many as nine flowers; Sunset, soft yellow, with orange crown, quite large for this race, and sometimes producing a cluster of six fine flowers; Triumph, white, with golden, frilled crown, flowers large, generally three together; and Lucia, deep yellow, with darker yellow crown.

This section will probably be greatly enlarged in the near future, though the present title may not prove accurately descriptive when the multi-flowered varieties are not only produced by crossing Tazetta with poeticus forms, but also Tazetta with the more substantial Barri and Leedsi varieties, and also re-crossing the present fine Poetaz sorts with such beautiful things as Homespun and Buttercup, for instance. At any rate, I for one have great faith in the future popularity of these bunch-flowered narcissi.

C. H. Curtis.



NARCISSUS JAUNE À MERVEILLE.
A fine Poetaz variety, with yellow, golden-crowned flowers, borne in clusters on stout spikes.

## WORK FOR THE WEEK.

### THE ORCHID HOUSES.

ONCIDIUMS.—The genus Oncidium is sure to be represented by plants in flower, no matter what the time of year, especially if well grown. One very pretty and useful species now in flower is O. obryzatum, its long and many-branched spikes carrying a large quantity of pretty golden-yellow flowers, spotted with light brown. The plants belonging to the O. crispum section, namely, O. Forbesi, O. curtum, O. Gardneri, O. Marshallianum, and O. crispum itself, are known by their rough, wrinkled pseudo-bulbs. O. Marshallianum produces its flowers during late spring and early summer, while the others display their beautiful sprays during late summer and autumn.

O. VARICOSUM ROGERSI.—Among the many beautiful and free-flowering members of this useful genus there is none that can excel O. varicosum Rogersi for autumn flowering. The flowers of all the kinds I have mentioned are showy, last a considerable time, are produced freely on erect, branching spikes, and therefore are desirable for any purpose; but the enormous number of blooms borne upon a single panicle taxes the plants very severely, and so weakens them that they take a very long time to recover. Owing to the cheapness of O. varicosum Rogersi, this is not of so much consequence as in the case of some others. In the case of rare and scarce varieties it is wise not to let them flower too often, taking care that the plants are in good health with plenty of roots, and thoroughly established when allowed to produce flowers. Even with established plants, care should be taken that the flower spikes are not allowed to remain upon the plants too long, and as soon as all the flowers are open the spikes should be removed.

CULTIVATION OF ONCIDIUMS.—These are best cultivated in shallow pans, suspended near the roof glass, where they may receive plenty of light and air, and be shaded from bright sunshine. In such conditions the growth will be hard and solid. They need a considerable amount of ventilation at this season, when the pseudo-bulbs are making up, as there are few orchids which more resent being grown in a confined, stuffy atmosphere. Close observation of the roots is the best guide as to the quantity of water the plants need at this season. Plants growing and rooting freely must have ample supplies of water whenever they become dry, and it will be noticed that the roots are most active at the time the flower spikes are forming. Many are now producing their flower spikes freely, and should be carefully guarded against injury from pests. All these oncidiums are best wintered in a well-ventilated structure, and those which have been grown in the cool house during the summer months will be better if removed to the cool end of the intermediate house, where the desired conditions can be maintained for them during the winter. After the flowers have faded the plants should be allowed to rest, and only sufficient water be given them to enable the pseudo-bulbs and leaves to keep plump and healthy.—J. T. BARKER, West Hill Gardens.

## STOVE PLANTS.

BEGONIA GLOIRE DE LORRAINE.—So useful and popular has this begonia and its sports become that we are inclined to wonder how we could do without them. They are indispensable plants for flowering during winter and spring, and, provided one has a clean, healthy stock, there need be no difficulty in having finely-flowered plants for at least six months in the year. The number of batches in various stages will, of course, be governed by the particular needs of the establishment, and the space at command. In our case the earliest batch is a small one, and they are the best of last year's plants shaken out and potted up last spring, and grown quietly all the summer. These are now fine specimens in 24's, and full of blossom. We have ceased to remove the buds from the first batch of young plants, and they will be available for decorative purposes in a few weeks. Other successional plants will have the flower buds pinched off for a while longer, and allowed to bloom as required. The latest batch should be as large as circumstance will allow, for perhaps these are the most useful of all, coming into bloom when there is a dearth of bright flowers. These should be potted at this time, unless they are to be kept in small pots to fit bowls, or other receptacles in the house. This procedure will induce them to make renewed growth, and but few flower buds. Buds that appear should be assiduously removed for some time to come to keep the plants growing freely and sturdily. Although this type of begonia revels in a humid atmosphere when in active growth, the structure should be kept ventilated throughout the day when fine, and a little top ventilation be left on during mild nights. This will ensure short-jointed and free-flowering growth. The earliest batches should be accorded special attention in this respect, and for preference they should be accommodated in a house having bottom ventilation near the hot-water pipes, as well as at the apex of the house. Continue to give periodical applications of liquid manure until the plants are in full flower, when only clear water should be given. Nothing is so safe and all-round reliable as liquid manure made from sheep or cow droppings, with a little soot added. Fowl or pigeon manure is also recommended, provided it has been laid aside for a few weeks before use, and then it should be well diluted.

OTHER WINTER-FLOWERING BEGONIAS, as Winter Cheer, Ensign, Julius, etc., should be kept growing freely on the same lines as for the Lorraine type, but I think more skill is required to grow them well. We find it is a good plan to occasionally change the stock of these varieties, and, if possible, procure them from a distance. An occasional mild fumigation with a nicotine compound will keep rust in check, if given in the early stages. In cases of a bad attack it is best to burn the whole of the affected plants, and get new stock. We had this pest badly in the variety Patrie last year, but a few young plants from another source enabled us to renew the stock, and now the batch is in rude health. Without doubt some varieties are more susceptible to rust than others.—H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

STRAWBERRIES IN POTS.—Give the plants plenty of room, to allow sunshine and air to circulate freely about them, so that the crowns will be fully developed and well ripened by the end of the autumn. The bright, sunny weather which we have experienced for the past few weeks has had a marked effect upon the growth of the plants. The earliest potted batch will be benefited by occasional watering of liquid manure and soot-water, but avoid the use of chemical manures at this stage of their growth. Keep the plants free from weeds and decayed foliage, remove all runners and side growths as soon as they appear, and guard against dryness at the roots; but, at the same time, only give sufficient water. Keep the soil in a moist condition. Syringe the plants several times with a solution of soft soap and sulphur to ward off the attacks of red spider and mildew; lay the pots on their sides when performing this operation, so that the under-sides of the leaves are thoroughly syringed with the mixture. If worms are troublesome in the soil, they can be eradicated by using a weak solution of lime-water.

RENOVATING VINES.—Presuming that all the grapes have been cut, this is the best time to lift the roots of vines that are in an unsatisfactory condition. Before commencing operations a sufficient quantity of good soil must be made ready, so that the work can be carried out expeditiously; the compost should consist of good fibrous loam chopped up into small pieces (it should have been cut and stacked for at least six months), incorporate with the loam plenty of old mortar rubbish, wood-ashes, charcoal, and bone-meal; turn it over together several times, and allow it to remain in a heap for a few days previous to being used. When dealing with the roots and borders, commence by taking out a trench three feet wide, down to the drainage material. Cut off all the roots that are found in the trench, which should be a distance of from six to ten feet away, if space permits, from the base of the vine. Carefully remove the soil from among the roots with a garden fork, gradually working towards the main stem. Exercise great care as the work proceeds, so as not to injure the roots, which should be carefully tied together in loose bundles and covered with wet mats to prevent them from drying. When this work is finished, carefully examine the drainage, and if not satisfactory, take means to set this matter right; place the new soil under the roots, and lay these out so that they are not in a confused mass. The top roots should not be deeper than four inches from the finished surface when they have been covered with the new soil. Make the soil quite firm as the work proceeds, and when the filling in has been accomplished the whole border should be given sufficient tepid water to settle the soil. Mulch the surface with long litter, and where the foliage is in a good healthy condition, the leaves must be kept well syringed to prevent flagging; while some means must be adopted to shade the vines for a few weeks until they have recovered from the check.—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

PHYGELIUS CAPENSIS.—For an autumn display this plant, sometimes known as the Cape Figwort, is very attractive. It grows about 3ft. high, and its rich scarlet flowers are produced in branching racemes at the ends of the shoots. It is quite hardy, but it succeeds best in a sheltered position. It prefers a light rich soil, and is propagated by cuttings, preferably from the base of the stems, as these are furnished with rootlets.

ZAUSCHNERIA CALIFORNICA. — The Californian Fuchsia is a lovely plant for autumn flowering, and is seen at its best during September. Its bright vermilion flowers are freely produced on erect stems, 15in. in height. It flourishes in sandy loam in the rock garden, but should be given a warm, sheltered position. It also grows successfully on an old wall when once established, and is best propagated from division of the roots or from seeds.

ANEMONE JAPONICA.—This is one of the most effective subjects at the present season, and the plants are producing an unusually bright display It is suitable for the herbaceous border or for planting in shrubberies, and it invariably succeeds best when not disturbed for a number of years. Rosea superba is a charming variety that should always be grown in addition to the white form.

COLCHICUMS. — These hardy bulbous plants contribute a bright display in the autumn, and, as the flowers open in succession, there is quite a long season of bloom. They are very effective growing among dwarf subjects in the rock garden, which is a better position for them than the flower border. They are probably seen at their best when naturalised in the grass, as the green forms a pleasing contrast and shows them to advantage. C. autumnale, with rosy-purple flowers, is well known. C. Parkinsoni is quite distinct, with singularly chequered markings on its violet-purple flowers. C. speciosum is a beautiful form, with large rosy-purple flowers, quite a foot above the ground. It prefers light sandy soil, and a fairly dry situation, exposed to full sunshine.

GENERAL WORK.—Take every care to keep the flower garden attractive and gay as long as possible. Upon the first sign of frost remove tender plants to a place of safety. Terrace plants, like agaves and bays, will need to be housed, and any other large specimens that are kept. All bedding plants that are required for another year must be stored in a cool pit where frost can be excluded. Most of the subjects will be potted up, and during bright days should be syringed regularly. Tuberous-rooted begonias should be carefully dried when lifted, and plants of Lobelia cardinalis must be boxed up and kept in a cool house, with very little water at the roots during the winter. Attend to all cuttings carefully, and give air when they are rooted, also pick off any decayed foliage that appears. Procure a supply of protecting material for different purposes. Where bulbs are grown, prepare the beds for them without delay. Those that are intended for naturalising in grass can be planted now; bold planting, comprising a large number of a variety in a group is the most effective method.—J. GARDNER, Batsford Park Gardens.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

A very large exhibition was held at the Royal Horticultural Hall on Tuesday, September 24. Every available inch of space was filled, and not only was the display a large one, but it was a good one also. Orchids were not numerous, but hardy flowers, dahlias, roses, fruits, and vegetables were very fine. The series of competitive classes for vegetables added materially to the size and interest of the show. New roses, dahlias, chrysanthemums, and orchids were also of special interest.

### FLORAL COMMITTEE.

Roses were in great force. Messrs. Alex. Dickson and Sons, Newtownards, had a brave show of lovely autumn blooms, and in many cases the flowers were as fine as in summer. Chief interest centred in the new varieties, such as the yellow Mrs. Mackellar (A.M.), the dark crimson George Dickson (A.M.), Edward Bohane (A.M.), a lovely and shapely red rose; Lady Pirrie, Grace Molyneux, Mrs. Fred Straker, Red Letter Day, etc. Messrs. Wm. Paul and Son, Waltham Cross, staged a beautiful collection of roses, and set up charming displays of Pharisaer, Lyon, Corallina, Mrs. A. R. Waddell, Ophelia, Lady Downe, Mdme. Abel Chatenay, Juliet, A. R. Goodwin, Coronet, Joseph Hill, etc.

A fine exhibit of roses from Messrs. Frank Cant and Co., Braiswick, Colchester, consisted of bunches of the best autumn-flowering roses, and especially good were Mdme. Melaine Soupert, Mdme. Charles, Lady Hillingdon, Queen Mab, La Tosca, Lyon, Mdme. Antoine Mari, Mdme. Ravary, Ecarlate, Sulphurea, and A. R. Goodwin.

A very pretty exhibit of roses came from Messrs. Benjamin Cant and Co., Colchester, whose large stands of Mdme. Abel Chatenay, Mdme. Melaine Soupert, Jessie, Mdme. Falcot, Irish Elegance, La Tosca, Warrior, Lyon, and Gustave Nabonnand were very striking.

In the group of carnations from Messrs. Stuart Low and Co., Enfield, there were good bunches of Baroness de Brienen, Royal Purple, Carola, Rose Doré, and White Enchantress. A goodly selection of Michaelmas daisies, set up by Mr. H. J. Jones, Rycroft, Lewisham, was well disposed; good things shown were Flossy, Rosalind, Climax, Keston Blue, Mrs. Duncombe Mann, R. C. Pulling, Miss Parish, and Mr. S. T. Wright.

Messrs. Pipers, Bayswater, were represented by a collection of alpines, chiefly saxifrages in pots and pans. Messrs. Robert Veitch and Sons, Exeter, staged the blue Veronica Veitchi, Nerine Bowdeni, N. B. pallida, Cyrtanthus hybridus, Calceolaria Veitchi, Clematis nutans, Magnolia grandiflora Exmouth var., and other rare and beautiful things. Some capital sweet peas, shown by Messrs. Jarman and Co., Chard, were interesting, because they were from plants that had seeded, but which had grown away again as a result of moist weather, and flowered freely at the top of the sticks. Most popular sorts were represented, and the blooms were quite good.

Messrs. Jas. Veitch and Sons, Chelsea, exhibited some beautiful streptocarpuses, brilliant cannas, nerines, and ixoras, and flowers and plants of a very fine tritoma named Lord Roberts, with very large spikes of rich deep coral red flowers. Standard salvias from the same firm were very bright. Mr. W. Easlea, Eastwood, Essex, had a small exhibit of such charming roses as Lyon, Mdme. Melanie Soupert, Juliet, Mrs. David McKee, Lady Hillingdon, Marquise de Sinety, Gottfried Kellar, etc. Messrs. H. Cannell and Sons, Swanley, were represented by hardy flowers in great variety, but their sheaves of the golden Helianthus sparsifolius and of Helenium Riverton Gem were conspicuously good.

The early chrysanthemums exhibited by Messrs. W. Wells and Co., Merstham, included J. Bannister, Le Garonne, Crimson Polly, Verona, Roi des Blancs, Bronze Goacher, Polly, and Leli, all good varieties. Jean Carter, a new yellow single, gained an A.M. Framfield Early White, a fine large early white chrysanthemum from Mr. Norman Davis, Framfield, Sussex, also gained an A.M. Gladioli formed the chief attraction in the exhibit from Messrs. R. Wallace and Co., Colchester, and the purple-blue Baron Hulot was the most conspicuous variety, though the paler Claude Monet, and the fawn and buff hybrids from G. primulinus were attractive

Mr. Dixon, gardener to Mary Countess of Ilchester, Holland House, Kensington, showed a collection of berried sprays of cratægus, these forming a very interesting little exhibit. Mr. Amos Perry, Enfield, and Mr W. Ingwersen, South Croydon, each showed new Michaelmas daisies, the latter staging several double sorts, such as Colwall Beauty and Moonlight. Mr Gentle, Little Gaddesden, again showed his new scarlet pentstemon, Gaddesden Gem.

Messrs. William Cutbush and Son, Highgate, had a pretty exhibit of roses and carnations. Dwarf polyantha roses were used as a groundwork for tall stands of good autumn-flowering roses, and for fine bunches of Countess of Lathom, Lord Rothschild, and Edna, the latter a fine mauve-heliotrope variety. Messrs. R. W. Procter and Sons, Chesterfield, had a nice group of cut roses. Messrs. R. H. Bath, Lim., Wisbech, showed large sheaves of Martin Reed, a new bright yellow early chrysanthemum of great beauty.

A grand bank of hardy flowers from Mr. James Box, Lindfield, commanded attention for its effectiveness as well as for the variety and quality of its contents. Heleniums, phloxes, rudbeckias, delphiniums, a famous lot of early chrysanthemums, a fine lot of Cimicifuga simplex, and sheaves of Hollandia, princeps, America and White Excelsior gladioli were among the more striking features of this display. A very interesting collection of sprays of ornamental foliaged and berried shrubs, from Messrs. Paul and Son, Cheshunt, included Catalpa pulverulenta, Euonymus atropurpurea, Pyrus sorbus, Prunus Moseri, fl. pl., Rhus typhinia laciniata, golden elms, maples, etc.

Sweet peas that seemed to be unusually well waved were submitted by Messrs. Dobbie and Co., Edinburgh; the flowers were lovely in colour, size, and fragrance, and notably good were the bunches of May Campbell, Mrs. W. J. Unwin, Dobbie's Cream, Melba, Rosabelle, Countess Spencer, Elfrida Pearson, and Edrom Beauty. Splendid scabious and a rare collection of the best and newest collarette dahlias helped to make up a large and bright display. Messrs. Barr and Sons, Covent Garden, displayed a capital lot of gladioli and selections of Michaelmas daisies and early chrysanthemums.

Messrs. T. S. Ware, Lim., Feltham, had a great show of Michaelmas daisies, pæony-flowered dahlias in great variety, and cactus dahlias in all the colours of the rainbow save blue. Rather solidly banked were the gorgeous pæony-flowered dahlias from Messrs. Bakers, Wolverhampton; The Warrior, Codsall Gem, Mrs. T. A. Weston, Liberty, J. S. Brunton, and Germania were outstanding sorts. Mr. E. Dixon, Putney, showed hardy flowers, as did Messrs. G. and A. Clark, Dover, these latter having the graceful Cimicifuga simplex in full form. Choice ferns from Messrs. H. B. May and Sons, Edmonton, were a fine foil to the brilliant colours of dahlias, etc.

Mr. J. T. West, Brentwood, gained an A.M. for Useful and Johnny, a decorative and a pompon dahlia respectively; he made a rare blaze with pæony-flowered, decorative, and cactus dahlias, and among them all Brentwood Yellow was again conspicuously good. Collarette dahlias were boldly shown by Mr. James B. Riding, Chingford; these were backed by pæony-flowered sorts, and the collection also included Madame Leggrange, Madame C. Molin, Deputé Aynand, Meissonier, and Mons. C. Dupont, new anemone-centred varieties that suggest the possibilities of dahlias are not yet fully fathomed.

Messrs. J. Cheal and Sons, Crawley, made a splendid bank of colour with cactus, single, and pompon dahlias; among the former Harold Peerman, Red Admiral, Miss Stredwick, Mrs. Usmar, Ruby Grinstead, and Snowdon were very fine. Collarette, pæony-flowered cactus and decorative dahlias were boldly staged by Messrs. Carter, Page, and Co., London Wall; the same firm displayed a charming collection of violas, very clean and bright and fragrant, and also collections of antirrhinums and early chrysanthemums.

Mr. C. Turner, Slough, presented fine examples of Attraction, Eleanor, Delice, Yellow Colosse, Loveliness, and Mdme. Lumere, all large, decorative dahlias of great beauty, fine colour, and good size; besides these there were selections of pompon, show, collarette, and pæony-flowered dahlias in fine condition and variety.

Of considerable interest was the collection of capsicums shown by Mr. Thomas Stevenson, gardener to E. G. Mocatta, Esq., Woburn Place, Addlestone; these were well grown and freely fruited, the most effective sorts being Chameleon, Early Dwarf Yellow, Bouquet, Mammoth, Yellow, Ruby King, Elephant's Trunk, Chinese Giant (a very large, stout, fruited form), Chinois, and the round berry-like Cerise.

### ORCHID COMMITTEE.

Mr. A. W. Metcalfe, gardener to Lady Wernher, Luton Hoo, Luton, brought up a beautiful lot of splendidly-grown orchids. The examples of Vanda cærulea were very fine, the spikes bold, many-flowered, and of lovely deep colour. Dendrobium formosum giganteum was equally good, while Cypripedium W. R. Lee, var. Lord Derby carried fifteen spikes, and Lælio-cattleya Bletchleyensis and L.-c. Dominiana were capital. From Messrs. Hassall and Co., Southgate, came a good set of plants of Cattleya Minucia, carrying beautiful mauve flowers; C. labiata, and C. Nestor were also shown.

Of quite outstanding merit was Odontoglossum Woodroffeæ (Rossi rubescens and Queen Alexandra) with brown and yellow sepals and petals, and a purple, yellow-based lip, shown by Mr. E. H. Davidson, Borlases, Twyford. This gained a F.C.C. The same exhibitor showed the bright Sophro-cattleya Dora, and numerous examples of Cattleya aurea. Messrs. Stuart Low and Co., Enfield, had a bright little exhibit of orchids, wherein Oncidium varicosum was prominent. Houlettia Brocklehurstiana, Cattleya Hardyana Enfieldense, Odontoglossum Uro Skinneri alba, and other good things were included.

The contribution from Messrs. J. and A. McBean, Cooksbridge, comprised a few pretty odontoglossums and odontiodas; conspicuously good was Cattleya Lord Rothschild albescens (A.M.), with white sepals and petals, and a golden lip with a few purple markings; and Cymbidium erythrostylum. Messrs. Charlesworth and Co., Haywards

Heath, submitted Cycnoches maculatum, Brasso-cattleya Maroniæ with a grand flower, Cattleya Rhoda, C. sirius, and Pilumna nobilis alba.

Zygopetalum maxillare var, Sanderiana with green sepals and petals and a white lip, secured an A.M. for Sir Trevor Lawrence, Bart. (grower, Mr. White), Burford Lodge, Dorking. An Award of Merit was granted to Odontoglossum Neptune (crispum x nebulosum) from Mons. H. Graive, St. Fascien, Saires, France. Lælio-cattleya Hastediana (L.-c. Henry Greenwood x C. Aurea), with a very deeply frilled, dark crimson-purple lip with gold veins, gained an A.M. for C. G. Phillips, Esq., The Glebe, Sevenoaks.

## FRUIT AND VEGETABLE COMMITTEE.

Finely-grown and most elegantly staged were the vegetables from Messrs. Sutton and Sons, Reading. Carrots, beet, and parsnips were wonderfully good, as though turned on a lathe; Ailsa Craig and Sutton's Globe were large and solid, while the useful Celeriac was distinctly ugly among the brilliant tomatoes and creamy cauliflowers. Celery and leeks and beans were capital, and the Chilian beet was of wonderful colour, and helped to increase the effectiveness of a grand exhibit. Mr. H. Hemsley, Crawley, entered the arena as an exhibitor of vegetables; he set up good samples of Factor potatoes, Gladstone peas, Defiance tomatoes, etc.

A splendid collection of apples and pears shown by Mr. R. C. Notcutt, Woodbridge, deserved special mention, as the fruits were very clean, bright, and of fine size. Jas. Grieve, Dr. Harvey, Chas. Ross, Lane's Prince Albert, Warner's King, Stirling Castle, Ribston Pippin, Frogmore Prolific, Newton Wonder, Peasgood's Nonsuch, Bismarck, Lord Derby, and Hollandbury were apples shown in the pink of condition. Mr. J. E. Peters, Menpes Fruit Farm, Purley, near Reading, sent large baskets of big fruits of Superlative, Hero of Lockinge, Ringleader, Universal, Emerald Gem, Royal Jubilee, and Sutton's Scarlet melons.

A very interesting collection of vegetables, staged by Messrs. Jas. Veitch and Sons, Chelsea, attracted considerable attention, because of its effectiveness and the merit of the subjects exhibited. Among many good things two novelties were conspicuous. One a new pebble-shaped white potato named Vitality, has been grown in Ireland, and in a crop of two tons there was not a single diseased tuber. The other novelty was an intermediate beet,, with roots six or eight inches long, and about 2½ inches in diameter for the whole of its length; the colour was superb. This, we understand, is a selection from the old round Egyptian, and is quite fixed.

A large contribution of vegetables from Messrs. James Carter and Co., Raynes Park, was finely arranged, and represented excellent varieties very well grown. Record and Ailsa Craig onions, Scarlet Emperor and Red Giant runner beans, Trailing White marrows, Holborn Marrow parsnips, aubergines, radishes, celery, cardoons, potatoes, turnips, peas, lettuces, cabbages, sprouts, cucumbers, etc., were all staged in capital condition, and proved a great attraction.

A collection of a hundred varieties of pears from Messrs. George Bunyard and Co., Maidstone, proved of great interest and educational value. In every case about a dozen and a-half even, clean, medium sized fruits were presented in baskets or on dishes. Many uncommon sorts were exhibited, but all the best sorts were on view, such as Conference, Potmaston Duchess,Beurre Fouqueray,Beurre Diel, Beurre Hardy, Doyenne du Comice, Louise Bonne of Jersey, Durondeau, Beurre Naghin, Marguerite Marillat, Mdme. Treyve, Fondante Thirriott, Triomphe de Vienne, Glou Morceau, Princess, Marie Louise, etc.

Messrs. Dobbie and Co., Edinburgh, displayed a beautiful lot of potatoes, clean, even, and in considerable variety, representing no fewer than fifty sorts. Red King, Climax, Sutton's Flourball, Crimson Beauty, Mr. Bresse, Exhibition Red Kidney, Herd Laddie, Eightyfold, Selected Russet, Purple Eyes, Pink Champion, and King Edward VII., provided an unusually good selection of coloured sorts, but, of course, white varieties of great merit were associated with them.

## CERTIFICATES AND AWARDS.

First Class Certificate.—To Odontoglossum Woodroffeæ, from Mr. E. H. Davidson, Borlases, Twyford.

Award of Merit.—To Odontoglossum Neptune, from Mons. Graive, St. Fuscien, Saires; to Lælio-cattleya Hastediana, from Mr. C. G. Phillips, The Glebe, Sevenoaks; to Zygopetalum maxillare Sanderiana, from Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking; to Cattleya Lord Rothschild albescens, from Messrs. J. and A. McBean, Cooksbridge; to Chrysanthemum Joan Carter, from Messrs. W. Wells and Co., Merstham; to chrysanthemum Framfield Early White, from Mr. Norman Davis, Framfield, Sussex; to Tritoma John Benary, from Messrs. Jas. Veitch and Sons, Chelsea; to decorative dahlia Useful and pompon dahlia Johnny, from Mr. J. T. West, Brentwood; to cactus dahlias Jenny Wren and Mrs. Randle, from Messrs. J. Stredwick and Son, St. Leonards; to roses George Dickson, Mrs. Mackellar, and Edward Bohane, from Messrs. Alex. Dickson and Son, Newtownards; to rose Little Dorrit, from Messrs. Paul and Son, Cheshunt; and to apple Turner's Prolific, from Mr. Chas. Turner, Slough.

## MEDALS.

Gold.—To Messrs. Sutton and Sons, Reading, for vegetables; to Mr. R. C. Notcutt, Woodbridge, for apples and pears; and to Messrs. G. Bunyard and Co., Maidstone, for pears.

Silver-gilt Knightian.—To Messrs. Jas. Carter and Co., Raynes Park, for vegetables; to Messrs. Jas. Veitch and Sons, Chelsea, for vegetables; to Mr. Peters Menpes Fruit Farm, Purley, Reading, for melons.

Silver-gilt Flora.—To Lady Wernher (gardener, Mr. A. W. Metcalfe), Luton Hoo, Luton, for orchids.

Silver-gilt Banksian.—To Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. Frank Cant and Co., Braiswick, Colchester, for roses; to Messrs. Alex. Dickson and Sons, Newtownards, for roses; to Messrs. Dobbie and Co., Edinburgh, for sweet peas and scabious; to Messrs. Wm. Paul and Son, Waltham Cross, for roses; to Messrs. Dobbie and Co., Edinburgh, for potatoes.

Silver Knightian.—To Lady Wernher (gardener, Mr. Metcalfe), Luton Hoo, for apples and pears.

Silver Flora.—To Mr. Jas. Box Lindfield, for hardy flowers; to Messrs. J. Cheal and Sons, Crawley, for dahlias; to Messrs. H. B. May and Sons, Edmonton, for ferns; to Messrs. Jas. Veitch and Sons, Chelsea, for greenhouse flowers; to Messrs. Hassall and Co., Southgate, for orchids; to Messrs. Stuart Low and Co., Enfield, for orchids.

Silver Banksian.—To Messrs. W. Cutbush and Son Highgate, for roses and carnations; to Mr. H. J. Jones, Lewisham, for perennial asters; to Messrs. Carter Page and Co., London Wall, for dahlias, etc.; to Messrs. Paul and Son, Cheshunt, for cut shrubs; to Messrs. Pipers, Bayswater, for alpines; to Mr. J. B. Riding, Chingford, for dahlias; to Mr. Chas. Turner, Slough, for dahlias; to Messrs. R. Wallace and Co., Colchester, for gladioli, etc.; to Messrs. W. Wells and Co., Merstham, for chrysanthemums; to Mr. J. T. West, Brentwood, for dahlias; to Mary Countess of Ilchester (gardener, Mr. C. Dixon), for cratægus.

Bronze Flora.—To Messrs. Procter and Sons, Chesterfield, for roses.

Bronze Banksian.—To Messrs. S. Low and Co., Enfield, for carnations; to Messrs. Price and Fyfe, Lee, for chrysanthemums; to Messrs. T. S. Ware, Lim., Feltham, for dahlias; and to Messrs. Jarman and Co., Chard, for sweet peas

## VEGETABLE SHOW.

This addition to the meeting on Tuesday was evidently a source of attraction, for there were many new faces present, and the classes were discussed with the avidity one associates with a country show. The collections, taken as a whole, were very fine, and gave the last word as far as effective staging is concerned. The competition in the single dishes was most keen, and the vegetables throughout were of a high order of merit

The premier class for twelve distinct kinds of vegetables produced three entries, the first prize being awarded the Hon. Vicary Gibbs, Aldenham House, Elstree (gardener, Mr. E. Beckett), who put up a splendid display. Each kind was as nearly perfect as possible. Perhaps the best were Ailsa Craig onions, perfect models of the type, parsnip Tender and True, potatoes Windsor Castle, leek Prizetaker, cauliflower Early Giant, and pea Centenary. Mr. H. T. Tatham, Kendall Hall, Elstree (gardener, Mr. W. Gaiger), was second with fine examples of Student parsnips, Early Giant cauliflower, Prizetaker leeks, and Ailsa Craig onions. The peas were the only weak-looking dish. Mr. F. Barber, Brooks Cottage, Eynsford, was placed third. In a smaller class for nine kinds, Mr. W. H. Myers, Swanmore Park, Hants (gardener, Mr. G. Ellwood), secured first prize with a really fine exhibit. The leeks were simply wonderful, while Duke of Albany peas, Ideal potato, and Early Giant cauliflowers were a fine feature. Col. Cox, Harefield, Uxbridge (gardener, Mr. J. Orton), was placed second with typical exhibits of Premier onions, Standard Bearer celery, Prizewinner runner beans, and Duchess of Cornwall potato; while Mr. R. Staward, Panshanger Gardens, Hertford, was a very creditable third. There were four entries here.

The collections for six distinct kinds brought out six entrants. Mr. Brodie Henderson, Little Berkhampsted (gardener, Mr. H. Smith), led off with a clean, bright collection, the best dishes being Centenary peas in fine condition, Early Giant cauliflower, Ailsa Craig onions, and tomato Perfection. He was followed very closely by Mr. J. Kerr, Loudwater, Rickmansworth (gardener, Mr. T. Avery), who excelled with Premier onions and superb examples of Autumn Giant cauliflower. Miss E. L. Bradshaw, The Grange, Steeple Aston, Oxon, was a good third, while Mr. H. Keep, Aldermaston, Reading, brought up the rear.

There were four competitors for twelve distinct varieties of potatoes, and a fine exhibit they made, too The first prize was awarded Mr. R. McMurdie, Woburn Park, Weybridge (gardener, Mr. A. Basile), who staged some splendid tubers, the best being The Factor, Duchess of Cornwall, King Edward VII., Crimson Beauty, Purple Eyes, and Mr. Bresse. The second prize was awarded Mrs. E. H. Denison, Little Gaddesden, Berkhampsted (gardener, Mr. A. G. Gentle), who had very fine dishes of Excelsior, Herd Laddie, The Factor, Purple Eyes, and Emperor. The third prize went to Sir M. Turner, The Bedfords, Havering, Romford (gardener, Mr. A. Humphrey), who staged some good level dishes.

There were five competitors for six dishes, distinct, the first position being awarded to H. W. Henderson, Esq., Serge Hill, King's Langley (gardener, Mr. F. L. Pike), who staged fine examples of Chapman, Irish Hero, Factor, and Erin's Queen. Mr. W. Gaiger followed with larger samples, but they lacked the finish of the first-prize collection. Mr. E. Beckett had to be content with third place. The onions made a brave show, the first prize being won handsomely by Mr. G. Ellwood, who had fine clean examples of Ailsa Craig, Cocoanut, Magnum Bonum, Sutton's Perfection, Sutton's A1, and Cranston's Excelsior. Mr. E. Beckett was second with some huge bulbs; and Mr. R. S. Staward third.

There were three entries for a collection of salads in nine varieties, and a fine show they made, too. Mr. E. Beckett led off with lettuces, endive (in fine condition), tomato Satisfaction, Ideal cucumbers, and a fine mound of French Breakfast radishes. Mr. W. Gaiger was a capital second, while Mr. R.

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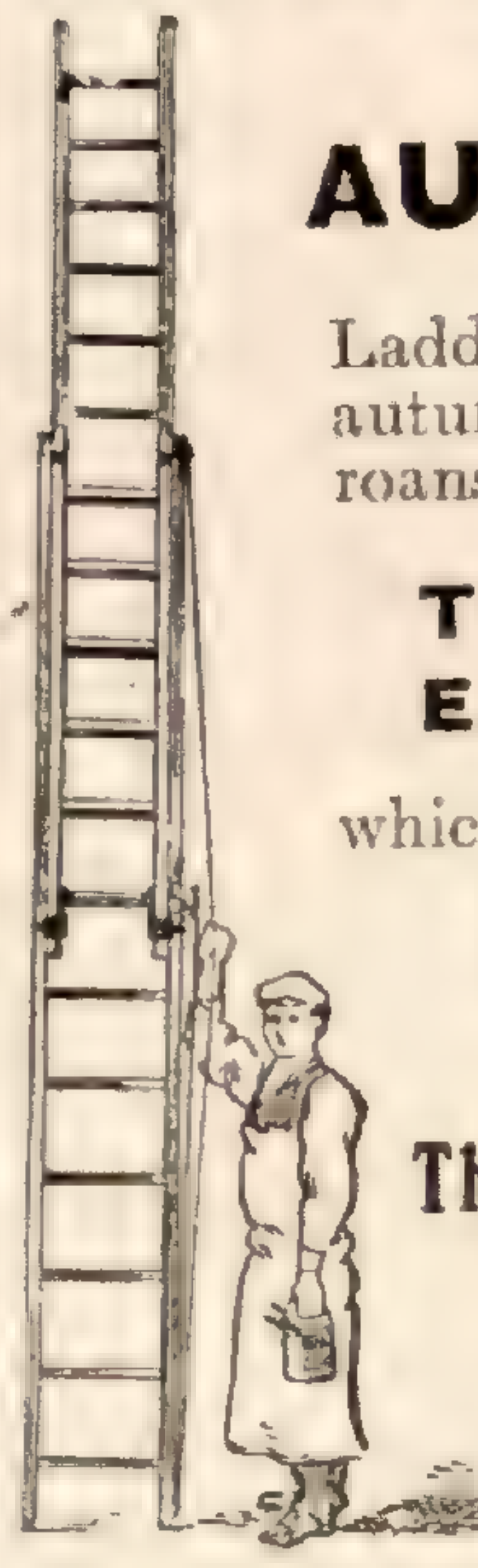

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Staward brought up the rear The smaller collection of six kinds was contested by a similar number of exhibitors. Mr. G. Ellwood was first with nice even samples. Mr. H. Smith followed closely, while the Rev. L. C. Chalmers Hunt, Willian Rectory, Hitchin, was third.

Mr. E. Beckett was awarded first prize for six kinds of the minor vegetables, staging in an attractive manner salsify, scorzonera, egg plant, kohl rabi, celeriac, and fine capsicums. Mr. G. Ellwood was second.

The scarlet runner beans were a very fine class. Mr. G. Ellwood led off, followed by Mr. H. Keep, Mr. E. Beckett being third. The entries in the single dish classes were very numerous, especially in the classes, devoted to carrots, parsnips, Brussels sprouts, tomatoes, and cauliflowers. The chief prizewinners were Messrs. E. Beckett, A. G. Gentle, A. Basile, H. Smith, G. Ellwood, R. Staward, and W. Gaiger, who seemed to divide the honours pretty evenly between them.

### SCIENTIFIC COMMITTEE.

SEPTEMBER 12.

PRESENT.— Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Messrs. J. W. Odell, A. Worsley, J. Fraser, G. Wilson, E. M. Holmes, W. Hales, J. O'Brien, and F. J. Chittenden (hon. secretary).

ERICA CINEREA MALFORMED.—Mr. E. M. Holmes showed a specimen of Erica cinerea from Ringwood in which the corolla was divided to the base so that the flowers had the appearance of those of ling. He also showed a specimen from Studland in which the flowers were replaced by very numerous bracts almost as in the wheat-ear carnation.

MALFORMED ARMERIA.—Mr. A. W. Hill reported that he had examined the flowers sent to the last meeting in which the corolla was replaced by a calyx, so that there were two calyces, and had failed to find either fungus or mite present to account for it. It was suggested that something, such as eelworms, had attacked the roots.

SWEET PEA WITH PROLIFEROUS INFLORESCENCE.—Mr. Fraser showed an inflorescence of sweet pea which after flowering had elongated and produced leaves and flowers to the number of 14 in all.

LYSIMACHIA VULGARIS. — He also showed a shoot of Lysimachia vulgaris which had grown out of a shady position in a horizontal fashion, and the leaves had arranged themselves as in a shoot of polygonatum.

WATSONIA.—Mr. A. Worsley showed a specimen of Watsonia iridifolia which differed in some respects, but especially in its extreme robustness, from the variety O'Brieni (also called Ardeni). It was thought probable that it was merely a robust form of that variety.

MUSA BAKERI.—He also showed staminate flowers of Musa Bakeri from a plant raised by him from seed.

CERTIFICATE OF APPRECIATION.—The Council have awarded a Certificate of Appreciation to Mr. C. H. Hooper for his work in connection with pollination of hardy fruits.

SEEDS OF PARROT TULIPS.—Some fruits of Parrot tulips were sent from Sussex, but on examination the seeds contained were found to possess no embryo.

## National Chrysanthemum Society.

A well-attended meeting of the committee was held at Carr's Restaurant on Monday, September 23, Mr. T. Bevan presiding.

Arrangements were made for holding the annual dinner at the Holborn Restaurant on November 27. In connection with the conference to be held at Essex Hall on November 20, at 7 p.m., Dr. Russell, of Rothamstead, has consented to deliver an illustrated lecture on "Soil Sterilisation."

Some time was occupied in balloting for the judges for the exhibitions at the Crystal Palace. Mr. Bevan was elected to act as the society's delegate to attend the International Congress, to be held next spring in connection with the Ghent Quinquennial Exhibition. A statement of accounts showed a balance of £58 0s. 3d. on the right side.

## North of England Horticultural Society.

SEPTEMBER 18.

The meeting, with lecture, and small show, at the Queen's (Midland) Hotel, on the 18th inst., was a great success. The room was filled with a keenly-interested audience to hear a lecture on "Commercial and General Manures," by Mr. W. Dyke, F.R.H.S. Professor R. S. Seton, B.Sc., of Leeds University, was in the chair. The market growers, Leeds rhubarb growers, head gardeners, and fellows and members present were delighted with a collection of fruit (grapes, apples, pears, peaches, etc.), from Lady Nunburnholme, Water Priory (head gardener, Mr. F. Jordan), which was unanimously recommended a large gold medal; also gladioli from Mr. J. C. Fordy, Warkworth, Northumberland, which were accorded a vote of thanks and a cultural certificate. Gloxinias and coleus were admirably shown by the Rev. Gallacher, Hunslet Vicarage, in the heart of Leeds, and the award of a silver medal was made. First class certificates were conferred on collarette dahlias Prince John and Frogmore, from Messrs. Dobbie and Co., Edinburgh, and on chrysanthemum Crimson Polly, from Messrs. W. Wells and Co., Merstham, Surrey.

## Broughty Ferry Horticultural Association.

The ordinary monthly meetings were resumed on the evening of the 17th inst., when Mr. Thomas Wilson, Glamis Castle Gardens, gave an interesting and instructive lecture on "The Formation of Fruit Tree Borders." Dealing broadly with the general principles of fruit cultivation, the lecturer confined his remarks mostly to the formation of vinery borders. Of these he had much to say, both of his own method and in criticism of other methods adopted by men who, in their day and generation were considered experts in the art. Unfortunately, their formulæ were often followed with disastrous results when a simpler and less expensive method might have been carried out with success.

A prolonged discussion followed, and many questions were put and answered by the lecturer, who, on the call of the president, Mr. James Bethel, was cordially thanked for his communications.

The exhibits consisted of cut flowers of Primula japonica hybrida from Mr. George Masson, salpiglossis from Mr. Jas. Slater, collarette dahlias from Mr. Wm. Grant, and a stand of double begonias and a stand of cactus dahlias from Mr. David Keiller; the latter exhibitor was awarded the monthly prize for his exhibit.

The President then presented the silver medal won at the sweet pea exhibition by Mr. George Masson, and reported that the gold medal had been posted to the winner, Mr. McOmish, Crieff.

**Aster Saturn.**—We are informed by Messrs. G. Bunyard and Co. that this beautiful aster, of which an illustration was given in our issue of the 21st inst., was raised by Mr. Ernest Ballard, of Malvern—the raiser of Beauty of Colwall—who sold the stock to them.

"**Sweet Peas and Their Cultivation,**" by C. H. Curtis, is a compact and very readable Guide to the culture of this lovely and fragrant flower. Mr. Curtis, who is Hon. Secretary of the National Sweet Pea Society, deals fully and practically with its varieties, culture, and diseases. The book is well illustrated, and can be obtained from our publisher for 1s. 2d. (cloth 1s. 9d.), post free.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

PEACH CULTURE IN ONTARIO.—L. S., Manchester: Can you give me some idea of the prospects of peach culture in Canada, particularly in Ontario? I mean the general cost of production, and the returns.—The chief agent to the Ontario Government states that good peach land planted in Ontario costs from £50 per acre upwards; unplanted from £10 upwards. Trees will bear a commercial crop in the fourth year, and should last 15 years. Ontario produces 99 per cent. of all the peaches grown in Canada. No irrigation is needed, the rainfall being sufficient. The following are official figures giving particulars of the cost of establishing a peach orchard. Annual cost per acre of bearing trees: Spraying, manuring, pruning, and cultivating, £5 15s.; picking, packing, and packages, £10 17s. 10d.; hauling to station (depending somewhat on location), £1 0s. 8d.; total cost, £17 13s. 6d. The profits: 700 baskets of peaches (11 quarts), £71 18s. 4d.; less the expenditure, £17 13s. 6d.; total net profit per acre, £54 4s. 10d. In addition to this profit there is an annual advance in value of improved peach land, more than sufficient to pay interest on the investment.

BRITISH FERNS.—J. J., Ulverston: Kindly tell me whether there is a good modern book dealing with British ferns and their varieties.—"British Ferns and Their Varieties" is the title of a recent work by Mr. C. T. Druery, V.M.H.; it is freely illustrated, and published by Messrs. Routledge and Sons, at 7s. 6d.

THE TULIP MANIA OF 1637. — G. A. S. B., Elstree: Could you give me a brief account of the Tulip Mania or Tulip Swindle of 1637?—Accounts of the Tulip Mania are to be found in many old books devoted to the history of floriculture. Phillips, in his "Flora Historica," writes: "It was towards the middle of the seventeenth century that the rage for flowers, and particularly for tulips, was carried to such an excess, both in Holland and France, as to produce bankruptcy and ruin to many families; and we are told the Tulipomania, for so it was justly termed, was entered into with as much avidity for a time as the Mississippi and South Sea Schemes, which were attended with such ruinous consequences. It would be almost impossible for us to credit the extraordinary accounts handed down respecting the high prices given for tulips by the Dutch florists of that age, were we not acquainted with their gambling speculations in this bulb, which carried them to much greater excess than their real fondness for flowers. Betting to a ruinous amount was often made respecting the eventual superiority of promising seedling bulbs, and for the possession of breeders of high merit, from which fine seedlings might be expected, as large a sum was given as the fleetest race-horse of the British turf ever sold for. About the year 1636 this spirit of floral gambling was carried to such excess at Haarlem, that during three years it is said to have yielded to that city a sum not less than ten millions sterling, for the price of these bulbs rose higher than that of the most precious metal. For a single tulip, to which they had given the fine name of Semper Augustus, 4,600 florins, a beautiful new carriage, two horses, with harness, etc., were given; and another of the same kind

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**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43. Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER, age 28, seeks SITUATION as Head of two or three; life experience in all branches; Inside and Out; married, no family. CLARK, Park Lane, Sandy, Beds.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head); life practical experience in all branches; disengaged when suited; six years' good reference from present employer. KETTLE, Violet Cottage, Whitstone Road, Pen-y-lan, Christchurch, Newport, Mon.

GARDENER seeks SITUATION (Single-handed); experienced (Inside and Out), or good Kitchen Gardener; good references; married; age 32. E. REYNOLDS, 93, London Road, Maidstone, Kent.

GARDENER (Single-handed or with help); used to Vegetable and Flower Growing; good Nursery experience of Forcing and Growing under Glass; married; 10 years present situation. W., 144, Castlemain Road, Stourfield Park, Bournemouth.

GARDENER (Head Working), thoroughly experienced in Vines, Peaches, Melons, Cucumbers, Tomatoes, Stove and Greenhouse Plants, Kitchen Garden, Flower Gardens, and Pleasure Grounds; good references; married. G. F. HALL, Bagpath, Brimscombe, Stroud, Glos.

GARDENER (Head Working), age 32, seeks SITUATION( where two or three are kept; thoroughly experienced in Fruit, Flowers, and Vegetables, Roses, and Herbaceous Plants; 8½ years' excellent reference from present situation. T. H. ORAM, Grangehyrst Lodge, Grange Hill, South Norwood, S.E.

GARDENER (Head Working).—MR. COLLETT, Kirtlington Park Gardens, highly recommends his FOREMAN, H. STEDMAN, as above; 19 years' practical experience in all branches; age 35; married, two children; life abstainer; excellent references; disengaged when suited. H. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

INTENSIVE GARDENING. — An opening wanted for a Youth, age 17. SECRETARY, 91, Parliament Chambers, Great Smith Street, London, S.W.

JOURNEYMAN (23) (Inside and Out), seven years' good experience; good references; Bothy preferred; footballer. G. W. FAIREY, The Gardens, Stoke Rochford, Grantham.

LADY GEORGIANA MURE wishes to recommend DONALD McLENNAN as GARDENER (Head), who has been in the service of Colonel Mure, of Caldwell, for 23 years, and is leaving owing to the place being let; she will be glad to answer any inquiries about him or give a personal reference. Apply, D. McLENNAN, Gardener, Caldwell, by Glasgow.

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W. MOUNT, The Gardens, Michaelston Hall, Dovercourt, Essex, wishes to strongly recommend R. BUTTON as JOURNEYMAN (Inside and Out); age 20; very active and strong; has been here five years in kitchen garden and pleasure grounds; Bothy preferred. State wages given, etc.

YOUNG MAN seeks a SITUATION as IMPROVER (Inside or Inside and Out); Bothy preferred; good references; abstainer. ALBERT HOUSE, 29, Rowley Road, Reading, Berks.

YOUNG MAN seeks SITUATION as IMPROVER (trade or private); some experience; age 20. W. HOLBROOK, Trinity Place, Tewkesbury, Glos.

YOUNG MAN, age 22, seeks SITUATION as Single-handed or Groom-Gardener; 7 years' experience; good references.—W. JARRETT, Ivy Farm, Southleigh, Witney, Oxon.

YOUNG MAN seeks SITUATION as GARDENER (Under); age 21; four years' good reference; South Devon preferred.—H. COOK, Hailey Lane, Hertford, Herts.

YOUNG MAN seeks SITUATION as IMPROVER (Inside); four years present place, age 18; strong and willing. F. GEORGE, The Gardens, Falkland Park, South Norwood Hill, S.E.

YOUNG MAN seeks SITUATION in Gardens; some experience; willing worker; can drive; willing to assist in house; accept small wage to start. "CARONA," Whitefield Road, Tunbridge Wells.

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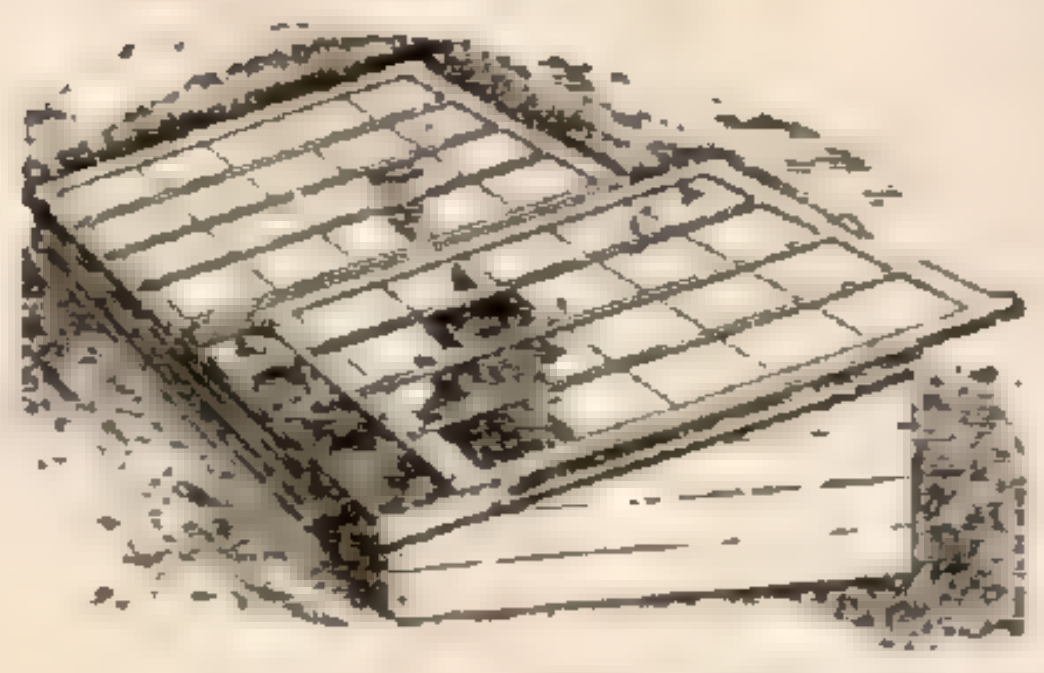

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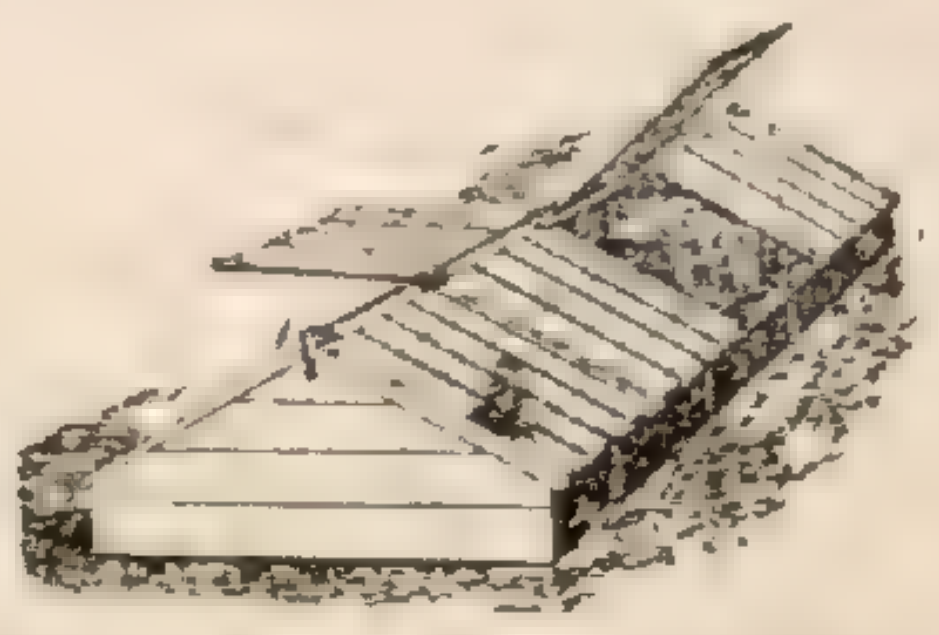

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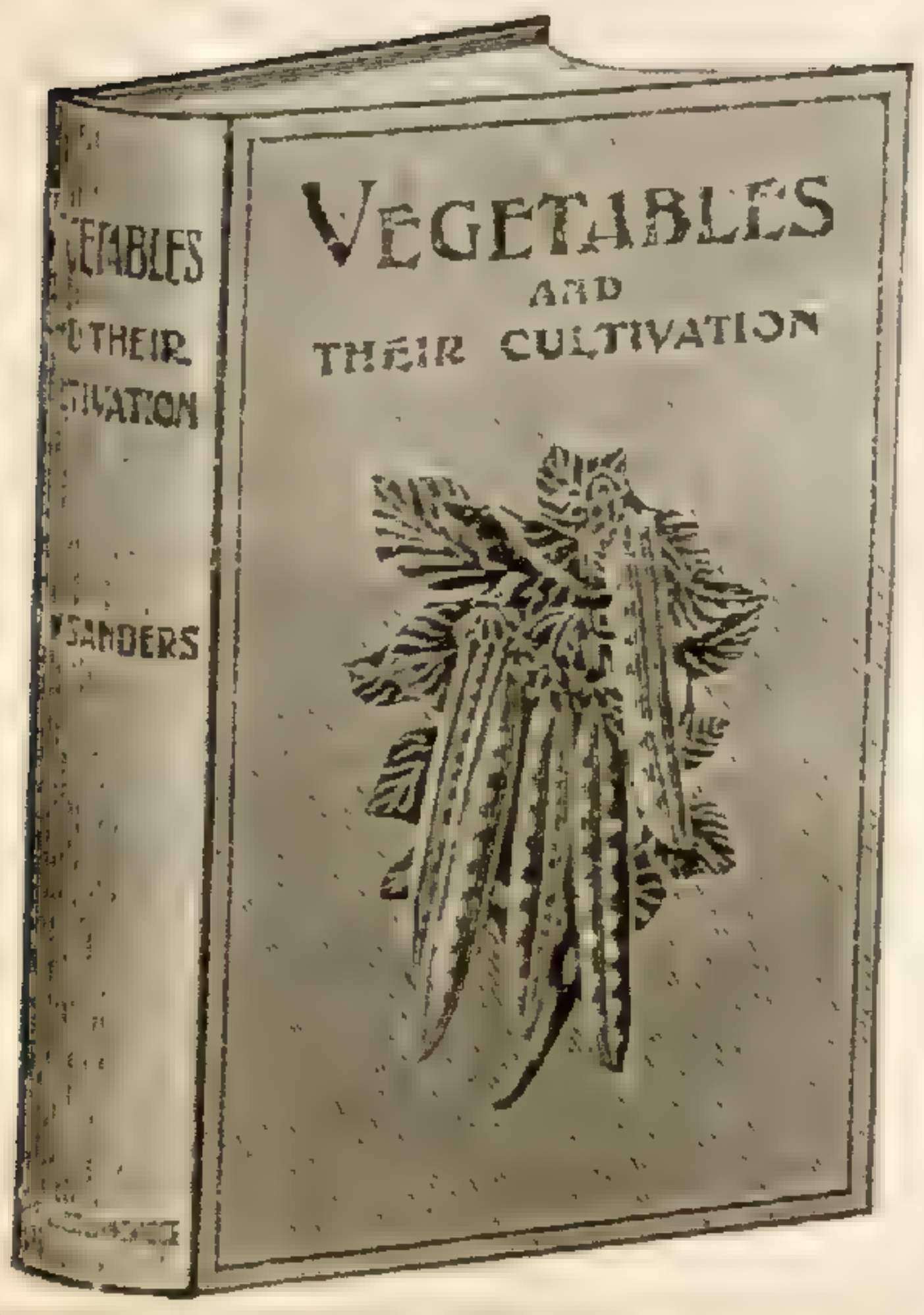

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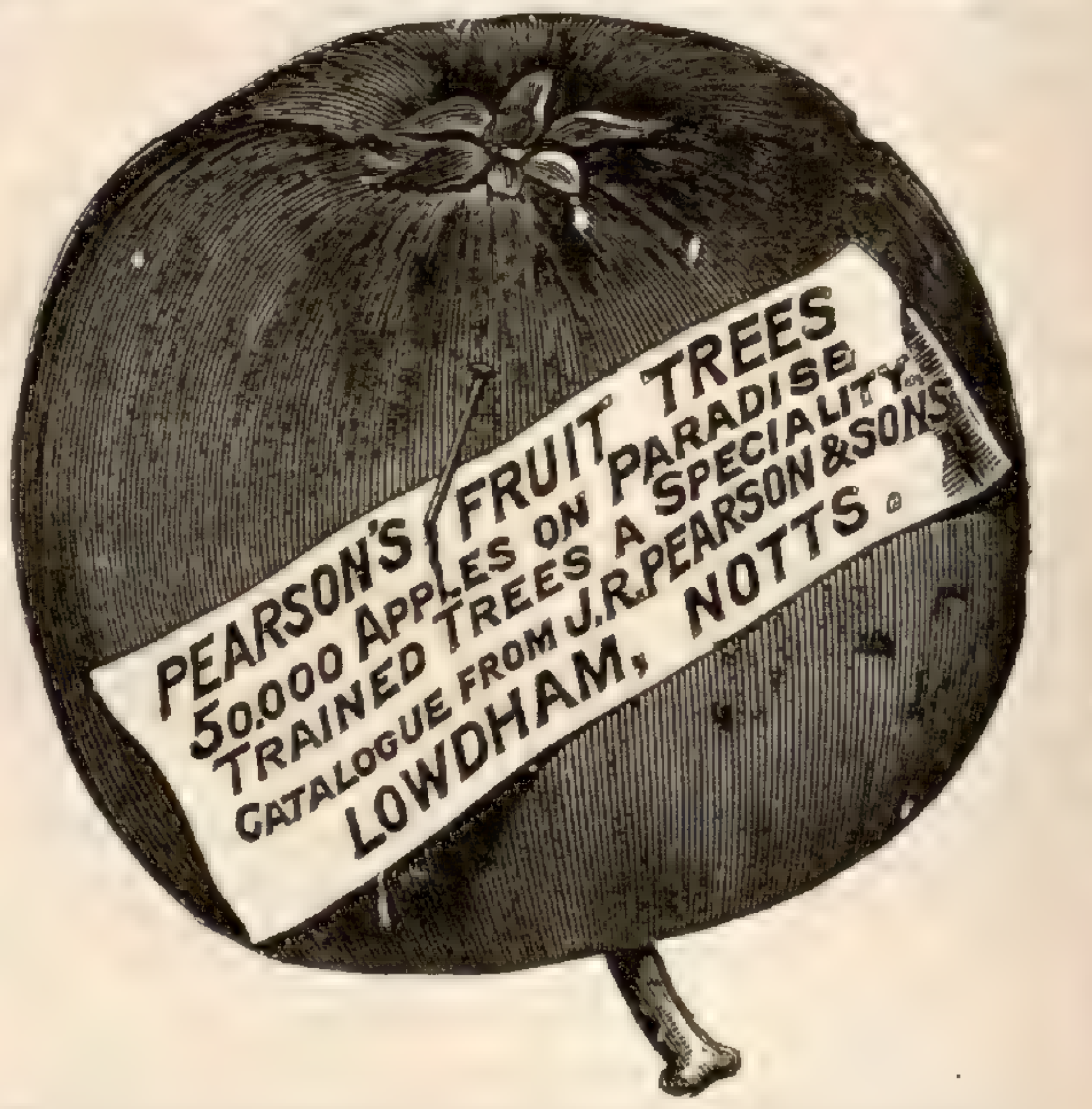
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VOL. LV.—No. 3,075. SATURDAY, OCTOBER 5, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Vegetable Cult.

The exhibitions of vegetables that have been held within the past fortnight by the Royal Horticultural Society and the National Vegetable Society have been of special interest as evidence of the close attention that is being paid at the present time to the products of the kitchen garden, and of the immense advances that have been made within recent years both in the improvements of the various types and in cultural methods. Not a few of our readers will be able to call to mind the time when vegetables were regarded by many as of quite secondary importance in the economy of the garden, and a knowledge of their cultivation not being considered one of the most important points in the education of the gardener. They will also remember that when vegetables had a position given them in the schedule of some of the leading societies a tent was specially provided for their accommodation, that they might not come under the notice of those who were not directly interested in them. That they should not have been given special prominence was in no way surprising, for with but few exceptions they were staged without regard to tasteful effect, and in some instances in a decidedly rough manner. All this has now been changed, and the exhibition of vegetables, if not, as yet, developed into a fine art, has been so immensely improved that when adequately represented they form a feature remarkable alike for its interest and attractiveness. The improvement has, indeed, been so great that collections of vegetables staged by cultivators who are able to occupy prominent positions in keen contests afford object lessons that many exhibitors of plants and flowers might learn with advantage both to themselves and the exhibitions in which they take part. At the Royal Horticultural Society's show the vegetables were more or less closely associated with the flowers and ornamental plants, and instead of detracting from the general effect, as was often the case in the old days, they appreciably enhanced it. At the National Vegetable Society's exhibition at Watford, the exhibitors were able to show that a highly-attractive display can be produced with vegetables alone. The advance in cultural methods has been not less noteworthy than the improvement in the manner of presenting kitchen garden produce to public notice, and the adoption of methods by which the several kinds can be brought to the highest degree of perfection is an accomplishment of even greater importance than tasteful methods of staging. For a considerable period after the exhibition of vegetables became general, the opinion was held by many that splendidly-grown specimens which were seen at the exhibitions were not equal in table quality to similar kinds grown under ordinary methods of cultivation. Different views are now held upon this point, and it is generally conceded that vegetables which bring honours to cultivators are not necessarily coarse and indifferent in flavour, but, on the contrary, of high quality. Such finely-developed products as are seen at the leading exhibitions are not the result merely of heavy manurial applications to the quarters in which they are grown, but represent a method in which deep cultivation and the thorough working of the soil are essential details. While cultivators have made strenuous endeavour to increase the bulk and improve the quality of kitchen garden products, those who are engaged in the seed trade have been unremitting in their efforts to create new types and improve existing ones, and they have achieved so high a degree of success that it would be difficult to place a proper estimate on their accomplishments. No class of vegetables of any considerable importance could be mentioned that have not been greatly improved, and thereby rendered more valuable by cross fertilisation and selection. Not only have the several kinds been increased in productiveness, appearance, and quality, but some have had their seasons prolonged as the result of the persistent endeavour of those engaged in the growth and sale of seeds. Not only has this been the case, but by the adoption of more scientific methods of procedure, cultivators have now at their service seeds possessing greater powers of germination than that from which past generations of cultivators raised their crops, a fact which is specially brought into prominence in seasons following a year in which the climatic conditions were unfavourable to the production of really first-class seed crops. The National Vegetable Society has been too recently formed to have exercised a great influence upon the advances to which we have briefly referred, but it has, since it was established, done excellent work in the encouragement of high-class cultivation, and in stimulating increased interest in vegetables as articles of food. We regard the latter as an important part of its work, for while the consumption of vegetables has enormously increased of late years, it should, in the interest of the health of the nation, be much larger, especially among town dwellers. The holding of the society's exhibition this year outside the boundaries of the Metropolis was a new departure, taken chiefly with the

MR. RICHARD A. WITTY,
Secretary of the National Chrysanthemum Society.

object of bringing the society into closer touch with a large section of cultivators. This object has, we hope, been accomplished, as Watford is situated in a district in which vegetables are largely grown, but whether the financial results will justify the change we are not in a position to say at the time of writing. With regard to the the future of the society, we feel that, while it has achieved much success under present conditions, it should be placed on a broader basis, and this can only be accomplished by those who are deeply interested in vegetables contributing liberally to its financial resources, and in such manner that the committee will have increased freedom in dealing with the funds. The exhibition at Watford was unquestionably the best the society has yet held, and the members of the executive may be heartily congratulated on the highly gratifying results of their well-directed efforts.

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**Mr. Richard A. Witty,** the able and genial secretary of the National Chrysanthemum Society, is an extremely popular man among horticulturists who frequent the N.C.S. exhibitions. Though the son of Mr. J. H. Witty, a well-known park and cemetery superintendent, Mr. R. A. Witty did not turn his attention to horticulture, either as a hobby or profession. He is a secretary par excellence and enjoyed an early training under Mr. Jas. Martin, the secretary of the Society of Incorporated Accountants. This followed an education at Christ's Hospital, where, besides knowledge, he acquired a spirit of sturdy independence. Mr. Witty is a member of a firm of accountants, and this year holds the important position of President of the Students' Society of Incorporated Accountants, after serving on the committee for a dozen years. About six years ago the National Chrysanthemum Society secured Mr. Witty's services as secretary, and, though it was a somewhat daring experiment to engage a man who protested that he had no knowledge of horticulture, the governing body has always felt that the experiment has been more than justified. Order, tact, a genial manner, a perfect knowledge of matters secretarial—these are the gifts, natural and acquired, that Mr. Witty possesses. He is justly proud of the fact that though the society has this year spent more money than ever before on literature for its members, and is offering a larger amount in prize money, more cash has been placed on deposit, and fewer members have had to be written off the books as "failed to pay subscription." These are signs of progress, and we hope they will increase and materialise under Mr. Witty's secretariat.

**Wisley Trials.**—The Council of the Royal Horticultural Society have made arrangements for the following fruits, flowers, and vegetables to be tried in the society's Wisley Gardens in 1912-13. Fruits: Autumn-fruiting strawberries, berry-bearing fruits other than currants, gooseberries, raspberries, and strawberries. Flowers: Antirrhinums, aquilegias, pyrethrums, gaillardias, violas, and bearded irises. Vegetables: Peas, early and mid-season potatoes, tomatoes, and turnips. Those who may be desirous of sending fruits, flowers, or vegetables for trial can obtain particulars on application to the Rev. W. Wilks, Vincent Square, Westminster, S.W., or Mr. S. T. Wright, Wisley Gardens, Ripley, Surrey.

**Gentian Cup Competition.**—The Council of the Royal Horticultural Society offer, on March 4 and 5 (subject to the general rules of the society, and the special regulations indicated below), a silver cup, known as the Gentian Cup, presented to them by Messrs. R. Wallace and Co. for the best exhibit by an amateur of alpine plants, including suitable bulbs and dwarf shrubs, in a space not exceeding 5ft. by 3ft. The use of stone is not absolutely necessary, but the judges will be instructed to favour its correct use, and the natural arrangement of the plants in connection therewith. The plants may be either in pots or lifted.

**Afforestation in the Black Country.**—Mr. P. E. Martineau, the organising secretary of the Midland Reafforestation Association, and, therefore, perfectly conversant with his subject, will give a lecture on the "Afforestation of the Black Country," illustrated with lantern slides, on the occasion of the monthly dinner and conversazione of the Horticultural Club, at the Hotel Windsor, Victoria Street, Westminster, on Tuesday, October 8. This is the first meeting of the autumn session; dinner at 6.30 p.m.

**Beckenham Horticultural Society.**—The winter session of this society will commence on Friday evening, the 11th inst., with a lecture on "Cross Breeding and Hybridisation," by Mr. E. H. Jenkins. The other lectures that have a place on the programme are: October 25, "Sweet Pea Cultivation," by Mr. T. Stevenson; November 8, "The Royal International Horticultural Exhibition," by Mr. J. Gregory; November 22, "Gardens of Roses," by Mr. George Gordon, V.M.H.; December 6, "Lime and its Uses," by Mr. C. T. F. Watts, B.Sc.; December 13, "Perpetual-flowering Carnations," by Mr. B. R. Leech; January 3, "Vegetables for Exhibition," by Mr. F. Phillips; January 17, "Orchid Culture," by Mr. J. Collier; January 31, "Life History of Flowering Plants and Ferns," by Mr. E. Gilmore; February 14, "Insecticides and Fungicides," by Mr. C. T. F. Watts, B.Sc.; February 28, "Single and Decorative Chrysanthemums," by Mr. H. J. Jones; March 14, "United Horticultural Benefit and Provident Society," by Mr. E. Burge, and "The Position of Gardeners," by Mr. J. Wright, V.M.H. The meetings of the society are held at the Church House, Beckenham, and the lectures, which are free, commence at 8 p.m., with the exception of that on Friday next, which commences at 7.30 p.m. The lectures on November 8 and 22 will be illustrated with lantern slides.

**Foreign Chrysanthemum Shows.**—This autumn shows will be held on the Continent as follows: Early chrysanthemums, Paris, October 10, Avignon, October 24; Montpellier, October 31 to November 4; Biarritz, October 24 to 27; Lille, November 9 to 14; Caen, October 31 to November 4; Angers, November 9 to 17; Vichy, November 7 to 10; Sens, November 9 and 11; Rosendael, November 9 to 11; Elbeuf, November 9 to 11; Paris (Great Autumn Show), November 8 to 17; Nantes, November 12 to 17.

**Sweet Pea Trials.**—Mr. Walter P. Wright asks us to state that owing to the increase in the number of sweet peas sent to him for trial he has decided to put his trials on a business footing for 1913, and organise an expert committee to assist him. Messrs. Aldersey and Marsden Jones, Mr. W. E. Alsen, Messrs. Bakers, Lim., Mr. Robert Bolton, Mr. E. Cowdy, Mr. B. Deal, Mr. F. G. Drew, Messrs. Faulkner and Aitkens, Miss Hemus, Mr. T. Duncan, Mr. T. H. Dipnall, Rev. D. D. Fraser, Messrs. Hobbies, Lim., Mr. J. A. Grigor, Mr. John Jones, Mr. J. Hall, Mr. H. H. Lees, Mr. Donald MacDonald, Rev. H. Mayall, Mr. J. H. Millard, Mr. H. A. Perkins, Messrs. Sutton and Sons, Mr. E. Tufnall, Mr. W. E. Usher, Mr. H. D. Tigwell, Mr. W. J. Unwin, Mr. H. E. Ward, Mr. H. J. Wright, Messrs. Webb and Sons, and Mr. T. A. Weston have already promised their co-operation. The trials will be conducted in the garden of Reading University in 1913.

**Sir W. T. Thiselton - Dyer, K.C.M.G., F.R.S.,** has been elected an Honorary Fellow of the Royal Society of South Africa.

**Gardeners and State Insurance.**—The State Insurance Commissioners have issued a circular stating that all persons coming under the provisions of the Insurance Act must join an approved society by October 26, or become Post Office contributors. Gardeners are among the very healthiest of workers, and this means less sickness, and a greater surplus at the end of three years for an approved society composed of horticulturists, therefore gardeners should carefully consider their own interests in this matter, and secure the best possible return that sevenpence per week will secure. We urge those gardeners who have not yet joined a society to at once obtain particulars of the United Horticultural Benefit and Provident Society, from Mr. Hill, 35, Alexandra Road, West Kensington.

**Ripening Peaches by Electricity.**—Mr. Thorne Baker, who has done excellent work in connection with the apparatus for the transmission of photographs by telegraph, is said to have been successful in ripening peaches by electricity. It is said that the peach on which the experiment was made was very green, and that after it had been subjected to a high-frequency current for a very short period, and left for a few minutes, the ripening effect was found to have penetrated nearly to the stone, and the flesh was luscious and juicy. The exposure of peaches to high-frequency current may result in some change in their condition, but whether the change will be such as to ensure the rich flavour characteristic of peaches ripened on the tree is another matter.

**Ghent Quinquennial Flower Show,** 1913.—Four years since the Royal Agricultural and Botanical Society of Ghent celebrated the one hundredth anniversary of its first flower show with an exhibition that was remarkable for its extent, interest, and beauty, and also for the great gathering of horticulturists from all parts of the world. Now, the executive is busily engaged in completing the arrangements for the quinquennial show which will be held from April 26 to May 4, 1913. The exhibition will be of the most comprehensive character, and in the 28 sections there are 841 classes, with the result that provisions are made for the adequate representation of the various subjects available for exhibition during the season of spring. The great importance and immense popularity of orchids among garden lovers is fully recognised by the provision in the schedule of 89 classes for them. The principal class for orchids, in which the competition is limited to amateurs, is that for a collection in which the premier award is a gold medal offered by the King of the Belgians. A similar class is provided for nurserymen, and in this the first prize is a work of art offered by Mr. Firmin Lambeau, the president of the Belgian Orchid Society. Azaleas, which for a long period have formed a magnificent feature of the Ghent quinquennials, have 55 classes devoted to them, and there should, as usual, be a brilliant display of these attractive flowers. The increased interest in Belgium in trees and shrubs distinguished by the beauty of their flowers is evidenced by the classes set apart for them being largely in excess of those provided on previous occasions. The quinquennial show will be held in conjunction with the International Exhibition, which takes place under the auspices of the City of Ghent in the park of the Citadel, and the plants will be arranged in the Palace of Horticulture which has been erected at a cost of 1,750,000 francs. The arrangements are being carried out by a small committee, of which M. Edgar Wastel is the president, and M. Lucien de Cock is the secretary. The schedule will be sent to horticulturists on applications addressed to the Secretary-General, Coupure 160, Ghent, Belgium.

**R.H.S. Orchid Conference.**—In conjunction with the exhibition of autumn-flowering orchids that will be held by the Royal Horticultural Society on November 5 and 6, there will be a conference on Wednesday, November 6, when papers on matters relating to orchids will be read and discussed. The conference will be held in the lecture room of the Horticultural Hall, Vincent Square, with Mr. J. Gurney Fowler in the chair, and will extend from 11 a.m. to 4 p.m., with an interval for luncheon, which will be obtainable at the hall. The following papers have been promised: "Some Epiphytical Orchids," by Mr. H. G. Alexander; "The Physiology of Fertilisation," by Professor Keeble; "The Application of Genetics to Orchid Breeding," by Major C. C. Hurst; "Albinism in Orchids," by Mr. R. G. Thwaites. As the seating accommodation of the lecture-room is limited, seats should be secured beforehand by application to the Secretary, R.H.S., Vincent Square, Westminster, S.W., who will be pleased to forward reserve seat tickets to those applying for them as far as the accommodation will allow.

**An International Horticultural Exhibition** will be held at New York in April next under the auspices of the Society of American Florists. The exhibition will be held in the Grand Central Palace, Lexington Avenue, New York, from April 5 to 11, 1913.

**Stripe in Sweet Peas.**—Writing with reference to the damage that is done in many instances by the disease of sweet peas caused by the fungus known as Thielavia basicola, a Newmarket correspondent directs attention to the great value of lime as a preventive of this disease. He states that, after discussing the question of manuring the land for sweet peas with a friend, he came to the conclusion that there was considerable danger in using farmyard manure very freely, and that an application of lime would be of value as a corrective of land which had in previous years been heavily manured. He accordingly decided to put the matter to a practical test, and, with reference to the experiment, he says: "This year (1912) I decided to experiment with my sweet peas. Being near a lime works, I procured some lime (dust), and divided my sweet pea land into several parts, treating each part differently. On one part ordinary farmyard manure was used, and on another lime and farmyard manure. On one piece lime only was applied in liberal quantities, and on one piece lime and charcoal were used. Lastly I grew some on land that had never grown sweet peas before this; but I did not apply anything at all to this, as it has always had rich farmyard manure, but had not been manured for two years, and had grown root crops and cabbages. Now for the result. On the part on which farm manure was used the disease was bad; where lime and manure were both used the disease was slight—about five plants were infected; where lime only was used a plant or two died; but where charcoal and lime were used, and also on the unmanured new land, there was no disease at all; so that, although the lime did not prevent the disease, yet I am certainly of opinion that lime to correct the sourness of the land is the right thing; but it is better still to give the land a rest from all leguminous plants, and to grow them on land that had not recently grown peas. I do not say that these measures will cure the disease, but hope these are steps in the right direction. I think we must look for prevention rather than cure, as there is no cure once the plant is attacked, it being difficult to catch it in time, as one cannot see the disease till it shows on the leaves, and then the mischief is done, as the roots are dead."

**The Shropshire Damson Crop** has this year been very heavy, and a correspondent informs us that upwards of one hundred tons were despatched by rail from Market Drayton on one day.

**He Wants the Earth.**—According to the "New York Tribune," one of the most unusual claims ever filed with a city department is that of Squire Herrick, at one time a well-known nurseryman, recently filed with the Cincinnati Park Commission. Herrick had leased his nursery on Price Hill to the commission which raised seedling trees and shrubs there. These were later transplanted in various city parks. Herrick now says that when the trees and shrubs were dug up some of his earth clung to the roots. He wants to be paid for the earth which was thus removed from his property. He says that during the last four years there must have been fifty-five cartloads of it, and asks two dollars a load.

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## YELLOW ROSES FOR OUTDOOR CULTURE.

Since roses have been freely utilised for massing in the flower garden on much the same lines as the more beautiful of the tender bedders are massed, it has, until quite recently, been a matter of frequent comment that there are but few if any roses with yellow flowers that can be employed with any considerable degree of success for bedding purposes. For a very long time there have been yellow roses, and many of them of great beauty, but they have not possessed the qualities in a marked degree that constitute a bedding rose of the first class. A rose, to be really useful for the filling of beds in the flower garden, should be of moderate height, have a free-branching habit, bloom freely and continuously from June until October, and have flowers that are of fairly good quality and pleasing and effect in colour. Bedding roses should bear, excepting in colour, a close resemblance to that well-known and beautiful hybrid tea Caroline Testout. None of the older yellow roses possessed these essentials in a sufficient degree to justify their having a prominent position among the first-class bedding varieties. Probably Madame Hoste and Marie Van Houtte approached the most closely to the ideal bedding rose, but not close enough to admit of their being freely utilised in bedding schemes.

The activities of the raisers both at home and abroad have resulted in the introduction of a considerable number of yellow roses that have the promise of becoming of considerable value for arrangements in the flower garden in which each bed is devoted to one variety. The most noteworthy of the newer varieties is the much-talked-of Rayon d'Or, which was introduced to cultivation two years since. Last year, owing to the great heat and long-continued drought, it did not produce so striking an effect in the garden as one could wish, but this year it has grown freely and bloomed profusely, and fully substantiated its claims for consideration at the hands of rosarians. It may not be quite so perfect in growth as could be desired, but it has no serious defect in this respect, and its bright yellow flowers are produced so freely that the bed devoted to it has been one of the most effective of the rose beds in my garden. This season it should be planted largely, more especially in gardens where bedding roses find favour.

Another rose that should be freely planted where yellow-flowered varieties are appreciated is the Duchess of Wellington, which was introduced three years since, and has had time to become established. This differs considerably from the first-mentioned, and therefore does not come into competition with it. The growth is free-branching and erect, and the flowers are borne with great freedom, the buds are long and pointed, and the colour is rich saffron-yellow suffused with orange. The leaves are deep bronze-green, and present a most pleasing contrast to the rich yellow flowers. Lady Hillingdon, which was introduced two years since, is somewhat similar to the variety immediately preceding it, but it belongs to the tea-scented varieties. It has rather large, well-formed orange-yellow flowers and deep green foliage, the leaves bronze-crimson in the earlier stages. Free in flowering and rich in colour, it is very attractive during the greater part of the season. It appears to be somewhat variable in growth, for in some gardens in which the soil is rather light, as, for example, at Kew, the blooms have not been held up well, but on rather heavier soils the growths have been stout and the blooms erect. This variety should prove useful, not only for producing a bright effect in the flower garden, but for the supply of blooms and buds for indoor decorations.

Another variety with orange-yellow flowers that is of special interest at the present time is Sunburst, which received the National Rose Society's gold medal last month. This high award was made in consideration of its value for culture under glass, and was unquestionably well deserved. Whether it will be equally valuable for the flower garden has yet to be seen. It has a strong branching habit, is free in flowering, and the blooms are borne on stiff stems, and it should be useful in the flower garden; the promise is sufficient to justify it being planted with a view to determining this point in the course of next summer. Lady Pirrie, a hybrid tea that was distributed in 1910, is a charming decorative rose that should be freely planted. The flowers are rather large, of good form, and the colour apricot-yellow, red-salmon on the outside of the petals, a charming combination, but the yellow is not so prominent as in the preceding varieties. Lady Downe, one of last year's novelties, is a remarkably fine rose, the colour deep yellow suffused buff, and passing with age to pale yellow, and should be included in the roses purchased this season. Lady Greenall, also one of last year's introductions, is full of promise; the blooms are large and of good form, and are cream-white with orange-yellow in the centre and tinted with pink on the outside of the petals.

The effectively-coloured Marquise de Sinety brings us back to the really yellow roses, and must be mentioned as one of the best of the older roses of its colour. It has the merit of being free in flowering, and the blooms are of medium size, moderately full, and of a bright golden-yellow colour, suffused bronze-red. The growth is not sufficiently free-branching to justify it being included among bedding roses, but it is highly attractive when associated with other varieties in borders. R.

## NATIONAL CHRYSANTHEMUM SOCIETY.

The great central portion of the Crystal Palace was particularly gay on October 2 and 3, when the National Chrysanthemum Society held its first exhibition of the season. As compared with the early show of 1911, this was far ahead in size and quality, and chysanthemums were very much more in evidence. The competition was quite good in a large number of classes, and very many excellent blooms were staged, indeed the entries were far larger than has been the case for four years past. Non-competitive displays formed a considerable part of the exhibition, and as these were of varied character they added to the interest as well as the effectiveness of the show.

### OPEN CLASSES.

For a dozen Japanese blooms, distinct, Mr. Sargent, gardener to G. W. Wigg, Esq., Rockshaw, Merstham, came first with Eclipse, White Queen, Marie Loomes, Mrs. A. T. Miller, Reg. Vallis, and Beecham Keeling in fine form; Mr. Thomas Stevenson, gardener to E. G. Mocatta, Esq., Woburn Place, Addlestone, a close second; and Mr. Martin Silsbury, Shanklin, Isle of Wight, third.

There were eight competitors in the class for six Japanese blooms distinct, and here Mr. G. Mileham, gardener to A. T. Miller, Esq., Emlyn House, Leatherhead, led with fine flowers of Mr. G. C. Kelly, Mrs. F. C. Stoop, Mrs. R. Luxford, Mrs. A. T. Miller, George Hemming, and White Queen; Mr. H. Runciman, Nightingale Lane, Wanstead, second, and Mr. T. J. Broom, gardener to Miss Langworthy, Gay's House, Holyport, third.

Mr. F. Brazier, Caterham, was the only exhibitor in the class for a display of chrysanthemums, cut or in pots, grouped with foliage and foliage plants. He staged a display of large sheaves of early varieties, and was awarded a second prize.

For a dozen bunches of outdoor-grown chrysanthemums, undisbudded, Mr. J. Bowness, Riverside Nursery, Busby, Glasgow, secured the first prize with a splendid set of Roi des Blancs, Loan's Crimson, Hector, Cream Perrier, Elstob Yellow, Goacher's Crimson, James Bateman, Durrington Gem, Caledonia, Mrs. J. Fielding, F. S. Richmond, and Loan's Pink. Second prize fell to Mr. J. Emberson, Grove Road Nursery, Walthamstow; and third to Mr. W. A. Collier, Headley, Epsom. There were three competitors in the class for a dozen bunches of outdoor-grown flowers, disbudded, and here Mr. J. Emberson led with very fresh, clean, and good-sized examples of Le Cygne, Almirante, Rio des Jaunes, Fee Parisienne, James Bateman, Countess, Cranfordia, Dolores, Perle Chatillonaise, Golden Queen of Earlies, and La Pactole. Mr. H. Dunkley, St. Peter's Avenue, Kettering, second, and Mr. J. Bowness, third.

Mr. F. Brazier, High Street, Caterham, led for a vase of early-flowering singles; Mr. G. Bowness second; and Mr. J. Emberson third. For a vase of singles, any colour but yellow or bronze, Mr. Emberson scored with Kitty Riches, a bright rose-pink; Mr. G. Bowness second. For a vase of singles grown out of doors, Mr. J. Emberson was again first-prize winner, Mr. Bowness following.

### AMATEURS.

The best half-dozen bunches of early outdoor chrysanthemums, not disbudded, were from Mr. H. Dunkley, who staged Polly, Roi des Blancs, Nina Blick, Goacher's Crimson, Fee Parisienne, and Jimmie; Mr. C. Fox, Linden Gardens, Tunbridge Wells, second; and Mr. D. B. Crane, Woodview, Highgate, third. For six bunches of disbudded flowers Mr. Dunkley gained second prize, and a similar award fell to Mr. D. B. Crane for six bunches of early pompon varieties, though why this failed to get the higher award did not appear.

There were four entrants in the class for six vases of early Japanese or decorative chrysanthemums, and here Mr. J. Emberson led with Roi des Jennes, Perle Chatillonaise, Countess, Dolores, Cranford Pink, and Le Pactole; Mr. G. Bowness, second; and Mr. R. B. Leech, gardener to J. C. Eno, Esq., Woodhall, Dulwich, third.

The best three blooms of any one Japanese chrysanthemum were fine specimens of Frances Joliffe, from Mr. A. Dunkley, gardener to the Rev. T. Sheepshanks, Stonelake House, Chudleigh, South Devon; Mr. T. Stevenson, second, with grand flowers of White Queen; and Mr. Sargent third with Mrs. R. Luxford; thirteen entries.

Mr. W. Webb, gardener to J. Chapman, Esq., Melrose, Lawrie Park, Sydenham; Mr. H. Dunkley, and Mr. C. Fox were successful in other amateur classes.

### DECORATIVE EXHIBITS.

In the open division the best table of wreaths, crosses, and other floral designs made in chrysanthemums was from Mr. A. H. Cole, Camberwell New Road, S.E.; a yellow harp, a pink and cream yacht, and a white and crimson wreath, were the leading features; Miss A. Fyfe, Grove Park Nursery, Lee, second.

Premier award for a table decoration of chrysanthemums fell to Mr. A. W. Trossell, 12, The Parade, Beckenham, for a light and pleasing design of yellow and bronzy flowers; Mrs. A. Robinson, Norhyrst Park Hill, Carshalton, second with a flatter arrangement.

Mr. T. W. Stevens scored for three epergnes of chrysanthemums; his centrepiece was filled with white and crimson flowers, and his side ones with yellow and bronze flowers; Mrs. A. Robinson second; and Mr. F. G. Bealing, Bassett, Southampton, third. Mr. J. Emberson was a capital first for a vase of single chrysanthemums, setting up a bold and bright exhibit of yellow, crimson, and bronze flowers; Mrs. A. C. Brown, Brookes Lodge, Reigate, second; and Mr. Thos. Stevenson, third.

In the open class for a vase of chrysanthemums for table decoration Mr. T. W. Stevens scored with a very light design in white and bronze flowers and berberis sprays; Mr. W. Webb second, and Mr. C. Fox third. First prize for a basket of chrysanthemums was awarded to Mr. L. Wheeler, The Gardens Woodhall, Dulwich, for a splendid arrangement of large, rich yellow and chestnut-crimson flowers associated, with croton leaves, berberis sprays, and fern fronds; Mr. J. Emberson, second; and Mrs. S. A. Cole, Addiscombe Avenue, Croydon, third.

Mr. R. Bugden, George Street, Gipsy Hill, led for a basket of autumn foliage and berries; and Mrs. A. R. Bide, Highlands, Farnham, was second.

In the amateurs' class for an epergne of chrysanthemums Mr. T. W. Stevens led with a very elegant design in yellow and bronze flowers, and tiny sprays of very small-leaved ampelopsis; Mr. C. Fox, second; and Mr. A. W. Trossell, third. In a special amateurs' class for table decorations Miss A. Bashford, Barrow Hedges Farm, Carshalton, led; with Mr. W. Webb and Mrs. A. MacMahon, Warlingham, Surrey, following in the order given.

### NEW VARIETIES.

First-class Certificates were awarded to Bob Pulling, a long-petalled, bright yellow Japanese variety, from Mr. H. J. Jones, Ryecroft Nursery, Lewisham; and to Mrs. Lloyd Wigg, a very big light-yellow Japanese variety from Messrs. W. Wells and Co., Merstham.

A Commendation was granted to Juliet, a fine rose-red market avriety of Japanese form, from Messrs. Cragg, Harrison, and Cragg, Merivale, Hounslow.

### NON-COMPETITIVE.

A bold exhibit of chrysanthemums, finely set up by Messrs. W. Wells and Co., Merstham, was neatly finished off with ferns, and the flowers were pleasingly associated with sprays of brilliant scarlet oak foliage. Popular early varieties were set up in great sheaves, but the most conspicuous item was a stand of six huge blooms of a new light-yellow Japanese variety named Mrs. Lloyd Wigg. In addition to the chrysanthemum group proper, the Merstham firm contributed Michaelmas daisies in good style, and a fine vase of Cimicifuga simplex. A splendid collection of choice ferns from Messrs. H. B. May and Sons, Edmonton, attracted much attention; exotics were chiefly shown, but the beautiful Adiantum capillus veneris imbricatum was also staged.

Messrs. Jas. Carter and Co., Raynes Park, had a most effective temple-like exhibit filled gracefully with selections of asters and dahlias, with asters and Michaelmas daisies banked around the base. A group of shrubs from Mr. David Russell, Brentwood, contained a lot of freely-berried pernettyas; he also showed a collection of apples and pears. A large and bright exhibit from Messrs. T. S. Ware, Lim., Feltham, included representative stands of the best pæony-flowered, giant decorative, cactus and pompon dahlias, as well as a selection of bright late-flowering perennial border flowers.

A goodly collection of fruits staged on a long table by Mr. E. Neal, gardener to J. A. Nix, Esq., Tilgate, Crawley, consisted of fifty-six varieties of apples, forty-four varieties of pears, and six varieties of grapes. Nancy Jackson, Ecklinville, Egremont Russet, Hollandbury, Annie Elizabeth, Warner's King, Lord Derby, Charles Ross, Rival, Norfolk Beauty, and Cox's Orange Pippin were particularly good apples shown in this fine group. Crotons and autumn foliage were effectively used among the stands and dishes.

Mr. Norman Davis was represented by a large and quite artistic exhibit of chrysanthemums, Michaelmas daisies, etc., associated with ferns and autumn foliage. Tall stands of flowers were grouped in the centre and smaller ones around them, with outstanding tall designs towards the margin, over vases of early chrysanthemums. A few chrysanthemums of special interest were Framfield Early White, White Queen, David Ingamells, Perle Chatillonaise, Almirante, Cranfordia, and Belle Mauve. Mr. J. B. Riding, Chingford, again showed collarette dahlias, and for so late in the season these were in capital condition. Pæony-flowered varieties made a bold and bright background for the rest, and autumn foliage was used among the flowers. Two single varieties, i.e., Grenadier and Little Othello, the latter deep rich crimson with dark bronzy leafage, especially attracted our attention in this group.

A particularly large exhibit was put up in good style by Mr. H. J. Jones, Lewisham. In the middle was a bank of chrysanthemums, chiefly pot plants, and conspicuous varieties here were the yellow Bob Pulling and the chaste White Queen. Early varieties and berberis sprays made a pretty margin. At either end there were large stands of popular early chrysanthemums, and fine masses of specially good varieties of Michaelmas daisies. Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow, set up fine flowers in great bunches, of Cranfordia, Moneymaker, Betty Spark, Dolores, Juliet, Framfield Early White, and Cranford Pink chrysanthemums. Mr. A. H. Cole, Camberwell New Road, S.E., contributed a small group of well-developed chrysanthemum blooms.

### MEDALS.

Gold.—To Mr. Norman Davis, Framfield, Sussex; to Mr. H. J. Jones, Ryecroft, Lewisham; to Messrs. W. Wells and Co., Merstham; to Mr. Neal, gardener to J. A. Nix, Esq., Crawley.

Small Gold.—To Messrs. H. B. May and Sons, Edmonton; to Mr. D. Russell, Brentwood.

Silver Gilt.—To Messrs. James Carter and Co., Raynes Park; to Messrs. T. S. Ware, Lim., Feltham; to Mr. J. B. Riding, Chingford.

Large Silver.—To Messrs. Cragg, Harrison, and Cragg, Hounslow.

Small Silver.—To Mr. A. H. Cole, Camberwell New Road, S.E.

## NEW PLANTS, ETC.

### ODONTOGLOSSUM WOODROFFEÆ.

A fine new addition to the small section of O. Rossi hybrids. The plant is dwarf and bore two flowers of fair size. The sepals and petals are brown, with a purple tinge, and irregularly barred with yellow. The large flat lip is bright rose-purple, with a yellow base. The parents are O. Rossi rubescens and O. Queen Alexandra. We understand the hybrid was originally raised by Messrs. Charlesworth and Co. F.C.C., R.H.S., September 24. Mr. E. H. Davidson, Borlases, Twyford.

### ODONTOGLOSSUM NEPTUNE.

This hybrid is the result of crossing O. crispum with O. nebulosum, and though it shows considerable evidence of the latter's influence, the flowers are not so rounded as might have been expected. The colour is white, with brownish spots and a yellow base to the lip. A.M., R.H.S., September 24. Mons. H. Graire, St. Fuscien, Amiens.

### CATTLEYA LORD ROTHSCHILD ALBESCENS.

The small plant shown carried one large and very beautiful bloom, with sepals and petals nearly pure white, and a handsome lip almost wholly yellow, with some white shading and a few purple marks. A.M., R.H.S., September 24. Messrs. J. and A. McBean, Cooksbridge, Sussex.

### LÆLIO-CATTLEYA HASTEDIANA.

Cattleya aurea and Lælio-cattleya Henry Greenwood are the parents of L.-c. Hastediana, a hybrid that is chiefly remarkable for the size and colour of its lip. This organ is wide-spread, finely frilled, deep crimson-purple, with a paler margin, and veins of old gold in the base and throat. The sepals and petals are rosy-purple, and in size and pose do not compare favourably with the lips. A.M., R.H.S., September 24. Mr. C. G. Phillips, The Glebe, Sevenoaks.

### ZYGOPETALUM MAXILLARE SANDERIANA.

A free-flowering orchid, carrying several showy flowers on erect stout spikes. The sepals and petals are green and make a fine setting for the rounded white lip, which has a rose-purple base or disk. A distinct and useful variety. A.M., R.H.S., September 24. Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

### ROSES.

George Dickson. A very fine dark crimson rose, with broad petals that make up a massive bloom. Shapely and of fine substance, this is a distinctly good variety. A.M., R.H.S., September 24. Messrs. Alex. Dickson and Sons, Newtownards, co. Down.

Mrs. Mackellar.—A large and beautiful H.T. rose, very fragrant and distinct. The form is rather globular, the petals of unusual breadth and size. The colour is yellow, of a soft and yet bright shade that is very effective. This should prove a splendid garden rose as well as a useful exhibition variety. A.M., R.H.S. Messrs. Alex. Dickson and Sons, Newtownards.

Little Dorrit.—A very pretty rose, already described and illustrated in these columns (see p. 724). A.M., R.H.S., September 24. Messrs. Paul and Son, Cheshunt.

NEW H.T. ROSE EDWARD BOHANE.

Flowers bright red-crimson. A.M., R.H.S., September 24. Messrs. Alex. Dickson and Sons, Newtownards.

Edward Bohane. A beautiful H.T. rose of great size and substance. The petals recurve slightly at the tips and are very broad. A massive rose of rich rose-red colour, flushed with crimson-scarlet. A.M., R.H.S., September 24. Messrs. Alex. Dickson and Sons, Newtownards.

### DAHLIAS.

Gigantic.—A large cactus dahlia, with incurving tips to its long, narrow florets. The soft old gold colouring fades to pink from the centre outwards. F.C.C., N.D.S., September 17. Messrs. J. Stredwick and Son, St. Leonards.

George Schofield.—A very neat, fair-sized cactus dahlia, with incurving tips. The colour is pink, paler at the tips, but the centre of the flower is yellow. F.C.C., N.D.S., September 17. Messrs. J. Stredwick and Son, St. Leonards.

Useful.—A very distinct decorative dahlia, and one that we hope is the forerunner of a good race of garden varieties. The flowers are three to four inches across, double, but not heavy or globular, shapely, and borne erect on stiff, foot-long stems. The variety is very free-flowering, and the blooms rise well above the foliage. The colour is purplish mauve. A.M., R.H.S., F.C.C., N.D.S., September 24. Mr. J. T. West, Tower Hill, Brentwood.

Johnny.—A capital pompon variety, very neat and shapely. Colour deep maroon-crimson. F.C.C., N.D.S., September 17; A.M., R.H.S., September 24. Mr. J. T. West, Tower Hill, Brentwood.

Jenny Wren.—A charming medium sized cactus variety, with pink incurving florets and a yellow centre. F.C.C., N.D.S., and A.M., R.H.S., September 24. Messrs. J. Stredwick and Son, St. Leonards.

Mrs. Randle.—A large cactus dahlia of rich pink colour, with lighter shading. F.C.C., N.D.S., and A.M., R.H.S., September 24. Messrs. J. Stredwick and Son, St. Leonards.

### ODONTIODA MARGARITA.

A pretty hybrid between Odontoglossum Madrense and Cochlioda Noetzliana. The flowers are of medium size, soft scarlet, with rose-purple shading. A.M., R.H.S., September 24. Mons. H. Graire, Amiens.

### KNIPHOFIA JOHN BENARY.

A handsome and stately variety with large brilliant red flowers borne erect on stout 4ft. stems. A splendid addition. It has also been shown as Kniphofia Lord Roberts. A.M., R.H.S., September 24. Messrs. J. Veitch and Sons, Chelsea.

### PENTSTEMON MRS. F. FULFORD.

A handsome and stately variety with large flowers of a deep and rich red hue. A.M., R.H.S., September 24. Mr. Fulton, Tarbolton.

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**Anchusa italica Opal.**—I observe an enquiry in the Gardeners' Magazine as to the origin of this anchusa, which as you rightly say in your reply, is quite distinct. The pale blue form known as Opal and introduced by Mr. B. Ladhams, Shirley, originated in the vicar's garden in Swanmore as a chance seedling. As a border plant it deserves extended cultivation, growing freely and flowering abundantly. To see the great difference between this and the dark blue form known as the Dropmore variety, which I have grown under the name of superba, the two varieties should be planted side by side in the same border. Well-grown plants of each will reach 6ft. high, and, when furnished with several main stems, which spread outwards as they grow, each one will produce a brilliant display of colour that lasts a long time in the summer. The plants should be replenished every two years, as, when they reach that age, they are apt to decay at the crown. Every piece of its thong-like roots, two inches in length, will, if placed in sandy soil in the spring, quickly grow into a vigorous plant.—E. Molyneux, Swanmore, Hants.

## DWARF POLYANTHA ROSES.

It is not surprising that the dwarf polyantha roses should have come to the front so rapidly, for they are not only very free in growth and bloom, but can be depended upon not to break away from a compact, and yet uncrowded growth. So many roses that would otherwise be good bedders are apt to throw out an occasional long growth, which detracts from the general effect. In the dwarf polyanthas, however, we can keep them almost as uniform as begonias, etc

Nor does it appear that one season suits them better than another, for during the past, trying summer they were quite unaffected. Even now our plants are in bloom, sufficiently so to produce a bright effect.

How very free and useful these are for bedding may be imagined when I state that spring-grafted plants of the present year, which were turned out of thumb-pots during the end of April, have been a mass of blossom since early in July. They have the merit also of doing well upon their own roots, and so are much less expensive in proportion to many others.

Both in beds, or edgings to others, also beneath standards, in lieu of other subjects than roses, they are most suitable. Some of the prettiest effects I have seen during the past summer were beds of dwarf polyanthas, having short standards of the same section in the centre They form good heads, and they look somewhat larger when raised a little from the ground in this way.

As pot plants, too, it would be difficult to improve upon these, their usefulness being enhanced by the length of time their large trusses remain in flower. So constant blooming are they that plants which have been forced under glass will come on rapidly, and give an excellent summer and autumn display if turned out after flowering and due hardening off. Still, I would prefer to partly ripen off the best of them in the usual way of treating pot roses, as this would tend to better results when forced again early in the year.

Dwarf polyantha roses do not seem very particular as to soil, but I have found a rich, light loam suit them best. Not having so much growth to support as the stronger growers, they thrive in shallow soils that are unsuited for the general run of roses, and this is another point in their favour.

With the planting season now close upon us, a list of some of the best may be of service, and I will select them alphabetically, for it would indeed be difficult to place them in order of merit, except in the case of some special colours.

Aennchen Muller has immense trusses of bright rose-coloured flowers, with the peculiarly twisted petals of a miniature cactus dahlia. In bloom from June until weather stays it. It is one of our earliest.

Anne Marie de Montravel is pure white; the flowers small, but very full. A profuse bloomer, and one of the sweetest-scented.

Aschenbrödel contains a touch of blood-red among its clear peach colouring, and has a salmon-orange centre. One of the best for massing.

Boskoop Baby is comparatively new, but it promises to be the best of the clear China rose colours. It is wonderfully free-blooming and sweet-scented.

Cecile Brunner, a blush, shaded with pale pink and a yellowish centre, is one of the best shaped, and charming for buttonholes.

Canarienvogel gives a very distinct and striking colouring with its golden-yellow, orange, rose, and purple blooms. A combination that takes the eye at once.

Eugénie Lamesch has peculiar growth and very shining foliage. It is one of the dwarfest, and always upright. Seldom more than fifteen inches high, and with bunches of flowers shaped like a ranunculus. Orange when first opening, turning to pale yellow and carmine later on.

Floçon de Neige is a great favourite here because it is even freer in blooming than the rest. It is a very aptly named rose, but not so well suited to cut from as the others, the petals falling in a shower when touched.

Gloire des Polyanthas has very tiny, but perfectly-formed flowers of deep rose, with a much lighter base. Very much used for bedding.

Jessie, although almost new, has made a great impression, because it is not only one of the brightest—a deep rosy-scarlet—but keeps its colour so clear up to the last. It is very good and bright under glass, and has no fault as regards growth and freedom in blooming.

Katherine Zeimet is one of the purest of whites, of good form, and borne in very large trusses. Certainly one of the best.

Kleiner Alfred is one of the dwarfest roses I am acquainted with; seldom reaching a foot high, but free flowering and interesting in quite tiny pots. The colour is a rich combination of bronze-yellow, and red.

Léonie Lamesch grows somewhat after the style of Eugénie Lamesch, but is much stronger. The flowers, too, are only from one to five in a truss, each resembling a miniature zinnia. Coppery-red, shaded with orange and a tinge of terra-cotta at the margins. A most striking rose, and one of the best to last.

Madame N. Levavasseur was extensively grown when first introduced, and is good still; but others have ousted it because of the indifferent way it keeps it colour, which is rosy-crimson at first, quickly fading off to a dull and dead-looking purple-red.

Maman Levavasseur, a seedling from the former, and with similar habit, has been styled Baby Dorothy. This has much the same colouring as Dorothy Perkins, and keeps clear. Quite a good variety, but too often confused with the other because of its similarity in name. It is very dwarf and free, reminding one of a large truss of the well-known Dorothy Perkins.

Mrs. W. H. Cutbush has the same habit, but I think the colour is clearer and not quite so deep. A very beautiful rose for bedding.

Orleans Rose is a rather stronger grower than most of the dwarf polyanthas carrying immense pyramidal trusses of vivid rosy-crimson flowers. Certainly one of the best both for beds or pots.

Perle d'Or has the habit of throwing up a strong shoot now and again, which rather spoils a small bed, but these growth are invariably ended by extra large trusses of flower and well spread out. It is one of the most distinct roses grown, and two or three of its beautifully formed nankeen-yellow and deep orange flowers are grand for the coat. There is no need to spoil the truss, for the blooms can be selected without sacrificing the unopened buds.

Phyllis resembles Mrs. W. H. Cutbush so much in every way, except being brighter, as to need no further description.

Schneewittchen is a clear ivory-white, with large golden stamens, upon candelabra-shaped trusses or bunches. It is often only semi-double, but very effective, and one of the sweetest-scented roses grown. A. P.

# RENOVATION OF OLD FRUIT TREES.

What an extraordinary number of old, worn-out fruit trees there are in country gardens and orchards! One only needs to take a walk along a country road and through an old-world village or hamlet, where sweet-scented gardens and green, grass-grown orchards peep at one through hedge-gaps; there you see these relics of a glorious past, lichen-covered, cankered, gnarled, and twisted in all their picturesque futility. For they are not fruit-bearing trees, these old specimens. They take up room that might very well be occupied with a nice, healthy, and clean-limbed young bush or standard tree, a heavy cropper of fine quality fruit, and a better monument to the skill and patient attention of the grower than the disease-choked specimen so commonly encountered. Of course, there is a certain amount of sentiment in relation to these old trees; they may have certain historical associations, so alluring to the owner of the garden or orchard, that he or she refuses to have them destroyed, or even tampered with in any way. No matter that they produce fruit no larger than crab apples, and very few and far between at that! The sentiment is there, and the tree remains. It is forgotten that it may spread the spores of the disease, which cankers and twists its branches into every conceivable shape, to other parts and other gardens, where an effort is being made to grow healthy, sound fruit trees.

## Grafting.

It need hardly be said that not all of these trees are past being renovated. Some, no doubt, should be chopped down and consigned to a fiery death; others can be so far renovated that they will bear fruit of a tolerably good quality, if not in great quantity. The writer has many times been requested to play the part of renovator, and in the course of the work many special points of interest have been noted. One thing is certain: it is a fallacy to suppose that old, worn-out, and half-decayed trees can be brought into any satisfactory state of fruitfulness by grafting. In almost every instance where such an attempt has been made, it has been noticed in after years that the graft, which, perhaps, may have made a strong, healthy growth, has eventually suffered a reaction when it has attained large dimensions, for the action of the branches was so vigorous that it put too great a strain upon the root system below, which, in turn, upset the balance of the tree. Now, it may be supposed that by heading back these strong-growing branches, the strain on the root-growth would be removed, or at least lightened somewhat, and new roots would develop to counterbalance the increasing vigour of the branches above. In a good soil overlying a fine, friable subsoil it may certainly be expected that such relief could be granted to the roots, provided, of course, the tree was comparatively healthy at the outset, and was growing on a good crab or vigorous apple stock. Indeed, I have noticed such excellent results in more than one instance —but not many more than one.

## Root-pruning.

Always, in speaking of the renovation of old, worn-out fruit trees, one inclines to thoughts of root-pruning. No doubt, the root action of many of these old trees would set up a decided improvement, calculated to benefit the whole tree, if it were taken in hand by a skilful root-pruner. The work requires careful attention, and a considerable amount of experience before it can be performed properly. In the case of young trees on crab and pear stocks, it will be noticed that, where they are growing in tolerably good loamy soil, an excessive amount of woody growth will be developed at the expense of the fruiting spurs, and it will then be necessary to root-prune so as to keep the trees compact and dwarf. The root-pruning of all fruit trees is best performed just after the fall of the leaf, or so long as the soil remains sufficiently warm to encourage the development of new fibrous rooting growths from the cut surfaces of the tap-roots. In the case of an old tree that is evidently in need of renovation of some kind or another, a trench must be taken out round the tree at a distance of three feet or more away from the stem, or just underneath the extending tips of the side branches. The age and habit of the tree must always be taken into consideration when doing this work, for in old trees the roots will be found to extend very far under the surface of the ground. Usually it is advisable to do only half the tree one year, taking out a semi-circular trench for this purpose, and completing the work in the following season. There is not so severe a check to the roots when the work is done in two seasons in this manner as when it is completed in one operation.

Care needs to be exercised in severing the thick tap roots that are exposed in the open trench; some misguided individuals I have noticed vigorously hacking away at them with the blunt edge of a spade. This is not the correct way to root-prune a fruit tree. A special pruning saw should be obtained for large, thick roots, and after severing these, the ends should be pared off as smoothly as possible with a sharp pruning knife. When the trench is first opened one may be at a loss to know how to dispose of the innumerable fibrous roots that are in the way of the root-pruner. The best way to manage these is to tie them up carefully to the ball of soil surrounding the roots, securing them firmly out of the way with a few wooden pegs.

That root-pruning is advantageous to old, partially worn-out fruit trees there can be no doubt, but it must be admitted that the operation is not always attended with the best results. It is problematical whether the tree will recover from the shock, but it is certain that the mechanical effect of the soil at the surface of the ground will have much to do in determining the success of root-pruning. A finely-pulverised surface soil, porous and light, and well permeated by air and moisture, will encourage rooting more than anything else; and it is advisable, where the soil is of a heavy and tenacious character, to lighten it by the addition of several barrowloads of good leafmould, mixed with sand, or some old potting compost. Of course, root-pruning is productive of very excellent results sometimes. Usually the first beneficial effects may be noted in the spring following the autumn when the work is performed. Leaf action will then assume an added vigour, and there will be an abundance of buds and spurs where formerly woody growth held full sway.

## Pruning.

The pruning of fruit trees is not a simple operation; neither the amateur nor the commercial fruit-frower finds it an easy matter to prune his trees in the best possible fashion. Sometimes, unfortunately, fruit trees are cut down so carelessly, and with such a wanton use of the knife, that their vitality and constitution have been practically ruined. The fruit-bearing capacities of these ill-treated trees have, of course, suffered unduly, and in many instances they have become actually barren or the fruit has been so small that it has been scarcely worth gathering. Usually, it will be noticed, that in the case of clean, healthy trees, this careless system of pruning is productive of a crowded, clustering mass of fruiting spurs along the extension of the thick, woody branches. To remedy this state of affairs, all that is necessary is to saw off the branches so as to leave, as nearly as possible, the young shoots of a previous year's growth regularly disposed over the tree at intervals of 10 or 12 inches. These young shoots, so disposed after the pruning saw has been at work, will produce plenty of buds in the following season, and a very fair crop of fruit may be relied upon, whether it be apples, pears, or plums.

Bad pruning very quickly reflects itself in the disposition of the fruiting spurs. For example, fifteen to twenty-year-old espalier or pyramid trees sometimes exhibit the effects of this unskilful treatment in the shape of thick, crowded clusters of fruit spurs grouped in a mass at the ends of branches. Plenty of bloom will, of course, make its appearance, but the very abundance of this bloom will impair the strength of the spurs considerably, and put a stop to their fruitfulness. Here, in such cases, the renovator must set to work and thin out the fruiting spurs, and remove all those that only produce a woody growth. Also he will remove part of the terminal shoots and spurs each season so as to bring back into their proper position those shoots which have grown away from the parent stem.

J. C. N.

# CHRYSANTHEMUMS.

## Lifting Plants from Open Borders.

In these days great quantities of cut flowers are required for the embellishment of rooms, corridors, and entrances of mansions and villas.

Soon the time will come when the gardener will have to depend chiefly on forced flowers, and the majority of these are expensive to produce. The chrysanthemum is not an expensive plant to grow, and it yields great quantities of beautiful flowers which last for a long time in a fresh condition. Specimens grown in pots yield many blossoms, and they are especially valuable for placing in greenhouses and conservatories, both as pot plants and for the supply of cut blooms. But where there are many plants now showing buds in plantations in the garden—it may be, in the vegetable quarters—some of them should be lifted and be replanted under glass to supplement the supply of flowers provided by the pot-grown plants.

Very little trouble attaches to the housing of these border plants, which will yield a rich harvest of blooms from October to December. The borders of peach houses are ideal places for chrysanthemums; the latter require abundance of air and a cool temperature, such as is afforded in a peach house at this season of the year. The inexperienced cultivator should carefully lift the plants, having, about one hour previously, well watered the soil, so that as much of it as possible may be lifted with the roots. It is a mistake to over-crowd, but the leaves of one specimen may touch those of another. Do not dig up, or in any way disturb the soil, but place the roots and adhering soil of the plants on it, and then add fresh soil to make a finished covering to the roots. Water at once, and then not too frequently, giving just sufficient to keep the leaves quite fresh.

Geo Garner.

## SOME CHOICE FLOWERING SHRUBS.

### Desfontainea spinosa.

It is many years since I saw this lovely evergreen shrub flowering so freely as it is at the present time in the gardens at Wych Cross Place, Sussex. The plants were placed in their present position against a south wall eight or nine years ago, and, though of slow growth, they have made considerable progress, and at the present time are in full bloom. The foliage somewhat resembles that of a holly, though rather smaller. The flowers are tubular in shape, and bright red and yellow, and are very conspicuous against the dark-green, shining foliage. When well established and in full bloom, no shrub that I am acquainted with is more attractive. Though introduced as far back as 1853, it is like a great many other hard-wooded plants — not generally cultivated. In some places in the south, where the winters are not too severe, this shrub does well in the open. The largest plant I ever saw was growing in the open in a garden in Dorsetshire; it was then a good-sized bush. Some cuttings I had from this plant were rooted, and planted in the gardens at Buxted Park, where they grew well, but were killed during a severe winter some few years ago. In the north, where the winters are more severe, the desfontainea is worthy of cultivation under glass; in fact, it was as a greenhouse plant that I first made its acquaintance. When grown out in the open it should have a sheltered position, but grows best when afforded the protection of a south wall. At Wych Cross Place it usually needs no protection. The soil most suited to its requirements is that of a light, sandy, peaty nature; given this, and a well-drained position, it makes one of the most interesting shrubs we have. Cuttings will root freely under a bell glass in a mixture of peat and sand.

### Cæsalpinia japonica.

I have on more than one occasion drawn attention to this most interesting shrub. At the present time it is flowering most profusely and is very attractive, the long spikes of canary-yellow flowers standing upright, like those of the horse chestnut, well above the foliage. This is a shrub of more recent introduction, and deserves to be far better known than is the case at the present time. It is about a quarter of a century ago since I first saw it. In habit the foliage somewhat resembles that of the thorn acacia, but the flower spikes are more loose, and stand erect. When in bloom, as it is at the present time, there can be no two opinions about its beauty as an ornamental flowering shrub. It needs a sheltered position to grow well.

### Ozothamnus rosmarinifolius.

Close to the specimen of Desfontainea at Wych Cross Place is an example of this ozothamnus, covering a large space on a terrace wall, and is now covered with its small white flowers. This is a native of Van Diemen's Land, therefore, is not hardy in all parts of this country, but where the situation is favourable it grows freely. When planted in a warm position facing south, and afforded a little protection during severe weather from the biting winds, it does well. The soil round the roots should be mulched in winter to prevent the frost reaching the roots. Should the plant be cut back by the severity of the weather, young growths will spring up again from the roots. Propagation may be effected by cuttings inserted in sandy peat under a bell glass or in a cold frame; they should be potted up, and grown on for two or three years in pots to have them well established before planting them out.

H. C. PRINSEP.

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## PECKHAM RYE PARK.

This favourite resort of South-east London is, compared with most parks, of a decidedly unorthodox character, as within recent years a large natural wood, containing glades and avenues, mainly consisting of elm trees, has been added thereto. An old farm, too, has been merged into the area of the park, and now forms one of the most delightful features to be found there. What was formerly the kitchen garden of the farm house is now the site of an Old English garden, so termed, for, though it contains many old-world features, yet the floral display is, in many cases, at least, brought up to date by the addition of the finest of the newer forms. The pergolas there are well furnished with the choicest of climbing roses, as well as other subjects.

What is of great importance to the visitor is that wide-spreading umbrageous trees are scattered here and there, and the seats, which are numerous, form a delightfully cool retreat during the summer. Though this desire for shade has not been so pronounced this year as it was last, yet many of the trees are sufficiently dense to keep off a good shower, and on this account they have been often appreciated. The plentiful—one might almost say lavish—distribution of seats, is one of the most pronounced features of Peckham Rye Park, and one much appreciated by the general public.

Beside seats of the style to be met with in all parks, advantage is taken wherever suitable spots exist, to erect rustic ones of all sizes, so that the single individual in search of solitude may be accommodated, as well as the family party. Although in harmony with their surroundings, these seats are exceedingly comfortable, so much so indeed that they are usually well occupied, and tend to suggest the thought that this example might be more generally followed.

In this part of the park there is a space given up to a collection of uncommon trees and shrubs, most of which are in a thriving state. The different conifers represented by some flourishing examples are, considering their close proximity to a crowded neighbourhood, doing remarkably well.

It must not be thought that the whole of this portion of the grounds is left in a state of wild, untrammelled nature, as, of course, walks are, in some cases, indispensable, and there are many instances in which the "art that doth improve nature" may be noted. For instance, advantage has been taken of a low-lying portion, kept moist by a tiny streamlet, to plant hardy bamboos and other moisture-loving plants. The bamboos have not been planted many years, but they have made magnificent growth, so much so, indeed, that they and their associates promise ere long to be one of the features of the park.

Close by, in a spot sheltered from the east wind, a collection of camellias, at present limited in number, has been planted, and are thriving remarkably well. The profusion with which they bloomed, and the promise of a grand display as they get larger are equally remarkable. Given such a spot, camellias are a delightful class of outdoor shrubs, a fact which seems to be very generally ignored.

It must not be thought that the summer floral display suffers any diminution by reason of the attention devoted to more uncommon subjects, for there is a herbaceous border some 250 yards or thereabouts in length, which has a background of ornamental shrubs, and contains a choice collection of flowering subjects disposed in groups or masses, so that the prominent features of each kind can be plainly seen. A continuation of this border, which used to be devoted to a miscellaneous collection of summer-flowering subjects, is this year treated somewhat differently. Like the herbaceous border, this has a pronounced background of shrubs, in front of which is a broad but irregular belt of Paul Crampel pelargonium, with an edging of Cineraria maritima, Iresine Herbsti, and Kœniga maritima. This sounds decidedly formal, but it is not really so, as the shrubs in the background, and the various light-tinted subjects, such as Leucophyta (calocephalus) Browni, Artemisia arborea, and Gnaphalium microphyllum, are interspersed with the pelargoniums, all tend to tone down the mass of colour, and thus form a pleasing combination. Probably, owing to the fact that they are on raised ground, the pelargoniums are this season flowering with more freedom than they are in some places.

On the opposite side of the walk from this border the principal flower beds are situated, and of them it may be said that the reputation of former years is well maintained. Of course, the weather has been decidedly unfavourable for some subjects, while, on the other hand, there are others much more effective than was the case last year. Fuchsias have, as everywhere else, done remarkably well, and the collection at Peckham includes some varieties rarely seen planted out. Ivy-leaved pelargoniums are also satisfactory, and the effective arrangement of many of the beds shows that the matter has been thoroughly thought out. A large bed of succulents is very attractive, while specimen hydrangeas in full bloom, plunged in the turf, show their adaptability for this mode of treatment.

A very important item in connection with public parks nowadays is that provision must be made to enable the public to play different kinds of games, a work that entails a considerable amount of forethought on those responsible for the carrying out of details. At Peckham there is a large space devoted to cricket and football, and to this a bowling green has been recently added. Beside these attractive features a band plays frequently on Peckham Rye, just outside the precincts of the park.

W. T.

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**Gentiana asclepiadea.** — The Willow Gentian is a valuable plant for the rock garden, for it produces its lovely purple-blue flowers all along the stems at a time when few subjects are in flower. It succeeds in ordinary moist soil, and can be naturalised in favourable positions in the wild garden, especially by the stream side. The white variety is equally worth growing, but is not quite so vigorous in growth.—J. GARDNER.

**Plumbago rosea.**—This ranks as one of the brightest and most beautiful warm house plants we have for winter flowering, and now is the time to encourage free growth by feeding the roots periodically. The plants require liberal culture during the growing season in order to produce as many strong growths as possible, each of which should yield a panicle of bright scarlet flowers in the winter months. Unfortunately, the plant is shy in "breaking" after stopping the leaders but if this be done judiciously, in conjunction with favourable atmospheric conditions, strong specimens with several growths will result. Admit air freely during the hottest part of the day, but close the house and syringe early in the afternoon.—H. T. MARTIN.

# NOTES FROM SCOTLAND.

## The Autumn Season.

The very welcome advent of three weeks' dry, breezy, and for the most part unclouded weather, with present prospects of a continuance of the same for some time longer, has wrought an almost magical change in vegetation, and the aspect of the country landscape in general; while in the minds of those largely or entirely depending upon the produce of the soil for a livelihood, it has banished the gloomy forebodings that prevailed a month ago in respect to agricultural matters. These were most acute in regard to the grain crops, which at the time were thought to be almost ruined with the continuous rains. Now, however, due in a large measure to sunshine and drying winds, bountiful and fairly well-conditioned crops are being garnered very rapidly, thus compensating to a considerable extent for the difficulty and extra expense incurred in cutting and winnowing the same.

## Bedding Plants.

All kinds of these are now making a fuller and brighter show of colour than at any time during the past summer; while herbaceous plants having grown very strongly, have since developed flowers in abundance, and many subjects that are usually past their best at this date mingle their colours with others that are true autumn-flowering species; hence but few blanks, always difficult to avoid in mixed collections, are in evidence.

## Roses in Garden and Shrubbery.

Interesting and beautiful as roses were at the latter part of July—a time, by the way, at which we were favoured with seasonable weather—they are scarcely less so now; added to which the colour of the blooms seems intensified; while their lasting properties, either upon the plants or when cut and used in vases, are far superior. Hybrid tea roses are, perhaps, the best and most reliable for autumn flowering, though many of the hybrid perpetuals leave but little to be desired in this respect; and, where the foliage has been kept clear of insect pests, long sturdy stems, surmounted by exquisite blooms and efficient leaf-growth, are now available for room or table decoration.

## Rambling and China Roses.

Many varieties of the first-named, but more particularly the Wichuraiana section, make a very pretty display of bloom until quite late in the season, which shows to good effect among the ever-changing foliage tints upon the various trees and shrubs by which the roses are surrounded. This refers to the suitability of this section for planting in partly-shaded positions, or where sunlight and air may be more pronounced at this time than at an earlier period; hence the flowering is retarded, and the blooms linger much longer than would be the case if fully exposed throughout. In gardens of any considerable extent there are usually trees, hard-wood or otherwise, that are passing beyond their youthful stages. Instead of removing these entirely, it is often possible to maintain some semblance of order by reducing the branches, and, after excavating and refilling with good soil a spacious trench about their bases, to plant therein one or several varieties of climbing roses, selected to colour according to taste in this respect, or the environment of the respective positions.

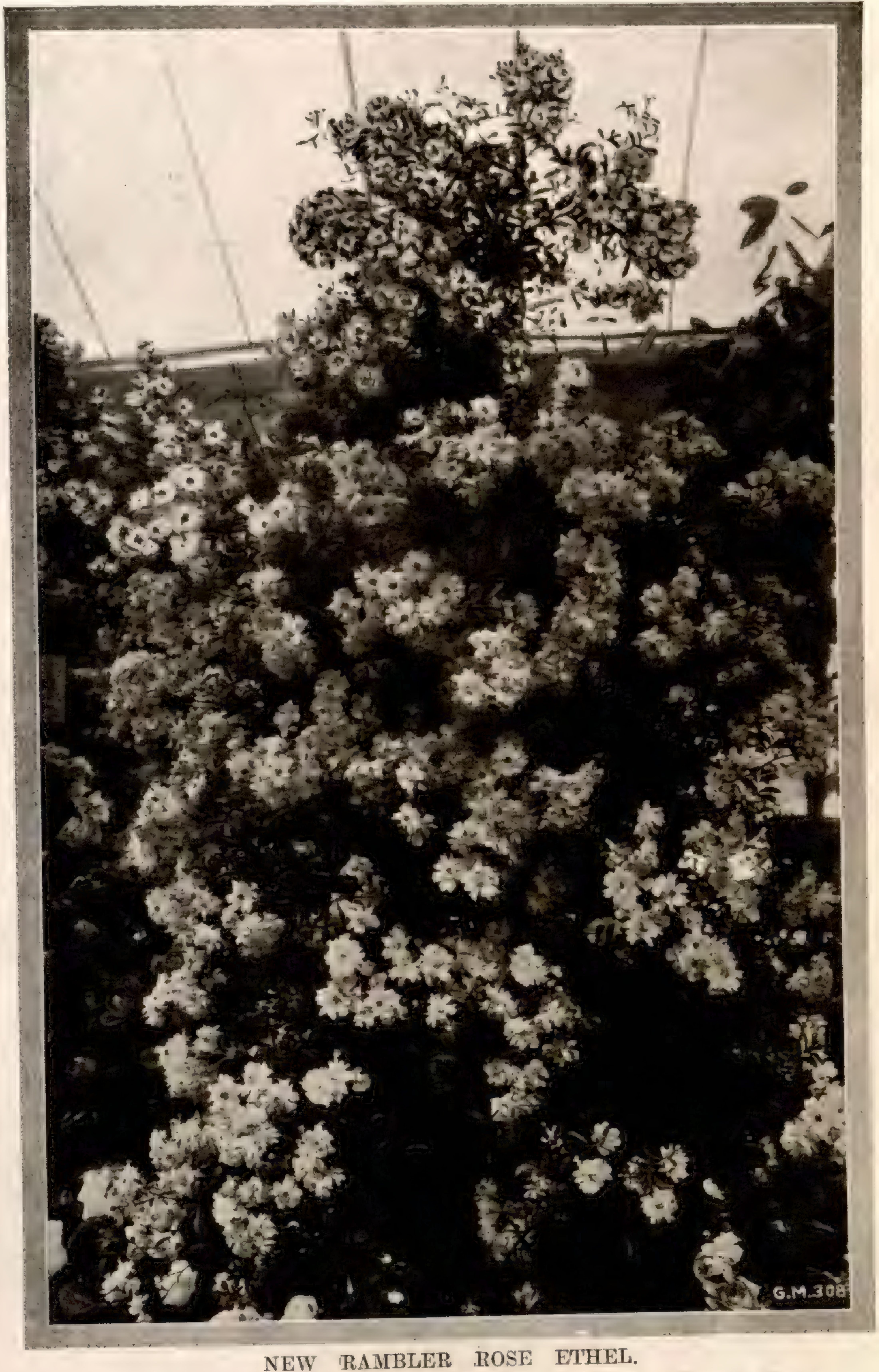
The China type of rose is generally considered a dwarf, which is so far correct while the pruning is severely carried out each year; but allowed to grow, and given the support of a wall or fence, the plants attain a height of several feet, or even yards, and flower profusely at this period of the year. Choice of aspect is of little importance with these, and the common pink variety grows here with more freedom against a wall whereon the sun has but little, if any, direct influence, than it does in what would be thought more highly-favoured positions. The flowers are very beautiful in appearance upon the plants. The crimson variety, Fellenberg, is the best of this class for massing with which I am acquainted. In growth it is moderately dwarf, very branching in habit, and flowers practically the whole season if the decayed flower-heads are kept off. Ducher (pure white) is good for variety, but the coloured forms seem to elicit most attention. Of these Charlotte Klemm, Comtesse du Cayla, Madame Eugene Resal, Queen Mab, and, lastly, the well-known favourite, Mrs. Bosanquet, are all worthy of extended cultivation, if only for autumn display.

James Day.

Galloway House, Wigtownshire.

# NEW RAMBLING ROSE ETHEL.

A rose of great beauty for garden decoration and one that has secured the recognition of two great societies is Ethel, a Wichuraiana variety for which Mr. Charles Turner, Slough, is responsible. It is a rambler of moderate growth, but particularly free-flowering, and carrying its medium-sized, semi-double flowers in very large and elegant clusters. The exquisite shade of rich pink colouring, with paler centre exhibited by the flowers of this charming rose make the variety most effective, whether the blooms decorate an arch or pergola, a wall or a pillar, or are used in a cut state in the home. At the National Rose Society's exhibition held at Regent's Park on July 7, 1911, Mr. Charles Turner was awarded a Card of Commendation for Ethel, and at the Holland Park show on July 2 of the present year the Royal Horticultural Society granted an Award of Merit.



NEW RAMBLER ROSE ETHEL.
Flowers bright pink. A.M., R.H.S., July 2. Mr. Charles Turner, Slough.

## NEW MEDAL ROSES.

In offering these few remarks on the roses which this year have been awarded medals by the National Rose Society in the seedling rose classes at Southampton, Royal Botanic Society's Gardens, Belfast, and Westminster, the writer trusts they will be accepted as merely first impressions, gathered, for the most part, from a few minutes' acquaintance in the place of exhibition; impressions which doubtless will have to be modified on a more intimate acquaintance with the varieties under review.

NEW H.T. ROSE BRITISH QUEEN.
Flowers creamy-white. Gold Medal, N.R.S., September 12. Messrs. S. McGredy and Son, Portadown.

The most striking feature of the seedlings exhibited this year is the colour--yellow in all shades and degrees—which makes the description of them somewhat difficult. Of the following medal roses of 1912, one has an opinion that, for a grower of specimen blooms, Coronation, a seedling of Messrs. Hugh Dickson, Lim., will prove the best rose of the year, and Mrs. F. Vanderbilt, a seedling of Messrs. S. McGredy and Son, the most useful for decorative purposes, grown outdoors. And yet neither of these roses gained the highest award!

British Queen.—H.T. (S. McGredy and Son), creamy-white, good size, superb shape, pointed globular, petals reflexed, blooms produced on slender upright stems, sweet-scented, habit branching, very free-flowering. It seems to be just as good in damp weather as in dry, which is surprising, as the texture of the petals is somewhat thin. The raiser has a very high opinion of it, and no wonder, as when seen growing at Portadown in July, a batch of several hundreds, the sight viewed from a distance appeared as a veritable snowstorm. On a closer inspection of the plants, the difficulty was to find any rough, or even damaged, flowers; every bloom, large or small, seemed perfect. Silver-gilt Medal, N.R.S., Belfast. Gold Medal, N.R.S., Westminster.

Colleen.—H.T. (S. McGredy and Son). Blooms carried erect, colour bright pink, with deeper shading, high-pointed centre, large, very attractive. Habit, on maidens, vigorous, upright, free-flowering. The depth of petals was remarkable. We understand that Mr. E. G. Hill, of Richmond, U.S.A., thinks so highly of this rose for commercial purposes that he has acquired the distributing rights of it in America. Silver-gilt Medal, N.R.S., Belfast.

Coronation.—H.P. (Hugh Dickson, Lim.). Soft clear peach pink, very large, globular, superb form, petals of good substance and reflexed, very double. One of the largest roses hitherto exhibited. Foliage dark green and leathery. Habit, as seen on maidens, similar to Frau Karl Druschki. Free-flowering. A massive, very attractive, and most promising "exhibition" variety. Silver-gilt Medal, N.R.S., Belfast.

H. E. Richardson.—H.T. (Hugh Dickson, Lim.). A very sweet-scented rose, the colour of Horace Vernet. Blooms of medium size. A beautiful group of this was staged at Belfast rose show in 1911, as well as this year. Habit, on maidens, tall, carrying the flowers upright. The blooms, however, like Horace Vernet, have a tendency to come rough. Silver-gilt Medal, N.R.S., Belfast.

H. Vessey Machin.—H.T. (Alex. Dickson and Sons). A large rich crimson flower, petals of good substance and reflexed. Habit, as seen on maidens, short and upright. The plant, apparently, does not carry many flowers, but those it has are exceedingly handsome. This variety will probably be wanted by exhibitors of specimen roses. Gold Medal, N.R.S., Belfast.

Irish Flame.—T. (Alex. Dickson and Sons). A decorative single tea of the Irish Elegance type. Of similar growth, but the flowers are smaller and more cupped. Colour very striking, distinct, ruddy bronze-yellow, difficult to describe. Best in the bud stage. A grand basket of this variety was exhibited at Southampton, but, from an inspection of the plants at Newtownards, one is inclined to think it took a good many plants to fill such a basket. It will, however, be wanted by exhibitors in the table decoration classes. Gold Medal, N.R.S., Southampton.

Lady Mary Ward.—H.T. (S. McGredy and Son). Colour, rich orange, shaded yellow. Medium-sized flowers, habit dwarf. Very distinct and attractive, especially as seen growing at Portadown. Gold Medal, N.R.S., Belfast.

Little Dorrit. — T. (Paul and Son). Blooms salmon-pink, flamed rosy-crimson, medium sized, well-formed, semi-double flowers. Silver-gilt Medal, N.R.S., Westminster.

Mrs. Andrew Carnegie.—H.T. (James Cocker and Sons). Colour lemon-white, large pointed bloom, sweet-scented, petals of great depth, but thin in texture. An enlarged Niphetos, erect. The flowers exhibited had the appearance of being grown, or at least shaded, under glass. It does not seem to have been exhibited at the N.R.S. shows again this year. Gold Medal, N.R.S., Royal Botanic Gardens.

Mrs. Charles E. Pearson.—H.T. (S. McGredy and Son). Colour orange, flushed with red. Apparently a Pernetiana of the Arthur H. Goodwin type, but much deeper in colour. Blooms of fair size, imbricated form. In a large batch of seedlings at Portadown, by reason of its remarkable colour, it was the first to attract the writer's attention. A charming decorative variety. Gold Medal, N.R.S., Westminster.

Mrs. C. Reed.—H.T. (Messrs. Lowe and Shawyer). Colour pale pink, with lemon shading, globular, resembling Clara Watson. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

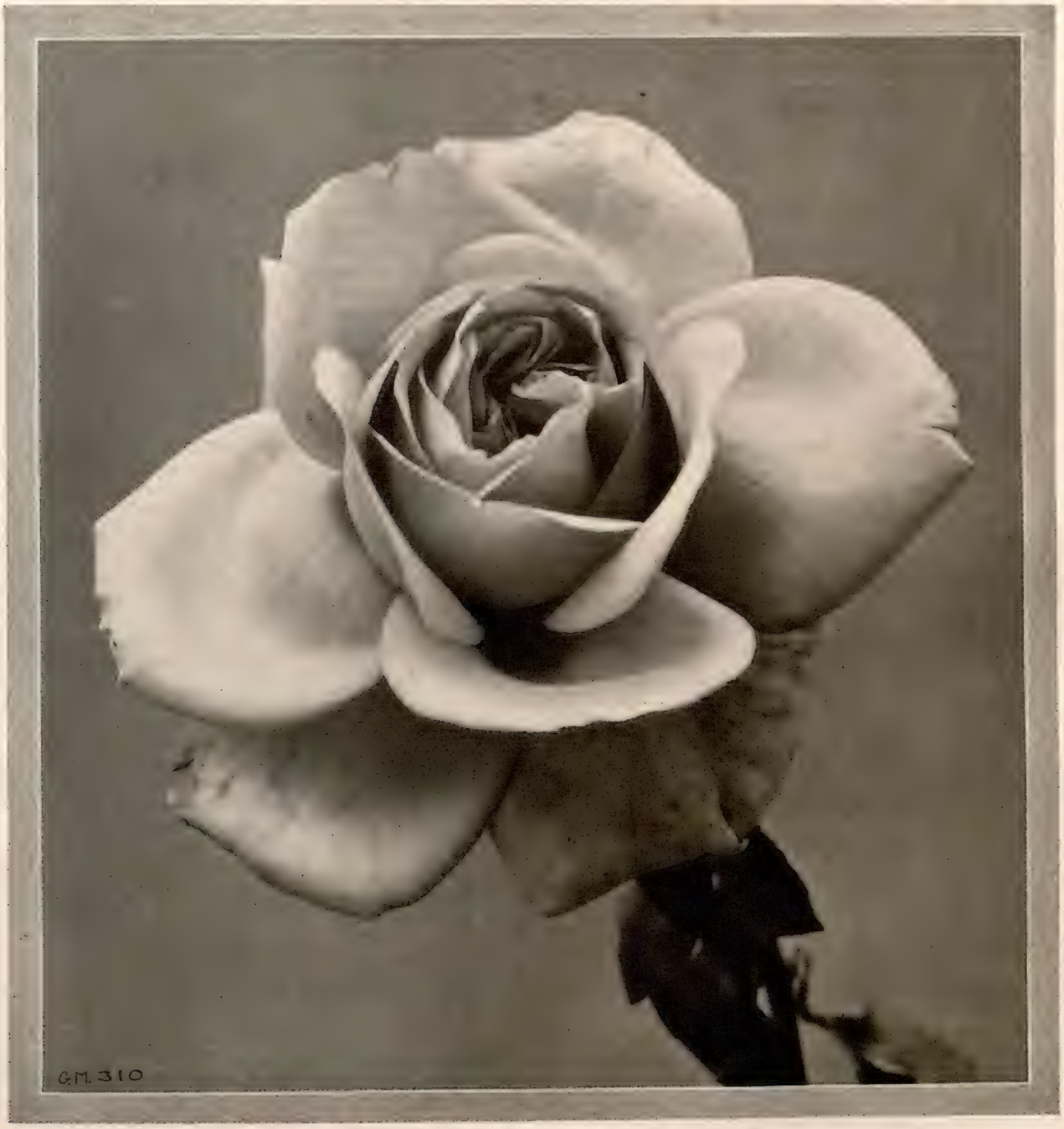
Mrs. C. S. Hunting.—H.T. (Hugh Dickson, Lim.). Colour light chamois-yellow, difficult to describe. Petals firm, apparently of free-flowering habit. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

Mrs. E. Part.—H.T. (S. McGredy and Son). A decorative variety, the colour of which is difficult to describe in definite terms, a blend between brilliant red and deep salmon. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

Mrs. James Lynas.—H.T. (Hugh Dickson, Lim.). Flowers large, blush-pink, good form. Silver-gilt Medal, N.R.S., Belfast.

Mrs. R. D. McClure.—H.T. (Hugh Dickson, Lim.). Colour soft rose-pink, shaded salmon; of the Lyon Rose type. Attractive as exhibited. Silver-gilt Medal, N.R.S., Belfast.

Mrs. F. Vanderbilt.—H.T. (S. McGredy and Son). Colour deep orange-red. A splendid stand of this remarkable variety was staged at the Belfast exhibition. As seen at Portadown the colour was very attractive. A promising, distinct, decorative variety. Silver-gilt Medal, N.R.S., Belfast.



NEW H.T. ROSE MRS. S. C. HUNTING.
Flowers chamois-yellow. Silver Medal, N.R.S., July 9. Messrs. Hugh Dickson, Lim.

Moonlight.—H.T. (Rev. J. H. Pemberton). A perpetual-flowering cluster rose; colour lemon-white, with golden stamens, semi-single; habit vigorous, branching; growth, three to four feet. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

Old Gold.—H.T. (S. McGredy and Son). A decorative rose. Colour scarlet, orange blooms, small but elegant, best in bud stage. It is likely to be in much demand for table decoration, the colour being so distinct and attractive. The basket of this variety received an unanimous vote; it was so well arranged. The exhibitor has a large number of plants from which to cut. Gold Medal, N.R.S., Royal Botanic Gardens.

Queen of the Musks.—(Paul and Son). A pretty cluster rose, apparently of dwarf habit. Light pink semi-double flowers. Silver-gilt Medal, N.R.S., Westminster.

Queen Mary.—T. (Alex. Dickson and Sons).—A small-flowered semi-single decorative rose. Sweetly pretty. Colour, lower half of petals bright yellow, upper half brilliant rosy-pink. In form it resembles a china. Habit free, branching, blooms erect. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

St. Helena.—H.T. (Benjamin R. Cant and Sons). Colour distinct, cream, with pink flush. Flower of perfect shape in the way of Joseph Hill, high-pointed centre, petals reflexed. Growth vigorous. Should prove useful to the exhibitor of specimen blooms. The raiser staged a beautiful twenty-four box of it at Southampton, and a magnificent flower at Colchester show. Gold Medal, N.R.S., Southampton.

Sunburst.—H T. (Pernet-Ducher). Probably the most attractive rose of the year, as exhibited. Colour a definite orange-yellow. Blooms of medium size, pointed, produced on long footstalks. Habit, as seen at Lyons, robust and branching. In the open, the blooms of the first growth are pale lemon, some almost white, but on the second growth the colour is deeper, although not so rich as when cultivated under glass. It promises to be one of the best new forcing roses. Silver-gilt Medal, N.R.S., Royal Botanic Gardens; Gold Medal, N.R.S., Westminster.

William Cooper.—H.T. (Hugh Dickson, Lim.). A fine flower of deep rose colour, pointed, borne on long, stiff stems, but not very distinct. Silver-gilt Medal, N.R.S., Royal Botanic Gardens.

George Dickson.—H.T. (Alex. Dickson and Sons). This rose won its award, a Gold Medal, at the N.R.S. show at Ulverston last year, and therefore lies beyond the scope of this article. Nevertheless, the raisers can claim for it a distinction that is seldom, if ever, reached by a new seedling in so early a stage of its career—a distinction of being awarded this year two Silver Medals, one at Regent's Park and the other at Belfast, for the best bloom of any hybrid tea in the exhibition. By naming this seedling after their much-respected father, Mr. George Dickson, the "Sons" evidently considered it an extra good rose—a view the writer took of it some two or three years ago. It is a magnificent well-built flower of the Horace Vernet type, but distinct. Colour velvety-crimson. Growth on maidens vigorous. Without a doubt it is one of the very best seedlings of 1911.

JOSEPH H. PEMBERTON.

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**Verbena Miss Willmot.**—When properly treated this is a charming variety for filling a few flower beds in the summer time. Mildew is an enemy of the plants, and will soon cripple them if they are grown in a shallow soil or in a draughty quarter. Another important point is the proper hardening of the plants.—G. B.

## A SOUTH BULB BORDER.

There is infinite variety of interest to be gained from the culture of delicate bulbous plants out of doors, for not only are the suitable species extraordinarily numerous and beautiful, but experiments will establish gardening records, by proving that many a greenhouse subject will submit to outdoor life in England if suitably located and well treated.

The best, in the sense of the widest results, can be obtained in south coast counties, but there are many inland places where the conditions are favourable. Sometimes height above sea-level is the advantageous circumstance, ensuring dryness of winter atmosphere, as in many parts of East Sussex, where myrtles, eucalyptus, and aralias flourish in the open. Sheltered, warm valleys, however, are also admirable localities, since a raised bed or border can be adequately drained, and the concentrated warmth will then be unmixed with evil.

But in even an ordinarily genial garden, neither in a seaside town nor a noted health resort, wonderful displays can be gained from bulbous plants that are not hardy, if a border is devoted to them against a south wall, and either a few outjutting evergreens, or a length of wall or fence, are arranged to give protection at the two ends of the space. Racking southwest winds always do harm, because they come frequently in summer, tearing the blossoms into strips, and bruising the foliage that is generally so attractive in the lily family. East winds of spring are harmful in other ways, checking the young growth, nipping off the scarcely starting shoots, and chilling the soil. But with a screen afforded against each of these wind enemies, the south bulb border is certain to be a success; the number of species grown will have to be determined by the local temperature conditions.

It is best to start the border in August or September, as many bulbs can then be planted, while the soil will be in a perfect state for the plantings of later months. Equal portions of turfy loam, leaf-mould, old cow-manure, and half-portions of brick rubble and coarse sand, should constitute this soil, while peat should be added for lilies and such other subjects as like it. Burnt earth can be added if desired; some gardeners declare that most bulbs grow more robustly when spent hops are used for top-dressings, and ultimately hoed in, but burnt earth seems admirable as a preventative of fungus trouble, which is such a danger to all bulbs. The elimination of insect pests from the border is a matter upon the necessity of which each planter must decide for himself.

A slight slope from the back of the ground to the front is beneficial, but must not be sufficient to render the edge portion damp; the back of a south border against a wall will invariably require much artificial watering as rains that reach it will be few. If the ground is edged by turf that should slope also; if by tiles or rockery there should be fissures left through which surplus moisture will pass through to flow into catch-drains in the path. A strip of turf is the edging that best shows off flowers. It should be freely watered with a solution of carbolic powder or liquid, not strong enough to harm the turf, but to keep it from harbouring leather-jacket grubs and wireworm.

The August plantings should include freesias, autumn and winter crocuses, colchicums, and liliums in great variety; also the spring star-flower, Tritelia uniflora, white, and T. violacea, blue, striped with violet, and Allium neapolitanum, which will form fine masses in earliest spring if got in early. Montbretias should be added to the border directly the clumps have done blooming, as divided bulbs planted then give far finer results than if removed later. Tritonia rosea, known as the pink montbretia, should not be forgotten.

There should be a splendid flower show in this portion of the garden during nine months of the year, and a fair one throughout the remaining three, for hellebores, winter aconite, snowdrops, dicentras, Roman and Italian hyacinths, hepaticas, Van Thol tulips, Schizostylis coccinea, Chionodoxa, Anemone fulgens, irises, Anemone appennina, and Anemone blanda, are all suitable.

While arranging for massed displays of such flowers as appear at inclement seasons the gardener should yet devote his care chiefly to the rare summer beauties that would not live in a spot less favoured. Ixias, babianas, and sparaxis are of noted attractiveness; arums of red, brown, purple, and greenish-white must not be omitted as they are very curious and handsome. Callas, falsely called arums, of yellow and of white, may be bedded out for summer, while varieties of agapanthus can be kept out altogether in some places.

Other beautiful bulbous plants that can be tried are albucas, the largest, A. Nelsoni, reaching a height of 3ft., and yielding spikes of almond-scented white blooms; A. canaliculata, yellow, and A. fastigiata, greenish-white, being 18in. growers. Alströmerias offer shades of orange, crimson, yellow, rose, and blush-white. Bloomeria aurea gives plentiful yellow blossoms on long stems, when the Scarlet Twin-flower, (Bravoa geminiflora), will also be gay. The Roman Squill (Bellevallia romana), blue, rose, and brown-shaded; Bessera elegans, with pendant bells of cerise; Anomatheca grandiflora, crimson; A. cruenta, scarlet-crimson; Butterfly tulips, the white Cooperias, Geissorhiza Rochensis, blue with crimson blotches; and Ixiolirions, are other charming novelties of medium height.

Gladioli, kniphofias, Hyacinthus candicans and innumerable irises will give tall, elegant growth. Pancratiums are exceeding beautiful, especially P. (Hymenocallis) Daphne. Crown Imperials are of yellow and orange-red. Eucomis punctata has white autumn flowers, marked with rose, on 2ft. stems. Three feet high are the stalks of Cypella platensis, one of the most genuinely azure - blue, yellow - centred flowers. Crinums rank with Lilium auratum among bulbous giants. For shade-loving bulbs, such as fritillarias and Dog's Tooth violets, nooks should be arranged between groups of tall subjects.

Mulching the bulb border with cocoanut-fibre refuse in earliest spring will do much to hasten and protect growth as well as to show off the blooms and prevent mud-splashes. Green-painted sticks only should be employed.

M. H.

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**Ilex crenata.**—As a distinct little evergreen for a small garden, this Japanese species of holly can be well recommended. It forms a compact, freely-branched bush, very effective when not more than a yard in height. The leaves, only about half an inch in length, are ovate lanceolate in shape, with a decided point, and markedly serrate around the edges. They are of a very deep green tint. There is a variegated variety whose leaves are prettily marbled with gold, and another, Fortunei, with rounder leaves and a rather more vigorous habit of growth. Being perfectly hardy, Ilex crenata can be safely planted where space is limited.—W.

## PEGGING DOWN ROSES.

The subject of pruning roses is one that is too often insufficiently considered. It may seem a simple matter to cut off certain parts, often a considerable portion, of the vigorous young shoots of rose trees, but is this always necessary or desirable? For exhibition purposes it is necessary to encourage the production of a few good blooms. In the pruning of rose trees, however, which are grown for garden decoration, or to provide flowers for cutting, quantity, within certain limits, rather than quality, should receive consideration. Having watched the development of a vigorous growth, some five feet to six feet high, on that beautiful snow-white rose Frau Karl Druschki, for instance, the gardener would cut off three parts of such a shoot with feelings of regret.

While for the majority of varieties it is necessary to follow the orthodox methods of pruning, there are a considerable number of vigorous growing sorts, particularly in the hybrid tea section, which when planted in suitable positions produce a very much greater number of blossoms when grown on what is known, for want of a better term, as the "pegging down" system. Instead of considerably shortening the long growths of the vigorous varieties, they are retained practically their full length, merely removing an inch or more of the unripened tips. All thin growths and old wood is cut out, and the vigorous growths bent down to within some two feet to two and a half feet of the ground. The most simple means of holding the shoots down in position is with hooked sticks, either placing the shoots under the hooks, or tying them in position with tarred string. Failing a sufficient number of hooked sticks, ordinary straight stakes, with notches cut in them to hold the string, will answer the purpose. A more permanent method is to fix a few iron stakes in the ground, and by connecting them with fairly thick wire, construct a light framework some two feet high over the bed or border. This has the advantages of permanence, while wooden stakes will not last more than one, or possibly two, years. For preference, however, I should choose wood, for when manuring or forking over the ground, and cutting out old wood and surplus growths in spring, the iron supports and wire connections impede the rapid completion of such work considerably.

These vigorous-growing roses are also among the best subjects for clothing low wire fences two feet to three feet in height. It is a very good and convenient plan to commence the pruning of rose trees in March by starting with those which are grown on the "pegging down" system. To commence with, probably two-thirds of the shoot bent down the previous year will require removal, as most of the vigorous growths to be retained will start from within one and a half feet to two and a half feet of the base. Also remove all old wood with no vigorous young growths on it, and thin out weak growth.

The following twelve varieties are selected as very good examples in habit, growth, and flowering qualities to cultivate on the system described and illustrated.

Frau Karl Druschki.—A superb rose with snow-white blossoms, large, full, and well formed. Though classed as a hybrid perpetual variety, it possesses in a marked degree the continuous and free-flowering propensities of the hybrid tea varieties. Its one failing is lack of fragrance. The illustration of a large bed of this variety at Kew is sufficient evidence of its value when the shoots are bent down instead of considerably shortened.

Gustave Regis.—This is a very vigorous variety. The buds are nankeen yellow, changing as they expand to creamy-white or light yellow. The open flowers are large and semi-double, displaying the stamens. The flowers are fragrant, and almost, if not quite, as freely produced in September as July.

Gloire de Dijon.—It hardly seems necessary to do more than mention the name of this lovely rose. Though introduced some sixty years ago, it is as popular as ever. One of the hardiest roses grown, it is very vigorous, the first to flower, and only checked by frosts in late autumn. In fact, in sheltered positions, during a mild spell of weather, it is sometimes possible to cut good flowers at Christmas. The buff-yellow blooms with the copper or salmon-shaded centres, are very fragrant. The varieties Belle Lyonnaise and Bouquet d'Or belong to the same type, and are very similar in growth and colour.

Clio.—This is a very vigorous hybrid perpetual, introduced by Messrs. W. Paul and Son in 1894. A bed of this variety at Kew, some 20 feet across, grown on the system recommended, I have seen with fully 2,000 flowers open at one time; on one shoot alone I counted 50 blooms, all in good condition. The flowers are flesh colour, shaded with pink, large and globular in form. The growths are very spiny.

A FINE BED OF ROSE FRAU KARL DRUSCHKI AT KEW.

Illustrating the advantages of the Pegging Down system in the cultivation of strong-growing varieties.

William Allen Richardson.—The deep orange-yellow colour of the buds of this rose place it at once in the front rank for garden decoration and cutting. It is often grown as a climber on walls and fences. Bending down the vigorous long growths induces the production of quantities of blooms, which would not be possible were the plants subjected to much pruning.

Soleil d'Or.—When introduced by Pernet-Ducher in the year 1900, the distinct colour of this hybrid briar rose at once attracted attention. Subjected to the usual hard pruning comparatively few blooms are produced, and its true value is only seen when the vigorous young growths are retained their full length and bent down. The blooms are orange-yellow, shaded with gold and red.

Gruss an Teplitz.—This distinct and free-flowering hybrid tea variety is a garden rose of great beauty. The large clusters of scarlet-crimson blossoms are prettily set off by the red tint of the foliage. It is one of the best autumn roses.

Billiard et Barre.—This is a vigorous variety of the tea section, introduced by Pernet-Ducher in 1899. The flowers are apricot-yellow, suggesting those of the well-known variety William Allen Richardson. They are freely and continuously produced, being particularly pleasing when half expanded.

Lady Waterlow.—There is much to admire in this distinct and pleasing hybrid tea rose. The pale salmon-pink blooms are semi-double; in the bud state, or half expanded, the petals are prettily edged with rose.

England's Glory.—It is only when the vigorous young growths of this variety are retained their full length, and bent down, that the value of the variety is seen. The deep flesh-pink blossoms are several shades deeper in the centre than are the outer petals.

L'Ideal.—A very distinct and pretty rose, particularly in the bud, and notable for its strong fragrance. The colour is a metallic red, shaded with yellow.

Juliet.—As this variety was only introduced by William Paul and Son in 1910, it seems rather early to talk of its value when the vigorous growths are pegged down instead of shortened. Experiments made this year, however, lead one to the conclusion that Juliet will be a useful variety for the purpose. It belongs to the hybrid briar section, and has large old-rose blooms, the outer petals prettily shaded with gold.

Kew. A. OSBORNE.

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**Schizanthuses.**—In your issue for September 14 (page 707) an interesting article on "Schizanthuses" appeared from the pen of Mr. E. C. Pooley. May I add one more to his list of varieties, viz., S. retusus Rosamonde? This is a most lovely variety, the colour being a pretty shade of pink; once grown I think this will be always grown, as it has a fine strong habit, and with us requires no stake. A batch of this in the conservatory last spring was a most beautiful sight.—R. H. LEGG, Melksham Hall Gardens.

## THE NEWER PERPETUAL CARNATIONS.

The immense strides lately made by English raisers in creating new perpetual carnations bids fair to further popularise this fine race of plants. At one time we were far behind the American raisers in securing first-rate varieties, but we can now quite hold our own with them, unless it be in new white and scarlet varieties. In these two sections we still have to depend largely upon Cousin Jonathan. But with the other colours some notable varieties have appeared from the hands of English growers.

Take the pink and rose shades. Here we note many good things. Empire Day, raised by Mr. Smith (who raised the well-known Britannia), is one of the best. It is a soft salmon-pink, with size, form, length of stem, and a sound calyx; a good cut flower variety. Lady Alington, already marked by growers as one of the finest varieties in commerce, is notable for its shade of salmon-rose, which closely follows the Leander colour. It is an easy grower, with well-filled, fragrant blossoms of the Enchantress type.

Gloriosa, one of the newer Americans, gives us once again the delightful pure pink colouring of the old Floriana. It possesses a free, quick growth, good stems, and first-rate blossoms of good size, decidedly a carnation for all growers. Baroness de Brienen, one of the loveliest varieties extant, is British, and has grand flowers of a glorious salmon-pink colour. It is essentially of the American type, with deeply fringed edges. Stem and habit are good, and the blossoms are very lasting. Rosette, a first-rate American novelty, gives a very well-finished blossom of a deep rose-pink colour, and if it retains its good character it bids fair to lead in the rose-pink shades for some time to come. Colossus is a massive rosy-cerise. It appears to follow Enchantress in growth and form, but is, perhaps, hardly so free as some of the other novelties. It is well worth a trial. Lady Northcliffe, an excellent salmon-pink, is as yet unknown to some growers, but these shades of pink are constantly being repeated in seedlings, so that this variety will have to fight for popularity.

Good scarlets are still few and far between, so the advent of the new St. Nicholas, from America, should be doubly welcome. It is well spoken of, larger than Scarlet Glow, with a good stem, and distinct lasting properties. Bonfire is not coming so well with British growers as with Americans, and we are still awaiting some really first-class things to fill up the vacancies in the scarlet shades.

Of crimsons the best is undoubtedly Engelmann's Triumph, which is good at all points, free, shapely, of good size, and pleasing in hue. Elektra, from the same raiser, will appeal to many, and, in my opinion, its good form and rich orange colour, relieved only by an edge of pink, makes it a distinctly pleasing novelty. Rosa, a seedling from Mrs. T. W. Lawson, is regarded very highly, and its promise to eclipse that favourite variety awaits fulfilment. On its merits it will have as a rival (and a strong rival, too!) the famous Mrs. C. W. Ward, which is grand when well grown. The only fault with Mrs. C. W. Ward is its comparative slowness in pushing up new growths after the first cut of blossom. If Rosa can prove itself better than its rival, carnation growers will be grateful to Mr. Engelmann for this novelty.

Salome and Sunstar are typical fancy varieties, and will doubtless find their way into all representative collections. They can hardly find the same popularity as more decided colours, although both are good in form, and pleasing. Salome is pink and heliotrope, Sunstar yellow, lightly marked with pink.

The French variety, La Rayonnante, a soft clear yellow in colour, has been boomed since its arrival here. This winter will prove its merits, but I would advise care in feeding, as there is a danger of the flowers bursting the calyx. It is a strong grower. Mandarin is an attractive fancy, with rose-pink markings upon an orange-yellow ground. The stem and calyx are good, while the blooms are bright enough to effectively contrast with other varieties.

White Wonder has been so largely in the public eye of late that there is no doubt of the place it is to occupy for some time to come, and the coming season will establish it in public favour. With the new giant Wodenethe the whites are further enriched, but this has yet to make its position as a continuous free variety. Of its size and purity we are assured, but more than that is required nowadays.

Wivelsfield Wonder should enhance the reputation of the Allwood Brothers; its fine form and size, and its colouring of pink flakes on a white ground, were quickly recognised by the Award of Merit granted by the R.H.S. last January. Benora, an American fancy, white, flaked with red, is quite distinct from the previous one, and merits a trial from all growers of fancy carnations. Fire Glow should be welcome for its rich colourings, its bright yellow ground, heavily marked with fire-red, making it very attractive.

I should value a first-hand opinion of the crimsons Pocahontas and Sultan, the former an American, the latter a British, novelty; also a note upon Princess Charming, as by some it is ranked above Enchantress, while others describe it as inferior. Coronation, the new silvery-pink, is full of promise, but one should not expect too much from Golden Ray and Golden Glory, two distinct shades of yellow, for yellows, unless exceptionally good, will not command the same popularity as pink and other shades.

P. S. Hayward.

## COLOUR SCHEMES AND HERBACEOUS BORDERS.

It is the fashion to point to the long herbaceous borders at Hampton Court and elsewhere, and to tell the enthusiastic amateur that he should take such as a model. It may be rank heresy on my part, but I venture to protest against such advice, and to assert that the Hampton Court border is no model for us! It is not a fair example in any way.

At the risk of being cried down as heterodox, I venture to say that colour schemes are "all my eye and Betty Martin," for Dame Nature does not make many mistakes, and a good old-fashioned mixture is the best for a border. Of course, there are a few difficult subjects, and it may be easy to produce a simply shrieking discord by the juxtaposition of, say, purple iris and Siberian poppy.

This year I had a fine idea for a pink and white border, and all went well until the antirrhinums and phloxes asserted themselves. They simply killed the idea I had in view, for the pink snapdragons created all kinds of discord, were warm of tint, and the phloxes made matters worse. Colour schemes!! I will have none of them. But really, a good jumble of almost every colour under the sun, with good masses and plenty of white and foliage, is the thing.

F. R. H. S.

## GARDENERS AND GARDENING.

### **Does Education Pay?**

Whilst appreciating the praiseworthy efforts of the British Gardeners' Association to raise the social status of the horticultural profession, I am reluctantly forced, by the various factors bearing on the case, to the conclusion that, from a monetary point of view at all events, higher education for the average private gardener does not pay.

I do not intend by this that young gardeners should not seek to improve their education beyond that which they obtain during their hours of labour, rather should they be encouraged to do so, as knowledge is power, and brings them into closer sympathy with their daily work, and is a pleasure unto itself. What I wish to convey is that the young man taking up a course of exhaustive study, such as would enable him to secure the proposed Diploma of Horticulture, would not be repaid for his labour when forced, as hundreds of good men are, to accept the average gardeners' position at a wage of something like 28s, or 32s. per week.

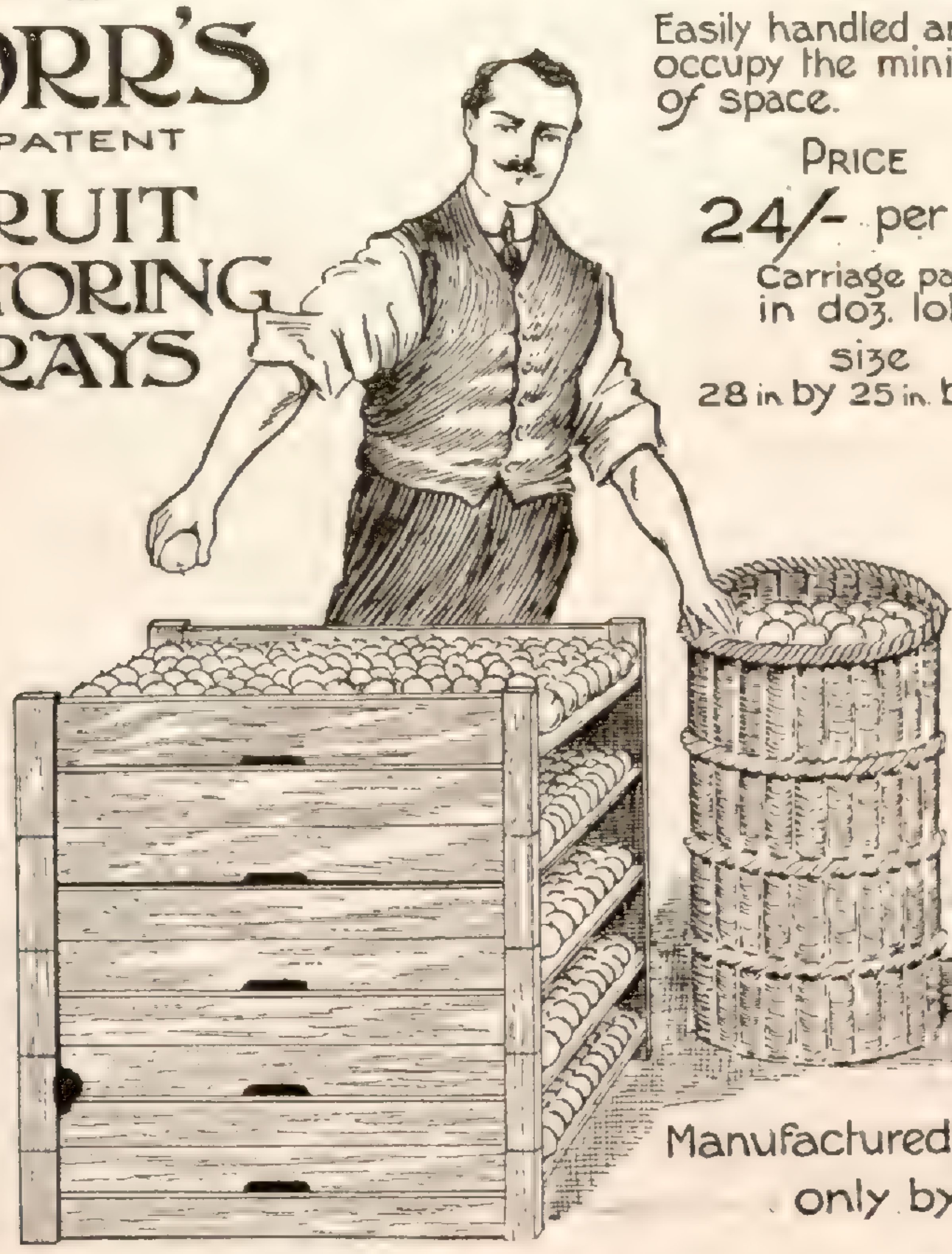
Like your correspondent "Nous Verrons" (page 608), I fail to see how the establishment of a criterion of ability is going to improve the position of the average gardener for, after all, it is the employer who pays, and I think it safe to say that in fifty per cent. of the gardens in this country the employer is satisfied to employ a purely practical man, and would not be induced to pay more on account of a man armed with a diploma setting forth the holder's capabilities in such subjects as botany, entomology, chemistry, meteorology, and land-surveying. Of course, I am fully aware that all these subjects have a more or less direct bearing on gardening, and the young men of the present day fully recognise this, and take up those subjects with no incentive other than that they will prove useful accessories in their endeavour to become first-class gardeners. There are also other strong factors bearing upon the success of the average private gardener, such as personality and tact, which are beyond the pale of a diploma of horticulture.

No doubt such a diploma (although more suited to horticultural instructors) would be a strong recommendation to the man seeking employment under public bodies or in very large establishments, botanical institutions, or trial stations, but in most cases the diploma would go to college-bred men, due to their better primary education, and, in consequence, we should have men holding prominent positions equipped with ample theoretical and scientific knowledge, but deficient in practical management.

Your correspondent, "J. C. W." (page 574), seems to think that the diploma would induce a different class of men to enter the profession. This may be so, but, after noting the general excellence—I might almost say perfection—of the exhibits at the recent International Exhibition, I would ask, what is wrong with the men already in the profession?

The youth of the present day has far greater opportunities of gaining a knowledge of scientific subjects appertaining to his profession than had the youth of twenty or thirty years ago. Technical classes, county council lectures, and excellent books on various subjects, written in a concise manner by specialists, are within his grasp, and the intelligent young gardener with the ordinary education of to-day can, and I am sure plenty do, acquire sufficient knowledge of these subjects without any incentive beyond the desire to know as much as possible for the proper performance of their duties, and in the hope that such knowledge so gained will serve them profitably as opportunity arises. A man so equipped and with a sound practical knowledge of garden management, is all that is required by the average employer.

I am inclined to think that if a diploma of horticulture was inaugurated, the competition for it would set up a system of cramming



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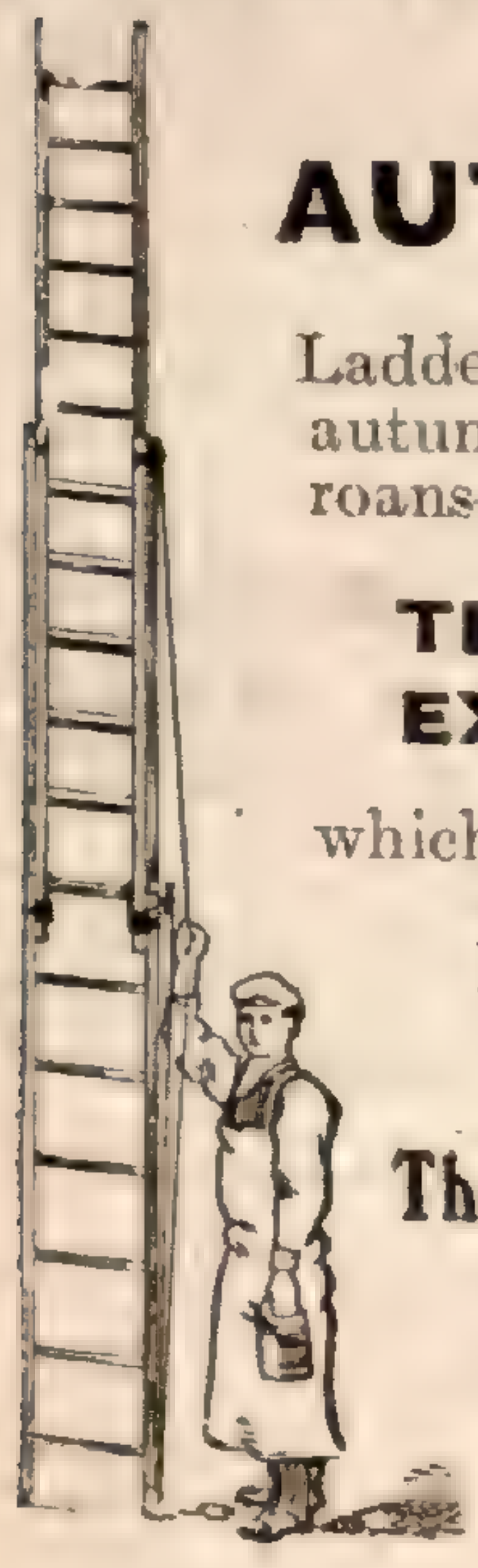

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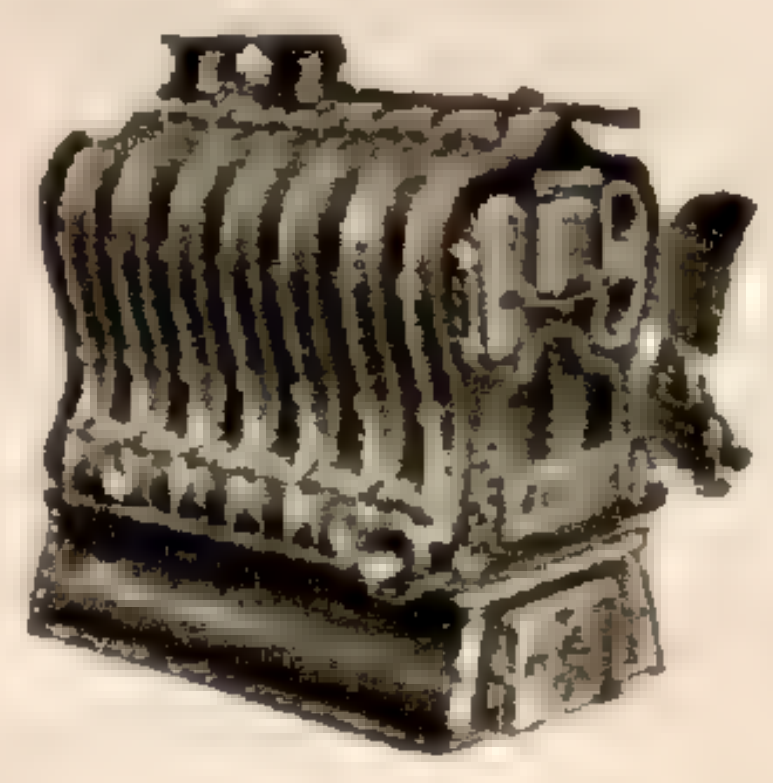

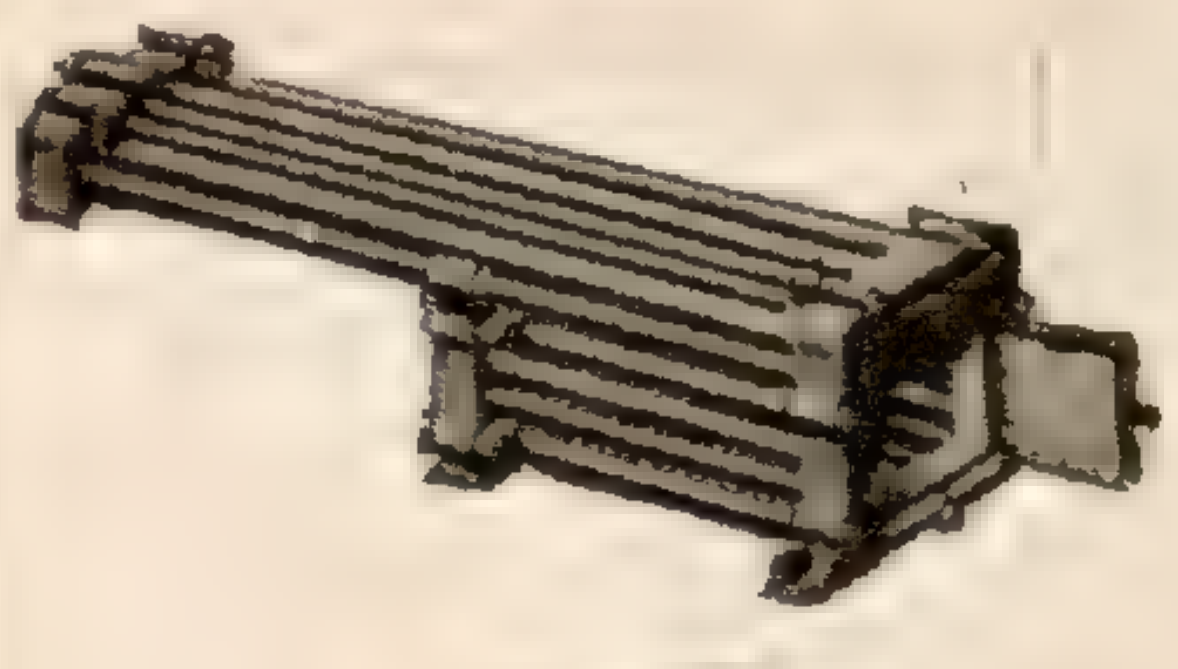

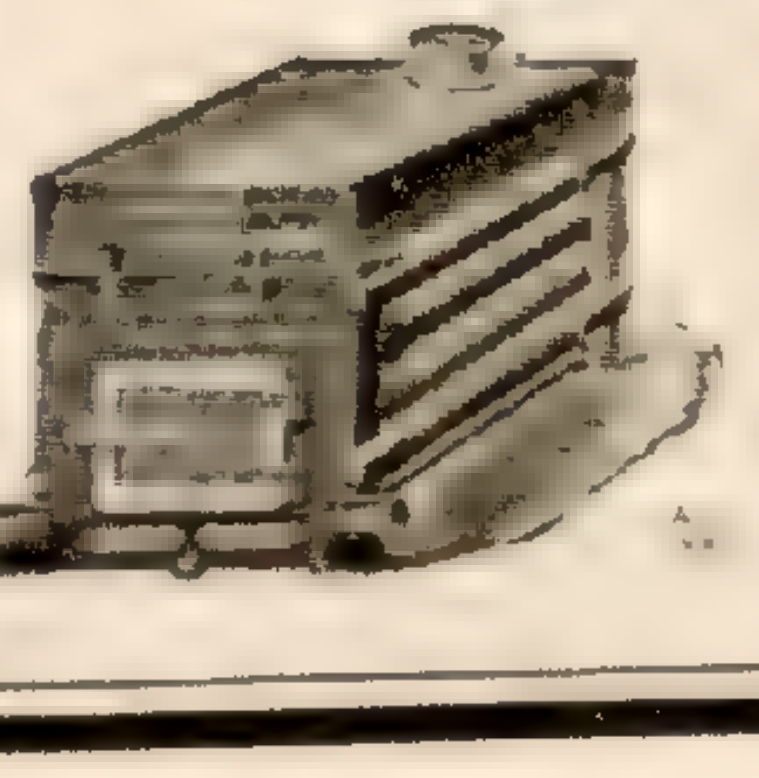

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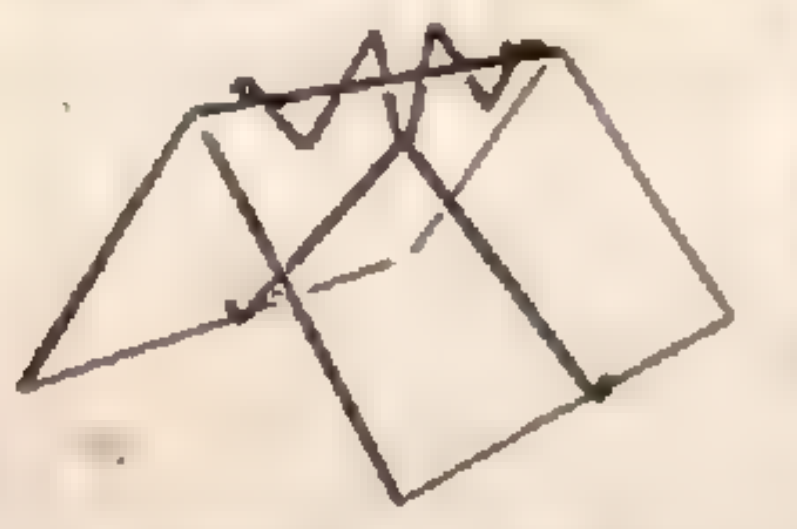

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## NEW BOOKS.

◆

### IRISES.

By W. Rickatson Dykes, M.A. (J. C. and E. C. Jack, 67, Long Acre, London). Price 1s. 6d. net.

Mr. Rickatson Dykes has achieved so high a degree of success as a cultivator and raiser of this large and beautiful class of flowers that he is not only recognised as an authority on all that relates to their cultivation, but is regarded as the natural successor to the late Sir Michael Foster in this branch of floricultural art. His book on irises, which is now before us, fully justifies the high estimation in which Mr. Rickatson Dykes is held as an authority, for within its pages is found conclusive evidence of his thorough acquaintance with the many species now in cultivation, and the conditions under which they can be grown to the highest degree of perfection. Written in a bright and pleasant vein, the book opens with a chapter on the structure of the plant and the distinctive characteristics of the groups into which the genus is divided, and this is followed by a chapter on the structure of the iris flower. In the succeeding chapters the several groups are passed under review, and the conditions essential to success clearly stated. The book, which is illustrated with coloured plates, is especially deserving the attention of those who are interested in the fascinating flowers to which it is devoted.

### MUSHROOMS AND HOW TO GROW THEM.

By John F. Barter. (John F. Barter, Lim., Napier Road, Wembley, Middlesex.) Price 1s.

The author of this book has long been known as one of the most successful of the growers of mushrooms for market in the vicinity of London, and it may be anticipated that those who are acquainted with his achievements as a practical cultivator will expect in a work from his pen to find ample information on all that relates to the production of abundant supplies of high quality. Those who have such expectations will not be disappointed, for in the course of the book Mr. Barter states concisely and clearly the course of procedure by which the most satisfactory crops can be obtained from beds both in the open and under cover. The preparation of the manure, the formation and spawning of the beds, gathering the crop, and packing and marketing the mushrooms, and other details essential to success are all dealt with in such manner as to render the advice of much value to those who are in need of assistance.

**Ligustrum Quihoui.**—This Chinese privet is worth including amongst the occupants of the shrubbery, for it is one of the latest flowering shrubs we possess, its normal blossoming time being September and October. When full grown it is seen as a bush 6ft. to 8ft. high, with rather stiff branches, somewhat sparingly clothed with small green leaves. The white flowers are borne in large, terminal inflorescences, and are at their best about the end of September. It may be grown quite as easily as any of the other privets, but it is not so well suited for shady places as Ligustrum ovalifolium, on account of its late flowering; in fact, the most satisfactory results are obtained from those plants which are exposed to full sun.—D.

## PLANT COLONISTS IN TROPICAL REGIONS.

The following extract from the paper read by Sir Everard Im Thurn at a recent meeting of the Royal Horticultural Society, and published in the society's journal, is of much interest, as showing how readily some of the plants that have their home in temperate regions readily adapt themselves to tropical conditions. It also affords further evidence of the fact that care is necessary in the introduction of plants to countries in which it will be difficult to keep them in check, should they become too aggressive. Sir E. Im Thurn said:

Before quitting the coast region, the traveller must notice one other very characteristic plant association. Every now and again he will come across a more open place where for some reason trees and shrubs have not succeeded in establishing themselves. In such places the black peaty-looking earth is almost free from plant-covering, except where at frequent intervals a tiny little island—like the "hag" in a Scotch moor—has been built up by the densely-matted roots of a coarse-growing fern, Acrostichum aureum, almost ubiquitous in the tropics, both in the east and in the west, and north and south of the "line"; and it is generally in such rather dreary-looking places that the beautiful white lily-like Crinum asiaticum finds its most congenial home.

When at last we turn away from the coast region and make for the Rewa River, our road takes us up and down hill, but mainly up, till, at a distance of nine miles from Suva, we reach the crest of the range of rugged hills which separate Suva Harbour from the wide delta through which the lower reaches of the Rewa flow. The nine miles through which we have passed was doubtless once forest covered, but much of it has at one time or another been cleared, either by natives or by Europeans, and most of this cleared part has again been allowed to fall back into bush or jungle. This tract affords a splendid opportunity for noticing the more prominent of the introduced plants which have taken almost too well to their new home, and have become more or less noxious weeds. Along the first part of this bit of road the most noticeable thing is the almost interminable "brakes" of "wild lemons," guavas and Lantana, all introduced plants, beautiful enough both in flower and fruit, now become noxious weeds, very difficult to eradicate, over very considerable areas of land.

The wild lemon is, of course, a "citrus fruit," but exactly what it is I cannot say. The fruit, which is very abundant and picturesque, is neither round like an orange nor lemon-shaped; nor is the skin of the colour or the texture of any other "citrus fruit" known to me. It is very irregular in shape, has a thick skin, much hard and almost woody white pulp, and little juice. It seems very unlikely that it is an indigenous species, and is more probably a reversion towards an original type of some form which has arisen by the natural crossing of two or more introduced species.

The fruit is rarely used—even, I think, by natives—though there is a considerable demand, both by Europeans and natives, for citrus fruits such as the "Tahiti" and Mandarin orange, the shaddock and the lime, all of which grow more or less freely in Fiji, but under slightly more domesticated circumstances. It should be added that the Fijians themselves habitually speak of the shaddock as the "moli n'dina" or "true orange."

The wild guava of these "brakes," though of a good enough variety, with a large and fairly luscious fruit, is little, if at all, used; nor, as far as I know, is it or any form of Psidium cultivated in Fiji. It seems almost as though the useful qualities of the guava were overlooked owing to a sort of illogical resentment against the plant because of the extraordinarily rapid spreading of the roots. Even small fragments of roots grow vigorously when the parent plant is destroyed, and even burning a guava scrub does not seem to kill it. There is no known way of eradicating a brake of this plant but to fence it in, and to keep a large number of goats in it till the unfortunate animals have eaten the last leaf which appears. Moreover, if one man does succeed in clearing his own land from guava, there is constant danger of new invasion from adjacent lands, either by root growth or by bird-carried seeds.

The common Lantana of our gardens has spread over probably every tropical area into which it has been introduced. But it is not very difficult to eradicate, and it certainly does not impoverish the land as does the guava. It is perhaps of horticultural interest that the Lantana which occurs in Ceylon is almost always yellow-flowered, with only an occasional pink, and very rarely a white, form; but that in Fiji its flowers are almost as varied in colour as are those bedded out in gardens at home. It seems almost certain that it was first introduced into Fiji as a garden plant, and at a comparatively recent date—i.e., after European horticulturists had guided it into a considerable variety of colour.

Another introduced plant very noticeable, not only along the road we are travelling, but in almost all parts of the island where the clearing of the ground from its previous growth has given the newcomer an opportunity of gaining a foothold, is Mikania amara, a weak-stemmed, almost succulent-looking South American creeper, of such tremendously rapid growth, during its active season, as to have earned for itself the popular name of "mile-a-minute." An isolated plant or two of this is pretty enough, by reason of its graceful habit, the exceptionally brilliant green of its leaves, and the infinite number of its tiny white and very sweet scented flowers. But, at least in tropical places, it is a dangerous enemy, because of the extraordinary rapidity of its growth, which enables it, if it once gets a chance, to smother herbage and bush and tree, till it lies over all other plant growth much as a heavy and much-drifted snowfall does in our own country.

I should have liked to say a good deal about the "sensitive plant" (Mimosa pudica), which has spread in Fiji, as in most similar places, almost as rapidly as the other "introduced weeds" I have mentioned; but I can only stop to point out that, whereas in its other new homes it is generally looked upon as an unmitigated pest, it is welcomed and encouraged in Fiji as a first-rate fodder plant. It is very remarkable, but I know from personal experience that it is true, that cattle eat it readily and with good effect, despite the large woody and curved thorns with which the adult plant is provided. The seed now fetches a high price for planting purposes, and an effort is being made to select a strain with the fewest possible thorns.

Nor must mention be omitted of two other introduced plants. Melastoma malabathricum L.—locally called "Kester's Curse," after the unfortunate planter, who is accused, I believe falsely, of having accidentally introduced it, with coffee plants from Ceylon—is now a pestilent weed in the cattle pastures, and has apparently no redeeming qualities. Again, over most of these introduced things, as well as over many of the native plants, a very familiar looking Dodder—very like our English plant—is rapidly spreading. It is the most difficult of all to eradicate; for the tiniest fragment of one of the threadlike stems is able to reproduce the plant in wonderful masses and at the shortest notice.

**Myrsiphyllums.**—When the trails of this useful twining plant attain a length of two or three feet they should be cut for use, so that fresh strings may be placed to receive the young shoots as they are produced. An endeavour should be made to obtain a wealth of nicely-developed trails during the autumn and winter, when they are most in request for decorations.—H. T. M.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

PREPARING FOR WINTER.—We must now take in hand seriously the work of placing plants in their winter quarters. Before this is done it is advisable to thoroughly cleanse the houses, both inside and out. The glass, woodwork, walls, etc., should be thoroughly scrubbed with hot water, to which some carbolic soft soap has been added, as this will effectually get rid of any insect pest lurking in crevices and other places.

TEMPERATURE.—By the end of the present month we shall again have reached that season of the year which necessitates the return to the winter treatment of the plants. The temperature for the different divisions was given in the first issue for the present year, and during the present month the warmth in the various departments should be gradually reduced, week by week, until the minimum degree is reached.

VENTILATION.—Owing to the beautiful weather experienced during the past week, it has been possible to admit air freely; and, with the increased light from the sun, the plants are ripening up much better than seemed possible a short time ago. Air should be admitted in all departments whenever possible. Orchids, in their native habitats, do not grow in glass cases, where fresh air cannot penetrate, and so it is desirable they should have a supply of fresh air daily. Care should be taken that cold draughts are not admitted, as these are as harmful to the plants as they are to the cultivator.

SHADING.—By the end of the month this may be entirely removed; but while the unexpected sunshine lasts, it is advisable, after the long spell of sunless weather, to use it with care.

ATMOSPHERIC MOISTURE.—With the reduced temperature it will be necessary to materially reduce the amount of atmospheric moisture; but on no account must a hot and dry atmosphere be maintained. If any house feels stuffy and oppressive, or cold and damp, rest assured the plants feel it in like manner.

WATERING.—The remarks under this heading made on September 7 are also applicable to this month. Water should now be administered with great caution. A wet, saturated compost is harmful to all orchids during the dull winter months, when evaporation takes place slowly. Those plants finishing their growths should have the supply of water at the roots gradually reduced, as it is a great mistake to cut down the water supply suddenly. Plants immaturely ripened only shrivel, and never produce a full complement of flowers.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

THE PRINCIPAL WORK which needs attention at the moment will be the selection and ordering of bulbs for winter and spring display. These should be potted up directly they arrive. Having already potted up batches of freesias, Roman hyacinths, and Paper White narcissus, other batches should be put in at intervals of a fortnight. It is necessary when ordering to select those varieties which have been already proved, and can always be relied on. Nevertheless, it is always advisable to try a few of the newer varieties in each section. Plump, weighty, and shapely bulbs should be chosen in preference to larger ones.

HYACINTHS.—These, with the exception of the Romans and the Italians, are best accommodated in 4½in. pots, one bulb in each. If a larger display is needed, six to twelve bulbs of each variety may be placed in pans or trays. Pans, however, of this description can always be made up by choosing a dozen of a variety with all the trusses developed alike, turning them carefully out of their pots and placing them close together in the pan and working some soil between them.

TULIPS.—These are invaluable, and should be grown in quantity; place four or five bulbs in a 4½in. pot. The Duc Van Thols, in several colours, are the earliest; they will be followed by the Pottebakkers, also in several colours. Some of the most reliable to follow in succession will be Rose Gris de Lin, Mon Tresor, White Swan, Rose Luisante, Yellow Prince, Brutus, Thomas Moore, and Keiser's Kroon. I do not advise growing May-flowering tulips in pots generally, but the following varieties I have tried and found them to succeed splendidly: Picotee, white, pink edge; retroflexa, light yellow; Inglescombe Yellow, deep yellow; Inglescombe Pink, Inglescombe Scarlet, and White Swan. These later varieties naturally take a much longer time to open, but if grown slowly and not allowed to become dry they develop splendidly at the end of March and early in April.

NARCISSI.—These should be grown in large quantities. A batch each of Paper White, Gloriosa, and Grand Monarque will be now rooting freely if potted up when advised, and other batches should follow these in succession. The varieties Emperor, Empress, Golden Spur, Mdme. de Graaff, and Queen of Spain are always reliable. The small trumpet or Leedsi sorts are always beautiful, and the best of these for pot culture will be Stella, Mrs. Langtry, Barri conspicuus, White Lady, and Lucifer. These, however, need to be grown in good-sized pots or pans where it is possible to place about a dozen bulbs together, as their habit of growth is tall. For cutting purposes they are most valuable if grown in boxes, fifty bulbs in each, and brought on gently. The white Pheasant's Eye (poeticus ornatus) may be lifted and forced in quantity in this way. All these bulbs will require a rich fibrous loam, with some leaf-soil and coarse sand added, and a good sprinkling of wood ashes. When potted they should all be well watered, and allowed to drain, and should then be stood in batches, keeping each variety distinct with a long label at the end of each; then they may be all covered with fine ashes to a depth of three inches. Some of them will be found to have rooted in about four weeks. They must be examined frequently, and when any variety is found to be well rooted, with the growth advancing from the top of the bulb, they must at once be removed or the leaves quickly become damaged.—Lewis Smith, Norwich.

## HARDY FRUITS.

SELECTION OF FRUIT TREES FOR PLANTING.—As the time for planting draws near, a selected list of good and well-tried varieties of the various kinds of fruits may be of some service. In the case of the grower of a small number of trees, the number of varieties of each kind may possibly be confusing, and I would suggest where there is any doubt in the matter, that the advice of a local nurseryman or fruit grower of repute should be sought as to those most likely to succeed in the particular district.

APPLES.—In order to obtain ripe fruits for dessert during the greater part of the year, the following varieties may be planted: Gladstone, Beauty of Bath, Langley Pippin, Lady Sudeley, Worcester Pearmain, Duchess of Gloucester, James Grieve, Mother, King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Margil, and Allington Pippin, Adam's and Claygate Pearmains, and Sturmer Pippin. Of good culinary sorts the following can be recommended: Lord Grosvenor, Ecklinville, Warner's King, Norfolk Beauty, Bismarck, Lane's Prince Albert, Annie Elizabeth, Newton Wonder, Bramley's Seedling, and Alfriston. There are many good dessert and cooking apples omitted from the above list, but it is not advisable to plant too many with the idea that if one or more fails to crop some of the others will probably not do so; it is far better to plant fewer sorts, which are reliable croppers. The above list comprises varieties which succeed in most places.

PEARS.—The quality and flavour of many varieties of pears is largely influenced by the stock on which they are worked, and the position the tree occupies, and these various factors have to be considered by the planter. To afford a succession of dessert pears requires a number of varieties owing to the short season of many of the earlier ones. The season of some of the most valued pears, such as Doyenne du Comice, may be considerably extended by planting against walls with various aspects and in the open. Grown as cordons, several pears may be planted in a small space, and the fruit is usually fine and of good quality. The following will give an extended season: Beurre Giffard, Williams' Bon Chretien, Triomphe de Vienne, Mdme. Treyve, Louise Bonne of Jersey, Comte de Lamy, Durondeau, Beurre Hardy, Beurre Superfin, Emile d'Heyst, Marie Louise, Doyenne du Comice, Pitmaston Duchess, Glou Morceau, Winter Nelis, Josephine de Malines, Olivier de Serres, President Barabe, Beurre Easter, Bergamot d'Esperen, and Duchesse de Bordeaux. There are several pears of recent introduction that are of good promise, and which may, after further trials, become standard sorts.

APRICOTS.—The apricots worthy of cultivation are not numerous. The old favourite, Moorpark, is so liable to lose its branches, that it is not advisable to plant it in quantity. Grosse Peche is much more vigorous and healthy, and a richly-flavoured variety. Other good sorts are: Hemskirk, Shipley's, and Large Early Montgamet.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

CAULIFLOWERS.—The young seedlings should now be large enough to prick out. Cold frames or handlights are to be preferred for them, though no coddling must ever be attempted. The frames will be necessary when much wet and damp weather occurs, when the lights should be placed over. Plenty of air must be admitted at all times, excepting during sharp frost, when the frames must be closed, and matted if necessary, for the night. Use only just ordinary loam for the plants, as rich soil would tend to produce strong growth, which is not required till the spring arrives. Use a little burnt garden refuse when pricking off if the soil is heavy. Make still another sowing under glass in frames.

CABBAGES.—Continue to plant these out in various aspects for a continuous supply, not forgetting a batch of the most forward plants of an early variety on a warm border facing south; these have a happy way of turning in at unseasonable times, and from January onwards many dishes can be cut. Those planted on the maincrop onion beds are doing well; ply the hoe freely, and give a scattering of soot and burnt garden refuse to ward off slugs. Later on the plants should be moulded or earthed up to make the stems safe and cosy. Continue to plant out later batches, setting early varieties at fifteen inches apart, and the larger varieties two feet apart in the rows, and eighteen inches from plant to plant.

PEAS.—With the most favourable weather still continuing, these will remain a long time fit for use; they are even flowering at the moment as freely as in May. It must not be expected that the whole crop will finish, therefore means must be employed to gain as many as possible. Firstly, top each plant so as to throw all energy into the pods formed; secondly, give water, if necessary, to fill up the pods and hurry the growth of later pods and flowers; thirdly, if in exposed positions, shelter the rows, even leaving the older rows of sticks and bine on the cold side.

LETTUCES are in fine condition. Take care of all, even if it means lifting some, and storing them in cold frames. Prick off autumn-sown ones in various aspects for spring supplies, and work the hoe in all the quarters.

ENDIVE.—Take up and store the forward plants in rough frames, and hasten later plants.—Geo. Ellwood, Swanmore Park Gardens.

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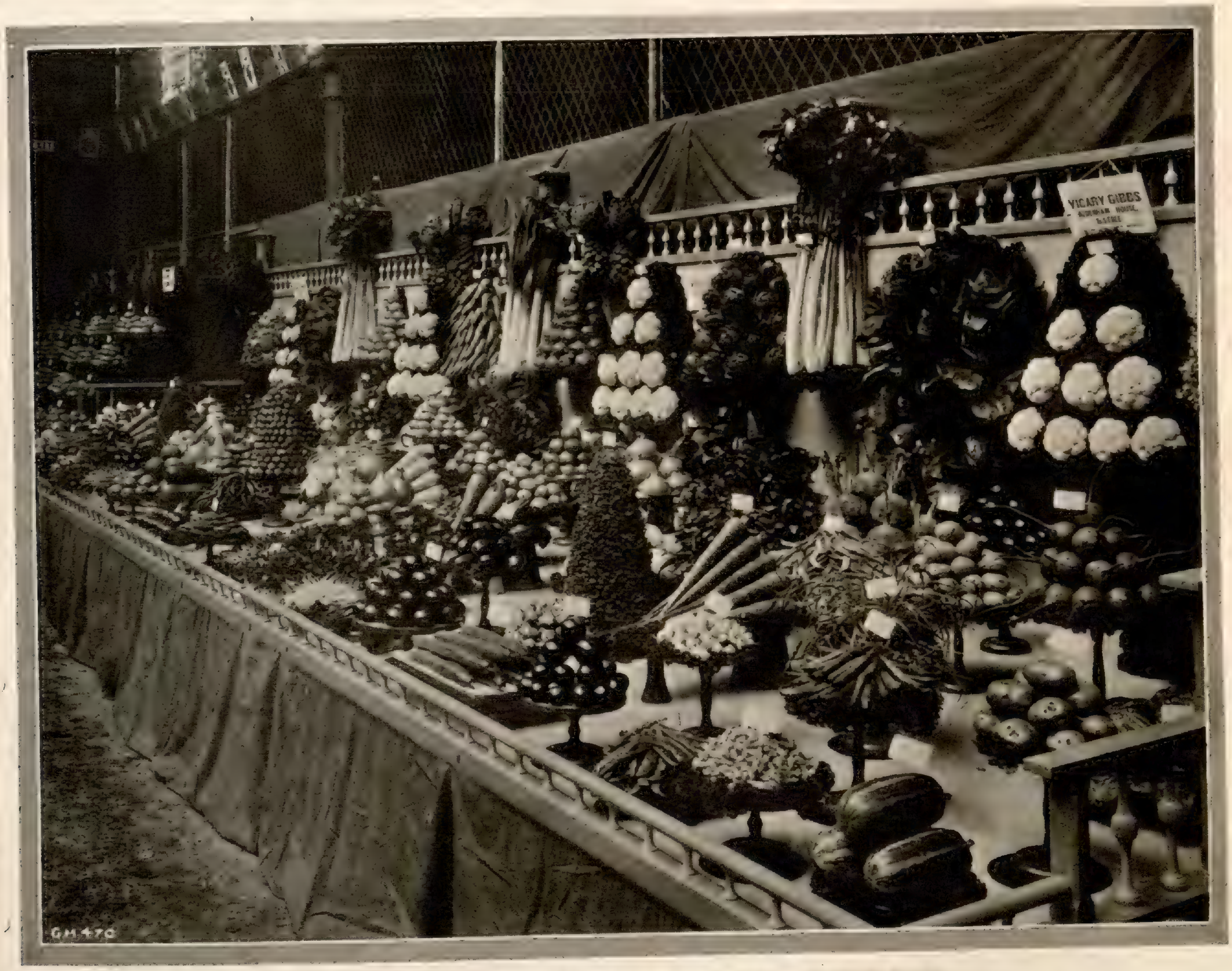
# EXHIBITIONS AND MEETINGS.

◆

## National Vegetable Society.

The third annual exhibition of the National Vegetable Society was held in the Clarendon Hall, Watford, on Wednesday, October 2. This was the first show under the auspices of the society held out of London, and the fine hall chosen was in every respect admirably suited to the purpose. Both the body of the hall and the spacious galleries were filled with extremely well-grown produce, the whole exhibition demonstrating in an emphatic manner the high-standard to which vegetable culture has attained in Great Britain, and the purity and quality of the best selected stocks that are in commerce. The show was opened by the Earl of Clarendon, who expressed his great pleasure in welcoming the National Vegetable Society to Watford. The Noble Earl spoke of the vast importance of vegetable culture, providing, as it does, a large proportion of the food of the people, and he congratulated the Society on the good work already accomplished, and trusted its hands would be strengthened to greater efforts and achievements in the future.



LARGE GOLD MEDAL COLLECTION OF VEGETABLES.
Exhibited by Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, at Watford.

### OPEN SECTION.

The principal class was for a collection of twelve dishes of vegetables, distinct kinds, there being four splendid entries. Mr. J. Gibson, gardener to the Duke of Portland, Welbeck Abbey, Worksop, scored a capital win with a collection staged in his best form. Sutton's Superb Pink celery was beautifully blanched, as also were the leeks, but it may well be said that better Intermediate carrots, Black beet, and Student parsnips have rarely (if ever) been seen. The other dishes were Ailsa Craig onion, Eclipse tomato, Snowball turnip, Dwarf Gem sprouts, Superlative potato, Duke of Albany peas, and Autumn Mammoth cauliflower. Mr. J. Hudson, Grimson Road, Leicester, was a worthy second, showing cucumbers and scarlet runners in place of Mr. Gibson's peas and turnips. Mr. F. L. Pike, gardener to W. H. Henderson, Esq., Serge Hill, King's Langley, was third, the fourth going to Messrs. Lobjoit and Sons, Heston Farm, Hounslow. A collection was provided for nine kinds, the exhibitors in the former class being barred. Of the three entries staged that of Mr. W. Gaiger, gardener to H. T. Tatham, Esq., Kendall Hall, Elstree, was adjudged best. Mr. Gaiger had a beautifully finished lot of Ailsa Craig onions, not over large, but of high quality. His Early Giant cauliflowers and long Surrey carrots were splendid, the other dishes being also cleverly-grown produce, and nicely staged. Mr. T. Avery, gardener to J. Kerr, Esq., Loudwater, Rickmansworth, was second, losing slightly in carrots and tomatoes; still his was a fine collection. Mr. E. Woolf, gardener to C. H. Fritton, Esq., Grove Mill House, Watford, came in third.

A class for nine tomatoes was judged for flavour as well as shape and colour, and Mr. J. Hudson's first-prize dish were really beautiful fruits of fine smooth shape, with a grand colour and in a quite perfect condition. The second prize went to Mr. J. Gibson, and third to Mr. A. G. Gentle, gardener to Mrs. Denison, Little Gaddesden, Berkhamsted; there were eight entries in the class. Mr. T. Jones, Bryn Penylan, Ruabon, showed six magnificent leeks, for which first prize was awarded. The even symmetry of the well-blanched stems made them about perfect models of what leeks should be. Mr. Hudson followed with another nice set; third going to Mr. T. Fellowes, Vicarage Road, King's Langley.

### AMATEURS' SECTION.

In the society's classes open to amateurs only, the leading class was for six dishes of distinct kinds of vegetables. Mr. H. Keep, Aldermaston, near Reading, was chief winner, his cauliflowers, onions, and tomatoes being supported by fine Prizewinner carrots, Prizetaker leeks, and New Guardian potatoes; second prize in this class was awarded to Mr. W. Coleman, 4, Hunter Street, Buckingham, who had also splendid potatoes, Autumn Mammoth cauliflowers, Best of All tomatoes, and good onions, celery, and runner beans. Third prize winner was Mr. J. Cady, The Limes, Sudbury, Middlesex. There was another class for three varieties, in which Mr. H. Andrews, Berkhamsted, led with onions, celery, and cauliflowers; second going to potatoes, carrots, and tomatoes shown by Mr. T. King, New Road, Bromham, Chippenham; third prize winner being Mr. J. Day, Kitsbury Road, Berkhamsted.

First prize for three dishes of potatoes went to Mr. C. E. Hoad, 40, Church Road, Willesborough, Kent; Mr. Coleman, Hunter Street, Buckingham, taking second this gentleman also winning first for two dishes, followed in this class by Mr. J. Baker, Kingsman Street, Woolwich, S.E. Mr. H. Keep, Aldermaston, Reading, had the best six onions, and Mr. R. Green, Ashdon Road, Watford, the first-prize lot of shallots. Mr. J. White, Oxford, scored for carrots; Mr. T. Jones, Ruabon, for tomatoes; and Mr. Cady, Sudbury, for leeks. Mr. Jones was again at the top for celery, his being big, good-hearted sticks, blanched to perfection. Mr. Jones also won first for parsnips; Mr. E. Deakin, Birmingham, scoring for beetroot. There were numerous other single-dish classes in the amateurs' section, the prizes being largely distributed among those exhibitors whom we have already named.

### COTTAGERS' SECTION.

There was a good class for six dishes of vegetables, competition being confined to cottage gardeners and allotment holders in the county of Herts. There were no less than twelve entries, the quality right through being a credit to the Herts growers. First prize was secured by Mr. A. E. Dawes, 7, St. James Road, Watford, whose vegetables were of even quality, well finished, and staged in quite approved style. Mr. W. Humphrey, Wards Lane Cottages, Elstree, made a good second; Mr. Blake, Elstree, following close for third place. It would certainly be an advantage if it were made a condition in this class that each vegetable should have a label with the name of variety attached. Visitors, especially those who have an eye to competing another year, would benefit if this were the case.

Goldfinder. Royalty. Emperor. King Edward VII. Snowball. Excelsior.

FIRST PRIZE COLLECTION OF SIX DISHES OF POTATOES.

Exhibited by Mr. A. G. Gentle in Messrs. Clay and Son's Special Class at Watford.

### SPECIAL CLASSES.

The schedule was largely augmented by classes provided by various seed firms, who offered prizes for produce grown from their own seeds. We deal with these classes in the order in which they appeared in the schedule. The first of these were Messrs. Barr and Sons' classes. Here Mr. A. Evans, Moor Lodge, Presteign, Radnor, took first prize for a dish of Scottish Chief potatoes, being followed by Mr. T. King, New Road, Bromham, Chippenham, and Mr. A. Woodgate, gardener to Mrs. Austin, Capel Manor Gardens, Horsmonden. The winner for six Little Queen cabbages was Mr. J. White, Sandsford Cottage, Bampton, Oxford, who was followed by Mr. Gaiger, and Mr. R. Staward, Panshanger, Herts. Barr's Stump Rooted carrot made a good class, Mr. Evans winning first place over ten entries, second prize going to Mr. J. H. Gilmour, gardener to Sir C. J. Jessel, Bart., Ladham House, Goudhurst, and third to Mr. J. White, Bampton, Oxford. Mr. Gaiger's Crimson Globe onions were placed first, their colour being very rich. Leeks were best shown by Mr. E. Woolf, and tomatoes by Mr. Gaiger, who was at the head of the competitors.

Messrs. W. Cutbush and Son offered prizes for six Barnet Hero onions, and Mr. A. G. Gentle took the lead among five exhibitors. The onions were a fine type and good bulbs. Other prize-winners in this firm's classes were Mr. W. West, gardener to Mr. M. Knox, Holt Hatch, near Alton, Hants, for First and Best tomato. Mr. A. Basile, gardener to Rev. T. McMurdie, Woburn Park, Weybridge, led for leeks, and Mr. T. King, New Road, Bromham, Chippenham, for carrots; whilst Mr. Gentle scored for parsnips with roots of wonderful length and excellent finish. Beetroot were best won by Mr. G. Hatch, gardener to A. B. Goldschmidt, Esq., Caversham Park, Mildenhall, and Mr. Basile led for Alderman peas.

Messrs. Dickson, Brown, and Tait's classes included tomatoes, in which Mr. E. Woolf was the only exhibitor, securing first prize. Cucumbers were best shown by Mr. T. Jones, Ruabon. For cauliflowers, the successful exhibitors were Mr. A. R. Searle, Castle Ashby Gardens, Northampton, Mr. T. Jones, and Mr. Woolf. Mr. Searle staged some splendid celery, with which he won first prize, followed by Mr. J. White, Bampton, Oxford.

Messrs. Dickson and Robinson had a number of classes, the first being for two bunches of Moneymaker tomato, Mr. F. L. Pike, gardener to H. W. Henderson, Esq., Serge Hill, King's Langley, being the principal winner, the other prizes going to Mr. A. Basile and Mr. A. G. Gentle. This firm's Premier onion was largely shown, competition being very keen. Mr. T. Avery, Loudwater, had highest honours, his half-dozen bulbs being large, shapely, beautifully fine in skin, and well finished. Mr. H. Wheeler, Wenvoe Castle Gardens, Cardiff, was second, his bulbs being as clean as though produced from a lathe. Third place fell to Mr. H. Folkes, gardener to Rt. Hon. T. F. Halsey, Gaddesden Place, Hemel Hempstead. Peas, although so late in the season, were of good quality, Mr. T. Jones' winning dish of Hercules being very fine. Mr. Jones also led with Lancastrian, second in each case being Mr. Basile.

Mr. Basile also scored for leeks, second prize going to Mr. T. J. Broom, gardener to Miss Langworthy, Holyport, and third to Mr. E. Deakin, Hay Mills, Birmingham. Perfection Intermediate carrots were shown by eleven competitors, among whom Mr. A. G. Gentle stood easily first, his roots being splendid; second prize went to Mr. W. Coleman, Hunter Street, Buckingham; and third to Mr. Evans, Presteign. The winners for celery were Mr. T. Sparkes, gardener to Miss Allard, Wimblehurst, Horsham; Mr. A. Basile, and Mr. Gentle, in the order named. Messrs. Dickson and Robinson also had classes for their specialities in beetroot, parsnips, runner beans, lettuces, turnips, and cauliflowers, the principal prizewinners being the competitors whose names have already been mentioned. It may be added that entries in all these classes were strong, and the quality was of a high order.

Mr. W. E. Sands, the Irish potato specialist, provided classes for Irish Hero and Erin's Queen potatoes, first prize going to Mr. F. L. Pike, Serge Hill, King's Langley, for a grand dish of the former, a very choice-looking variety; Mr. Gentle took second with Irish Hero; and third prize went to Mr. R. Bloomer, gardener to the Misses Plunkett, Ballymascallon, Dundalk, Ireland, also for Irish Hero.

One of the best classes in the show was that for six dishes of potatoes, in which the prizes were provided by Messrs. Clay and Son, of fertilizer fame. Entries were about a dozen strong, and the tubers throughout the class were well-grown specimens, fully developed, without coarseness, and were remarkably free from blemishes. The chief winner was Mr. Gentle, who had as fine a lot as could be wished for. Snowball, Emperor (a fine coloured oval), King Edward, Royalty, Excelsior, and Goldfinder, were his varieties. Mr. M. Hoad, Hythe Road, Willesborough, Kent, came second, showing smaller, but still good, tubers; and third place went to Mr. J. Gilmour, gardener to Viscount Goschen, Seacox Heath, Hawkhurst.

Messrs. H. J. Lobjoit and Sons, Heston Farm, Hounslow, won in the Market Gardeners' class arranged for by Messrs. Watkins and Simpson, the vegetables being of good marketable quality, the sprouts being particularly fine. Another strong class was provided for three dishes of potatoes, the prizes being offered by Messrs. H. Lane and Son, Berkhamsted. There were almost a score of entries, Mr. A. G. Gentle leading with good examples of Royalty, King

Edward, and Snowball, all being very clean, smooth, and of nice colour. Mr. J. Gilmour, Hawkhurst, was second, and third place was taken by Mr. A. Humphrey, gardener to Sir Montague Turner, Bedford, Havering, Romford; Mr. J. H. Gilmour, Ladham House Goudhurst, being fourth.

The chief class provided by Robert Sydenham Limited was for nine distinct kinds of vegetables, and here the leading award was secured by Mr. T. Jones, Ruabon. He had Ailsa Craig onions in grand form, as well as celery, cauliflowers, sprouts, and other things of good quality. Mr. J. White was a good second, third prize being secured by Mr. D. W. Bedford, gardener to R. H. Ling, Esq., The Braes, Berkhamsted; and fourth by Mr. West, gardener to Mrs. M. Knox, Holt Hatch, near Alton. In another class for eight kinds the winner was Mr. E. Deakin, Hay Hall, Birmingham; the second-prize winners being Messrs. Lobjoit and Sons, Hounslow.

The Messrs. Sydenham had also numerous classes for separate vegetables, the winners for eight onions being: First, Mr. Wheeler, Wenvoe Castle Gardens; second, Mr. T. Jones; third, Mr. Basile; and fourth, Mr. R. Staward. Mr. E. Deakin took first place for tomatoes, followed by Mr. J. White and Mr. Basile, the latter exhibitor taking the lead for leeks and cauliflowers, Mr. T. Jones following in both cases. For six heads of celery Mr. Basile led, second prize going to Mr. T. Jones, and third to Mr. J. White. The winners for eight turnips were Mr. R. H. Ling, Mr. E. Deakin, and Mr. Basile. First prizes were also taken by Mr. J. West, for parsnips; Mr. J. White, for carrots; and Mr. E. Deakin, for beetroot; the quality and number of entries in all these classes being highly satisfactory.

NON-COMPETITIVE.

There were not quite so many exhibits from the seed firms as there have been at former shows, but those that were staged added considerably to the general effect of the show, there being great variety and general excellence in every stand. Pride of place among the non-competitive exhibits on this occasion must be accorded to Mr. E. Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree. Mr. Beckett has, as everybody knows, put up scores upon scores of splendid collections of vegetables, but it is doubtful whether he has ever made a more attractive and interesting display than that he made on Wednesday. The exhibit was of great extent, and the variety of form and colour embraced in the collection was positively wonderful. Some of the capsicums, aubergines, yellow tomatoes, and Painted Lady beans were as bright and varied in colour as flowers could well be, and it is almost unnecessary to say that the more solid vegetables, such as the Ailsa Craig onions, the potatoes and beetroot, carrots and parsnips were of superb quality. Many quite uncommon subjects were staged, as well as those that, in most gardens, have long passed out of season.

Messrs. Dickson and Robinson, Manchester, brought a nice exhibit of their popular Premier onion, the bulbs being of good size and fine quality. The collection of vegetables arranged across the end of the hall by Messrs. Barr and Sons, King Street, Covent Garden, included excellent types and varieties of most of the leading vegetables. Barr's Long Surrey carrot was staged in grand form, length, smoothness and colour being very fine. A pile of Trebon's Selected onion showed capital quality, and the green-fringed salad lettuce was as beautifully crimped as an endive. Messrs. Dobbie and Co., Edinburgh, exhibited potatoes set up in baskets on a tiered staging. It was interesting to note the difference in skin and finish between Midlothian Early grown in Scotland and the same variety grown in Essex. The latter were considerably darker in colour, and had the rough skin admired by many growers, but the Scotch-grown were nevertheless an attractive sample. Dobbie's Exhibition Red Kidney was given a prominent place, its bright colour and true kidney form making it a pretty potato. Dobbie's Favourite, Mountain Ash, an extremely long tuber with purple skin, and Edina, were but a few among a host of varieties shown. The platform was tastefully decorated with groups of palms, ferns, and liliums, with a group of Michaelmas daisies in the front, the latter being quite representative of the finest varieties in cultivation. The exhibitors in this case were Messrs. M. Gleeson and Co., Watford.

Messrs. H. Lane and Son, Berkhamstead, put up a table of apples and pears, the fruits being of beautiful colour. A dish of the firm's new apple, named Oakland Seedling, showed good quality. It is a promising apple of the long-keeping class. Allington Pippin, Worcester Pearmain, and, of course, Lane's Prince Albert, were well represented.

### Bristol Gardeners' Association.

The monthly meeting of this association was held at St. John's Parish Rooms, Clifton, on September 26, and Mr. Baston presided over a large audience. A most able lecture was given by Mr. J. C. House on "Useful Perennials for Cutting Purposes." The lecturer gave a long list of various flowers, and also the best time to cut them. He only dwelt with propagation of a few varieties. The excellent lecture was followed by a good discussion.

The prizes for the evening, for four bunches of hardy perennials, were awarded as follows: Mr. Scott first, Mr. Woodward second, and Mr. Elkes third. Mr. House was awarded a special certificate for a collection of cut hardy perennials, and Mr. Garnish a certificate for two vases of chrysanthemums. A hearty vote of thanks was accorded on the motion of Mr. Shelton, seconded by Mr. Henderson.

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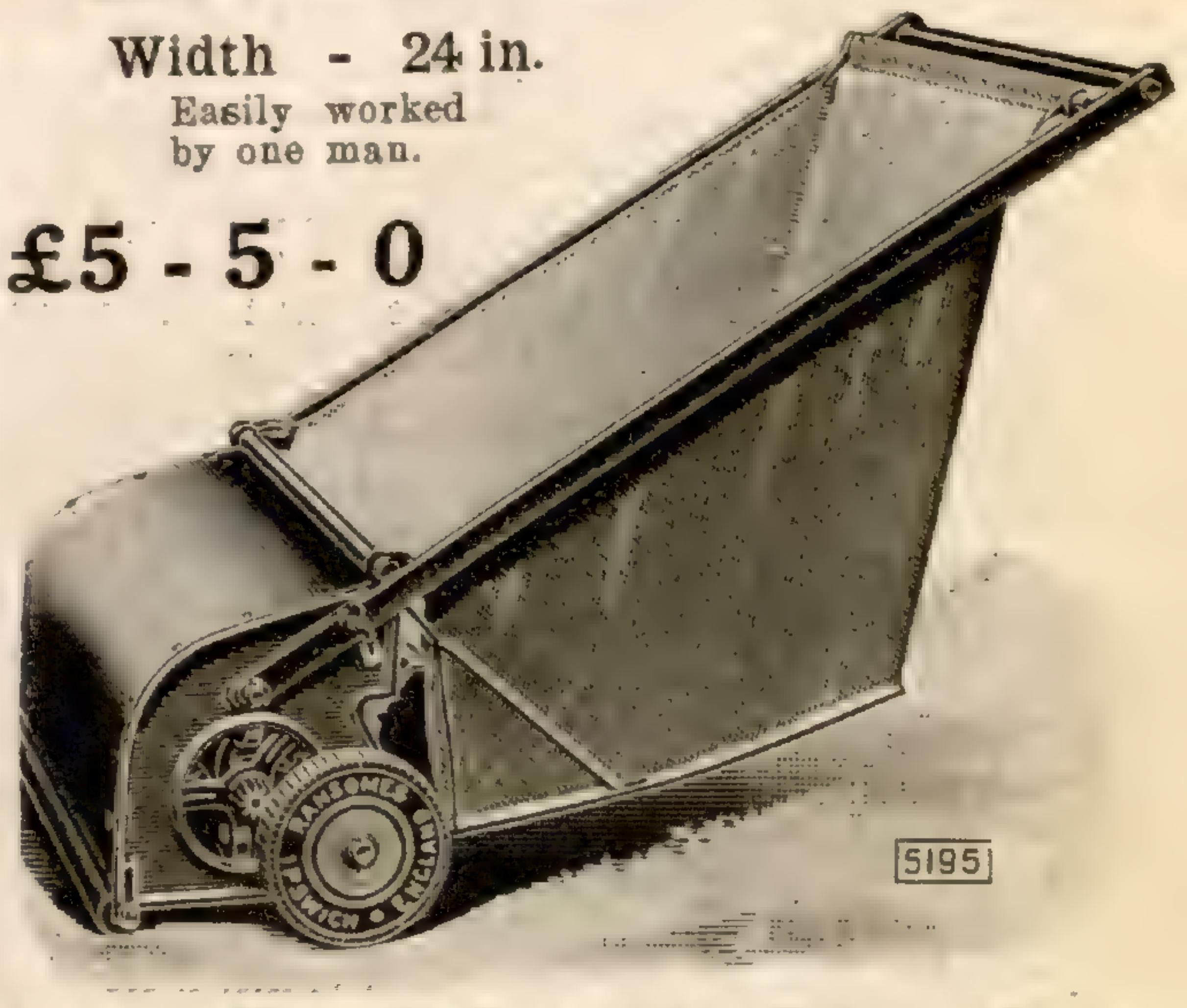

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# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

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AMERICAN GRAPES.—S. F. D., Penarth: I shall be much obliged for a little information, through your valuable paper, on the method of dealing with two Canadian vines which I have, Concord and Niagara. One of them is white, and the other black. I do not know which is which. They are planted in an outside border, where they get the sun all the best part of the day; planted about a year, but have never fruited. At the back of the border is a long tomato house. The previous owner of the garden looked for grapes, but I wonder whether the vines are worth keeping. Your assistance will be much esteemed.—The vines have not as yet had an opportunity of showing whether they will bear and ripen a crop under the conditions that obtain in your garden, especially as the past summer has been exceptionally wet and cold. We should be inclined to allow them to remain during the summer of 1913, and if they do not bear a crop worth gathering, root them out in the autumn.

DWARF BRITISH FERNS AT GLASGOW.—With reference to the question raised by Mr. C. Pattison in our issue of September 28, Mr. C. T. Druery writes: In reply to Mr. C. Pattison's enquiry in your issue of September 28, the only varieties to which the term "dwarf" is properly applicable are those of particularly small dimensions when full grown as compared with the normal, and not such species as are normally small. As regards the several varieties referred to, Lastrea pseudo-mas crispa cristata angustata, Polystichum angulare congestum grandiceps, and Scolopendrium vulgare spirale corymbiferum are the only ones properly belonging to the dwarf section; the others, Polypodium vulgare trichomanes cristatum, Blechnum spicant serratum ramo-cristatum, and Asplenium trichomanes incisum, should not rank as dwarfs. I know of no truly dwarf Polypody except a very small-growing normal which I have found in Wigtonshire, which persistently dies under cultivation, and all the varieties of trichomanoides, or rather, cornubiense, with which I am acquainted, under favourable circumstances attain fair normal size. Asplenium trichomanes incisum assumes full size under like conditions, and so does Blechnum spicant. True dwarf varieties are comparatively rare. The best ones are Lastrea pseudo-mas above cited, raised by Messrs. Sang of Kirkcaldy, and often called, for brevity's sake, Sangi. In the same sub-species we have L. p. m. crispo-gracile, Lyelli, and ramulosissimum, all very dwarf and good. In Blechnum a true dwarf form is B. s. crispissimum Hartley, only three or four inches high; in Scolopendrium we have several spirale forms with very small leathery fronds and twisted habit; also S. v. Kelwayi densum, like a ball of moss; and the several conglomerate forms Kelwayi, Coolingi, Baxteri, and Wardi, may legitimately be included in the section. A number of Mr. Lowe's crossed forms only attain very small dimensions, but few of them are fit for exhibition purposes, being far more curious than pretty. From Mr. H. Stansfield we have recently received a very dwarf S. v. crispum and a grandiceps form of same. In the Polystichums we have but few true dwarfs belonging to the congestum section; parvissimum, despite its name, often forms foot-high fronds, but could scarcely be considered ineligible on account of its name and compact habit. In the Lady Ferns there are some very beautiful true dwarf forms, A. f. f. congestum minus, A. f. f. c. m. cristatum, and grandiceps are charming forms, rarely exceeding six or seven inches. Messrs. May have recently raised a particularly pretty crispy form from that section. A. f. f. crispum is a dwarf rambling form, very distinct, and there are several forms of stipatum which are very dense, imbricate, and compact, which dwarfs them considerably and brings them fairly within the line. The above list comprises certainly the best of the "dwarfs." In conclusion, I must emphasise the principle that small-growing normal species, like some of the spleenworts, if introduced into a group specified as dwarfs, would inevitably disqualify it if judged by experts.

[We are much obliged to Mr. Druery for his reply to the question, although we are not at all inclined to agree with him in his definition of "dwarf" British ferns, and we think that but few of our readers will readily accept it. Evidently, if an expert like Mr. Druery would exclude the spleenworts from a collection of dwarf British ferns, the time has come when the British Pteridological Society should make definite regulations for governing such competitions. —Ed. "G.M."]

HEATING A GREENHOUSE.—B. T., Swindon: I have a pit measuring 16ft. in length, 9ft. in width, and 8ft. in height, at the centre of the span-roof. I have two flow pipes and one return, all two-inch piping. There are 42ft. of piping altogether. Would this be sufficient to keep out frost?—A good deal depends upon the construction of the side walls and the capacity of the boiler; if the latter is already fully taxed in other directions, the piping might not suffice in severe weather. It would be better if there were two return pipes, and better still if the piping was 4-inch instead of 2-inch, as the larger radiating surface would reduce the need for severe firing, with its attendant evils of stuffiness and unpleasant atmosphere.

STANDARD ROSES.—C. D., Bath: Please tell me which you consider the best roses for standards. I should like to know at once so that I may visit a nursery and see the varieties ere they finish flowering.—If you refer to larger-flowering roses, then the following is an excellent selection of varieties for standards: Captain Hayward, Caroline Testout, Frau Karl Druschki, Hugh Dickson, J. B. Clark, La Tosca, Suzanne Marie Rodocanachi, White Maman Cochet, Lady Ashtown, Killarney, Augustine Guinoisseau, Gustave Regis, and Gustav Grunerwald.

STOPPING PERPETUAL CARNATIONS TO SECURE LARGE BLOOMS.—F. M., Hants, asks: Would you or some of your readers who are carnation experts be good enough to consider the subject of stopping perpetual-flowering carnations to produce large blooms? In certain catalogues some of the hints given to amateurs appear rather misleading; and I want to know whether such comparatively small-flowering varieties like Mrs. H. Burnett and Black Chief would produce larger flowers if only stopped once. —Will some of our readers kindly give us their opinion on this matter? We believe the increase in size would be relatively small, and would not be sufficient to outbalance the reduction of the crop.

KEW BULLETIN.—S. J., Leeds: Kindly tell me where I can obtain the "Kew Bulletin," and what is its price.—The "Kew Bulletin" is published by his Majesty's Stationery Office, and can be obtained through any bookseller or direct from Messrs. Wyman and Sons, Fetter Lane, E.C. The price is 4d. per issue.

HOPS AS MANURE.—M. W., Watford: I have been told that spent hops from the brewery are valuable as manure for garden crops, and shall be grateful if you will advise me on the matter. Are they a good manure for roses, bush fruits, and vegetables? And, if so, when is the best time to use them?—Spent hops are of considerable value on heavy clay soils, because they help to lighten the soil and supply humus. There is no advantage in using hops on rich old garden soil, but in the case of a recently-formed garden a good dressing may be dug in at this time of the year, or spread as a surface mulch in spring. The chemical properties of spent hops are of little account, but Wakeley's Hop Manure, which is composed of brewers' hops impregnated with suitable chemical fertilisers, is an excellent food for the subjects you name, and, in fact, for all garden produce. It is about the best substitute for animal manure we know.

## NAMES OF PLANTS.

M. E. J., Hexham.—1, Primula floribunda; 2, Helianthus decapetalus; 3, H. sparsifolius.

B. C., Birmingham.—1, Aster versicolor; 2, Chrysanthemum uliginosum; 3, Solidago virgaurea; 4, Leycesteria formosa.

F. R. C., Woodbridge.—1, Caryopteris mastacantha; 2, Sequoia sempervirens; 3, Taxodium distichum; 4, Garrya elliptica.

W. D., Durrington.—1, Cupressus Lawsoniana albo-spica; 2, Prunus Pissardi; 3, Rosa rugosa Blanc Double de Coubert; 4, Datura suaveolens.

G. S., Ryde.—1, Acanthus mollis; 2, Sedum Sieboldi variegata; 3, Abelia triflora; 4, Echinops ruthenica; 5, Spiræa ariæfolia; 6, Aster ericoides.

C. G. C., Northampton.—1, Bougainvillea glabra; 2, Tradescantia zebrina; 3, Panicum plicatum; 4, Aralia Chabrieri; 5, Panax Victoriæ; 6, Dracæna Sanderiana.

B. M. T., Exmouth.—1, Helenium autumnale; 2, Sibthorpea europæa; 3, Cotyledon umbilicum; 4, Echeveria secunda glauca; 5, Arbutus Unedo; 6, Clematis Davidiana.

## NAMES OF FRUITS.

M. N., Chelmsford.—Beurre d'Amanlis.

W. J., Redhill.—Probably Souv. de Congrès.

J. B. C., Llandudno.—1, Sturmer Pippin; 2, Lane's Prince Albert.

K. T. E., Brighton.—1, Dr. Jules Guyot; 2, Bergamotte d'Automne; 3, Beurre Capiaumont.

S. R., Bath.—1, Comte de Lamy; 2, Doyenne Boussoch; 3, Beurre Clairgeau; 4, Emile d'Heyst.

E. D. E., Skipton.—1, Bramley's Seedling; 2, Dumelow's Seedling; 3, Bismarck; 4, Lane's Prince Albert; 5, Catillac.

W. O., Dorking.—1, Beurre Bosc; 2, Durondeau; 3, not recognised, probably a small Styrian; 4, Worcester Pearmain.

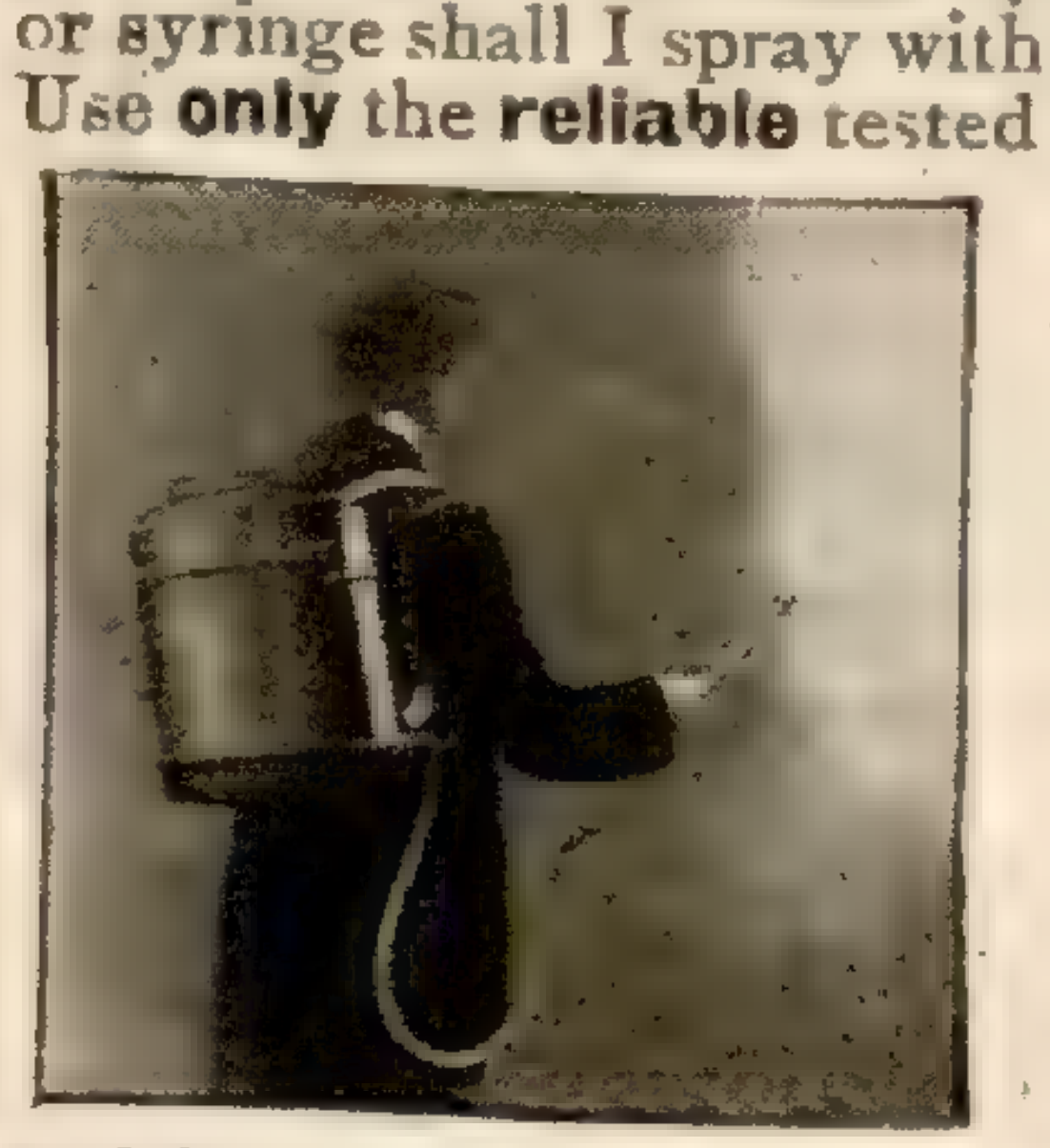
W., Weybridge.—1, not in character, send again; 2, Beurre d'Amanlis; the apple is Peasgood's Nonsuch; and the grape is Gros Colmar.

F. T. J., Dorking.—1, Bergamotte Bufo; 2, Beurre Diel; 3, not recognised; 4, Beurre Diel; 5, Bergamotte d'Automne; 6, a small Calebasse.

R. A. H., Surbiton.—1, Ribston Pippin; 2, Emperor Alexander; 3, Ribston Pippin; 4, Fearn's Pippin; 5, Lane's Prince Albert; 6, Norfolk Beefing.

T. S., Kingston Hill.—1, a malformed fruit, not recognised; 2, Schoolmaster; 3, evidently a Cellini, but very pale in colour; 4, Cox's Pomona; 5, send again; 6, Hawthornden.

L. J. W., Rochester.—1, Bismarck; 2, Lady Henniker; 3, Stirling Castle—fine, clean specimens, and if all we received were of the same excellence our task of identifying varieties would be comparatively easy.



Spraying

The question to-day is not "**Shall we Spray,**" as every gardener knows he **must** Spray, but "What machine or syringe shall I spray with?" All the world answers, Use **only** the **reliable** tested "FOUR OAKS" which have won **30** Gold & Silver Medals, many in open competition with other makes. The machine illustrated is the Four Oaks Gold Medal Knapsack Sprayer, **45/-.** No rubber valves. Complete Catalogue of Spraying and Limewashing Machines and Syringes of every description free on application to the Sole Manufacturers—**THE FOUR OAKS SPRAYING MACHINE CO., No. 3 G, SUTTON COLDFIELD.**

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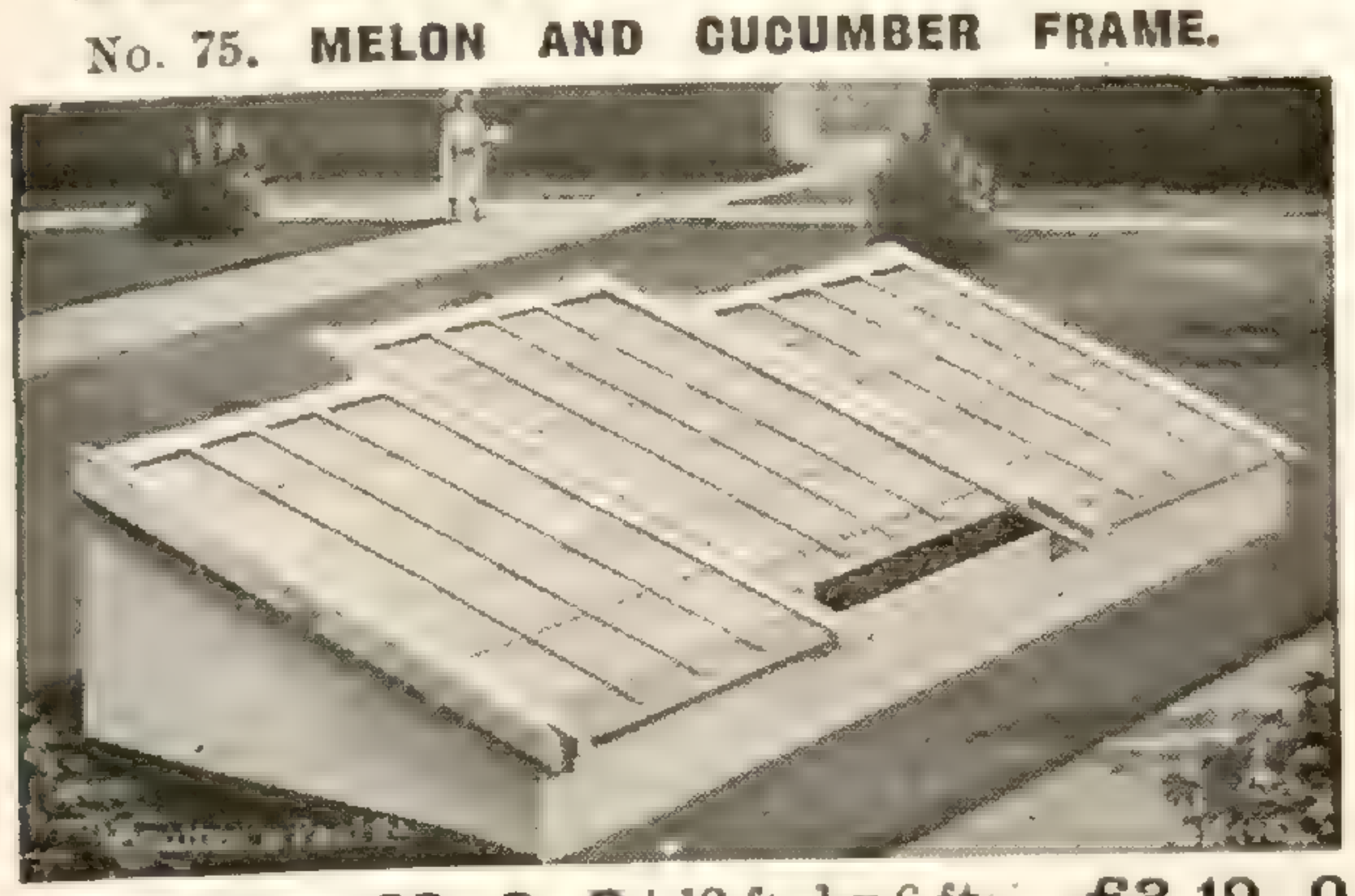

4 ft. by 6 ft. ...£2 0 0 | 12 ft. by 6 ft. ... £3 19 0
8 ft. by 6 ft. ...£3 0 0 | 16 ft. by 6 ft. ... £4 18 0
Painted three coats, Glazed 21oz. Glass.

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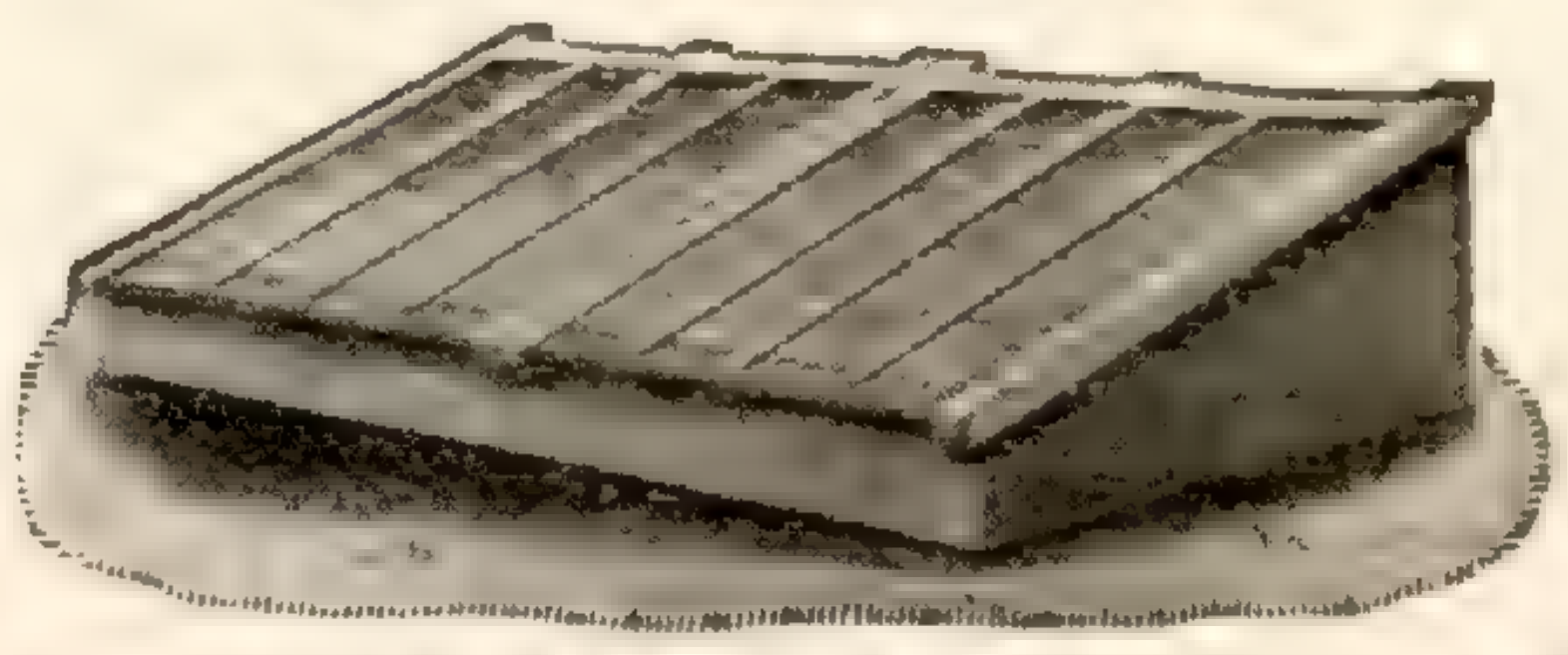

6 ft. by 4 ft. ... £1 15 0 | 9 ft. by 4 ft. ... £2 7 6.

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6 ft. by 3 ft. ... £1 14 0 | 12 ft. by 3 ft. ...£3 2 0
6 ft. by 4 ft. .. £2 5 0 | 12 ft. by 4 ft ...£3 13 0
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**Pharisaer,** H.T.
**Richmond**
**Ben Cant,** H.P.
**Caroline Testout,** H.T.
**Charles Lefebvre,** H.P.
**Commandant F. Faure,** H.P.
**Fisher Holmes,** H.P.
**Frau Karl Druschki,** H.P.
**Gen. Jacqueminot,** H.P.
**Gloire de Dijon,** T.
**Gruss an Teplitz,** H.T.
**J. B. Clarke,** H.T.
**Killarney,** H.T.
**La Tosca,** H.T.
**Mrs. Sharman Crawford,** H.P.
**Mrs. W. J. Grant,** H.T.
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**Ulrich Brunner,** H.P.
**Victor Hugo,** H.P.

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**Juliet,** H.Per.
**Lady Hillingdon,** T.
**Lady Pirrie,** H.T.
**Lieut. Chaure,** H.T.
**Lyon,** H.T.
**Marquis de Sinety,** H.T.
**Miss A. de Rothschild,** T
**Mrs. A. Hammond,** H.T.
**Mrs. Alfred Tate,** H.T.
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**Mrs. W. Christie-Miller,** HT
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**OLD GRAMMAR SCHOOL, WISBECH.**

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| Five Lines and under ... ... ... ... | £0 2 6 |
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| " Half Column ... ... ... ... ... | 1 10 0 |
| " Column ... ... ... ... ... ... | 3 0 0 |
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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12x10 | 14x12 | 18x12 | 16x14 | 20x14 | 20x16 | 24x16 | 22x18 |
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## Watering Hose

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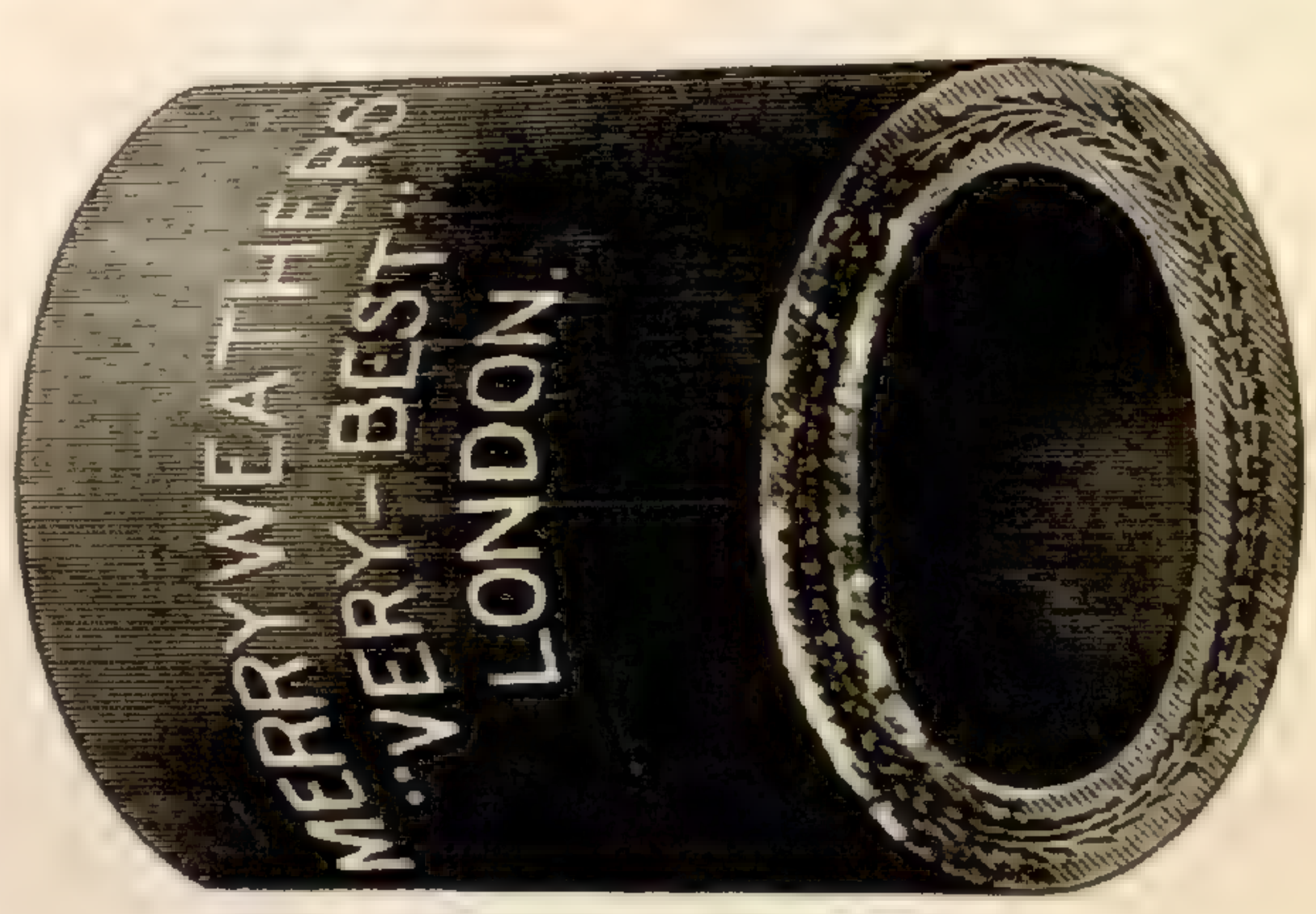

Made on the lines of Fire Engine hose, therefore good for hard wear and long life. Customers find it good after 10 years' use.

*Beware of cheap and flimsy imitations.*

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C. JENNINGS and CO., Timber Merchants, General Woodworkers, 916, Pennywell Road, Bristol.

# OBITUARY.

◆

## MR. WM. BAYLOR HARTLAND.

On September 15, Mr. W. Baylor Hartland passed away, at the age of 76 years. During the whole of his long working life he was associated with the nursery and seed trade in Cork and entered business on his own account in 1878. Mr. Hartland will probably be best remembered for his efforts to popularise daffodils and raise new varieties. In 1882 he published a complete list of known daffodils, and in 1896 issued his tulip list. He was a great lover of flowers, a stalwart, handsome, genial Irishman, admired and loved by all who knew him well.

# GARDENING ENGAGEMENTS.

Mr. Frank Birkinshaw, a member of the gardening staff of the Royal Gardens, Kew, has been appointed, on the recommendation of Kew, Assistant Agricultural Superintendent in St. Vincent, West Indies.

Mr. Henry Fenner, for the past nine years gardener at Bethlem Royal Hospital, Southwark, has been appointed gardener at Bethlem Hospital and King Edward's School, Witley, near Godalming.

Mr. E. Smith, late gardener to A. Seligman, Esq., Shapswell Manor, Etchingham, Sussex, has been appointed gardener to J. F. Mason, Esq., M.P., Eyneham Hall, Witney.

# METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. September 22 to September 28. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Sept. 22—Sunday ...... | 9 54 | 54 | 47 | 61 | 39 |
| ,, 23—Monday ...... | 6 18 | 50 | 50 | 62 | 43 |
| ,, 24—Tuesday...... | 4 12 | 47 | 47 | 60 | 41 |
| ,, 25—Wednesday.. | 5 36 | 51 | 46 | 58 | 36 |
| ,, 26—Thursday.... | 9 24 | 54 | 48 | 58 | 39 |
| ,, 27—Friday........ | 8 18 | 48 | 46 | 59 | 33 |
| ,, 28—Saturday..... | 6 6 | 52 | 48 | 58 | 42 |
| Means | (total) 49 48 | 51 | 47 | 59 | 39 |

| Date. 1912. September 22 to September 28. | Rain. | Temperature of the Soil At 9 a.m. | | | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Sept. 22—Sunday ...... | — | 53 | 55 | 56 | 28 |
| ,, 23—Monday ...... | — | 54 | 54 | 56 | 34 |
| ,, 24 Tuesday...... | — | 54 | 54 | 56 | 32 |
| ,, 25—Wednesday.. | — | 52 | 54 | 56 | 28 |
| ,, 26—Thursday.... | — | 52 | 54 | 55 | 29 |
| ,, 27—Friday.. ..... | — | 51 | 53 | 55 | 24 |
| ,, 28—Saturday .... | 0·29 | 52 | 53 | 55 | 31 |
| Means ... | (total) 0·29 | 52 | 54 | 55 | 29 |

Dahlias destroyed by frost Friday, 27th.

# FORTHCOMING ENGAGEMENTS

TUESDAY, October 8.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "The Influence of Atmospheric Impurities on Vegetation," by Dr. C. Crowther; Scientific Committee at 4 o'clock.

Weybridge Horticultural Society; Monthly Meeting.

WEDNESDAY, October 9.—East Anglian Horticultural Club.

THURSDAY, October 10.—Royal Horticultural Society's Fruit Show; two days.

FRIDAY, October 11.—Annual Conference of the Union of Horticultural Mutual Improvement Societies, at the Royal Horticultural Hall, at 3 o'clock.

MONDAY, October 14.—United Horticultural Benefit and Provident Society.

WEDNESDAY, October 16.—North of England Horticultural Society; Meeting at Leeds; Lecture on "Apple Culture," to be delivered by the Rev. J. Bernard Hall.

# MARKETS.

◆

## COVENT GARDEN.

### Flowers.

Chrysanthemums, carnations, and roses are very much in evidence, and there is a good all-round demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Arums | per doz. | 3 0 | to | 3 6 |
| Adiantum cuneatum | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Asters | per doz. bun. | 1 6 | | 3 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 0 8 | | 2 0 |
| ,, | per doz. bun. | 6 0 | | 12 0 |
| ,, Malmaison | per doz. | 8 0 | | 15 0 |
| Cattleyas | per doz. | 9 0 | | 15 0 |
| Chrysanthemums | per doz. bun. | 3 0 | | 6 0 |
| ,, | per doz. blooms | 1 0 | | 2 6 |
| Coreopsis | per doz. bun. | 0 6 | | 1 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Delphiniums | per doz. bun. | 4 0 | | 6 0 |
| Eucharis | per doz. | 2 0 | | 2 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gaillardias | per doz. bun. | 0 6 | | 1 0 |
| Gardenias | per doz. | 2 0 | | 2 6 |
| Gladiolus | per doz. | 2 0 | | 4 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Lapageria | per doz. | 1 6 | | 2 6 |
| Lilium auratum | per bun. | 2 0 | | 3 6 |
| ,, speciosum | per doz. | 1 0 | | 2 6 |
| ,, longiflorum | per doz. | 1 6 | | 2 6 |
| Lily of the Valley | per doz. bun. | 10 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 0 | | 4 0 |
| Mignonette | per doz. bun. | 3 0 | | 5 0 |
| Montbretias | per doz. bun. | 4 0 | | 5 0 |
| Odontoglossums | per doz. blms. | 2 6 | | 4 0 |
| Pelargoniums | per doz. bun. | 2 0 | | 6 0 |
| Physalis | per doz. bun. | 5 0 | | 6 0 |
| Roses | per doz. | 0 9 | | 2 6 |
| Scabious | per doz. bun. | 2 0 | | 3 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Statice | per doz. bun. | 2 0 | | 2 6 |
| Sweet Sultan | per doz. bun. | 2 0 | | 3 0 |
| Stephanotis | per 6 doz. blms. | 2 6 | | 3 0 |
| Tuberoses | per doz. | 0 6 | | 0 9 |
| Violas | per doz. bun. | 0 9 | | 1 0 |
| Violets | per doz. bun. | 1 6 | | 3 6 |

### Fruits.

Ample supplies are offered, and the demand is good at the prices quoted.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English | per bush. | 2 0 | to | 5 0 |
| ,, Californian | per box | 7 0 | | 10 0 |
| Bananas | per bun. | 4 0 | | 8 0 |
| Blackberries | per peck | 2 0 | | 2 6 |
| Cocoanuts | per 100 | 18 0 | | 23 0 |
| Cranberries | per case | 12 0 | | 14 0 |
| Figs | per doz. | 1 0 | | 3 0 |
| Grapes, English | per lb. | 0 9 | | 3 0 |
| ,, Belgian | per lb. | 0 6 | | 1 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 0 |
| Greengages | per ½-sieve | 5 0 | | 7 0 |
| Lemons | per case | 8 0 | | 30 0 |
| Melons | each | 0 9 | | 2 0 |
| ,, Cantaloupe | each | 2 0 | | 4 0 |
| Oranges | per case | 10 0 | | 30 0 |
| ,, Jamaica | per case | 10 0 | | 15 0 |
| ,, Cape | per case | 12 0 | | 17 0 |
| Peaches | per doz. | 4 0 | | 15 0 |
| Pears | per ½-bush. | 1 6 | | 3 0 |
| ,, French | per box | 2 0 | | 5 0 |
| ,, Californian | per case | 6 0 | | 7 0 |
| Pineapples | | 2 0 | | 5 0 |
| Plums | per ½-sieve | 2 6 | | 3 0 |
| ,, Californian | per case | 8 0 | | 12 0 |
| Walnuts | per doz. lbs. | 2 6 | | 3 6 |

### Vegetables.

Excellent supplies continue, and are both extensive and varied. Green stuffs are cheap.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 1 0 | to | 2 6 |
| Aubergines | per doz. | 2 0 | | 2 6 |
| Beans, Runner | per bush. | 1 0 | | 2 0 |
| Beet | per bush. | 1 6 | | 2 6 |
| Cabbage | per tally | 1 6 | | 3 0 |
| Carrots | per doz. bun. | 1 6 | | 2 0 |
| Cauliflowers | per tally | 4 0 | | 5 0 |
| Celery | per bun. | 1 0 | | 1 6 |
| Cucumbers | per doz. | 1 6 | | 2 6 |
| Endive | per doz. | 1 0 | | 2 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per score | 0 6 | | 1 6 |
| Marrows | per tally | 4 0 | | 5 0 |
| Mint | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per bush. | 2 6 | | 4 0 |
| ,, Spanish | per case | 5 0 | | 6 0 |
| Parsley | per doz. bun. | 2 0 | | 3 0 |
| Parsnips | per bush. | 2 0 | | 3 0 |
| Peas | per bush. | 5 0 | | 6 0 |
| Radishes | per doz. bun. | 0 6 | | 1 0 |
| Shallots | per doz. lbs. | 2 0 | | 2 6 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 1 6 | | 3 6 |
| ,, Guernsey | per doz. lbs. | 1 9 | | 2 6 |
| Turnips | per doz. bun. | 1 6 | | 2 6 |
| Watercress | per doz. bun. | 0 4 | | 0 7 |

## LONDON POTATO MARKETS.

Business continues as usual, and prices remain about the same.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per ton | 75 0 | to | 85 0 |
| Kents | per ton | 80 0 | | 95 0 |
| Lincoln | per ton | 80 0 | | 95 0 |
| Blacklands | per ton | 70 0 | | 85 0 |

# CATALOGUES RECEIVED.

D. PRIOR AND SON, COLCHESTER.—Roses occupy the larger part of this firm's autumn catalogue, and the section is freely illustrated. Fruit trees, ornamental trees and shrubs, and border plants are also listed.

EDWIN MURRELL, SHREWSBURY.—This is a capitally arranged catalogue of roses, most comprehensive, and containing numerous fine illustrations.

MESSRS. BENJAMIN R. CANT AND SONS, OLD ROSE GARDENS, COLCHESTER.—A catalogue wholly devoted to roses; the varieties are admirably described, and grouped in their respective sections. The firm's new rose, St. Helena, is figured, as are many other good roses.

DANIELS BROTHERS, NORWICH.—An autumn catalogue that covers a wide field, and includes bulbs, roses, trees and shrubs, fruit trees, sundries, etc.

R. H. BATH, LIM., WISBECH.—A descriptive and illustrated catalogue, with cultural notes, of choice bulbs, roses, pæonies, carnations, fruit trees, etc.

MESSRS. J. VEITCH AND SONS, ROYAL EXOTIC NURSERY, CHELSEA.—Purchasers of bulbs will find much to interest them in the catalogue of bulbs issued by this firm. The lists evince much care in preparation, and the illustrations should be found useful as suggesting to cultivators methods of arrangement that cannot fail to prove satisfactory.

WM. PAUL AND SON, WALTHAM CROSS.—In every respect a fine catalogue, dealing entirely with roses. The firm's new varieties figure largely, and are well illustrated, coloured plates being devoted to the varieties Mrs. Charles Hunter and Nevissa. No useful rose is omitted, the descriptions are good, and the varieties are grouped under their respective sections, while the order form provides a capital alphabetical index.

CHARLES TURNER, THE ROYAL NURSERIES, SLOUGH.—The admirably-prepared catalogue of bulbs from Slough contains select lists of varieties of the several kinds of bulbous plants in general request, and will be found useful to cultivators generally.

LAXTON BROTHERS, BEDFORD.—An interesting catalogue of new strawberries and other soft fruits; freely illustrated.

HALLAMS, MOSELEY, BIRMINGHAM.—A neat pocket catalogue of selected bulbs, sundries, sweet peas, etc.

FRANK DICKS AND CO., 110, DEANSGATE, MANCHESTER.—A catalogue in which bulbs occupy the chief place, but which is also devoted to other flowering roots, roses, and sundries.

THOMAS S. WARE, LIM., FELTHAM.—A valuable and interesting catalogue of rare as well as popular bulbous plants, with descriptive lists of choice, hardy plants such as carnations, pæonies, violas, phloxes, etc., and roses.

WILLIAM BARRON AND SONS, ELVASTON NURSERIES, BORROWASH, NEAR DERBY.—From this firm we have received a special list of selected varieties of fruits; a neat little rose catalogue; a useful catalogue of herbaceous and alpine plants; and a larger catalogue of hardy trees and shrubs.

WILLIAM DUNCAN TUCKER AND SONS, LIM., CANNON STREET, E.C., AND TOTTENHAM.—A quite new and finely-illustrated catalogue of horticultural buildings, glass-houses of all descriptions, frames, and heating apparatus. The illustrations represent work executed in various parts of the Kingdom by the firm.

DOUGLAS LEIGH, ARDEN NURSERIES, HAMPTON-IN-ARDEN.—Roses occupy the larger part of this catalogue, but trees, border flowers, and sundries are also included.

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## ILLUSTRATIONS.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

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ALL-ROUND GARDENER or CARETAKER, Handy Man, married, no children; good characters. Particulars to Caretaker, Northwood, Hornsey Lane, Highgate.

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FOREMAN (Inside); age 23; thorough practical experience Vines, Peaches, Carnations, Chrysanthemums, Decorating and General Routine of good establishments; disengaged. T. YARWOOD, Pyon House Gardens, Hereford.

GARDENER, age 28, seeks SITUATION as Head of two or three; life experience in all branches; Inside and Out; married, no family. CLARK, Park Lane, Sandy, Beds.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER seeks SITUATION (Single-handed); experienced (Inside and Out), or good Kitchen Gardener; good references; married; age 32. E. REYNOLDS, 93, London Road, Maidstone, Kent.

GARDENER (Head Working), thoroughly experienced in Vines, Peaches, Melons, Cucumbers, Tomatoes, Stove and Greenhouse Plants, Kitchen Garden, Flower Gardens, and Pleasure Grounds; good references; married. G. F. HALL, Bagpath, Brimscombe, Stroud, Glos.

GARDENER (24), married, seeks SITUATION to attend electric plant and fill up time in Garden; good experience. A. EVEREST, The Lodge, Chipstead Common, near Sevenoaks, Kent.

GARDENER (Head Working).—MR. COLLETT, Kirtlington Park Gardens, highly recommends his FOREMAN, H. STEDMAN, as above; 19 years' practical experience in all branches; age 35; married, two children; life abstainer; excellent references; disengaged when suited. H. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GARDENER (Head Working, or good place as Second); excellent character; nine years in present place; leaving when suited; age 25. WILLIAM DEVERALL, The Green, Holt, Wilts.

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J. A.

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IMPROVER, with general experience, seeks SITUATION; age 20; Bothy preferred. F. JAMES, East Lodge, Stonelands, West Hoathly, Sussex.

JOURNEYMAN (23) (Inside and Out), seven years' good experience; good references; Bothy preferred; footballer. G. W. FAIREY, Bell End, Brampton, Huntingdon.

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LADY GARDENER seeks daily post for outside work; skilled in kitchen garden, lawns, pleasure grounds; in or near London preferred. Apply Miss "M.," 69, Lovelace Gardens, Southend-on-Sea.

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*148 & 149, Aldersgate Street, London,* **E.C.**

**For OCTOBER 12, 1912.**

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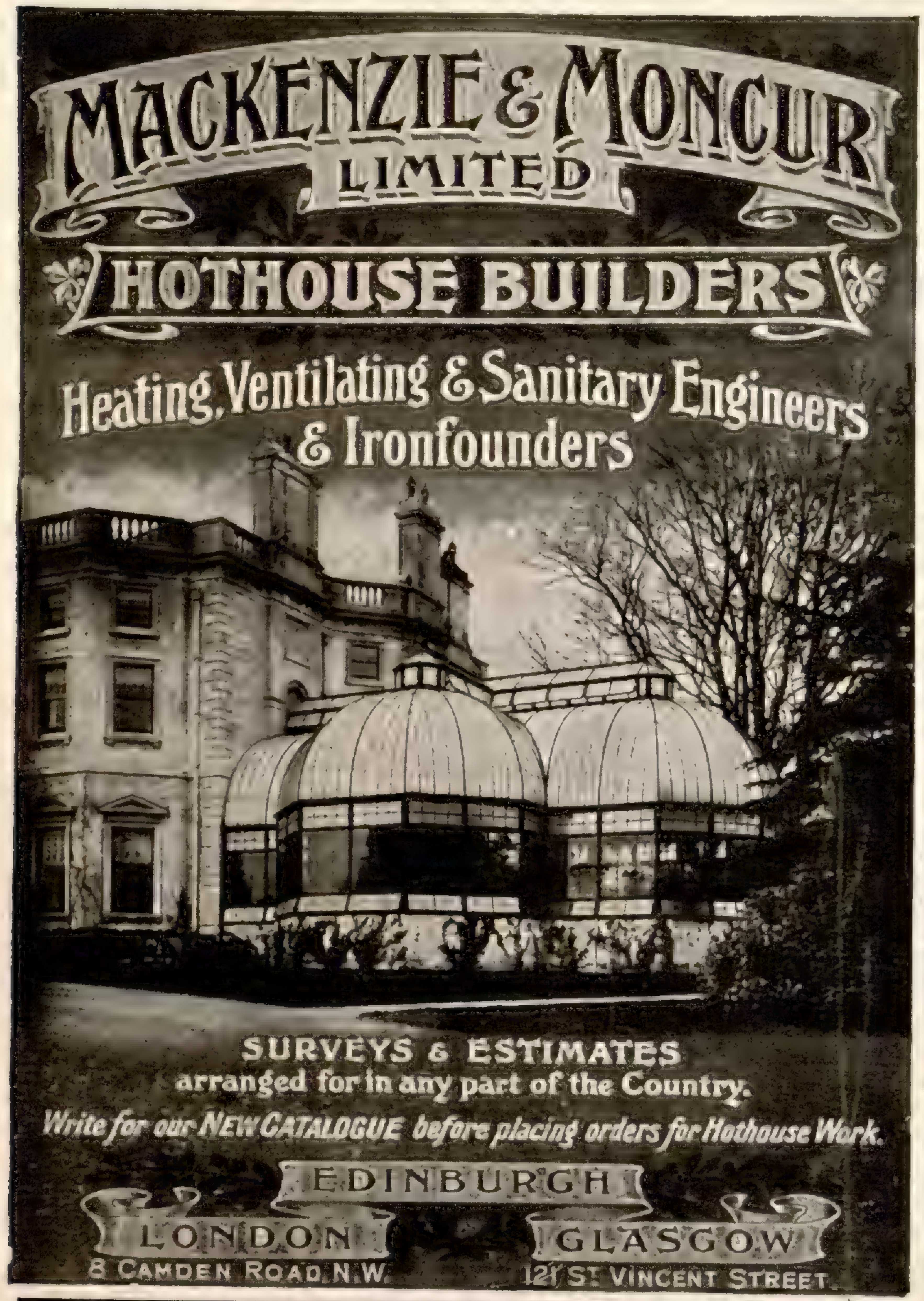

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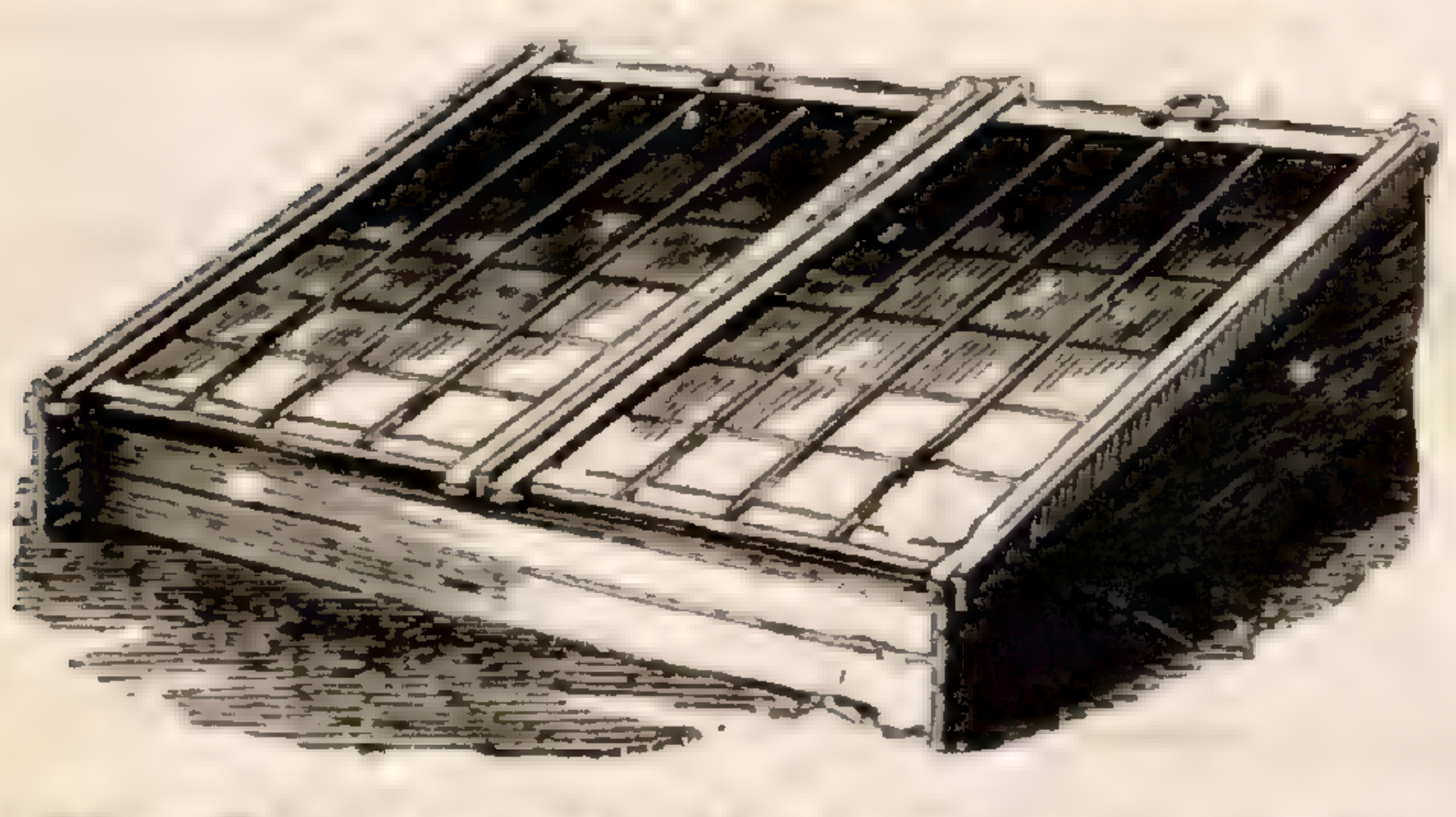

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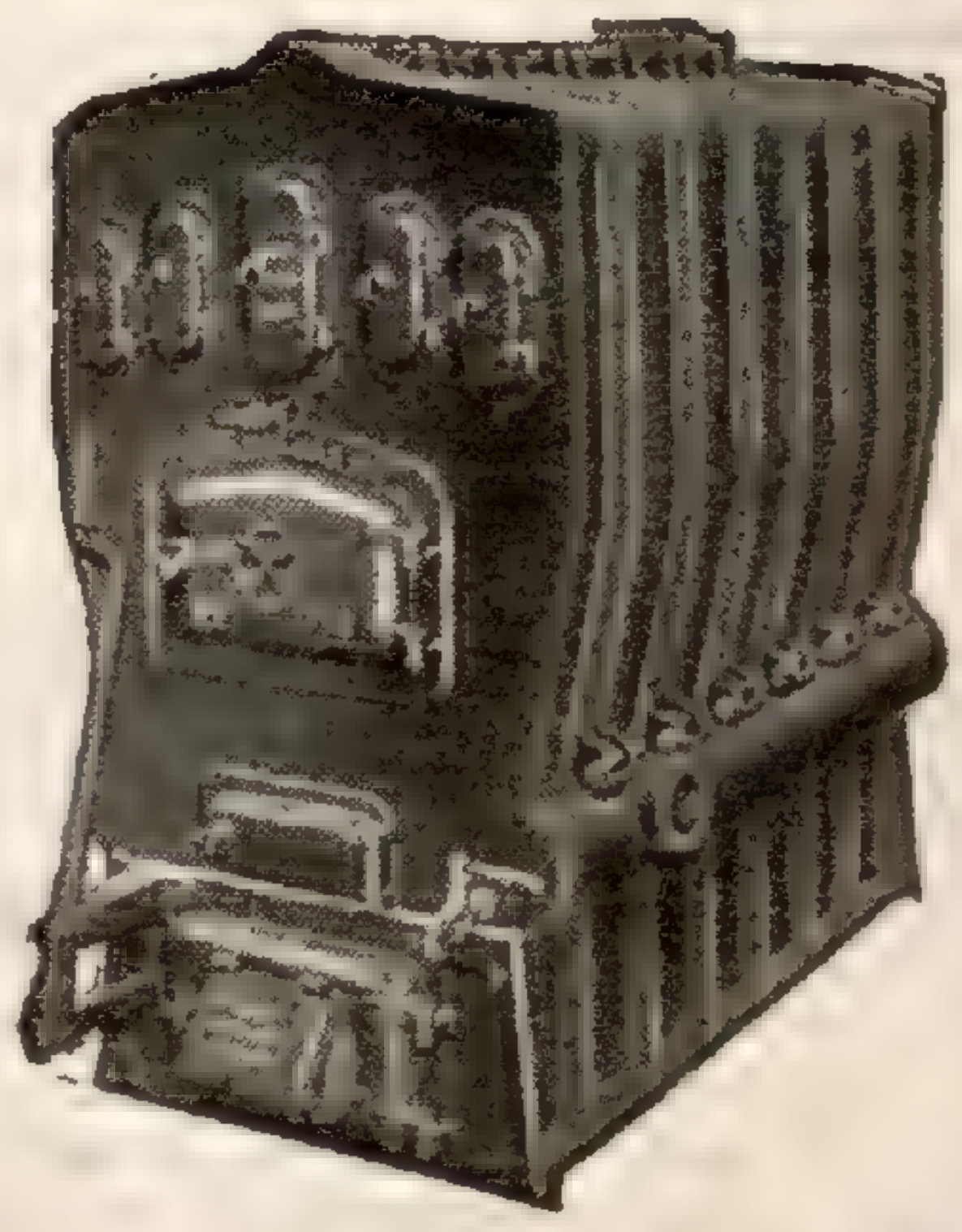

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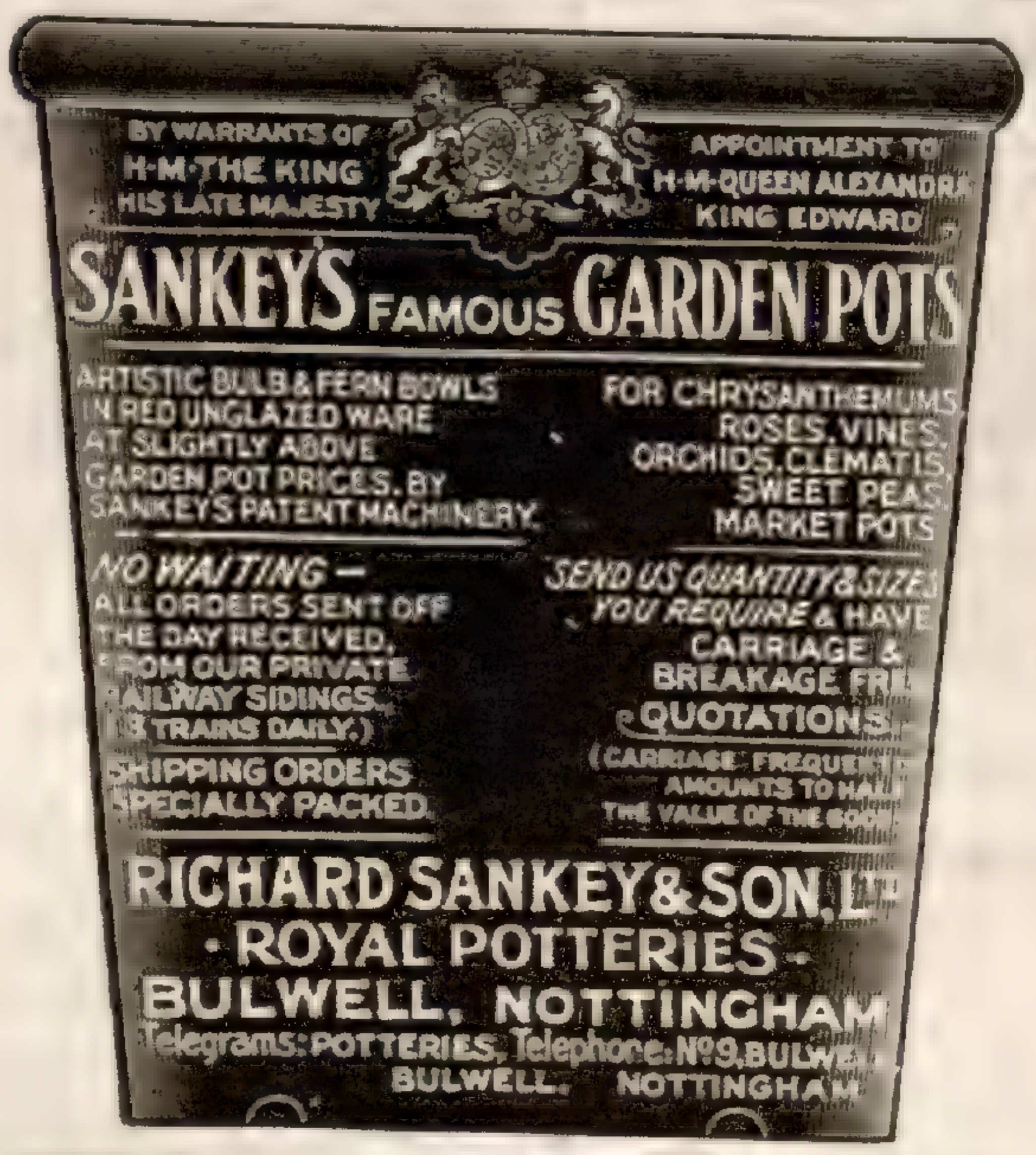

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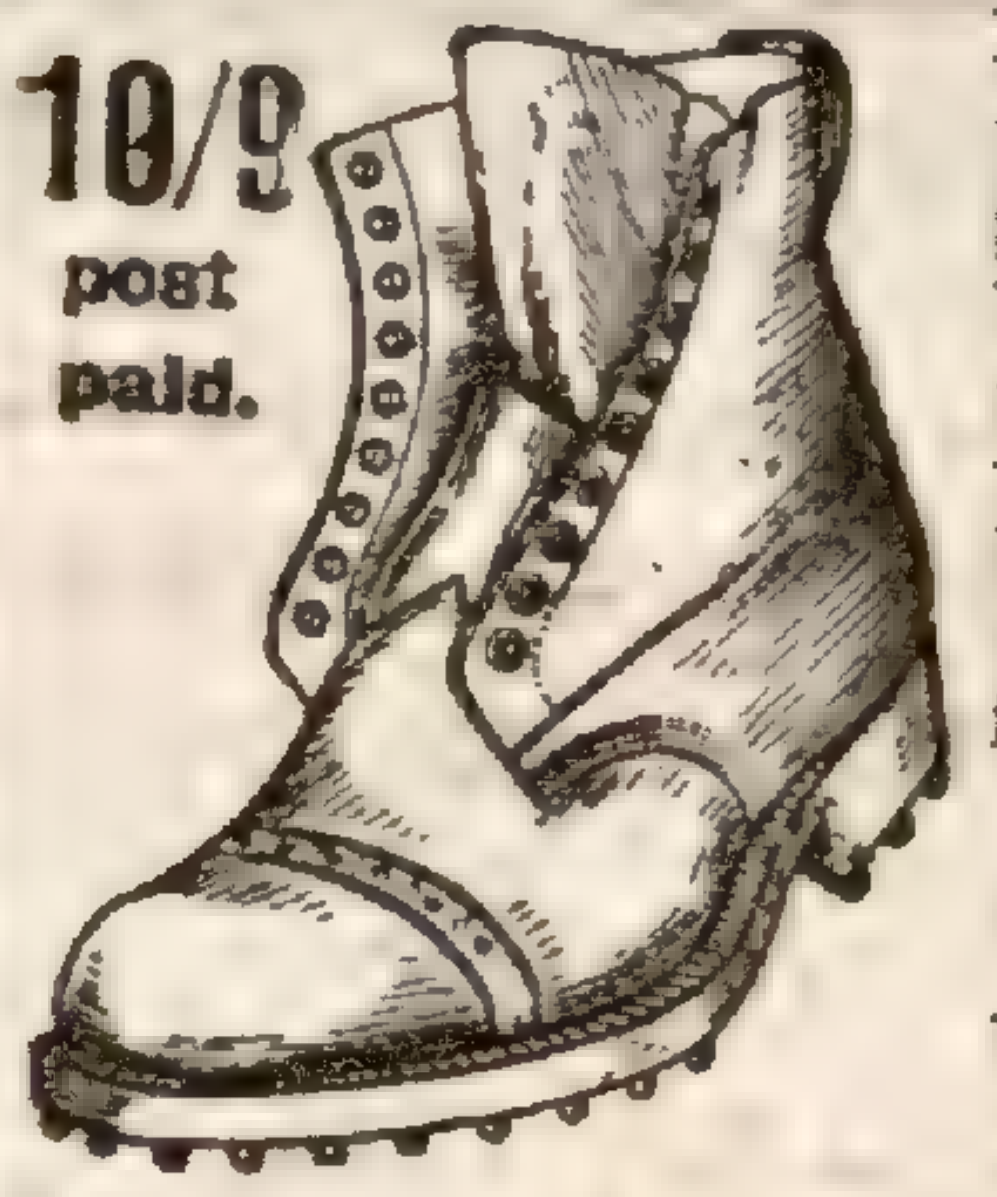

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# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Spring Flowers.

One of the distinctive peculiarities of the work of the garden is the length of time that necessarily elapses between the commencement of the preparatory details and the attainment of the desired result; and this peculiarity is brought into special prominence in connection with displays of spring flowers. To have the garden highly attractive from within a short period of the winter, with its frosts and snows, passing away, until the closing days of the season of spring, the plants must be in their positions immediately the breath of autumn has passed over the summer flowers, and bereft them of their beauty. The initial steps, such as the raising of seedlings and the rooting of cuttings, have to be taken at a much earlier period; but to these we need not refer otherwise than briefly. For our present purpose it will suffice to say that to obtain really satisfactory results in spring gardening the planting of both bulbous and fibrous-rooted plants must be commenced forthwith, and be proceeded with as rapidly as the condition of the soil and other circumstances will permit. It is essential to the bulbous plants attaining a high degree of development that they be planted early enough to become well rooted before the commencement of the winter season; and it is still more important in the case of those with fibrous roots that they should be well established in their new quarters before wintry weather is experienced. Not only do late-planted arabis, silenes, and other subjects of a similar class fail to bloom satisfactorily when they have not time to become established in the course of the autumn, but they are unable to make sufficient growth to cover the soil with a carpet of greenery. Moreover, they sometimes suffer severely from inclement weather, and as a result the beds present a more or less patchy appearance, thereby losing much of their charm for a considerable period. To make a judicious selection from the spring-flowering plants suitable for massing in the flower garden is not less essential to success than to fill the beds and borders comparatively early in the autumn. Bulbs are now cheap and good, and should be planted freely; but they ought not, as is sometimes the case, to be grown to the exclusion of other subjects. The merits of other suitable kinds should be carefully considered, and if this be done it will be seen that it is an immense advantage to include fibrous-rooted plants flowering in spring in due proportions, and grow them in separate beds or in association with bulbs that will be in harmony with them. Crocuses, daffodils, hyacinths, and tulips, to mention but few kinds, should be planted with some degree of liberality; but in making purchases of these it should be remembered that the same number of bulbs give a finer effect over a much larger area when arranged in association with other classes of plants than when they are grown alone in solid blocks. In the former case the bulbs can be planted farther apart without a suggestion of thinness, and the soil is covered with a green carpet, which is no small advantage, more especially when the beds are within view of the windows of the dwelling-house. On the other hand, beds that are wholly devoted to bulbs have a bare appearance from the time they are planted in autumn until the new growth has made considerable progress in the spring. Carpeting the surface is not the only advantage derived from the use of fibrous-rooted plants. The effect is greatly enhanced if due attention is paid to the harmony of colours, and the attractiveness of the beds extends over a much longer period than would otherwise be the case. The fibrous-rooted plants commence flowering well in advance of the bulbs, and they continue in bloom until the beds have to be prepared towards the end of May for their summer occupants. The passing of the flowers of the daffodils, hyacinths, and tulips need not be a disfigurement, for they can be readily removed when they have lost their freshness and beauty in such manner that nothing but the leaves remain. The most useful of the fibrous-rooted plants for beautifying the flower garden early in the spring are Arabis albida, in its single and double forms; Alyssum saxatile, of which there are compact-growing and lemon-coloured varieties; aubrietias in variety; forget-me-nots, polyanthuses, primroses, Silene pendula compacta, violas in great variety, and wallflowers, of which there are numerous colours, all more or less attractive. All these may be freely utilised in carrying out colour schemes on a large scale, and when the area is limited a selection should be made from them according to the taste of the planter and the special purpose for which they are required. To achieve a full measure of success in the use of these plants it is necessary they should be strong and well rooted when the beds are filled. To obtain stock of this description, it is necessary to propagate the respective kinds from seeds or cuttings, as the case may be, early enough for them to become well furnished with roots. For example, wallflowers should be raised from seed sown early in the spring and twice or thrice transplanted, and not, as sometimes happens, be raised from summer-sown seed and transferred direct from

MR. JAMES W. BARR.

the seed beds to those in which they are to produce their richly-coloured and delightfully-fragrant blooms. Arabis, alyssums, and aubrietias should be raised from cuttings soon after the season of flowering is past; and violas, which are best grown from cuttings rooted in summer, should be given sufficient time to become well rooted and furnished with healthy growths before the planting season. In like manner, forget-met-nots and silenes, which require a comparatively short period of growth should have the time necessary for acquiring the requisite degree of strength. There is one other point that should have attention, and that is the importance of the young plants having sufficient room to enable them to make their growth without overcrowding.

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**Mr. James W. Barr,** one of the three brothers who carry on the business of Messrs. Barr and Sons, King Street, Covent Garden, is very popular in the horticultural world. He is the nurseryman of the family, the other members of the firm being chiefly identified with bulbs and seeds and the office management respectively. Mr. J. W. Barr had a practical training under his father, the late Mr. Peter Barr, but he is as conversant with Dutch and other Continental methods as with British ones. He was for many years manager of the firm's nurseries at Ditton, near Surbiton, and upon him fell the greater part of the responsibility of transferring the stock of hardy plants and bulbs from Ditton to the newly-acquired, large, and very suitable nursery at Taplow. It is in connection with hardy alpine and herbaceous plants, and tulips, that Mr. J. W. Barr is best known, and a life-long study of these subjects has made him a leading authority upon them. Few people know more about daffodils than he does, but we fancy his own tastes are more in favour of late-flowering tulips, irises, and the florists' varieties of hardy flowers, such as phloxes, pyrethrums, Michaelmas daisies, etc. Mr. J. W. Barr is a member of the Royal Horticultural Society's Floral Committee, and he takes a close interest in the horticultural charities. He is a hard worker, enthusiastic, and tremendously energetic, and music is at once his hobby and recreation.

**Carpenteria californica** grows and flowers remarkably well at Melksham Hall, Melksham. Mr. R. H. Legg sends us a photograph of a large specimen carrying, apparently, about two hundred clusters of bloom, but unfortunately the photograph was not suitable for reproduction. This example was planted eight years ago in a narrow border, against the west front of the house. Here it has flowered well several seasons, but this year, owing doubtless to the hot summer of 1911, it has been a wonderful sight. Mr. Legg considers that Carpenteria californica should be more largely grown in warm sheltered positions, and in this matter we entirely agree with him.

**Proposed Park for Lewisham and Forest Hill.**—We understand from the "City Press" that the Lewisham Borough Council has opened negotiations with the Leathersellers' Company for the purchase of twenty acres of the Guild's trust estate at Forest Hill, with a view to converting the land into a recreation ground. Part of the Leathersellers' estate in this part of London is built upon, and the remainder is for the most part grass land. The negotiations are as yet only in a preliminary stage, and nothing has been definitely settled. Dealing as they are with trust property, the Court of the Company must perforce treat the matter as a business transaction, though they would naturally prefer a recreation ground to more houses.

**Presentation to Mr. C. S. Fuidge.**—The celebration of the Southampton Horticultural Society's Jubilee has entailed an immense amount of extra work upon the secretary, Mr. C. S. Fuidge, his exertions resulting in two exhibitions, the Rose Show and Jubilee Show, of which any society might have been proud. Unfortunately the local public were either not interested, or did not realise the extent and excellence of the shows, as the attendance was most disappointing, resulting in a loss on the two shows of over £100. Consequently the council of the society had no funds from which to adequately compensate the secretary, and, therefore, decided to hold an evening fête for his benefit; although the fête itself was not very successful, the subscriptions to the benefit fund enabled the chairman, at a meeting of the council on Monday last, to hand to Mr. Fuidge a cheque for a substantial sum, together with a gold medal, as a memento of the jubilee year. Mr. E. K. Toogood, in making the presentation, remarked that Mr. Fuidge had been "connected with the management of the society since 1867: five years as a committeeman, and forty years as secretary, a very rare service, which should entitled him to the V.M.H."

**Birmingham's New Park.**—We learn that Mr. Smith Ryland, of Barford Hall, has presented about four and a-half acres of land to the Birmingham City Council, to be used as a public park. The land is situated in the Brighton Road, Birmingham.

**Watering Plants.**—In his recent lecture on the scientific aspects of watering Professor Bayley Balfour, V.M.H., stated in his opening remarks that mistakes in the watering of plants in cultivation caused more disasters in gardening than all other causes together. The water problem is essentially an air problem. Water itself cannot kill directly, but does so when in excess by inhibiting the air supply to the roots, and thereby causing suffocation. No code of rules for watering plants is possible because of the complex conditions that obtain, but guidance may be obtained through a knowledge of the method of intake and of outgo of water from the plant, and of the adaptations presented by plants to the factors affecting these. Water is necessary to the plant as a vehicle of food-material and for the maintenance of turgescence, and it should be remembered that when the latter is lessened the plant wilts. The soil, and not the atmosphere, is the source from which the plant draws its water, although irresponsible suggestions that the latter is the source are sometimes made. Osmosis through the root-hairs of the water-films enveloping the soil particles gives the plant water, and the effectiveness of the process is influenced by the bulk of the films, the soil temperature, the density, and chemical quality of soil water, and, above all, by air in the soil. These latter factors may so operate that a soil saturated with water gives no abundant supply to the plant, which, therefore, finds itself in conditions practically dry. Understanding these circumstances of intake, the cultivator can control with reason his watering. He will recognise, for instance, that adding water to a cold soil is not to supply the roots, but to drive out air, and so induce suffocation. A knowledge of the conditions of the escape of water from the growths is of considerable practical importance, and it should be understood that the functions of the stomata, in giving off water as vapour and liquid, are closely related to the supply of water from the root. They are also affected by cosmic factors—the sun's rays, wind, temperature, dampness, and dryness of the air. The plant is in health when the balance between shoot outgo and root intake is maintained. As the cultivator can influence intake by watering, so also can he influence outgo by spraying and other means.

**Fruiting of the Loquat.**—Messrs. Robert Veitch and Son, of Exeter, write: "Rather an unusual case of a half-hardy shrub fruiting in the open has occurred near Exeter recently. At Culver, the seat of Atherton Byrom, Esq., about five miles south-west of Exeter, is a nice specimen of the Loquat (Eriobotrya japonica), and this year the specimen has produced several fruiting sprays with ripe fruit on them. The loquat is growing under a south wall, and the foliage is of noble proportions, and the fruit about the size of a greengage plum."

**The Squirrels in Regent's Park** are always a great source of attraction, because of their tameness, pretty appearance, and rapidity of movement. Unfortunately about a hundred and fifty squirrels have disappeared from the park during the last six months, and as the general impression was that most of them had been stolen, a close watch was kept. Eventually a young German was seen to make three unsuccessful attempts to catch a squirrel, but his next attempt was successful. He was brought before Mr. Paul Taylor, at Marylebone, and fined the full penalty of £5, or a month's imprisonment.

**National Sweet Pea Society.**—As already announced in these pages, the annual meeting of the National Sweet Pea Society will be held at the Hotel Windsor, Victoria Street, Westminster, on Thursday next, the 17th inst. The meeting will, as usual, be followed by a conference and dinner. The dinner has been arranged for 6 p.m. at the Hotel Windsor, and the conference—also at the same place—will commence at 7 p.m.; and Major C. C. Hurst, F.L.S., will give a lecture on "Rogues in Sweet Peas."

**The Influence of Atmospheric Impurities on Vegetation** was the subject of an important lecture given by Dr. Charles Crowther at the afternoon meeting of the Royal Horticultural Society on Tuesday. For several years past Dr. Crowther has devoted a considerable share of his attention to the investigation of the effect of atmospheric impurities on vegetation in and around Leeds, which, as in the case of other centres of industrial activity in the Midlands, is remarkable for its smoke cloud. With the aid of admirable lantern slides, Dr. Crowther was able to convey to his audience a clear idea of the immense volume of smoke that is given off by the factory and domestic chimneys of the town. He then proceeded to state that, according to investigations which had been made, 250 tons of soot to the square mile were annually deposited. At Glasgow the annual deposit of soot per square mile was said to amount to 820 tons, but these figures he considered, required verification. It was generally believed that some trees had greater power of resisting the deleterious effects of atmospheric impurities than others, and this was, no doubt, the case up to a certain point; but it was found that in the smoke-laden atmosphere of Leeds trees of all kinds suffered more or less from the impurities contained therein. In proof of this, slides from photographs taken in adjacent woodlands were thrown on the screen, and in these oak, ash, and several other forest trees were shown in a leafless condition or in a dying state as a consequence of the injury they had received. Of interest was the section of a Scots fir which had grown vigorously until some twelve years since, when certain works were started within a short distance of the wood in which it was growing. Until the starting of the works the annual rings of the trunk of the tree were of the usual thickness; but subsequently they had greatly decreased, until the tree succumbed to the injurious influences to which it was exposed. In discussing the products of the combustion of coal, Dr. Crowther directed attention to the high percentage of carbon and tar, and showed in a graphic manner how greatly these percentages were influenced by the manner in which the coal was consumed. Thus, in the soot obtained from burning coal in a kitchen range the percentage of tar was 12.5, whereas in the soot derived from coal of similar quality burnt in the grate of the dining-room of the same house the percentage was 34.9. The injury done to vegetation by atmospheric impurities was due to the great reduction in the light, the blocking up of the breathing pores of the leaves, and the acid that is washed down to the roots. There may not be much that is new in this statement, but it is satisfactory to have access to facts that are based on careful investigation. With regard to the reduction in the light, the injury done to the plants was in part due to the impurities that adhered to the leaves, and in part to the cloud of smoke. In 1907 the hours of bright sunshine recorded in the industrial area of Leeds during the year were 1,157, as compared with 1,400 a few miles out.

**Window and Flower Gardening at Battersea.**—With a view to encouraging the cultivation of flowering and other plants by the occupants of their houses and tenements, which number 351, the Battersea Borough Council annually offer a series of prizes for window and flower gardens, to be competed for by their tenants. As in previous years, the Council obtained the aid of the Battersea Amateur Chrysanthemum and Horticultural Society in making the necessary arrangements for the competitions, and for judging the entries. The society arranged the competitions as follows: (1) Upstair window-sill gardens; (2) indoor window gardens; (3) back gardens—central; (4) back gardens—side of house. The number of entries in the four classes was 43, and the awards made by the society were as follows: (1) three prizes and certificates, (2) one prize and certificate, (3) seven prizes and certificates, and (4) seven prizes and certificates. A meeting will be held at the small hall, Latchmere Road Baths, Battersea on October 22, at 8 p.m., when the Mayoress (Mrs. A. B. Runeckles) will present the prizes and certificates to the successful competitors.

**English-grown Tulip Bulbs.**—At the recent meeting of the Hythe Gardeners' Society Mr. C. Duruz, a nurseryman of Hythe, exhibited some tulip bulbs in a high state of development, for the purpose of showing that the bulbs of tulips can be as successfully grown in England as in Holland. The bulbs, he said, were of large size and well ripened, because they had received good cultivation. Mr. Duruz also stated that large quantities of bulbs are annually sent from this country to Holland, where they are bought by English growers who are afraid of buying English-raised bulbs. The statement with regard to the sale in Holland of bulbs grown in England may be in accordance with fact, but it needs confirmation. Cultivators who know anything about tulip bulbs are in no way afraid of those grown in this country, but prefer them, and buy them direct from English houses.

## NOTES FROM KEW.

### Antigonum leptopus alba.

The antigonums are all climbing plants belonging to the polygonum family; and, though very beautiful in some parts of the Tropics, are not often seen in this country. The typical A. leptopus, introduced from Mexico in 1868, has small, bright pink flowers, plentifully borne in loose racemes towards the ends of the shoots; while in the variety alba, which is in flower in the succulent house, they are white. This form has now been known for about ten years.

### Achimenes coccinea.

Though this, the oldest of all the achimenes, has long been recognised at Kew as a delightful basket plant, it is probably, from the small size of its blossoms, often passed over where collections of these beautiful flowers are grown. In the T. range some baskets bearing a profusion of its bright scarlet flowers are particularly noteworthy.

### Columnea gloriosa purpurea.

From its distinct character and showy blossoms this South American gesnerad forms one of the most striking features in the intermediate portion of the T. range. It is planted on the top of a piece of dead tree fern stem, and the strictly pendulous shoots hang down for a considerable distance. The leaves, which are arranged in a regular, opposite manner, are, as well as the shoots themselves, decidedly hoary and of a pronounced purplish tinge. The flowers at once arrest attention, the main feature being the large upper segment, which is of a peculiar hooded shape, as much as three inches in length, correspondingly broad, and of a soft scarlet colour. The lower segment is small, and almost hidden by the large upper one. The columneas, which are little known plants, are somewhat in the way of the æschynanthuses—to which, indeed, they are nearly allied.

### Hippeastrum reticulatum.

This species of hippeastrum would not attract much attention if it flowered in the spring and early summer, when so many of the garden hybrids are at their best. Blooming, however, in the autumn, it is, of course, more useful. A native of Brazil, Hippeastrum reticulatum is said to have been introduced as long ago as 1677. It is in all stages of growth readily distinguished by the dark green strap-shaped leaves, having a clearly-defined ivory-white midrib. The flowers, about three inches in diameter, are of a pleasing yet varied shade of pink, with darker veins of so pronounced a character as to gain for it the specific name of reticulatum. Hybrids have been raised between this species and some of the others, but they are not in general cultivation. In flower in the "T" range.

### Ipomœa Leari.

In the intermediate portion of the "T" range there is an example of this Cingalese members of the convolvulus family, which, trained to a rafter, well shows its suitability for this mode of treatment. The large, delicate flowers are of an intensely bright shade of blue, a tone of colour which is very generally admired.

### Begonia Dregei and Plumbago rosea.

These form an exceedingly pleasing combination in the greenhouse, the white flowers of the begonia and the rosy-scarlet ones of the plumbago harmonising well. These little groups form quite a feature of the scheme of decoration as carried out in the greenhouse, where some delightful combinations may often be noted.

### Browallia viscosa.

This species of browallia has been brought prominently forward during the present year, some well-flowered examples in 5in. pots having been shown at two or three of the meetings of the Royal Horticultural Society. It has been grown for greenhouse decoration at Kew for some time, and this season it is planted out of doors in a circular bed near the succulent house. It has in this way proved very satisfactory, its deep blue flowers, with their conspicuous white eye, being borne in great profusion. This is an old species, but it is only of late that it has been generally met with. The "Dictionary of Gardening" refers to it as an annual, but it can be as readily propagated from cuttings as the better-known Browallia speciosa major.

### Lilium nepalense.

A group of this striking and distinct lily is now to be seen in the greenhouse. When it was first introduced, over twenty years ago, L. nepalense created quite a furore, it being so widely removed from any other species. Since then, thanks to importations from Upper Burmah (for it does not increase readily in this country), it has become fairly well known. It is a plant of slender growth, while the regularly-reflexed blossoms have the topmost portion of the segments yellowish-green or greenish-yellow, and the basal portion purple, thus forming a large dark-coloured centre to the flower. As a rule, freshly-imported bulbs stand some time before they commence to grow, and it must be assigned a place among the late-flowered lilies. In a general way it can only be regarded as a greenhouse kind.

### The Water-lily House.

The structure near the Palm House, which was originally built for the accommodation of the Victoria Regina, is given up to a collection of tropical water-lilies and various moisture-loving plants. Many of them are in flower, among them being the Egyptian Nymphæa Lotus, represented by both white and rose-coloured forms; the blue N. zanzibarensis, and its rose variety; N. stellata, N. pulcherrima, and others. Nelumbium speciosum, which in a cut state has attracted a good deal attention at some of the recent meetings of the Royal Horticultural Society, is flourishing in the mud in the corner tanks. A portion of the roof, too, is draped with many quaintly-shaped members of the gourd family, which from their uncommon appearance are very attractive to visitors. The large cannas, just standing in the water, are now past their best, but some bold masses of hedychiums are very fine. Besides the gourds there are many other pretty and distinct climbers, such as one rarely meets with.

K.

**Shrubby Veronicas.**—The numerous garden forms of Veronica speciosa are exceedingly valuable for decorative purposes early in the autumn. Good examples may be grown in five-inch pots, but at the same time fair-sized bushes may, if desired, be obtained. Cuttings readily root in the spring, and the young plants grow away freely afterwards. They should be stopped once or twice in order to lay the foundation of a bushy specimen. There is now a wide range of colour to be found among the different varieties, varying as they do in tint from pure white to deep purple and crimson, numerous intermediate shades of blue, lilac, lavender, and violet being also represented.—S. W.

## PLANT LIFE ON THE FOREST FLOOR.

When one enters the depth of some grand old wood, the first consideration which impresses itself upon one is the great and varied change that follows upon the conversion of the bare moor into a forest. Instead of the wind on the heath which blew from the four quarters of heaven there is shelter and stagnant air. Where once the sun shone straight down with burning ray there is now reflected and diffused light and heat, making a feeble effort to reach the ground. The rains are different, too, and come in great drops reluctantly to the earth; but when they fall their influence stays behind, and it is long ere the moisture is dispersed again into thin air.

The nature of the soil itself is greatly modified. It is full of vegetable matter; the dead leaves make a veritable hot-bed for numerous parasites and semi-parasitic plants. These, and the gloom-loving herbs, comprise the two great forest classes, and form a study of surpassing interest. When we consider the disadvantages which the gloom of the woods must entail, it seems astounding that either in individuals or in species their denizens could be so numerous. The wind is absent; where, then, are the bearers of the pollen from flower to flower, and where the wafters of the seeds to new habitats? The sun is never seen; where, then, the gay flies that sport in his beams and stop every now and then in their gambols to give the life-giving touch to the essential organs of the flowers? Truly, from the carpet of heather, bent, and moss, interspersed with whin and harebell, to the soft grasses, wood rushes, scattered ferns, and layers of pine needles on the forest floor, there is an evolution which will amply repay study by all who wish to approximate to correct notions of how the garment of old Mother Earth is woven.

Struggling for existence, but never in internecine strife, there are three or four plants to be found on the floors of all our woods. The trientalis, with its pearly-white and clean-cut petals, starlike in their setting, bespangles the forest floor; and near it, but in masses, will be found the lovely wood sorrel. Communities of goodyera lie upon their beds of pine needles, and lift up white spires of flower and villous leaves so remarkable among orchids—above the soil. Rarer, but, happily, becoming year by year more plentiful, is the beautiful twinflower, Linnæa borealis—so dear to botanists. The large trailing evergreen masses of this romantic plant, with its coriaceous leaves in pairs, its wiry stems, and flesh-coloured shoots, arrests the attention of the verious lout before it is crowned in July with its pair of nicely-balanced bell-like flowers, that perfume with their faint vanilla odour the surrounding gloom. Although not what may be called free, yet it may be found in this country from Yorkshire to Ross-shire, but it is in Scandinavia where it seems to find its most congenial home, and where its flower and fruit are plentiful. Named after the great Karl von Linné, who assumed it on his coat of arms, this plant was first discovered as a native in Scotland in 1795, in the woods of Fettercairn, Kincardineshire, by Professor J. Beattie. Its fruit, however, is rare in this country. An incident which came under the writer's observation concerning the plant may bear recapitulation here. Some years ago a great windstorm left a gap in a wood close to a patch of Linnæa borealis. After the light, with its attendant flowers and insects, obtained access, blossoms became plentiful, and seed, if not in abundance, was at least not rare. But although the admission of light clearly assisted the reproductive organs of the plant, it was the reverse with the vegetative ones. Year by year the patch dwindled, and on a recent visit it was difficult to gather a few specimens. What was life for the fruit seemed to be death for the plant—not a new law in biology.

But there are other associates of the forest floor, all, in their way, notable, and all of which will amply repay close and continued study. Here may be studied the transition from honest and self-supporting planthood to greenwood robbery and semi-parasitism. I refer specially to the Goodyera repens, whose very visage betrays guilt. Its felted roots spread far and wide among the leaf-mould to take in food prepared on sunlit twigs, and the smile on its cream-white perianth is a sickly reflections. Its seeds are of most minute dimensions, so light, in fact, that it takes 50,000 of them to weigh a dram. Needless to say, the slightest breath of wind suffices to waft them to the nearest humus bed, where germination will be successful. Then we also find on the forest floor Oxalis acetosella, or wood sorrel, which adapts itself in various ways to its surroundings. The seeds are not of the microscopic dimensions of the goodyera, but they secure a like end by other means. The seed capsule has an elastic, dehiscent, fleshy coat, which, when ripe, suddenly gives way, and projects the contents to a considerable distance in all directions. It is pleasing to see the amusement children derive in playing with the ripe fruit of the wood sorrel. A slight pressure on the top causes the seeds to squirt in their faces, causing much fun. We are told that the leaves of this plant sleep during the night, and in the darkening which accompanies showers. But old Dame Nature has an object in this movement—which is affected by variations on the turgidity of the pulvinus, or cushion, at the base of the leaf-stalk—for it is done to prevent the radiation of heat from the leaves. The flowers are dimorphic, and exhibit that curious second string to their bow which is known as cleistogamy, where a failure to set seed by the usual assistance of insects is supplied by the plan of producing late unopening flowers that are self-fertilised.

And there are several other plants found in our woods which we may just touch upon. There is the Trientalis europæa, so unhappily named the chickweed winter green, and the pyrolas. Truly the study of plant life in the forest brings home to one very keenly conviction in the belief that the plant is even more than man a child of circumstance. The trientalis, of doubtful etymology, is another northern flower, and it is such a true dryad that nothing will induce it to live beyond the forest fence. If transplanted to a garden it will survive only a short time, even though a lump of peat in which the roots are embedded be transplanted with it. One can only explain this fact by supposing that the organic compounds produced by the decay of vegetable remains on moors and in woods are essentially different from those evolved by similar matter under the changed conditions of temperature and moisture occurring in a garden usually at a lower level. Evidently—and practical gardeners tell us so—the peat and black graphitic soil from the slopes of our snowy mountains turns sour in gardens. In all probability the humic acids produced under altered circumstances are different. W. K.

## GARDENERS AND GARDENING.

Under the above heading many interesting letters have appeared in recent issues of the Gardeners' Magazine. Whatever may be the result of such correspondence very few of us can tell. Young gardeners who are unfortunate in not serving under such types of a "chief" as your correspondent Paul T. Moore (whose sentiments I must strongly support) have my sympathy. As a young gardener good fortune favoured me in this respect, and I often recall the valuable information gained from those with whom I have had the honour of serving. I am also sorry that the absolute management of some of our best private establishments is now under those who have not the interest of, or sympathy with, those under them.

I am often in conversation upon various subjects not in any way connected with horticulture, with men of various types, and on many occasions I have been deeply impressed by the conservative methods which nearly every professional man adopts to preserve the etiquette of his profession. I often wish that gardeners could be educated to the necessity of some such sense of honour in maintaining the position of our profession. We should then soon see evidence of a higher standard.

As an example, take the firm stand which the medical men have adopted against what they consider an injustice to their profession. Taking doctors as a whole, considering their station in life, and the expenses of the training necessary to become qualified, it is questionable whether they are better paid than ourselves. I am well aware they have individual grievances in reference to remuneration. Most of our large cities can produce medical experts who may earn anything from one thousand to twenty thousand pounds per annum, but at the same time, they are working harmoniously with men who do not exceed a couple of hundred pounds per year. Yet these men stand firmly together for one common cause, and their example is one we may profit by.

There is, I believe, an old proverb that before one deserves assistance he must first learn to help himself. I am of opinion that we shall never derive much benefit until more energy and a determination to succeed is infused into the majority of young gardeners. Every such man ought to have a fixed determination to qualify for any and every position he may or may not be called upon to fulfil, from that of the humble but important crock-boy to the dignified position of head gardener to the King, or chief officer of the London Parks; and if such men were found to exist in large numbers we should produce men who would yet solve the difficulty of protecting our time-honoured, but almost worn-out, profession.

Another most essential item is to cultivate sociability with those with whom one comes into contact. While I advise everyone to resent any interference from outsiders, and to make a firm resolve to stand up for certain well-known liberties, such as ordering goods, and the management of one's own men. I would also advise the young gardener to obey his employer to the letter, and at the same time devote attention to those immediately connected with such employer. A little diplomacy will often make an end of what appear to be great troubles. We must always remember that most of our employers have other matters besides gardens to think of, and at times these undermine their otherwise good intentions.

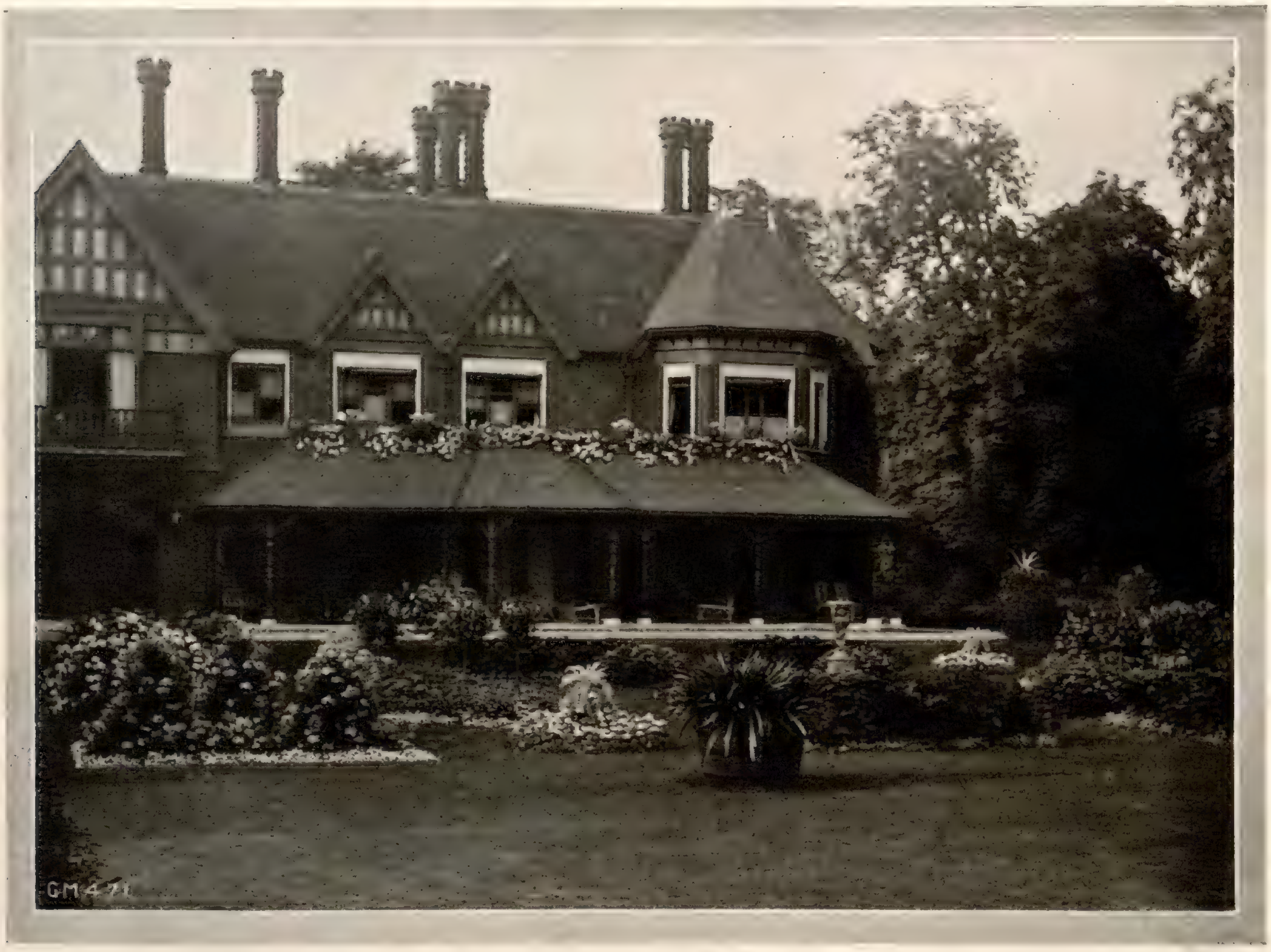
I do not believe that any hard and fast rule can be applied for the education of gardeners. Diplomas will assist, but they are not of much value in private gardens. When those engaged in the horticultural trade and in private gardens learn the art and value of organisation they may demand greater consideration, and receive their due reward.

John Donoghue.

Bardon Hill Gardens, Leeds.

# THE FRIARY, OLD WINDSOR.

Among the many beautiful gardens along the banks of the Thames, there may perhaps be some better known than those of The Friary, at Old Windsor, but it is doubtful, for a garden of its size, whether there is one where gardening is better or more intelligently carried out than here. Unlike some of its near neighbours, the house and grounds do not stand on an eminence overlooking the river, but are very pleasantly situated just out of reach of the floods, which, during the winter and spring months, often play havoc with the low-lying houses and gardens on the banks of our chief river.



GARDEN FRONT OF THE FRIARY, OLD WINDSOR

Though between the towing paths, on the one side, and the main road on the other, the mansion is well screened from both by the well-timbered grounds. The house was built about the middle of the eighteenth century, and was occupied by Princess Elizabeth, who used it chiefly as a fishing temple. The Friary has been in the occupation of Francis Ricardo, Esq., for the past forty-eight years, and he has rebuilt the house and stables, remodelled the grounds, built a glass department, and added to the size of the estate as he was able to acquire the surrounding land. The whole property now forms a very beautiful riverside estate, with a quite good-sized home farm.

As may be assumed from the accompanying illustrations, flower gardening is one of the chief features of the Friary gardens, both Mr. and Mrs. Ricardo taking especial interest in this particular branch, and at the time of my visit, early in September, the set of beds on the south front formed a fine feature, the colour arrangement of the whole set of thirty beds being exceedingly good, and seldom has it been my pleasure to see so much bloom on a set of beds planted at the end of May, and allowed to stand the whole summer.

At many "show places" the beds are often refilled once or twice during the season, as the various occupants lose their freshness, but here no such methods are practised, and the excellent display produced reflected great credit on the gardener, Mr. G. West, who has had charge of the gardens for the past seven years.

The fairly light and porous soil, with water at no great distance below the surface, is certainly favourable to the growth of the soft-wooded bedding plants, and I have never seen ivy-leaf pelargoniums flowering in such profusion as here, though one might naturally think the very wet time experienced for five or six weeks previous to my visit would have tended to minimise the amount of flower on such quick-growing plants.

The beds cover a space of about 90ft. by 70ft. The four corner beds were planted with ivy-leaved pelargonium Souvenir de Charles Turner in pyramidal form, the surface being carpeted with the same variety, and edged with a good breadth of Alyssum minimum. The middle bed at either end was planted in a similar manner, but with Madame Crousse pelargonium, and edged with Lobelia Royal Purple.

The four large beds surrounding the sundial were planted with Paul Crampel pelargonium, with an edging of the silver-leaved Veronica Andersoni variegata. The central raised beds in each half of the display contained good standard plants of Fuchsia Mrs. Marshall, under which were fine masses of Heliotrope Madame de Bussey, many of the trusses of bloom measuring quite a foot across. The small, round, intermediate beds between those already mentioned were filled with tall Centaurea maritima, as dot plants, among the little-known zonal pelargonium Verona; this variety is quite unique, the foliage being of the colour and brilliancy of the cut-leaved golden elder, and the flowers a beautiful shade of shell-pink. The whole was splendidly set off with an edging of the double blue Lobelia Kathleen Mallard. The two crescent beds immediately around the sundial contained Begonia Phosphoresence, with a groundwork of Leucophyton Browni. These beds are surrounded on two sides by the house, and on the other two sides, at a greater distance, by large horse chestnut trees, and so the flower garden stands out well, especially so as all the rest of the pleasure grounds, some five acres bordering the river, is more or less covered with fine specimen trees, consisting chiefly of planes, chestnuts, elms, and birch, among the deciduous trees, and of cedars, thujas, retinosporas, cupressus, etc., among the Coniferæ, while some very fine standard Portugal laurels are to be seen on the North Terrace.

On the opposite side of the road are the glasshouses and fruit and vegetable gardens. The latter are fairly extensive, and a fine herbaceous border, about 100 yards long, leading to the rose garden, is a very fine feature. The herbaceous plants kept company with good bold clumps of antirrhinums, asters, nemesias, clarkias, schizanthuses, alonsoas, etc., which at the time I saw them were making a fine display, in conjunction with helianthuses, heleniums, rudbeckias, perennial asters, phloxes, anemones, achilleas, gladioli, solidagos, etc., each represented by the best varieties.

The rose garden consists of beds of mixed varieties, and it struck me this would prove much more effective if planted in beds of separate colours or varieties. The beds are intersected by a well-furnished pergola, with American Pillar, Tausendschon, Lady Gay, Dorothy Perkins, Hiawatha, Madame Abel Carriere, Blush and Tea Ramblers, Alberic Barbier, etc., were all in good health, and showing evidence of having provided a good display during the summer.

Remarkable crops of apples and pears were to be seen in the walled-in garden, and also in the orchard. This abundance is not general in the Thames Valley, and many fruit gardens that I have seen this season have been only thinly cropped. Indoor fruit is well managed, and though the peaches and nectarines were practically over, the trees looked in excellent order for carrying a good crop next year. Of the four vineries the only house not cut was one of Alicantes, and this was carrying a fine crop of good-sized and particularly well-coloured bunches. The plant houses also are of considerable interest, the large house of winter-flowering carnations promising well for a good display all through the winter. Mr. West excels in the cultivation of these plants, and his exhibits of perpetual carnations at the autumn show, and of his Malmaisons at the summer show, of the Windsor and District Horticultural Society, are always much admired.

Calanthe Veitchi is also a feature, as also is Begonia Gloire de Lorraine, these latter being cultivated in comparatively small pots, though the plants often reach a yard in height. Single chrysanthemums are extensively grown both for cutting and grouping, and the fine groups of these put up at Windsor Show have from time to time been favourably commented on, and, in one instance, illustrated in the Gardeners' Magazine.

The whole place bears evidence of good management, the enthusiastic efforts of an energetic and skilful gardener being backed up by a generous and sympathetic employer. Thomas Stevenson.

VIEW IN FLOWER GARDEN OF THE FRIARY.

## POINTS ABOUT GREASE BANDING.

Just now apple growers are busy picking apples, storing or marketing the same, but at harvest time in the orchard and fruit plantation thoughts turn in the direction of next season, and the moment is opportune for taking early precautions to prevent the ravages of insect pests in the future. The leaf-eating caterpillar of the winter moth is one of the worst pests that fruit growers have to deal with, and unlike some other insects, for it is broad in its tastes, as it feeds on the young foliage of apples, pears, plums, and cherries, in orchards and fruit gardens, lacerates the leaves on hedgerows, and plays havoc with the leafage of oak trees in the woodland.

It is no wonder that a pest capable of doing such widespread damage is difficult to cope with, and in providing ways and means this is one of the cases in which science has come to the aid of the cultivator. Fruit growers might have been contented to include the winter moth along with other pests under the comprehensive heading of "blight," but the scientist studied the habits of the pest, found that the dull grey little moth that flits through the evening air in the autumn is the male and that the female has only rudimentary wings, and is unable to fly. Nature prompts her to lay her eggs in the branches of trees and near to the shoots on which the young caterpillars will feed, so she crawls up the stems in order to deposit her eggs in crevices on the limbs and near the ends of the shoots. Towards the end of March hatching begins, and the looper caterpillars, first a dirty grey and then green with pale lines, devour an amount of leafage that is quite out of proportion to their size, until they are about an inch long, and when full fed they let themselves down to the ground and remain in a pupa stage until the moths emerge in the autumn.

In dealing with insect pests prevention is better than cure, so the idea suggested itself that if means were adopted to capture the female moth as she journeyed up the tree, egg-laying would be prevented. This led to fastening bands of grease-proof paper round the stems of the trees and smearing them with a sticky kind of grease, and in practice it must be said that the process answers. There are, of course, some people who are sceptical about grease-banding, but the proof of the pudding is in the eating, and they may not have seen, as I have, grease bands so thickly covered with both male and female moths that dead bodies made bridges for live insects to crawl over. Neither can the sceptics have been in that splendid fruit-growing district in the Vale of Evesham, where every grower grease-bands his trees as a matter of rule, and where, by adopting this co-operative plan, winter moth infestation has been reduced to a minimum in the locality. The Evesham fruit grower does not spend time and money on grease banding for amusement—he is out to make his business pay, and adopts this operation as a means to that end.

Many people fail to obtain the full benefit from grease banding because they are not persistent enough. Perhaps they put bands on one year and do not catch many moths, for the simple reason, probably, that the pests were not so numerous as usual that season. Not having caught many moths one year, they give up banding, whereas if they had continued they might have captured thousands the next. As a matter of fact, this spasmodic grease banding is no good, and if it is to be efficacious it must be done as a matter of rule and in anticipation of what may happen.

Secondly, there is the mistake of putting the bands on too late, and many a pound in time and money have been wasted on putting on grease bands after the moths were safe in the trees. Grease banding should be started at the end of September, and should certainly be finished early in October, if the first of the moths that go up the trees are to be captured. In short, it is no good thinking that grease banding is a job that can be done at any time when other work is not pressing, and more than one grower has condemned it as being useless when the fault has been his own, through being too late.

Thirdly, it should not be thought that grease banding is proof against the attacks of every insect pest that fruit-tree life is heir to. It can only be a remedy for insects that crawl up the trees, and it only needs the exercise of a little common sense to realise this, so it is no good blaming the grease bands if the trees in the spring are attacked by pyslla or aphis.

Lastly, there is the matter of the grease. It is often recommended that ordinary cart grease will do, and so it will, so long as it keeps sticky; but it dries too quickly, and becomes useless if the whole work of smearing is not gone over again. My advice is to do the thing well by using one of the excellent prepared greases that are now on the market, and remain sticky as long as the bands are on the trees. I am opposed to the custom of smearing the grease directly on the bark, because paper bands are cheap enough; they are easily attached, can be just as easily removed, and there is no possible danger of damage being done to the bark. Grease banding is not so efficacious on bush trees close to the ground as on standards with clean stems. The bands should be in position by the time I have stated, and it may be necessary to do a second smearing after Christmas to capture any moths that go up in the early spring. If a high-class grease is used, not much is required, and if it is plastered on so that it runs down the trees this is wasting the material.

Let me say, in conclusion, that grease banding is one of those operations in which you must take so much on trust. In a season or district when or where winter moths are not prevalent, and few insects are captured, so much the better, but the risk is always there, and why take it, when for a small outlay one has at hand the best-known remedy for preventing the ravages of the winter moth caterpillar? H.

HERBACEOUS BORDER IN THE FRIARY GARDENS.

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## NEW ZEALAND BURS OR ACÆNAS.

Carpeting plants are very useful, as well as highly ornamental, and among the perennials which have come into favour for covering bare spaces, such as those which are left after the foliage of spring-flowering bulbs has died down, are the acænas, or New Zealand burs. These are, as a rule, rapid-growing plants, covering the ground with neat leaves, of the characteristic form of the rosaceæ, the natural order to which they belong, and afterwards bearing numerous heads of inconspicuous flowers, some of them having pretty spines. These, by the way, are the cause of the name of "bur," and they prove pests indeed in the sheep-farming districts of New Zealand, by clinging to the fleeces of the animals, and being practically impossible of removal without leaving the little hooks in the wool, which is considerably reduced in value by their presence.

A large number of acænas are now in cultivation, but, with the exception of one, A. Buchanani, which cannot well be omitted because of the beauty of its pea-green foliage, only those are named that can be procured in the form of seeds. This species also may possibly be purchased in seeds, but the writer has not seen them offered. A pretty New Zealand bur is Acæna argentea, said to be a form of A. microphylla, with charming, silvery-green foliage and little burs. It is a good grower and to be recommended. A. inermis is another good one, this having nice green leaves, and is a good carpeting for the border or the rockery.

In A. microphylla we have another pretty acæna, and one that has for long been a general favourite. It has pretty foliage, moss-like in its general appearance, and with burs which have showy little scarlet spines. In a mass these give a really beautiful effect, and the writer well recollects one mass of several yards square in a low, moist spot in a famous garden, where this was remarkably pretty. A. sanguisorba is a very free grower, and useful on the rockery.

These acænas are really very easy to cultivate, and will grow almost anywhere, in sun or in shade, in dry soil or a moist, peaty one, in the border, on the rockery, or between stones in paths and flights of rough steps. They are increased by cuttings off the trailing stems, which root as they grow, or by means of seeds, which can be bought and sown under glass in spring, or in drills in the open garden in May. These are quite hardy everywhere almost in the United Kingdom. S. A.

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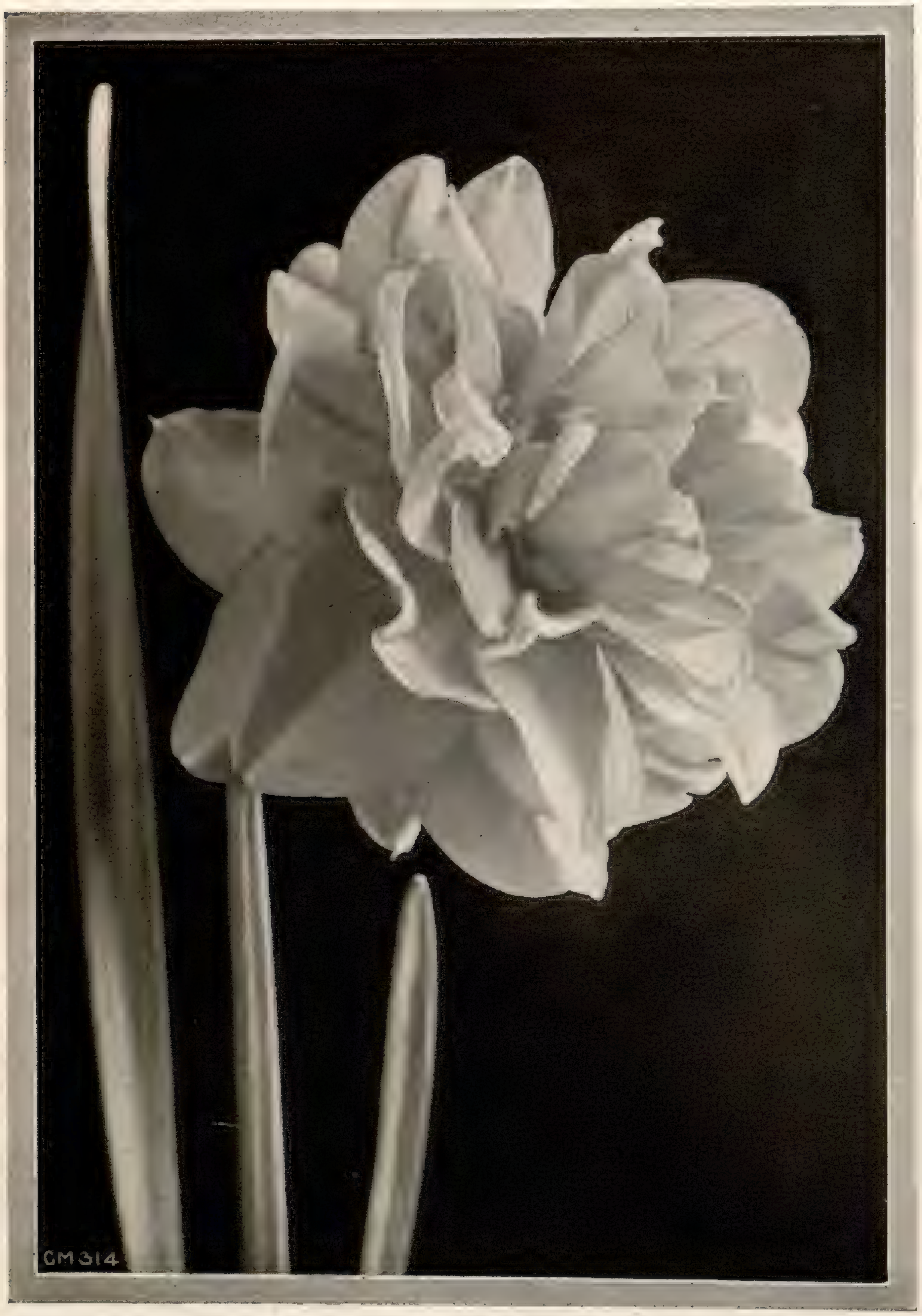
CHRYSANTHEMUMS.—For full instructions on the Culture of Chrysanthemums in beds or borders for garden or greenhouse decoration, read the Second Edition of **CHRYSANTHEMUMS FOR GARDEN AND GREENHOUSE**, by D. B. Crane, price 2s. 6d. net; or by post 2s. 10d., from W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London.

## DOUBLE DAFFODILS.

Double flowers of any and every kind are anathema to some people, but, usually, those who declaim against the development of double blooms at the hands of the florists are generally found to have a weakness for at least some one kind of double blossoms. It may be the carnation appeals to them, or the big chrysanthemum arrests their attention, or the brilliance of double begonias dazzles them. Time and again one has heard folks objecting to double daffodils, and pouring out scorn upon the old double yellow Telamonius plenus; but when shown fine flowers of Argent, Inglescombe, Plenipo, Apricot, Phœnix, or Primrose Phœnix, then they have to confess that there are good points about double daffodils.



NARCISSUS PRIMROSE PHŒNIX.
A beautiful, bright primrose-yellow double daffodil.

All this goes to show that tastes are as different as temperaments among the flower-loving public, and that raisers should not be too conservative in their estimate of floral fashion. Double daffodils have been with us for so long a time that their position is assured, even though they may not be universally liked. Old Gerard evidently loved the double forms, as he figured several and wrote, "The double yellow Daffodil hath small, smooth, narrow leaves, of a darke green colour; among which riseth up a naked hollow stalk of two hands high, bearing at the top a faire and beautiful yellow floure, of a pleasant sweet smell."

It is probably not generally understood that there are about two dozen distinct double daffodils, varying in size from the little minor plenus, or Rip Van Winkle, up to the large and bold Phœnix varieties. The colour, too, ranges from the pure white of the double Poet's daffodil, through shades of cream, primrose, and yellow, to the deep orange-scarlet hue found in the centre of the new Volcano. All the double daffodils are useful for pot or bowl culture, some of the smaller sorts are suitable for the rock garden, and most are valuable for naturalising, though at present some are too valuable for use in this way.

Volcano is the most expensive double daffodil now being offered, and it carries very large, soft yellow flowers, each with an orange-coloured centre; it is a fine, bold variety. Another newcomer is Inglescombe, and, like other things that bear this name, it is good; here, also, the flowers are large and very double, but in no sense coarse, and the colouring is a distinct shade of very bright primrose-yellow. Not so new, and therefore less expensive, is Primrose Phœnix, and its character may be gathered from the accompanying illustration; the flowers are very shapely and large, and the colour shade is rich primrose-yellow. This variety is a very strong grower, often rising to a height of twenty inches.

Argent is a particular favourite of mine; it is not so double as the rest, but its rich yellow central petals, surrounded by broad creamy-white ones, render it very attractive everywhere. This variety, as well as Plenipo and Dubloon, have been raised by crossing the old Telamonius plenus with Poeticus or Poeticus ornatus. Plenipo is a sturdy grower, and its large double blooms are very attractive in their garb of white, primrose, and yellow. Dubloon is bright yellow, with dark yellow centre, and is a good grower.

Using Gerard's language, "Besides these former there are foure or five double yellow daffodils, which I cannot pass over in silence." For instance, the beautiful buff-coloured Apricot Phœnix, its colour paling almost to white at the circumference, is a great beauty; but its price is a trifle high yet. Butterfly, yellow and cream, is well within the mark, and is quite good at about half a crown a dozen bulbs. Then there are the good old sorts, Butter and Eggs, yellow and orange; Codlins and Cream, white and sulphur-yellow; and Eggs and Bacon, white and orange-yellow. The last two are also known respectively as Sulphur Phœnix and Orange Phœnix. The late flowering, fragrant, white, and beautiful double Poeticus occupies a foremost position among double daffodils; it is a fine garden plant, charming for indoor decoration, and is grown by the million in market gardens all up and down the country. The little Irish Capax plenus, with its lemon-yellow flowers, and Cernuus plenus, a native double white variety, fine for every purpose, are two others that cannot be lightly regarded by those who wish to cultivate the very best of daffodils. Which of the double Jonquils is the best is not an easy matter to decide. All three are first-rate pot plants, and so there can be no mistake in growing Jonquilla flore pleno, odorus Campanella plenus, and odorus plenus. C. H. Curtis.

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**Cleaning Orchids.**—After the houses have been thoroughly cleaned, and are dry, the plants should also be thoroughly examined. The cleaning of orchids is often considered a difficult matter, and undoubtedly under the old regime of sponge and clean water this was the case. There is no reason why orchids should not be cleaned with insecticides like other plants, providing it is done intelligently, and with proper precautions. If any plants are infested with insect pests, I never hesitate to have them dipped overhead in a solution of insecticide mixed up to the proper standard. This is always used in a fairly warm state, and I can say without hesitation orchids will stand water much hotter than is anticipated without doing them any harm. If one can keep the hands comfortably in the hot water the thick-leaved orchids, such as lælias, cattleyas, cypripediums, and others, will stand it without any harm resulting. As most orchid growers obtaining plants from different sources will meet with some that are infested with pests of some description, and as it is not always possible to isolate them, it is a wise precaution to thoroughly clean them before allowing them to be placed with the general stock. As plants infested with parasites cannot thrive, cleanliness is essential.—J. T. B.

## EARTHING-UP WINTER GREENS.

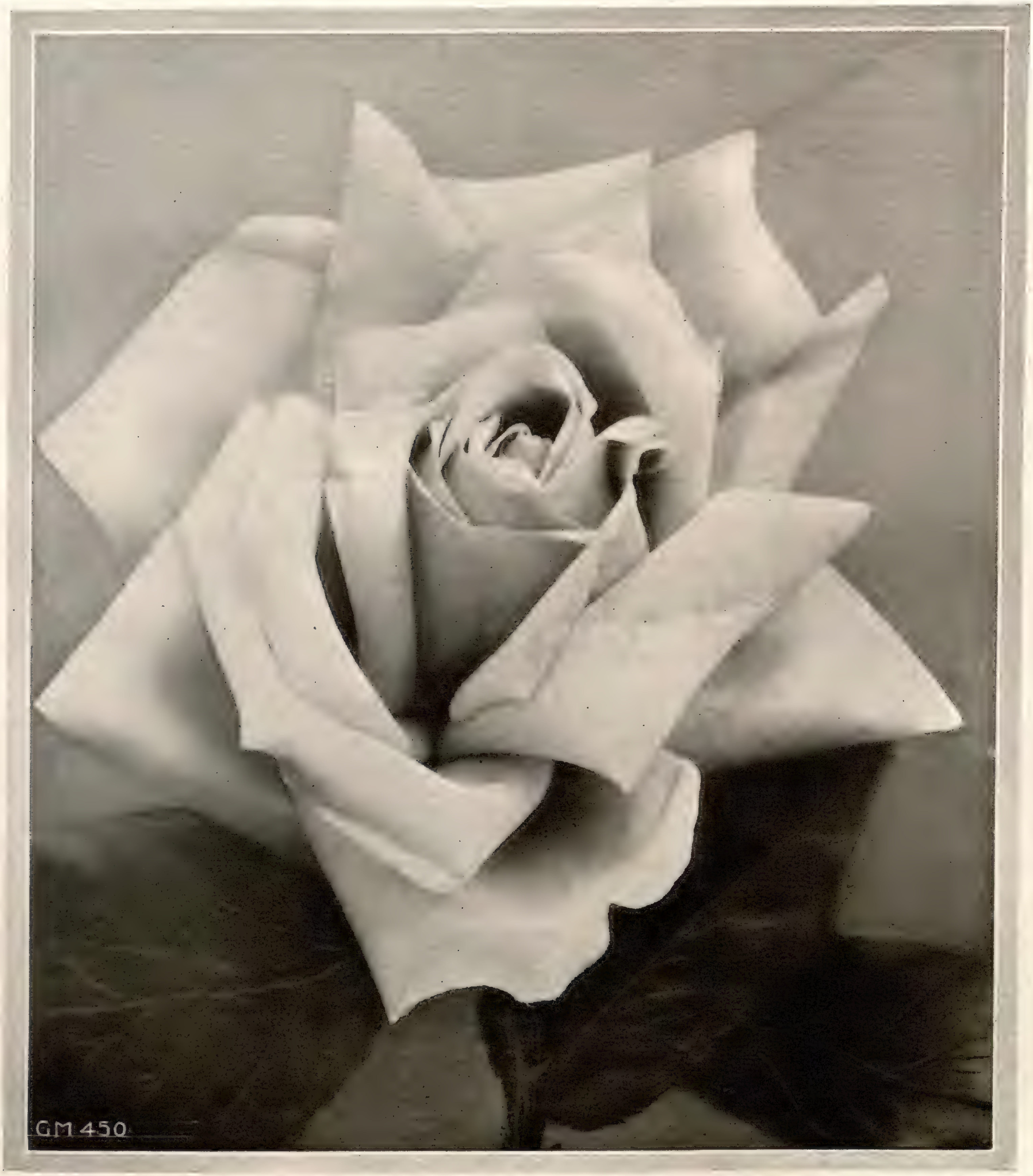
Severe frosts spoil broccoli, cause savoy heads to split, and the stems of all kinds of greenstuffs to split and decay just under the lower leaves.

I have found that the bad effect of frost is more marked on plants grown in a clayey soil than in a light one. The softest part of the stem is that portion immediately below the leaves, but, in cases where the greens have been planted some considerable time, the whole of the stem is hard enough to withstand ordinary frosts; it is when we experience exceptionally severe frosts that our plants suffer so much. Owing to the prolonged rainy weather in August, the plants have made gross growth, and thousands of them will have sappy stems this year, so that they should be guarded against frosts.

I once suffered much loss through having the stems frozen, so afterwards I had the rows of plants well earthed-up. This work must be done before the plants occupy the whole of the soil with their surface roots, otherwise drawing up of the soil will lay bare the roots. I have found that plants, so treated, have improved very much afterwards, the roots freely permeating the soil drawn up to the stems. The soil must be drawn up so that it almost touches the lowest leaves on the stem; it prevents the loosening of the latter in the ground during strong winds. Where light soils obtain, it is advisable to press the earth to the stems with the hands after it has been drawn up; but in the case of heavy loams and clay soils such pressure is not necessary, or, indeed, desirable. **Geo. Garner.**

## ROSE DUCHESS OF NORMANDY.

It is often said that "comparisons are odious," but it not seldom happens that descriptions fail unless we can compare the flower described with one that is familiar. In the case of the new hybrid tea rose named Duchess of Normandy, readers will at once obtain a good idea of its form and merit when the variety is compared with Dean Hole. All good rosarians know this last-named rose, and so, bearing that in mind, and altering its colour to soft salmon-flesh, overlaid with glowing salmon-yellow, paling a little to cream at the margins, one can imagine the beauty of Duchess of Normandy. The accompanying illustration will also help to indicate the form, substance, and beauty of this rose from



NEW H.T. ROSE DUCHESS OF NORMANDY.
A beautiful hybrid tea, introduced by Mr. Philip le Cornu, and remarkable for its attractive colouring.
Card of Commendation, N.R.S., June 26 last.

the island of Jersey. Mr. Philip Le Cornu, The Jersey Nurseries, Jersey, who is distributing this new rose, tells us that the flowers last particularly well when cut, and that if cut when just expanding the yellow glow deepens as the blooms open out. Duchess of Normandy was well shown at Southampton on June 26 last, at the exhibition of the National Rose Society held on the Pier, and it was then granted a Card of Commendation.

## BEAUTIFUL FLOWER BEDS AT BOURNEMOUTH.

In contrast to last summer very little watering has been necessary this year. Those who have been responsible for the filling of flower beds will have had varied experiences. In some gardens plants have made too much growth, and flowers have been scarce. In others the plants have grown unevenly. There are many instances where zonal pelargoniums have been badly diseased

While the result of the year's labours are before us, it is well to take close note of it for future guidance. A wise man will always learn much from his mistakes.

In the Bournemouth Public Gardens the flower beds have been very gay all through the summer; they are so at the present time (the end of September), and look like retaining their brightness until very late in the season. No doubt many readers of the Gardeners' Magazine will appreciate a few notes on these beds, which Mr. Stevenson, the able superintendent, has altered somewhat during the past few years. I will not go into detail with reference to the occupants of the various beds, but simply give the names of the plants used.

I may say here that the principal beds are cut in the grass on both sides of a fine, broad path leading from the square —the centre of the town—to the sea front, at the pier entrance. Alternate beds are round, the others being square, and, as they are all large and boldly filled, the general effect is really very charming and in good keeping with the surroundings.

The contents of the principal beds are double white marguerite Mrs. Sander, with acacias as dot plants. Dwarf Alyssum maritimum as a groundwork, with scarlet tuberous begonias, and kochias as mixed dot plants; the double edging being composed of blue lobelia and golden pyrethrum. These beds (they are mostly in pairs) were very striking. Fuchsias and yellow arum lilies as dot plants in a groundwork of mimulus, were also unique and charming. Zonal pelargonium Golden Harry Hieover, with blue lobelia as a ground plant, and an edging of white alyssum, completed another beautiful pair of beds. Scarlet salvias, abutilons and acacias as dot plants, with a row of single white asters, and an outer one of blue ageratum, were used in another bed.

Beds of heliotrope with dot plants of fuchsias looked charming, while the beds filled with cannas and edged with single asters, with an outside ring of Gazania splendens were very striking. This gazania is not used in flower gardens as much as it deserves to be. A clump of centaurea in the centre, then a band of pink fibrous-rooted begonias, and a bordering of white alyssum suitably filled other beds. Two large beds were very attractive; Flower of Spring pelargonium was planted as a groundwork; intermixed with these were Iresine Lindeni and Lobelia cardinalis, with fuchsias and an edging of Golden Harry Hieover pelargonium.

Geo. Garner.

## WARGRAVE PLANT FARM, LIMITED.

The announcement of a new nursery is in these days of ever-increasing activity in the horticultural world by no means a rare occurrence. Some of the new ventures are certainly short lived, and it has frequently been remarked that the Trade is overcrowded. We have always held the opinion, to which we still adhere, that there is yet room for really good nurseries, the essential qualifications being that they must be founded on a combination of business aptitude and capital, and that a definite line must be struck in some particular branch of horticulture. It may at once be said that the subject of these notes, the Wargrave Plant Farm, Limited, fulfil these conditions, and, despite the fact that less than twelve months have elapsed since the business was started, evidence is abundant that the firm is on the track that makes for success. It need only be said that the head of the firm is Mr. Bernard Crisp, whose father, Sir Frank Crisp, of Friar Park, has long been a prominent patron of horticulture, to show that it is in capable hands, while Mr. Richardson, the head foreman of the nursery, is a man of wide and sound experience and a plantsman to his finger tips.

The line in which this new nursery is specialising is hardy perennials and alpine plants, the growing popularity of which is so marked a feature of present-day gardening. As a matter of fact it was an admirably-prepared and up-to-date catalogue of hardy border and rock plants which the firm has published that claimed our interest and induced us to visit the nursery, and see for ourselves the collection that has been formed. Larger catalogues than this one exist, but few are so entirely devoted to really the best of the hardy flowers. Indeed many extremely rare subjects are offered both for the herbaceous border and the rock garden. As our readers may obtain copies of the catalogue for the asking, it is unnecessary to occupy space reviewing it. We prefer to deal with the plants themselves as seen at the nursery. Even before one enters the gates a brilliant display of colour presents itself to view. Fine borders of hardy flowers, backed with rows of first-rate dahlias, have been arranged on either side the drive which runs from the gates across the nursery. Our visit was paid on October 4, a bright, cheerful day, but Jack Frost had laid his finger on the fine mass of dahlia blossoms the night before, and had just left his mark upon them. It was still evident, however, that all the varieties grown were of the best, and from a distance the show of colour was still bright and pleasing. Among the perennials in the borders many plants engaged our attention. There were good phloxes still in bloom and pentstemons carrying an abundance of brilliant flowers. Heleniums were flowering profusely, H. autumnale Riverton Gem standing out conspicuously as one of the finest autumn-flowering plants we have. It is an immense improvement on H. grandicephalum striatum. Just as beautiful in its way is Rudbeckia Herbstouni, with broad-petalled flower of a clear canary-yellow, with thimble-like green-tinted cones. There were Michaelmas daisies, embracing the best of those in cultivation, one that showed up remarkably well being Aster Novæ Belgi Viscount Garnault, a compact-growing variety, bearing perfect masses of bright, rosy-mauve flowers. Gypsophilas of sorts still carried loose panicles of starry flowers, and a brilliant dash of colour was provided by Dianthus cruentus still in bloom. The newer hybrid Verbascums receive at Wargrave the attention they merit, and spring-propagated plants were flowering splendidly. Polygonums, veronicas, the crimson flowers of Phygelius capensis, and several sidalceas added their quota to this interesting display of autumn flowers, and when it is remembered that many of these have been in bloom for weeks or months it is small wonder that the cultivation of herbaceous plants has made wonderful strides in British gardens.

Passing from the borders to the alpine and rock plants one realises in a moment that at the Wargrave Plant Farm there is no ordinary collection, for the choicest and rarest of alpines are seen in the plunge beds, which occupy a very large area in front of the packing sheds and offices. Let it be aubrietias or saxifragas, primulas or linarias, the varieties seen were the very best of their respective kinds. There is apparently no room for the common or indifferent, but one could not name many really choice forms that were not to be seen, and the whole collection evidenced skilful cultivation and watchful care. Wahlenbergia serphyllifolia major, carrying its rich purple flowers, which are of remarkable size for so tiny a plant, was a subject that we greatly admired, and we also appreciated the charms of the dainty little Linaria origanifolia, Gypsophila dubia with its slender red stems and glaucous foliage, and the remarkably free-flowering Polygonum vaccinifolium. Margyricarpus setosus is a plant of quite unique aspect and great beauty. Its closely-set, awl-shaped foliage, its quaint green flowers, and pretty little white berries have an individuality about them, and make this plant highly desirable where the aim is to possess a really choice collection.

An old favourite, but somewhat scarce plant that was both growing and flowering freely is Ceratostigma plumbaginioides. Flowers of a real pure blue colour are at any time valuable in the garden, and during September and October, when this may be had in bloom either in the border or on the rockery, its rich colour is unsurpassable. Hardy primulas are largely grown at Wargrave, the newer Chinese introductions being included in a good collection. Primula capitata was flowering beautifully, the plants being less than a twelvemonth old. This is a delightful primula, other good forms being P. Cockburniana, P. Littoniana, and P. Bulleyana, all of which are numbered among the Wargrave collection. Arabis Sturi is a little gem that has quite a distinct character, its compact rosettes of deep green foliage more closely resembling an androsace or a saxifraga than most of the other members of its own family. Its white flowers are very attractive, being large in proportion to the size of the herbage.

There are excellent propagating houses on the nursery, and in them young stock is still being produced, such plants as Lithospermum prostratum, Fremontia californica, Romneya Coulteri, and other choice subjects being worked up for spring demand. A very useful subject is Santolina incana nana, it being much dwarfer and more compact than the ordinary type. Cistus and helianthemums, shrubby potentillas, white lavender, and the ever-useful Nepeta Mussini are all to be seen growing away in perfect vigour, and throughout the place there seems to be nothing but highly desirable plants, for which a ready sale should be found with the greatest of ease. Twyford Station, on the Great Western main line is about one and a-half miles from the nurseries, and it is worth the while for any hardy plant enthusiast to run down and see this newly-formed, but extremely interesting collection. The firm's head office and shop is in The Arcade, Liverpool Street, London, and here a seed and bulb trade is conducted, and a seasonable display of cut bloom maintained, as well as collections of alpines for the benefit of those who are unable to visit the nursery.

**Clerodendron nutans.** — The clerodendrons are indeed a variable race, and they differ in so many and strongly marked features one from the other. Clerodendron nutans is an old plant, which forms rather a loose-growing shrub clothed with dark green, ovate-lanceolate leaves. The flowers, borne in drooping racemes, are about an inch across, and pure white; while, as in many other members of the genus, the calyx is large, and being of a reddish tint, it forms a conspicuous feature. This species is a native of the East Indies, and requires a stove for its successful culture.—S. W.

# ALYSSUMS, OR ROCK MADWORTS.

As spring comes round we look for the resumption by our plants of the Rock Madwort of that wondrous display of small golden flowers which have bestowed upon it the other popular name of "Gold Dust," one distinctly descriptive of the appearance of the flowers. Individually small, in a mass they give us a wealth of gold, and with the aid of other spring flowers render the garden as gay in spring as at any period of the year. Alyssum saxatile is a truly fine plant for covering mounds and rocky banks, as well as for massing in the borders, and it must always be remembered that it is ineffective as small plants, compared with its appearance when boldly massed and well shown by its situation.

It is pleasing at any season with its greyish foliage, but it is when this is literally covered with the small golden flowers that it is at the zenith of its usefulness for the garden.

## Alyssum saxatile and its Varieties.

What is known as the typical Alyssum saxatile is a good plant with greyish-green leaves and small yellow flowers, and forms a rounded bush a foot or so in height, or in dry situations a few inches less. It is valuable, but, useful though it is, it is inferior for horticultural purposes to the variety called Alyssum saxatile compactum. This is from six to nine inches high, and flowers with as much, or even more, freedom than the typical plant of gardens. In masses in the rock garden or the borders devoted to spring gardening, associated with snow-white arabises and purple aubrietias, an effect of the highest kind is produced, especially in April and May.

It has a rival with less golden flowers in Alyssum saxatile citrinum. This assumes more of the compact habit of A. s. compactum than that of the type, and is prized by many for its soft, citron-yellow flowers. It looks well associated with the arabises and with a dark purple aubrietia, after the shade of Dr. Mules or Prichard's A.1.

Still dwarfer than any of the foregoing is Alyssum saxatile Tom Thumb, a true miniature, only attaining a few inches in height, but not so free-flowering by any means as one would like. It is a pretty grey-foliaged plant for the rockery, but its flowers are sparsely borne, and it has little effect, so that it may well be dispensed with.

A very good form of the Rock Madwort is Alyssum saxatile fl. pl., which is a variety of the larger form with double flowers, of the same brilliant golden hue as those of the original. The habit is also the same, but the doubling of the flowers gives the blooms greater endurance, and it is to be recommended to many, although I consider from my experience of it that this double variety is a little stiff in its growth.

Finally, we have Alyssum saxatile variegatum, a variety with leaves margined or variegated with creamy-yellow. It is not a plant which appeals much to me, inasmuch as the variegation is not too bright, and its presence appears to have the effect, so frequently found in variegated-leaved plants, of reducing the freedom of flowering. It cannot, therefore, be recommended where a display of bloom is desired, and has not any outstanding points of real merit to commend it.

## Propagation.

These Rock Madworts can all be propagated by means of cuttings, the best time for which is immediately after the flowering is past for the season. This is the only method by which such varieties as the double form, Tom Thumb, and the variegated one will come true. Compactum sometimes comes fairly true from seeds, but is apt to become a little stronger than it should do when thus propagated. Some utilise as cuttings the smaller branches, and take them off at the base and root in light soil in a frame, or under a handlight in the open, or in pots under glass. The stronger branches will also strike well if taken off with a heel, and put in light soil in a frame or greenhouse, or under a handlight or bellglass in the open.

ALYSSUM SAXATILE CITRINUM.
A lemon-coloured form of a beautiful spring-flowering plant.

The typical A. saxatile may be raised from seeds, and certain strains of compactum and citrinum come almost true from seeds also. Where a large number of free-flowering plants are required, this is an excellent way of procuring a stock. The seeds can be sown under glass from February onwards in the same manner as ordinary perennials or half-hardy annuals, or in late April, May, and June in little drills of sandy soil in the open. When they can be handled, the seedlings ought to be pricked out three or four inches apart and transplanted to where they are to bloom early in the autumn.

## After-Treatment.

Large plants of A. saxatile do not move well, and young ones should be employed. A great improvement is effected by cutting over the plants after they have bloomed to retain them in shape, and prevent them becoming leggy. In a short time young shoots will make their appearance, and will thicken up the plants and assist in and will thicken up the plants and assist in giving a better display the following year.

The Rock Madwort looks best on a mound or rockwork, and should be planted there in a group of several plants together, so as to make a more brilliant show. A dry soil is preferable, and the foliage will be lighter in colour and of a more silvery appearance if a little lime is in the soil. A sunny position is the best, and with a dry soil it is certain to please all by its brilliance in its season. S. Arnott.

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**Clerodendron fallax.** — Though this may be had in bloom at different seasons of the year, its richly-coloured blossoms are perhaps seen to best advantage during the late summer and autumn months. It readily responds to liberal treatment.—W.

## SWEET WILLIAMS.

Sweet Williams (Dianthus barbatus) rarely receive the attention they deserve in the autumn time. The plants are quite hardy, and flower very freely, looking charming in the mixed border. When a little extra attention, however, is given to them they grow vigorously, and yield great numbers of flowers.

Very often the plants are allowed to remain in the seed beds until the spring, and are then lifted and transferred to their flowering quarters. Now, clumps so treated will not yield a plentiful supply of really good blossoms. I have seen remarkably strong clumps, lifted in spring, which have drooped badly, and not recovered their normal condition again for a long time. By the time spring comes sweet williams should be well established in their flowering-beds, and the way to ensure this is to transplant them at the end of September or early in October.

The sweet william is a grand plant for a clayel soil. Some of the best specimens I have ever seen were grown in a stiff, clayey loam; transplanting had resulted in the formation of numerous fibrous roots in addition to the rather long tap-root, and the leaves were large and of great substance. A soil in which water lies stagnant, however, will not suit them; the lower leaves turn yellow and then shrivel up, and the whole plant becomes stunted, not branching out as one would wish.

Where the ground is on a low level, and thorough drainage is difficult to accomplish, the beds should be raised, and some road-grit mixed with the soil. Transplant the clumps while the soil is fairly dry, and, while in this condition, make it moderately firm around the roots. Slugs are very fond of them, eating out the tender young centres. Use dry soot or dust lime, and also sprinkle sifted ashes on the surface around the plants as a preventive.

G. B.

## SAMBUCUS CANADENSIS.

Regarded from a flowering standpoint, this is a very striking elder. Its huge cymes of creamy-white flowers are considerably later in expanding than those of the common kind. Furthermore, it is much less of a tree than Sambucus nigra, forming as it does, a bold bush from six to ten feet in height or thereabouts. It is very effective when planted in close proximity to water. The date of introduction is given as 1761, but it is only within the last few years that attention has been generally directed to its high ornamental qualities. As Sambucus pubens maxima a good deal of interest was centred in it about ten years ago.

Of the other elders that we have in our gardens, our own native species, Sambucus nigra, is remarkable for its extreme variability, as the several varieties differ from each other in foliage, habit, flower, and fruit. Among the more uncommon kinds is a double-flowered form of a pretty pinkish tint. The ordinary kind, when in full flower, is certainly very handsome, and, in addition, it blooms when the bulk of our flowering shrubs are past, while it will flourish even in hard, stony soils.

The red-berried elder, Sambucus racemosa, is remarkable, not only because of the colour of its fruits, but also because of the distinct leafage of many of its varieties, which, in their finely-cut foliage, suggest some of the Japanese maples.

S. W.

## HÆMANTHUSES.

The genus hæmanthus comprises, according to Nicholson, about thirty species. Several new hybrids have, however, been raised since the publication of that work, but possibly the number of distinct kinds in general cultivation may be reduced to a dozen. Some of the best are H. Cinnabarinus, red; H. insignis, orange-scarlet; H. Kalbreyeri, bright crimson; H. Katherinæ, bright scarlet; H. multiflorus, bright red; H. natalensis, orange; H. punicens, orange-scarlet; H. sanguinens, scarlet; and H. Andromeda, orange-scarlet.

It is somewhat surprising that these really handsome plants are not more generally cultivated, for it is the exception, rather than the rule, to find them grown. They are not, perhaps, so striking as the amaryllis, to which order they are allied, but, nevertheless, a batch of well-grown plants of any of those mentioned would hardly fail to appeal to the average observer. Even when not in bloom their handsome, rich green leafage invariably commands attention.

Cultivation consists mainly in producing active growth, followed by a decided rest. Propagation is by seeds, which set freely, or offsets, which are generally plentifully produced. The seven plants of H. Andromeda which secured the Award of Merit at a recent meeting of the Royal Horticultural Society were grown from offsets taken, with ten others, from one bulb in the spring of 1910. These were potted into four-inch pots in a compost of sandy loam and peat in equal proportions, and placed in a fig-house where the temperature was high, and the atmosphere moist. Here they soon got over their severance from the parent bulb, and made rapid progress, and, after about two months were removed to a position of less heat, but always kept growing strongly with fairly moist surroundings. Plenty of water, with frequent weak stimulants, were given until signs of rest were apparent by the leaves turning yellow, then the amount was gradually reduced until the foliage died down, when, as in the case of other classes of bulbous plants, water was withheld for a time to ensure their enjoying a thorough rest.

During the resting period a temperature of about 40 to 50 degrees was given, and the soil kept perfectly dry. On the first signs of new growth in early spring they were given a good soaking of water, shaken out of the old soil, and placed in six-inch or seven-inch pots, using a similar compost to that described, with the addition of bone-meal and soot. In these pots they flowered. The previous year's treatment was repeated as nearly as possible, excepting that they did not receive such a high temperature to enable them to recover after potting. This season a slight top-dressing only was given, and the plants were grown as before until the flower spike was well advanced. A removal to a dry, airy greenhouse was then necessary, as it is important that no water touches the blooms.

Hæmanthuses remain in bloom for six weeks, and are found useful for house decoration. Tables fitted with receptacles for holding about five plants make a striking feature. Having once brought the bulbs to flowering size, they may be cultivated under ordinary greenhouse treatment, but they prefer a higher and more humid atmosphere while growing freely. With established bulbs, every other year will be quite often enough for repotting.

Arthur Cobb.

Duffryn Gardens, near Cardiff.

## THE SCOTTISH FRUIT CROPS.

### Apples.

This very important crop, in the northern parts of the country, is developing much more kindly than was at one time anticipated. Taking productiveness generally, it must be admitted that the bulk of crop varies considerably. In some districts the fruit is plentiful, and good in quality, while in others the ruling is quite the reverse —a state of things that is by no means uncommon in other parts of the United Kingdom.

The brilliant weather which prevailed throughout the greater part of September was of great assistance in bringing the earlier kinds to maturity; while later-keeping sorts have increased in size at a rapid rate, and really large, well-coloured specimens are now in evidence—a pleasing contrast compared with the estimate formed a short time ago. One great peculiarity of the apple crop this season has been that of the fruit dropping from the trees, even in its quite incipient stage. Some varieties, as may be imagined, were more addicted to this failing than others, but scarcely any seemed quite free from the defect.

So prevalent was this with some that summer was so reduced that but few remained upon the trees to mature. In like manner, and for a similar reason, crops of midseason fruits are now being gathered to save them from loss by being bruised in falling from the branches, which assuredly would be the case should a storm of wind arise. Even the latest varieties that are seldom gathered until the middle of October must shortly be placed in store, as it is becoming too risky to leave them much longer upon the trees.

With the wet, dull summer that we have had one naturally thought that the ingathering of crops could profitably have been deferred for a longer period than in previous years. Such, however, is not the case, and it applies with equal force to most other fruits besides apples. This premature falling of apples is not the result of attack from the codlin moth, as the fruits are perfectly sound, and, when size permitted, were readily made use of. Furthermore, pests of this kind are but little in evidence in Scotland at any time.

### Pears.

These have developed one of the best crops in recent times, most varieties contributing to this result. The early dessert kinds have already ripened off well, while those succeeding are equally promising. Upon the whole the colouring of the respective sorts leaves little to be desired, and size and quality of the individual fruits is equal to that experienced in more propitious seasons. The above refers more especially to the best of the dessert kinds, which in this part require the protection afforded by a wall to develop their best qualities.

Commoner kinds, as Hessle, Swan's Egg, and Crawford's Early, together with such well-known and popular sorts as Williams' Bon Chretien, Louise Bonne of Jersey, and a few others of the first rank, that will succeed in bush or standard form in the open, were, or still are, laden with fruits, most of which are above average size. The great amount of sunshine last year was probably the principal factor in this, which the excessive rainfall during the growing period this year did not materially affect, except that the liberal amount of moisture in the soil assisted the fruits in attaining a larger size than usual.

Galloway House, James Day.
Wigtownshire.

# OBSERVATIONS ON THE TREATMENT OF HARDY FLOWERS.

The effectiveness of a well-planned perennial border depends to a great extent on the components of which it is formed; blending of colour, the extent of each group and manner of arrangement, all influence the final effect produced, so that wherever planting is being done these conditions should be given judicious consideration in the initial planting. The possibilities of this branch of garden decoration are not readily defined. As a general rule, masses of colour give the most impressive effects, of which perennial phloxes, lupinus, monarda, and campanulas afford useful examples, yet the principle is one offering great latitude, being specially applicable where broad effects are necessary, otherwise, under these conditions, a degree of indecision and spottiness would be our only reward.

To extend this principle, without restraint, into the smallest garden, would not materially lessen its value as a practical guide; in substance, the masses need not attain to the same dimensions as in a larger sphere, while by exercising the selective element we naturally incline to the use of plants yielding the greatest display over the most extended season. Some modification of this system would be here admissible, otherwise we exclude many subjects that, having regard to their proportion, could not readily be accommodated in quantity where space is restricted. Yet, if introduced in appropriate positions, these, by the law of contrast, emphasise the characteristics of less commanding subjects, while, at the same time, their boldness assumes additional value, it may be the foliage chiefly, as in Senecio clivorum, or, again, the flowers, as in Spiræa aruncus, but in either case, single specimens of these, when fully matured, may always be introduced to advantage in small gardens, and thereby redeem a composite planting from any charge of being commonplace.

The relative contrast and harmony that all plants exhibit in their general characters is an aspect of good gardening not usually recognised, and given the importance it warrants in practice, and probably wherever it attains its highest development, it will be found, as a rule, that leaf contrast produces the best effects, as flowers most fittingly express their beauty in harmony. This is simply illustrated by the sword-like foliage of irises, montbretias, and gladioli, which invariably offer a marked contrast to plants bearing leaves in the form of flattened plates; again, there are others whose decisiveness during the vegetative period is never great, as in some bupthalmums, heleniums, and campanulas of the persicifolia type, which, when contrasted with plants of the iris type, or with those having pinnate or compound leaves, as galega, thalictrum, and Papaver orientale, add considerably to the general effect, and also offer a definite amount of pleasure to be drawn from comparison of the various leaf-types.

As to how far harmony of colour in border planting can be successfully carried into practice, is probably most readily answered by broadly reviewing some of the larger genera with which we are most familiar, as for example, in pæony, pyrethrum, phlox, and iris, where we find almost a complete gradation of colour within themselves, so that, planted separately, we find that, in practice, a bed, border, or even a garden devoted to one of these subjects invariably affords a pleasing and satisfactory result from a colourist's point of view. We must, however, recognise one serious drawback to an unrestricted use of the massing system, a danger that directly affects gardens of every extent, in that large groups of early-flowering subjects leave a distinct gap when the flowering period is over. Poppies of the oriental class are well-known offenders in this respect, yet to exclude plants of this class from the hardy border would be a serious less to many gardens. Instances such as this must be frankly met and overcome, either by intergrouping with some later-flowering subject or in relegating them in a body to a position by themselves, the latter preferably, even if it can only be practised on a small scale.

We are much too conservative at times in our methods of gardening, and by rigid adherence to stereotyped custom we do not invariably secure the best results, for an arrangement that applies to one garden will not of necessity be the best for all. Hence it is only by experiment that we may eventually attain to the fullest knowledge of the conditions that affect us locally, while an interchange of ideas has at least distinct value in enabling us to institute comparisons between methods that approximate to our requirements, and between subjects that are most likely to succeed under our conditions and yield the desired results. Thomas Smith.

Coombe Court Gardens.

# GARISH DAHLIAS—A PROTEST.

To the admirers of floral beauty, as exemplified in symmetry of make and delicate beauty, it must be a matter of regret that the general exhibitions of dahlias nowadays should be so largely alloyed by the newly-introduced pæony section, in which great size and glaring colours are associated with huge bunches of coarse petals, loosely and irregularly arranged without even a suspicion of that orderly and symmetrical grouping which is considered an essential feature in all the other classes, but one, of the beautiful dahlia tribe. In the old-fashioned globular flowers, both in the full-sized ones as in the dwarf pompons, we see this symmetrical arrangement to perfection, and in the cactus section it is also a sine quâ non, and it is really a feast to the eye to see these at their best as recently exemplified at the Royal Horticultural Hall. Each flower is a gem, and, although the colours may be brilliant and even dazzling, their association with perfectly-formed flowers with regular petals, often delicately graded in tints, makes them irreproachable.

With the ragged-looking "pæony" forms, however, the very brilliancy of their colours is an added offence, attracting, as it does, the eye to their manifest imperfections. In no other popular flower that we know of could such productions be deemed acquisitions, much less improvements, and no one, we think, imbued with true horticultural taste, could tolerate them as garden embellishments. The exception to the general beauty of the other sections, to which we have alluded, is the so-called collarette section. Here, indeed, we may have a fine section in the making, but, so far, in all the flowers, the possible, evenly-made collar or coronet of enlarged central florets, is invariably irregular, like a bad set of teeth, and this, to our mind, alsolutely spoils the simple charm of the beautiful singles whence they spring. In this direction we would by no means discourage the raiser's efforts to obtain ideally perfect flowers, but with regard to the flambuoyant pæony section, we consider them to be of far too coarse a nature to promise anything worth having. C. T. D.

# THE IMPROVEMENT OF ROSE SOILS.

With the planting season close upon us, the making of new beds and the improvement of rose soils will need some consideration.

For instance, suppose we have a clayey, and consequently heavy, soil, in which much plant food is needed. If such a soil is turned up to the air, and, maybe, frost, as roughly as possible, much good will be done. A little lime is also wanted upon this class of soil. I would like to turn such soil up as soon as possible, and let the air and lime do a great deal of their work before adding any animal or other manures, or planting in any way. If very wet it should be drained in some form. Burnt earth is a good thing for a clayey soil, and may be added freely to the lower spit when trenching or taking out holes for specimen plants. A little basic slag at the proportion of 6 to 8 ozs. to the square yard will also be a help. Powdered chalk at the same rate is another good ingredient for clayey soils. But we need some manures as well as these materials, which are really applied to help bring the soil into better working order rather than as food to the roses themselves. The best all-round fertiliser is thoroughly rotten manure from the stockyard. This is really suitable for any class of soil provided we add the other ingredients, as above, upon those of a distinctly clayey character.

Turf edgings, the sweeping and scrapings of untarred roadways, as well as decaying vegetable matter, are all helpful upon stiff and poor soils. After pruning, a liberal dressing of manure, and this slightly forked in, is a great stay to the plant all through the summer.

A sandy or gravelly soil will not grow roses to perfection, and must be supplemented with rich and stiff loam, and farmyard (preferably from horned cattle) manure added. The aim is to render the soil much stiffer and more retentive. No one need despair of growing roses satisfactorily if they attend to the making up of their soils. We do not want extremes; a soil a little inclined to be stiff is, however, the most suitable. If ours is not naturally of such physical condition we should strive to make it as nearly so as circumstances will allow.

It is an excellent plan to replant rose bushes at least each fourth season, unless they are in definitely fixed positions, such as over buildings, arbours, porches, etc., when, if we make due use of the opportunity, and enrich the lower strata, the newly-planted roses will be renovated, and show a decided improvement.

Rosarian.

**Leycesteria formosa.** — This shrub, which is said to form such a notable feature of its Himalayan home, is in our climate decidedly less attractive than it is where it occurs in a state of nature, but even here it is well worth planting for ornament, the flowers being borne in the latter part of the summer, when so many shrubs are over. Botanically, it is a new relative of the honeysuckles, and forms a free-growing shrub, whose shoots are clothed with a green bark. The flowers, which are borne in drooping racemes, are white with a purplish tinge. A prominent feature of the inflorescence, consists of large purple leaf-like bracts which subtend the flowers. Here these bracts are said to be much less brilliantly coloured than when growing wild in the elevated regions of the Himalayas. —K.

# WORK FOR THE WEEK.

◆

## THE ORCHID HOUSES.

VANDAS.—The end of the present month or the beginning of next is the best time of the year to thoroughly overhaul all plants of V. tricolor and V. sauvis, especially if any disturbance at the roots is necessary. When done at this season there will be far less loss of foliage than when the operation is performed at any other time. These plants do not appreciate strong sunlight at any time, and now that the sunshine is daily decreasing in power, and the external air is cool and heavily charged with moisture, a suitable atmosphere can easily be maintained for them at the cool end of the cattleya or intermediate house. A shaded position is of the greatest assistance towards the re-establishment of the plants without loss of foliage. These vandas, when allowed to lose their leaves, are among the most unsightly objects possible, therefore it is necessary to take every precaution against loss of foliage.

REPOTTING at this season is favourable both to the production of fresh roots and the retention of the lower leaves. It is principally those leggy specimens, which have become unsightly by the loss of leaves, that will need repotting, and in the case of plants in that condition, it will be necessary to remove the old potting material and drainage. When taking the plant from its pot, the roots which are clinging to the sides should be carefully detached. If the base of the stem can be cut off, to enable one to bring the lowest leaves down to the same level as the rim of the pot, so much the better, providing there are sufficient roots left on the stem to maintain the plant until new ones are made. Keep the stem of each plant in the centre of the pot, and carefully work the lowest roots around the bottom, intermixing with them clean crocks to half the depth of the pot. Over these place a layer of sphagnum moss; spread the other roots carefully over the surface, and work amongst them some clean, picked sphagnum moss.

TOP-DRESSING.—Plants that are furnished with leaves to the rim of the pots should not be disturbed, but the old potting material, which has become sour and decomposed, should be carefully removed down to the drainage, and be replaced by fresh material.

WATERING.—For several days after potting no water at the roots will be necessary, as the moisture from the moss will be sufficient for them. When the moss turns white, and appears quite dry, a thorough watering will be necessary. As the moss on the surface becomes dry it should be sprayed as often as is necessary to keep it in a healthy growing condition. Vandas of this section should be placed on a stage, covered with some moisture-retaining material such as crushed coke. These vandas, although not seen to such advantage as formerly, are very handsome plants, and when several are in bloom the perfume from the flowers pervades the whole house.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

CURRENT WORK.—In this department we have not the anxiety of having the plants housed before sharp weather sets in, but, at the same time, there is need to see that everything is in order to withstand the changing conditions. Many species of warm-house plants, that in normal seasons would be better for a longer sojourn in pits and frames, must now be removed to warmer and drier quarters. Although I do not recommend a high, close temperature for such winter-flowering plants as poinsettias, eranthemums, Plumbago rosea, and the like, at this time of year, yet, if allowed to remain in their summer quarters too long a severe check may result which cannot be remedied. Cold nights and sunless days must be guarded against, or the roots will become chilled. It is a good plan to rearrange the whole of the occupants of the plant stove about this time, taking advantage of the opportunity to thoroughly cleanse the glass and woodwork of the structures, both inside and out, and clean the plants themselves. This procedure will ensure the admittance of the maximum amount of light to the plants, and this is essential to their well-being during the dull, dark days of winter.

POTTING SOILS.—No time should be lost in preparing the various composts required for another year. First and foremost is good fibrous loam, and this can usually be dug from an old pasture. The required number of turves should be cut, not more than three inches thick, and stacked in a compact heap, sprinkling plenty of lime and soot between the layers as the stacking proceeds. This will answer a double purpose, viz., kill the insects and their larvæ, besides making the soil sweet and friable for potting by the time it is wanted for use. The best leaf-soil is obtained from decayed oak or beech leaves, and, assuming these were collected last season and have been turned over occasionally, they should by now be in good condition for use. Before mixing this with the compost, pass it through a sieve to keep back decaying sticks, which are harmful to the roots of plants. Charcoal is of inestimable value, and on estates where plenty of hard wood is to be had, some should be made into charcoal during bad weather.

TEMPERATURE.—All structures containing stove plants must now be kept at the proper temperature by the use of more fire-heat; at the same time, let this be judiciously applied in accordance with the conditions prevailing outdoors. Admit air on all favourable occasions, and close early in the afternoon in order to store as much of the warmth from the sun's rays as possible, thus necessitating less fire-heat at night. Heavy syringings should now cease; at the same time, maintain a fair amount of humidity in the atmosphere to keep down insect pests, such as red spider and the like. Above all things, do not overwater at this season, especially those plants that are ripening their growths preparatory to going to rest for the winter.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY PERMANENT VINES.—Where it is intended to commence forcing vines in the early house by the middle of next month, the laterals should now be pruned back to two or three good buds; this will enable the vines to have a complete rest before forcing operations are commenced. In advocating the retention of two or three buds when pruning, it should be borne in mind that this will allow the choice of the best growths when the embryo bunches are showing. Rub off the loose bark from the rods, but on no account should they be scraped with a knife or peeled closely; give the vine rods a good wash with insecticide, working it well into all the crevices, and around the buds with a stiff brush. This will not injure the vines in any way, but it has the effect of destroying all insect pests and mildew. Whitewash the walls with freshly-slaked lime, to which some flowers of sulphur has been added. Tie the vines into position, and remove a few inches of the surface soil from the borders, and give a good top-dressing of fibrous yellow loam, with plenty of bone-meal, lime-rubble, and some approved chemical fertiliser added. If the soil in the borders is dry, a thorough soaking with clean water should be given, and this is usually sufficient water at the roots until the young growths make their appearance.

EARLY PEACHES AND NECTARINES.—The leaves of the earliest trees will have fallen, and pruning the trees should be taken in hand forthwith. Where careful disbudding and forethought has been exercised in laying in the young growths, very little pruning with the knife will be necessary. In any case remove all wood that is not required with a sharp knife, as the work of pruning proceeds. Cut the ties, and detach all the wood from the trellis; it will be necessary to secure some of the main branches temporarily to the trellis, or otherwise they may be broken. It often happens that too much young wood has been tied in during the current growing season, but do not hesitate to thin it out sufficiently to allow plenty of room for the development of good fruit next season, and for laying in next season's young growths. When the pruning is finished, wash the trees with soft soap and warm water, scrub the main stems and branches with a stiff scrubbing brush, and the young growths with a small tooth brush, taking great care not to injure the buds. If the trees are infested with scale, this can easily be dislodged by brushing them off with a dry tooth brush before washing commences. Tie the branches into loose, convenient bundles, and give the glass, woodwork, and walls a good scrubbing with soft soap and hot water; afterwards wash the whole structure down with clean water applied forcibly with the garden engine. Whitewash the walls with lime and sulphur, and set out the main branches into their respective places; then commence to tie in the young growths, so that they will form a good, evenly-balanced, fan-shaped tree. When the work is finished remove a few inches of soil from the borders and top-dress with good loam, lime-rubbish, bone-meal, and wood ashes well mixed.—Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

SPRING BEDDING.—The work of preparing the beds for their spring occupants should be proceeded with at once. It is essential to thoroughly cultivate the soil and enrich it with well-rotted manure. Endeavour to carry out this work when the soil is not too wet, and while wheeling and removing material avoid damaging the walks or cutting up the grass around the beds. It is an advantage to have all spring-flowering subjects planted before the end of the month, so that they can become thoroughly established before the advent of inclement weather. Wallflowers, myosotis, arabis, and polyanthuses should be taken up with plenty of soil attached to their roots. When planting, press the soil firmly around them, and give a good watering when the work is complete. Some of the newer varieties of sweet william are very charming subjects. Pink Beauty is especially delightful, and it should be planted at the present time. The various bulbs required for spring display should be also planted at once.

ORNAMENTAL CONIFERS.—Many gardens are lacking in good conifers, and there are so many handsome species in cultivation that there is no excuse for not making more use of them. When well placed, conifers are generally admired, and during the winter months they give colour to the pleasure-grounds. Cedrus atlantica glauca forms a very attractive object when it has attained fair proportions, its silvery-grey foliage being very effective. Abies pungens glauca, A. concolor, and A. lasiocarpa are extremely showy, and are ideal for planting as single specimens on the grass. Abies nobilis, A. Pinsapo, A. bracteata, A. magnifica, A. Mariesi, and A. homolepsis are all exceptionally handsome trees to plant, and have attained a large size in these gardens. Cupressus Lawsoniana Allumini is a distinct and handsome tree, and its glaucous foliage renders it especially attractive. C. L. lutea is probably the most effective of all, and when well grouped for distant effect is very telling. C. L. intertexta is a distinct form, and C. macrocarpa lutea is quite an acquisition. Juniperus chinensis aurea, J. drupacea, J. japonica aurea variegata, and J. Sabina Knap Hill variety all deserve a place.

LIBOCEDRUS DECURRENS, Sequoia sempervirens albo-spica, and Taxodium distichium are all desirable trees. Retinospora filifera, R. pisifera, and R. plumosa are especially attractive, as are their golden forms. R. squarrosa forms a delightful tree.—J. Gardner, Batsford Park Gardens.

# NORTHERN COUNTIES FRUIT CONGRESS.

I have recently received a command from the Rev. J. Bernard Hall, secretary of the North of English Horticultural Society, to fix up a Congress on Fruit or Fruit and Potatoes for the four northern counties of England, to be held in 1914; and further, a request that I should appeal to the Durham County Council for funds to meet various expenses.

I am wondering if I may have the assistance (in the first instance) of your valuable paper to ventilate this scheme, and as regards the Congress to come into touch with horticulturists and others in the North, who would intimate their willingness to work with me to run the said Congress. The Northern Fruit Congress, so called, of the past years, has been, more or less, a one-man scheme, and a financial failure. In 1910 Captain Cuthbert had to pay a deficit balance of £50. In 1911 the Rev. J. B. Hall was responsible, and had to meet a deficit of £30. In 1912 the Rev. J. B. Hall and Professor W. B. Little were conjointly responsible at Carlisle, and they have come out looking rather blue; still, they are going to keep running and organise a conference at Kendal in 1913. This procedure seems to me very unwise. If a congress on fruit, or a horticultural congress in any form is wanted, why should there not be a proper representative congress committee or council to carry on such a movement on similar lines to which any other congress is managed, and make it peripatetic—annual meetings in different centres? The request for me to approach the Durham County Council or any other county body for cash—and more particularly the Council in question, as not one of the members are horticulturists—is not the right course to take. Mr. Hall argues that the Yorkshire Agricultural Society arrange and provide many years in advance; they and other allied societies have the interests of the work at heart, understand and provide in advance; not so a county governing body. To ask a County Council to organise a show or prepare a scheme amongst whom no one is enthusiastic, two years hence, and out of the rates, is not the proper course to take. If a body of ladies and gentlemen can be found to work together I will gladly work hard with them.

Whilst writing in connection (although indirectly) with the North of England Horticultural Society, it may not be out of place to note the progress of this northern society since its inception. One wonders sometimes if it is wanted. The secretary often states that existing societies and others must invite them to come out if they are to visit a centre. The mission of the North of England Horticultural Society should be to tell societies that they ARE COMING to their town on a given date, create interest, and partially finance the concern. If this is done horticulture will advance. The old custom to wait for folks to send for you is dead.

Judging from the Monthly Magazine (which now does not appear on the first of the month), no progress has been made; whereas at first the Fellows and others were given some good original reading—lately it is generally copy, and begging, and advertisements. The main question which is raised by numbers of people suggests that Leeds is not a good centre; at any rate it is not suitable, and the system of management may have been good twenty-five years ago, but that system is now obsolete. It would be a good thing to have fewer ideals manufactured, and fewer commands sent forth.

JOHN SMITH,
Fellow of the N.E.H.S. and Horticultural Lecturer for County of Durham.
Shire Hall, Durham.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

There was a remarkably fine exhibition at Vincent Square on October 8, the Royal Horticultural Hall being packed from end to end, each annexe containing a number of bright exhibits. The newer trees and shrubs, bamboos, Michaelmas daisies, chrysanthemums, dahlias, orchids, and fruits were all present in great force. There were a number of good novelties and a large attendance of visitors. The collection of heaths from South Africa, sent by Lady Grey, gained the high appreciation of the Floral Committee.

### FLORAL COMMITTEE.

Lady Grey, 22, South Street, Park Lane, contributed a particularly interesting collection of heaths, all Cape species, and the specimens had been exhibited at an exhibition of wild flowers held at Caledon, Cape Colony, on September 14. There was a protea at the back (possibly P. cynaroides), and then there were about forty vases of flowers, and probably three dozen distinct species were represented, but, alas, not one was labelled. Some few had a familiar look, but the majority were unknown to most people who saw them. Two kinds attracted general attention; one with slender growth and a profusion of small golden-yellow flowers; and one with dense clusters of tiny ventricose, greenish-cream flowers. A most interesting exhibit that won the appreciation of the Floral Committee.

Messrs. W. Cutbush and Son, Highgate, filled a large corner with great mounds of Michaelmas daisies, Liatris pycnostachya, Kniphofia tricolor, K. Glow, and the quaint Phytolacca decandra. Among the Michaelmas daisies Desire, Peggy Ballard, St. Egwin, Climax, Delight, Chastity, and Amethyst were specally good. In every case the height of the variety was stated on the label. In another corner Mr. James Box, Lindfield, had a fine exhibit of hardy flowers. Solidagos, heleniums, and Michaelmas daisies, in tall stands, made a fine background for masses of early chrysanthemums. Perle Chatillonaise was very fine, Gladiolus princeps, G. America, Helianthus sparsifolius, Watsonia Ardernei, and phloxes, the latter very good for so late a date.

Messrs. Cragg, Harrison, and Cragg displayed grand bunches of such fine market chrysanthemums as Juliet, Crandfordia, Moneymaker, Mrs. Roots, Phœbe, Miss Collier, H. W. Thorpe, and Cranford Yellow. Messrs. Barr and Sons, Covent Garden, exhibited a selection of early-flowering chrysanthemums and Michaelmas daisies, with a quite good lot of spikes of Dr. Hulot, America, La Luna, The Dawn, and Afterglow gladioli. In the same exhibit there were a few nerines and little batches of flowering plants of Acidanthera bicolor, and Schizostylis coccinea. Messrs. Carter Page and Co., London Wall, were represented by violas and Michaelmas daisies.

A large collection of graceful bamboos, exhibited by Mr. L. R. Russell, Richmond, gave a very fair idea of the elegance and beauty of these plants; Phyllostachys aurea, P. Quilloi, P. nigra, P. Boryana, Arundinaria nigra, A. auricoma, A. fastuosa, A. Simoni, Bambusa palmata, and B. quadrangularis, were among the most attractive kinds. The ferns from Messrs. H. B. May and Sons, Edmonton, consisted largely of the newer nephrolepises and choice adiantums and davallias.

Messrs. James Veitch and Sons, Chelsea, presented some charming varieties of greenhouse rhododendrons, a batch of Nerine Fothergilli major, the lovely old Amaryllis reticulata, and collections of bouvardias and abutilons. This firm had also a large exhibit of choice trees and shrubs, filling the whole side of the hall opposite the entrance. Berried plants were very largely shown, and some of the most attractive of these were Cratægus Lelandi, Symphoricarpus occidentalis, Hippophæ rhamnoides, Eleutherococcus Henryi (with clusters of black fruits), Stanæsia undulata, the bright coral red Berberis Stapfiana, B. Wilsonæ, Cotoneaster bullata, C. acutifolia, C. rugosa Henryi, and Pyrus Veitchi. Other fine things were Libocedrus macrolepis, a graceful conifer; Eleagnus pungens aureo-maculata, bright with golden variegation, Eucalyptus coccifera, the crimson-leaved Nandina domestica, Cupressus macrocarpa lutea, Viburnum rhytidophyllum, Ilex Pernyi, scarlet oaks, silvered ivies, "blue" abies, crimson and purple-leaved vitis, and a host of other good things.

Mr. W. E. Ingwerson, Harewood Road, South Croydon, showed a collection of Michaelmas daisies raised by Mr. E. Ballard, of Colwall; Glory of Colwall, a new large double form; Nancy Ballard, Rosy Morn, Moonlight, and Peggy Ballard were the varieties staged. The first-named attracted a good deal of attention. Messrs. J. Love and Son, Westbury, Bristol, showed a new variegated form of Galega officinalis named Lovei. Maxime Kovalesky is a splendid light scarlet zonal pelargonium, and one well shown by Messrs. H. Cannell and Sons, Swanley, who also displayed the fine late sunflower, Helianthus sparsifolius.

Roses were delightfully shown by Messrs. William Paul and Son, Waltham Cross, the firm using tall bamboo stands as well as the familiar round baskets for the display of their flowers. Varieties of special beauty were Richmond, Lyon, Sulphurea, Pharisaer, Juliet, Florence Haswell Veitch, Liberty, Ophelia, Corallina, and Madame Abel Chatenay. Messrs. Benjamin Cant and Sons, Colchester, exhibited roses finely, as though the fogs and frosts of early autumn counted for nothing. The varieties Hugh Dickson, Lady Hillingdon, Papa Gontier, Irish Elegance, Jessie, St. Helena (very fine), La Tosca, Gustav Nabonnand, Lyon Mrs. W. Christie Miller, and the bright Alexandra Zarizi.

A pretty group of roses came from Messrs. Frank Cant and Co., Braiswick, Colchester, and this firm showed beautiful bunches of Comtesse de Cayla, Lyon, Queen Mab, Madame Jean Dupuy, Frau Karl Druschki, Gustave Regis, Lady Hillingdon, A. R. Goodson, Papa Gontier, and Dorothy Page Roberts. The roses from Messrs. W. and J. Brown, Stamford, were reminiscent of summer time, and the exhibit contained beautiful blooms of Lyon, Liberty, La France, Juliet, Duchess of Wellington, Sunburst, and other fine varieties. Messrs. E. Jackman and Son, Woking, were represented by roses, the best of the autumn bloomers being set up in good bunches; with the roses were Michaelmas daisies, early chrysanthemums, and a finely-berried set of pernettya sprays.

Nerines were well displayed by Mr. Frank Lilley, Guernsey. N. Fothergilli, N. Salmon Queen, and N. Bowdeni were in capital condition. Perpetual carnations were quite largely shown by Messrs. Stuart Low and Co., Bush Hill Park, Enfield, the firm showing Baroness de Brieneri, Mikado, Carola, Frank Galsworthy, Washington, and the new Rosette in good form. The chrysanthemums shown by Messrs. W. Wells and Co., Merstham, contained wonderful blooms of the new Mrs. Lloyd Wigg (A.M.), the single decorative yellow Celia (A.M.), October Gold, Delones, and the huge Frances Joliffe.

Michaelmas daisies were sent by Mr. G. Reuthe, Keston, who also showed Meconopsis integrifolia, Desfontainea spinosa, nerines, etc. Linaria triornithophora, in various colours, was conspicuous in the rockwork display from Mr. Reg. Prichard, West Moors, Wimborne. Messrs. G. and A. Clarke, Dover, had a lovely vase of Cimicifuga simplex, its graceful white tassels of bloom standing out well among Michaelmas daisies, pentstemons, kniphofias, and other autumn flowers.

Dahlias were displayed by Messrs. Dobbie and Co., Rothesay, who confined their attention to collarette varieties, and showed fine, clean blooms of Princess Louise, Queen Anne, Gallia, Goldstein, Prince de Venosa, Joseph Jongon, Victoria, etc. Messrs. W. Fells and Son, Hitchin, were large exhibitors of Michaelmas daisies, heleniums, and solidagos. Large-flowered chrysanthemums, in a great variety of colouring, were staged over ferns by Messrs. J. Peed and Sons, West Norwood; the brilliant golden-yellow variety David Ingamells was very conspicuous. Messrs. Price and Fyfe, Grove Park Nursery, Lee, staged bright chrysanthemums, and showed David Ingamells and Golden Glow in good form.

In the collection of Michaelmas daisies submitted by Mr. H. J. Jones, Ryecroft, Lewisham, we noted Maidenhood, White Swan, Ringdove, Roddy, Chastity, May Crum, and Mrs. T. Hayward as good sorts among the small-flowering, graceful varieties.

A very bright lot of dahlias, chiefly cactus and pæony-flowered varieties, from Mr. J. T. West, Brentwood, gave a fine patch of colour to the show; Brentwood Yellow, Pride of Essex, Harold Peerman were particularly bright yellow sorts, while Firefly, among the "pæonies," was vivid crimson-scarlet. Messrs. T. S. Ware, Lim., Feltham, contributed a goodly set of Michaelmas daisies and early chrysanthemums, but more gay than these were the double and single tuberous begonias arranged on boards; the flowers were very good and the colours beautiful.

Very noble and beautiful were the splendidly healthy specimens of Asplenium nidus avis, from Messrs. J. Hill and Son, Lower Edmonton. There were several dozen large, finely-grown plants in perfect condition.

Over a groundwork of dwarf polyantha roses Mrs. W. Cutbush and Jessie, vases of Mrs. L. Mackinnon, Countess of Lathom, Edna, Miss Winnie Hey, and Goldfinch carnations were staged by Messrs. W. Cutbush and Son, Highgate.

## ORCHID COMMITTEE.

Messrs. Sander and Sons, St. Albans, put up a beautiful and very interesting group of orchids. Cattleyas, lælio-cattleyas and oncidiums were chiefly in evidence. Cattleya Hardyana Royal Sovereign, C. fulvescens, C. Freya, C. Iris, L.-c. Phœnix var. Glory, and Brasso-cattleya Mariæ were all notably good. Smaller thaings were Cirrhopetalum Roxburghi, Saccolabium acutifolium, Pholidota imbricata, and Catesetum Russellianum. Messrs. Stuart Low and Co., Enfield, had a very bright exhibit, in which Oncidium varicosum Rogersi was very gay; Cattleya Iris, C. Gaskelliana Hodgkinsoni, C. Caducia, C. Mrs. Pitt, and the lovely little Sophro-lælia Gratrixæ were all well shown.

Mr. Day, gardener to H. S. Goodson, Esq., Fairlawn, Putney, put up a good exhibit of very choice orchids. Sophro-lælio-cattleya Elissa, with four good blooms in a 60-sized pot; Cattleya Iris King Edward VII., golden-fawn coloured; C. Phœbe, C. fulvescens, and the fine Odontoglossum Nellie Blanches were a few of the best plants. M. Charles Maron, Brunoy, France, submitted Cattleya Fabia alba, and C. Olympia, both very beautiful.

Mr. G. H. Davidson, Borlases, Twyford, exhibited a number of good forms of Cattleya labiata, L.-c. Virginia, and the deep chocolate-red Odontoglossum Eric. Messrs. J. Cypher and Sons, Cheltenham, displayed Cattleya Euphrasia, C. Kelosia, C. Mantini nobilior, Cypripedium Gaston Bulteel, and the fine C. Felicity. Mr. H. Alexander, grower to Sir George Holford, Westonbirt, Gloucester, exhibited fine specimens of Lælio-cattleya Berthe Fournier, Fascinator, and L.-c. Priam, the latter carrying seven grand rosy-lilac flowers.

Catasetum Imperiale, from M. Firmin Lambeau, Brussels, was striking, and Cattleya Mrs. Pitt, Charlesworth's var., from Mr. R. Le Doux, Marefield, West Derby, gained an A.M.; it has a fine golden glow on the rose-coloured lip, and deep reddish-rose sepals and petals. A few choice orchids from Messrs. Charlesworth and Co., Haywards Heath, included Cattleya Fabia alba, C. Colmaniana, Dendrobium Sanderæ, and Stanhopea oculata Shuttleworthi.

From Sir Trevor Lawrence's collection at Burford Lodge, Dorking, came Miltonioda Harwoodi (A.M.), with pink-carmine tinted flowers, and a good plant of Cypripedium Rolfei Peeter's var. Messrs. J. and A. McBean, Cooksbridge, showed a few good odontoglossums, and a richly-coloured form of Odontioda Charlesworthi named Orchid Dene var. (A.M.).

Mr. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, put up a nice group of orchids, composed chiefly of odontoglossums, cattleyas, lælio-cattleyas, miltonias, etc. Cattleya Undine, C. intermedia, C. Fabia, C. Mantini, and C. Iris were well represented. Cattleya Harrisiana (C. Fabia alba x C. Frau Melanie Beyrodt), F.C.C., with white sepals and petals, and a gold-veined purple lip, was shown by Mr. C. J. Phillips. M. Maurice Mertens, Ghent; Mr. F. H. Godman, Mr. R. G Thwaites, and others also contributed orchids.

## FRUIT AND VEGETABLE COMMITTEE.

A wonderfully fine exhibit of a hundred and eighty varieties of apples and about forty varieties of pears, was staged by Messrs. James Veitch and Sons, Chelsea. The fruits were in splendid condition, clean, bright, full-sized, and in quantity, almost every variety being represented by a heaped-up basket of splendid fruits. The apples were grand and the variety Rev. W. Wilks was unusually fine. First-rate sorts that attracted special attention were Cox's Orange Pippin, Golden Noble, Beauty of Stoke, Emperor Alexander, Peasgood's Nonsuch, Bramley's Seedling, Newton Wonder, Ribston Pippin, Chelmsford Wonder, Annie Elizabeth, Lane's Prince Albert, Bismarck, Rival, Allington Pippin, Lord Derby, Schoolmaster, Washington, Charles Ross, Blenheim Pippin, Cox's Pomona, Dumelow's Seedling, Bow Hill Pippin, Margil, Mother Apple, Baxter's Pearman, and a grand dish of Lamb Abbey Pearmain. Standards of Cratægas Aronia, C. punctata, and C. orientalis, smothered in fruits, were placed down the centre of the long table. In our estimation this was the finest exhibit of fruits that the Chelsea firm has ever staged, and that is saying a good deal.

The Barnham Nurseries, Lim., Barnham, Sussex, exhibited a particularly brilliant exhibit of fine apples, all staged in baskets and decked with autumn foliage Gascoigne's Scarlet, Coronation, Barnack Beauty, Rival, Charles Ross, Peasgood's, Paroquet, Cox's Pomona, etc., were all most vividly coloured, and large examples.

Mr. Staward, gardener to Lady Cowper, Panshanger, Hertford, exhibited a very fine collection of well-grown onions, showing a great variation in size, shape, and colour; Ringleader, Ailsa Craig, Webb's Coronation, Brown Globe, Giant Rocca, Webb's Surprise, Cocoanut, Red Globe Tripoli, and Deptford were among the most notable varieties.

Mr. Thomas Smith, gardener to the Marquis of Ripon, Coombe Court Gardens, Kingston Hill, exhibited about fifty dishes of good apples and pears.

## CERTIFICATES AND AWARDS.

First Class Certificate.—To Cattleya Harrisiana, from Mr. C. J. Phillips, The Glebe, Sevenoaks.

Award of Merit.—To Pyrus Veitchiana, to Cotoneaster bullata, and to Berberis Stapfiana, from Messrs. James Veitch and Sons, Chelsea; to Chrysanthemum Mrs. Lloyd Wigg, from Messrs. Wells and Co., Merstham; to Chrysanthemum Celia, from Messrs. Cragg, Harrison, and Cragg, Hounslow, and Messrs. W. Wells and Co., Merstham; to Cotoneaster Zabeli, and to C. salicifolia rugosa, from the Hon. Vicary Gibbs (gardener, Mr. E. Becket, V.M.H.), Aldenham House, Elstree; to Adiantum cuneatum micropinnulum, from Messrs. H. B. May and Sons, Edmonton; to Cattleya Hardyana Herbert Goodson, from H. S. Goodson, Esq., Putney; to Miltonioda Harwoodi, from Sir Trevor Lawrence, Bart., Barford Lodge, Dorking; to Odontioda Charlesworthi Orchid Dene var., from Messrs. J. and A. McBean, Cooksbridge; to Cattleya Mrs. Pitt Charlesworth's var., from Mr. R. Le Doux, Marefield, West Derby, Liverpool.

## MEDALS.

Gold.—To Messrs. James Veitch and Sons, Chelsea, for fruits; and one to the same firm also for trees and shrubs.

Silver Gilt Knightian.—To the Barnham Nurseries, Barnham, for fruit.

Silver Gilt Flora.—To Messrs. Sander and Sons, St. Albans, for orchids.

Silver Gilt Banksian.—To the Marquis of Ripon (gardener, Mr. Thomas Smith), Coombe Court, Kingston Hill, for apples; to Lady Cowper (gardener, Mr. Staward), for onions.

Silver Flora.—To Messrs. Stuart Low and Co., Enfield, for orchids; to H. T. Pitt, Esq. (gardener, Mr. Thurgood), Stamford Hill, for orchids; to H. S. Goodson, Esq. (gardener, Mr. G. Day), Fairlawn, Putney, for orchids; to Mr. E. H. Davidson, Borlases, Twyford, for orchids; to Mr. James Box, Lindfield, for hardy flowers; to Messrs. W. and J. Brown, Stamford, for roses; to Messrs. B. R. Cant and Sons, Colchester, for roses; to Messrs. William Cutbush and Son, Highgate, for roses and carnations; to Messrs. J. Hill and Son, Lower Edmonton, for a group of Asplenium nidus-avis; to Mr. L. R. Russell, Richmond, for bamboos.

Silver Banksian.—To Messrs. Barr and Sons, Covent Garden, for hardy flowers; to Messrs. Frank Cant and Co., Colchester, for roses; to Messrs. Dobbie and Co., Edinburgh, for dahlias; to Messrs. G. Jackman and Son, Woking, for hardy flowers; to Mr. H. J. Jones, Lewisham, for Michaelmas daisies and chrysanthemums; to Mr. Frank Lilley, Guernsey, for nerines; to Messrs. Stuart Low and Co., Enfield, for carnations; to Messrs. H. B. May and Sons, Edmonton, for ferns; to Messrs. William Paul and Son, Waltham Cross, for roses; to Messrs. T. S. Ware, Lim., Feltham, for hardy flowers; to Messrs. W. Wells and Co., Merstham, for chrysanthemums; to Mr. J. T. West, Brentwood, for dahlias; to Mr. H. Woodgate, Worcester Park, for apples; to Messrs. James Cypher and Sons, Cheltenham, for orchids.

Bronze Banksian.—To Messrs. T. Cannell and Sons, Swanley, for pelargoniums.

## SCIENTIFIC COMMITTEE.—September 24.

Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Dr. A. B. Rendle, M.A., F.R.S., Messrs. R. A. Rolfe, J. Fraser, W. Hales, R. H. Curtis, A. W. Hill, J. G. Wilson, J. O'Brien, and F. J. Chittenden (hon. secretary).

LILIUM CANDIDUM DOUBLE.—Mr. Bowles exhibited a remarkably vigorous specimen of the double form of Lilium candidum.

GALL ON WILLOW.—Mr. J. Fraser showed a rather small example of the gall on Salix fragilis produced by the mite Eriophytes salicis, collected on the bank of the Brent, near Ealing. Mr. W. Marshall, V.M.H., also sent an example of this gall collected on the bank of the Dart, Kent. It is only a few years since the first specimen recorded as British was shown before this committee, but several specimens have since been received from various parts of South-East and East England.

"WHEAT-EAR" SWEET WILLIAM.—Mr. J. Fraser also showed a specimen of Sweet William with the bracts multiplied as in the "Wheat-ear" carnation.

CIRRHOPETALUM MINIATUM.—Mr. Rolfe drew attention to a Cirrhopetalum exhibited by Messrs. Sander and Sons, St. Albans, as having been introduced from Annam with Dendrobium Bronckarti. It strongly recalled C. gracillimum, Rolfe, especially in its caudate, almost thread-like lateral sepals, and in the strongly ciliate dorsal sepal and petals, but differed in having vermilion-coloured flowers, with the hairs of the dorsal sepal and petals yellow. His first knowledge of the plant was in September, 1910, when it was sent to Kew for determination from the Royal Botanic Garden, Glasnevin, with the information that it had been purchased from Messrs. Sander and Sons as a plant imported with Dendrobium Bronckarti. It was then named and described as Cirrhopetalum miniatum, Rolfe. Afterwards a painting was received from M. Maurice Valcke, a collector for Messrs. T. Pauwels and Co., Meirelbeke, Belgium, who stated that he met with the species at Haut Laos, between Siam and Cochin China.

ERICA CINEREA MALFORMED.—Mr. A. W. Hill showed a specimen of Erica cinerea malformed in the same way as those exhibited by Dr. Rendle on a previous occasion, this time from wild plants collected in South Devon.

GREEN-BERRIED ELDER.—Mr. J. Bennett Poë sent specimens of the albino form of the elder in which the ripe fruits are greenish (as in white grapes). Some members of the committee thought them sweeter than the black form.

ARISTOLOCHIA CLEMATITIS FRUITING.—Mr. Bowles showed fruits of Aristolochia clematitis from his garden at Myddelton House, Waltham Cross, containing ripe seeds.

FRUIT OF PYRUS NIEDWETZKYANA.—He also showed, on behalf of Canon Ellacombe, fruits of Pyrus Niedwetzkyana, in which the flesh is deeply coloured, as are all parts of the tree.

VERBASCUM WITH GALLS.—He also showed the curious proliferations which are sometimes noticed at the base of verbascums, and have previously been shown before the committee, but which were, in the present examples, growing some distance up the stem.

ALBINO FORMS OF GERANIUM ROBERTIANUM.—Mr. Bowles also showed the two albino forms of Geranium Robertianum, one with a red stem, the other with a green, which have maintained themselves for a long time in his garden. Almost all the plants of the latter form appear to be traceable to one or two sources, and the committee would be glad to hear of its occurrence in a wild state.

HELENIUM CUPREUM VIRESCENT.—Mr. J. Hudson sent a specimen of a virescent and proliferous form of Helenium cupreum from the gardens of Gunnersbury House.

ALPINE PLANTS ATTACKED BY DODDER.—Miss Willmott, V.M.H., sent an interesting series of alpine plants attacked by a species of dodder, including Sedum album, S. elongatum, Daphne alpina, a mossy Saxifrage, Thymus serpyllum, Campanula rotundifolia, Thalictrum minus, Phlox subulata, and Dianthus deltoides.

"REVERSION" IN BLACK CURRANTS.—Mr. E. A. Bunyard sent an interesting series of specimens illustrating his idea that the "reversion" to which the attention of the committee was recently directed was the result of the development of lateral branches after injury to the terminal bud. Among the specimens sent (which did not appear to be all of one variety) were shoots showing mechanical injury, shoots probably injured by the shoot-cutting weevil, and shoots injured by "big bud," all exhibiting the reverted foliage, with normal shoots for comparison. The hypothesis, the committee considered, hardly accounted for the persistence of the "reversion," so that whole bushes were affected season after season.

PLANTS DISEASED, ETC.—Numerous specimens of diseased plants and plants injured by hail were also exhibited.

## Reading Gardeners' Association.

The first autumn meeting of this society took place in the Abbey Hall on Monday last, when Mr. F. G. Drew (chairman of committee) presided over a large assembly of members. The lecturer for the evening was Mr. W. Camm, of the Gardens, Cliveden, Taplow, and his subject was "Common Sense in the Cultivation of the Apple." He said that his system, or, as some might think it, lack of system, in the cultivation of apples was adopted by him some years ago when taking his first complete charge at Battle. He had seen too often in many gardens methods generally pursued that only resulted in a crop of "flower stakes" each year. His idea was to strike out a line of his own which would produce crops of fruit instead, although, perhaps, his trees were less trim than those of his neighbours. The latter scoffed when he first started, but when he began to beat them on the exhibition stage, they altered their minds, thinking that there was something in the system. He pointed out that the rule of thumb method of pruning lateral shoots to the orthodox two eyes had to give way to a system, the practice of which was based on the natural habit of the tree, its method of fruit bud production and its general environment. Before it was possible to decide as to the best system to apply to any particular tree these points had to be observed.

Mr. Camm exhibited shoots of different varieties of apples, showing how in some varieties fruit buds were produced freely on the current year's wood in a manner resembling the peach, with others fruit buds were formed chiefly on short stubby spurs along the sides of the unshortened shoots of the previous year. He pointed out how any material cutting back of these shoots induced growth instead of fruit bud formation. Shoots of other kinds typical of a number of our best apples were also shown where the fruit buds were largely produced at the termination of short lateral growths. Any shortening of these removed the greater part of the crop. Mr. Camm advocated a system of thinning rather than pruning, and stated that, although fruit buds might be formed on old spurs, the fruit was rarely equal to that produced on young straight growth in which there was no interruption to the flow of sap. The old gnarled spurs had the disadvantage of harbouring the eggs of insect pests and the spores of fungi to a degree impossible on young wood.

The lecturer was careful to point out that his method of pruning and thinning applied to developed trees, and not to trees in the adolescent stage, whose chief business it was to grow, not to produce fruit, with which more severe methods of pruning were necessary in order to form a framework on which the fruiting wood was to be borne.

A question with reference to summer pruning elicited the answer that the lecturer had neither time for it nor any faith in the practice. It might answer a useful purpose on young trees in a warm, dry soil. On older trees and heavy land it was generally detrimental.

A collection of single dahlias (from seed) was staged by Mr. H. C. Loader, The Gardens, Erlegh Park, who also exhibited vases of magnificent asters, Sutton's Shell Pink. Ten new members were elected.

## Croydon Gardeners' Society.

The keen interest exhibited towards this society by its honorary members was exemplified on Tuesday last, when Mr. A. R. Dickinson, Rydal Mount, Croydon, a vice-president of the society, provided a capital lecture on the use of artificial fertilisers for flower, fruit, and vegetable culture. The bad weather was the cause of a smaller attendance of members than would otherwise have been the case, but those who braved the elements were well repaid with what they heard.

The lecturer, Mr. H. H. B. Shepherd, F.I.C., F.C.S., was followed throughout his discourse with appreciative interest. Illustrated with lantern slides, a thorough grip of the subject was obtained. The forethought of Mr. Dickinson in having printed copies of the lecture to distribute among the audience was a distinct advantage, as quiet study could be given to the details raised, enabling each one to grasp technicalities accruing from a lecture of this description.

Time would not permit a lengthy discussion, but Mr. Shepnerd's kind invitation to all to send written questions to him when he will answer them in similar form was very acceptable, and a subsequent meeting of the society will provide the means of hearing both questions and answers.

The members were unanimous in expressing their warmest thanks to Mr. Dickinson, and to the lecturer, before their departure.

The room was decked with exhibits of different kinds. Mr. T. W. Hayden contributed a collection of Michaelmas daisies; Mr. A. Edwards had a similar exhibit, with the addition of vases of outdoor chrysanthemums; Mr. M. E. Mills showed a big collection of Michaelmas daisies; Mr. W. G. Graves staged a brace of vegetable marrows; and Mr. E. Mann put up a dish of Autocrat peas and a dish of Blenheim Orange apples.

## Bournemouth Gardeners' Association.

A very good display of vegetables, fruits, and plants was staged at the last meeting of the members of this association. There were competitive classes in addition to the usual ones for the "points prizes." For three kinds of vegetables, the President, J. R. Ralph Smythe, Esq., was awarded the first prize. He had very fine cauliflowers, large runner beans, and good beet. Mr. Lansley was a close second with perfect onions, plump Brussels sprouts, and fairly well filled peas. Third honours went to Mr. B. Marlow, who had a nice even lot of potatoes, Brussels sprouts, and onions. Mr. E. G. Cox staged the best three dishes of fruit—Alicante grapes, Pitmaston Duchess pears, and large, well-coloured Peasgood's Nonsuch apples. Mr. G. H. Heath was second with Black Hamburgh grapes, Pitmaston Duchess pears, and striped Beefing apples.

In competition for the "points prizes," Mr. Heath had a beautifully-grown coleus; Mr. Evans, a finely-coloured croton; Mr. Pearce, three lovely ferns; and Mr. Pavey, large sticks of celery.

Mr. E. T. King, of Higham Gardens, Bournemouth, gave a very interesting lecture on "Vegetables: How They should be Prepared for Table." He is a strict vegetarian, and advocated the eating of both vegetables and fruit in their proper seasons, and retaining the skins as much as possible, all being first thoroughly cleansed from any contaminating matter. Instead of boiling, steaming was recommended; and instead of slicing up vegetables, he said they ought to be cooked whole, as then the nourishment and distinctive flavour of each would be retained. A vegetable stew for one person, said the lecturer, should consist of four kinds of vegetables and four ounces of each kind, with pearl barley added.

A free discussion followed, and Mr. King replied to many questions. Both the lecturer and Mr. Smith, the chairman, were accorded hearty thanks at the close of the meeting.

### Woolton Mutual Improvement Society.

The winter's work of this society commenced on the 1st inst., when the secretary, Mr. R. G. Waterman, gave an excellent account of the Royal International Horticultural Exhibition of 1912. The lecturer having held the responsible positions of county secretary for Lancashire, and member of the jury, had opportunities of submitting details that proved interesting and instructive. The lecture was much appreciated, both by those who visited the great show, and those who were unable to do so. A discussion followed in which visitors emphasised and enlarged upon the information of the essayist. A hearty vote of thanks was accorded to Mr. Cromwell, who occupied the chair, and to Mr. Waterman.

### Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 1st inst. Mr. Massie, the president, was in the chair, and there was an attendance of 105 members. The Secretary, Mr. A. D. Richardson, gave a lecture, illustrated by a large number of lantern slides, on "Edinburgh's Park and other Trees." He pointed out that, though Edinburgh was very much behind some of the other cities in the United Kingdom as regards street planting, there was a very considerable variety of trees which grew well in the city, and, even in the most central parts, many good specimens occurred in the parks and gardens. Some of the pyruses, such as P. intermedia, P. aria, P. pinnatifida, and P. rotundifolia did well, and thorns and laburnums also withstood the smoke-polluted atmosphere very well. But the tree which succeeded best in the city was Platanus acerifolia, the so-called "London" plane, though, owing apparently to some unintelligible prejudice against its use as such, it had been very little planted as a street tree. Amongst the old trees, the ash, elm, beech, sycamore, and lime were the principal species, and there were still some fine specimens of the oldest of them. The beech was gradually disappearing, however, and it would never be replaced by the same kind of tree. Curiously enough, many of the oldest elms were not the Scotch species (Ulmus montana), but the English elm (U. campestris) and forms of it, and young trees of the latter species were thriving well. Amongst the soft-wooded, broad-leaved trees, the White or Huntingdon willow (Salix alba) gave most promise of becoming a good tree, and the white poplar (Populus alba) seemed to deserve more attention than it got. On the motion of Mr. Todd, the secretary received a very hearty vote of thanks.

The President gave a short but interesting account of a visit to Normandy last month. The agriculture there, he said, was very similar to our own, excepting that a considerable area was devoted to the cultivation of buckwheat and Indian corn for fodder. The methods of cultivation, however, were very primitive as compared with ours.

The exhibits were: New collarette, cactus, pompon, dwarf bedding, pæony-flowered and double fancy dahlias, and early-flowering chrysanthemum Cynthia, exhibited by Messrs. Dobbie and Co. Each of the following was awarded a certificate of merit: Collarette dahlia Princess Louise, pæony-flowered dahlia Kakadee, dwarf bedding cactus dahlia Marianee, and chrysanthemum Cynthia. New Michaelmas daisies Glory of Colwall and Nancy Ballard, exhibited by Mr. Ernest Ballard, The Court, Colwall, Herefordshire, were each awarded a first-class certificate. Kniphofia Marie Dickson, exhibited by Messrs. Dicksons and Co., Edinburgh (awarded a certificate of merit); large collection of sprays of foliage (many with fruit) of hardy trees and shrubs, exhibited by Mr. D. W. Thomson, Edinburgh (highly commended). Mr. Thomson also showed some fine spikes of pentstemon Mrs. F. Fulford. The President exhibited magnificent fruits of Pitmaston Duchess pears, each fruit weighing about 1½lb., and Messrs. Todd and Co. showed a fine vase of Michaelmas daisy, Beauty of Colwall.

At the meeting on November 5 Messrs. A. Eddington, F.J.I., and James Hay, F.R.P.S., will give papers on Villa Gardening and Window Gardening respectively.

### Bolton Horticultural Society.

The winter session of this society opened on the 3rd inst. at the Spinners' Hall, Bolton, by Mr. R. G. Waterman, the Woolton secretary, who gave his "Impressions of the Royal International Exhibition of 1912." Mr. H. Shone was voted to the chair in the unavoidable absence of the chairman, Mr. R. Smith. There was a fair attendance, and the lecture was thoroughly enjoyed.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.
Height above Sea-level, 150 feet.

| Date. 1912. September 29 to October 5. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | Temperature of the Air. At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Sept. 29—Sunday | 3 54 | 54 | 53 | 60 | 51 |
| ,, 30—Monday | 0 54 | 55 | 55 | 63 | 51 |
| Oct. 1—Tuesday | 5 12 | 52 | 51 | 61 | 46 |
| ,, 2—Wednesday | — | 46 | 46 | 48 | 46 |
| ,, 3—Thursday | 7 48 | 42 | 40 | 50 | 33 |
| ,, 4—Friday | 7 42 | 39 | 39 | 52 | 30 |
| ,, 5—Saturday | 7 6 | 33 | 32 | 56 | 28 |
| Means | (total) 32 36 | 46 | 45 | 56 | 41 |

| Date. 1912. September 29 to October 5. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Sept. 29—Sunday | 1·58 | 53 | 53 | 55 | 45 |
| ,, 30—Monday | 1·10 | 54 | 54 | 55 | 50 |
| Oct. 1—Tuesday | 0·56 | 55 | 54 | 55 | 42 |
| ,, 2—Wednesday | 0·08 | 55 | 54 | 55 | 46 |
| ,, 3—Thursday | — | 51 | 53 | 55 | 25 |
| ,, 4—Friday | — | 49 | 52 | 55 | 24 |
| ,, 5—Saturday | — | 48 | 51 | 54 | 25 |
| Means | (total) 3·32 | 52 | 53 | 55 | 36 |

## CATALOGUES RECEIVED.

MESSRS. H. CANNELL AND SONS, SWANLEY, KENT.—In the autumn catalogue recently issued from the "Home of Flowers" will be found carefully-prepared lists of the finest of the bulbs in general cultivation, with short lists of greenhouse plants, etc.

MESSRS. DICKSONS, CHESTER.—The catalogue of bulbous plants issued by this firm is remarkable for its comprehensive character, the admirable descriptions of the varieties of the various kinds, and the clear, yet concise, information relating to their cultivation.

MR. A. F. UPSTONE, CHURCH STREET, ROTHERHAM.—A short and well-prepared list of bulbous flowers.

P. BERNAIX FILS, VILLEURBAUNE, LYONS.—A useful and freely-descriptive list of roses, new and old. In every cases the size and form of the flowers is indicated.

CHRISTOPHER BOURNE, BLETCHLEY.—In addition to his daffodil list Mr. Bourne has issued a neat little catalogue of tulips, hyacinths, etc., containing useful cultural hints.

JAMES MURRAY AND SONS, DEPTFORD.—In this bulb list the collections of hyacinths and tulips offered are especially extensive.

MESSRS. J. CARTER AND CO., RAYNES PARK, S.W.—The catalogue of bulbs that is being issued from Raynes Park is comprehensive in scope, admirably arranged, and attractively illustrated.

GEORGE PRINCE, LONGWORTH, BERKS.—An important catalogue of roses, illustrated and briefly descriptive.

H. A. ELLISON, WEST BROMWICH.—A catalogue of bulbs, seeds for autumn sowing, ferns, etc. Bulbs are sent on approval if necessary.

F. C. HEINEMAN, ERFURT.—An illustrated list of seed novelties for 1913.

J. R. PEARSON AND SONS, LOWDHAM, NOTTS.—An admirable and descriptive catalogue devoted to fruits and roses, subjects the firm specialises in.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

DISEASED CARNATIONS.—O. R.: Would you please inform me, through the "G.M.," what is amiss with the carnations I am sending? I have not seen the disease before, but have recently purchased a new variety, and found it was similarly affected. What must I do to cure the disease? An early answer will oblige one of your oldest readers.—The carnations are suffering from debility and disease, which came first we cannot say, probably the former. Cuttings and layers should never be taken from plants that show the least signs of disease, or which are not first-class as regards robustness and freedom of flowering. A weak plant and a weak cutting are predisposed to disease. Layering was not commenced sufficiently early to produce the best results. Young plants like those sent will never become good specimens, and should be burned at once. Others, with only slight signs of disease, should be sprayed with a solution of sulphide of potassium after all the rusty and badly marked leaves have been cut away, and burned. If the plants are to be kept in frames during the winter, stand them on a well-drained base, well apart, and so ventilate the frame that an ample circulation of air can be provided among them. Ventilation over the tops of the plants is not sufficient. Water sparingly, and when it is necessary to give water apply it early on fine days.

CONSTRUCTION OF COW HOUSES.—C. G. G., Minehead: Some time ago a correspondent asked for information concerning the erection of cow-houses, and I believe you referred him to a government publication. I cannot find the answer, so perhaps you will be good enough to say where I can get the needed information.—Apply to the Secretary of the Board of Agriculture, 4, Whitehall Place, London, S.W., for Leaflet No. 241, dealing with "The Construction of Cow Houses." You need not stamp the letter or enclose any sum for the pamphlet.

HORTICULTURAL LECTURES AND LANTERN SLIDES.—R. D., Templecombe: A question frequently asked in connection with gardeners' associations is: Where can lantern slides be obtained for illustrating horticultural lectures? If you could say where such slides can be purchased or hired at a moderate rate you would, I am sure, be helping many of your readers.—Those qualified to lecture on horticultural subjects and who are in some demand as a consequence, usually provide their own lantern slides. A good set of slides illustrating any given branch of horticultural study or activity is generally accumulated in the course of many years, the slides being made from photographs of suitable subjects that come under the notice of the lecturer. We have in mind a popular lecture that is illustrated by about eighty slides. Some of these slides were made about a score of years ago, but rarely does a year pass without the addition

WEST'S PATENT GARDEN SUNDRIES have been invented during 30 years of practical experience. By better cultivation, and pleasure by which gardens are kept in order, their expense is doubly repaid. Samples and Illustrated Catalogue free. C. E. WEST, Higham Hill, London, N.E.

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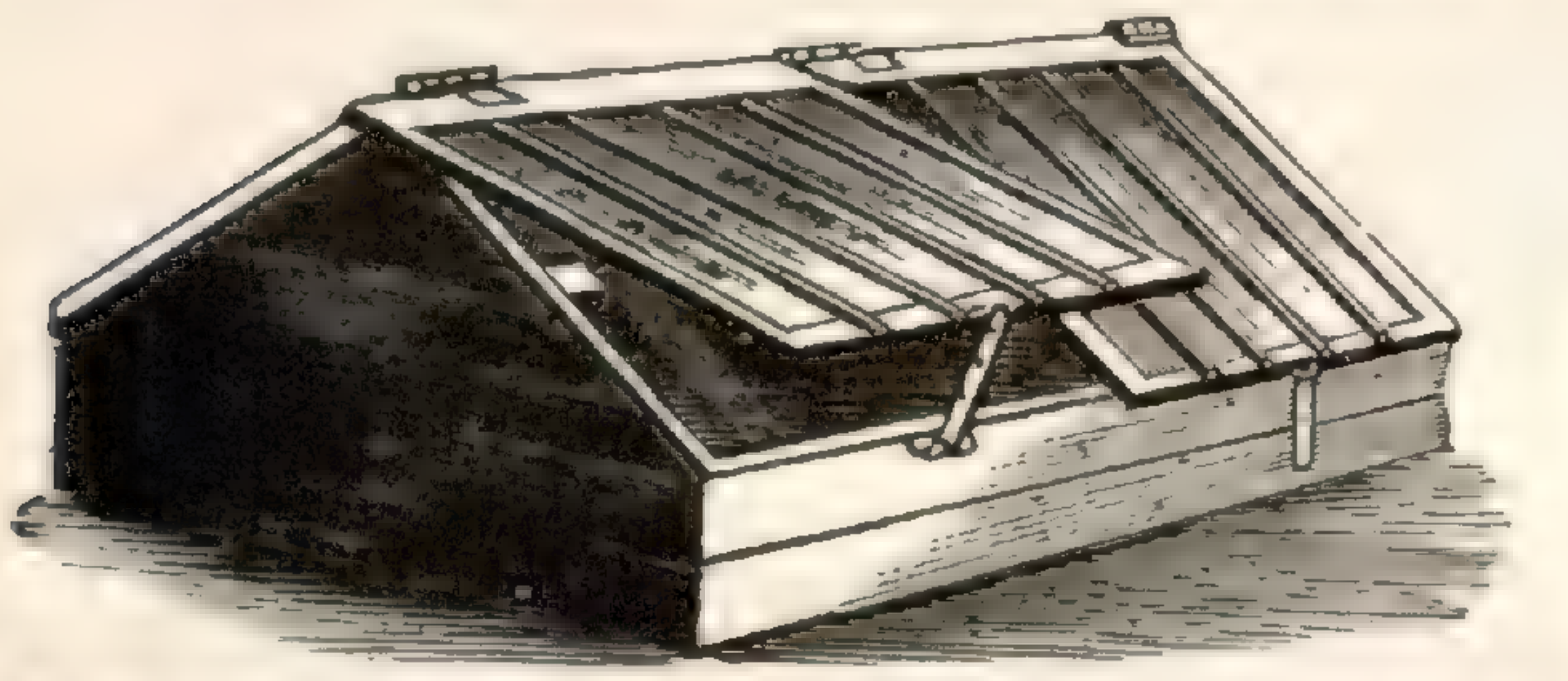

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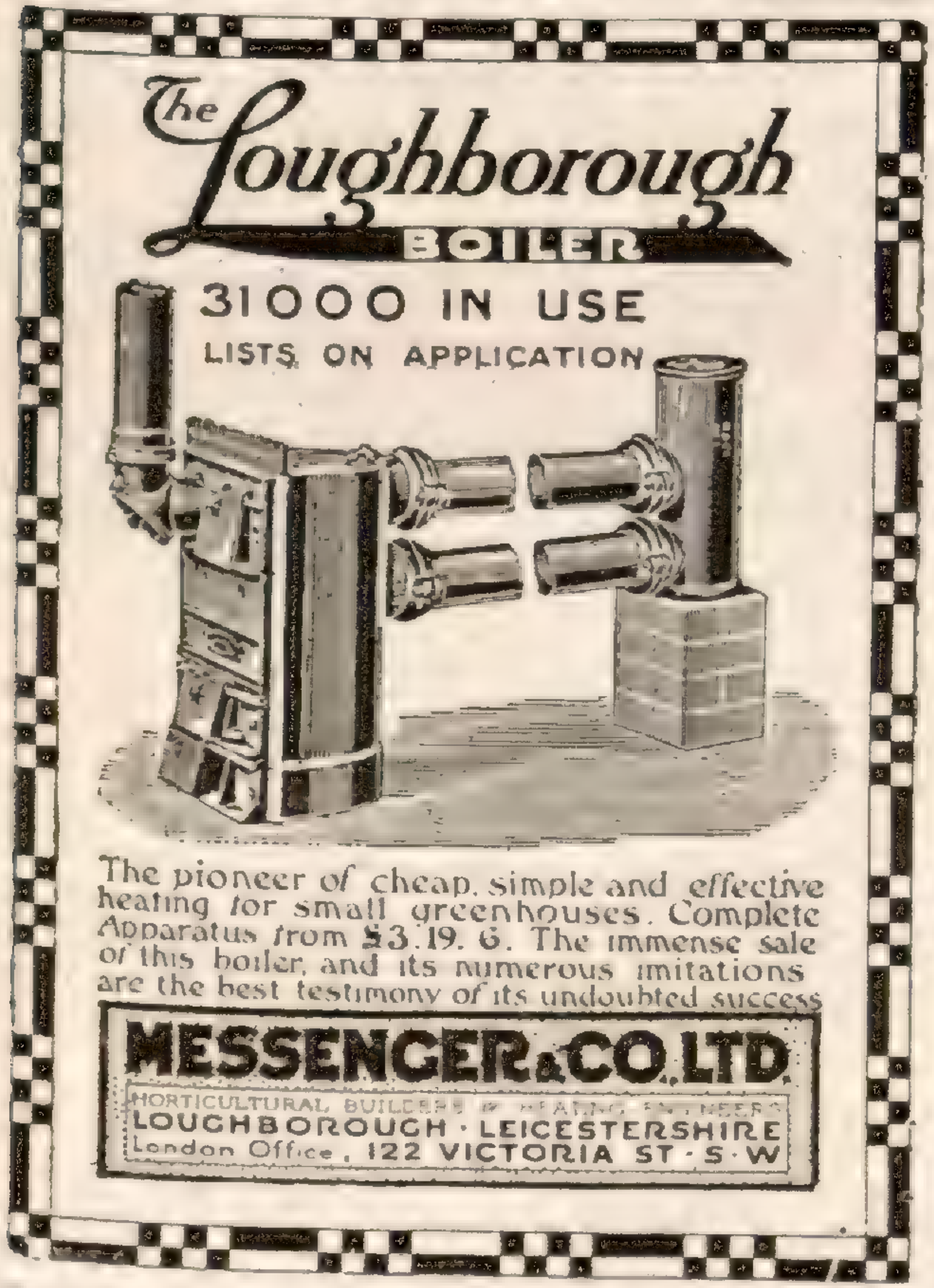

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of new slides and the elimination of old or out-of-date ones. All this means time and expense, and such a set could not be either hired or purchased. There is not, so far as we know, any firm that supplies sets of slides of this character, but the Royal Horticultural Society has a set of printed lectures, some with lantern slides, and these are available for circulation at a small fee among societies affiliated with the R.H.S. You may obtain full particulars on application to the secretary, R.H.S., Vincent Square, Westminster, S.W., but we may say that the chief of these lectures, with lantern slides, are "Annual Flowers," "Apple Culture," "British Wild Flowers in the Garden," "Early-flowering Chrysanthemums," "Commoner Birds of our Gardens; their Habits and Food," "Flowering Trees and Shrubs," "Gardens by the Lake of Como," "Hardy Nymphæas," "Plants for Terrace Gardening," "Plants in Congenial Positions," "Royal Horticultural Society," "Some Beautiful Shrubs," "Spices," and "The R.H.S. Wisley Garden."

HARDY CYPRIPEDIUMS.—R. E. N., Sherborne: Kindly tell me whether you think hardy cypripediums would be a success in this district; and, if so, the kind of soil that would best suit them, and the kinds to plant.—Given a sheltered position, moist, but not stagnant, and soil composed of loam, mixed with plenty of leaf-mould and peat, most of the hardy cypripediums should do very well with you. Partial shade is desirable. Good kinds to grow are Cypripedium acaule, C. arietinum, C. Calceolus, C. candidum, C. guttatum, C. japonicum, C. macranthum, C. parviflorum, C. pubescens, and C. spectabile. The last-named is one of the finest of the set. All should be planted in little colonies, and the present month is a capital time for planting.

SPIGELIA MARYLANDICA.—M. A. S., Glamorgan: We have plenty of peaty, boggy soil, where heaths, rhododendrons, and the like grow freely, and it has been suggested that we should grow Spigelia marylandica in quantity in semi-shady, moist places. Will you please tell me what kind of plant this is, whether you think our soil would suit it, and how it can be propagated?—Spigelia marylandica is a pretty herbaceous perennial that thrives in moist, peaty soil, and should be quite at home in your garden. It hails from North America, as its name suggests, and it grows about a foot high, sometimes reaching eighteen inches, and sometimes being less than a foot, according to variety and conditions. The angular stems, produced in dense tufts, are clothed with stalkless leaves, and carry spikes of bright flowers. The latter are about 1½ inches long, red outside, yellow within. Spigelia marylandica belongs to the order Loganiaceæ, that includes the well-known Buddleias. It is propagated by division in spring, and flowers in the summer. There are many species of Spigelia, but S. marylandica is the only one of any value for cultivation out of doors.

## NAMES OF PLANTS.

Under this heading we can only undertake to name species and well-marked varieties of plants, and not florists' flowers. Specimens should be packed in stout boxes with damp (not wet) moss, or some leaves, as packing material, to ensure their reaching us in a fresh state. It is essential that flowers must accompany specimens of flowering plants, that fern fronds be fertile, and that numbers be firmly attached to the specimens so that they can be seen without any untying. We cannot promise to name more than six specimens at one time from any one correspondent.

S. S., Chelmsford.—Centranthus ruber.

S. F. W., Chislehurst.—1, Cattleya labiata; 2, C. Harrisonæ.

J. J., Alnwick.—1, Statice spathulata; 2, Silphium perfoliatum.

C. W. H., Stafford.—1, Cimicifuga simplex; 2, Tilia platyphylla.

A. B. N., Bideford.—1, Plumbago rosea; 2, Erythrina crista-galli; 3, send again.

R. L. J., Steventon.—1, Silene pendula; 2, Thuia gigantea; 3, Laurus nobilis; 4, Quercus Suber.

M. S., Haslemere.—1, Buxus sempervirens myrtifolia; 2, Empetrum nigrum; 3, Cotoneaster horizontalis.

H. R. C., Derby.—1, Solidago canadensis; 2, Senecio pulcher; 3, Aster diffusus horizontalis; 4, A. multiflorus.

H. A. R., Wimbledon.—1, Cestrum elegans; 2, Exacum affine; 3, Ardisia crenulata; 4, Hippeastrum aulicum.

## NAMES OF FRUITS.

When sending fruits for naming, will our readers be good enough to send good specimens, as without these it is not possible to accurately determine the varieties. Pack firmly, using light tin or wood boxes, and send not more than six varieties at once. Label each specimen and enclose letter with the fruit, whether a separate notification is sent or not. Address the packages to the Editor, GARDENERS' MAGAZINE, as advised in the notice at the head of "Answers to Correspondents."

J. R. D., St. Albans.—Peasgood's Nonsuch.

M. M., Faringdon.—1, Catillac; 2, Beurre Rance; 3, Beurre Bosc.

S. E. B., Hellifield.—1, Yellow Ingestrie; 2, Hawthornden; 3, Emperor Alexander.

L. E. A., Lewisham.—1, Summer Pearmain; 2, Yorkshire Greening; 3, Golden Noble.

L. P. A., Folkestone.—1, Adams' Pearmain; 2, Durondeau; 3, Beurre Diel; 4, Sturmer Pippin; 5, Lane's Prince Albert.

SCHOOLMASTER, Bucks.—The seedling apple does not possess merits likely to place it ahead of, or even on an equality with, other apples already on the market. We expect your variety is a seedling from King of the Pippins, as the peculiar flavour of the latter can be detected in it. The fruits are not attractive, nor is the flavour likely to commend the variety.

## FORTHCOMING ENGAGEMENTS.

MONDAY, October 14.—United Horticultural Benefit and Provident Society.

WEDNESDAY, October 16.—North of England Horticultural Society; Meeting at Leeds; Lecture on "Apple Culture," to be delivered by the Rev. J. Bernard Hall.

THURSDAY, October 17.—National Sweet Pea Society, Annual Meeting at Hotel Windsor, at 2.30 p.m., to be followed by a Dinner at 6 p.m., and a Conference at 7 p.m.

MONDAY, October 21.—National Chrysanthemum mum Society; Floral Committee meeting at Essex Hall, Strand, at 3 p.m.

TUESDAY, October 22.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "The Senses of Plants," by the Rev. Professor G. Henslow, V.M.H.; Scientific Committee at 4 o'clock.

WEDNESDAY, October 23.—Hereford Fruit and Chrysanthemum Show; two days.

TUESDAY, October 29.—National Chrysanthemum Society's Exhibition at the Crystal Palace; three days.

WEDNESDAY, October 30.—Kent County Chrysanthemum Show; two days.

Croydon Chrysanthemum Show; two days.

THURSDAY, October 31.—Torquay Chrysanthemum Show.

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# MARKETS.

## COVENT GARDEN.

### Flowers.

Frosty nights have practically put an end to outdoor flowers. The demand is steady, and prices are firmer.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Arums | per doz. | 3 0 | to | 3 6 |
| Adiantum cuneatum | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 0 8 | | 2 0 |
| ,, | per doz. bun. | 6 0 | | 12 0 |
| ,, Malmaison | per doz. | 8 0 | | 15 0 |
| Cattleyas | per doz. | 9 0 | | 15 0 |
| Chrysanthemums | per doz. bun. | 3 0 | | 6 0 |
| ,, | per doz. blooms | 1 0 | | 3 6 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 2 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz. | 2 0 | | 2 6 |
| Gladiolus | per doz. | 2 0 | | 4 0 |
| Gypsophila | per doz. bun. | 2 0 | | 3 0 |
| Lapageria | per doz. | 1 6 | | 2 6 |
| Lilium auratum | per bun. | 2 0 | | 3 6 |
| ,, speciosum | per doz. | 1 0 | | 2 6 |
| ,, longiflorum | per doz. | 1 6 | | 2 6 |
| Lily of the Valley | per doz. bun. | 10 0 | | 18 0 |
| Marguerites | per doz. bun. | 1 0 | | 4 0 |
| Mignonette | per doz. bun. | 3 0 | | 5 0 |
| Montbretias | per doz. bun. | 4 0 | | 5 0 |
| Odontoglossums | per doz. blms. | 2 6 | | 4 0 |
| Pelargoniums | per doz. bun. | 2 0 | | 6 0 |
| Physalis | per doz. bun. | 5 0 | | 6 0 |
| Roses | per doz. | 1 0 | | 5 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Statice | per doz. bun. | 2 0 | | 2 6 |
| Stephanotis | per 6 doz. blms. | 2 6 | | 3 0 |
| Tuberoses | per doz. | 0 6 | | 0 9 |
| Violas | per doz. bun. | 0 9 | | 1 0 |
| Violets | per doz. bun. | 1 6 | | 3 6 |

### Fruits.

Supplies are still large, though scarcely so abundant as during the last few weeks. Grapes and pears are much in demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English | per bush. | 2 0 | to | 5 0 |
| ,, Cox's | per ½-sieve | 3 6 | | 6 0 |
| ,, Californian | per box | 6 0 | | 9 0 |
| Bananas | per bun. | 4 0 | | 8 0 |
| Blackberries | per peck | 2 0 | | 2 6 |
| Cobnuts | per doz. lbs. | 2 0 | | 2 3 |
| Cocoanuts | per 100 | 18 0 | | 23 0 |
| Cranberries | per case | 12 0 | | 14 0 |
| Figs | per doz. | 1 0 | | 3 0 |
| Grapes, English | per lb. | 0 9 | | 3 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 0 |
| ,, Almeria | per barrel | 8 0 | | 21 0 |
| Greengages | per ½-sieve | 5 0 | | 7 0 |
| Lemons | per case | 8 0 | | 30 0 |
| Melons | each | 0 9 | | 2 0 |
| ,, Cantaloupe | each | 2 0 | | 4 0 |
| Oranges | per case | 10 0 | | 30 0 |
| ,, Jamaica | per case | 10 0 | | 15 0 |
| ,, Cape | per case | 12 0 | | 21 0 |
| Peaches | per doz. | 4 0 | | 15 0 |
| Pears | per ½-bush. | 2 6 | | 4 6 |
| ,, French | per box | 2 0 | | 5 0 |
| ,, Californian | per case | 6 0 | | 10 0 |
| Pineapples | | 2 0 | | 5 0 |
| Plums, Californian | per case | 7 0 | | 12 0 |
| Walnuts | per doz. lbs. | 2 6 | | 3 6 |

### Vegetables.

Runner beans are quite over in many districts owing to frosts, hence the higher prices. Business continues brisk.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 1 0 | to | 2 6 |
| Aubergines | per doz. | 2 0 | | 2 6 |
| Beans, Runner | per bush. | 3 0 | | 5 0 |
| Beet | per bush. | 1 6 | | 2 6 |
| Cabbage | per tally. | 3 0 | | 5 0 |
| Carrots | per doz. bun. | 1 6 | | 2 0 |
| Cauliflowers | per tally | 4 0 | | 5 0 |
| Celery | per bun. | 1 0 | | 1 6 |
| Cucumbers | per doz. | 1 6 | | 2 6 |
| Endive | per doz. | 1 0 | | 2 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per doz. | 0 6 | | 1 0 |
| Mint | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per bush. | 2 6 | | 4 0 |
| ,, Spanish | per case | 5 0 | | 6 0 |
| Parsley | per doz. bun. | 2 0 | | 3 6 |
| Parsnips | per bush. | 2 0 | | 3 0 |
| Radishes | per doz. bun. | 0 6 | | 1 0 |
| Shallots | per doz. lbs. | 2 0 | | 2 6 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 2 3 | | 3 6 |
| ,, Guernsey | per doz. lbs. | 1 9 | | 2 6 |
| Turnips | per doz. bun. | 1 6 | | 2 6 |
| Watercress | per doz. bun. | 0 4 | | 0 7 |

## LONDON POTATO MARKETS.

Trade is not very good, and buyers are careful because of the large amount of disease in some stocks.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per ton | 80 0 | to | 90 0 |
| Kents | per ton | 80 0 | | 95 0 |
| Lincoln | per ton | 80 0 | | 95 0 |
| Blacklands | per ton | 70 0 | | 85 0 |

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

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ALL-ROUND GARDENER or CARETAKER, Handy Man, married, no children; good characters. Particulars to Caretaker, Northwood, Hornsey Lane, Highgate.

C. BRAY, Upper Breinton, near Hereford, seeks Situation under Foreman as JOURNEYMAN; Inside preferred; age 20; can be well recommended.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43 Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

FOREMAN (Working); well up in general Nursery Stock (Inside and Out); Floral Making up; life experience; age 45; married. G. CANN, Monnow Street, Monmouth.

GARDENER, Single-handed; 14 years' experience in general gardening; age 28; single. W. VAISEY, Barnsley Park Gardens, Cirencester.

GARDENER (Head); life practical experience in all branches; disengaged when suited; six years' good reference from present employer. KETTLE, Violet Cottage, Whitstone Road, Pen-y-lan, Christchurch, Newport, Mon.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER seeks SITUATION (Single-handed); experienced (Inside and Out), or good Kitchen Gardener; good references; married; age 32. E. REYNOLDS, 93, London Road, Maidstone, Kent.

GARDENER (Head Working) seeks Situation; life experience in good all-round gardening; age 40; married, two children; good references. HOARE, Wycombe Court Gardens, High Wycombe.

GARDENER (Head Working).—MR. COLLETT, Kirtlington Park Gardens, highly recommends his FOREMAN, H. STEDMAN, as above; 19 years' practical experience in all branches; age 35; married, two children; life abstainer; excellent references; disengaged when suited. H. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GARDENER; good general experience, both Inside and Out; 10 years' good reference; disengaged; age 31; married. F. VENN, care of W. Stocks, Verulam House Gardens, St. Albans, Herts.

**Read what our Advertisers write re "Gardeners' Magazine."**

"Glad to say that H. S. has got a situation in Norfolk, and I beg to thank you, and on behalf of S."

Yours, etc.,
J. A.

"I beg to say the youth has found an engagement through your paper. Thanking you for your assistance," Yours, etc.,
W. T.

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JOURNEYMAN (23) (Inside and Out), seven years' good experience; good references; Bothy preferred; footballer. G. W. FAIREY, Bell End, Brampton, Huntingdon.

JOURNEYMAN (Inside) seeks SITUATION; eight years' experience; good references. J. BADNELL, 62, Greys Hill, Henley-on-Thames.

IMPROVER (age 16), a strong Lad, seeks engagement as above; had some experience; Bothy preferred; abstainer; disengaged. Apply, W. RYE, Great Mowshurst Farm, Edenbridge, Kent.

IMPROVER, with general experience, seeks SITUATION; age 20; Bothy preferred. F. JAMES, Cowitlands Gardens, West Hoathley, Sussex.

IMPROVER seeks SITUATION; age 17½; three years' experience Inside and Out here; good character. JAMES KEMP, Ellern Mide Lodge, Totteridge, Herts.

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YOUNG MAN (19-20) seeks SITUATION as Improver, in large nursery; four years' experience in general work. E. WESTON, Fir Bothy, Lambley, nr. Nottingham.

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**For OCTOBER 19, 1912.**

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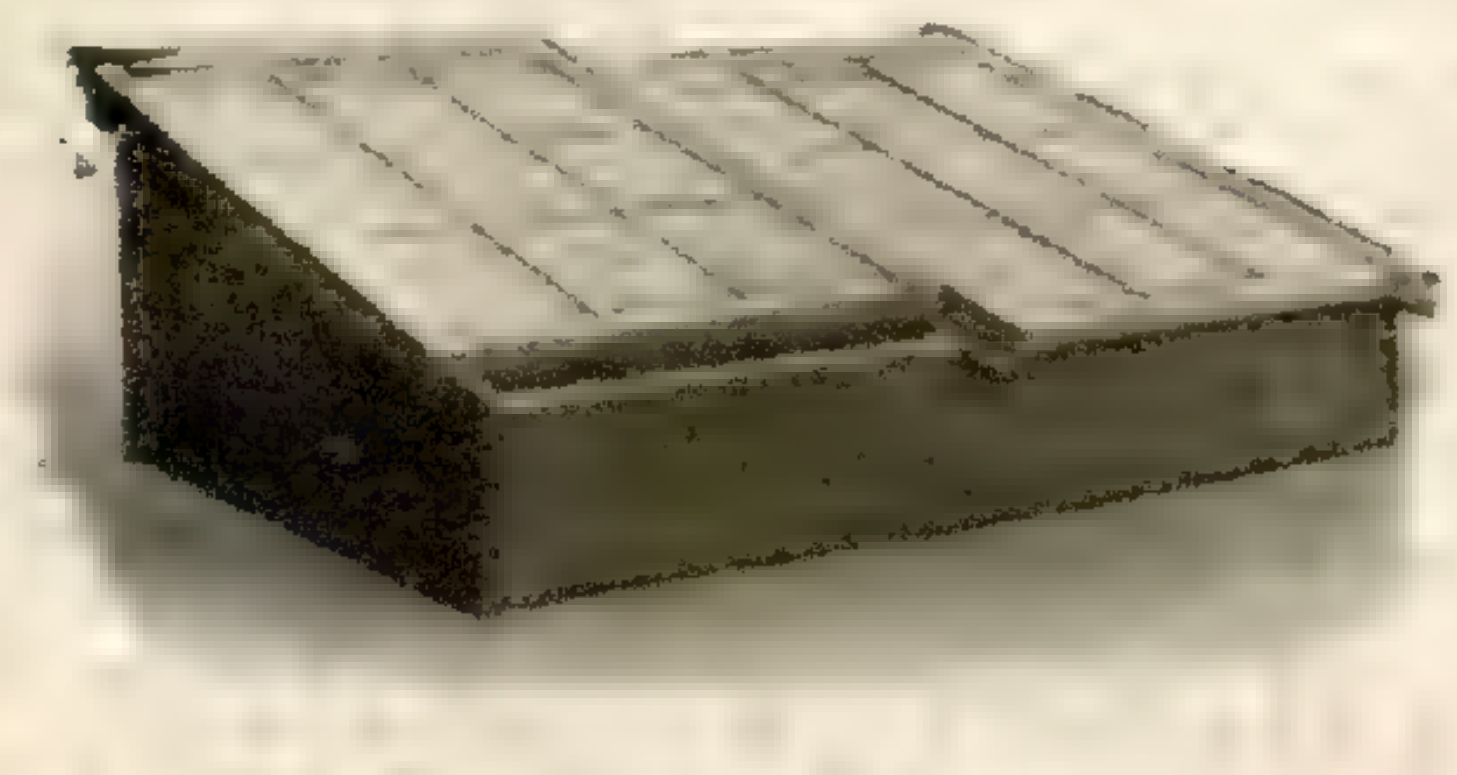

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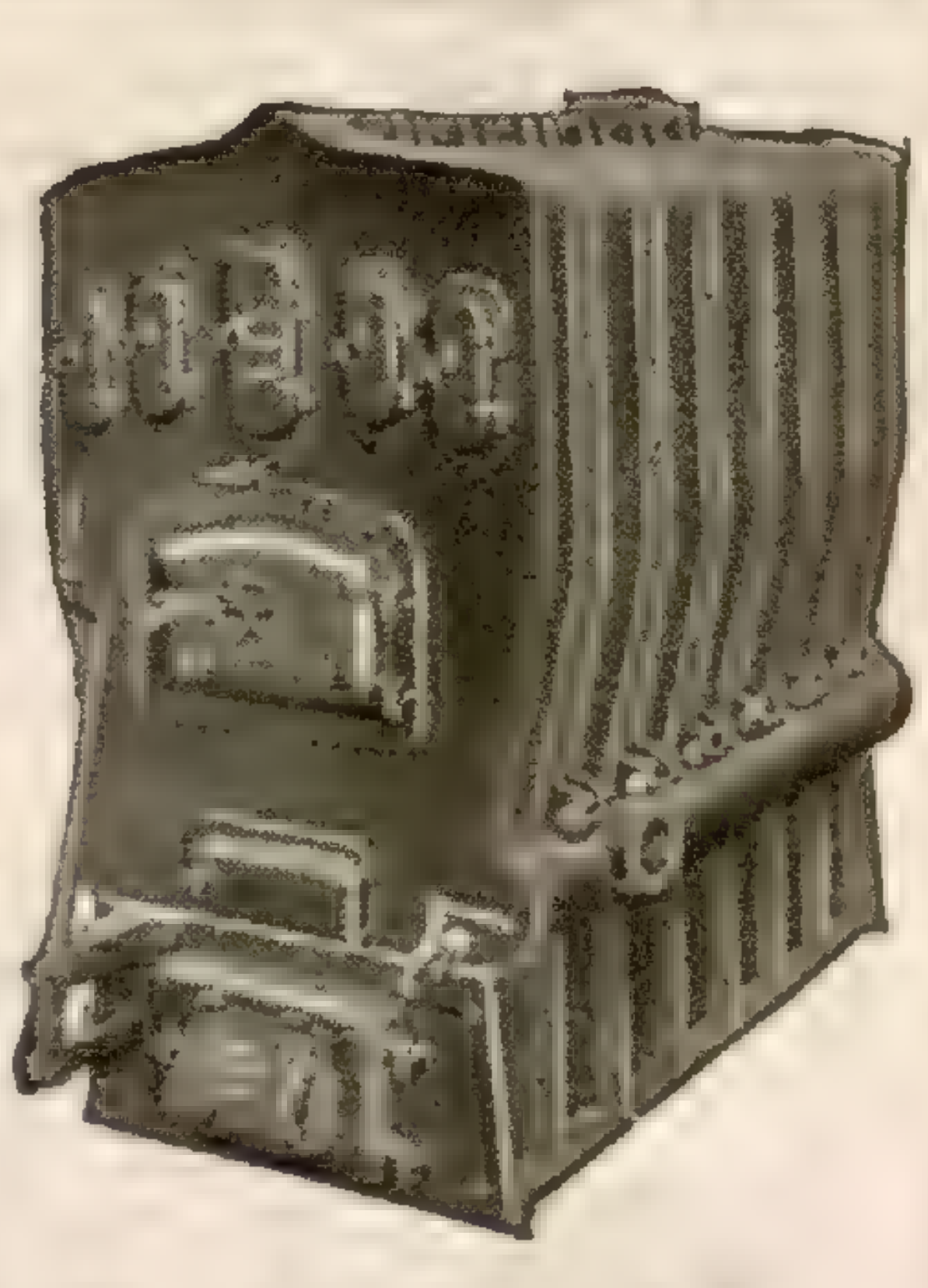

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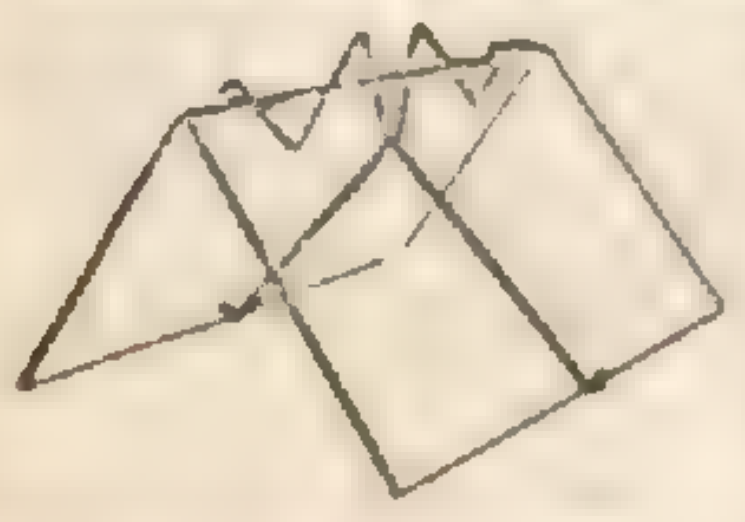

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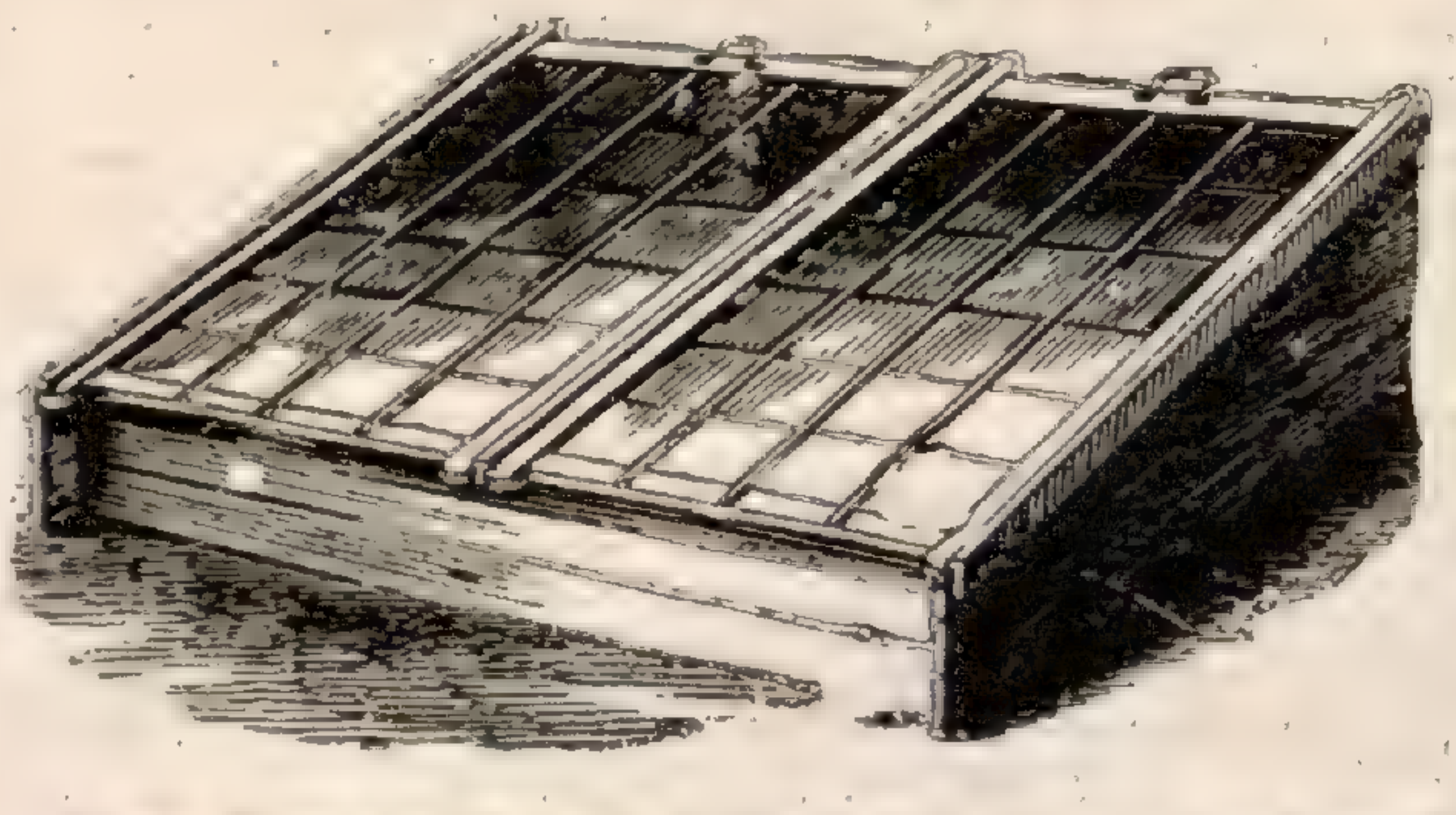

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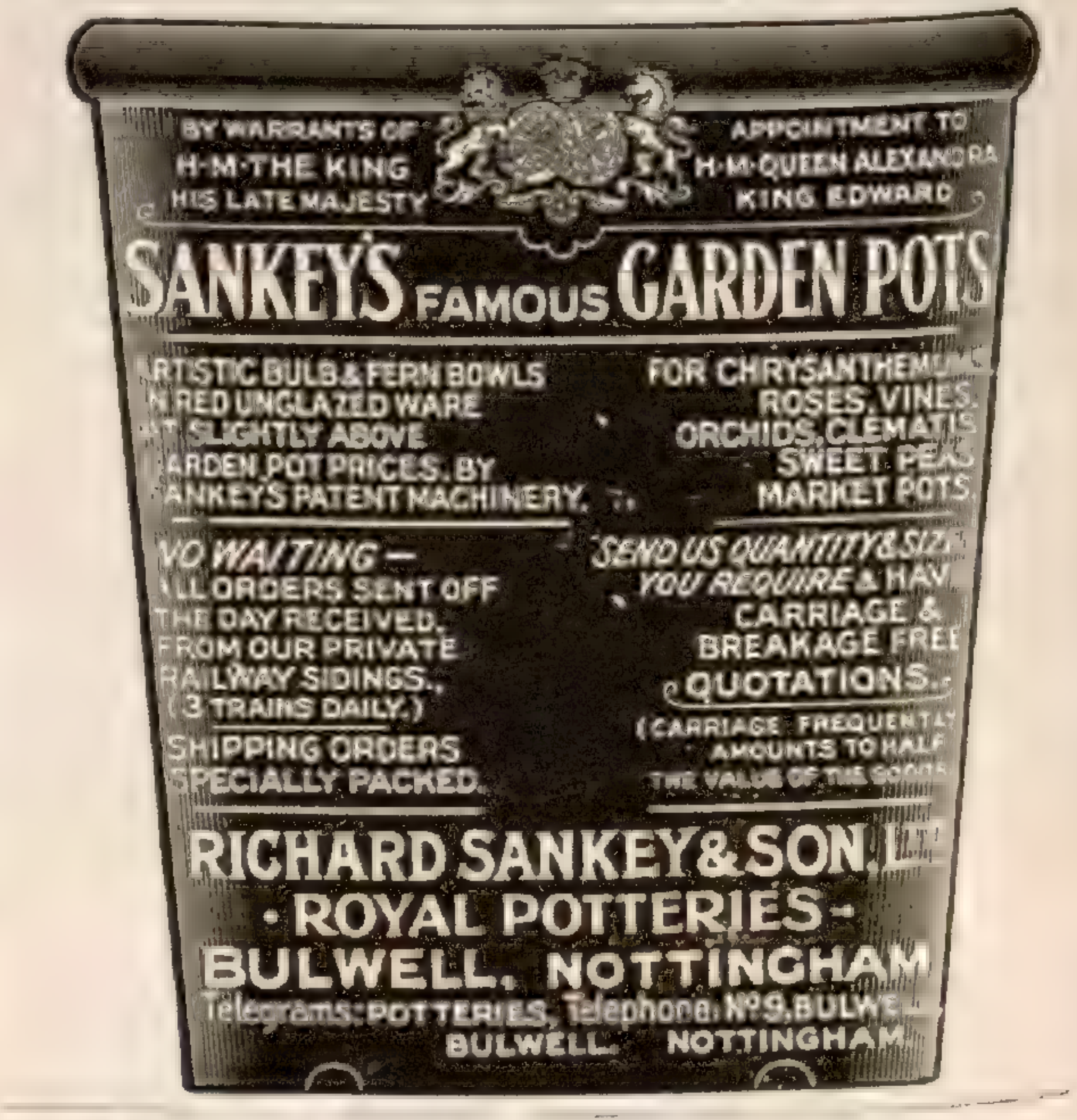

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VOL. LV.—No. 3,077. SATURDAY, OCTOBER 19, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Horticultural Evolution.

Some year or so back much interest was evoked at one of our great chrysanthemum shows by the concurrent exhibition, side by side with the finest specimens of the cultivated forms, of the insignificant single wild species from which undoubtedly the whole series of enormous and variously tinted flowers had been produced by simple and long-continued selection, and indepen- wonderful contrast between the small, daisy-like blooms of the original wild progenitor and those of its offspring brought home to the spectators in the most striking fashion the possibilities which lie within even the simplest flower of being developed by selection into not merely a practical infinity of forms, but these also of the most varied and brilliant hues. dent of any hybridisation. The Such comparative exhibits, we think, might well be extended in scope. The begonias, for instance, would lend themselves equally well thereto, although in their case it is true much of the variety has been induced by hybridisation, as more than one species have been concerned in their production. If, however, a prominent position were awarded, for instance, to the two small flowering species which gave the start to the now brilliant array of the tuberous section, the contrast would be immense, and to many people a common origin would appear almost incredible. So, to a less extent, with the dahlias, and many other of the most striking examples of horticultural triumphs, if the original parents could be shown. Even in culinary vegetables, the exhibition of a plant or two of the still common coastal weed Brassica oleacea, the wild cabbage, in conjunction with some of the best types of cabbages, Brussels sprouts, cauliflowers, kales, and kohl rabi, would certainly enhance the interest in the group, if, as is requisite in all such cases, a plain explanatory notice were to accompany it. In short, a special exhibition, announced as being an evolutional one, would, on the lines indicated, convey to a large number a mass of instructive information on a subject which at present is only grasped by a very few. Wild fruits could also be included and shown, by way of contrast to the finer developments of apples, pears, plums, cherries, etc., hoc genus omne. In this connection, interest would be further increased if some idea could be given of the appriximate date at which what may properly be termed horticultural evolution began—i.e., when these normal wild plants came under the influence of human selection. In this way, the relative rapidity in improvement or development by man, as compared with purely natural selection would be clearly shown, particularly in many of the later floral developments—the begonias, for example, in which the whole of the work covers but a few decades, though that of the chrysanthemum covers centuries. Even centuries, however, are insignificant periods as regards the natural selection of the raw material as fashioned by the selective action of the insect world, or other unintelligent agencies. On the other hand, however, we cannot fail to marvel at the floral developments produced in so many cases by Nature alone as rivals even to man's best productions. The rose has been converted by his aid from simple flowers to indescribably ornate ones; but the rival queen of the floral world, the lily, is found in a wild state in its full beauty, and practically defies improvement of its natural charm. So with the gloriosas, daturas, lapagerias, and a host of other magnificent flowers, which, though the outcome of purely natural selection, are practically perfect, and lend themselves but little, if at all, to cultural improvement. In many cases, indeed, it may be argued that man's intervention has not led to improvement at all, but has only succeeded in destroying simple natural beauty, and replacing it by substitutes of infinitely less charm. All this, however, is largely a matter of taste, and it must not be forgotten that the selective florist is guided by the fact that flowers are used for many other purposes than merely garden decoration. Cut flowers, to wit, need unnaturally long stalks, and hence, as with carnations, the natural dwarf or even dense habit of its family (the Dianthus) is sacrificed entirely to meet the need aforesaid, so that in this case the end justifies the means, even though Nature be outraged.

MR. WALTER IRVING.

**Mr. Walter Irving**, who has charge of the collections of herbaceous and alpine plants at the Royal Gardens, Kew, is a well-known authority on what are generally considered as "hardy plants." It is interesting to notice that gardeners group plants in curious fashion, and so "hardy plants" exclude trees and shrubs, fruits, and vegetables in the common language of the garden. Mr. Irving has about 7,000 species of plants under his care, and these are planted in and around the Herbaceous Ground and the Rock Garden. His gardening career commenced at Easton Park, near Wickham Market, Suffolk, where his father was gardener. Later on he gained experience in several gardens and nurseries, including a stay at Old Windsor with Sir Charles Murray, and some time in the old Hammersmith nurseries of Messrs. Lee and Son. Subsequently Mr. Irving went to Belvoir Castle, where, under the late Mr. Ingram, he obtained a wide knowledge of hardy flowers and their use in garden decoration. From Belvoir he came to Kew, in 1890, and in 1893 he obtained his present position, succeeding the late Mr. D. Dewar, who went to take charge of the Glasgow Botanic Gardens. Under Mr. Irving's care the Rock Garden at Kew is being re-made, and in some measure re-modelled, although the general idea of the dry bed of a Pyrenean stream still remains. Large portions of the Rock Garden have been entirely remade, and great success has followed the work. At the present moment another large portion is being dealt with, and the old methods of forming a rock garden are being revealed as great masses of sandstone, hitherto completely buried, are being brought to light. These are being set aside, and for the new work many tons of old, weathered stone, brought from Cheddar, are ready to hand.

**Flowering Trees and Shrubs.**—Owing to our persistent advocacy during the past twenty years of the merits of the trees and shrubs remarkable for the beauty of their flowers, and our efforts in giving prominence to the finest of the several kinds, they have now attained to a high position among the various forms of arborescent and ligneous vegetation available for furnishing the garden. Their attainment to a high degree of popularity has given rise to many requests for further information on the all-important questions of selection and planting, and, with a view to render our readers the fullest possible assistance, we have arranged to devote our next issue (the 26th inst.) chiefly to trees and shrubs with attractive flowers. Chief among the contents of the issue will be a monograph of the ornamental crabs, and articles on flowering trees and shrubs suitable for lawn specimens and spacious borders; hardy azaleas; trees and shrubs of slow growth, specially adapted for small gardens; the newer buddleias; and flowering shrubs that may be successfully utilised in furnishing rock gardens. The issue will be freely illustrated, and the illustrations will include several new and little-known kinds.

**Conference of Horticultural Societies.**—In accordance with the custom that has obtained for several years past a conference of the gardeners' associations and horticultural societies in affiliation with the Royal Horticultural Society was held at the Horticultural Hall on the second day (October 11) of the exhibition of British-grown fruits. Sir Daniel Morris, K.C.M.G., V.M.H., presided, and about 120 delegates were present, a considerable increase upon the numbers present at any previous conference. With an ideal chairman, a programme including several subjects of considerable importance, and a large gathering of horticulturists from various parts of the country who are deeply interested in the work and the welfare of the various organisations engaged in the advancement of the gardening art, a brilliant success was anticipated by not a few present. That their expectations were not fully realised was unfortunate, and due to the fact that too much was crowded into the two hours set apart for the conference. In addition to the four subjects arranged for discussion, the programme included an exhibition of colour photography, by Dr. G. G. Hamilton, the honorary secretary of the Bournemouth Gardeners' Society. Dr. Hamilton had a large number of slides showing roses, orchids, hardy flowers, old-world gardens, and scenes in the New Forest, in their natural colours, from photographs taken by himself. These were by far the finest set of slides representative of the garden and its occupants from direct colour photographs that we have as yet had an opportunity of seeing. The slides represented much artistic taste as well as manipulative skill of a high order, and the colours of the several subjects evinced a remarkable fidelity to nature. The colours were not only true, but they were characterised by extreme clearness, in which respect they differed materially from many of the lantern slides from colour photographs. It was an interesting, instructive, and delightful exhibition, which all the delegates enjoyed to the full. The exhibition must have extended over nearly an hour, and when, at its close, the Chairman reminded the delegates that there was less than an hour in which to discuss the four subjects on the agenda, some of them at once saw the difficulty they would have in discharging their duty to the societies which they represented. The inclusion of the exhibition of colour photography in the programme was of much value, as it gave the delegates an opportunity of becoming acquainted with the best of all methods for illustrating lectures. The proper course would have been to have arranged two meetings—one in the forenoon, for the consideration of matters relating to the work of the societies that were represented at the conference; and the other in the afternoon, for the exhibition of colour photography. The questions arranged for discussion were—attracting young men to meetings, the admission of lady gardeners to meetings of mutual improvement societies, garden clubs, and the judging of bottled fruits. At the close of the conference Dr. Hamilton and Sir Daniel Morris were accorded hearty votes of thanks.

**City of London Rose Society.**—We are informed by Mr. Ernest Protheroe that a general meeting of this newly-formed society will be held on Wednesday, October 30, at 5 p.m., at the Cannon Street Hotel, for the purpose of framing the rules and the election of committee and officers. Mr. Protheroe's address is 67 and 68, Cheapside, E.C.

**The Senses of Plants.**—All students of vegetable life must have sometimes considered the wonderful adaptability of plants, their behaviour under certain circumstances, their arrangements for securing the largest amount of light, and the various methods of climbing and twining, resisting drought, etc., etc. So many of these things seem to point to sense or instinct, and when we find the Fly Trap (Dionæa muscipula) exercising great cunning in the capture of insects for food, we begin to wonder where the plant's brains are. Anyhow, the whole subject is vastly interesting, and no one can make it more interesting than the Rev. Professor G. Henslow, M.A., V.M.H., who is to lecture on "The Senses of Plants," at the Royal Horticultural Hall, on Tuesday, October 22, at 3 p.m.

**London's Surplus Bedding Plants** will be distributed at the various parks and gardens managed by the London County Council, on Saturday, October 19. The distribution commences at 9 a.m., and closes at 11 a.m., and personal application must be made for the plants. Children under 14 will not receive plants unless they present a note from a teacher or other responsible person.

**Young Gardeners and Horticultural Associations.**—In raising the question as to the best means of attracting young gardeners to the meetings of mutual improvement societies, the Loughborough Society followed the course that has usually been taken at previous conferences. Instead of a delegate stating the views of the society on the question in a carefully-prepared paper or well-reasoned speech, the question was merely asked whether something could not be done to attract young gardeners to the meetings in larger numbers than was at present the case. A short discussion followed the raising of the question, and widely divergent views were expressed. Some of the delegates thought the annual subscription was often more than young gardeners could afford, but from the statements made by the speakers it appeared that not more than half-a-crown is usually charged them. If this be really the case, the annual subscription is not so high as to prevent any considerable proportion of the young men who are being trained as gardeners from participating in the advantages that result from the attendance at meetings of mutual improvement societies. In some instances the subscription was said to be only one shilling, and yet the attendances of young men were not satisfactory. Several delegates stated that with an annual subscription of half-a-crown they had no difficulty in obtaining young gardeners as members, but they made their meetings as interesting and varied as possible by arranging at frequent intervals during the session lectures illustrated by lantern slides, and for the most part by men occupying prominent positions in the world of horticulture. Probably if this practice became general there would be less difficulty in securing good attendances, but the change would necessarily involve additional expenditure. However that may be, an endeavour to increase the interest and usefulness of meetings rather than a reduction of the subscriptions is likely to produce the most satisfactory results.

**Aids to Colour in Fruit.**—Mr. G. P. Berry considers that although eminent authorities state there is always much more iron in the soil than is necessary for the colouring of fruits, there are certain districts and certain soils where colouring is very marked. At the Carlisle Fruit Congress he instanced the great variation of colouring found in the East of Scotland, from Berwick to Kincardine. He always added four stones per acre of sulphate of iron when preparing for fruit planting, and in nine plantations under his care, in different counties, he found that in the sections fertilised with potash there was earlier maturity and finer colour than in the case of the phosphate and nitrogen plots. He advocated the application of 1½cwt. of sulphate of potash per acre as a good average dressing to secure good colour in fruits.

**The Kent Commercial Fruit Show,** to be held at Maidstone on October 29 and 30, is chiefly for the purpose of showing how well apples can be grown in Kent, and how skilfully they can be graded and packed for home distribution or export. The exhibition of 1911 laid the foundation of an export trade to the Argentine and South Africa, and good prices resulted. This year it is anticipated that about 20 tons of apples will be staged, representing fruit from Hereford, Worcester, Devon, Cambridge, Norfolk, Suffolk, Surrey, and Sussex, as well as Kent, these former counties having now come into the movement.

**Lady Gardeners and Mutual Improvement Societies.**—The question raised by Mr. Bullen, of the Guildford Society, as to "the desirability of admitting lady gardeners to mutual improvement societies," was of considerable importance, and it was evident the discussion would have been brisk and interesting had time permitted. Mr. Bullen, who championed the cause of the ladies, was not particularly fortunate in presenting his case. At first the delegates were under the impression that Mr. Bullen had a mandate from the Guildford Society asking for the admission of lady gardeners as members to all mutual improvement societies, but he had not proceeded far before it became evident that this was not the case. Subsequently Sir Daniel Morris elicited the fact that when the matter was discussed at Guildford there was a majority of two only in favour of admitting ladies. This close voting was of more than usual interest from the fact that the society has for its president a lady not less remarkable for her charming personality than for the keen interest in horticulture. Mr. Bullen had prepared a written statement of his case, but owing to the low tone in which it was read there was a difficulty in catching its purport, but it appeared to have been prepared for reading at the Guildford meeting rather than at the conference. The few delegates who had an opportunity of speaking expressed opinions strongly in favour of the admission of ladies, and they had no difficulty in giving instances where the lady members are a source of much strength.

**Proposed Addition to Wandsworth Park.**—As Lady Hensley has intimated her willingness to accept £3,000 for Glenton House and grounds, a proposal is on foot for the acquisition of the property at this low figure as an extension of Wandsworth Park. A public meeting has been called to fully consider the matter.

**"The Botanical Magazine"** for October contains illustrations and descriptions of several interesting plants. Chamædorea glaucifolia, a slender and elegant South American palm, and one that has been in cultivation at Kew for about 40 years, is figured, and so are Ceropegia Thorncrofti, a climbing Asclepiad from the Transvaal, with white, purple-marked flowers; Osmanthus Delavayi, a useful hardy shrub, evergreen, and bearing white, fragrant flowers in terminal clusters during March; Elsholtzia Stauntoni, an aromatic, hardy Chinese shrub, that bears dense Veronica-like spikes of small, rose-purple flowers; and Furcræa elegans, a Mexican plant closely allied to the agaves, and one that carries its green flowers on branching spikes that may be as high as 25ft., and 6in. thick at the base.

**Potato Lifters on Strike.**—A few days ago about 1,000 workers empoyed in lifting the potato crops in East Lothian demanded a rise of 2s. per week, or a wage of 20s. At the time of writing the matter remains unsettled. The demand of the workers does not seem extravagant.

**The Late Mr. Alexander Dean, V.M.H.**—We learn that the late Mr. A. Dean, whose will has been proved, left £2,071.

**The Largest Vine in Scotland.**—In answer to our request for information concerning the oldest vine in Scotland, a correspondent has sent us a cutting from a Boston (U.S.A.) paper, referring to the famous vine at Killin, Loch Tay, Scotland. This vine is about 80 years old, whereas the one at Bearehill is 135 years old. In point of size, however, our Transatlantic contemporary states that "the vine owned by Lord Breadalbane, and to be seen at Killin, Loch Tay, Scotland, has now eclipsed in size every other vine in Europe. Planted in 1832 in a modest conservatory measuring only 15ft., its glass-house has now grown to 172ft. by 25ft., the outer branches being some 80ft. off the main stem, and both vine and its little crystal palace are still adding to their inches, the latter having been extended 28 years ago. The trunk measures 6ft. in height and 2ft. 10in. in girth. The 1912 yield numbered 2,075 bunches, but it was thought best to allow only 500 of them to mature. They have a delicious flavour, and are of the Black Hombnrg variety. Like everything connected with this vine, the watering is done on a large scale, 7,000 gallons being given to it at one time, and the performance repeated only twice, or, at the most, three times in the year. By far the most interesting feature of the vine, however, is the determined way in which it has, through many decades, sought and found freedom for itself through the roaming of its roots. They have been traced to a spot some 750ft. away from where the main stem is confined in an artificially-heated atmosphere, and its branches trained along wires, and tied every few feet. Free and wild, the roots have worked their way in the direction of the virgin soil, where the rich yellow loam, uncultivated for some 200 years, lies on either side of some running water, which the roots are found to have crossed. So Nature continues to care for her offspring, independently of what the friendly hand of man may think it is accomplishing."

# EDUCATION AND TRAINING OF YOUNG GARDENERS.

## First Essentials.

It matters not into what sphere of life one's thoughts are directed at the present time, as contrasted with what existed, say 50 years back; everything points to an immense advantage in favour of lads at the present day, when laying the foundation, so to speak, of their future career. Education has advanced by leaps and bounds, this being supplemented by continuation classes and technical training also. Thus, a lad who starts his career as a gardener at the present time has everything in his favour, as contrasted with what obtained even under the best conditions half a century back. Speaking personally, let me state here that it is just over fifty years since I left school and first started in my gardening career. I have watched the progress of events from that time onwards, and have often wished that I had, at that time, the same advantages that a young man has at the present day. In saying this, I would explain that, in practical work there has not, in my opinion, been such a great advance as there has been on the scientific side of horticulture.

In stating this I will give an instance to support my argument. Sixty years ago, when the Chiswick gardens were in their heyday of popularity, young men were taken into them to be trained as practical gardeners. I had a brother there at that time who received 10s. a week in wages, and who, during the busy season of the year, had to start work at four o'clock in the morning and do a course of lawn mowing with the scythe. There were not then for the young men the immense advantages that now obtain at Wisley, with the laboratory and other means of scientific research. Then, the young gardener had to exercise his limits of ingenuity and perseverance if he wished to excel in his profession. It was then more a question of "self-help" than otherwise. To instance this, I must still follow my brother's career for two years after he left Chiswick. He was fortunate enough to obtain a position as under-gardener at Dalkeith, when Mr. McIntosh was head gardener there. Noting his abilities, he took my brother into his office to assist in the preparation of the plans for McIntosh's "Book of the Garden"—a standard work at that time, the reason being his knowledge of geometry. On the other hand, the then Duchess of Buccleuch preferred to have him do the indoor decorations rather than any other. I instance this to indicate two distinct phases of gardening, and the advantages that accrued thereto in my brother's case.

## The Last Year (or Two) of School Life.

I have contended for many years past that a lad's last year (or two) at school should be directed into grooves that will best aid him in after life. The present-day methods of large classes, I admit, does not often favour this. Thus, when a lad has made up his mind what shall be his future career, and the better will it be for the lad if he does this, I speak from experience, his energies should be concentrated on what will be most likely to assist him in after life. In my own case, I applied myself to learning French and other branches of education likely to assist me in gardening or estate work. This embraced the elements of geometry, and a good grounding in land surveying, followed up after I left school by practice in the last-named, as well as in timber measuring and estate work generally. I owe all these acquirements to my father, under whom I first worked. A lad who starts actual work with some technical knowledge to assist him has an advantage over his fellows. This gathers rather than diminishes as years go by. The lad should be grounded in what I have already stated, and also have some elementary knowledge of botany and chemistry.

Subsequently, when he can, in his spare time aftermards, follow up these aids to his future success in his profession, he will find it easier to apply himself thereto. One other great essential—in fact, there are two, writing and spelling. Every young gardener should take a pride in his writing, and do his best both to write a letter plainly, and the plant names upon labels so that they can be easily read. Correct spelling is also most essential, but methinks that sufficient attention and care is not given to this, or to writing either. Composition will also stand a lad in good stead, and will possibly, with good writing, secure him a position in after life against competitors who fail in these essentials. I know this to be a fact.

## The First Start in Garden Work.

A great misconception exists as to the best way of commencing a gardening career. Many think that it is better to start in some well-known garden of repute. With this view I totally disagree. It is much better to make the start in a small but well-kept garden, such, for instance, as where only three or four hands are employed for all the work. Here a lad will have to assist at almost everything that has to be done, and in a manner, so to speak, have to rough it. This will be a good training for him. In support of this, I well remember being told, when a young man myself, by a gardener who had won his position, that he owed more than he could express to the insight into general garden work that he gained when employed as garden boy, with only one man. Here he had, I know, to walk two miles to his work every morning, and the same back to his home at night.

A little of everything, and that well done, is infinitely better than a superfluity, and that badly managed. A lad can grasp the several points in a well-kept small garden better than in a large one. In the latter he must, necessarily almost, be confined to one department of work. Later on this will follow as a matter of course, but it should be when he is better equipped. A young gardener should never be ashamed to own that he started his career in a small garden where he may have had to do what might be termed menial work. In later life he will assuredly value all the useful hints he gained in his early career.

## The Advantage of an Early Training.

I have outlined somewhat the line that should be followed from the last year at school. I found this in my own case to be invaluable. As a comparison in another sphere of life I would quote the case of the expert mathematician, one who has taken high honours at his college or university. This fits him for taking up the higher grades of physics and of science generally. So it is in the case of a young gardener, not on quite the same lines, of course, or in such a high degree. A young gardener who is well equipped in the theory, as well as in the practice of horticulture, has a far better chance of success when he enters for any of the examinations now provided for young and aspiring gardeners. The mere fact of reading up for these examinations is a great boon, and greater still will it be if he passes them successfully. (I speak, Mr. Editor, from experience in this.) It will broaden his mind and thus also his reasoning powers. He may not see it in that light at the time, but it will dawn upon him later in life.

Jas. Hudson, V.M.H.

(To be continued.)

# AMONG THE ALPINE FLOWERS.

> "Sun that burned out of season
> With the old magnificent flame
> May-time knew. . . ."
> —*Professor J. W. MacKail.*

After a long and dreary time, little broken by the brightness of the usual autumn days, we are again revelling in the bright sunshine, and our flowers still respond to its advances, even though the days have grown short and the frosty feeling of the evening and the morning tells us that the dreaded winter is drawing nigh, when we shall be living on the memory of the past and on the hope of the future.

Yet this need not hinder us from drinking in the enjoyment of the present, even though it is mingled with "taking thought for the morrow," for the gardener must lay his plans and perform work for future realisation.

Many of our alpine flowers seem now to be giving us a fresh bloom, as if the rest of the long, dull days had stimulated them to a fresh desire to give us delight now that the sun once more shines upon us, and the dreary, rainy days have passed for the time.

## The Alpine Poppies.

In the moraine we have a little group of alpine poppies, delightful little flowers, members of a gorgeous race, which the hand of the florist has tutored into almost endless varieties, many of the greatest beauty. Strangely susceptible to his influences have proved many of these flowers of Lethe, and but few of the species have been passed by. One would have expected, however, that the dainty Papaver alpinum, a charming miniature, so to speak, of the Iceland poppy, would have escaped his notice. It is a gem for the rock garden; one of these exquisite little flowers whose beauty seems perfection. Of the most exquisitely graceful foliage, with leaves as if wrought by some most skilled craftsman out of the finest frosted silver, and with dainty stems bearing fragile blossoms of varied colours, from white, through yellows to almost scarlets, the alpine poppy stands as one of our bonniest of rock plants and as the most beautiful of the race for the alpine garden. Only a few inches high, it may be planted almost anywhere. Not always a long liver, Papaver alpinum will generally reproduce itself from seeds if given a spot where the seeds may find a resting-place until they germinate and yield their dainty plants. The sunny rock garden in light soil will suit them, but they appear to delight in the moraine, where they flower earlier and look happier than in the other parts of the garden.

One of the latest developments of this alpine poppy has been the production of varieties with finely laciniated petals, which are very beautiful in their way. Yet I am not sure that I enjoy these as much as the older forms, which have dainty little cups of all colours. Possibly it is prejudice on one's part, but the fact remains that I prefer the smooth-edged flowers, beautiful as are the laciniated forms of Papaver alpinum. Charming, indeed, are these flowers, however, though among the choicest indeed, are the Pyrenean forms, sold in seeds as Papaver alpinum pyrenaicum. Those who wish to own these lovely little flowers may best obtain them in the shape of seeds.

## Colchicum autumnale major.

Those who have grown the common meadow saffron, Colchicum autumnale, are deterred from buying the variety major, thinking that it is but little better than the typical C. autumnale, whose long, weak tube renders it so useless in the border in a wet autumn, the flowers soon falling down and looking most unhappy unless spearing through some plant which will hold them up. But C. autumnale major is a superior thing indeed. Of much greater substance and with larger and finer flowers, it is in every way a desirable subject. It has not the deep colouring of Colchicum speciosum, but its soft purple and white blooms are very satisfactory companions to the bigger and more deeply hued "showy meadow saffron." C. autumnale major is really vastly superior to the typical autumnal colchicum or meadow saffron. It is a capital bulb for the lower parts of the rock garden, preferably in a moist, rather rich soil, though heeding but little its character, except that in poor soil it gives smaller blooms.

## Astrantia gracilis.

Through the kindness of a good friend, as deeply devoted to alpine flowers as myself, I am the happy possessor of a dainty little astrantia, which is called Astrantia gracilis, and seems to be quite overlooked by the usual cultivators of rock plants. It is an undeserved neglect, as it is a charming little plant of its kind. These astrantias, or masterworts, do not appear to be general favourites, probably because they have not the charm of bright colouring to attract the eye of the garden-lover. Yet they grow wonderfully on one, and soon become quite fixed in our affections.

The little Astrantia minor well deserves a place in the rock garden, though it is now less frequently seen than some years ago. Still more deserving is A. gracilis, which resembles minor much in the appearance of its elegantly-formed white flowers of a creamy tinge. It is, however, neater in its growth, and the stems are more in proportion to the size of the flowers and foliage. The stems are shorter; the flowers are as neat, and the foliage is larger and less finely divided than that of A. minor. In a low part of the rock garden, near a stone pathway and in light soil, this choice little masterwort is thriving and assuming pleasing dimensions. That it is only nine or ten inches high will show that it is a good plant for many positions, while the fact that it blooms for months renders it doubly acceptable.

## Other Flowers.

There are still many flowers in the rock garden. There are tunicas, silenes, violas in plenty, erodiums, geraniums, campanulas of various sorts and sizes, dianthuses, autumnal crocuses, colchicums, dwarf asters, veronicas, ambitious arabises which scorn to bloom in spring alone, with many other flowers of beauty and charm. Then there are mounds and taller groups of many-hued leaves, all adding to our pleasures in these fast-running days which soon close our garden year.

S. ARNOTT.

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**Stenotaphrum glabrum variegatum.**—The green form of this is known by the specific name of americanum as well as that of glabrum. It is also popularly called the Australian Buffalo Grass. The apparent contradiction between these two names is to be accounted for by the fact that it occurs in many of the warmer portions of the globe. The variegated-leaved variety is a very pretty basket plant, as when suspended the spreading stolons hang down for a long distance. The grass-like leaves are disposed in tufts along the entire length of these pendulous stolons, are bright green, prettily striped with white. Under favourable conditions it will grow like a weed.—T.

# PYRUS CRATÆGIFOLIA.

The various species of pyrus have, on the whole, been seen at their best during the present autumn; and certainly we rarely have the opportunity of seeing this particular species in better condition. It is very distinct amongst other species, as its leaves resemble those of a cratægus rather than a pyrus; while its bushy habit hardly suggests its correct family. A native of Northern Italy, it belongs to the aria group of the genus, thus having as close relatives the white beam (P. aria) and the wild service (P. torminalis).

Growing into a good-sized bush, it is showy in May by reason of its white, rose-flushed flowers, which appear in quantity. Later on another attraction is present in the yellow-and-red fruits, which are small and glossy. Then a few weeks before they fall, the leaves take on a dark red hue, which makes them very conspicuous. As the plant grows satisfactorily in loamy soil, and does not readily outgrow its position, it might well be used more often in places where a fast-growing tree would be out of the question, whilst it is quite worth a prominent position as a specimen bush.

W. D.

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# THE LIBERTIAS.

Less than half a dozen species go to make up the family of Libertias, but all possess considerable beauty and decorative value. Further, they lend themselves to a variety of purposes, being suitable for the herbaceous border and the rockery, whilst they form delightful subjects as pot plants.

In common with a host of other plants whose native habitat is an equable and warm climate, the Libertias have been successfully acclimatised, and are fairly comfortable in our English gardens. It is usual to afford slight protection in the shape of bracken or cocoanut-fibre around the crowns during severe periods, and when it is stated that these plants hail from Chili and New Zealand, it will be understood that warm and sheltered spots should be selected in which to establish groups or colonies. Another important detail is to afford a light and sandy soil, and where the natural soil is heavy and tenacious, a nine-inch layer of drainage must be placed 3ft. deep.

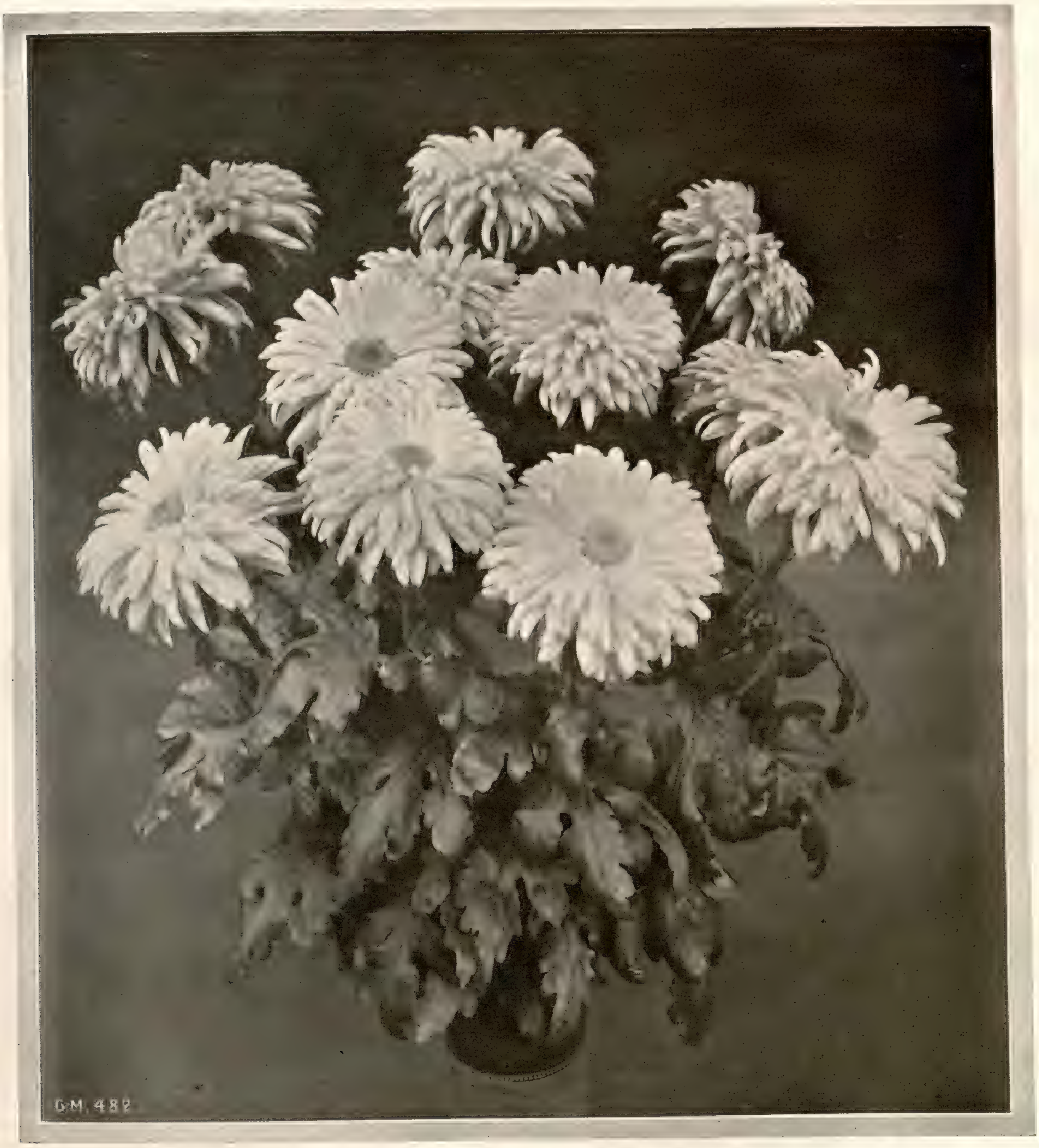
Propagation is easily and readily effected by means of seeds and division, and if the last-named method be adopted the best time to carry out the work is immediately after the plants pass out of flower. With regard to seed-sowing, if seeds are sown in a gentle hotbed in March, and the seedlings are duly grown on in a frame, they may be planted out on a south border, and first-rate plants result by the end of the season. It is inadvisable to transfer to permanent quarters until another season, and, to be on the safe side, they should be given the protection of a frame or frame-light.

L. tricolor is an attractive species, with variegated leaves, after the style of Zea quadricolor, and white flowers. It seldom exceeds 2ft. in height. L. grandiflora is worthy of its name, and towers up to 3½ft., while the flowers are similar to those of the foregoing. L. formosa is content to rise 18in., the leaves being arranged in dense tufts. The panicles of white flowers form elegant material for vase decoration, etc. Pale blue colouring is seen in L. cærulescens, which, together with the last-named, claims Chili as its home. Then we have L. pulchella and L. ixioides, which, perhaps, are the least desirable in this small group of plants. WALTER H. AGGETT.

## NEW PLANTS, ETC.

### CATTLEYA HARRISIANA.

This is a provisional name for a hybrid between C. Fabia alba and C. Warscewiczi Frau Melanie Beyrodt. It is a beautiful orchid with large white sepals and petals, and a very large lip. The latter has a rich purple apex and margins, and is heavily veined and shaded with gold in the throat. F.C.C., R.H.S., October 8. Mr. C. J. Phillips, The Glebe, Sevenoaks.



CHRYSANTHEMUM CELIA.

Flowers semi-double, bright yellow. A.M., R.H.S., October 8. Messrs. Cragg, Harrison, and Cragg, Heston.

### CATTLEYA MRS. PITT, CHARLESWORTH VAR.

A beautiful orchid, the rounded, stiff flower showing markedly the influence of C. Harrisonæ. The colour is rich reddish-rose, with a golden glow over the greater part of the lip. A.M., R.H.S., October 8. Mr. R. Le Doux, Marefield, West Derby, Liverpool.

### MILTONIODA HARWOODI.

This very pretty bigeneric hybrid, derived from Miltonia vexillaria and Cochlioda Noetzliana, has charming pink flowers, tinted with carmine, and in shape these have a striking resemblance to Calanthe Veitchi. A.M., R.H.S., October 8. Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

### CATTLEYA HARDYANA, VAR. HERBERT GOODSON.

A handsome variety with white sepals and petals, and a very showy purple lip veined and shaded with golden-yellow. A.M., R.H.S., October 8. H. S. Goodson, Esq. (gardener, Mr. E. Day), Fairlawn, Putney.

### ODONTIODA CHARLESWORTHI, ORCHID DENE VAR.

A particularly good form of this lovely orchid; the flowers are shapely and of good size, and the colour is bright crimson-red. A.M., R.H.S., October 8. Messrs. J. and A. McBean, Cooksbridge.

### BERBERIS STAPFIANA.

An erect, bushy species with small deciduous leaves. The stiff, slender growths are freely furnished in autumn with coral-red berries that are more or less transparent and suggestive of pale red currants, though they do not hang in racemes. A new Chinese species. A.M., R.H.S., October 8. Messrs. Jas. Veitch and Sons, Chelsea.

### CHRYSANTHEMUMS.

Mrs. Lloyd Wigg.—A very large exhibition Japanese variety, with long, drooping florets of a soft light yellow shade. Should become very popular for show purposes. A.M., R.H.S., October 8. Messrs. W. Wells and Co., Merstham.

Celia.—A fine rich yellow variety that must be classed as single, though it has several rows of florets. The disk is greenish-yellow. When disbudded and the blooms are upwards of four inches across, this is a very decorative variety. A.M., R.H.S. Messrs. Cragg, Harrison, and Cragg, Hounslow; and Messrs. Wells and Co., Merstham.

### PYRUS VEITCHIANA.

A small tree of free growth, and quite hardy. It fruits freely, and as the fruits are about half an inch in diameter, and of a deep crimson colour, the tree is useful for autumn effects. A.M., R.H.S., October 8. Messrs. Jas. Veitch and Sons, Chelsea.

### COTONEASTER SALICIFOLIA RUGOSA.

This evergreen shrub has long, drooping branches furnished with elongated willow-like leaves. Along these branches the scarlet berries are borne in clusters. An attractive species that should find favour for autumn effects. A.M., R.H.S., October 8. Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham House, Elstree.

### ADIANTUM CUNEATUM MICROPINNULUM.

A beautiful fern, even more graceful and with smaller pinnules than A. c. gracillimum, from which it has descended. The young fronds are prettily rose-tinted, so that the plant has many good features. A.M., R.H.S., October 8. Messrs. H. B. May and Sons, Edmonton.

### ASTER NANCY BALLARD.

This double Michaelmas daisy has flower heads over an inch across, and of a purplish-mauve colour. The growth is stiff, and the flower are borne erect as in the case of the parent variety, Beauty of Colwall. A.M., R.H.S., October 8. Mr. Ballard, The Court, Colwall, Herefordshire.

## GREENHOUSE CLIMBERS AT KEW.

The greenhouse (No. 4) is just now particularly gay with flowering subjects of all kinds, not the least attractive feature being furnished by the climbing plants, of which there is an extensive and well-chosen collection. Of the different climbers that especially appeal to one may be mentioned Abutilon insigne, a very distinct species with large rugose leaves, and flowers more widely expanded than in the garden forms; they are of a deep crimson colour, with darker veinings; Abutilon megapotamicum variegatum, a slender-growing kind with yellowish flowers and prettily-mottled leaves; Abutilons Boule de Neige and Golden Fleece, two popular varieties, with white and yellow flowers respectively; Bougainvillea glabra, of which there is a particularly richly-coloured form in good condition; Clerodendron Thomsoni, usually grown in a warmer structure, but in the greenhouse the pretty red flowers protruding from large white calyces are very attractive; Clerodendron ugandense (or cærulea), prominent among clerodendrons because the flowers are of two shades of blue; Fuchsia simplicicaulis, a beautiful Peruvian species of lax growth, and bearing clusters of very long, rosy-scarlet coloured flowers; Ipomœa rubro-cærulea, an annual species whose flowers are at first of a charming shade of blue, with later on a reddish suffusion; Jasminum grandiflorum, a Himalayan species, with white, highly fragrant blossoms that have a reddish tinge on the exterior; Lantana salviæfolia, more generally known as L. delicatissima, is a popular bedding plant, but its great merits as a greenhouse climber are not so generally recognised; Lonicera sempervirens minor, with bright red and yellow flowers, borne throughout the entire summer and well on into the autumn; Passiflora cærulea alba, also well known as Constance Elliott; Plumbago capensis, a well-known plant with a profusion of light blue flowers; Plumbago capensis alba, a white counterpart of the preceding. K.

## HARVEST IN ORCHARD LAND.

By Orchard Land I refer to that part of the West Country where every rural homestead has its grass orchard, containing a heterogeneous collection of apples and pears, with perhaps plums, and a few odd damson and prune trees in the hedgerows; and where the filling of the domestic cider hogsheads is an essential item of the fruit harvest.

Strange records have been established in Orchard Land this season, and the other day a small holder informed me that for the first time in his life he had picked his plums from a punt. A curious experience, you say. Just so; but, then, what was the man to do? For he lived by the side of the Severn, which overflowed its banks when the plums were ready to pick; and it was either a question of utilising the punt for the purpose or leaving the plums to spoil, which was out of the question when they were fetching five or six shillings a pot down in South Wales. So our friend paddled his boat underneath the trees, and picked the fruit in the manner described. I admit, by the way, that this was an exceptional instance; but it actually happened in August, when miles of land in the Vale of Severn were under water.

Climatically speaking, it was not a happy time for plums, and the variety that stood the best—the one that could be picked when it was fine or when it rained, and fetched its money when it got into the market—was a local plum, not unlike a miniature Victoria, that is known down the Severn Vale as the Blaisdon Red. It originated, so the story goes, in the tiny village of Blaisdon, in Gloucestershire, and it occupies the position in the Severn Vale that is held in Worcestershire by the Yellow Pershore, or Egg Plum. Little by little the Blaisdon Red has been distributed from the place of its origin, and propagation is an easy matter, because it grows readily from suckers, until it has found its way into most of the orchards round about; and, though other commercial and reputedly better varieties have been introduced from time to time, the local growers tell you that, taking one season with another, there is no plum that crops so heavily, stands unfavourable weather so well, or brings in more money than the Blaisdon Red. One wonders if it would do so well if it were taken away from its native district.

A strange thing is that this season, in spite of the wet and the lack of sunshine, the apples are colouring well, and a pretty sight is a typical West Country orchard on one of the beautiful September days we are enjoying at the moment of writing. As a rule, the West Country apple crop is fairly good this year, and as you pass a typical orchard you see almost as many varieties as there are trees; and reddest of all are the little cider apples, which are pretty to look at, but deceptive if you come to taste. An air of harvest ripeness is stealing over the orchard just now, and amongst the leaves changing from green to yellow you see fruits of a lemon tint on this tree, and others deepening to purple-crimson on the next. It is ten to one that most of the varieties are strangers to you, but the farmer knows them by curious names that were never seen in any nurseryman's catalogue, for the simple reason that they were raised by some local celebrity in the district in days gone by. In a general way, the farmer turns his attention to the orchard after harvest, picking what he calls the table fruit for market, and gathering the rest in heaps as it falls to feed the cider mill later on. This year he finds himself "all anyhow," so to speak, and the apples in many cases are being neglected, which is not surprising considering that September this season finds everybody busy haymaking.

But there is disappointment in many an orchard as I write, and there are dozens of trees laden with apples; but they are small, scrubby, and not much bigger than hazel-nuts. Why didn't they swell, and come to maturity, as they ought to have done? asks the farmer, as he quaffs a cup of cider with a neighbour, and discusses the prospects of the coming vintage. They can't make much of it, and put it down in a general way to the season. But they do not remember about last May-time, when the apple trees were crippled and infested by the apple aphis—blight it is called in the West, in common with every other pest that attacks fruit trees—but the swelling fruits were doubtless checked by the pests in question, which sucked the juices from the leaves round the trusses, and, owing to the unfavourable conditions of weather that followed, the apples were never able to recover.

The crop of the year, however, is pears, and this generally miserable summer has suited them, for the fruit is particularly fine and clean. In many orchards there are a few trees of really good varieties that have been planted from time to time, and the farmer has a few pots to sell; but the low price he gets causes him to grumble. "What is the good of growing pears?" he says; "they fetch no money." And when you ask him how many he has sent to market, you find that it is only a matter of a few baskets, and perhaps it is several years since he sent any before.

But the pears that figure most conspicuously in West Country orchards are not eating varieties at all, but Perry pears, which in some seasons are worth sending to market to sell from costermongers' barrows. But this year the demand will be small, even if it exists at all. Fine old specimens of trees are these perry pears—the Blakeney Reds, Barlands, and the rest—and enormous is the weight of fruit that a single specimen will produce in a year like this, when every branch is simply roped with pears. What will be done with them? They will fall in due course, or be shaken from the trees; a quantity will be ground up for perry, or be mixed with the apples to make cider; while some, perhaps, will be sent to market.

The big centres of population in South Wales take a lot of the fruit direct from West Country orchards, and a lot goes to the Midlands and the North. But when there is anything like a crop, the prices of apples in local markets about this time are rarely very high. The reason of this is not far to seek, for the farmer, as a rule, has a great idea of getting the fruit into market as soon as possible—perhaps because he wants the money, or perhaps because he has no proper means of storage; or maybe he considers the loss and shrinkage that storage entails. But it would really be a wonder if much of the orchard produce realised good prices when you see the mixed medley of varieties that makes up a consignment from one farm—the big, little, and medium samples all jumbled together, or not infrequently with the former on the top, and the generally untidy and unattractive appearance of the packages. As a rule, there are plenty of buyers at the auction who know how far to go; and perhaps, in an ordinary way, they give as much as the fruit is worth; but not infrequently it is a price that would send the farmer to bankruptcy if he had to depend entirely on his orchard for a living.

G. H.

## BULBOUS FLOWERS OF AUTUMN AND WINTER.

Gardeners who fail to make judicious plantings of bulbs during July, August, and September miss one of the chief opportunities of the whole year; the preparation of beauty that will cheer the pleasure grounds during the dull months is, in too many places, infinitesimal. Because flower beds and borders full of bloom in November, December, January, and February are rare objects, certain to attract admiration—that non-jealous delight which soothes both soul and eye—especial pleasure should be taken in creating such displays in front gardens, whether of small or vast proportions.

The common deterring idea is that a perfect climate and dry, warm soil is needed, and that without them time, labour, and money will virtually be thrown away. Now this does not apply to the culture of colchicums, autumn crocuses, and winter crocuses at all, while even the exquisite winter-blooming irises can easily be accommodated with low rockeries made up of suitable compost, and so planned as to concentrate south sunshine and shut off cold winds, the large slabs of stone being laid so as to protect the roots from stagnant moisture, their one foe.

It may be doubted if Colchicum autumnale is to be found in one front garden out of a hundred, and when it is grown it is generally as an isolated group or two, far in the shrubbery. This hardy bulb will bloom well under trees, or close against the objectionable privet and other hedges that destroy the healthfulness of so much border soil, but it is entitled also to better treatment. An edifying display was made last year in the east border against a villa front; during summer begonias were gay, in September Colchicum autumnale was added, one bulb between each begonia, so that during November, after the tender plants had been stored, the ground was one flush of peach-mauve. Small golden shrubs were added, in the places of the begonias, as soon as the meadow saffrons failed.

This plan could have been improved upon, however, by the use of a fine collection of colchicum species instead of the employment of one, as all the mauve, rose, crimson, and purplish colours tone excellently; while later blossom might have been given by the winter and early spring species that are so little known. From November to January Colchicum Decaisnei can be had in perfection, and this is a flesh-coloured kind. Nor can its cost, which is about four shillings a dozen bulbs, be reckoned extravagant for a perennial addition of such merit. Colchicum brachyphyllum, pinky-white, blossoms in December and January; several others begin in early February, notably C. luteum, orange-yellow; C. hydrophyllum, purplish-rose; C. cilicicum, rosy-crimson; and the violetlined White C. crociflorum, two more expensive gems. Yet for making bold bank sides or summits of peach colour the common C. autumnale can be cordially recommended, or use may be made, for other effects, of its varieties, roseum, roseum plenum, purplish-crimson, and plenum, pale lilac.

There are aristocrats, too, among these autumn saffrons, notably Colchicum Bornmülleri, rosy-peach, white centred; C. byzantinum, rose; C. Parkinsoni, lilac and white; C. Sibthorpi, red-purple; and C. speciosum rubrum, crimson.

A bed filled with golden euonymus, eighteen inches high, and the autumn Crocus speciosus, a really bright blue, will be a delight. A belt of the winter Crocus, C. Imperati, violet, buff, and black-purple; or C. biflorus, white, marked with lilac, might be added; and finally a broad edge of the early spring Crocus Tommasinianus, a peculiar amethyst-blue shade; this would blossom before the ordinary mixed crocuses of our gardens.

Golden winter crocuses can be well massed around green or silvery shrubs. Crocus Susianus is most used, but C. ancyrensis is deep orange-yellow, therefore vastly superior, and costs only a penny a bulb. An effective species is Crocus Sieberi, mauve with yellow base. The autumn Crocus longiflorus is soft mauve, and deliciously fragrant.

In considering the possibilities of the winter iris we may give Iris stylosa, Iris reticulata, I. histrio, and I. histrioides first place in order of merit for January blossoming, but a charm all its own belongs to the small azure Iris Vartani, which comes from the Holy Land, and is said to be always open by Christmas.

The deep blue Iris verna of early spring is tolerably hardy in any sunny open border of the southern counties, and the March Iris Sindjarensis will give azure and white blooms on stems a foot tall. The beautiful Iris reticulata, violet and yellow, and the blue, white, and violet Iris Bakeriana, both gifted with the perfume of violets, flower freely in borders against south walls.

If more use were made of bulbous and other plants that flower in dreary months of the year our gardens would gain immensely in interest. The old-fashioned hepaticas, double and single; the tall single nodding snowdrops, and the gold star-like winter aconite, should all be included in beds and borders, the best results being ensured by early planting.

M. H.

## LILIUM LONGIFLORUM.

This occupies a foremost place among the most popular of all lilies, and deservedly so, for whether its beautiful silvery trumpets are borne out of doors during the summer, or under glass throughout the entire year, they are admired by everyone. Though it will flower well for one or two seasons after planting in many gardens, it is only occasionally that it can be permanently established, in the sense that Lilium candidum and L. croceum may be.

Bulbs of this lily must nowadays be imported into our country by millions, for in many commercial establishments they are flowered in a wholesale manner. The bulk of them are sent here from Japan, but we also receive large quantities from South Africa, and also from Bermuda. From this last-named island the first bulbs were sent about thirty years ago under the name of L. Harrisi, which name is still retained, though it is really but a form of L. longiflorum. These Bermuda-grown bulbs "caught on" at once, as in the first place they attained a development to which we were at that time quite unaccustomed; and next, owing to the early period at which they ripened, they reached here long before it was possible to obtain dormant bulbs of L. longiflorum from any other source, for the retarding system which has now attained such dimensions was at that time undreamt of. It was, I remember, considered to be a most noteworthy fact when we obtained flowers of Lilium Harrisi at Christmas; while now, thanks to retarding, they may be had in plenty at that season. A popular name for L. Harrisi was that of the Easter Lily of Bermuda, on the ground that the silvery trumpets were available for Easter decorations, but as a matter of fact they could be induced to flower a good deal earlier than that.

The bulbs which are now retarded in such a wholesale manner come chiefly from Japan, the first consignments reaching here, as a rule, about the end of October. The greater number consist of the variety Wilsoni, a superior form to the typical L. longiflorum, but large quantities of the vigorous-growing giganteum and the dark-stemmed Takesima are also sent. All of the Japanese bulbs are splendidly ripened, and even the comparatively small ones will flower well, while the larger ones yield a magnificent display. A variety sent to this country in very limited numbers is foliis albo-marginatis. In this, each leaf has a clear and decided edging of white; and when well grown it is, from a foliage point of view, equal to a dracæna.

Prior to the advent of these Japanese bulbs, we used to obtain our supplies of L. longiflorum from Holland, but we do not draw many from that country now. The longiflorum of the Dutch has shorter flowers and leaves than the Japanese form. This retarding, not only of lilies, but also of such things as spiræas, lily of the valley, etc., has been in vogue about a dozen years. At all events, my first introduction to this method was a group contributed by Mr. T. Rochford, of the Turnford Nurseries, when the meetings of the Royal Horticultural Society were held at the Drill Hall, Buckingham Gate, on October 23, 1900. The exhibit at that time aroused a great deal of attention.

Where Lilium longiflorum is cultivated for sale, the bulbs are usually either potted singly in 5in. pots, or three bulbs are arranged triangular-wise in pots 6in. in diameter. In common with all lilies that flower in a perfectly satisfactory manner the first season after they are moved, Lilium longiflorum pushes out a considerable number of roots from the base of the stem, and these convey a large portion of nourishment to the flowers. For this reason many cultivators, when potting the bulbs, leave a space of a couple of inches or so to allow of a top-dressing of good soil when the stem roots are ready to take possession of it. Apart from this, as the pots get full of roots, an occasional dose of liquid manure is very beneficial.

When Lilium longiflorum and its varieties are grown under glass it is very necessary to keep a sharp look-out for aphides or green-fly, as these are very apt to collect in the tender, unfolding leaves, and may do a great deal of damage before their presence is suspected. They attack the buds while quite small, and cause the flowers to become deformed. Dipping the points of the shoots in an insecticide, or vaporising, is the best way to get rid of them.

Planted out of doors the Japanese bulbs may be depended upon to make a grand display the first season, but, as above stated, unless exceptionally situated, they are likely to deteriorate afterwards. The conditions most favourable to this lily are a free, sandy, well-drained soil, and a sheltered position. The bulbs are none too hardy, hence a good plan is to cover the ground in the winter with some protecting material such as leaves, bracken, or coconut fibre refuse.

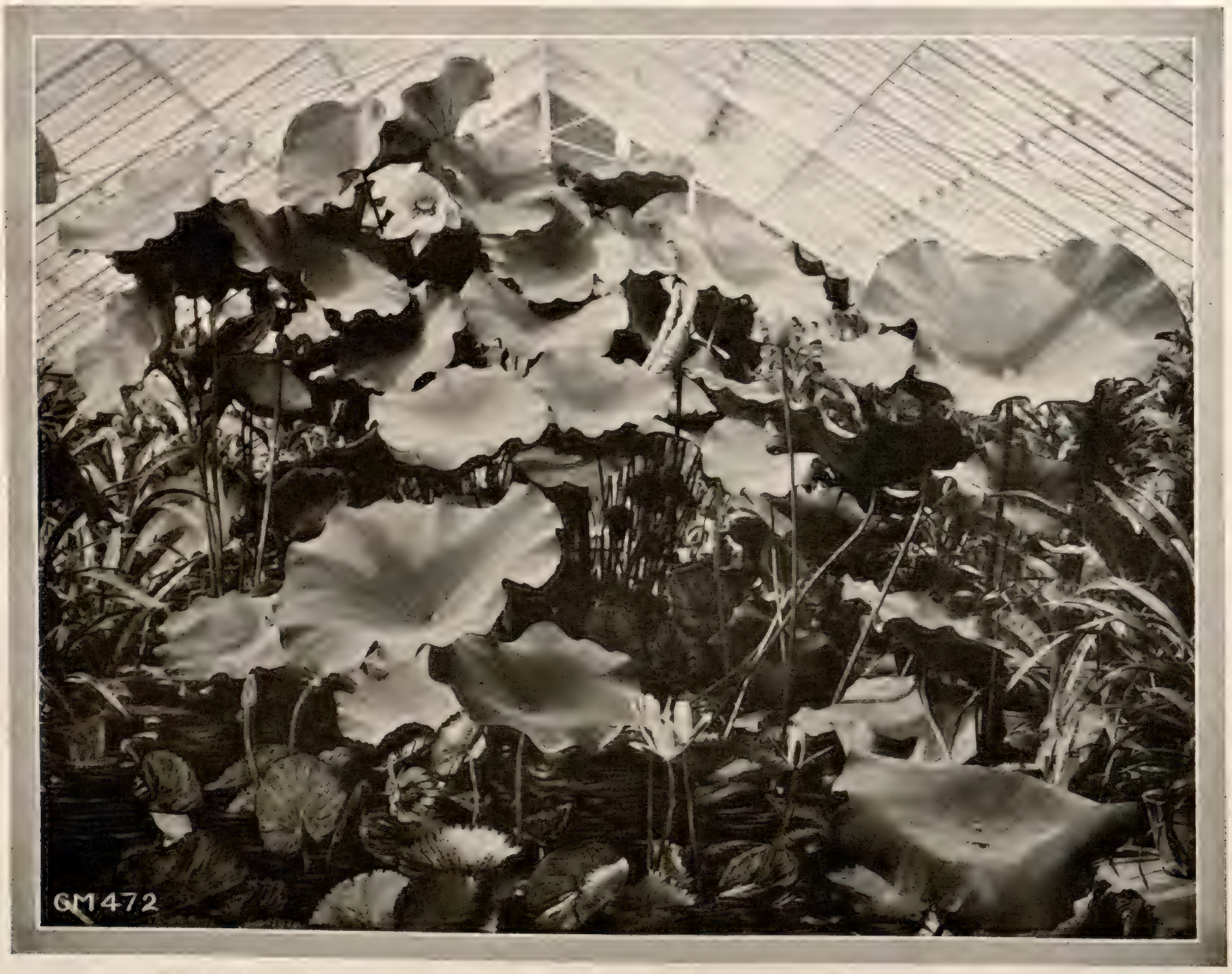
S. W.

**Wistaria sinensis for Forcing.**—The forcing of hardy flowering shrubs for greenhouse decoration has made considerable headway within recent years, a great number of different subjects having proved amenable to that treatment. In making a selection of the best, the wistaria must on no account be passed over, for, grown as standards, it will flower freely, and is quite distinct from its associates.—T.

## NELUMBIUM SPECIOSUM.

We have heard a great deal lately about the decorative value of the flowers and leaves of nelumbiums, and an effort is being made to popularise them, chiefly by means of imported flower buds that are expanded when they reach this country. We are apt to forget that nelumbiums were popular when Moses was undergoing his military training in Egypt, and when Joseph was Prime Minister in the land of the Pharoahs.

Where space can be afforded Nelumbium speciosum is an especially attractive aquatic for cultivation under glass. It is a most interesting and noble, as well as beautiful, subject, and now that so many of the popular "market" plants are grown in batches in almost every garden, the cultivation of the nelumbium would relieve the monotony that so frequently exists.



NELUMBIUM SPECIOSUM AND NYMPHÆA DEVONIENSIS AT BISHOP'S HALL.

At Bishop's Hall, Romford, the residence of Colonel Lockwood, a house is set apart for tropical aquatics. A tank 22ft. long, 8ft. wide, and 3½ft. deep, is provided, and one four-inch pipe runs all round the inside, this being ample for maintaining a temperature of 70 to 75 degrees in the water. Crotons are the only plants grown in the house, besides the nelumbiums, Nymphæa dentata, and N. Devoniensis. The crotons occupy the side stages. The house is never shaded.

During the first or second week in March, each year, the tank is cleaned out, the tuberous roots of the nymphæas and the creeping rootstocks of the nelumbiums being collected as the old soil is removed. As quickly as possible these are placed in new soil. For nelumbiums a compost of two parts turfy loam, one part leaf-soil, and one part dried cow manure is prepared. For the nymphæas a similar compost, minus the manure, is used; the nymphæas are placed in tubs, and the nelumbiums in a large tub. Water covers the whole to a depth of four inches.

The house is kept very warm, and when the foliage of the aquatics appears it is syringed two or three times a day in warm, bright weather. Under no consideration are the ventilators opened, so as to communicate directly with the outside air, but the doors at either end of the house, leading into other houses, are opened in the hottest weather, but these are invariably closed at two o'clock all through the summer. Late in autumn, when the plants show signs of going to rest, the temperature is greatly reduced, and during winter a night temperature of from 55 to 60 degrees is found sufficient.

Mr. George Cradduck, Colonel Lockwood's gardener, states that the nelumbium leaves are carried 6ft. to 6½ft. high, on stout stems, and the largest leaves have a diameter of 26 inches. The flower stems rise about 5ft. high, and the blooms are about a foot, or a little more, across, and of a beautiful soft rose colour.

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**Oncidium spilopterum**, with large yellow labellum and violet-coloured crest, is now flowering. It is of easy culture, growing well in the cool house during the summer months, but is best wintered in the intermediate house as advised for the other species. Many of the oncidiums do not lend themselves very readily to cultivation, but by closely observing their manner of growth, and their requirements, there is no reason why these difficulties should not be overcome. A mistake often made in the cultivation of all oncidiums is growing them in deep receptacles, and with too much compost about their roots.—J. T. Barker, The West Hill Gardens.

## CELOSIA PYRAMIDALIS.

This graceful plant has come markedly to the front within recent years, not only as a desirable subject for summer bedding, but also as a valuable one for the decoration of the greenhouse and conservatory. For this latter purpose it is, as a rule, most appreciated when the beauty of the outdoor flowers is over. A remarkable feature of this celosia is the intensely vivid colours of many of the inflorescences, so that they are looked upon as crude by some, and those of that way of thinking often contemptuously refer to them. There is, however, no question about their telling effect when judiciously disposed, as they serve to lighten up the more sombre-tinted foliage plants most effectually.

In order to have these celosias at their best they need to be grown straight away from the seedling stage without any check, using for the purpose light rich soil. The month of May is quite early enough to sow the seeds to produce plants for autumn flowering. There is now a considerable range of colour in the different forms. According to the "Dictionary of Gardening," this celosia, which is a native of India, was introduced in 1820. Another species very much older is the Cockscomb (Celosia cristata), which, by the same authority, is said to have been introduced in 1570. Many object to this celosia because of its lumpy habit, but it is really very showy, and a decided favourite of mine. W. T.

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**Tetranema mexicana.** — This uncommon Mexican plant is of a pretty, neat growth, and flowers continuously. It belongs to the Scrophularia family, but in its rosette of leaves it almost suggests one of the primulas. The purple flowers are borne in clusters.—K.

# GREAT EXHIBITION OF BRITISH-GROWN FRUIT.

Although the fine fruit show held at the Royal Horticultural Hall, Westminster, on October 10 and 11, was not the best of its series it must rank quite high, especially when the peculiarities of the season of 1912 are taken into full consideration. Apples were abundant and good, and the colouring fine, while pears were of particularly high quality. The choice dessert fruit classes, and the grape classes, brought out keen competition, but disqualification for the use of Washington as a dessert apple in the chief of the former classes caused not a little disappointment, but as this variety is listed as a cooking apple, the Council could do no other than disqualify it. Most folks would class Washington as a dessert apple, and say the list is wrongly compiled, but that does not help matters for the moment, and it adds further emphasis to the need on the part of competitors for a careful consideration of the schedule. The nurserymen's exhibits made a remarkably fine display, and Messrs. Gaskain and Whiting's set of twenty baskets of apples in the market growers' class was of exceptional excellence.

R.H.S. FRUIT SHOW.—GOLD MEDAL COLLECTION OF HARDY FRUITS.
Exhibited by Messrs. G. Bunyard and Co., Maidstone.

The effectiveness of the display as a whole was marred by the arrangement of all the trade displays in one-half of the hall, and the single dish and other flat exhibits at the other end.

### CHOICE DESSERT FRUITS.

Four competitors entered in the class for a collection of nine dishes of ripe dessert fruits, and the leading award was made in favour of Mr. G. Mullins, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury, who staged Gros Maroc and Muscat of Alexandria grapes, Pitmaston Duchess and Doyenne du Comice pears, Chas. Ross apples, Late Devonian and Barrington peaches, Pineapple nectarines, and Countess melon. It must have been a tough fight between Mr. Mullins and Mr. S. Barker, gardener to the Duke of Newcastle, Clumber, Worksop, who was placed second, though many of the visitors who "judged the judges," placed him first. He had Appley Towers and Muscat of Alexandria grapes, the latter not so good as Mr. Mullin's; Hero of Lockinge melon, splendid Pitmaston Duchess and Doyenne du Comice pears, good dishes of Washington and Cox's Orange Pippin apples, Golden Eagle and Salway peaches. Mr. Barker evidently lost ground on his grapes. Third prize fell to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, who had beautiful bunches of Madresfield Court grapes, and grand dishes of Cox's Orange Pippin and Washington apples, and Golden peaches.

Subsequently both second and third sets in the foregoing class were disqualified, to everyone's regret, and the disqualification occurred because both Mr. Barker and Mr. Goodacre showed Washington apples, and the R.H.S. lists include this as a cooking, and not as a dessert variety. Mr. T. Pateman was awarded the second place, as a result of these disqualifications. Extra prizes were awarded by the Council to Mr. Barker and Mr. Goodacre.

Six competitors came forward with collections of six dishes of ripe dessert fruits, and here Mr. W. H. Cooke, gardener to Lord Belper, Kingston Hall, Derby, led with Gros Colmar and Muscat of Alexandria grapes in good condition, Cox's Orange Pippin and Charles Ross apples, Pitmaston Duchess pears, and a fine dish of the pale Gladstone peaches. Mr. G. Shelton, gardener to Lord Hillingdon, Wildernesse, Sevenoaks, secured the second prize, and showed Pitmaston Duchess and Doyenne du Comice pears finely, and also had a good dish of Cox's Orange Pippin apple; Mr. J. Vert, gardener to Lord Howard de Walden, Audley End, Saffron Walden, third.

### GRAPES.

Mr. S. Barker won the silver cup for a collection of five varieties of grapes, two bunches of each. There were five competitors. Mr. Barker displayed heavy, well-finished bunches of Gros Colmar, Muscat of Alexandria, Black Hamburgh, Buckland Sweetwater, and Madresfield Court. Mr. J. H. Goodacre was a good second, and his selection of varieties was Madresfield Court, Muscat of Alexandria, Muscat Hamburgh, Golden Queen, and Gros Maroc.

For four varieties of grapes, selected from Madresfield Court, Mrs. Pince, Muscat Hamburgh, Muscat of Alexandria or Canon Hall Muscat, Mrs. Pearson, and Dr. Hogg, Mr. J. Shelton led with Madresfield Court, Mrs. Pearson, Muscat of Alexandria, and Mrs. Pince; Mr. G. Richardson second.

The popular Black Hamburgh grape was shown by six competitors, and the best pair of bunches were those set up by Mr. A. Heald, gardener to Rev. W. Beecher, Wellow Hall, Newark, whose small clusters were finely berried and of excellent colour; Mr. S. Barker second, and Mr. J. H. Goodacre third. Only one exhibit was staged in the class for a collection of hardy fruits, arranged on a space 12ft. by 3ft., and this was from Mr. Bacon, gardener to Sir Marcus Samuel, Bart., Mote Park, Maidstone. Lady Palmerston and Sea Eagle peaches, damsons, Monarch and Wyedale plums, nuts, figs, cherries, and a fine selection of apples and pears were put up, and the first prize was worthily awarded.

The best pair of bunches of Mrs. Pince came from Mr. G. Richardson, gardener to H. St. Maur, Esq., Stover Park, Newton Abbot, and were large clusters; Mr. J. Kidd, gardener to G. Miller, Esq., Newberries, Radlett, second. Eleven competitors came forward in the class for two bunches of Alicante, and grand bunches from Mr. H. Brown, gardener to Mrs. W. G. Raphael, Castle Hill, Englefield Green, secured the first prize. Mr. G. Mullins, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury, second; and Mr. Howe, gardener to Lady Tate, Park Hill, Streatham, third; while Mr. W. H. Allen, gardener to L. Currie, Esq., Minley Manor, Farnborough, was highly commended for finely-berried bunches.

In the Madresfield Court class, Mr. J. H. Goodacre scored with beautifully-finished, medium-sized bunches, and he was followed in order by Mr. J. Doe, gardener to Lord Savile, Rufford Abbey, Ollerton; and Mr. S. Barker, gardener to the Duke of Newcastle, Clumber, Worksop. Mr. Doe was first for Prince of Wales with rather ungainly bunches of wonderfully fine berries; Mr. H. J. Alderman, gardener to H. H. Konig, Esq., Ardenrun Place, Blindley Heath, second. In the any other black class, there were thirteen entries and first prize fell to Mr. R. Learmouth, gardener to J. Liddell, Esq., Sherfield Manor, Basingstoke, for large-berried examples of Appley Towers; Mr. H. Brown second with Lady Downes. Some enormous bunches of Gros Guillame were staged in this class by Mr. S. Barker.

About a dozen competitors staged a pair of bunches of Muscat of Alexandria, and first prize was given to Mr. J. Simon, gardener to W. W. Mann, Esq., Ravenswood, Bexley, whose large-berried bunches were a trifle shrivelled; Mr. A. R. Allan, gardener to Lord Hillingdon, Hillingdon Court, Uxbridge, second with longer, fresher-berried bunches. For any other white grape, Mr. T.

Pateman, gardener to C. A. Cain, Esq., The Node, Welwyn, led with large bunches of Mrs. Pearson, followed in order by Mr. A. Gooding, gardener to W. B. Bird, Esq., Eartham House, Chichester; and Mr. E. C. Wickens, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, both of whom showed Mrs. Pearson.

### MARKET GROWERS' CLASSES.

The best twenty baskets of apples, culinary and dessert varieties, shown by market growers, was unquestionably the set exhibited by Messrs. Gaskain and Whiting, Dargate, Faversham, and probably no finer twenty baskets could have been selected from the whole of the exhibition. The fruits were of grand size, even, clean, and bright—a perfectly splendid collection. The varieties were Newton Wonder, Gascoyne's Scarlet, Blenheim Pippin, Annie Elizabeth, Bismarck, Allington Pippin, Lord Derby, Rival, Cox's Orange Pippin, Warner's King (grand specimens), Peasgood's Nonsuch, Chas. Ross, Stone's, Ribston Pippin, American Mother, Lady Henniker, Cox's Pomona, King of the Pippins, Bramley's Seedling, and King of Tompkin's County. Second prize fell to Mr. Bolton Smart, Superintendent of the Hollesley Bay Labour Colony, Suffolk; Blue Pearmain, Royal Snow, Newton Wonder, Allington Pippin, and Chas. Ross were good in this set.

For a dozen baskets of apples, representing six each of cooking and dessert sorts, Mr. A. E. Mason, Rectory Farm, Hampton Hill, was a good first with beautiful, even sets of Chas. Ross, King of the Pippins, Ribston Pippin, Cox's Orange Pippin, Yellow Ingestre, Jas. Grieve, Lane's Prince Albert, Newton Wonder, Bismarck, Bramley's Seedling, Beauty of Kent, and Dumelow's Seedling. Mr. J. Holloway, gardener to H. Lumley Webb, Esq., Tunstall House, Sittingbourne, second.

### AMATEURS' COLLECTIONS OF APPLES.

Mr. T. Pateman, gardener to C. A. Cain, Esq., The Node, Welwyn, for sixteen dishes of cooking and eight dishes of dessert apples, won the Hogg Medal, with a good set that included good samples of Warner's King, Emperor Alexander, Peasgood's Nonsuch, Lane's Prince Albert, Washington, Cox's Orange Pippin, Chas. Ross, Jas. Grieve, and Wealthy; Mr. W. H. Bacon, gardener to Sir Marcus Samuel, Bart., Mote Park, Maidstone, second.

There was but one entry of twelve dishes of cooking and six dishes of dessert apples, and this, staged by Mr. F. G. Gerrish, gardener to J. G. Williams, Esq., Pendley Manor, Tring, gained a first prize. Lady Henniker, Warner's King, Peasgood's, Newton Wonder, Cox's Orange Pippin, Chas. Ross, and Allington Pippin were finely shown.

In the class for a set of eight cooking and four dessert apples, Mr. R. Learmouth led with a very fair set. Mr. Pateman scored for six dishes of cooking apples with good specimens of Peasgood's Nonsuch, Bramley's Seedling, Warner's King, Emperor Alexander, Lane's Prince Albert, and Queen; Mr. Mullins second, and Mr. W. H. Bacon third. Mr. Mullins took the lead for six dishes of dessert apples with bright, even dishes of Jas. Grieve, King of the Pippins, Rival, Wealthy, Cox's Orange Pippin, and Ribston Pippin; Mr. W. H. Bacon came second.

### AMATEURS' COLLECTIONS OF PEARS.

A fine set of eighteen dishes of pears from Mr. G. Davison, gardener to Colonel Petre, Westwick, Norwich, gained first prize and Hogg Medal, attracted much attention, and gained a great deal of admiration. The fruits were of wonderfully fine size, the varieties being Charles Ernest, Glou Morceau, Pitmaston Duchess, Souv. de Congrès, Pres. d'Osmonville, Beurré Baltet père, Emile d'Heyst, Durondeau, Doyenne due Comice, Conference, Beurré d'Avalon, Marie Louise, Bergamotte d'Esperen, Marguerite Marillat, Beurré Alexander Lucas, Triomphe de Vienne, Easter Beurré, and Nouvelle Fulvie. There was a fine competition, six exhibitors coming forward. Second prize fell to Mr. Pateman, and third to Mr. R. Learmouth.

For a dozen dishes of dessert pears, Mr. J. W. Bards, gardener to A. P. Brandt, Esq., Bletchingley, Surrey, was awarded a second prize, and was the only exhibitor. Mr. W. A. Cook, gardener to Sir Edmund Loder, Bart., Leonardslee, Horsham, came first for six dishes of pears with Doyenne du Comice, Beurré Baltet père, Marie Benoist, Duc de Nemours, Beurré Hardy, and Louise Bonne of Jersey; Mr. T. H. Bolton, gardener to the Earl of Devon, Powderham Castle, Exeter, second; and Mr. W. H. Bacon third.

A grand three dishes of stewing pears secured a first prize for Mr. G. Davison, who showed magnificent specimens of Uvedale's St. Germain, Catillac, and General Todleben.

### OTHER FRUITS.

Mr. James Vert, Saffron Walden, secured first for three dishes of plums with President, Coe's Golden Drop, and Vert's Violet — a handsome fruit with a violet line down each; Mr. James Hill, Kingston Lacy, Wimborne, second. Mr. Gerrish, gardener to J. G. Williams, Esq., Tring, scored for damsons and bullaces, and also led for a dish of Morello cherries.

### DISTRICT COUNTY CLASSES.

As usual, there was a series of distinct county classes, two classes in each division, one for six dishes of apples and one for six dishes of pears. In each case the first prize was 20s., and third class return rail fare; and second prize 15s. and return rail fare.

Among Kent growers Mr. J. Coleman, gardener to Captain S. G. Reid, The Elms, Yalding, led for apples with fine dishes of Bismarck, Lord Derby, Peasgood's Nonsuch, Warner's King, Cox's Orange Pippin, and Ribston Pippin; Mr. J. Bond, gardener to W. E. S. Erle Drax, Esq., Wye, second. In this division Mr. J. Coleman led for pears with Doyenne du Comice, Pitmaston Duchess, Durondeau, Marie Benoist, Conference, and Beurre Superfin in fine form; Mr. J. Bond second; three entries.

In the division open to Surrey, Sussex, Hants, Dorset, Somerset, Devon, and Cornwall there was a capital competition. Mr. Brock, gardener to the Duke of Richmond, Goodwood, Chichester, scored for apples with very handsome fruits of Peasgood's Nonsuch, Lord Derby, Warner's King, Allington Pippin, Charles Ross, and Lane's Prince Albert; Mr. J. Capp, Ferndale, Teignmouth, second out of eight competitors. The best pears in this division were good dishes of Beurré Baltet père, Beurré Bachelier, Doyenne Boussoch, Charles Ernest, Durondeau, and Doyenne du Comice, shown by Mr. T. Turton, gardener to F. J. Digby, Esq., Sherborne Castle, Dorset; Mr. A. Tidy, gardener to C. H. Combe, Esq., Cobham Park, Surrey, a good second.

The counties of Wilts, Gloucester, Oxford, Bucks, Berks, Beds, Herts, and Middlesex were grouped together, and here Mr. C. Page, gardener to J. B. Fortescue, Esq., Dropmore, Maidenhead, scored for apples, and staged a nice dish of Ribston Pippins.

R.H.S. FRUIT SHOW.—SILVER-GILT KNIGHTIAN MEDAL COLLECTION OF HARDY FRUITS.
Exhibited by Messrs. J. Cheal and Sons, Crawley.

Mr. A. R. Allan, Hillingdon Court Gardens, led for pears, and showed Charles Ernest and Durondeau finely; Mr. J. Coleman second.

The next grouping found Essex, Suffolk, Norfolk, Cambridge, Hunts, and Rutland associated, and here the premier award for apples fell to Mr. Andrews, gardener to the Right Hon. W. Lowther, Campsea Ash, Suffolk, who showed very good examples of Peasgood's, Lord Derby, Belle de Pontoise, Bismarck, Cox's Orange Pippin, and Ribston Pippin; Mr. A. Humphrey, gardener to Sir Montagu Turner, Havering, Romford, second. Pears in this division were best staged by Mr. W. Allan, gardener to Colonel Harbord, Gunton Park, Norwich, who was followed by Mr. W. Messenger, gardener to G. H. Berners, Esq., Woolverstone Park, Ipswich.

Lincoln, Northampton, Warwick, Leicester, Notts, Derby, Staffs, Shropshire, and Cheshire formed the next group, and here Mr. J. Taylor, gardener to F. Bibby, Esq., Hardwicke Grange, Shrewsbury, led both for apples and for pears, and he showed finely in each case, some of his best dishes being of Warner's King, Stirling Castle, Cox's Orange Pippin, Marie Louise d'Uccle, and Souv. du Congrès. Mr. H. Collier, gardener to Sir Oswald Mosley, Bart., Rolleston Hall, Burton-on-Trent, second for apples and also for pears.

Curiously enough there was only one exhibit in the class open to Worcester, Hereford, Monmouth, Glamorgan, Carmarthen, and Pembroke, and this was of pears from Mr. W. E. Hyde, Old Post Office, Trumpet, Ledbury; a second prize was awarded.

The six Northern Counties and the Isle of Man sent four exhibits. Mr. J. C. McPherson, gardener to Baron de Forest, Londesborough Park, Yorks, scored for apples; and Mr. W. Chuck, Brodsworth Hall, Doncaster, came second. For pears the same exhibitors filled similar positions.

Scotland sent three exhibits, one of apples and one of pears from Mr. Staward, gardener to R. M. Pilkerton, Esq., St. Fort House, Newport, Fife; he was awarded a second prize for apples, and a first for pears, and his varieties in the latter case were Thompson's, Clapp's Favourite, Beurre Diel, Marechal de la Cour, Chas. Ernest, and Bergamotte d'Esperen. Mr. J. Duff, gardener to Colonel Gordon, Threave House, Castle Douglas, was a capital first for apples, and showed Peasgood's, Gascoyne's, Scarlet, Worcester Pearmain, The Queen, Jas. Grieve, and Cox's Pomona.

Among Irish growers Mr. T. E. Tomalin, gardener to the Earl of Bessborough, Bessborough, Piltown, led for brightly-coloured apples, with Mr. C. B. Broad, Aghern, Conna, co. Cork, second. There were no pears from the sister Isle, and no exhibits at all from the Channel Islands.

### DESSERT APPLES: SINGLE DISHES.

Over two dozen classes were provided for single dishes of specified dessert apples, and in each class the first prize was 7s., and the second 5s. We give the first prizewinner in each instance.

Adam's Pearmain, eleven entries, Mr. J. Bond. Allington Pippin, eighteen entries, Mr. C. Wotton, gardener to the Earl of Westmorland, Woodcock Park, Sittingbourne. American Mother, seven entries, Mr. C. Page, Dropmore, Maidenhead, a finely-coloured set. Belle de Boskoop, four entries, Mr. G. Richardson. Ben's Red, two entries, Mr. C. B. Broad, Conna, co. Cork. Blenheim Orange, seventeen entries, Mr. A. Tidy. Charles Ross, ten entries, Rev. W. H. Bull, Westgate-on-Sea. Christmas Pearmain, two entries, Mr. J. Brock, Goodwood. Claygate Pearmain, one entry, no award. Coronation, three entries, Mr. J. Brock. Cox's Orange Pippin, twenty-two entries, Mr. J. Smith Kelly, gardener to the Duchess of Albany, Claremont, Esher—a fine dish. Duke of Devonshire, four entries, Mr. J. Copp, Ferndale, Teignmouth.

Egremont Russet, six entries, Mr. J. Bond. Houblon, three entries, Mr. J. Copp. James Grieve, seven entries, Mr. J. Copp. King of Tomkins County, nine entries, Mr. T. E. Tomalin, Bessborough. Lord Hindlip, two entries, Mr. T. E. Tomalin. Margil, eight entries, Mr. J. Coleman. Rival, six entries, Mr. J. Brock. Ribston Pippin, seventeen entries, Mr. W. Allan. Edmund's Pippin, one entry, Mr. W. Allan. Wealthy, eight entries, Mr. W. Messenger. Any other early variety, thirty entries, Mr. H. Markham, gardener to Viscount Enfield, Wrotham Park, Barnet, with Ellison's Early Orange. Any late variety, not previously named, twenty-four entries, Mr. W. Allan, first with Winter Ribston.

### COOKING APPLES: SINGLE DISHES.

In this division single dish classes were provided for a large number of specified varieties with prizes as for dessert apples.

Annie Elizabeth, seven entries, Mr. J. Bond. Beauty of Kent, four entries, Mr. A. Basile, Woburn Park Gardens, Weybridge. Bismarck, eight entries, Mr. A. Andrews. Blenheim Orange, nine entries, Mr. P. B. Awcock, gardener to D. A. Seligman, Esq., Iden Manor, Staplehurst. Bramley's Seedling, six entries, Mr. C. Wotton. Byford Wonder, two entries, Mr. J. Copp. Dumelow's Seedling, nine entries, Mr. J. Skelton. Ecklinville, five entries, Mr. C. Page. Edward VII., one entry, Colonel Bullock, Chiddingfold, Surrey. Emmett Early, one entry, Mr. J. R. Smith, gardener to J. Lewis, Esq., Bedgebury Park, Goudhurst. Emperor Alexander, ten entries, Mr. G. Richardson. A grand dish of fruits that was probably the best of the set had no class card, and was therefore not judged. Gascoyne's Scarlet, ten entries, Mr. J. Vert; here, too, there was a splendid dish of fruits without a class card, and therefore not judged.

Golden Noble, eight entries, Mr. J. Bond. Grenadier, two entries, Mr. C. Page. Hambling's Seedling, ten entries, Mr. J. Bond. Lady Henniker, five entries, Mr. J. R. Smith. Lane's Prince Albert, twelve entries, Mr. T. A. Tomalin. Lord Derby, four entries, Mr. J. Coleman. Mere de Menage, three entries, Mr. G. Richardson. Newton Wonder, eight entries, Mr. J. Bond. Norfolk Beauty, six entries, Mr. A. Andrews. Peasgood's Nonsuch, eleven entries, Mr. F. Brock—a grand dish. Pott's Seedling, two entries, Mr. G. Longhurst. Rev. W. Wilks, three entries, Mr. T. E. Tomalin. Royal Jubilee, two entries, Mr. J. Brock. Stirling Castle, two entries, Mr. C. Page. The Queen, seven entries, Mr. T. E. Tomalin. Tower of Glamis, five entries, Mr. B. J. Meyer, Wierton Place Gardens, Maidstone. Warner's King, nineteen entries, Mr. C. Wotton. Any variety not included above, twenty entries, Mr. Tomalin, with Loddington in fine form; indeed, Mr. Tomalin's fruits were very fine, and his numerous successes should prove distinctly favourable to the steadily-growing fruit industry in Ireland.

### CHOICE DESSERT PEARS.

About forty classes were provided for specified varieties of choice dessert pears, and in each class prizes of 7s. and 5s. respectively were offered. In these classes we give the first-prize winner only.

Beurré Alexander Lucas, nine entries, Mr. T. Turton. Beurré d'Amanlis, one entry, a second prize to Mr. G. Longhurst.

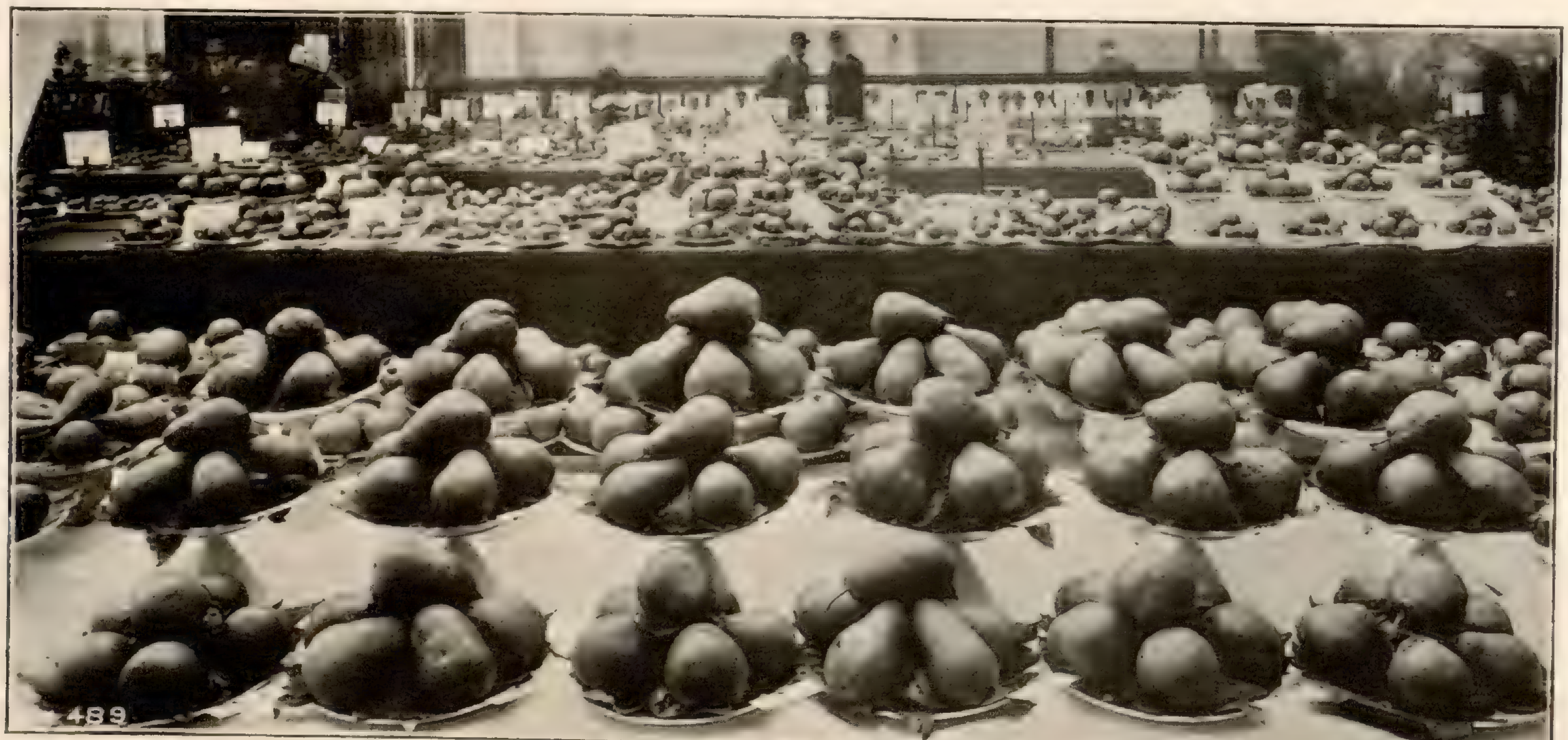
Back row.—Bramley's Seedling, Peasgood's Nonsuch, Mère de Ménage, Lord Derby, Barnack Beauty, Emperor Alexander.
Middle row.—Beurré Alexandre Lucas, Doyenne du Comice, Pitmaston Duchess, Beurré Baltet père, Conference, Marie Benoist.
Front row.—Charles Ross, Blenheim Pippin, Ribston Pippin, King of the Pippins, Wealthy, Cox's Orange Pippin.

R.H.S. FRUIT SHOW.—FIRST PRIZE COLLECTION OF APPLES AND PEARS.

Exhibited by the Ipswich Gardeners' Society in the Affiliated Societies' Class.

Beurré d'Anjou, four entries, Mr. C. Page. Beurré Bosc, eleven entries, Mr. T. Turton. Beurré Dumont, two entries, Mr. A. Basile. Beurré Hardy, sixteen entries, Mr. A. Basile. Beurré Perran, one entry, Mr. T. Turton. Beurré Superfin, eight entries, Mr. T. Stevenson, gardener to E. G. Mocatta, Esq., Woburn Place, Addlestone.

Blickling, one entry, Mr. W. Allan. Charles Ernest, eight entries, Mr. T. Turton. Comte de Lomy, eight entries, Mr. A. R. Allan. Conference, five entries, Mr. T. Turton. Doyenne du Comice, eighteen entries, Mr. T. Turton. Durondeau, eleven entries, Mr. T. Turton. Easter Beurré, seven entries, Mr. A. R. Allan. Emile d'Heyst, eight entries, Mr. T. Turton. Fondante d'Automne, five entries, Mr. A. Basile. Fondante de Thirriot, four entries, Mr. Messenger. Glou Morceau, fifteen entries, Mr. E. Colman, gardener to B. E. Richardson, Esq., Hill House, Stanstead Abbotts. Gratioli of Jersey, two entries, Mrs. M. P. Mead, St. Mary's, Teddington. Josephine de Malines, twelve entries, Mr. T. Turton. Le Brun, two entries, Mr. A. Basile. Le Lectier, ten entries, Mr. J. Vert—very fine fruits. Louise Bonne of Jersey, six entries, Mr. J. Taylor, Shrewsbury. Marie Benoist, seven entries, Mr. T. Turton. Marie Louise, twelve entries, Mr. J. R. Smith, Goudhurst. Nouvelle Fulvie, nine entries, Mr. T. Turton, Olivier des Serres, eleven entries, Mr. A. R. Allan. Pitmaston Duchess, eleven entries, Mr. F. King, gardener to the Rev. H. A. Bull, Westgate-on-Sea. President Barabe, three entries, Mr. W. Allan. Souv. du Congrès, three entries, Mr. A. Basile. Thompson, seven entries, Mr. A. R. Allan—a beautiful dish. Triomphe de Vienne, two entries, Mr. J. Skelton. Winter Nelis, seven entries, Mr. A. E. Gardner, gardener to Lord Foley, Ruxley Lodge, Esher. Any other early variety, sixteen entries, Mr. A. Basile, with Marguerite Marillat. Any other late variety, twenty entries, Mr. T. Turton, with fine examples of Beurré Baltet père. In these two latter classes eight fruits had to be staged "for the judges to be able to taste two of them." Evidently the judges had more faith in names and sight than in flavour, as not a single example was cut in all the thirty-six dishes.



Back row.—Charles Ernest, Glou Morceau, Pitmaston Duchess, Souvenir du Congrès, President d'Osmonville, Beurré Baltet père.
Middle row.—Marie Louise, Beurré d'Avalon, Conference, Doyenne du Comice, Durondeau, Emile d'Heyst.
Front row.—Bergamotte d'Esperen, Marguerite Marrillat, Beurré Alexander Lucas, Triomphe de Vienne, Easter Beurré, Nouvelle Fulvie.

R.H.S. FRUIT SHOW.—FIRST PRIZE EIGHTEEN DISHES OF PEARS.

Exhibited by Colonel J. B. Petre (Mr. G. Davison, gardener), Westwick, Norwich.

## NURSERYMEN'S CLASSES.

The chief of the several classes provided for nurserymen only was for a display of hardy fruits, grown out of doors, arranged on a space 30ft. by 6ft. Here there were three competitors. Messrs. George Bunyard and Co., Maidstone, secured a gold medal for a very fine display of capital fruits set up in dishes and baskets, with a few tall stands and some palms to prevent any appearance of flatness. Some of the finest apples shown were Beauty of Stoke, Twenty-Ounce, Norfolk Beauty, Newton Wonder, Rival, Peasgood's, Blenheim Orange, Lord Derby, King of the Pippins, Withington Fillbasket, Bramley's Seedling, Bow Hill Pippin, James Grieve, New Hawthornden, Gilozie, and Tower of Glamis. Especially good pears were Duchess d'Angoulême, Beurré Alexander Lucas, Pitmaston Duchess, Conference, Emile d'Heyst, Doyenne du Comice, Beurré Clairgeau, and Charles Ernest.

Messrs. J. Cheal and Sons, Crawley, secured a silver-gilt Knightian medal for a very handsome exhibit and a well-arranged one. Particularly good were the large baskets of Encore, James Grieve, Stirling Castle, Lane's Prince Albert, Cox's Orange Pippin, Charles Ross, Warner's King, Rival, Beauty of Stoke, Alfriston, Lord Derby, Chelmsford Wonder, and Bismarck apples, and the new Beurre de Naghan, and the old Catillac pears. A silver-gilt Knightian medal fell to Messrs. H. Cannell and Sons, Swanley, for excellent fruits, all well staged in pyramids on dishes and baskets. The apples were uncommonly good, especially such sorts as Bramley's Seedling, Annie Elizabeth, Charles Ross, Brabant Belle Fleur, Alfriston, Mrs. Barron, Allington Pippin, Warner's King, Emperor Alexander, Bertigheimer Red, Norfolk Beaufin, Wealthy, and King of Tomkins County.

In the next class the space allowed was 20ft. by 6ft., and here there were five entries. Mr. R. C. Notcutt, Woodbridge, was awarded a gold medal for an exhibit of some of the brightest fruits in the show of Ribston Pippin, Lord Stradbroke, King of Tomkins County, Cox's Orange Pippin, Emperor Alexander, The Queen, Baumaunn's Red Reinette, Gascoyne's Scarlet, Fearn's Pippin, Mère de Ménage, Charles Ross, Annie Elizabeth, King of the Pippins, Hollandbury, and Rival apples; he had splendid and brilliant fruits. Messrs. S. Spooner and Sons, Hounslow, gained a silver-gilt Knightian medal for a fine display wherein Castle Major, Pott's Seedling, Newton Wonder, Bow Hill Pippin, Hambling Seedling, and Warner's King apples were good, and there was a fine stand of Uvedale's St. Germain pears.

The Barnham Nurseries, Barnham, Sussex, also secured a silver-gilt Knightian medal for a very well-displayed set of well-grown fruits. Among apples the popular sorts were capitally represented, and we noted good dishes of Egremont Russet, Winter Quarrenden, Dumelow's Seedling, Bow Hill Pippin, Winter Ribston, Sandringham, and King's Acre Pippin and King's Acre Bountiful.

Messrs. W. Seabrook and Sons, Chelmsford, were awarded a silver Knightian medal for their exhibit of large baskets and dishes of twenty apples and pears. Allington Pippin was in fine form, as also were Bismarck, Cox's Pomona, Peasgood's, The Queen, Cox's Orange Pippin, Lane's Prince Albert, and Royal Jubilee apples.

Messrs. Laxton Brothers, Bedford, were awarded a silver Knightian medal for their contribution of clean, bright fruits. Their Cox's Pomona, Lane's Prince Albert, The Queen, Thomas Rivers, Newton Wonder, Jas. Grieve, Schoolmaster, and Allington Pippin apples were particularly good.

In the smaller class, the fruits arranged on a space 12ft. by 6ft., Mr. Chas. Turner, Slough, won a silver-gilt Knightian medal for very fine fruits arranged over red oak leaves. The new Arthur Turner apple that recently gained an award as Turner's Prolific; Chas. Ross, Peasgood's Nonsuch, Lord Derby, Ribston Pippin, Lady Henniker, Cornish Giant, and Bismarck apples. Messrs. G. Cooling and Sons, Bath, were awarded a silver-gilt Banksian medal; they had a fine dish of Pitmaston Duchess pears. Messrs. J. Peed and Son, West Norwood, secured a silver Knightian medal, and Messrs. Paul and Son a silver Banksian medal and each firm had a good exhibit.

## AFFILIATED SOCIETIES' COMPETITION.

First prize in the Affiliated Societies' competition fell to the Ipswich Gardeners' and Amateurs' Association, Mr. F. W. Salmon, Brooks Hall Road, Ipswich, secretary. This exhibit contained especially good dishes of Bramley's Seedling, Mère de Ménage, Lord Derby, Ribston Pippin, King of the Pippins, Cox's Orange Pippin, Peasgood's, Annie Elizabeth, and Bismarck apples, and Conference, Doyenne du Comice, Pitmaston Duchess, Durondeau, Glou Morceau, and Beurré Baltet père pears. The East Anglian Horticultural Society followed closely for second place, and the Colchester Gardeners' Association was third with a meritorious collection. The Affiliated Societies' challenge cup went to the Colchester Society, as both the Ipswich and East Anglian Societies have won it during the last three years.

## ORCHARD HOUSE FRUITS.

The premier award for orchard house fruit and trees, a gold medal, was won by Messrs. T. Rivers and Sons, Sawbridgeworth. This firm staged wonderfully-cropped pot trees of King of Tomkins County, Buckingham, Peasgood's Nonsuch, Belle de Pontoise, Cox's Orange Pippin, and Ribston Pippin apples, of Marie Louise, Conference, and Beurré Bachelier pears, and several figs. Wonderfully fine in size and colour were the picked fruits of such handsome and useful apples as King of Tomkins County, Gascoyne's Scarlet, Jas. Grieve, Blenheim Orange, Cox's Pomona, Ribston Pippin, Washington, Cox's Orange Pippin, Emperor Alexander, Reinette Descadoc, Egremont Russet, while Pitmaston Duchess, Durondeau, Doyenne du Comice, and Magnate pears were very fine.

A silver-gilt Banksian medal was awarded to The King's Acre Nurseries, Lim., Hereford, for their exhibit of orchard house trees and fruits. Their trees of Gascoyne's Scarlet, Wm. Crump, King's Acre Pippin, Cox's Orange Pippin, Beauty of Kent, and Bismarck apples carried good crops of finely-coloured fruits, and in the dishes of picked fruits there were splendid examples of Gloria Mundi, Emperor, Alexander, Washington, Cox's Pomona, Sandringham, Allington Pippin, and Rival apples.

R.H.S. FRUIT SHOW—GOLD MEDAL COLLECTION OF TWENTY BASKETS OF APPLES.
Exhibited by Messrs. Gaskain and Whiting, Faversham, in the principal class for market growers.

Only one exhibit of nine vines in pots was put up, and this, from Messrs. T. Rivers and Sons, Sawbridgeworth, secured a silver Knightian medal. The vines were fairly well fruited, and the varieties were Gros Colmar, Golden Queen, Alicante, and Melton Constable.

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**Montbretias.**—These charming bulbous plants, of which the newest form, Star of the East, attracted so much attention at the recent meeting of the Royal Horticultural Society, may, under the above name, be sought for in vain in some works of reference. Both in the Kew Hand Lists and in the "List of Plants Certificated by the Royal Horticultural Society," the montbretias are included in the genus Tritonia, though the certificates and awards have been made to them as montbretias.—K.

## THE ARTISTIC USE OF CLIMBERS.

There are few gardens that do not owe much of their beauty to climbing plants, for, however charming a place may be made with ordinary flowering plants and shrubs, it cannot be considered complete unless advantage is taken of some of the more desirable climbers that are capable of producing such delightful effects. Climbers can be used in a great variety of ways, but it is often those that are made use of in an unusual and original manner that add the greatest charm. At this season of the year many climbers are seen at their best, and it is well to note the positions in which they succeed and create the most artistic and pleasing effects.

In the case of some of the stronger-growing kinds, they can very well be utilised for spreading their elegant growths over the forest trees and shrubs in the pleasure grounds, a method that might be more largely practised than at present. Several ornamental vines succeed admirably in this way, especially Vitis Cognetiæ and V. Thunbergi. When well established these create charming effects in the autumn with their richly-coloured foliage, especially when growing over hawthorns and hollies. Such plants require little attention, beyond being kept free from grass and weeds around their roots; but a top-dressing of well-rotted manure is often a help in promoting vigorous growth. Varieties of Rosa polyantha succeed in this way, and so does Clematis vitalba, masses of the latter producing a beautiful display at the present time. Clematis montana rambles freely over large shrubs, and C. Jackmanni grows rapidly among trees like Acer negundo variegata; while in contrast with Liquidambar styraciflua in the autumn, the effect must be seen to be realised. The common honeysuckle and Jasminum officinalis are worth planting among the trees for their scent alone.

There are a great variety of subjects suitable for clothing rustic summer-houses, pergolas, and similar ornamental erections. Ceanothus azureus Gloire de Versailles is one of the most desirable plants for this purpose, as its lovely azure-blue flowers make a display for a long period. Aristolochia sipho commonly known as the Dutchman's Pipe, with its large green leaves, is very attractive. Bignonia radicans, with its rich orange-scarlet flowers in September, demands attention; but a fairly sheltered position is essential to grow it well. Wistaria sinensis and W. multijuga grow freely on pergolas, but are more at home planted to clothe a warm balcony. Periploca græca, Photinia serrulata, and a large variety of the climbing roses, are well adapted for this purpose.

Climbing roses and clematis of the Jackmanni type should also be grown on poles in the shrubberies. Subjects like Escallonia macrantha, E. Langleyensis, Caryopteris mastacanthus, Cratægus pyracantha, Garrya elliptica, Magnolia grandiflora, Chimonanthus fragrans, and cotoneasters in variety, are suitable for planting against terrace walls.

Fences can often be made exceedingly gay with climbers, rendering them unusually attractive; but it is not recommended to plant against hedges, owing to the difficulty in trimming them. Roses of the Wichuraiana type are very suitable for fences, but besides these, clematis, vitis, and some of the variegated ivies may be used. Many more subjects might be enumerated, but those named include most of the more desirable climbers for the purpose, the object being to indicate where, and in what manner, they may be used. Thorough preparation of the ground is essential before planting, for if the plants receive a good start they are sure to be a success, and a source of satisfaction in the future.

Batsford Park Gardens. J. Gardner.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

MAXILLARIAS.—This large genus contains many species which, on account of the small size of their flowers, are not worthy of cultivation as decorative plants. The following species comprise the best and most generally grown: M. Sanderiana, M. splendens, M Turneri, M. venusta, M. luteo-alba and the old and useful M. grandiflora. The last-named is very desirable for blooming at the present season, and its fragrant flowers are always acceptable. These species are all of evergreen habit, and are easy to cultivate, and, as a rule, rarely fail to produce flowers. A well-ventilated, cool intermediate house meets their requirements the year round, and with the exception of M. Sanderiana, all may be grown in ordinary flower pots. Should space be limited the whole may be grown like M. Sanderiana, in teak baskets, suspended from the roof. In the cultivation of these plants in baskets, it is not advisable to place crocks at the bottom, but a few pieces of fern rhizomes, to prevent the compost being washed away when dipping the plants. M. Sanderiana often produces its flower spikes horizontally from the base of the pseudo-bulbs, and pushes them through the compost in a downward direction.

COMPOST.—Good fibrous peat, Osmunda fibre, and sphagnum moss, in equal proportions, form the most suitable rooting medium. The earthy particles should be removed from the fibres as advised in previous notes. The roots, in most cases, are somewhat large and fleshy, and should not have the compost placed about them too firmly, and the material used in the compost should be as rough, and in as large lumps as is consistent with the size of the pots, or baskets. When grown in pots maxillarias must be well drained, and the remarks made respecting rebasketing are also applicable to repotting.

INSECT PESTS.—Maxillarias, if grown in too high a temperature, or in an atmosphere inclined to be dry, are subject to attacks of red spider, which must be eradicated by sponging, or some other method.

MASDEVALLIA TOVARENSIS, and species of the Chimæroid section, which require a slightly warmer position than the cool house, affords during the winter months, should be removed to the intermediate house and be suspended at the coolest and most airy part. They require plenty of water at all times. These plants also are subject to the attacks of red spider, and yellow thrips, especially during their sojourn in the warmer division, therefore they must be carefully examined from time to time.—J. T. BARKER, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

AZALEAS.—Few plants can surpass these for general usefulness in the conservatory during the winter and spring months. Large numbers of splendid, well-budded plants are imported annually both of indica and mollis varieties, and no plants, to my mind, give such a quantity of bloom in return for the small outlay and labour required. One sees these plants sold by auction in many of the large towns in England, and they can often be thus purchased at a ridiculously low price. I do not, however, recommend buying these plants in this way, as it is a risky proceeding, but rather would advise purchasers to obtain them from some reliable nurseryman. Azaleas are very fine rooting subjects, and when imported can be accommodated in rather small pots. The principal compost for azaleas will be peat and silver sand. Plants should be ordered soon, and directly they are received they should be repotted and the soil rammed firm. They should be stood in cold frames, and sprayed occasionally; they must not be allowed to become dry at the roots, or the leaves will soon drop, and the buds will not develop, but turn soft and brown. After they have become accustomed to this treatment for about three weeks they may be taken into warmer quarters, a few at a time, and gradually forced.

SPIRÆAS.—The many herbaceous spiræas such as S. japonica, S. palmata, S. astilboides, S. Peach Blossom, and S. Queen Alexandra are now available in large quantities, and should be secured and potted up forthwith. These are extremely useful, and when a batch is well grown, many spikes of flowers in varying hues give a delightful effect. Spiræas like a heavy compost, and should be potted firmly. When growing they will need any amount of water, and should on no account be allowed to become dry. When the flower spikes are advancing it may be necessary to water the plants twice daily.

LILY OF THE VALLEY.—Retarded crowns can still be obtained, and where quantities are required batches of crowns should be potted up fortnightly. The quality of the soil used does not matter, as the crowns do not make fresh roots during the process of forcing, but a light porous soil is best. Cocoa-nut fibre refuse is also a good material to place them in. Nine or twelve crowns should be placed in each 5in. pot, and put in a warm house, standing another pot of the same size upside down over the crowns, to keep them dark for a few days. These can be had in bloom in about fourteen days from the time of potting and placing them in heat.—LEWIS SMITH, Norwich.

## HARDY FRUITS.

CHERRIES.—By selecting suitable varieties it is possible to grow cherries on any aspect, the warmer and more protected aspects will naturally be the most suitable for the early varieties. East and west aspects should be chosen for mid-season sorts, and walls facing a northerly direction may be utilised for the late cherries. The following list comprises most of the best, and will ensure a succession of fruits. Early Rivers, Bigarreau Jaboulay, Bigarreau de Schrecken, Frogmore Bigarreau, Knight's Early Black, Governor Wood, Elton Heart, Black Tartarian, Emperor Francis, Waterloo Heart, Noble, Bigarreau Napoleon, Florence, St. Margaret's, May Duke, Guigne d'Annonay, Late Duke, and Guigne de Winckler. Morello, Flemish Red, and Scarlet King succeed well on a north wall. Kentish Red is a prolific cropper of rich flavour, and makes an excellent preserve.

NECTARINES.—A selected list of nectarines for planting will include such varieties as Early Rivers, Lord Napier, Elruge, Dryden, Rivers' Orange, Pineapple, Humboldt, and Spencer. Stanwick Elruge is a fine variety, but requires a warm and well-protected position.

PEACHES.—There are now so many excellent peaches that it is a difficult matter to decide upon which varieties to include or omit in a comprehensive list which will give a succession of fruits throughout the season. The following are all of sterling merit: Duchess of Cornwall, Amsden June, Waterloo, Hale's Early, Rivers' Early York, Early Grosse Mignonne, Peregrine, Crimson Galande, Alexandra Noblesse, Dymond, Stirling Castle, Prince of Wales, Sea Eagle, Late Devonian, Princess of Wales, and Golden Eagle.

PLUMS.—The best dessert kinds are Early Transparent, Transparent (original variety), Late Transparent Gage, Kirke's Blue, Green Gage, Jefferson, Bryanston Gage, Comte d'Althan's, Reine Claude de Bavay, Coe's Golden Drop, Coe's Violet, Golden Transparent, and Late Orange. All the foregoing are worthy the protection of a wall, and few of the gages succeed perfectly without it. Good culinary varieties that will afford a succession from mid-July to November are: Rivers' Early Prolific, Czar, Sultan, Belgian Purple, Victoria, Pond's Seedling, Primate, President, Monarch, and Wyedale. Where possible trees of the later varieties should be planted against a wall, preferably a west aspect, where it is possible to protect the trees at any time against the attack of birds, either during the swelling of the flower buds or when the fruits are ripe. The serious effects of cold winds and frost may also be minimised during the flowering period, and swelling up of the young fruits in the same way. Some varieties of those enumerated as cooking plums are, when fully ripe, good for dessert, notably Rivers' Early Prolific, Czar, Sultan, and President.

DAMSONS. — Bradley's King and Shropshire Prune are the finest in point of size. The Merryweather (a new variety), is a very fine fruit, and will no doubt be largely grown in the near future. Farleigh Prolific is an immense cropper, but the fruits are small.

FIGS.—The finest variety for outdoor culture is Brown Turkey; Brunswick, and White Marseilles may be included if variety is desired. Figs should be afforded a warm position against a wall, or if grown in bush form, they must have a well-protected situation, where they will receive the maximum of sunheat. The wood needs to be thinly trained, and the roots restricted. — W. MESSENGER, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

CUCUMBERS.—To maintain a regular supply at this season of the year, and onwards, great care must be exercised. Plants from seeds sown in August are now coming into bearing, and will need every encouragement to promote stout growths before the winter months arrive. Never over-crop the plants and always keep them perfectly clean. Maintain a steady temperature and an atmosphere in accord with outside conditions. Top-dress very lightly each week with a mixture of sweet loam, flaky leaf-soil, and a little mushroom bed manure, all warmed before use. Cut the fruits as soon as large enough so as not to unduly strain the plants.

RUNNER BEANS.—The late sowings of these and of climbing French beans are still producing serviceable crops. Gather when large enough, and lay those not required on a damp mat. Keep the rows safe from frost by using some protecting material at night.

RHUBARB CROWNS that have been grown for forcing are ripening satisfactorily as a result of the fine and dry September we have had. These will make excellent material for forcing. It will be the better plan, where very early forcing is contemplated, to expose the roots entirely, working all the soil away so as to expose them to the weather for ten days or more, previously to placing them in the forcing quarters. This treatment will give the rhubarb a complete rest, and the response, when placed in heat, will be very marked.

SEAKALE.—This crop has formed very fine, strong crowns this year, and, like rhubarb, is ripening off its foliage very early. If any of the foliage is green let the crop be taken up, lay on the ground for a few hours for the foliage to wilt, when it can then be cut off without any loss from bleeding. Place in mushroom-houses or other structures of similar temperature, and keep quite dark. Give regular supplies of water at the roots. Later lifted plants will be found to shed their leaves easily and completely. In forcing this crop beds of ordinary soil, with a good supply of leaf-mould added, can be formed, or deep boxes or large flower-pots be used.

GENERAL REMARKS.—The lovely summer-like weather of the last five weeks will help to ripen and harden up all vegetable crops, and enable them to withstand the coming winter. Any assistance that can be given in this direction should be afforded. Much may be done by removing all decaying leaves. Brussels sprouts will greatly benefit from this treatment. While fine weather continues dig over vacant plots as roughly as possible; the ground will benefit much if so treated until time for trenching arrives. Frosts must be expected, and prepared for. Continue to earth up celery and cardoons; hoe and fill up cabbage plots; winter parsley, lettuces, spinach, turnips, and onions will be the better for an application of soot or wood ashes.—GEO. ELLWOOD, Swanmore Park Gardens.

## AMONG THE ROSES.

Last year September was one of the best months for roses during the season, and with the present-day varieties it is likely to be so in future. The slightly cooler weather after July and August is admirably suited to the better development of the charming decorative teas and their hybrids. Such varieties as Betty, G. Nabonnand, Peace, Madame Ravary, Richmond, General MacArthur, Lady Ashtown, Theresa, Molly Sharman Crawford, Lady Battersea, Corallina, and Gustave Regis—only to name a dozen that occur to me as I write—are invariably better and more lasting than during the heat of midsummer, when the sun is apt to expand them too quickly. In addition to these lighter colours we now have several capital dark varieties, the flowers of some almost maroon. Victor Hugo, Chateau de Clos Vougeot, Etoile de France, Kaiser Wilhelm, Laurent Carle, and W. E. Lippiat, all give excellent autumn flowers. A few of our best late bloomers among climbers and pillar roses are Ards Rover, Gruss an Teplitz, Aimée Vibert scandens, Madame Alfred Carrière, and William Allen Richardson, which seldom fail to give a fairly good show of blossoms.

### Pruning Ramblers.

There is considerable work to be done among roses this month. Strong shoots of this year's growth upon climbers and ramblers should be made secure against the winds. These being the most valuable part of the plants for next season's display, it is important to avoid any chafing and bruising of the wood and eyes. It ought not to be necessary, but I would again like to warn my readers against the too ruthless removal of these rambling growths, simply because they are flowerless now, and sometimes rather in the way. Far better cut out more of the growths that have already flowered, and so make room to tie these in loosely but securely, allowing plenty of air and light to reach the wood.

The heps upon the rugosas are bright and showy. In connection with these I am much pleased with the small and bright scarlet heps of American Pillar, which are now very prominent upon the deep sea-green foliage so characteristic of this useful rose. I do not remember American Pillar better than it has been this season, in whatever form it was grown. Perhaps it was seen to the greatest advantage as tall, semi-weeping standards. This variety, like Dorothy Perkins and its relatives, has the great advantage of carrying gracefully drooping rods of growth, with deep, glossy green leafage that is always clean and pleasing after the flowering season is past.

### Rooting Cuttings.

But to return a little closer to seasonable work. The present month should find us very busy with cuttings, both of stocks and roses. Most of the climbing polyanthas and wichuraianas root as freely as any of the stocks, and where this is the case I strongly advise their culture in this form rather than having them worked upon foster roots, which are always liable to produce an undesirable sucker, whereas, from cuttings, the whole of the growth is valuable, and the suckers most of all. I have had very indifferent success in rooting some of the later hybrids of the wichuraianas, and have decided not to attempt some of them in that form again.

Dorothy Perkins, striking so freely, and making roots so full of fibre, it occurred to me to use it as stock for other roses; but it will not do. True, they grow freely enough, both as budded plants and grafted under glass, but to keep down suckers was found quite impossible. Even when grafted upon pieces of root alone, suckers formed after the manner of brambles and raspberries, and it needed constant attention to confine the roots to supporting the bud or graft only, and when once the original growth got away the rose was quickly starved.

Briar, Manetti, Polyantha, and De la Grifferaie cuttings for future stocks should have the lower eyes carefully removed before the cuttings are inserted. But roses not intended for stocks should have the whole of their eyes or buds left intact, more particularly those at the bottom, for it is these that will prove the mainstay of the future plant. It is by no means necessary that the wood of these and stocks should be thoroughly ripe before making them up. Indeed, I greatly prefer to catch this wood when a little more than half ripened, because at that time the ground is still warm and the cuttings contain a considerable amount of sap, which is a great help towards quick callus and early rooting, that will prove a great support to the cuttings during the winter months.

The best medium I have found for rooting both stocks and roses is a rather sandy loam, and the freer this is from manure of any kind the better are the results. It is very important that all cuttings should have their base well down upon fairly firm soil. To "hang" them means many failures, and results in the survivors making a larger number of side roots, from where the eyes were removed, instead of at the base, where we can leave them when trimming the stocks previous to shallow planting in beds to be budded upon. Should the ground be dry, I would not delay inserting the cuttings, but pour some water into the opened slit made by the spade previous to setting the cuttings in. I have found this a great help, and would prefer planting in this way upon a dry soil rather than waiting for more natural moisture.

### Preparing for Planting.

As soon as the opportunity comes, I would prepare ground intended for new plantations of roses. This cannot be done too thoroughly, and the bottom soil needs much more attention when preparing than the surface. We cannot reach the bottom soil so well at any future time, whereas the top is always more or less accessible. Therefore be sure and discover the nature of the subsoil now, and treat it accordingly. It should be moved at least two and a half feet deep; three feet would be better. If stiff and clayey, add some manures calculated to lighten this, such as soot and crushed bones. But if naturally of a light, gravelly, and porous nature, supply well decayed manures such as from the cow-shed or pigstye. Even a little clay, or, better still, some stiff loam, will do more good in such a case than giving manure of a light character. Always dig up the bottom as deeply as the tool will allow. Add a dressing of the manure before turning it over, and a second dressing after, and before placing the top spit of soil upon this. If this work is done soon, the soil will have a chance to settle down a little. Do not plant when the soil is wet; if it clogs to the feet or sticks to the tools in any way it is seldom in the best condition for planting, and I would rather wait a considerable time before working upon ground in that state. If it must be done, use planks, and take the little extra trouble to place some prepared compost around the roots before adding the staple soil. Always make the latter firm about the roots, but not rammed down hard. Adding a little at a time, and just placing the foot upon this, is far better than one heavy treading at the last. A. P.

## BARK DISEASES OF FRUIT TREES.

The following is the text of the lecture by Mr. F. J. Chittenden, F.L.S., at the Northern Fruit Congress held at Carlisle, as given in the current issue of the North of England Horticultural Society's Magazine, from which it is reproduced by permission.

One of the results of the extension of fruit growing is the knowledge that to deserve success the cultivator must be ready to take preventive measures against diseases, or to fight them when they appear. Of recent years the State has made some laws regarding plant diseases, but the State is almost powerless unless the individual does his work well, and if every individual does that there is nothing for the State to do.

Everywhere in every county of England, from south to north, one still finds, however, plenty of neglected orchards, and one of the most common evidences of neglect and ignorance is the prevalence of canker. Canker is a bark disease so conspicuous that no one can fail to observe it, but there are two others far less conspicuous that I hope to refer to if time permits.

In order to deal intelligently with any disease it is imperative that an accurate knowledge of the way a plant lives its life should be in the possession of the cultivator, and a few minutes devoted to a consideration of the part the bark plays in the plant's economy. A little experiment which anyone may perform will show us much.

Take a leafy willow shoot, and about three inches from the bottom end cut out a ring of bark about three inches deep. You may strip away the bark from the wood quite easily, for between them lies the cambium, which is the most active of all the living tissues in this part of the stem. It has delicate walls which are easily ruptured, and by its division, and the chemical changes in these walls it adds to the wood on the inside of it the annual rings familiar to everyone, and also adds to the bark on the outside of it in the same way, but to a less extent. The cambium is of the utmost importance, but we must not stop to discuss it now. Let us place our shoot with the bottom nine inches in water, and leave it for three or four weeks. At the end of that time we shall find it has rooted, but rooted in a peculiar way. There will be roots from the bottom three inches on which we left bark, none on the part from which the bark was removed, but there will be roots from the part above the cut. Comparing these roots we find those in the lower part smaller and less well developed than those above, and if we leave them long they will eventually die, while the higher series flourish apace. Willow is useful for this experiment, as its roots can absorb oxygen from the water.

To grow the plant requires, as we do, air, warmth, water, and food, and apparently these roots have air, warmth, moisture, and food, else they could not grow at all. What is there to account for the difference in their growth, then? Only that one or other of these necessities is supplied more liberally in one case than in another, and a little consideration will suggest that the vital thing not well supplied to the lower roots is food.

All gardeners know that all the food a mature plant feeds upon comes from the leaves—is, in fact, made in the leaves, where the food of the whole world is made, and where and by which that energy of which coal is the source was originally stored long before our age. Our experiment shows us that the food is carried down the bark. The removal of the bark did not interfere with the flow of water up the stem, but interfered so seriously with the flow of food down that the roots below the cut were in time starved. A little food had already been stored in the stem, and that they could use, but as soon as it was exhausted they began to wither and die. Those above the cut could draw on the rich supplies sent down from the leaves and continue to exist and flourish on this long after the store in the stem had become exhausted.

May I emphasise the fact that the substances taken in by the plant, by its roots from and with soil-water, and by its leaves from the air, will not feed the plant; they are only the materials which the plant uses for making the stuff it feeds on—sugar, fats, albumen, and the like. A clear understanding of this fact is essential to an appreciation of the value of leaves to a plant and the part the bark plays in acting as a channel for the conveyance of food stuffs to the parts below.

Of course the bark does something else. It is of cork, and like all efficient cork keeps liquids from passing. That is the purpose of the cork. But the cork is on the outside only. Just below is a layer of fibrous cells forming strong, tough bands like bast (indeed the bast of Archangel mats is from this part of the lime tree's bark) which strengthens the stem and enables it to support the enormous weight of the foliage and withstand the buffeting of the winter winds. And there are other tissues, each with some part to play, and among them, lying just outside the delicate cambium, the tubes along which the food passes.

Anything that damages the bark then causes the flow of food down the stem to be checked, and one of the most marked results following an attack of canker flows from this. For a tree to be fruitful an abundance of food is necessary—food, I mean, made by the tree—not food in the sense of much manure, for that stuff from which food is to be made may easily be given in too great quantities, but actual sugar and albumen. If then the downward flow of food is checked more food than usual will accumulate in the branch, and the branch will tend to become more fruitful. How often we see the cankered branches of Lord Suffield bearing heavy crops of fruit, and the reason must be evident. But another result less desirable than heavy fruiting flows from this bark injury. The tissues below it will be deprived of food entirely or to some degree according to the extent and duration of the injury. Thus if the cankered area persists the cambium below will gradually cease to make new wood and bark, and the roots will be starved. Truly, if one member suffers all the members suffer.

It is unnecessary to describe Canker. We are all too familiar with the gaping wounds and cracks in bark to need descriptions, and we may pass now to enquire the cause. Many causes have been suggested, but there is only one common to all. The one actual primary cause of canker is a fungus. There is doubtless some truth in most of the suggested causes, but they are secondary, not primary. Keep the fungus away and the other causes would not produce canker.

This fungus, Necteria ditissima, causes canker on many different kinds of trees, such as ash and beech, as well as apple, and more rarely pear. It grows into and feeds upon the tissues of the bark, ultimately destroying them. It is a parasite, and an unwelcome and troublesome guest that steals from its host the food it has made for itself, lodges itself in its host's channels of communication, and finally destroys the lodging house it has made use of, but not before it has sent out on the wings of the wind, and on the feet of insects numerous little pieces of itself, which we call spores, each capable of starting another parasite of precisely the same dangerous character. Some of the spores are formed in little bright red fruits, easy to see on the canker spots in early spring, or even in the winter, but smaller than a pin's head, and thus often overlooked. Each fruit contains numbers of these tiny spores.

Perhaps the most important point about the habits and life of the fungus from the fruit-grower's point of view, is the fact that when the spores germinate, the thread to which they give rise cannot make its way through healthy, whole bark. Only when the bark has a hole in it can the fungus penetrate into the living cells beneath, begin its march of dire destruction, and start that sequence of events which culminates in death and decay. It is one of the group of organisers called "wound parasites." But it is easy for it to make its way even through a hole as minute as a shot hole, or even smaller, and it behoves the fruit-grower to prevent to the extent of his power the wounding of his trees, or when they are wounded to protect the wounds with something which will encourage healing and prevent the entrance of the fungus.

If the fungus gets in it grows and, as we have said, destroys the tissues on which it lives. There comes a time of rest, however, and during it the tree tries, as every tree tries, to repair the damage done by the fungus by covering it over with a healing layer. Unless the tree is in good health that time is all too short, and before the tissue is cut off and the wound healed where the parasite has taken its abode, the season for tree growth is past, and the season for the fungus development is come. Then goes on a fight between fungus and tree, the one destroying, the other trying to repair, and the marks of the fray may be seen in any old canker wound. Layer on layer of new tissue is put on to be almost as quickly destroyed. It is possible that sometimes the fungus threads may pass along a length of stem and break out in a new part of the bark not previously affected, so that occasionally (when a tree is affected in one part) canker may occur where no wound was present previously.

How are wounds caused? They may be wilful, they may be accidental, they may be due to carelessness, they may be almost natural. Pruning, especially in young trees, is a necessity, and too often it is done with blunt or otherwise unsuitable tools, resulting in wounds difficult to heal. Knives (and nothing else ought to be used in pruning apple or pear trees) cannot be too sharp. Cuts cannot be too clean, but all large cuts should be painted over either with Stockholm tar or lead paint. Smearing over with earth is useless, and worse than useless. All it does is to hide, not to protect a cut. Large wounds are not as a rule necessary unless trees have been neglected in their youth. Among the accidental wounds, and those due to carelessness, we may put those due to scraping with ladders and boots, shot from guns, and so on. I have known an orchard almost ruined through canker gaining an entrance into wounds made when shooting rabbits. Among those due to natural causes, breakages by storms, wounds made by frost and damage by insects and birds, may be mentioned. Of the insects none is worse than the woolly aphis or American blight. The sucking of the insects may possibly induce a sort of gall formation, at any rate they cause wounds. The trees start to heal the wounds by making large masses of tender healing tissue, into which the canker fungus can readily penetrate. No effort should be spared to get rid of this pest, and to avoid making wounds in bark that are difficult to heal quickly, and if such are made cleanly cut them and protect them in the way I have already suggested.

The nature of the soil seems often to have something to do with canker. Indeed, some have put down canker to uncongenial soil surroundings entirely. This is, of course, wrong, but no doubt bad soil conditions are a great contributing factor, just as insects, storms, and shooting rabbits may be contributory factors.

It will, I think, be found that soils where water cannot get away freely are those where apples canker worst. The probable cause of this is not only that trees in such soils suffer in health from the inability of their roots to breathe, but they are much more liable to injury from late frosts, and the same thing applies to trees planted at the bottom of a slope. Frost may frequently damage trees after the leaves begin to appear in such situation, and actually kill buds, leaving places where the fungus may find an entrance, and it may at times cause cracking and splitting of the bark. Such situations should at all costs be avoided when planting is being done, and all land not well drained naturally should be attended to. The cost is rather heavy, but the outlay will be repaid.

It is important to do all one can to avoid canker in the ways suggested, but it is equally important to attend to trees affected so as to enable them to repair their injuries and check the spread of disease. The only method is to cut out all canker wounds cleanly with a sharp knife and paint the wound made to protect it from further infection. If this be done consistently and preventive measures adopted with intelligence and earnestness much may be done to rid our orchards of this pest. Some trees, of course, are beyond repair, and these should be forthwith removed and burned, along with all branches so badly affected as to render it doubtful whether they will recover. Maintenance of good health, careful treatment, and protection of wounds are essentials of success.

Some varieties appear more prone to canker than others; possibly they are more prone to wounding or slower to heal, and it would be well to select others. The best kitchen variety, Wellington, or Dumelow Seedling as it is often called, is one of them; Lady Sudeley in this district is another; Lord Suffield, Lord Grosvenor (in Cumberland), Cellini, Ecklinville, Pott's Seedling, Warner's King, King of the Pippins, and Ribston seem more susceptible than others, although, as I have pointed out, their liability to attack may be due to contributory causes.

## MEDAL ROSES OF 1912.

I read with considerable interest in common with all rosarians interested in new roses, the Rev. J. H. Pemberton's notes on "The Medal Roses of 1912," in your issue of October 5 last. I naturally hesitate very considerably before advancing any opinion of my own that controverts any statement that comes from such an authority, but it is for that reason only that I write you. The opinion of the President of the National Rose Society naturally carries so much weight that that which he may give expression to may seriously effect the reputation of a rose, at any rate, for a season or so; and, although he rightly prefaces his remarks by a statement that they are "merely first impressions," still that statement may be lost sight of, and the effect of his opinion before referred to remain.

The remarks that I desire to draw your attention to occur under the reference to Messrs. Alex. Dickson and Sons' new decorative single Irish Fireflame (called Irish Flame by Mr. Pemberton). This rose is well known to me; its flowers are larger, not smaller, than Irish Elegance. Mr. Pemberton goes on to say that, "from our inspection of the plants at Newtownards, one is inclined to think it took a good many plants to fill such a basket" (refering to the exhibit at Southampton, which, by the way, was not a basket but a series of tripods or bamboo stands), and thereby inferring that this rose is shy blooming; it is not really so, it is quite as free as Irish Elegance.

I think our worthy President, when he looked at the plants, forgot that they had been cut heavily from, first of all for the shows all through the month, and secondly, that over 2,000 buds had been taken from those same plants for budding purposes.

I saw before I left Newtownards, some two or three days after Mr. Pemberton's visit, some plants of this rose. I think they were cut-backs, probably the original plants, that were literally a blaze of colour, as befits a rose with such a name as Fireflame. One other point, Coronation is referred to as "likely to prove the best rose of the year, and yet it did not get the highest award!" Mr. Pemberton unwittingly does the judges of the new seedling roses, and himself included, an injustice here, as Coronation received the highest award at Belfast Show.

Herbert E. Molyneux.

FRUIT GROWING.—Full instructions as to planting, pruning, and management of fruit trees are given in Profitable Fruit Growing —a gold medal essay by John Wright, V.M.H., —price 1s., or by post 1s. 3d., from the Publisher, 148 and 149, Aldersgate Street, London.

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# EXHIBITIONS AND MEETINGS.

◆

## Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—October 8.

Present: Mr. R. Hooper Pearson (in the chair); Messrs. J. O'Brien, J. Fraser, W. Hales, R. Curtis, G. Gordon, J. T. Bennett-Poë, and F. J. Chittenden (hon. sec.).

BULBOPHYLLUM GENTILII. — Mr. O'Brien showed, on behalf of Sir Fred. Moore, a specimen of Bulbophyllum Gentilii, Rolfe (see "Orch. Review," October, 1912, p. 314), curious in having the nectary placed on the upper side of the dorsal sepal. This species has been confounded with B. calamaria (B.M. 4088), and the two are mixed in herbaria.

MENTHA VIRIDIS VAR.—Mr. J. Fraser showed a specimen of the Mentha described by Sir John Smith under the above name occurring wild about Bocking and Maidstone.

NOMENCLATURE OF ORCHID HYBRID.—The committee considered a question of the nomenclature of a hybrid orchid refered to it by the Council. The alleged parentage was C. × Fabia alba (C. labiata × C. Dowiana aurea) × C. Warcewiczii var. "Frau Melanie Beyrodt," and the name suggested C. × Harrisiana. The committee considered this suggested name transgressed the recommendations of the Vienna Botanical Congress regarding plant-names in being too much like existing names in the same genus, thereby tending to confusion (e.g., Cattleya Harrisoniana and C. × Harrisii); the name was therefore not tenable. Further, they thought that although Art. xii. of the rules of horticultural nomenclature ("Journal" R.H.S., xxxvii., p. 151) permitted the use of names of Latin form for such cross-bred plants as this, it would be more convenient if vernacular names were chosen, generally from the classics. They recommended that the exhibitor should be asked to choose such a name.

TOMATOES WITH PALE, ROUND SPOTS.—Some tomatoes with pale spots, circular in outline, about ¼ inch in diameter, and each having a minute black spot in the centre, were sent from Highgate. Microscopic examination revealed the presence of a minute hole where the spot was, but no fungus, and the committee concluded the damage was probably the result of punctures by a hemipterous insect, possibly white fly, or a species of Lygas.

POTATOES WITH SUPER-TUBERATION.—Potatoes showing growth after the first stage of tuber production were sent from Bush Hill Park. These are frequent this season, no doubt as the result of the wet of August.

GLASSINESS IN APPLE.—A specimen sent from Battle showing the peculiar soddening of the tissue called glassiness. This is not at all infrequent this season, several specimens having been received at the society's laboratory, and Mr. Chittenden said he had found some on trees at Wisley (on the sunny side of the tree) as early as July.

## Reading Gardeners' Association.

The second meeting of the session took place in the Abbey Hall on Tuesday. There was another large attendance, the President (Mr. F. B. Parfitt) occupying the chair. The lecturer for the evening was Mr. H. C. Loader, of The Gardens, Erleigh Park, and his subject, "The Value of Observation to the Gardener." In opening his paper Mr. Loader announced that his remarks would be more particularly addressed to the younger members of the audience, and he strongly advised them not to neglect the cultivation of the faculty of observation. The lecturer recalled many instances in his early career in which, by the study and attention to matters which happened to come under his notice, though not necessarily under his care, he had found exceedingly helpful when the time came for him to take the full responsibilities of a head gardener's position. He also urged them not to overlook the value of the opportunity now offered, a privilege not available when he was a youth, of attending the horticultural and other classes promoted by University College, Reading. The knowledge gained by a course of study at such classes would prove of inestimable value later in life when the object of every young gardener's ambition, viz., becoming "head," had been attained.

The lecturer was accorded a very hearty vote of thanks at the conclusion of the debate which followed his remarks. Mr. Loader was congratulated on a very finely-grown collection of vegetables (from the gardens at Erleigh Park) staged by him. Mr. T. Judd exhibited giant potato tubers, and Mr. F. Townsend brought from The Gardens, Hillside, a monster Woodwardia radicans, which was greatly admired.

## The Horticultural Club.

On Tuesday, the 8th inst., this club opened its winter series of dinners and lectures by an invitation to a number of the members of the Midland Reafforesting Association, whose organising secretary, Mr. P. E. Martineau, gave, after the dinner at which Sir Harry J. Veitch presided, a lecture on Afforestation in the Black Country, illustrating his remarks with a considerable number of lantern slides. Among the guests were Sir Richard Paget, Lady Lockyer, Miss Lee Bourn, Mr. R. L. Robinson, Mr. Percy Groom, Mr. M. C. Duchesne, Mr. W. W. Watts, and others connected with the association.

In the Black Country, embracing Walsall, Dudley, and other large coal producing and coal consuming districts, the debris from the pits and furnaces has been allowed to accumulate on the surface until immense areas are simply smothered under extensive hillocks which, unattended to, reduce the country to an all but barren and desert-like waste of many thousands of acres. The object of the association is the afforestation of these areas by the judicious planting of suitable trees, such as the poplar, birch, alder, willow, ash, etc., which experiment has proved to be capable of not only living but thriving in defiance of the vapours emanating both from the works and in many cases even from the still burning pit tips and spoil banks, as they are locally termed. A number of photographs showed clearly that it was possible, by judicious action in this direction, to utterly transform the dreary wastes into picturesque wooded slopes, or even of pretty parks with comparatively little outlay, where, left to themselves, nothing better than coarse grasses would have made their appearance. Uncongenial as the material, of which these heaps consist, would appear to the arboriculturist, it is amply demonstrated that many trees will grow in it, and that the main element of success is adequate rainfall, plus the introduction of the trees either by sowing seeds or planting young saplings, not exceeding two years old, as owing to their small size are enabled to establish themselves without too great a call upon their root resources at the outset.

In the discussion which followed the lecture, in which Sir Richard Paget, Mr. M. C. Duchesne, Mr. R. L. Robinson, Mr. Percy Green, and others participated, the project of the association was recognised as extremely laudable, and worthy of encouragement both on the æsthetic and, as was hoped, on the commercial side, since the reafforestation of the originally forest land not only rendered it healthier and more pleasant for the pitmen and other operatives generally by the improvement of its otherwise dreary and inhospitable aspect, but as the timber produced in the process was locally required in large quantities for many purposes, the commercial value came in as a supporting asset. In addition to this, as the labour required was entirely unskilled, many of the local unemployed could be, and indeed were, provided with work. These two elements of immediately local requirement and available labour were pointed out as factors of success, the absence of which in many other places had led to failure of afforestation schemes. So great indeed were the demonstrated benefits obtained by the association that it was felt the Government should contribute to its support or to the extension of similar schemes in other districts, and that the owners of property should do the like in their own interest owing to the increase of value induced by bettered surroundings.

A hearty vote of thanks to Mr. Martineau (whose address is Bentley Heath, Knowle, Warwickshire) concluded the meeting.

## East Anglian Horticultural Club.

At the October meeting of this club, held at Norwich, a very interesting paper was read by Mr. C. H. Fox, gardener to Lady Mansel, Catton House, Norwich, upon "Deciduous Flowering Trees and Shrubs." He touched upon some twenty-four kinds, and gave practical details of treatment, especially as to position and planting. A capital discussion followed, during which the subject of pruning came largely in for review.

An interesting feature upon the exhibition tables were some plants of figs in eight-inch pots, profusely covered with fruit. These were grown from eyes inserted just eight months ago.

Apples were staged in quantity, and a good display of early chrysanthemums brightened up the room.

## Parkstone (Dorset) Gardeners' Association.

On October 10 a very fine display of apples and pears was made by members of the above association. Mr. T. Alexander had the best two dishes of apples, one of a cooking variety and one of a dessert variety, showing Annie Elizabeth and Cox's Orange Pippin respectively. Second honours went to Mr. A. C. May, who had Peasgood's Nonsuch and Blenheim Orange Pippin. Mr. E. G. Cox was third, and Mr. Gould fourth. In the class for one dish of apples, dessert, Mr. A. C. May was first with Sturmer Pippin; Mr. Alexander second with King of the Pippins; and Mr. W. Camp third with Golden Drop. In the corresponding class for one dish of cooking apples, Mr. Cox won with large fruits of Peasgood's Nonsuch; Mr. May second with Lord Derby; and Mr. Camp third. For one dish of pears Mr. C. Gould was awarded first prize for a fine dish of Pitmaston Duchess; Mr. Rattue was a close second with a dish of unnamed but splendid fruits; and Mr. Cox was third with Pitmaston Duchess.

Mr. T. Alexander was awarded the society's first class certificate for a beautiful collection of twenty-four dishes of apples and pears.

The same evening Mr. G. Garner, of Bournemouth, gave a lecture on "Fruit Culture." He dealt principally with cultural details connected with apples, pears, and grapes, advocating well-trenched ground, made firm afterwards, for apples and pears, with training, pruning, and top-dressing. He recommended the growing of cordons, bushes, and pyramids in preference to tall standards, and with the maintenance of a good balance between root and branch growth.

With regard to grape vines, the lecturer advised growers to have shallow, well-ventilated borders efficiently drained.

Dr. Crallan, the popular President, occupied the chair. A good discussion took place, and cordial votes of thanks were passed to both chairman and lecturer. The attendance of members was very large.

## THERMOMETERS.

The implements and utensils necessary to the equipment of a large garden are many and varied in character, and not the least important of these are thermometers of strict accuracy and scientific construction. A recent visit to Messrs. Negretti and Zambra's establishment at 38, Holborn Viaduct, E.C., gave us an insight into the wonderful variety that exists, and the faultless manufacture that is ensured in the thermometers made by this well-known firm.

Instruments are made for every possible purpose, and many of the thermometers are made specially to meet the needs of the horticulturist, either in the open or in glass-houses. For the modest sum of 3s. 6d. a self-registering thermometer is obtainable, the scale of which is made of permanently-enamelled sheet steel. It has the distinct advantage of being fitted with an adjustable index by means of which the lowest temperature during the night is self-registered, whilst the coloured spirit, of course, indicates the exact temperature at any moment, night or day. Six's self-registering maximum and minimum temperature thermometers are also extremely useful, showing at a glance what has been the minimum and the maximum temperature since the last adjustment, which is effected in an instant by the application of a small magnet to the index. An electrical thermometer, which by means of a very ingenious device is made to ring a bell whenever the temperature falls below a certain point, is of immense value in large establishments, where there are extensive ranges of glass-houses. The thermometer may be hung in the greenhouses and the bell in the bothy or gardener's house, communication being obtained by a wire from the battery. As soon as the temperature in the greenhouse falls to a point that entails risk of injury to the plants the bell rings, and continues to ring until the stoker has given his attention to the matter. Thus the man on duty may take his rest with the assurance of being awakened in the event of his fires requiring attention.

Another instrument that demonstrates the practical value of scientific experiment is the horticultural hygrometer. This may be described as a "frost indicator," showing in advance the approach of frost. A brief explanation of the principle on which the hygrometer works must of necessity give an impression of a somewhat complicated machine, but anyone seeing the instrument and examining it, together with a perusal of a very clear pamphlet issued by the firm, can grasp the matter in a moment, and the possession of one of these little "prophets of frost" will enable a gardener to cover his frames, set fires going, or protect anything necessary against the coming frost.

We can only add that it is to the advantage of our readers to write for the well-illustrated and excellently-compiled catalogue and pamphlets issued by Messrs. Negretti and Zambra, who may be relied upon to supply thermometers that will do their work well and last a lifetime.

## GARDENING ENGAGEMENT.

Mr. Lewis Smith, late of Shottesham Park, Norwich, has been appointed head gardener to A. C. Drummond, Esq., Cadland, Southampton, and enters upon his new duties immediately.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

LANTERN LECTURES.—R. F. G.: I am the honorary secretary of one of the many gardeners' mutual improvement societies in England, and as the attendance at our meetings is not all that could be desired I should like to make them rather more attractive than is at present the case. It is my belief that the best way of doing this would be to have lantern lectures occasionally, and I should like to know whether you consider this would be the right course to take. If you consider that we might introduce lantern lectures with advantage will you advise me whether we should purchase a lantern and work it ourselves or hire it, and where we can obtain suitable sets of slides.—There is no doubt whatever in our mind as to the advantage of illustrating some, if not all, the papers and lectures at the meetings of gardeners' associations with lantern slides. Whether your society should own or hire a lantern depends upon circumstances. It would be cheaper to own the lantern, but cheapness is not everything. The lantern, to show the slides properly, must be a good one, and lanterns of really high-class manufacture are expensive. Moreover, the lantern must be manipulated with some skill to ensure satisfactory results. For the present we should advise you to hire a lantern with an operator from a good firm in the district. The Royal Horticultural Society lend on hire sets of slides with a printed lecture for each set, the latter being written by men of the highest eminence in the respective branches of horticulture. Within the past few weeks the society's list has been augmented by ten new sets, eight of which are devoted to vegetables. The whole of the slides in the society's list are lent at a charge of five shillings per set. Many of the experts who lecture at the meetings of gardeners' associations have slides to illustrate their lectures.

GAS-LIME.—S. W. W., Leicester: I have a garden in which the soil is rich and heavy, and I am told that a dressing of gas-lime will sweeten it and do it good in other ways. Please tell me if it will be right to dig in the gas-lime this autumn, and what will be the effect of the dressing upon next season's crops.—The effect of the gas-lime will be to sweeten the soil, disinfect it, and unlock the plant foods, and so render them available for subsequent crops. Spread the gas-lime thickly on the surface of the ground, and let it remain there for two or three weeks, then trench the ground and mix in the gas-lime as the work proceeds, leaving the surface soil as rough as possible. If rain and snow work the surface down, take advantage of dry weather to lightly and roughly fork it up again, so that aeration may proceed, and a fine tilth be available for seed-sowing or planting next March or April.

AUTUMN-FLOWERING CROCUSES.—M. E. M., Kingston: I should be very glad if you will give a list of the autumn-flowering species of crocus, and their colours. — The principal autumn-flowering crocuses are C. asturicus, rather variable, usually violet or purple, there are several named varieties; C. cancellatus, lilac, with yellow throat, has also a white and yellow variety; C. Clusi, purple, very fine; C. adriaticus, white and purple; C. iridiflorus, outer segments purple, inner ones lilac; C. Karduchorum, rosy lilac, veined with purple; C. longiflorus, lilac and yellow; C. medius, bright purple; C. ochroleucus, creamy-white, tinged with orange; C. pulchellus, lavender-blue, orange tinted; C. Salzmanni, lilac or white, feathered with purple; C. sativus, bright lilac (the saffron crocus), of this there are a number of beautiful varieties, notably Elwesi and Pallasi; C. Scharojani, bright yellow, practically evergreen; C. speciosus, the best-known autumn-flowering species, very free, bright lilac to blue-purple; and C. zonatus, rosy-lilac.

NORTH OF ENGLAND HORTICULTURAL SOCIETY.—H. J. C., Hull: I shall be much obliged if you will publish the name and address of the secretary of the North of England Horticultural Society, and state what the society is for.—The secretary is the Rev. J. Bernard Hall, B.A., and his address is Rawdon, Leeds. The object of the society is "To organise horticulture (scientific, educational, commercial, and general) in the North of England."

BITTER PIT IN APPLES.—H. R. S., Chepstow: I am sending a few specimens of Warner's King apples, which are dotted all over the top with brown marks. These spoil the appearance and value of the fruits and prevent them from keeping. Kindly say what is the cause of the trouble and how it can be prevented.—The brown embedded patches are due to the presence of a fungus named Glœosporium fructigenum, and Warner's King seems especially susceptible to attack. We have frequently received diseased specimens of this apple during the last few years, and an opinion frequently expressed is that the variety seems to have lost its constitutional vigour. Diseased fruits should never be allowed to remain on the ground where they fall, and in the case of trees known to be affected the fruits should be examined regularly after they are of usable size, and when the slightest sign of disease is seen the fruits should be picked, peeled thickly to remove the damaged portion, and be used. The peelings and all apples unfit for use should be burned at once. During the winter spray the trees with a caustic potash solution or one of the preparations advertised, and in July spray the trees with a solution of potassium sulphide.

PETROL AS A CURE FOR AMERICAN BLIGHT.—R. R., Worcester: I have been told that petrol is a cure for American Blight if painted on to the trees after leaf fall. I shall be greatly obliged if you will tell me whether this is correct, or refer me to some work dealing with the matter.—On several occasions notes have been published suggesting that petrol applied with a brush to dormant apple trees would prove a cure for American Blight. Solitary instances of success or failure with any fungicide or insecticide prove nothing; what is needed is a properly conducted experiment. A few years ago Mr. Spencer Pickering conducted experiments at Woburn for the destruction of American Blight or Woolly Aphis, and young trees were immersed bodily in petrol for five minutes. In 10 per cent. of the trees the scion only was killed and in 5 per cent. both stock and scion succumbed, but the trees were not in a robust condition at the time, and a mortality of 7.5 to 15 per cent. was doubtless due to the mere transplanting, and not to the action of the insecticide. In the following June, July, and September, the live trees were examined, and they showed no trace of American Blight. Growth was slightly checked, and was about 94 per cent. of the normal. All this suggests that petrol, properly used, may prove very useful in combating one of the worst pests fruit growers have to deal with. Try it on one or two trees that can well be sacrificed for experimental work, and report in due course.

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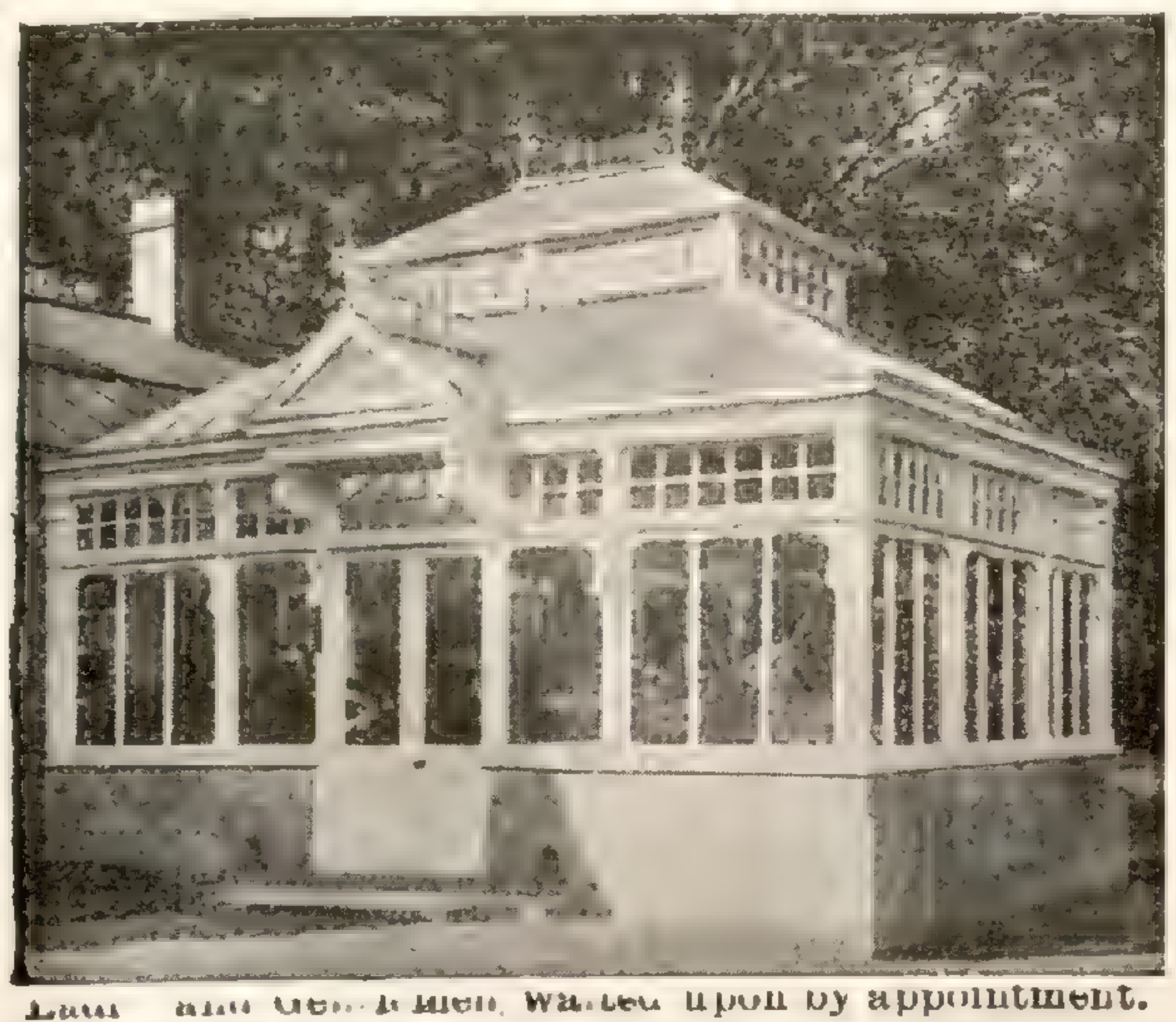

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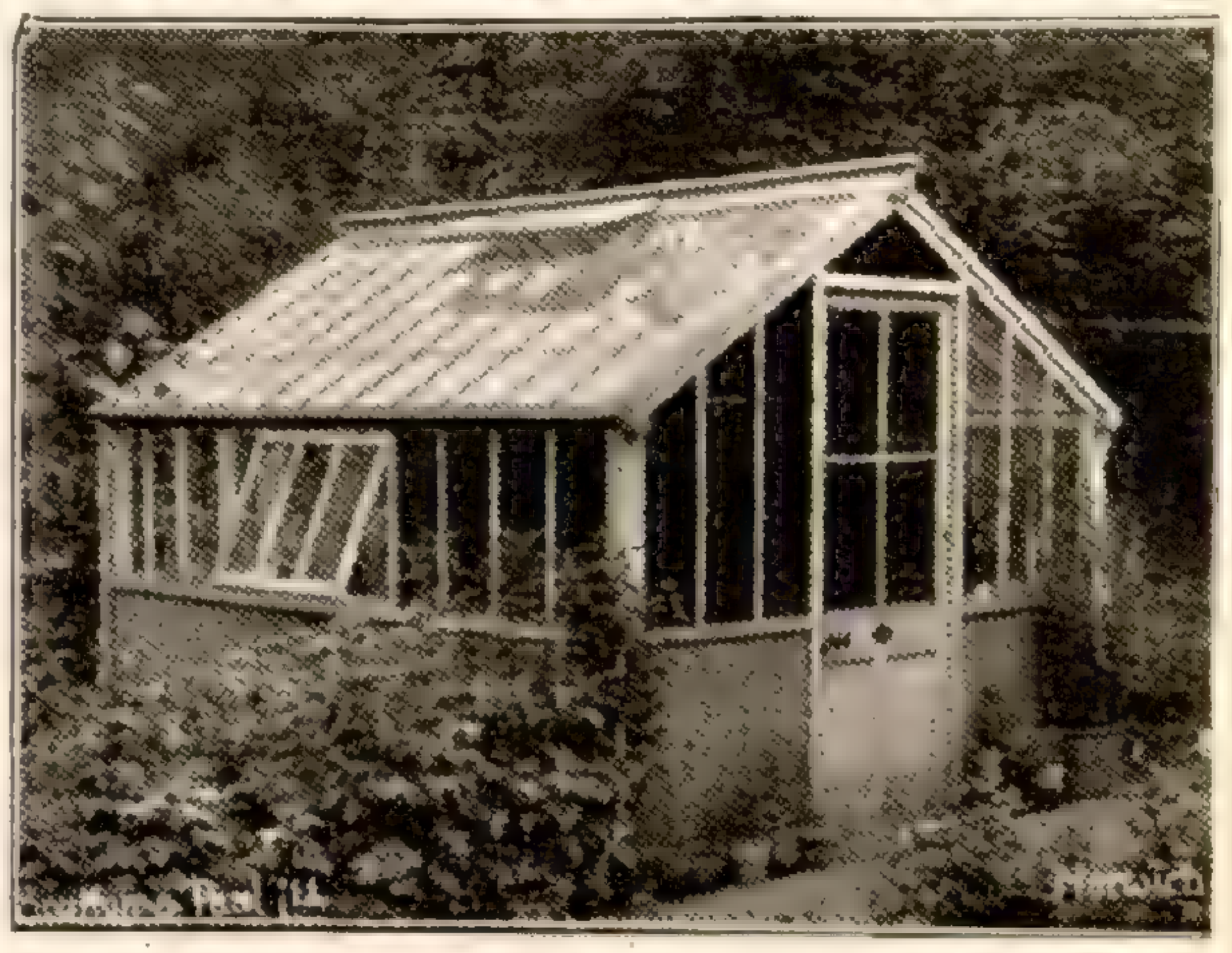

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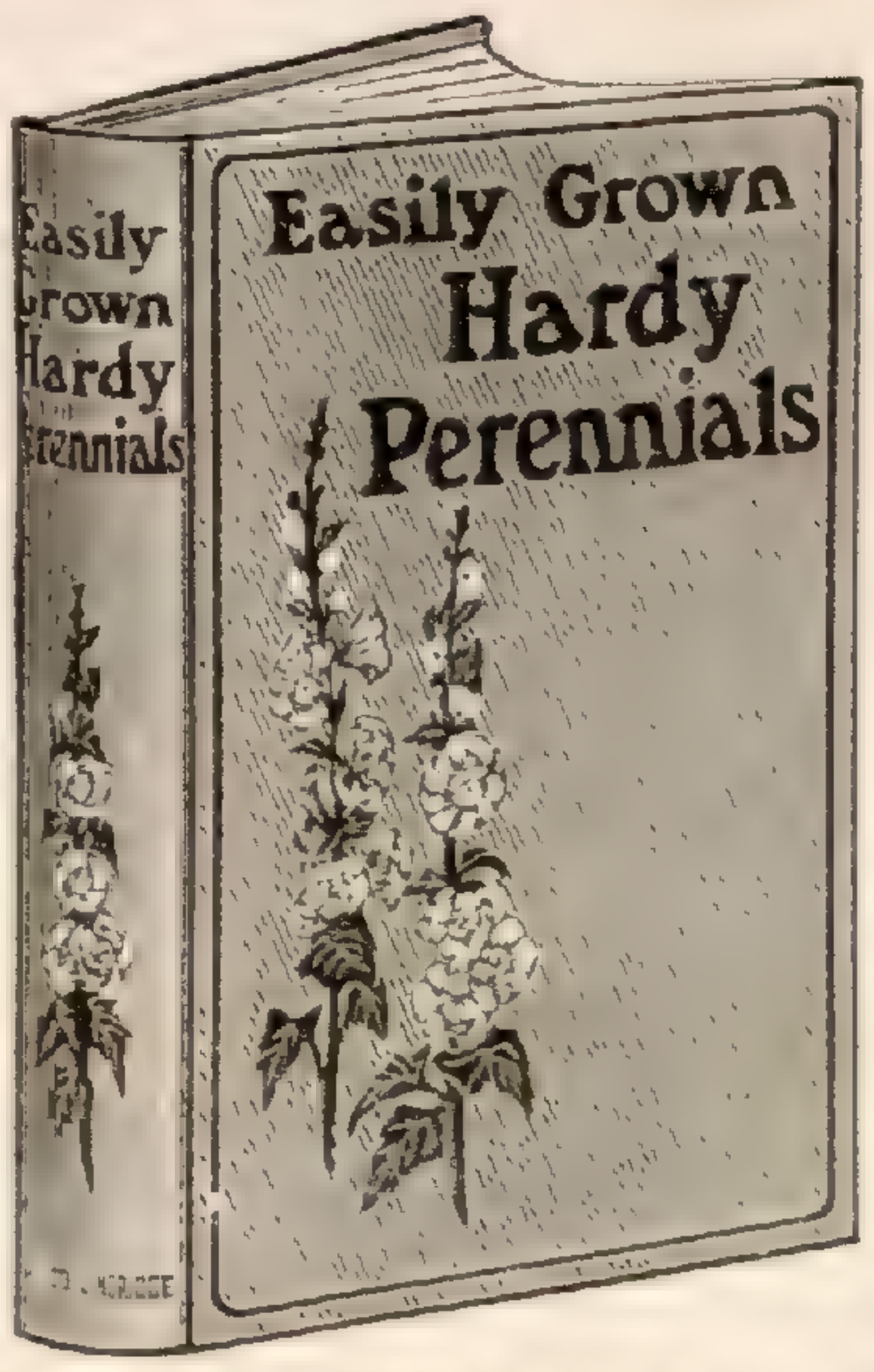

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*Name* ..............................................................

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## NAMES OF PLANTS.

Under this heading we can only undertake to name species and well-marked varieties of plants, and not florists' flowers. Specimens should be packed in stout boxes with damp (not wet) moss, or some leaves, as packing material, to ensure their reaching us in a fresh state. It is essential that flowers must accompany specimens of flowering plants, that fern fronds be fertile, and that numbers be firmly attached to the specimens so that they can be seen without any untying. We cannot promise to name more than six specimens at one time from any one correspondent.

A. P., Lancaster.—Phytolacca decandra.

E. A. D., Holsworthy.—Polygonum polystachya.

S. S., Winchester.—1, Arundinaria nitida; 2, Molucella lævis.

H. E. C., Matlock.—1, Polygonum lanigerum; 2, P. orientale; 3, Nepeta cataria.

S. R. D., Blackpool.—1, Episcia fulgida; 2, Santolina incana; 3, Artemesia Abrotanum; 4, Hypericum calycinum.

M. E. M., Kingston.—1, Crocus speciosus; 2, Cratægus crus-galli; 3, Monarda punctata; 4, Physostegia virginiana.

W. S., Droitwich.—1, Ruscus aculeatus; 2, Cupressus macrocarpa lutea; 3, Berberis stenophylla; 4, Quercus ilex.

G. B., Old Colwyn.—1, An oxalis, possibly O. rosea; 2, Carex brunnea variegata; 3, Sedum Sieboldi; 4, Cyprus laxus; 5, a species of lotus; 6, Escallonia macrantha.

C., Essex.—1, a form of Berberis vulgaris; 2, Chrysocoma linosyris; 3, an euphorbia, send when in flower; 4, Ophiopogon Jaburan; 5, Begonia Haageana.

## NAMES OF FRUITS.

A. J. G., Burwash.—1, Queen; 2, Hollandbury; 3, not recognised; 4, probably Zephirin Gregoire.

E. R., Windsor.—1, New Hawthornden; 2, Warner's King; 3, Golden Noble; 4, Lemon Pippin; 5, Sturmer Pippin.

D. P., Godalming.—1, Emperor Alexander; 2, Adam's Pearmain; 3, Lord Derby; 4, Worcester Pearmain; 5 not recognised, out of character; 6, Buerré Bosc.

A. J. D., Eltham.—1, Badly damaged, probably Souv. du Congrès; 2, Comte de Lamy; 3, London Pippin; 4, not recognised; 5, Ribston Pippin; 6, Marie Louise d'Uccle.

## THE NORTHERN FRUIT CONGRESS.

It is a pity Mr. Smith was not living in the North when the Hexham Fruit Congress was held. He would then have got hold of the facts. As it is, it is difficult to write on the matters he touches upon without holding forth at length. One or two statements by me must therefore suffice.

1. Mr. Smith has received no commands from me! He has been requested to approach his County Council secretary about a Darlington Fruit Congress, 1914, when we would like to have, not only the support of the local agricultural society and the local horticultural society, which we have already, but also a continuance of that generous support we have already received at the hands of the local educational authorities at Hexham, Newcastle, Carlisle, and now for Kendal, 1913.

2. To be correct, Newcastle Congress and Show, thanks to all concerned, was a financial success, and the same applies to Carlisle Congress and Show. We all owe Mr. Little a debt of gratitude for his services as secretary of the congress, and thanks, too, to the local committee for the splendid way everything was carried out.

3. The N.E.H.S. has no official editor of its monthly magazine and circular. We need some means of intercommunication between members, and some organ in which to publish lectures. That is all we run to at present. If Mr. Smith had continued the reports of his epoch-making researches into the colouring of apples, and enlightened us on his discovery of two species of big bud, no doubt the magazine would have been more interesting, though, perhaps, less instructive!

J. BERNARD HALL.

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Supplies are almost entirely confined to indoor flowers now; chrysanthemums are cheap and plentiful.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Arums | per doz. | 3 | 0 | to | 3 | 6 |
| Adiantum cuneatum | per doz. bun. | 4 | 0 | | 6 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 16 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Bouvardia | per doz. bun. | 6 | 0 | | 7 | 0 |
| Carnations | per doz. | 0 | 8 | | 2 | 0 |
| ,, | per doz. bun. | 6 | 0 | | 12 | 0 |
| ,, Malmaison | per doz. | 8 | 0 | | 15 | 0 |
| Cattleyas | per doz. | 9 | 0 | | 15 | 0 |
| Chrysanthemums | per doz. bun. | 4 | 0 | | 8 | 0 |
| ,, | per doz. blooms | 1 | 0 | | 3 | 6 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Eucharis | per doz. | 2 | 0 | | 2 | 6 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Gardenias | per doz. | 2 | 0 | | 2 | 6 |
| Lapageria | per doz. | 2 | 0 | | 2 | 6 |
| Lilium auratum | per bun. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 1 | 0 | | 2 | 6 |
| ,, longiflorum | per doz. | 2 | 0 | | 3 | 0 |
| Lily of the Valley | per doz. bun. | 10 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 6 | | 4 | 0 |
| Mignonette | per doz. bun. | 3 | 0 | | 5 | 0 |
| Odontoglossums | per doz. blms. | 2 | 6 | | 4 | 0 |
| Pelargoniums | per doz. bun. | 3 | 0 | | 6 | 0 |
| Physalis | per doz. bun. | 5 | 0 | | 6 | 0 |
| Roses | per doz. | 1 | 0 | | 5 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 0 |
| Spiræa | per doz. bun. | 4 | 0 | | 6 | 0 |
| Statice | per doz. bun. | 2 | 0 | | 2 | 6 |
| Stephanotis | per 6 doz. blms. | 3 | 0 | | 4 | 0 |
| Tuberoses | per doz. | 0 | 6 | | 0 | 9 |
| Violas | per doz. bun. | 0 | 9 | | 1 | 0 |
| Violets | per doz. bun. | 1 | 6 | | 4 | 6 |

### Fruits.

Nova Scotian and Californian apples have now begun to arrive in earnest. Pears are plentiful, and grapes very cheap.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, English | per bush. | 2 | 0 | to | 5 | 0 |
| ,, Cox's | per ½-sieve | 3 | 6 | | 8 | 0 |
| ,, Californian | per box | 6 | 0 | | 10 | 6 |
| ,, Nova Scotian | per case | 6 | 6 | | 8 | 0 |
| Bananas | per bun. | 4 | 0 | | 8 | 0 |
| Blackberries | per peck | 2 | 0 | | 2 | 6 |
| Cobnuts | per doz. lbs. | 2 | 0 | | 2 | 3 |
| Cocoanuts | per 100 | 18 | 0 | | 23 | 0 |
| Cranberries | per case | 9 | 0 | | 12 | 0 |
| Figs | per doz. | 1 | 0 | | 3 | 0 |
| Grapes, English | per lb. | 0 | 6 | | 4 | 0 |
| ,, Guernsey | per lb. | 0 | 6 | | 1 | 0 |
| ,, Almeria | per barrel | 12 | 0 | | 18 | 0 |
| ,, Lisbon | per case | 7 | 0 | | 8 | 0 |
| Greengages | per ½-sieve | 5 | 0 | | 7 | 0 |
| Lemons | per case | 8 | 0 | | 30 | 0 |
| Medlars | per crate | 4 | 0 | | 5 | 0 |
| Melons | each | 0 | 9 | | 2 | 0 |
| ,, Cantaloupe | each | 2 | 0 | | 4 | 0 |
| Oranges | per case | 10 | 0 | | 30 | 0 |
| ,, Jamaica | per case | 10 | 0 | | 15 | 0 |
| ,, Cape | per case | 12 | 0 | | 21 | 0 |
| Peaches | per doz. | 4 | 0 | | 15 | 0 |
| ,, Canadian | per box | 3 | 0 | | 4 | 0 |
| Pears | per ½ bush. | 1 | 6 | | 4 | 6 |
| ,, French | per box | 2 | 0 | | 5 | 0 |
| ,, Californian | per case | 6 | 0 | | 10 | 0 |
| Pineapples | | 2 | 0 | | 5 | 0 |
| Plums, Californian | per case | 7 | 0 | | 12 | 0 |
| Pomegranates | per case | 7 | 0 | | 8 | 0 |
| Walnuts | per doz. lbs. | 2 | 6 | | 5 | 6 |

### Vegetables.

There is an improvement in business, but prices are still easy, and supplies large.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 1 | 0 | to | 2 | 6 |
| Aubergines | per doz. | 2 | 0 | | 2 | 6 |
| Beet | per bush. | 2 | 0 | | 3 | 0 |
| Brussels Sprouts | per ½-bush. | 1 | 6 | | 2 | 0 |
| Cabbage | per tally. | 3 | 0 | | 5 | 0 |
| Carrots | per doz. bun. | 1 | 6 | | 2 | 0 |
| Cauliflowers | per tally | 4 | 0 | | 5 | 0 |
| Celery | per bun. | 1 | 0 | | 1 | 6 |
| Cucumbers | per doz. | 1 | 6 | | 2 | 6 |
| Endive | per doz. | 1 | 0 | | 2 | 0 |
| Horseradish | per doz. bun. | 10 | 0 | | 12 | 0 |
| Lettuce | per doz. | 0 | 6 | | 1 | 0 |
| Mint | per doz. bun. | 1 | 0 | | 2 | 6 |
| Mushrooms | per doz. lbs. | 6 | 0 | | 10 | 0 |
| Onions | per bush. | 2 | 6 | | 4 | 0 |
| ,, Spanish | per case | 5 | 0 | | 6 | 0 |
| Parsley | per doz. bun. | 2 | 0 | | 3 | 6 |
| Parsnips | per bush. | 2 | 0 | | 3 | 0 |
| Radishes | per doz. bun. | 0 | 6 | | 1 | 0 |
| Spinach | per bush. | 1 | 6 | | 2 | 6 |
| Tomatoes, English | per doz. lbs. | 2 | 6 | | 3 | 6 |
| ,, Guernsey | per doz. lbs. | 2 | 0 | | 3 | 0 |
| Turnips | per doz. bun. | 2 | 0 | | 2 | 6 |
| Watercress | per doz. bun. | 0 | 4 | | 0 | 7 |

## LONDON POTATO MARKETS.

There is little alteration in trade, but a spell of sharp weather will probably send prices up.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Bedfords | per ton | 80 | 0 | to | 90 | 0 |
| Kents | per ton | 80 | 0 | | 95 | 0 |
| Lincoln | per ton | 80 | 0 | | 95 | 0 |
| Blacklands | per ton | 70 | 0 | | 85 | 0 |

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. OCTOBER 6 TO OCTOBER 12. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Oct. 6—Sunday | 6 0 | 36 | 35 | 56 | 27 |
| ,, 7—Monday | 7 48 | 45 | 44 | 61 | 31 |
| ,, 8—Tuesday | 6 30 | 35 | 35 | 59 | 32 |
| ,, 9—Wednesday | 6 30 | 38 | 38 | 60 | 33 |
| ,, 10—Thursday | 6 54 | 44 | 44 | 62 | 38 |
| ,, 11—Friday | 3 0 | 36 | 36 | 55 | 32 |
| ,, 12—Saturday | 4 0 | 35 | 35 | 58 | 33 |
| Means | (total)<br>40 42 | 38 | 38 | 59 | 32 |

| DATE. 1912. OCTOBER 6 TO OCTOBER 12. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Oct. 6—Sunday | — | 48 | 51 | 54 | 23 |
| ,, 7—Monday | — | 47 | 50 | 54 | 25 |
| ,, 8—Tuesday | — | 48 | 50 | 53 | 29 |
| ,, 9—Wednesday | — | 48 | 50 | 53 | 27 |
| ,, 10—Thursday | — | 49 | 50 | 53 | 33 |
| ,, 11—Friday | — | 49 | 50 | 52 | 29 |
| ,, 12—Saturday | — | 48 | 50 | 52 | 30 |
| Means | (total)<br>— | 48 | 50 | 53 | 28 |

## FORTHCOMING ENGAGEMENTS.

MONDAY, October 21.—National Chrysanthemum mum Society; Floral Committee meeting at Essex Hall, Strand, at 3 p.m.

TUESDAY, October 22.—Royal Horticultural Society; Committees meet at 12 o'clock; Lecture at 3 p.m. on "The Senses of Plants," by the Rev. Professor G. Henslow, V.M.H.; Scientific Committee at 4 o'clock.

WEDNESDAY, October 23.—Hereford Fruit and Chrysanthemum Show; two days.

TUESDAY, October 29.—National Chrysanthemum Society's Exhibition at the Crystal Palace; three days.

Kent Commercial Fruit Show, at Maidstone; two days.

WEDNESDAY, October 30.—Kent County Chrysanthemum Show; two days.

Croydon Chrysanthemum Show; two days.

THURSDAY, October 31.—Torquay Chrysanthemum Show.

## CATALOGUES RECEIVED.

MESSRS. JNO. JEFFERIES AND SON, LIM., CIRENCESTER send us their catalogue of bulbs, in which the finest of the varieties in the numerous classes have a place, with brief descriptions.

H. CANNELL AND SONS, SWANLEY.—A useful catalogue of greenhouse plants, herbaceous plants, fruit trees, roses, trees, and shrubs, etc.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

C. BRAY, Upper Breinton, near Hereford, seeks Situation under Foreman as JOURNEYMAN; Inside preferred; age 20; can be well recommended.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43 Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

FOREMAN (Working); well up in general Nursery Stock (Inside and Out); Floral Making up; life experience; age 45; married. G. CANN, Monnow Street, Monmouth.

GARDENER, Single-handed; 14 years' experience in general gardening; age 28; single. W. VAISEY, Barnsley Park Gardens, Cirencester.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working) seeks Situation; life experience in good all-round gardening; age 40; married, two children; good references. HOARE, Wycombe Court Gardens, High Wycombe.

GARDENER and FLORIST seeks SITUATION; first-class practical experience, Inside and Out; single; quick and hard-working; intelligent; age nearly 30. A. BERGER, 58, Doughty Street, W.C.

GARDENER (Head of five); excellent references as above; good Fruit, Cut Flower, Hardy Shrubs, and Vegetable Grower; 13 years Head in good establishments; age 39; wife experienced laundress if required. H., 5, Mallinson Road, Clapham Junction.

GARDENER (Head Working).—MR. COLLETT, Kirtlington Park Gardens, highly recommends his FOREMAN, H. STEDMAN, as above; 19 years' practical experience in all branches; age 35; married, two children; life abstainer; excellent references; disengaged when suited. H. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GENTLEMAN highly recommends his HEAD WORKING GARDENER; leaving at his own request; capable and trustworthy; abstainer; has been with him 24 years; life experience in all branches; age 48. GEORGE MARLOW, The Oaks, Walton Heath, Surrey.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 14th.

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"Yours truly,
"W. S. C."

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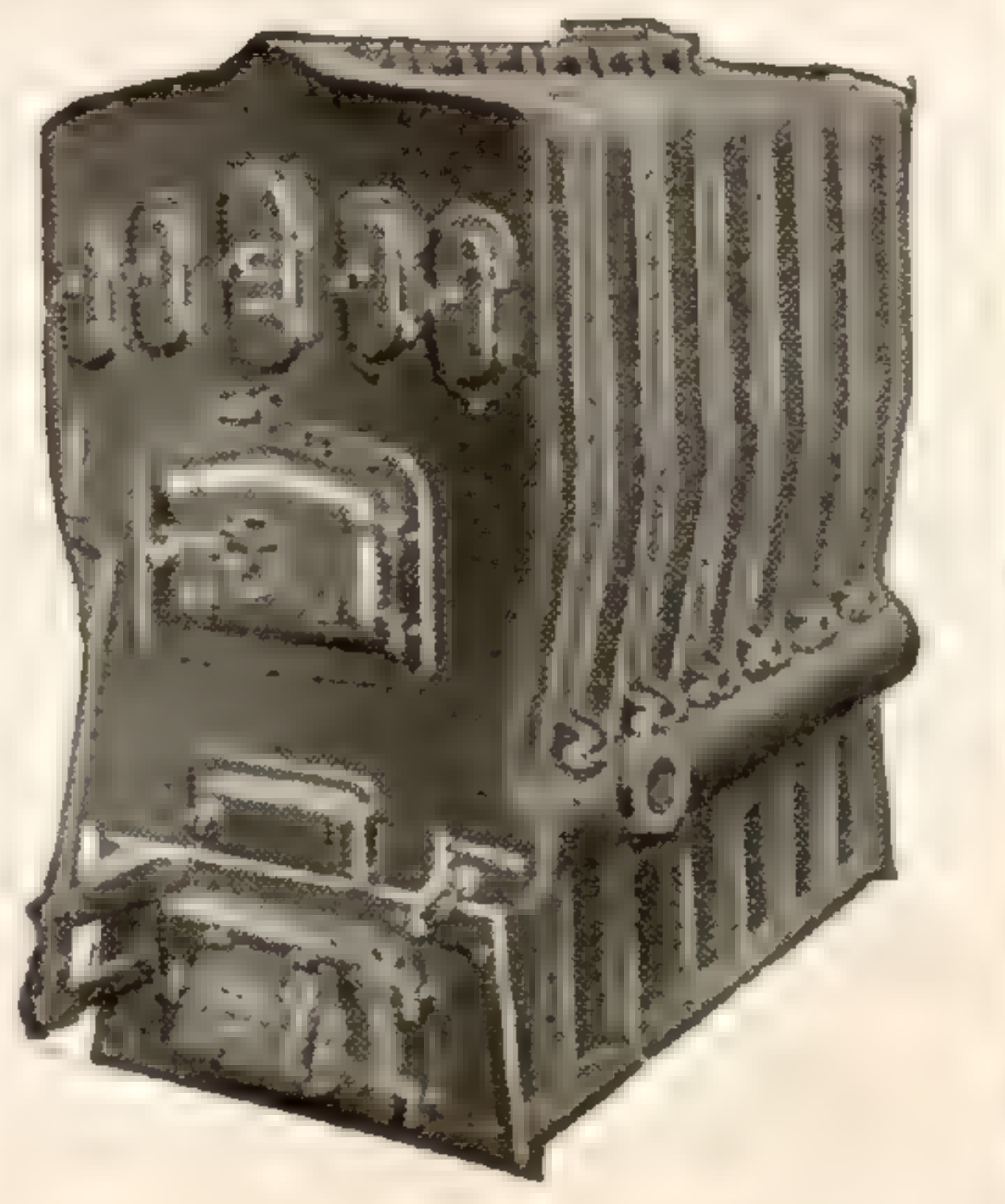

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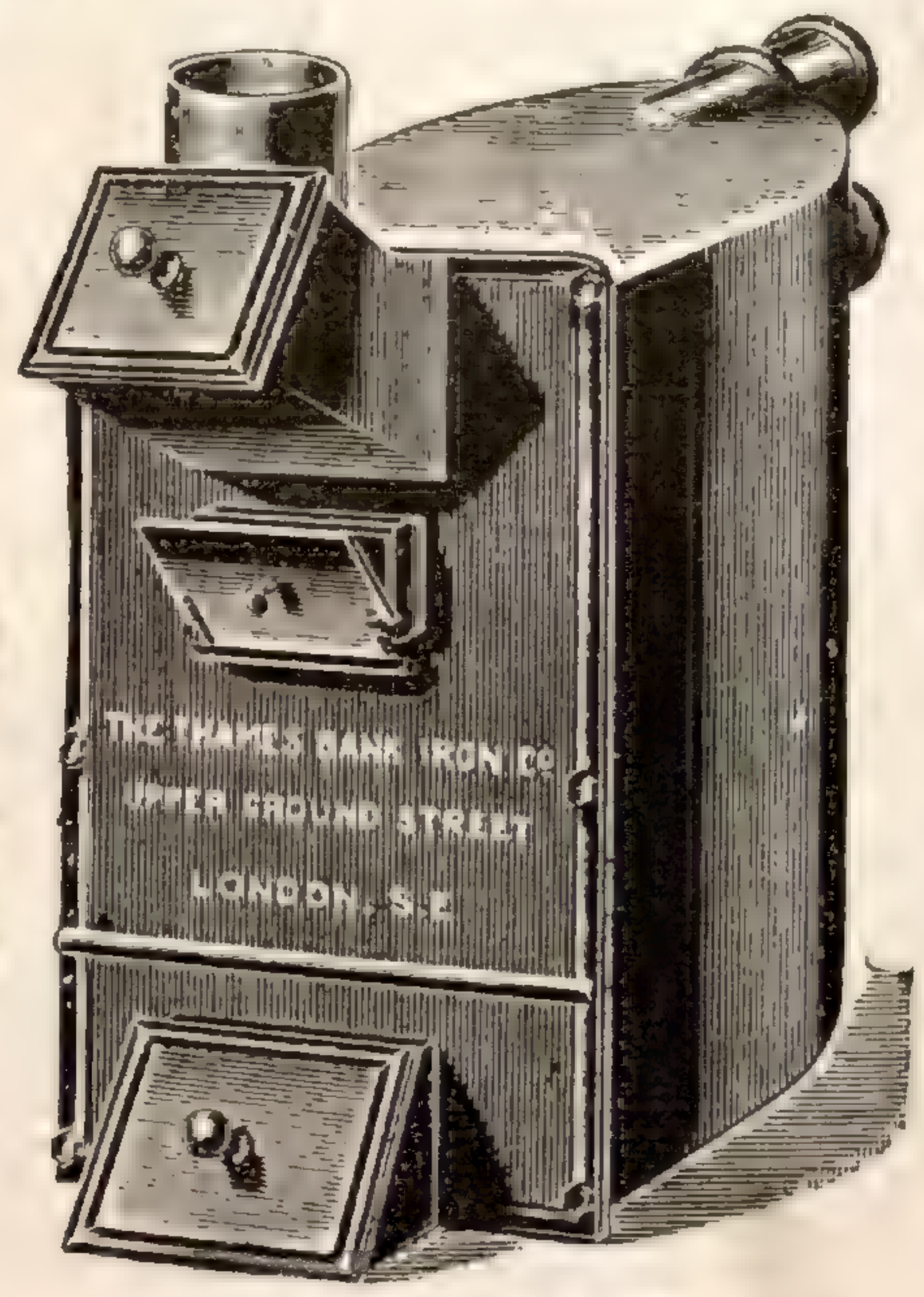
THE HEEL



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No. 3,078. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

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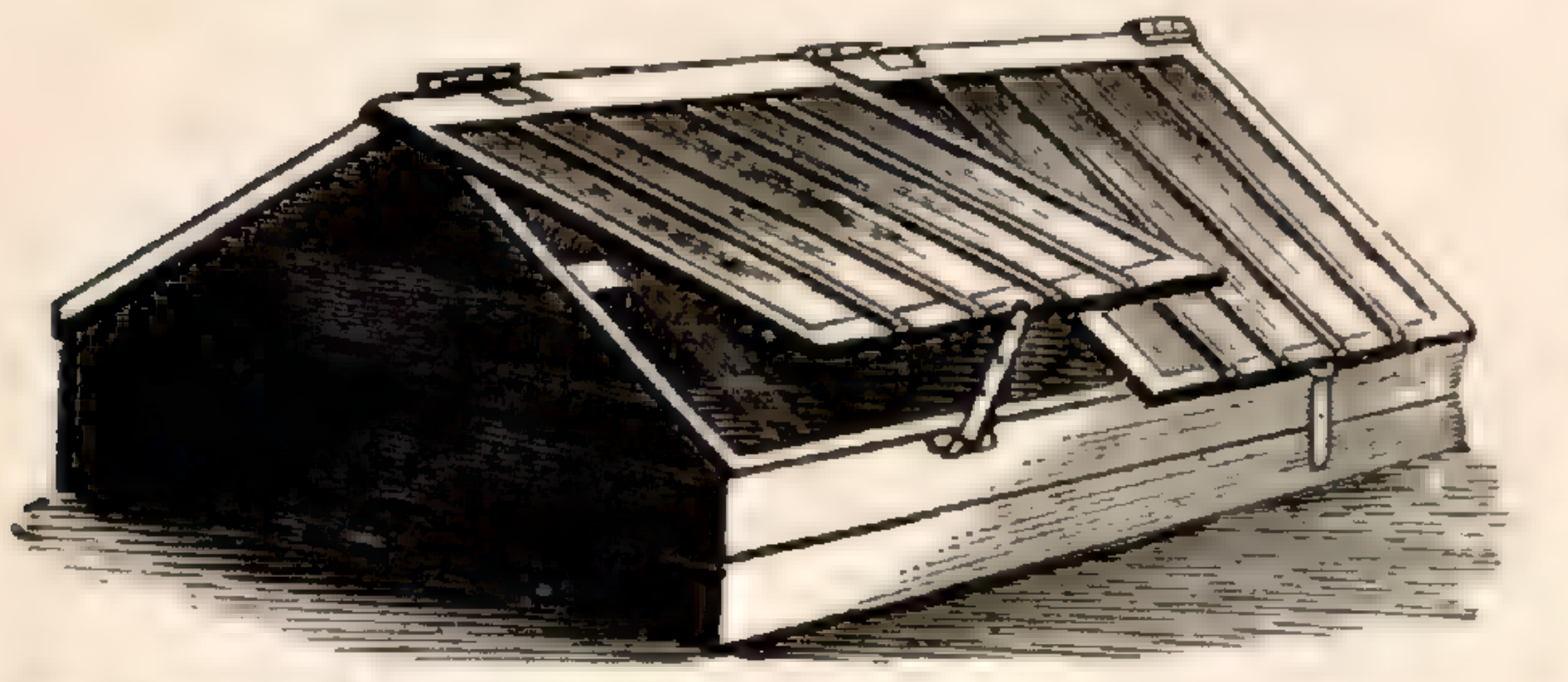

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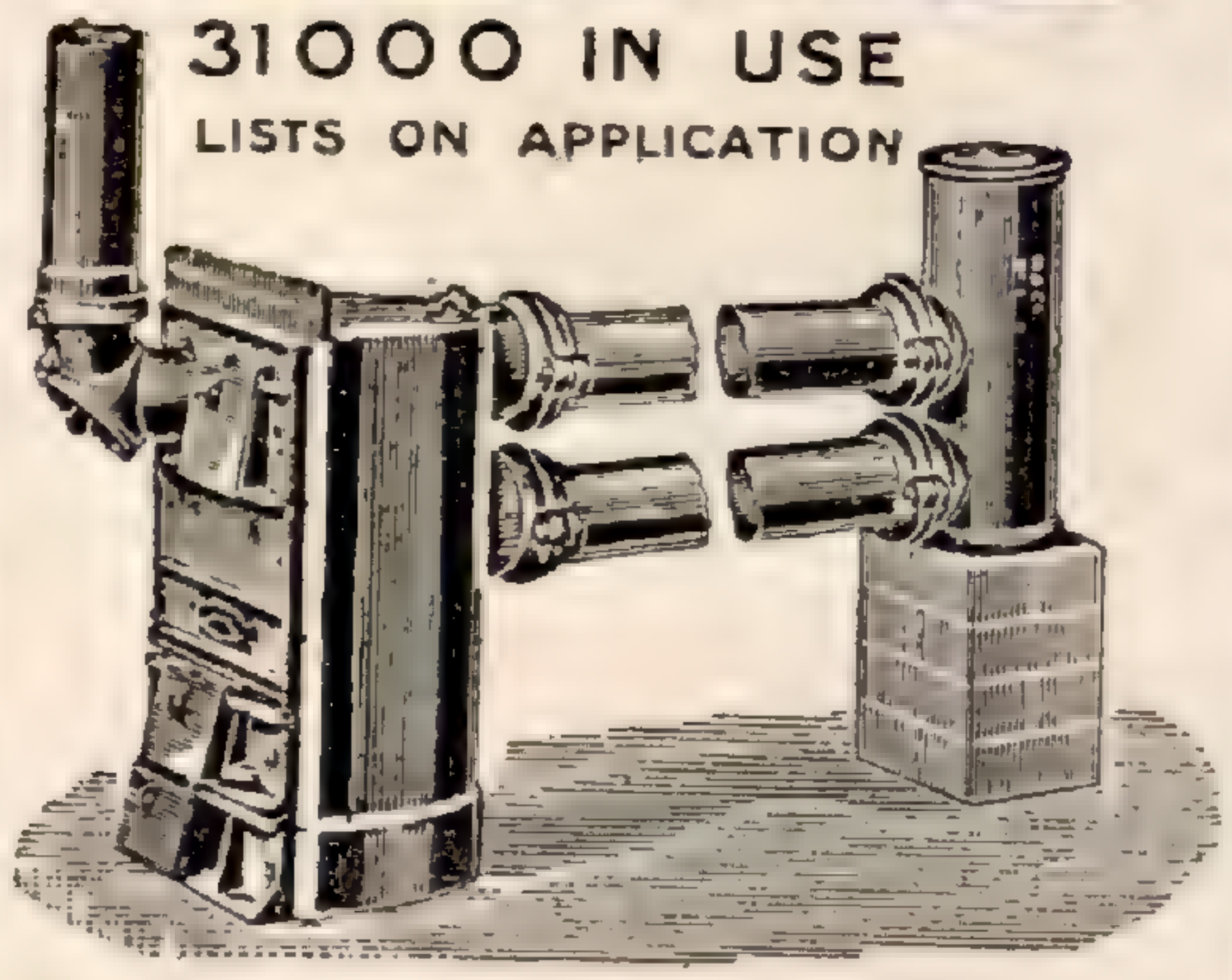

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VOL. LV.—No. 3,078. SATURDAY, OCTOBER 26, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### Flowering Trees and Shrubs.

Trees and shrubs available for the creation of garden scenery are of many kinds, and evince a remarkable divergence in character and adaptability for the various positions the garden affords for the demonstration of the varied charms of arborescent and ligneous vegetation. There are trees and shrubs that are remarkable for their graceful habit or nobility of aspect, that claim attention for the attractive colouring, or elegance of their leafage; and there are others—and they are many—which strongly appeal to garden lovers by reason of the great beauty of their flowers. There is no occasion to institute comparisons between the several classes with a view to determine their relative merits. But it is important the fact should be recognised that all trees and shrubs which possess beauty in a marked degree should, at the planting season, have their claims fully considered, whether their beauty be derived from habit of growth or from fine flowers or bright foliage. There should be a careful selection of kinds from the several classes, and this should be made with due regard to the aid they will render in carrying out a well-devised colour scheme, and their suitability for the positions to be planted. There should be no conflict between trees or shrubs that have beautiful flowers and those remarkable for their attractive leaves. Both should be utilised in such proportions as will enable the planter to produce the desired effect and ensure the diversity of form and colour so essential to the full enjoyment of the garden, whatever may be its dimensions and chief characteristics. At the present time we are more immediately concerned with trees and shrubs that bear flowers of great beauty, and if we urge our readers to plant the finest of these with some degree of liberality, both in furnishing new gardens and making alterations in those which have been long established, we must not be understood as suggesting that those which have handsome leaves or a graceful habit should be less extensively planted. A proper balance should be maintained between the distinctly ornamental kinds, but no longer should the oaks, the elms, the beeches, and other trees that properly belong to the forest and woodland be allowed to occupy the limited space available for trees and shrubs in gardens of comparatively small dimensions. An immense improvement has been effected in this direction during the twenty years that have elapsed since we began our special advocacy of the claims that beautiful flowering trees and shrubs have upon owners of gardens, but much has yet to be accomplished before they will have adequate representation in planting schemes.

MR. WILLIAM YOUNG.

During the past two decades the number of the finest of the flowering trees and shrubs planted annually have increased by at least a thousandfold, if we except the rhododendrons, which had previously obtained fuller recognition than had other classes of shrubs. In some cases a doubt exists as to the advisability of making a distinct departure in the method of planting, and in others trees and shrubs remarkable for the beauty of their flowers are planted so sparingly as to fail to appreciably increase the charms of the garden, and we would direct the attention of those of our readers who hesitate to plant them freely to the fact that while they annually produce a charming display of blossom in their season of flowering, they are at least equal in attractiveness at other seasons to kinds bearing inconspicuous flowers. The greater number of both trees and shrubs bloom during the spring and early summer months, but if we include the heaths, and they should certainly not be omitted, there is hardly a month in the year in which one or more will not yield their floral charms. The number of months over which the procession of flowers in the shrubberies will extend depends, to some extent, on the number of kinds for which space can conveniently be found, but those whose gardens are not large should plant but sparingly, if at all, those which bloom very early in the year, because of the risk of the flowers being injured by damp and fog. If they escape well and good, but if they are injured by the frost a certain amount of disappointment is inevitable. Therefore, the preferable course in all but quite spacious gardens is to plant those kinds that bloom from March onwards. Moreover, shrubs that bloom in April and May can be more fully enjoyed than those so precocious as to yield their flowers in the first two months of the year. It is also desirable, where the area of the garden is not very large, to limit the selection to such kinds as bloom freely and possess much beauty. In the furnishing of large gardens greater latitude may be allowed, for there are many kinds that, while they are not specially showy, are of much interest. The shrubs from which selections should be made include azaleas, berberis, buddleias, ceanothuses, cydonias, cytisus, deutzias, escallonias, forsythias, halesias, heaths, hypericums, honeysuckles, lilacs, olearias, philadelphus, ribes, rhododendrons, viburnums, and weigelas. Then the trees from which selections should be made comprise the double-flowered cherries, catalpas, double-flowered peaches, chestnuts, laburnums, magnolias, plums, styrax, thorns, and Snowy Mespilus. The species and varieties of the foregoing genera do not exhaust the meritorious kinds, as shown in the contributions on flowering trees and shrubs that appear in other parts of this issue, but they should receive first consideration, as they will afford simple material for the production of the most delightful effects. When a selection of these has been made, and the trees or shrubs planted, other kinds can be considered as opportunities offer, and added to the selections previously made, if considered desirable. To ensure a full measure of success the planting must be proceeded with as early as possible so that the roots may have the assistance of the warmth still in the soil. Purchases should be made at once, and, as far as possible, the several kinds should be on their own roots, and especially is it necessary that this should be so in the case of the lilacs, and indeed of all shrubs that sucker freely. The preparation of the soil should be commenced forthwith when new borders are formed. Trench the soil in the usual way, and, if in an exhausted state, previously apply a moderate dressing of manure.

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**Mr. William Young** is one of the best known and highly respected horticulturists in the South of Scotland. For the long period of twenty-seven years he has had charge of the gardens at Craighlaw, Kirkcowan, Wigtownshire, belonging to Mrs. Fleming Hamilton. A native of Lanarkshire, Mr. Young was at an early age apprenticed with the late Mr. William Noble, then gardener at Bonnington House, Lanark. Mr. Noble, then in the prime of life, was regarded as a man of sterling qualities, and one holding high ideals of the gardening cult, which he endeavoured to instil into the minds of his subordinates, though the precept was misunderstood by some of them. Mr. Young, however, remembers with pleasure the time spent at Bonnington, and believes that his after-success in life is largely due to the excellent training inculcated by Mr. Noble. Afterwards Mr. Young served as journeyman at Headington Hill Hall, Oxford, and at Falkland Palace, Fifeshire, and was for five years foreman to Mr. Ormiston, Alloa Park, Clackmannanshire. From Alloa he went as head gardener to W. F. Stanley, Esq., Cumberlow, South Norwood, Surrey, where he laid out a new kitchen garden and orchard, and otherwise improved the place. From thence he returned to Scotland and entered upon his present situation. As in other callings, but more particularly that of horticulture, a man's success is often assured by close and careful study of his environment. This fact was evidently recognised by Mr. Young, who, on leaving a genial southern climate to begin afresh in a bleak moorland district, did not attempt what was well nigh impossible, but concentrated his efforts on producing in their best form subjects most likely to succeed. These were roses, herbaceous plants, and vegetables, with all of which he has for many years carried off the leading honours at exhibitions, both in the immediate neighbourhood as well as much further afield. A few only of his chief successes can be referred to, viz., at Edinburgh in September last, premier position for eighteen dishes of vegetables (open class), and for thirty-six vases of herbaceous flowers. At Glasgow last year, chief honours for a collection of herbaceous flowers. Three years ago at Edinburgh, the Centenary Cup, presented by nurserymen, was awarded to a collection of hardy flowers from Craighlaw Gardens; while for many years Mr. Young has secured a fair share of the principal honours for roses, exhibiting both pot plants and cut blooms at the leading centres in Scotland. At home, the at one time rather unattractive aspect of the establishment has been entirely changed, as flowers in abundance and great variety now prevail, where previously such were considered unattainable, to the great delight of a generous and sympathetic employer, from whom Mr. Young has always received much encouragement in his endeavours.

**An Interesting Site of an Old Garden.**—Waterloo Station, the terminus of the London and South-Western Railway, which has been greatly extended and improved within recent years, is of some interest as the site of Cuper's Gardens, one of the London spas that were popular early in the eighteenth century. In its day these gardens were prominent among the more popular of these resorts on the south side of the Thames. Boydell Cuper, the first proprietor, was for some time head gardener to the Earl of Arundel, who formed a large and important collection of statues. When the gardens were being laid out by Cuper, the Earl presented him with several statues from his collection, and these occupied a place alongside the walks until 1753, when the gardens were closed, and the land devoted to other purposes.

**A Forest of Araucarias.**—Among the advertisements relating to the sale of landed property that are now appearing is one in which an area of land in Argentina containing 2,000,000 trees of Araucaria imbricata is offered for sale. The value of the timber and resin furnished by the trees is referred to, and it is pointed out that "the fruit . . . is adapted for a variety of purposes, including the making of almond rock."

**Bacteriological Effects of Liming Soils.**—According to the "Research Bulletin" of the Iowa Agricultural Experiment Station, experiments were made at the station with a view to determine the effects of applications of ground limestone on crop yields, the total number of bacteria in the soil, and the number of bacteria of certain groups. The ground limestone was carefully mixed with different lots of soil in pots at the rates of one-half, one, two, and three tons per acre, and the pots were kept at approximately uniform temperature and moisture throughout. After the lapse of a month, the soils were examined, the examination being repeated three times at intervals of two or three weeks; and at each the number of bacteria was estimated. It was found that the applications of limestone resulted in an increase in the number of bacteria in the soil, and the increase was almost proportional to the amount of limestone applied up to three tons per acre. In all cases the largest percentage of gain in bacteria was shown at the first examination. At subsequent dates differences occurring in all the soils, both treated and untreated, obscured to a greater or less extent the differences due to liming. The applications of limestone were also found to increase the ammonifying, nitrifying, and nitrogen-fixing powers of the soil, the increases in each case being found to be almost proportional to the weight of limestone applied.

**Export of Trees, etc., to South Africa.**—From the South African Department of Agriculture comes the following notice: Nurserymen with South African customers are hereby respectfully informed that plants, excluding bulbs and seeds, are admitted into the Union from oversea only under special permit. Permits are not given at all for conifers, or for eucalyptus or acacia trees. They are freely given, without regard to quantity, for house palms, ferns, carnations, geraniums, chrysanthemums, orchids, and many other tender plants; but are given only for ten plants of a variety in the case of ornamental shrubs; while for fruit-bearing plants and roses, and for trees in general, they are given only for varieties that are not procurable in the Union, and that cannot be grown from seed, and for not more than ten of a kind. It is desirable that nurserymen refrain from filling any order in the absence of knowledge that a permit has been issued or is practically certain to be issued with respect to it. Applicants are supplied with permits in duplicate, so that one copy may be sent with the order. Labels and invoices should invariably give the varietal names of trees, shrubs, roses, climbers, etc., as otherwise the inspectors may not be able to connect the plants with the permits. In filling orders for the latest varieties of roses, and orders for other plants for which customers may say they are unable to get permits in advance of ordering owing to their not being able to give the varietal names, it is advisable to send to the customer a list of what varieties will be supplied a week or two ahead of despatching the plants. This action would admit of the customer getting a permit before the plants arrive, and thus perhaps avoid serious delay in the delivery of the consignment.

**Successful Workhouse Gardeners.**—Mr. Walter Wood, a Lewisham farmer and Guardian, some time ago challenged the Master of the workhouse in a competition for vegetable culture. Mr. Wood is a good grower, and evidently thought this challenge would interest and inspire the men who worked in the workhouse garden. These latter are practically all old men of 70 years and upwards, and, under the Master's tuition, they have, for the second year in succession, beaten Mr. Wood handsomely, and, incidentally, increased the food supply of the workhouse.

**Dr. A. Anstruther Lawson,** lecturer on botany at the Glasgow University, has been appointed to the chair of botany at the Sydney University, New South Wales. Dr. Anstruther will be the first occupant of this position at Sydney, and he is well qualified for his duties. He has travelled considerably in Canada, the United States, and the West Indias, and he is familiar with most of the leading botanical institutions in Europe.

**Financial Improvement at Ipswich.**—The Ipswich Horticultural Society has for some time been hampered by debt, but special efforts made this year have reduced the debt to £4 6s. 8d., this being the deficit when accounts were closed. The deficit brought forward from 1911 was £99 12s., and the income that year was £394 13s. 4d., as compared with £531 9s. 10d. this year. We congratulate our Ipswich friends upon their success and the prospect of better times.

**Snowdrop Snuff.**—During a lecture on English wild flowers, delivered at the London Salon of Photography, Mr. H. Essenhigh Corke stated that if the petals of snowdrops were dried and crushed, an excellent substitute for snuff would be produced.

**Œnothera Lamarckiana.**—The well-known work of Professor H. de Vries on the evening primrose, Œnothera Lamarckiana, and the various forms (mutants and hybrids) derived from it has been followed up by various cytologists in the hope of elucidating the origin and nature of these forms with reference to the nuclear phenomena. Among these workers is Miss Anne M. Lutz, who, we learn from "Nature," has published an extensive paper based upon the counting of the chromosomes in the dividing nuclei of various œnotheras, especially in the forms called "triploid mutants"—in which the somatic cells have thrice instead of twice the number of chromosomes normally found in the male and female germ-cells from which the plant arose. The results obtained by Gates, Davis, Geerts, and the writer herself are discussed at length, and considerable ingenuity is shown in the explanation of the various numbers of chromosomes observed in different œnotheras—a list is given of more than forty possible combinations and permutations in the chromosome numbers in the germ-cells, and the writer claims to have demonstrated "the harmonious relationship existing between practically all of the observed phenomena thus far reported for the germ and somatic cells of œnothera."

**The Spring Rose Show** that will be held by the National Rose Society at the Horticultural Hall, Vincent Square, on May 1, 1913, has the promise of proving a great success. The schedule is, we understand, being prepared by the Exhibition Committee, and from what we hear it is likely to be sufficiently comprehensive to ensure a large, varied, and attractive display of the roses that may be had in a high state of development during the spring season.

**Royal Horticultural Society of Ireland.**—An endeavour is being made to increase the attractions of the autumn flower shows in Dublin, and, as far as possible, to make them thoroughly representative of the leading products of the garden in autumn. At the monthly meeting of the society the draft schedule of the autumn show for 1913 was submitted for approval, and this contained several new classes. In several of the leading classes that have had their place in the autumn schedule for some years past the prizes have been augmented.

**A New Park for Newport.**—Lord Tredegar has presented Jew's Wood, a suburban spot of about five acres' extent, to the town of Newport, Monmouth. It is a condition that the present well-timbered aspect of the wood shall be preserved, and that swings shall be erected for the children.

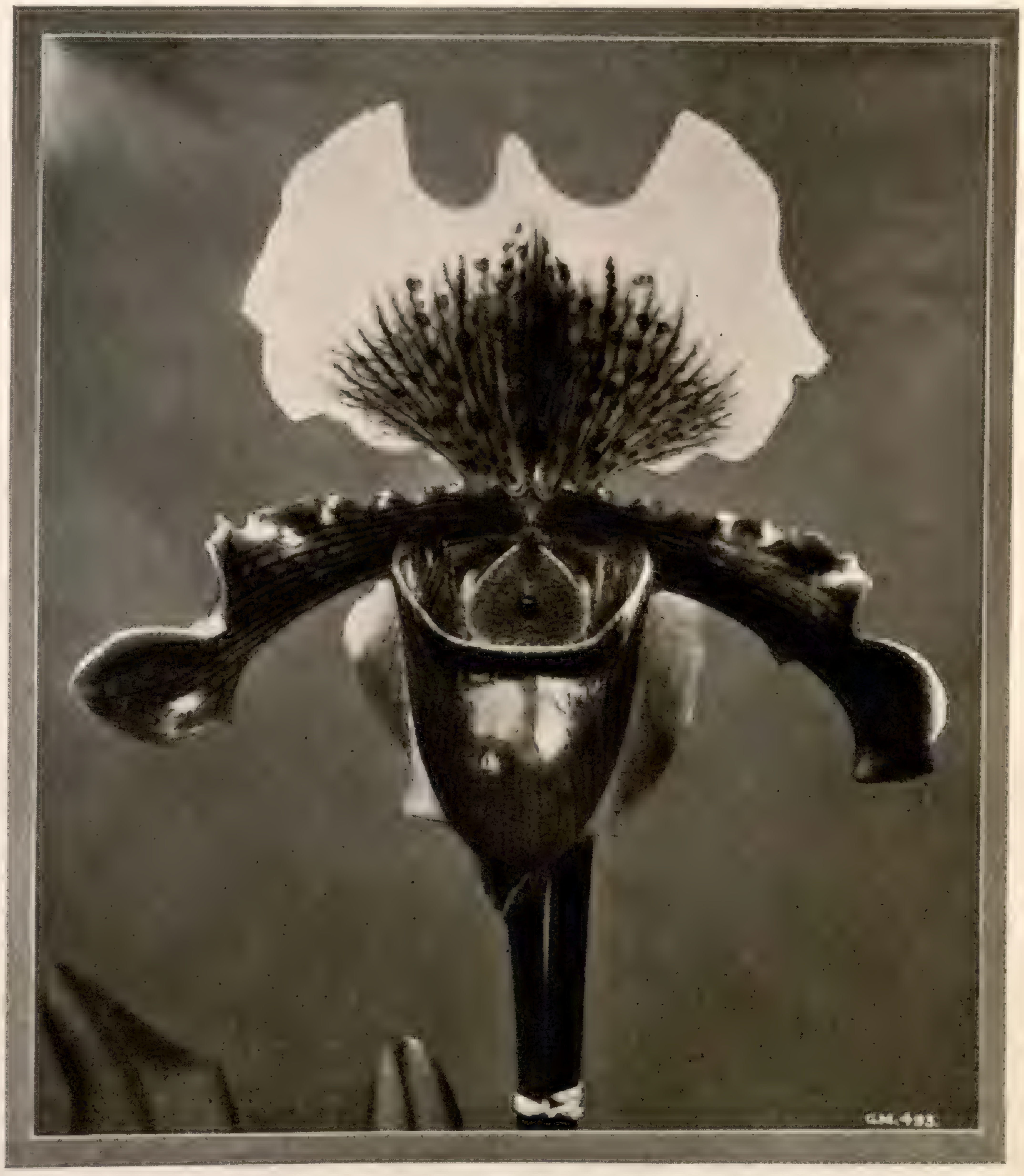
**Chrysanthemums in the London County Council Parks.**—The annual chrysanthemum shows are open to the public at the undermentioned London County Council parks: Battersea Park, Brockwell Park, Finsbury Park, Southwark Park, Victoria Park, and Waterlow Park.

**Cercidiphyllum japonicum.**—This rare deciduous shrub from Japan is quite hardy in our climate, but it is desirable to grow it in a fairly sheltered position, such as a south shrubbery border. It is not very vigorous in growth, and is usually about four or five feet in height. It possesses graceful, drooping, heart-shaped leaves that assume a brilliant red in autumn, in fact, no shrub is more attractive at this season of the year. All who grow choice shrubs should certainly include it in their collection. It prefers a light, open soil that is freely drained, but when the soil is naturally of a heavy and retentive character, a compost of good fibrous loam, leaf-soil, and coarse sand should be prepared for it. If planted firmly in this rooting medium no difficulty should be experienced in making its cultivation a success.

**Prizes for Railway Station Gardens.**—The London and North Western Railway Company offers prizes for the best station gardens on its system, and this year the awards fall as follows: Fulwell and Westbury, £5; Padbury, £3 10s.; Shepshed, £3; Buckingham, £2; Stanmore, £1 5s.; Aylesbury, £1 5s.; Bletchley, £1 5s.; and Croft, £1 5s.

## HARDY AZALEAS.

No shrubby plants cultivated out of doors make a more gorgeous show than azaleas. When a good collection is being formed it is a good plan to thoroughly prepare the ground by trenching, breaking up the soil well, and adding, if such is necessary, some fine peat and road scrapings, or gritty sand and sandstone broken small. Though azaleas will grow quite well in sandy loam, they are all the better if some fine grit and open soil are added to allow surface water to drain away quickly. At the same time it is a good plan to fork in some well-decayed cow manure, as this will give the roots some rich feeding material, and such a compost will suffice for years with an occasional top-dressing.



CYPRIPEDIUM PALLAS ATHENE.

A very fine hybrid of unknown parentage; the colouring is white, green, and dark purple (see page 826). F.C.C., R.H.S., October 22. Mr. W. R. Lee, Plumpton Hall, Heywood, Lancs.

The Ghent and mollis types provide the popular varieties, though there are several species decidedly interesting and beautiful, and, when judiciously arranged, these help to prolong the display. Where it succeeds, good batches of Azalea (or Rhododendron) ledifolia planted among the deciduous kinds will relieve the plantation from bareness throughout the winter.

Azaleas are effective during two seasons of the year. In the autumn the leaf colouring is most beautiful, and from a short distance produce the effect of brilliant bloom. The azaleas may be transplanted with the utmost ease; they shift most readily from August till April. When large plantations are made some evergreens, such as bamboos or skimmias should be included, as these break up the flatness of the azaleas and provide greenery during winter, which is an advantage. Narcissi, etc., should also be grown between them for spring effects. These azaleas can be raised at home quite easily, and good flowering plants secured in three years. One important matter, especially when azaleas are growing on slopes or banks, is that they must be well supplied with water after flowering and until the buds are set.

Some of the best varieties are Gloria Mundi, one of the most vivid and beautiful, and a real good grower, with vermilion and apricot flowers; clumps of this are charming; Grand Monarque, salmon-pink; Soleil d'Orange, Roi des Belges, Peach Rose, Minerva, with large salmon-rose flowers; Fanny, a beautiful soft red; Alba grandiflora, Bouquet de Flore, salmon-pink; Unique, deep yellow, are nearly all sweet scented. Anthony Koster, rich yellow, and is quite one of the finest and most distinct, and probably this and Gloria Mundi are two of the most widely-grown sorts. Dr. Pasteur, orange-red; Emil Liebig, salmon-red; General Vetter, orange; Hugo Koster, salmon-red; J. J. de Vink, soft rose, very beautiful; N. Beets, dark orange; Madame A. Koster, orange-pink; Alphonse Lavalee, flame, a fine flower and a strong grower; Comtesse de Kerchove, orange-red; and Multiflora, red; are among the best of about seventy varieties grown here.

A. amœna is far more hardy than many suppose, and makes a grand show, and, being evergreen, is most valuable. It is a strong grower, and when once well established requires only an occasional top-dressing. We have plants 10ft. across, and these produce thousands of small crimson flowers from April till the end of June, in fact, some are blooming on October 7. There are some fine forms of this species. One of the best is A. Hexe, with larger flowers of a dark crimson shade; splendens, Carminata splendens, Flambeau, and Obtusa alba are all good.

Azalea ledifolia is perfectly hardy, and evergreen, and flowers grow uncommonly well in the front rows of rhododendron beds, or among the deciduous kinds. It gives masses of bloom, and one wonders how the flowers are produced in such quantities, as the beds look as though a white linen sheet had been thrown over them at flowering-time. Azalea rosæflora is a gem for the alpine garden. Azalea occidentalis flowers when nearly all the other types are over; it is white and very fragrant. Azalea Vaseyi is a fine species that flowers very freely, but it is deciduous, and the flowers are produced before the foliage.

In addition to their usefulness in the garden, these azaleas are extremely useful for cutting in the spring and early summer. The flowers are fine for table decoration, being light and graceful, and they can be used in a great variety of ways.

Azaleas are also, for the most part, wonderful subjects for forcing, and last a number of years; if hardened off, planted out on a good piece of ground, and rested during alternate years. They can be purchased cheaply and in quantity.

Hardy azaleas can be raised from seeds, carefully saved, and sown in boxes in February and March, in a temperature of 60 to 65 degrees. Choose finely-sifted, peaty soil, with plenty of sand for a seed-bed, and place a sheet of glass over the seeds. Keep them shaded and in a moist atmosphere. Prick off the seedlings as soon as large enough into other boxes, or into a frame, and provide a gentle bottom heat. Subsequently harden off the plants, and place them in well-prepared beds outside, in a partially-shaded site.

Leonardslee Gardens. W. A. COOK.

## JAPANESE IRIS.

The mere mention of Japanese iris will recall to the garden-lover many pleasing scenes in which these glorious flowers have played a very prominent part. I do not doubt that each reader may have in mind an "idealised picture," in which the Irises of Japan have created a vista of garden beauty unsurpassed by the majority of favourite plants common to English gardens. Look where you will, you will find nothing more superlatively beautiful in July than these irises of the Kæmpferi group, and I may safely say that no other group of flowering plants embraces such a range of indefinable tints, suffusions, and shadings of colour, as are found in these most useful subjects. For use in a garden where water plays its part in the making of a pleasing landscape, the Japanese Irises bring into the picture such a supreme portrayal of beauty in repose, such a wealth of glorious yet restful colourings that one is always impelled to acknowledge that for sheer depth of beauty there is nothing to surpass them.

The sword-like foliage blending in a perfectly natural manner with the reeds, grasses, and usual waterside subjects, and the great flapping blossoms reflecting their wondrous hues in the mirrored water of the pools, combines to make up a plant that is at home in almost any phase of garden design, and which is truly ideal for all phases of natural gardening where water enters into the scheme. There is no need for me to enumerate numbers of successful plantings; it rather concerns me to further popularise the group in the minds of English garden-lovers. We are surely, however, under a great debt of gratitude to the Japanese specialists, who, by generations of steady, peaceful work, have developed the varieties of Iris Kæmpferi to so high a degree of perfection, and if there is any ambition in the heart of the iris-lover, it must assuredly be to view the blossoming vales at iris time in such favoured spots as Hori Kiri, Kamata, and other centres. Although there are a very great number of truly splendid varieties, there is a danger of purchasers duplicating them, simply through the practice of changing the names of these plants from their Japanese renderings to a more sober-sided, commonplace English series of names. It is thus possible for one to buy, say, the same variety under four or five different names. I would advise intending purchasers to select from varieties in blossom, and where this is not possible, then fall back upon the splendid representations of the Japanese artists on rice-paper, which give a really good conception of the varieties as they really are.

Without taking up too much space with detail, I will mention a dozen really fine forms as a little help to selectors. They are as follows: Gekka-no-Nami, heavy white with yellow blotches; Oyodo, an immense violet-blue; Momiji-no-taki, crimson-purple, suffused and feathered with white; Oshokun, intense, rich blue; Iso-no-nami, sky-blue on a lilac-grey ground; Lama-no-mori, large white, gently shaded with softest blue; Kyodaisan, purple, overlaid with rich blue; Bandai-no-nami, a splendid white with large yellow blotches; Kasugano, a pretty reddish-lilac, daintily marked; Shira-taki, a magnificent white, known to Japanese eyes as the White Waterfall; Datedogu, a rich claret-red of great merit; and Choseiden, a first-rate ruby-crimson.

With reference to cultivation, Japanese growers make a point of manuring the irises regularly from November to March, at intervals of about a month. The reason for this is obvious, for, though the crowns are practically at rest during this period, the roots are gathering nutriment to build up the foundation of those glorious blossoms, which are to come with summertide. My own experience is greatly in favour of this plan, and I would urge the free use of cow manure for this purpose, if possible, as for planting. I believe in planting up stocks, especially if division is to take place, as early as possible after flowering. Provided the soil is in good condition, and the work capably done, I have found the irises more ready to respond to demand of culturist at this season than at any other, and one can establish his stock before the winter season sets in. As I have intimated in a previous issue, choice forms can be split up into single crowns, and put into 48-sized pots in a good compost, and be quite ready for planting out in early autumn; or, if desired, kept in pots until spring.

Moisture is a great necessity of the Japanese iris during the growing season, more particularly when the foliage is in full growth, and the flower spikes rising. Hence it is necessary to group them by the waterside, or else grow them in deep, well-worked loamy soil. Good cultivation is essential to success, and, though it is sometimes difficult to bestow full attention upon everything, yet the irises well repay any trouble in this direction. The value of our subjects for summer effect is great, and no scheme of water-scenery should be worked through without their aid.

Although so much has been done by the Japanese, I hold the belief that there is still room for a few more novelties in the irises, and a series of good English-raised forms will be as welcome as those of Japan. In closing, let me urge the use of irises in those schemes of garden adornment where flagged pathways, stone-cased pools, or basins, and other semi-formal arrangements are in vogue. P. S. HAYWARD.

## MORE YELLOW BEDDING ROSES.

In the issue for October 5, page 751, "R." has some interesting notes about yellow roses for outdoor culture. I fully endorse every word he writes, but as there are several other really good yellow bedding varieties I would like to mention them before the planting season has passed away. "R." praises Duchess of Wellington highly; but it deserves even more praise than he accords it. In spite of three sharp frosts on consecutive mornings my plants were still very showy, and would have carried heaps more blooms if this set-back had not interfered with the numerous buds upon the trusses.

Other yellows that make a good show and have been well tried here are Le Progrès, a deep nankeen-yellow that is very free both in bloom and growth. Madame Ravary gives us another that is quite distinct in its golden-yellow and orange-shaded flowers; having beautiful bronzy foliage, and is an exceptionally free grower here, although I note a few well-known growers class it as only moderate in growth. A yellow bedder that has been extra good with me is Mrs. Peter Blair, a deep lemon with a golden-yellow centre; and, like Madame Ravary, very sweetly scented. Then we have two deep lemon-yellows producing large upright trusses of flowers a little more than semi-double, which make a thoroughly good display all through the season. The darkest and sweetest-scented is Madame Pol Varin-Bernier, and the other Madame Pernet Ducher. Both grow to a good uniform height and spread their trusses well.

Lena and Miss Eva are a couple of closer growers with saffron-yellow buds. When planted thickly these are very effective. So, too, are the dwarf-growing China named Chin-chin, and the dwarf polyantha Eugénie Lamesch, both of which retain their colour better than most yellows, which so often fade off to almost white as the flowers expand.

It is somewhat strange that "R." should omit Miss Alice de Rothschild, a really good yellow of Marechal Niel colouring. The flowers are large, carried boldly upright, hold their colour remarkably well, and are very sweet scented. It is a good grower and very free bloomer, and has thrived out of doors during the last two widely different seasons.

Harry Kirk is a beautiful yellow among the tea-scented class. A deep sulphur with rather lighter edges, and good in all respects. James Coey and Senateur Mascuraud are also very deep yellows that open well, although the flowers are of globular form. "R." mentions the old favourite Marie Van Houtte, and few can beat it, but it is prone to hang its blossoms. We have a much larger and more double form of this rose in Mrs. Dudley Cross, a variety given us by Messrs. W. Paul and Son in 1907.

A very showy Indian-yellow and saffron-orange is found in Mrs. Aaron Ward. The flowers are always carried boldly upright and often in large trusses. The habit of this rose makes it a perfect bedder, and it is good both early and late. It is, however, rather uncertain as to colour, a good number coming without much of the Indian-yellow which is so striking in this hardy and useful variety.

In Melody we have a newer rose from Newtownards, with deep saffron-yellow centre and primrose-yellow edgings. This variety is full of promise, and carries itself well for a bedder. ROSARIAN.

## NEW PLANTS, ETC.

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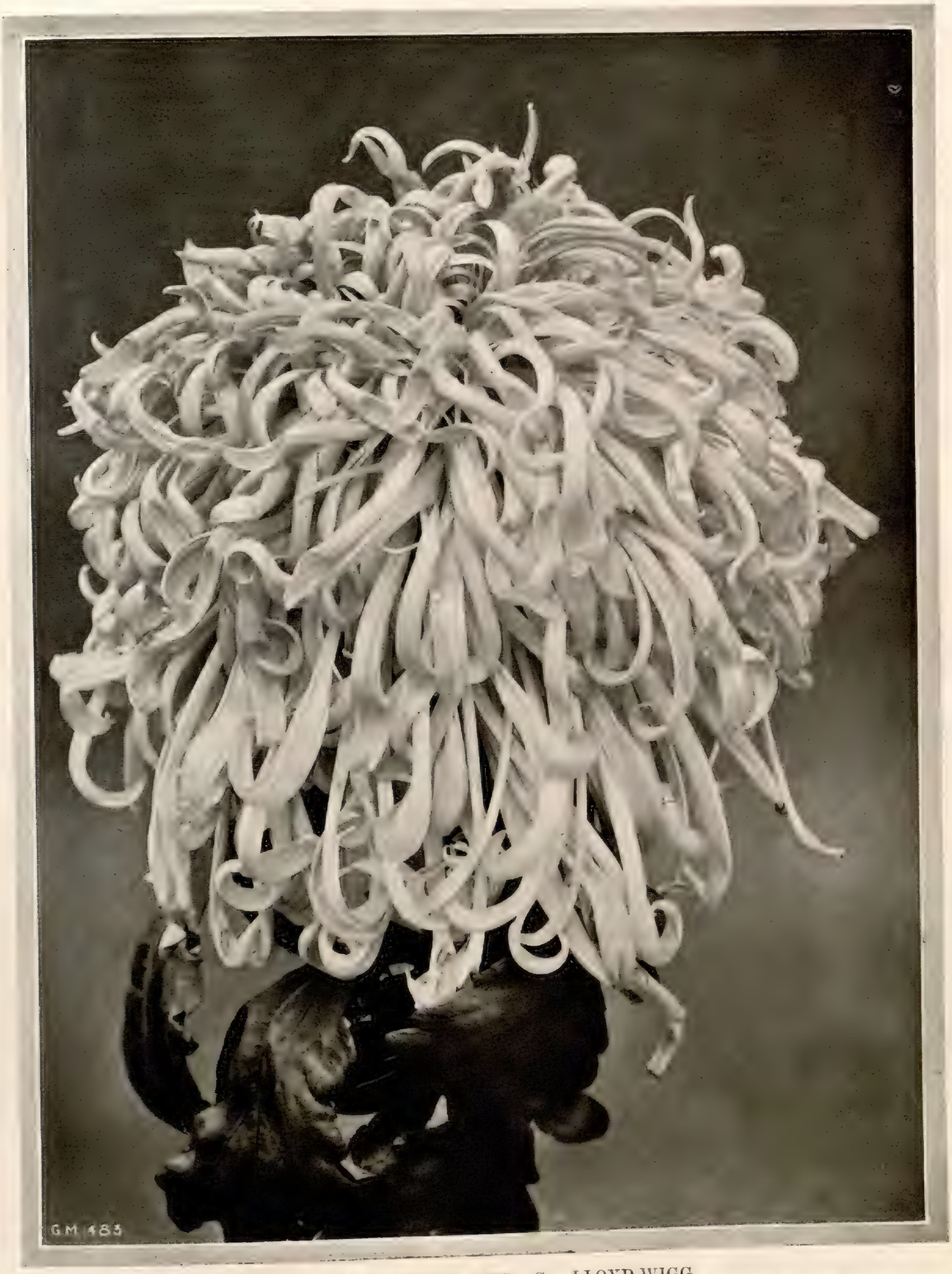
### COTONEASTER ZABELI.

A strong-growing shrub that promises to become a small tree when well established. It is semi-evergreen, and has pointed, ovate leaves between one and two inches long. The dull crimson berries are produced in clusters, but the colouring is not nearly so effective as in the case of C. salicifolia rugosa. A.M., R.H.S., October 8. Hon. Vicary Gibbs (gardener, Mr. E. Beckett, V.M.H.), Aldenham House, Elstree.



CHRYSANTHEMUM MRS. G. LLOYD-WIGG.

A distinct Japanese variety described in our issue of October 19; the flowers large, the colour soft yellow. A.M., R.H.S., October 8. Messrs. W. Wells and Co., Merstham.

### COLUMNEA GLABRA.

A handsome Costa Rican species with somewhat pendulous growths that bear erect scarlet flowers three inches long. These flowers are solitary and produced from the upper axils in the leafy ends of the twigs. A freely-flowered, twiggy branch presents a handsome appearance. An intermediate house suits it, and cuttings root readily. "Bot. Mag.," t. 8,453.

### DENDROBIUM IMTHURNI.

A very robust-growing and beautiful species from the New Hebrides. It was discovered by Sir Edward Im Thurn. when Governor of Fiji, in the island of Efate. The growths are from 3 to 4½ft. high, thick and leafy, and bear many-flowered axillary racemes towards the tops of the pseudobulbs. The flowers are of medium size, white, with lilac marks on the side lobes of the lip. The sepals are spirally twisted, and the petals curved upwards at the ends. "Bot. Mag.," t. 8,452.

### BERBERIS VERRUCULOSA.

An attractive Chinese species collected in Western Szechuan by Mr. E. H. Wilson. It forms a dense, low, sturdy bush that should find favour in the rock garden. The twigs are very short, and bear from three to five small, spiny leaves, three sharp spines, each half an inch long, and solitary flowers, each composed of six sepals and six petals, all bright yellow. The flowers are followed by purplish-blue berries. "Bot. Mag.," t. 8,454.

### CHIRONIA LAXA.

The most popular species of chironia in gardens is C. linoides (C. ixifera), but this has a more erect and bushy habit than C. laxa. The latter has slender laxly-branched stems, and linear lanceolate leaves. The bright magenta flowers are borne on stiff peduncles an inch or more long. "Bot. Mag.," t. 8.455.

### PRIMULA WATTI.

A small-growing species found in Eastern Sikkim, where, however, it is somewhat rare. It belongs to the Soldanelloid group, and will probably have to be treated as an annual under cultivation in this country. From the centre of a little cluster of membranous, hairy leaves, the spike rises about 4in. high, bearing at its apex a number of drooping, violet, white-eyed flowers. "Bot. Mag.," t. 8,456.

### CHAMÆDOREA GLAUCIFOLIA.

An elegant species belonging to the Areca group of palms. It hails from South America. Though not common in cultivation it was in some request as a table plant when first introduced to cultivation. A 15ft.-high specimen in the Aroid House at Kew, has a fine crown of graceful leafage, but the slender stem is not strong enough to carry this head of foliage without support. The larger leaves have often as many as forty leaflets on each side. "Bot. Mag.," t. 8,457.

## THE MEADOW RUE-LEAVED COLUMBINE.

Many of the aquilegia species have become neglected owing to the great favour so deservedly shown to the charming long-spurred hybrid columbines, which are so delightful in their time, and we do not so frequently see the other species in our gardens as we did some years ago. One of these little-known species is Aquilegia thalictrifolia, or the meadow rue-leaved columbine, a plant which has, as the name would suggest, a good deal of the appearance of the thalictrums, or meadow rues, in its foliage, just as, on the other hand, one of the thalictrums, T. aquilegifolium, partakes of the leafage of the meadow rue.

In Aquilegia thalictrifolia, the pretty leaves have their three-stalked segments cut into very deep, oblong lobes, hence the resemblance accounting for the specific name.

From this rise stems of about three flowers on each, these being of a kind of lilac-blue, the sepals being about half an inch long and the limb of the petals about the same size, the spurs being rather shorter than these. It does not rank as one of the finest of the alpine aquilegias, but is, withal, a pretty plant, whose attractions are rather heightened by the pubescence with which its stems and leaves are covered.

The cultivation of A. thalictrifolia is easy, and I find that it can be cultivated successfully in the border or the large rockery. It likes partial shade and a soil which is not too dry, but otherwise it is accommodating, and will withstand more drought than it really likes, although it is not so fine under such conditions as those it prefers. A native of the Tyrol, it was introduced in 1879. It is propagated by seeds, which are sometimes offered by specialists in such plants.

S. Arnott.

## FLOWERING SHRUBS FOR THE ROCK GARDEN.

Flowering shrubs take a prominent part in the schemes of rock garden planting, and when provided with sutable positions, they produce a pleasing effect. Due consideration must be paid to the selection of the various kinds, avoiding, to a great extent, those having gross feeding tendencies. These latter, if planted in close proximity to the small-growing alpine plants, will quickly starve them out. Another point to bear in mind is the size the shrubs attain before showing their full beauty.

There are numbers of shrubs of dwarf growth that are useful for limited spaces among the rocks, and quite suitable for associating with the smaller plants, without any fear of encroachment. Positions in the background may be found to accommodate those of taller habits, and many may be used to great advantage as specimen plants within the environments of the rock garden. Additional interest is afforded by a good collection of flowering shrubs, and a more natural effect obtained by their use. Fortunately, there are many excellent shrubs quite suitable for the purpose, and generally the greatest trouble is to decide which not to plant, especially when the dimensions of the rock garden are rather small. When the garden is on a large scale, flowering shrubs may be made a fine feature, planted amongst the rocks, and growing over large boulders. Those enumerated below do not form an exhaustive list, yet they include first-rate subjects in their proper positions.

There are few shrubs that excel the azaleas for producing colour effects during the early part of the summer, and both the Ghent and Mollis types should be planted. A. amœna and A. procumbens are also particularly well suited to the rock garden. The andromedas form a splendid group of plants, A. floribunda, A. paniculata, and A. speciosa being good subjects for peaty beds. Some of the barberries are very effective; B. Darwini, B. stenophylla, and B. Thunbergi are most useful, the latter giving fine foliage effects in the autumn. Choisya ternata should be planted in a sheltered spot, and treated as a specimen plant. It is a beautiful subject, and grows into a good-sized bush. The cistuses or rock roses are indispenable for clothing dry sunny banks, and in favoured districts, where they will stand the winter, should be liberally planted. They thrive exceedingly well near the sea, and produce an abundance of blossom throughout the summer. C. algarvensis has yellow flowers, and is somewhat prostrate in growth; C. albidus, rose; C. crispus, reddish-purple; C. ladaniferus (Gum Cistus), white; C. purpureus, purple with a maroon blotch; and C. villosus, reddish-purple, are all good and delight in warm, sandy soil in sunny positions.

Cotoneaster horizontalis and C. microphylla are good plants for the rougher parts of the rockery, where their growths may ramble over and among large stones. They are by no means showy subjects when in flower, yet they well deserve a place for their berries, foliage, and good habit. Several members of the cytisus family are well suited for the purpose, such as C. Ardoini, C. Kewensis, C. nigricans, C. præcox, C. Schipkænsis, and C. scoparius Andreanus. All the cytisus delight in sunny positions, and great care must be exercised in selecting the correct places when planting. Some, such as C. Andreanus and C. præcox, do not show their full beauty until they attain a good size, therefore it would be a mistake to plant them in the foreground. Others, such as C. kewensis, should be given a place among the smaller plants. Daboicia polifolia is a pretty little heath-like shrub, with rosy-purple, bell-shaped blossoms. It rarely exceeds a height of eighteen inches, and is a most continuous bloomer. There is also a white form.

Daphne alpina, D. Blagayana, and D. cneorum may be numbered among the most select of the rock garden shrubs. A partially shaded situation suits them, and they thrive in a mixture of peat, limestone, and sand. The old D. Mezereum and its white form are well-known, and they are both beautiful subjects for the early part of the year. Dryas octopetala is a dwarf, creeping evergreen, bearing white flowers. Hardy heaths are of great value, and should be liberally planted, the tall kinds in the rougher parts of the garden and the dwarfs in the limited spaces among the small-growing alpine plants. Erica arborea, E. australis, E. carnea, E. codonodes, E. mediterranea, and many others will be found most useful. Genista hispanica, G. sagittalis, and G. tinctoria plena should have a place, the former being the showy Spanish Furze. G. pilosa and G. tinctoria plena have a prostrate habit. The kalmias should be represented by K. angustifolia rubra, K. glauca, and K. latifolia. A cool, peaty soil suits these plants, and they may be associated with the ericas to great advantage. Ledum palustre is another peat-loving subject, delighting in a cool, partially shaded situation.

The New Zealand Pink Broom (Notospartium Carmichæliæ) is a lovely shrub with graceful shoots, which bear small bunches of pea-shaped blossoms. This plant does not appear to be so well known as it deserves, and it is a most beautiful subject when in flower. It is of slow growth, but will reach the height of from four to six feet. Rhododendron ferrugineum and R. hirsutum are capital plants, and besides these two there are R. racemosum, R. odoratum, R. Wilsoni, and R. præcox to choose from. Rosa rugosa and its varieties are excellent subjects for the wilder parts of the rock garden, where they are allowed to grow at will. Romneya Coulteri (Californian Poppy) is a strikingly handsome plant, with large poppy-like flowers, white, with yellow centres.

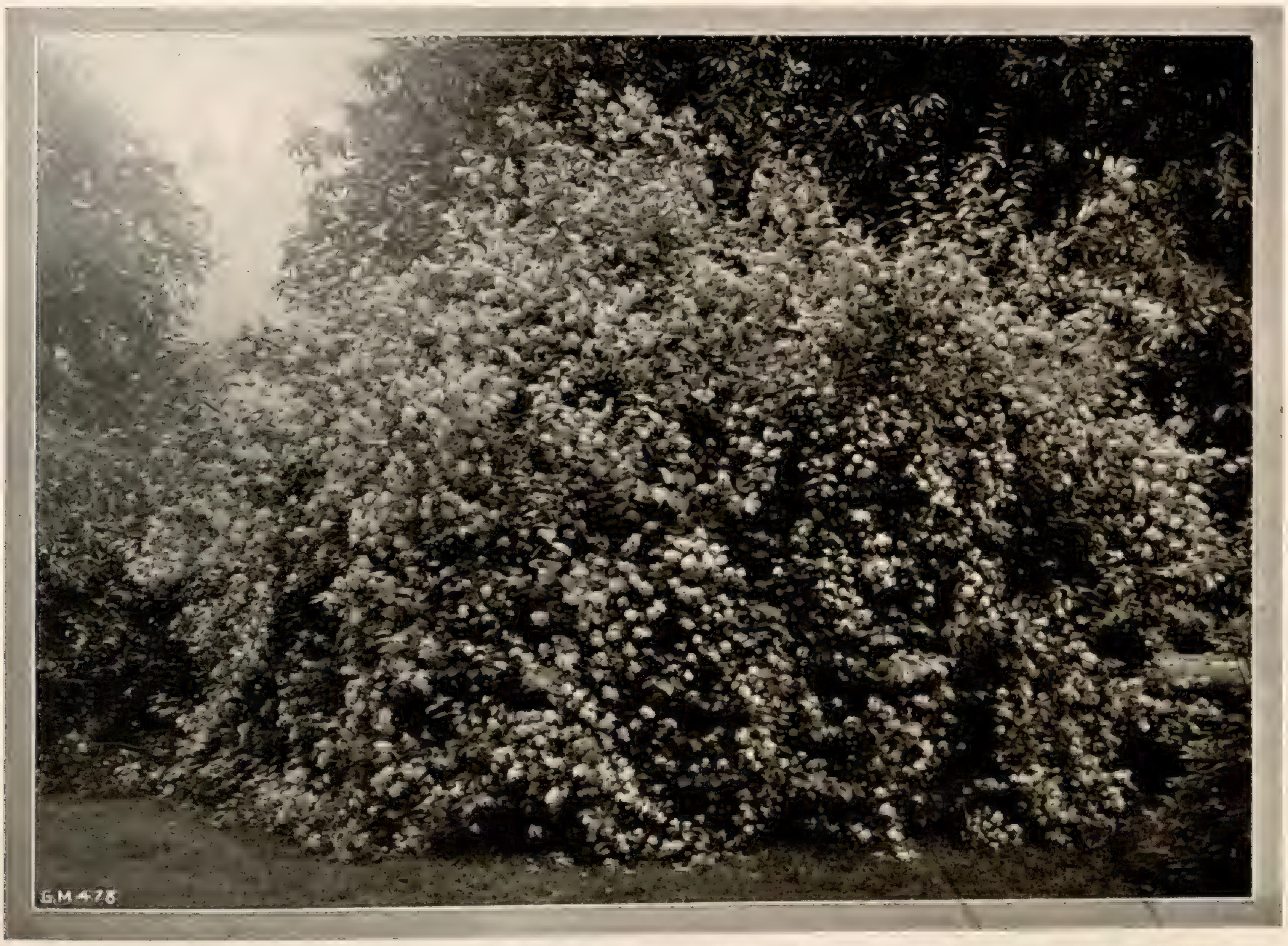
Among the spiræas we have S. arguta multiflora, a very free-flowering kind with white flowers; S. crispifolia, of small stature and with miniature foliage clothing stiff, wiry stems. This is essentially a rock garden plant, with dwarf, compact habits of growth. There are also S. Bumalda Anthony Waterer, S. Thunbergi, and others quite suitable for the rock garden. The double-flowering furze (Ulex europæa flore-pleno) creates a fine effect when grouped in suitable places. To prevent it becoming leggy and unsightly with age, hard pruning is necessary after flowering. This operation should only be performed to prevent untidiness, and must not be done annually, as in the case of many other flowering subjects. The veronicas are a host in themselves for the rock garden, the New Zealand species being especially suitable.

It is rather a difficult matter to know where to leave off when selecting flowering shrubs, but no large rock garden would be complete without a few magnolias. Specimen plants dotted about are very effective in the early part of the year. Mention may be made of M. conspicua, M. Lennei, M. parviflora, M. Soulangeana, and M. stellata. The St. John's Worts, also, are beautiful subjects.

Gnaton Gardens. E. C. Pooley.

# FLOWERING TREES AND SHRUBS FOR SPECIMENS.

Self-evident though it may be, there can hardly be any question as to the desirability of stating, by way of reminder from time to time, that one of the chief essentials to success in furnishing gardens with trees and shrubs is to select the kinds with special reference to their suitability for the positions they are to occupy. Whether they are remarkable for the beauty of their flowers or foliage, or for their elegant or otherwise distinctive habit, this fact should be constantly kept in mind when making selections. The size of the several kinds should, as far as possible, be proportionate to the area they will occupy, for when trees or shrubs that attain to large dimensions are planted in relatively small spaces, a considerable amount of pruning of roots or branches have to be done to keep them within bounds. This involves considerable time and labour, and unless the pruning is performed with considerable skill, the trees or shrubs operated upon will present a much less satisfactory appearance than kinds which can be allowed to grow unchecked, or not pruned beyond what may be necessary to maintain a proper balance between the several parts. On the other hand, where there are spacious borders to be filled and great breadths of lawn to be beautified, a considerable proportion of the kinds selected should attain to a comparatively large size, and possess some degree of boldness when full grown. Those which will be referred to in these notes grow to a rather large size, and make highly effective specimens when allowed sufficient room for their full development, but in no case are the dimensions such as to render them unsuitable for the garden.



PHILADELPHUS INSIGNIS.

A distinct hybrid, robust in growth, free in flowering, and of exceptional merit for specimens of large size. The pure white flowers are borne in comparatively long racemes.

### Æsculus.

The most beautiful of all the chestnuts is Æsculus hippocastanum, or the horse chestnut, but it is too large for gardens other than those of the largest size. The scarlet chesnut (Æ. rubicunda fl. pl) is, on the other hand, of medium size when full grown, and one of the most valuable of trees suitable for lawn specimens, even where the garden is of quite modest dimensions. Somewhat brighter in colour than the type is the variety known as Binoti, and it should have the preference in preparing a selection of the finest kinds. Æ. (Pavia) macrostachya is a handsome tree of small size, and very attractive when bearing a profusion of its pale yellow flowers. It is suitable both for borders and lawns, but it requires a rather warm soil for its full development.

### Berberis.

There are a considerable number of berberis that are most attractive when placed under conditions favourable to their full development, but the finest of all for growing as specimens on the lawn and in bold groups in spacious borders is Berberis stenophylla. Most desirable also is its handsome double variety. Both are extremely elegant in growth, and the rich orange-coloured flowers are borne in great profusion along the slender, gracefully-arching branches. B. Darwini possesses merit for the formation of border groups, but it is not equal to the former for lawn specimens. In growing B. stenophylla on the lawn a good effect is quickly obtained by forming small beds three feet or so in diameter, and arranging three plants in each.

### Buddleias.

Of the buddleias now in cultivation, the most valuable, both for lawn specimens and shrubbery borders are the varieties of B. variabilis, which have been introduced to this country within recent years. As these are dealt with in another part of this issue, I shall not refer to them further than to say that they make excellent lawn specimens, of which a considerable number have come under my notice in English and Scottish gardens. B. globosa, with its orange-coloured, globular flowers, forms a handsome bush with comparatively little attention, and is so distinct in character and colour as to deserve to be more generally planted than has yet been the case.

### Cerasus.

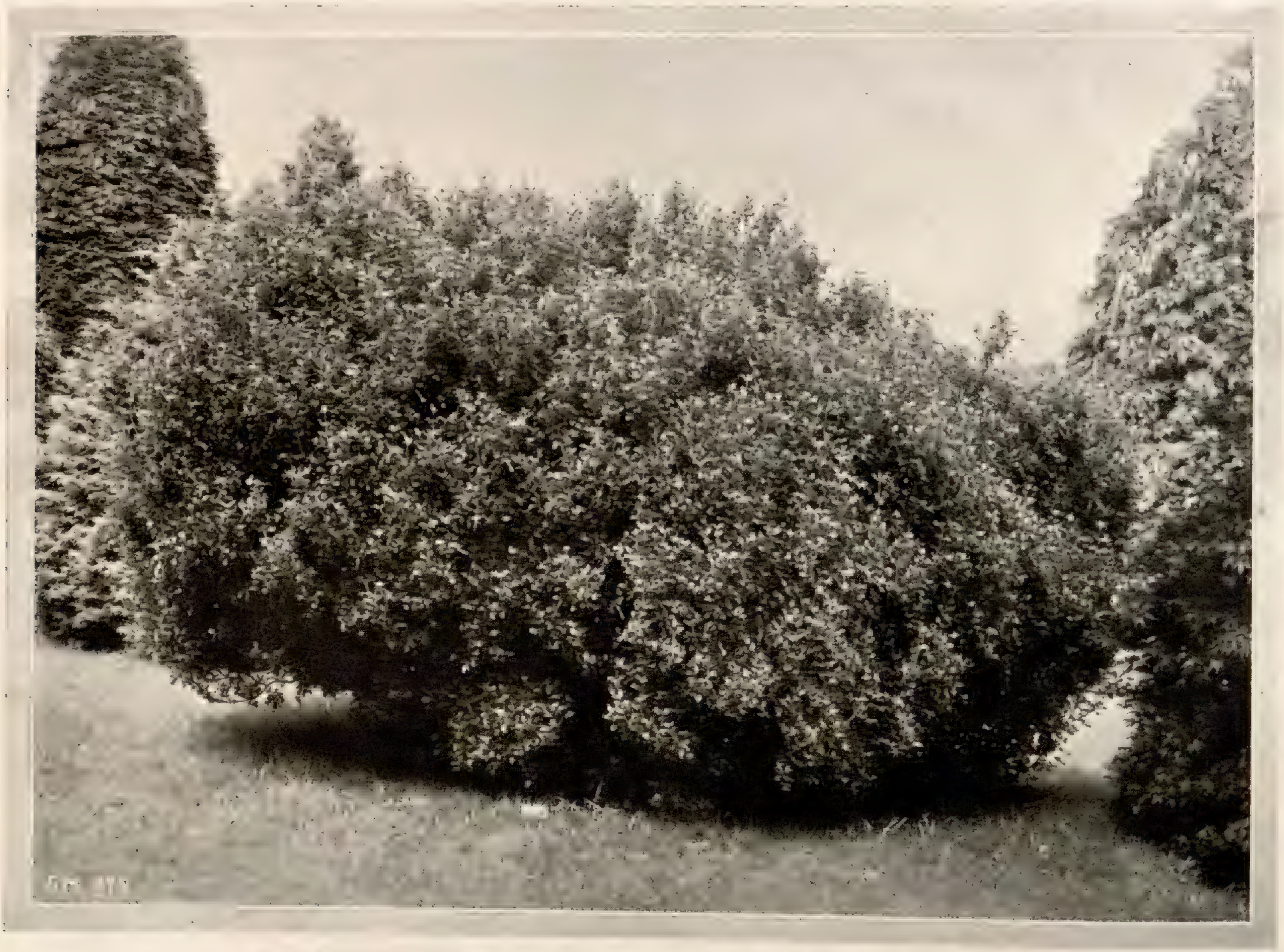
The ornamental cherries include some of the finest of the trees suitable for the garden, and should be included in the smallest selection. Those that can be the most strongly recommended are Cerasus avium fl. pl., a comparatively large tree, bearing in great profusion large pure white double flowers. C. pseudo-cerasus, a handsome tree, with compact, spreading head, and bearing in great profusion large double flowers of a pale rose colour. Its variety, J. H. Veitch, is still more beautiful; the flowers are not less profuse, but are larger and are of a brilliant rose-pink hue. As they bloom at different periods, both should be planted. C. p.-c. serrulata is very free in blooming, and has large double-white flowers. It is distinct in growth, the main branches spreading out more or less horizontally, and producing a distinct effect.

### Cratægus.

The hawthorns include a goodly number of trees of great beauty when in bloom, and some are highly attractive at other periods of their growth. The double-flowered varieties of the common hawthorn make handsome trees of medium size, and are remarkably beautiful when in bloom. Paul's Double Scarlet is the best of them, but the Double Pink and Double White are both desirable. The Weeping Thorn, which has single white flowers, is a graceful tree that should not be overlooked. C. Carrierei and C. tanacetifolia are two beautiful white-flowered thorns that are of much value, as they bloom several weeks after the varieties of C. oxycantha. All the thorns here mentioned are especially suitable for lawn specimens.

### Desfontainea.

The distinct and beautiful Desfontainea spinosa is unfortunately not sufficiently hardy to admit of it being successfully grown other than in kind climates. In the southern western counties it grows vigorously and blooms freely, but nowhere have I seen it in such a high state of development as in the famous gardens of Castlewellan, the Irish seat of the Earl of Annesley. These gardens are on a southern slope of one of the smaller of the Mourne Mountains, co. Down, Ireland, and about four miles from the sea. In these gardens the desfontainea grows with the vigour of the holly, and the specimen herewith illustrated was about fifteen feet in diameter and eight or nine feet high. There are several large specimens of this beautiful Chilean shrub at Castlewellan, and all were flowering with great freedom when I saw them at the end of July last. The flowers are about three inches in length, and of a rich scarlet hue, with golden-yellow lobes. Where the conditions are favourable it forms a very handsome lawn specimen, and should be planted wherever there is a probability of it succeeding, a warm position being selected for the purpose of the experiment. The specimen illustrated was bearing thousands of flowers, but owing to their tonal value, photographically, being much the same as that of the leaves, they are not readily seen.



A MAGNIFICENT SPECIMEN OF DESFONTAINEA SPINOSA.

In the gardens of Castlewellan, the seat of the Earl of Annesley. In growth and foliage this Chilean shrub resembles the holly, and bears a profusion of scarlet and yellow flowers.

### Eucryphia.

The beautiful E. pinnatifolia is another introduction from Chile, and is of much value from the fact that it can be successfully cultivated under conditions less favourable than those necessary in growing Desfontainea spinosa. In favoured districts it makes a good lawn specimen, the large pure white single flowers being especially attractive; but in many gardens it will be preferable to plant it in a warm, sheltered border. In most gardens to which it is introduced for the first time it will be well to grow it in a sheltered border for a year or two, and then transfer it to an open position should it be considered advisable.

### Laburnums.

The laburnums are equally useful as single specimens on the lawn and for planting in prominent positions in shrubbery borders. Both the Common (L. vulgare) and the Scotch (L. alpinum) laburnums should be grown, the finest of the varieties being, as a matter of course, selected. The best of the forms of the first-named are Alschingeri and Vossi, and of the latter Parksi and Watereri. The Scotch laburnum and its varieties are the best suited for lawn specimens, because of their shapely heads, and they are somewhat later in flowering than L. vulgare and its varieties.

### Magnolias.

The best known of these trees have no superiors, and should be grown in both large and small gardens. They are admirably adapted for cultivation as lawn specimens and also for association with other subjects in the shrubbery border. M. conspicua and M. Soulangeana and their varieties make handsome trees, some twenty or more feet in height, and are characterised by freedom of flowering. The first-named, as so well known, has white flowers, while those of the other are pale rose, and where space permits both should be planted; but where there is room for only one, M. Soulangeana, should be selected because of it being later in coming into bloom, and the flowers not so liable to be injured by frost. Nigra, a deep-coloured form of the last-named, is well deserving a place in the garden, although not, perhaps, quite so attractive as the type. M. Lennei has the advantage of being still later in coming into bloom, and has very large flowers of a rich red-purple on the outer side. In the western counties well-developed trees are to be met with, but elsewhere it usually grows in the form of a big bush. The stations for magnolias should be carefully prepared by adding a liberal proportion of light, rich compost to the staple soil.

### Philadelphus.

The mock oranges of robust growth include several that, by reason of their graceful habit and abundant flower production, are admirably adapted for lawn specimens and of much value for occupying prominent positions in the shrubbery. Even the old and well-known P. coronarius and several of its varieties, are not without value as specimens, but they are so far inferior to several others that there is no occasion at the present time to consider their merits. P. Gordonianus forms a very attractive specimen when allowed sufficient room for the full development of its growths, which, in the flowering season, are simply wreaths of the large snowy-white blossoms. P. grandiflorus floribundus is equally vigorous and free in blooming, and has the advantage of being more graceful in habit, and is therefore preferable. Somewhat similar in character to P. grandiflorus floribundus and of much merit is P. Lewisi californica, both for planting on the lawn and in the shrubbery.

It is well to consider the merits of the three last-named kinds, because some of them can be readily obtained in the usual way, but the best of all the mock oranges attaining a large size is the comparatively unknown P. insignis. This hybrid, the specimen of which at Kew is herewith illustrated, has a robust and elegant habit, and produces its flowers very freely and in large racemes, as so well shown in the illustration. The flowers are of the purest white, and not fragrant. As this fine mock orange is so little known that it has not yet made its way into trade catalogues, it will be of interest to mention that it was first described by M. A. E. Carriere as a new plant in the "Revue Horticole" in 1870 (page 40). It was apparently sent to him by M. Billiard, who appears to have been the raiser, for it is of hybrid origin. The synonymous name of P. Billiardi, which the plant bears, also suggests that it was raised by M. Billiard. In the description no mention is made of the parents. The Kew specimen has attained dimensions that suggest its having occupied its present position upwards of twenty years.

### Prunus.

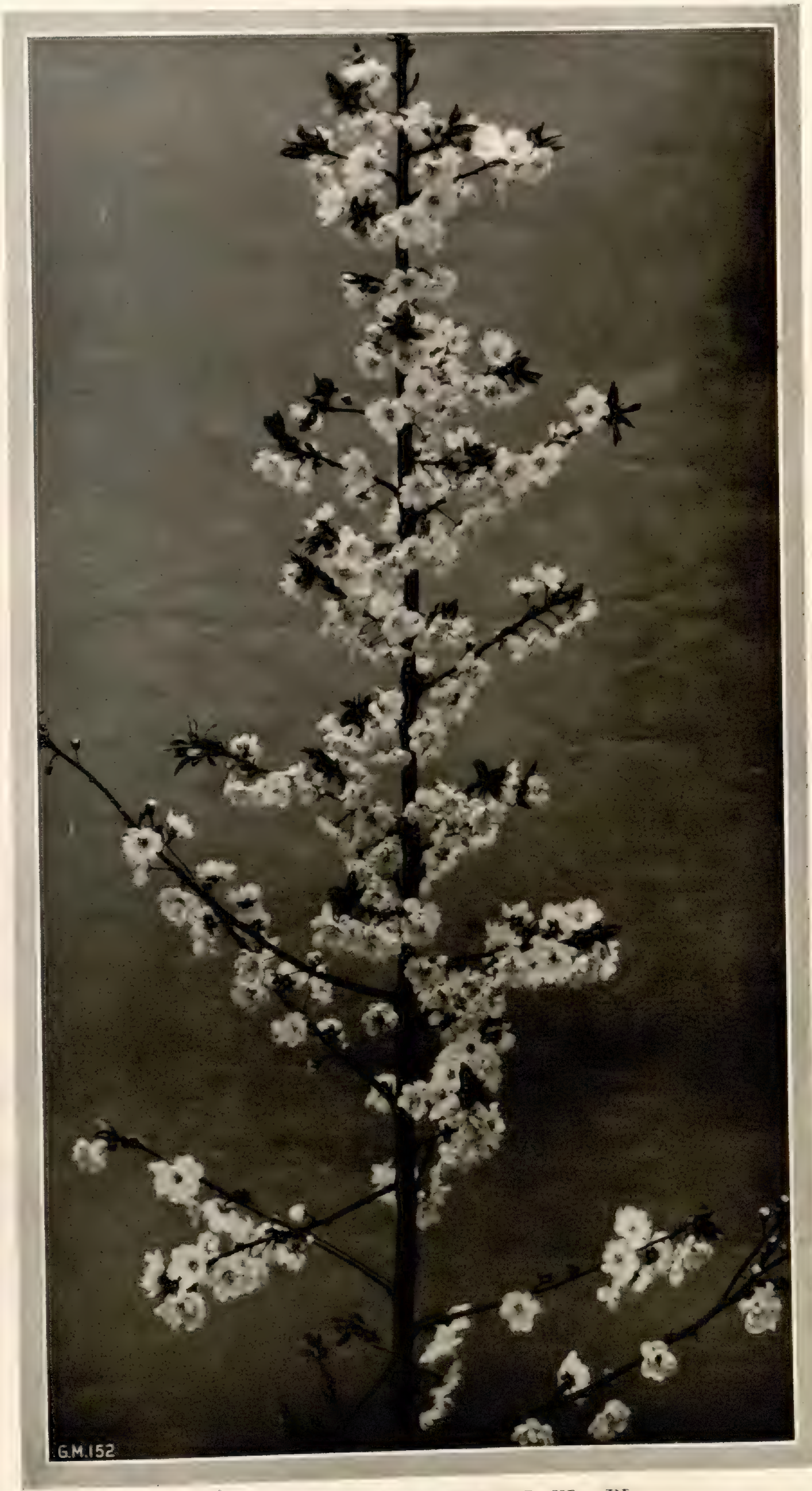
The well-known Prunus Pissardi forms a handsome tree of moderate size, and the pale flowers produce a pleasing effect in contrast with the dark bronzy-red leaves, which usually make their appearance during the season of flowering. Still finer in every way is its variety Moseri fl. pl., which has large double rose-coloured flowers that retain their beauty for a longer time than do those of the type. The foliage is equal in depth of colouring to that of P. Pissardi, and the tree has therefore a double claim upon planters engaged in the creation or improvement of garden scenery.

### Spiræa.

The remarkably distinct and handsome S. Lindleyana, with elegant leafage and feathery inflorescence is one of the best of the shrubby plants for lawn specimens, and it has the advantage of being equally suitable for both large and small gardens. Two or three plants will, if arranged in a small bed, which has been liberally enriched with manure, soon form handsome specimens.

### Syringas.

The lilacs include some of the best of the flowering shrubs for the purpose now under consideration, and should be rather freely used in proportion to the area of the garden. Alba grandiflora, white; Dr. Lindley, deep rose; Congo, rose-red; and Princess Marie, pink-lilac, are excellent single varieties; and Alphonse Lavallée, violet-blue; Lemoinei, rose-lilac; Madame Abel Chatenay, white; Madame Lemoine, pure white; Michael Buchner, lilac; and President Grevy, rose-lilac, are double varieties possessing much merit. In the cultivation of lilacs as specimens it is essential to keep them to one main stem by the suppression of suckers, and they should all be on their own roots. Rubra de Marley is very effective when grown in standard form with six or seven-feet stems.



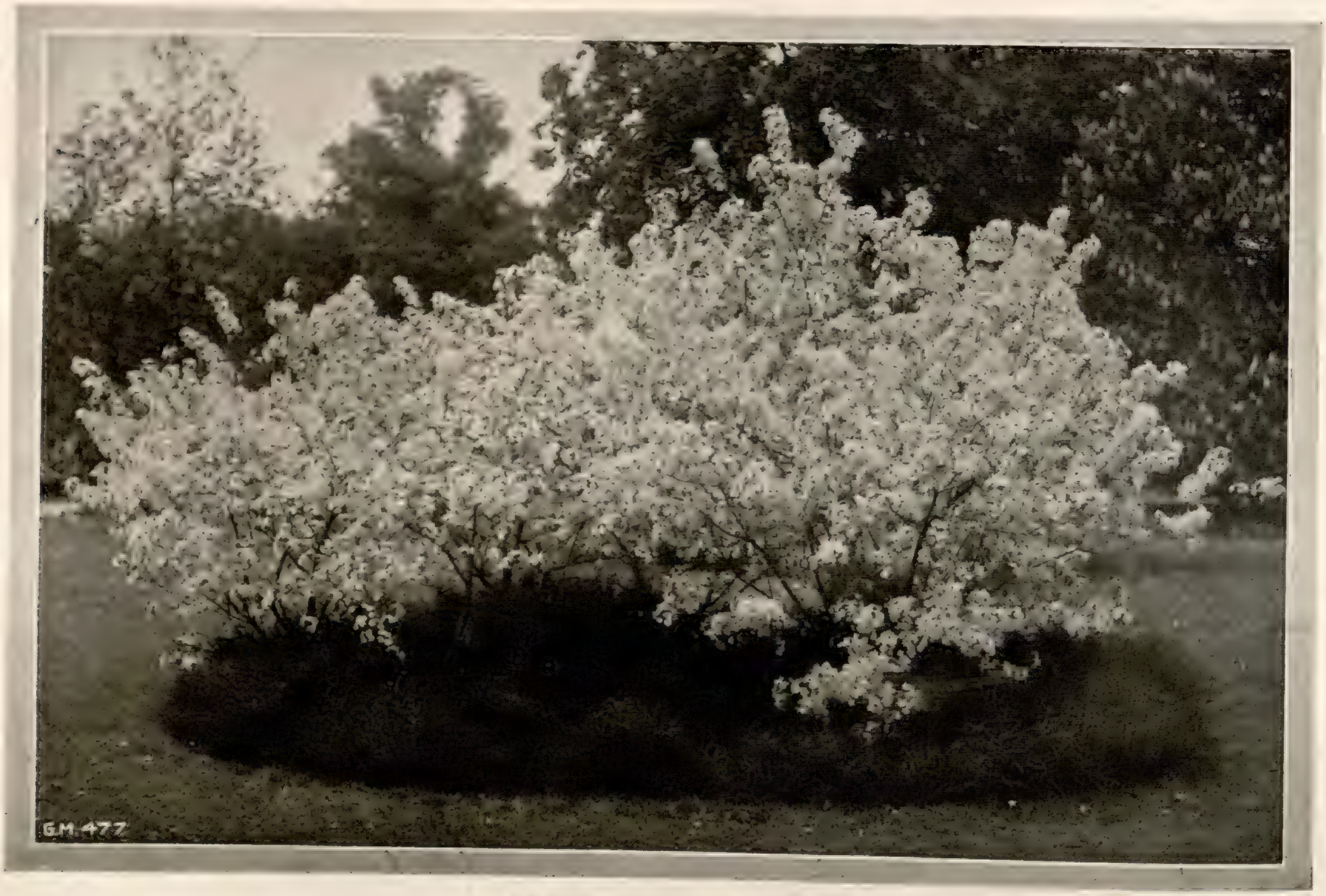
PRUNUS PISSARDI MOSERI FL. PL.
A fine variety, with large semi-double rose-pink flowers and bronze-red foliage.
A.M., R.H.S., March 19. Messrs. J. Veitch and Sons, Chelsea.

### Viburnum.

The Guelder Rose or Snowball Tree (Viburnum opulus sterile) is especially attractive when grown as lawn specimens, and these are readily obtained by arranging three plants in a small bed. It is, of course, one of the most beautiful of the kinds with white flowers for bold groups in the shrubbery, but in too many instances the plants are so crowded as to render it impossible for them to show their true character. It is not desirable this shrub should occupy over much space, but the plants grown should have enough room to display their distinctive charms. G.

# THE ORNAMENTAL CRAB APPLES.

Amongst the species of trees which constitute the genus pyrus are many which exhibit ornamental features of the highest quality, and of this number several of the best are included in the malus or apple section of the family. They possess a fairly lengthy flowering period, for the earlier ones may be found in bloom by mid-April, and the late ones are scarcely over by the end of May. Added to this, a number of kinds produce highly-coloured fruit, which, in itself, is a reason for their culture. As a rule, the various sorts of pyrus are amongst the easiest trees to cultivate, but it must be remembered that they are subject to attacks from American Blight in the same degree as the garden kinds of apple, therefore it is inadvisable to plant them in crowded places where they cannot obtain plenty of air, or in districts where American Blight is very bad, for it is only species belonging to the malus section of the genus which fall a prey to the pest, other kinds escaping, even when growing amongst badly infested apple trees. Amongst the numerous kinds included in the section, the following are specially worthy of note:



PYRUS SCHEIDECKERI. [Photo: C. P. Raffill.

An effective lawn group of this beautiful crab in the Royal Gardens, Kew. The flowers are relatively of large size, and of a pleasing pink hue.

### P. baccata.

This, the well-known Siberian Crab, grows into a large, round-headed tree, 20 to 35ft. high, with a branch diameter of 30ft. or more. The almost white flowers are slightly flushed with rose, and it is rarely that they are not produced in such profusion as to almost hide the branches. There are several varieties, but they do not differ much in regard to flowers; the principal differences being noticeable in colour, shape, and size of fruits. P. baccata is a native of the Himalayas, China, and Japan.

### P. coronaria.

The American Crab Apple is met with in a wild state in the Eastern United States. The type is rarely seen in this country, but a variety with double flowers has attained a certain amount of notoriety during the last few years. P. coronaria forms a small round-headed tree with large, white, rose-flushed flowers, that are followed by round fruits, which, when ripe, are of a bright glossy green. The variety flore pleno is remarkable for its large flowers, which are not approached in size by those of any other pyrus, for they frequently exceed two inches in diameter, and are white with a rather deep rose flush. They appear towards the end of May.

### P. floribunda.

This finds favour with everyone by reason of its free-flowering character. It more often assumes the dimensions of a large bush, rather than a tree, and specimens 15ft. high, and 20 to 30ft. in diameter, with branches sweeping the ground, may often be seen. The rose-shaded flowers open about the end of April, and they are in such profusion as to hide the branches. A variety, atrosanguinea, with darker-coloured flowers than the type, may be obtained. By forming a group of the two kinds a very pretty effect is provided. The species is a native of Japan.

### P. Halliana.

A certain amount of mystery centres about this tree, for no one appears to know what its origin is. It, however, seems to be a hybrid, and probably P. floribunda is one of its parents. It is, however, of more upright and less bushy habit than that species. Whatever its origin, it is very showy, for the semi-double flowers are large and heavily shaded with a rich rosy-red hue.

### P. malus.

Many fine specimens of this, the common European crab apple, will be called to mind, occupying places in hedgerows and plantations in various parts of the country. Its rose-flushed flowers are very like those of our garden apples, and they are frequently succeeded by highly-coloured fruits. Of the several named varieties, astracanica, the parent of the Red Astracan apple; flore-albo pleno, pendula, and rosea, are very distinct.

### P. Niedzwetzkyanus.

This is one of the most distinct of all pyruses, and one which has been highly recommended of late for general planting. Whether it is really a good species, or whether it is but a well-marked form of P. malus is not very certain. Obtained originally from the Caucasus, it has many points of resemblance with the common crab apple, but its flowers are a peculiar shade of red, and a similar colour permeates all parts of the tree; leaves, wood, roots, and shoots. This peculiar character separates it from all other kinds, and makes it a popular tree for ornamental planting.

### P. prunifolia.

In many respects this Siberian species has much in common with P. baccata, the principal difference being noticeable in the fruits, for, whereas in P. baccata the calyx lobes are deciduous and fall very early, in P. prunifolia they are persistent, and last until the fruits fall. The fruits of the latter kind mature at an earlier date than those of the former. Some forms are highly coloured and very showy.

### P. Ringo.

This Japanese species bears white, rose-flushed flowers an inch across with great freedom. Its most showy time is, however, autumn, for at that period the branches are heavily laden with golden fruits.

### P. Scheideckeri.

This has only become really well known during the last ten or twelve years. Of hybrid origin, its parents are said to be P. prunifolia and P. floribunda. The flowers are semi-double, and larger than those of either parent, and they are borne with such freedom that growth suffers, and the bushes are apt to assume a stunted character, whilst it is often difficult to get good growth buds for purposes of propagation. It is popular alike for border culture and for forcing.

### P. spectabilis.

A native of China and Japan, this is rarely represented in this country, except by one or other of its double-flowered forms. The type assumes the proportions of a well-grown apple tree, and bears large flowers 1½ to 2in. across. The variety flore pleno is extremely ornamental, both when in flower in April or May, and again in autumn, when the leaves assume very pretty tints previous to falling. This form has large pink and white flowers; flore albo has white flowers, and Kaido rich rose-coloured blooms.

### P. Toringo.

Another Japanese tree of showy appearance when in flower; it is, however, of less general worth than the double-flowered form of P. spectabilis.

In addition to the kinds mentioned above. the numerous large-fruited crabs of the John Downie type are all very pretty when in flower. W. Dallimore.

Kew.

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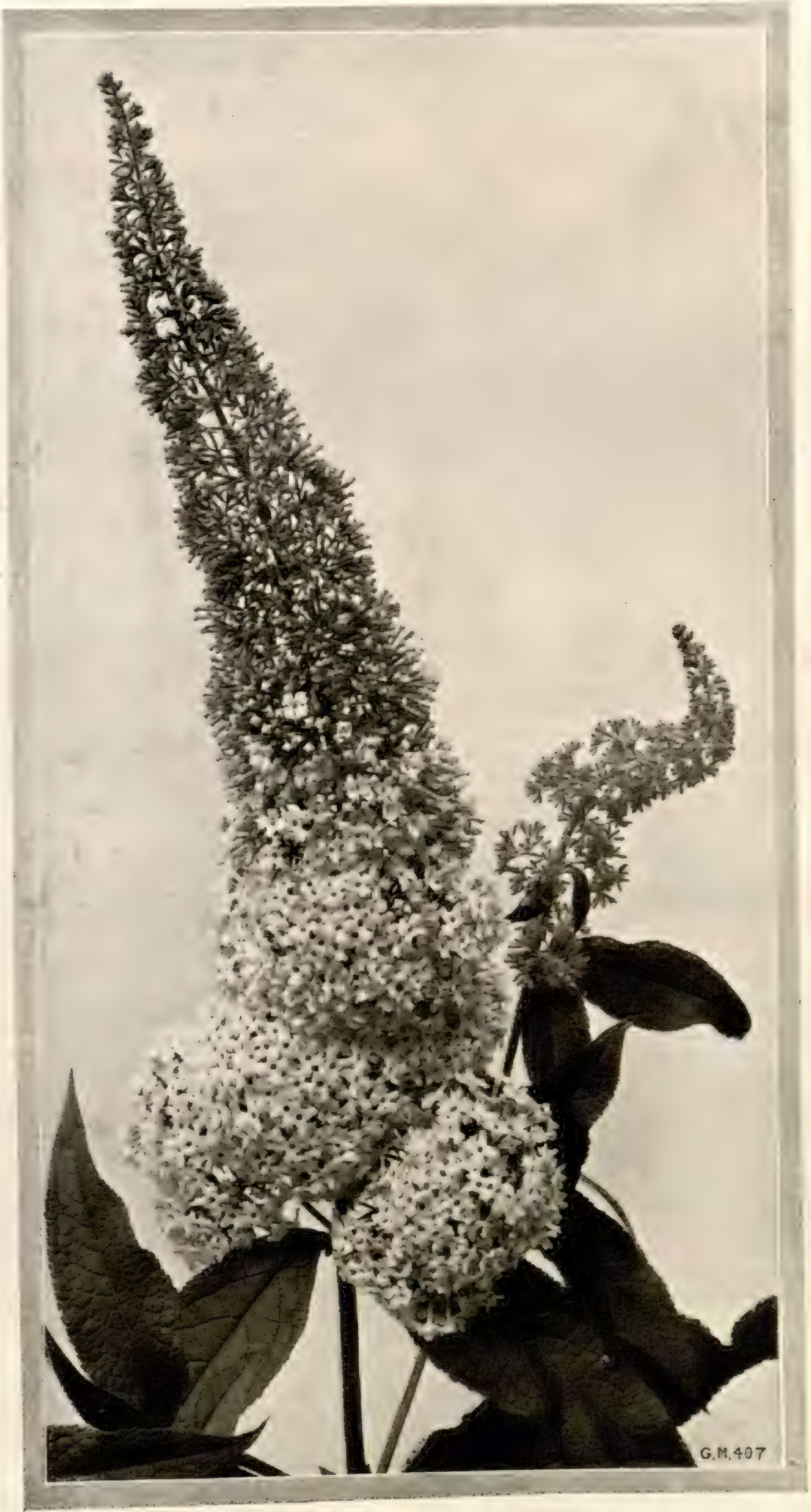
## BUDDLEIA VARIABILIS AND ITS VARIETIES.

Probably no packet of seed amongst the numerous ones received from the Arnold Arboretum in 1908 more fully justified great expectations than did the one of Buddleia variabilis. Mr. Wilson, the well-known collector, speaks of the particular bush from which he gathered the seed as being a good form, with flowers of a dark purple hue, and this no doubt accounts in a great measure for the many beautiful and distinct varieties that have been raised from it.

The seed in question was sown with many others in shallow boxes and placed in a warm house early in the New Year, and there remained for a month or two, any that showed signs of germinating being removed immediately to a cooler structure. When well hardened off, the seed boxes were transferred to cold frames, and the pricking off of the seedlings into other boxes with a rather greater depth of soil received attention in due course. For a time they were kept close, and carefully watered until established, when air was freely given, the plants making luxuriant growth.

The largest plants were in the same season pricked out in a border, chiefly with a view to test their hardiness. The following spring they were replanted, and made excellent growth, and flowered abundantly, and the different varieties were noted and marked accordingly. Since then we have planted them freely amongst our flowering and other shrubs, and few subjects during the season of flowering have been more greatly admired.

The varieties of Buddleia variabilis ought to be planted in every garden where a home for shrubs is found, as they are not exacting in their requirements, are quite hardy in constitution, and though the foliage may be cut with early autumn frosts before fully matured, they will break again with wonderful freedom in the spring. The spikes of flowers can only be described as magnificent, and frequently one sees a growth six to eight feet long bearing a huge terminal spike with numerous lateral growths that will bloom later. For quite two months they continue in bloom, and the spikes last a long time when cut and placed in water for room decoration. To obtain the largest blooms the plants should be pruned back fairly hard in the spring as growth is commencing, and for the information of those who may intend planting them this autumn, it may be stated that the addition to the soil of manure, road sand, and leaf-mould will be found of benefit. Where the plants are grown in masses of rhododendrons and allowed to produce their flowers above the foliage of the latter as I have seen them, the spikes naturally lose in point of size, but a large bush is most effective.



BUDDLEIA VARIABILIS SUPERBA.

A distinct and handsome variety; the flower spikes very large, and the colour rich blue.

Propagation is effected by means of cuttings, which are best taken during the month of August, and inserted in pots of sandy soil, using clean, well-drained pots and a compost of finely-sifted loam, leaf-mould, and coarse sand. Make fairly firm, and choose young growths that will be found breaking from the axils. Keep very close, and shade from bright sun, and give a thorough soaking of water with a rose-can after insertion. These will soon callus over, but do not often root readily, therefore potting off singly should not be too hurriedly carried out. Another method of increasing them is by division of the roots, for, as can often be seen when transplanting, the small portions left in the ground readily form young plants.

The variation in colour comprise shades of rose from pale to dark, lavender, pale blue, purple, etc., each and all the shades being very beautiful. A distinct variation is also shown in the shape of the spikes, some being particularly long and narrow, while others form quite a pyramid of bloom.

Among the best of our varieties are B. variabilis rosea, quite one of the best and most distinct; B. v. lilacina, an attractive flower of a pleasing and uncommon lavender hue; B. v. gigantea, an imposing variety, with immense growths and spikes of flower; B. v. superba, a fine variety, the flowers rich blue and borne in handsome spikes; B. v. Delight, B. v. Distinction, and B. v. perfecta. As so well known, B. v. magnifica and B. v. Veitchiana are highly attractive.

Edwin Beckett.

Aldenham House Gardens.

## VARIETIES OF HARDY CLEMATIS.

A large number of the clematises now in cultivation are capable of investing gardens with a degree of beauty that is not readily excelled by any other group of climbing shrubs; indeed, their only formidable rival is the rose, and happily each genus is particularly rich in those colours that are but sparingly represented in the other. It is not unusual to find capacity of these two classes for decorative effect reaching its highest expression when employed in combination. On pergolas and arches and for clothing unsightly trees or clambering over rustic work, the unrestrained growth of clematis has freest expression, and even if the space is limited, they may still be employed, either grown on a single pole, or in the form of free pyramids, formed by three poles erected in the form of a tripod. The hybrid forms are mostly moderate growers, and, if allowed to ramble over another shrub, such as an old bush of laurestinus, they disclose their beauty in a pleasing manner, and rarely injure their living support.

Clematises succeed in a cool, rich soil, which should be prepared by being broken up to a depth of at least two feet, some time in advance of planting. They are partial to limestone, and should therefore have a quantity of old mortar or chalk added to the soil where such is naturally absent.

The trade usually supplies garden varieties of clematis grafted upon a wild species, and in planting it is advisable to keep the union well under the surface of the ground with the view of inducing the scion to form roots on its own account. It is common knowledge that the clematis frequently fails when grafted from some unexplained reason, often dying down to the ground, but there is always the possibility of it breaking again from a dormant bud, and when on its own roots the resulting growth will be of the variety desired.

Clematises bloom at different periods of the year, some flowering upon wood of the previous year. These form the earliest section, and include the well-known montana and its variety rubens, the latter differing from the type in having purple leaf-stalks and dark foliage and rose-coloured flowers. The forms of C. patens bloom in succession, the flowers being much larger and the colours varied. A selection includes: Lord Derby, pale mauve, with purple anthers; Margaret Dunbar, pale blue; Nelly Koster, white; Sir Garnet Wolseley, blue with distinct bar of plum colour; The Queen, lavender; Fair Rosamund, blush-white.

Forms of C. florida bloom about midsummer, producing flowers of the largest size; representative varieties are: Countess of Lovelace, double rosettes of bluish lilac; Duchess of Edinburgh, pure, double white; J. G. Veitch, lavender-blue; Elaine, double azure blue.

The varieties of lanuginosa bloom on the current wood, and flower throughout summer and autumn in many soft, delicate shades and large flowers. Typical varieties of great excellence include: Elsa Spath, deep violet-purple; Fairy Queen, flesh-white, with a bar of pink; King Edward VII., lilac-mauve, deeper centre; Henryi, creamy-white; Lady Caroline Neville, heliotrope, with mauve bars on petals; Marcel Moser, mauve-violet, with a distinct bar of red; Mr. Gladstone, azure blue; Queen Alexandra, pale lavender, lilac-purple base.

The varieties of C. Jackmani bloom in autumn from wood of the same year; the flowers are large and the colours exceedingly rich. These include Gypsy Queen, velvet purple; Jackmani, in distinct colours, white, red, and violet-purple, the form superba being the richest of the last-named shades; Mdme. Edouard André, velvety red; Perle d'Azure, sky blue; Snow-white Jackmani, large white; Velutina purpurea, dark purple-violet; Ville de Lyon, reddish-crimson.

Hybrids of coccinea bloom in autumn, having small, bell-shaped flowers of great beauty; Admiration, deep salmon, edged violet, and shaded with violet heliotrope; Countess of Onslow, bright violet-purple, with a broad band of scarlet down the centre of each petal; Duchess of Albany, bright pink shading to soft lilac-pink; Duchess of York, blush-pink, tinted deeper along the centre of each petal; Grace Darling, rosy-carmine, star-shaped flowers.

Thomas Smith.

**Rhododendron intricatum.**—This, one of Wilson's many introductions from China, is a pretty little alpine species, and remarkable from the fact that it will often give a second crop of flowers during the autumn months. It is as yet decidedly uncommon, and was first shown at the meeting of the Royal Horticultural Society on April 2, 1907, when a first-class certificate was awarded it under the name of Rhododendron nigro-punctatum. The general appearance of the plant, either in or out of flower, suggests a daphne, rather than a rhododendron, as it forms a neat, compact little bush clothed with small elliptic leaves, while the flowers, borne in little terminal clusters, are lilac in colour, and less than half an inch in diameter. W. T.

**Costus igneus.**—The flowers of this member of the Ginger Wort family are, as a rule, borne during the last three months of the year, and during the dull weather we so often experience at that time the intense deep orange tint of the blossoms causes them to stand out in a marked manner from their associates. Like many of its allies, it forms a thickened root-stock, from whence are pushed up leafy stems, that reach a height of eighteen inches, or a little more. The flowers, which are borne in a cone-like head, are from two to three inches in diameter, and thin in texture. Individually they do not last long, but a succession is kept up from one head for a considerable time. It is a native of Bahia, and potted in light compost, with a liberal amount of water when growing, it will thrive under stove treatment.—W.

## FLOWERING SHRUBS AND TREES FOR SMALL GARDENS.

From among the many ornamental trees and shrubs available for garden decoration it is sometimes difficult for the owner of a small garden to make a selection, especially when he is unacquainted with the virtues of each particular plant, and has to rely on the advice of someone else. Moreover, it is an extremely difficult problem for one who has more than a passing knowledge of trees and shrubs to select a certain number, and say definitely that those are the very best of the many hundreds which are available. No selection of the best shrubs would be complete for certain parts of the country without one or more members of Ericaceæ were included; but for other parts of the country, where lime is prevalent in the soil to any great extent, it would be quite useless to suggest these plants. Then there are excellent plants like the various kinds of brooms, which grow easily and flower well, which have to be excluded on account of their comparatively short life; for the best results are only obtained from young or moderately young plants. Therefore in the following selection care has been taken to choose twelve kinds which are generally useful, give comparatively little trouble, and last for a considerable number of years in good condition, although in some cases they may fall short of certain omitted plants in the matter of beauty, but which are more fastidious in their requirements.

### Spiræa arguta.

This is one of the first to suggest itself. Of hybrid origin, it is one of the best of a very large family of shrubs. Although it may sometimes be found between 4 and 5ft. in height, it does not grow rapidly after it has attained a height of 3ft., and may be kept dwarf by pruning after the flowers are over. Growing into a shapely bush, the main branches are well furnished with thin, wiry branchlets, and small, dainty leaves. In April white flowers are borne in great profusion from axillary buds, and the plant never misses flowering freely. Propagation by cuttings is difficult, but layered branches put down in spring root during summer.

### Forsythia suspensa.

Objection might be taken to this Chinese shrub on account of its vigorous habit, but it is so amenable to different methods of culture, stands pruning well, and thrives under all sorts of conditions, that it is everybody's plant. Planted to grow over another shrub or over a trellis, its long pendant branches clothed from end to end with bell-shaped yellow flowers, it is most effective. Against a wall it has also a beautiful appearance; while when grown as a specimen bush, and cut hard back each year, it sends up strong, vigorous, upright shoots, which blossom profusely. Pruning should take place about the end of April, when the flowers fade.

### Weigela Eva Rathke.

This is one of the best of the many kinds of diervilla, or weigela. Of hybrid origin, it forms a bush 3 to 4ft. high, and blossoms freely from May to July. The tubular flowers are of a rich red colour, and are most freely produced on young wood; therefore it is a good plan to thin some of the older wood out now and then. A good time to do this is during summer. To induce the plant to give the best possible results, rich loamy soil must be given, with an occasional surface dressing of well-rotted manure. Cuttings of soft shoots root quickly in a heated frame during early summer.

### Berberis Darwini.

When a small garden is under consideration, this Chilian species is the better kind to plant, but when room is no object preference may be given to B. stenophylla. B. Darwini is well known by reason of its glossy, evergreen leaves, and freely-produced inflorescences of orange-coloured flowers, which are followed by black or purple fruits covered with a glaucous bloom. It may be kept fairly dwarf by pruning as soon as the flowers are over. Cuttings root well in a cold frame, and plants may be easily raised from seeds.

### Philadelphus Lemoinei erectus.

This is, perhaps, the best of the dwarf-growing mock oranges. If left to its own devices, it grows into a dense bush 5ft. high, but that is not the best method of culture. It is always advisable to keep the plant supplied with young wood. Therefore, directly the flowers fade, cut all flowering wood away, and leave only such strong young shoots as are growing from the base. During summer they attain a length of 2½ or 3ft., and produce fragrant white flowers from end to end the following June. Rich loamy soil is essential to the best results, and propagation is easily performed by cuttings.

### Syringa persica.

This, the Persian lilac, might well be planted more extensively in gardens where tall-growing kinds would be out of place than it is at present; for it is very graceful in outline, blooms freely, with flowers of the most approved shade and delicious fragrance. Although it eventually grows 5 to 6ft. high, with a like diameter, it takes a long while to attain a height of 3ft. Once planted in good loamy soil, it gives little trouble, and rarely needs more than an occasional thinning. The flowers are to be found during May and June. Layered branches form a good means of increase.

### Viburnum tomentosum, var. plicatum.

The Japanese counterpart of our common guelder rose, or snowball tree, is, however, much dwarfer than our native plant, for when mature it rarely grows more than 5½ft. high, and is frequently seen about 3 or 3½ft. Forming a shapely bush, it bears its large heads of white sterile flowers very freely in June. Good loamy soil is essential to success. Cuttings may be rooted during summer.

### Olearia Haasti.

One of the most useful of all evergreens, for it thrives alike in inland gardens and when exposed to sea air. Its small dark green leaves are attractive throughout the year, while in August it has the further attraction of showy white flowers. Cuttings root readily in a cold frame, and it stands severe pruning when necessary. A New Zealand shrub, it is met with between 2½ and 4ft. in height.

### Ribes sanguineum, var. splendens.

Although the flowering currant of gardens is one of the oldest and best-known flowering shrubs, it is still one of the best and most ornamental. This variety differs from the type by reason of its rich red flowers. There are few gardens where it will not thrive.

### Prunus serrulata, var. James H. Veitch.

A Japanese cherry of high ornamental qualities. Forming a small tree, it is peculiar because its long branches are beset with short spurs, from which the rosy flowers, which individually are a couple of inches across, appear in profusion in May. The young leaves are also showy, for they have a rich bronze tinge.

### The Snowdrop Tree.

The Snowdrop or Silver-bell Tree (Halesia tetraptera) is a showy and rather uncommon tree from the southern United States. Growing in this country from 15 to 25ft. high, it forms a wide-spreading head, with a short trunk. The white bell-shaped flowers are at their best in June, and they hang in profusion from the younger branches. Although it assumes the proportions of a small tree, it may also be grown as a spreading bush 6 to 8ft. high and as far through. Under either condition it finds many admirers. Unfortunately, although its curiously-angled fruits are interesting, they are not showy, neither do the leaves assume such brilliant tints as those of numerous other trees in autumn.

SILVER BELL OR SNOWDROP TREE (HALESIA TETRAPTERA).

A charming shrub or small tree with pure white flowers that resemble those of the snowdrop.

### Paul's Double Scarlet Thorn.

This thorn completes the list. It is a very useful flowering tree, and one which is always popular. The double red flowers last in good condition for a considerable time, and the tree needs little attention beyond an occasional thinning of the branches. Those who are not fond of double flowers might substitute Cratægus mollis for it. This has white flowers, succeeded by large red fruits. W. Park.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

SEASONABLE NOTES.—Cœlogyne cristata and its varieties have now completed their growth for the season, and the liberal supply of water afforded them must be greatly reduced. From now onwards until after the flowering stage, the compost should be kept just moist enough to keep the pseudo-bulbs plump and healthy. At this season the species resents being kept dry, and many cases where this species fails to bloom satisfactorily is attributable to this cause. During the dull days of winter, the plants should be afforded all the light possible, with a supply of fresh air daily. They delight in a cool intermediate temperature, and a succession of their lovely flowers may be obtained by growing some at the warm end, and others at the cool end of the house. To prolong the season it may be advisable to remove a few plants at intervals into a slightly warmer house, but the plants must not be unduly forced. Those specimens which were repotted last spring should not be allowed to flower, as it usually takes two seasons to re-establish, and get them thoroughly strong again. Badly-rooted plants, no matter to what species they belong, should not be allowed to produce flowers. The sole object of the cultivator should be to grow his plants stronger year by year until they have become so thoroughly established that they can annually develop flowers without distress.

DENDROBIUMS will by now have mostly made up their growths, and should be removed to the resting-house. Plants of the evergreen section, which include D. thyrsiflorum, D. densiflorum, D. Farmeri, D. Bronckartianum, and others, may also be removed from their growing quarters to a cooler and better ventilated place, but they must not be kept quite so dry at the roots as the D. nobile section. Dendrobiums, while at rest, require sufficient water to keep the pseudo-bulbs and the leaves fresh and plump, and must not be allowed to shrivel at any time. The deciduous D. aureum will soon be pushing out flower buds from the nodes of the pseudo-bulbs made last year, but the plants should be allowed to remain in the resting-house until the buds are half developed, when more heat may be given. This old dendrobium should be grown by all lovers of these interesting and beautiful plants on account of its delightful perfume. Dendrobiums should be rested in a house that does not go below 55 degrees, and the atmosphere must be kept moderately dry.

SHADING.—All permanent shading may now be removed from the houses, as we have reached the season when every bit of light obtainable is beneficial to the plants. Thanks to the beautiful weather we have experienced during the last few weeks, our plants are finishing their growths much better than at one time seemed possible.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

APHELANDRAS.—These handsome stove plants are surpassed by few that produce their flowers in autumn or early winter. One of the best is A. aurantiaca Roezli; this bears terminal spikes of brilliant scarlet flowers thrown well above the silvery-green leafage. Although, during active growth in summer, these plants delight in abundance of moisture both at the roots and in the atmosphere, they should be accorded dry conditions from the time the flower spikes appear until they have finished flowering. Continue to give frequent applications of weak liquid manure until the flower spikes are nearly developed when only clear water should be given. When the plants pass out of flower gradually reduce the supply of water, and finally only give sufficient to prevent shrivelling of the wood during the resting period. Unless large specimens are required, some of the older plants may be thrown away, only retaining the younger ones for next year, and for the production of cuttings. Cuttings of half-ripened shoots, if taken with a heel of the old wood, root readily in spring.

IXORAS.—Although not nearly so extensively cultivated as they once were, the ixoras are well worth growing, especially where there are large stove houses. Given proper treatment they seldom fail to make a fine display during summer. The fading flowers should now be removed. Prune away all sappy and spindly growths in order to ensure proper maturation of the remainder, for on this depends, in no small degree, free flowering in ensuing years. After thoroughly cleaning the plants place them in a warm and fairly dry position near the roof glass, and gradually reduce the supply of water, but at no time should they suffer from being too dry.

DRACÆNAS.—This is a good time to "ring" the tops of any plants that have lost their lower leaves. If this is carefully done now the tops make nice plants for use next spring, long before cuttings can be taken off and rooted. Small 60-sized pots answer well if sawn in half longitudinally. With a sharp knife cut through the bark immediately below a joint, in the half-ripened portion of the stem; then make another cut half an inch below and remove the intervening ring of bark. Place the halves of the pot in position, one on either side, and tie firmly. Three parts fill the pot with a mixture of chopped sphagnum moss, peat, charcoal, and sharp sand. Keep this moist by frequent syringings, and maintain a high temperature and humid atmosphere. When well rooted sever from the parent plant below the pot, and place in a larger pot.

ALOCASIAS.—Plants of the evergreen species will now need less water, both at the roots and overhead, but provided the roots are in a sweet, open medium, a moderate amount of water will be required throughout the winter. Nothing is so prejudicial to these plants as stagnation about the roots, especially during winter. The deciduous kinds may be dried off and wintered in precisely the same way as recommended for caladiums.—H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

PINE APPLES.—Fruiting plants will be benefited by occasional weak applications of liquid manure until the fruits have fully developed, when it should be withheld; clear water must also be given very sparingly when the fruits are ripe. Keep the plants in a temperature of 70 degrees at night, and, with sun heat, from 80 to 85 degrees by day, admitting a little air through the top ventilators at all times. Where the bottom heat of late fruiting plants is likely to decline below 75 to 80 degrees, the beds should be renewed without delay, but one must be careful not to use material that will become overheated, or otherwise much damage will be caused to the roots. Endeavour to raise the plants near the glass, so that they will be exposed to all the sun and light possible; maintain a house temperature of from 70 to 75 degrees, and pay particular attention to the application of water, so that the proper degree of moisture must be maintained in the soil, or otherwise the roots will decay. When the fruits are swelling, the atmosphere of the house should be kept fairly moist by sprinkling the paths and walls with clean tepid water several times a day. Successional plants should be kept steadily at 60 degrees at night and about 70 degrees by day. This temperature will considerably check any excitement of growth, and the plants will succeed far better later on if this is observed.

FIGS.—The late crops will have been gathered, and the trees should be subjected to a lower temperature, to induce a complete rest. If the roots of permanently planted trees require attention, now is the best time to undertake the work. Proceed in the same manner as that recommended for the renovation of vines. Plants in pots should be shifted into a larger size if required, and the others top-dressed with good fibrous loam, and well-pulverised cow manure, afterwards placing the plants in a cold house or an open shed; give water sparingly to the roots, but do not on any account allow the soil to become too dry at any time.

STRAWBERRIES IN POTS.—These must be protected from frost and heavy rains. Old sash lights are very useful at the present time to give the necessary protection for a few weeks hence; later on, as frost becomes more severe, it will be necessary to provide more adequate protection by placing the stock in cold frames or pits. At the present time allow all the air and light possible by removing the lights on fine days and nights. Continue to give weak applications of liquid manure to all plants that are well rooted. In the early part of next month select and make ready a batch of the earliest plants, which can be placed in a cold house preparatory to forcing; examine the drainage before taking them inside, and select only those plants that have the strongest crowns.—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

THE HERBACEOUS BORDER.—The present is a good time to undertake the renovation of hardy flower borders, as when the work can be completed in the autumn the plants soon become established. Hardy perennials are frequently allowed to remain in the same position undisturbed for a number of years, with the result that the clumps become unduly large, and frequently weakened in growth. To grow the plants well, it is essential to divide and replant them every third or fourth year. When new borders are to be made or old ones replanted, the most thorough preparation of the ground is necessary. Dig up the plants and lay them in on a convenient piece of ground, and take care that the labels are securely attached to each. Apply a thorough dressing of well-rotted farmyard manure, cultivate the soil to a depth of at least 2ft., and incorporate the manure well with the soil as the work proceeds. Allow the ground to settle for a week or two, and then carry out the work of planting during mild weather when the soil is in a fairly dry and friable condition. Some of the larger clumps will need division, and this should be done by placing two forks through them, back to back, and levering them apart; this is much better than chopping a clump in half with a spade. It is desirable to retain the outside portions of the clumps.

REPLANTING requires great care, or the appearance of the border may easily be spoiled. It is necessary to arrange it so that there will be a continual display of bloom the whole season, consequently late-flowering subjects must be planted near early-flowering ones. Arrange the plants so that the colours will harmonise; soft harmonies or direct contrasts are best. It is not desirable to make the groups too large, three plants to each being quite enough, for if large masses of plants like delphiniums and pæonies are included in the border, the result is that there are large blanks during the late summer and autumn. It is not necessary to plant all the tall subjects at the back; some may be allowed to extend to the centre of the border; if the right subjects are judiciously planted in this way, with dwarfer plants between, the result is the formation of irregular bays or inlets at intervals, and the whole arrangement is rendered more attractive. Plant firmly, and label each group carefully as the work proceeds. Level the ground over neatly after planting, and apply a light top-dressing of old mushroom-bed manure or other suitable material.

THE ROCK GARDEN.—Most alpines have made vigorous growth during the past season, and some of the more robust plants, like arabis and aubrietia, have probably overgrown their allotted space; if this is so, shorten back their growths now. Keep the rockery free from weeds, or these will soon overcome some of the more delicate specimens.—J. GARDNER, Batsford Park Gardens.

BIRMINGHAM GREAT
CHRYSANTHEMUM SHOW.

BINGLEY HALL.

TUESDAY, WEDNESDAY, and THURSDAY,
5th, 6th, and 7th November.
ALFRED NOAKES, Secretary.

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The Twenty-sixth EXHIBITION of AUTUMN FLOWERS will be held at the WINTER GARDENS PAVILION, on TUESDAY and WEDNESDAY, November 5th and 6th, 1912. Will be opened on TUESDAY, at 12 noon, by SIR ALBERT KAYE ROLLIT, LL.D., D.C.L., Litt.D., F.R.H.S., President of the National Chrysanthemum Society.
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The Association will hold its next
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in the
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# EXHIBITIONS AND MEETINGS.

◆

## Royal Horticultural Society.

The exhibition held at Westminster on Tuesday, October 22, was a fine one, and the hall was well filled with exhibits. Large numbers of novelties were brought forward, thirty-three being adjudicated upon by the Orchid Committee. Hardy shrubs, stove plants, hardy flowers, orchids, chrysanthemums, and fruits provided the chief subjects on view. During the afternoon there was a large crowd of visitors.

### FLORAL COMMITTEE.

A wonderful display of hardy evergreen shrubs was made by Mr. L. R. Russell, Richmond. The whole length of the hall right opposite the entrance, and a width of about ten feet was filled and the table space next to it was also filled with the overflow plants, so that there was a Russell avenue. In recent years the introduction of so many fine deciduous flowering trees and shrubs has made it just possible that the merits of many well-known ornamental evergreens may be overlooked. Such an exhibit as this acts as a good reminder of those merits and the interest taken in it proved its educational value. Bamboos, throwing their graceful spires of elegant leafage 15ft. high, formed a light background for a number of specimen hollies, green and variegated, gold and silver, many of them freely berried, and about 10ft. high. Between the hollies were large standards of variously-coloured tree ivies, while dotted along the foreground of the group were pillar specimens of Hedera dentata variegata with its bold creamy-variegated leaves. Berried aucubas, grouplets of finely-fruited pernettyas, cotoneasters, symphoricarpus, and skimmias gave colour and interest to the whole. Golden forms of Cupressus obtusa, yews, Cedrus atlantica, Cupressus macrocarpa, and Retinospora tetragona were very effective, and the white flowers of laurustinus were also cheery.

Across the top end of the hall there was another large and very fine exhibit from Messrs. James Veitch and Sons, Chelsea. This consisted almost entirely of stove plants and orchids. A fine background was made up of Cocos plumosus, and in front of this were staged grand specimen plants of the huge-leaved Cocoloba pubescens, the equally bold Dieffenbachia imperialis, the long-leaved Cyclanthus bipartitus, masses of Dracæna Godseffiana, and D. Sanderiana, Anthurium Veitchi, and the grey-green Alocasia argyrea. Tall and finely-grown specimens of Croton Thomsoni, C. B. Comte, C. candatus tortilis with spirally twisted gold and brown leaves, and C. Resplendent rose above the smaller plants. Marantas were capitally shown, and the little groups of exquisitely beautiful silver and purple bertolonias were very charming. Groups of Lilium speciosum were also very effective, and the elevated specimens of Nepenthes Chelsoni excellens, N. Tiveyi, N. Amesiana, N. Sir W. Thiselton Dyer—very fine—and N. mixta created a great deal of interest. In the centre, backed by a beautiful Phœnix Roebelini, were a few orchids, notably Vanda cœrulea, the bright Epidendrum vitellinum majus, Disa grandiflora, some cypripediums, and lælio-cattleyas. Winter-flowering begonias were well shown by the Messrs. J. Veitch and Sons in another group, and with these were associated the bright Leonotus Leonurus, and a selection of chrysanthemums, the latter being chiefly represented by very dwarf, beautifully grown, and freely-flowered decorative plants in small pots.

Chrysanthemums were boldly exhibited by Messrs. W. Wells and Co., Merstham; their exhibit was a fine one, and included immense blooms of such Japanese varieties as Mrs. Henshaw, Mrs. G. Lloyd-Wigg, Frank Payne, Mrs. L. Thorn, and the beautiful White Queen. Miss M. Pope, Celia, Caterham Bronze, and the big Miss Margaret Walker were very fine singles shown by the Messrs. Wells. The Messrs. Price and Fyfe, Grove Park Nursery, Lee, S.E., exhibited chrysanthemums in great variety, and associated their flowers with sprays of ornamental foliage.

Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow, exhibited some first-class market chrysanthemums, setting up fine bunches of Celia, R. C. Pulling, Charles Kingsley, Edith Pagram, Mensa, W. Garner, Florrie King, and Cedie Mason, all grand single sorts. They also staged the pale yellow incurved variety J. W. Streeter, and gained an A.M. for it. Mr. Norman Davis, Framfield, Sussex, gained an A.M. for single chrysanthemum Mrs. Loo Thomson, primrose-yellow; and for the golden single variety Charles Kingsley. Mr. C. Beckett, Chilton Gardens, Hungerford, gained an A.M. for the primrose-yellow Hon. Mrs. John Ward; a fine Japanese chrysanthemum.

Scolopendrium vulgare crispum nobile, Bolton's Broad form (F.C.C.), is a fine plant, and a splendid specimen of it was shown by W. B. Cranfield, Esq., East Lodge, Enfield Chase. Clianthus Dampieri, The Glory Pea, was prominent in the exhibit from Messrs. Stuart Low and Co.; this firm contributed excellent carnations, Gloriosa being very finely shown, and a collection of crotons. Mr. P. Purnell, Woodlands, Streatham, grouped crotons, celosias, palms, ferns, and Primula obconica—it is always pleasing to find amateurs bold enough to bring exhibits to the hall.

Begonia Bavaria, with drooping panicles of pink flowers, a good winter bloomer, was shown freely by Messrs. S. Bide and Son, Farnham; the same firm exhibited Begonia Saxony, with drooping clusters of very rich, rosy-pink flowers. From Messrs. H. Cannell and Sons, Swanley, came succulents in great variety, the graceful Lotus peliorhynchus, and a few spikes of gorgeous cannas. The popular Begonia Gloire de Lorraine was shown by Mr. G. Gumbrell, gardener to Mrs. Percy Westmacott, Rose Mount, Ascot, who displayed about thirty freely-flowered specimens. Among the carnations from Messrs. Allwood Bathurst, Haywards Heath, we made special note of Baroness de Brienen, the rich heliotrope variety Fairmount, and the yellow La Rayonnante.

Nephrolepis Millsi, another elegant fern with finely divided fronds, gained an A.M. for Mr. W. A. Manda, St. Albans; Mr. Manda again showed the fine Polypodium Mandaianum and Nephrolepis Whitmanni. Chrysanthemums in small pots, cyclamens, and Primula obconica made up a bright exhibit for Messrs. H. B. May and Sons, Edmonton.

Michaelmas daisies from Mr. H. J. Jones, Ryecroft, Lewisham, proved interesting at this late date, Moonstone and Climax standing out well. Mr. Jones also showed two good new Japanese chrysanthemums named Bob Pulling (A.M.), golden yellow; and Master Rex, rich amber. Mr. L. T. Greening, Richmond, and Miss Dixon, Edenbridge, each showed hardy flowers, and the latter added a few melons.

The very fine Michaelmas daisy named Climax, with large bluish flowers, was very largely shown by Messrs. Whitelegge and Page, Chislehurst. Mr. A. H. Chapman, gardener to L. F. Harrison, Esq., Orchards, East Grinstead, sent up a new single chrysanthemum named Miss M. Borrer (A.M.), a fine bright rose-pink variety. Mr. Thos. Page, Hampton, brought up a good new white chrysanthemum of market type, named Mrs. John Maher (A.M.).

Carnations from Messrs. Young and Co., Hatherley, Cheltenham, included fine blooms of Geisha, Mikado, May Day, Mrs. Greswold Williams, and Christmas Cheer. Mr. G. Prince, Longworth, put up a quite pretty lot of roses, his Hugh Dickson, Richmond, Rayon d'Or, and Lady Hillingdon being quite fresh and fragrant from out of doors.

Perpetual carnations were extensively shown by Messrs. W. Cutbush and Son, Highgate, associated with dwarf roses and edged with the graceful, drooping pink-flowered Heeria rosea, a somewhat neglected plant. A variegated form of Bougainvillea glabra was conspicuous in this exhibit. Saxifrages, sempervivums, shortias, soldanellas, sedums, veronicas, and other dwarf alpine plants were displayed by Messrs. T. S. Ware, Feltham.

### ORCHID COMMITTEE.

A few very fine orchids set up by Mr. Shill, gardener to Baron Bruno-Schroder, The Dell, Egham, included Brasso-cattleya Queen Alexandra, The Dell var. (F.C.C.), an exquisitely lovely large-lipped, fringed, white flower; Cattleya labiata Opal (F.C.C.), with a pink tint on the white lip; Lælio-cattleya George Woodhams, with huge purple flowers, and the green and white Cypripedium Alma Gevaert. Lælio-cattleya Golden Oriole, Holford's var., a very bright flower, gained an A.M. for Mr. Alexander, grower to Sir George Holford, Westonbirt, Tetbury.

Cypripedium Pallas Athene (F.C.C.), a big flower, parentage unknown, with purple spottings on the white, green-based lip, attracted a great deal of attention; this was from W. R. Lee, Esq., Plumpton Hall, Heywood. Cymbidium Doris (F.C.C.), cream, pink, and buff, with brown markings, was a fine hybrid between C. insigne and C. Traceyanum, shown by Messrs. J. and A. McBean, Cooksbridge, Comte Joseph de Hemptinne, St. Desins, Ghent, sent over several beautiful orchids, all unnamed, save the rich orange-yellow Lælio-cattleya Hemptinne (A.M.). Two good white forms of Cattleya labiata were shown by Mr. E. V. Low, Haywards Heath; C. l. Lady Duff was very chaste.

Messrs. Charlesworth and Co., Haywards Heath, submitted Cattleya Portia with a head of eight light purple flowers; Odontoglossum grande with a spike of eight flowers; Oncidium splendidum aureum, etc. Varieties of Cattleya labiata, a good C. Hardyana and C. Sylvia came from Messrs. Hassall and Co., Southgate; and Mr. E. H. Davidson, Twyford, showed Sophro-lælio-cattleya Zondhage (A.M.), with rosy flowers, and other good things. The quaint Cirrhopetalum refractum and the white form of Oncidium ornithorhynchum came from Messrs. Mansell and Hatcher, Rawdon.

Messrs. Sander and Son, St. Albans, showed some very fine forms of Cattleya Fabia, the beautiful Lælio-cattleya Nysa superba, C. Portia magnifica, Cypripedium Goldfinch, etc. Messrs. J. Cypher and Sons, Cheltenham, presented cypripediums largely, notably C. Fairrieanum, C. Sir Redvers Buller, C. insigne Harefield Hall, and C. i. Sanderæ; Dendrobium formosum giganteum was also well shown. Messrs. Stuart Low and Co.'s exhibit of orchids was gay with Oncidium varcosum, Cattleya labiata, Vanda cærulea, Dendrobium formosum giganteum, etc. Sophro-cat.-lælia Menippe var. H. S. Goodson (A.M.), with small ruby-crimson flower, was a feature of the group of orchids from Mr. Day, gardener to H. S. Goodson, Esq., Fairlawn, Putney; Phaio-cymbidium Chardwarense was also conspicuous in this group, and so was Cattleya Maggie Raphael Goodson's var. (A.M.).

### FRUIT AND VEGETABLE COMMITTEE.

A very fine collection of apples and pears grown under orchard house conditions was submitted by Messrs. G. Bunyard and Co., Maidstone. The fruits were all of fine size, clean, and handsome, and staged in baskets. Beurre Clairgeau, Emile d'Heyst, Doyenne du Comice, Beurre de Jonghe, Charles Ernest, Beurre Diel, and Marie Benoist pears were very finely shown, and the examples of King of Tompkins County, Golden Noble, Twenty-ounce, Norfolk Beauty, Emperor Alexander, Cox's Orange Pippin, and Cox's Pomona apples were excellent.

From the Purfleet School Garden, Essex, came some capital apples, pears, plums, and nuts, all grown by lads from 11 to 14 years of age. Royal Muscadine and Esperione grapes grown against a wooden fence were quite good, and attracted no small amount of attention. Mr. E. G. Walker, gardener to C. Baring Young, Esq., Oak Hill Park, West Barnet, sent a few dishes of apples and pears, and among the latter Beurre Diel was good.

About three dozen really handsome plants of Dobbie's Exhibition Parsley, from Messrs. Dobbie and Co., Edinburgh, made up a very attractive exhibit, and the plants were quite as elegant as many ferns.

### CERTIFICATES AND AWARDS.

First Class Certificate.—To Scolopendrium vulgare crispum nobile, Bolton's Broad form, from Mr. W. B. Cranfield, Enfield Chase; to Cattleya labiata Opal and to Brasso-cattleya Queen Alexandra, Dell var., from Baron Bruno Schröder (gardener, Mr. D. Shill), Egham; and to Cymbidium Doris, from Messrs. J. and A. McBean, Cooksbridge.

Award of Merit.—To Cypripedium Pallas Athene, from W. R. Lee, Esq., Plumpton Hall, Heywood; to Cattleya Princess Mary, from Pantia Ralli, Esq., Ashstead Park, Leatherhead; to Lælio-cattleya Golden Oriole, Holford's var., from Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury; to Sophro-lælio-cattleya Heatonense Zandhage, from Mr. Davidson, Twyford; to Sophro-cat.-lælia Menippe var. H. S. Goodson, and Cattleya Maggie Raphael Goodson's var., from H. S. Goodson, Esq., Fairlawn, Putney; to Lælio-cattleya Hemptinne, from Comte Joseph de Hemptinne, St. Denis, Ghent; to decorative chrysanthemum, Mrs. John Maher, from Mr. Thos. Page, Hampton; to single chrysanthemums Mrs. Loo Thomson and Charles Kingsley, from Mr. Norman Davis, Framfield, Sussex; to Japanese chrysanthemum Hon. Mrs. John Ward, from Mr. C. Beckett, Chilton Gardens, Hungerford; to single chrysanthemum Miss Borrer, from Mr. L. Harrison, East Grinstead; to Japanese chrysanthemum Bob Pulling, from Mr. H. J. Jones, Lewisham; to incurved chrysanthemum J. W. Streeter, from Messrs. Cragg, Harrison, and Cragg, Hounslow; and to Nephrolepis Millsi, from Mr. W. A. Manda, St. Albans.

### MEDALS.

Gold.—To Mr. L. R. Russell, Richmond, for evergreen and berried shrubs; to Messrs. J. Veitch and Sons, Chelsea, for stove plants.

Silver-gilt Banksian.—To Messrs. G. Bunyard and Co., Maidstone, for orchard house fruits; to Messrs. Stuart Low and Co., for carnations, crotons, etc.

Silver Flora.—To Messrs. H. B. May and Sons, Edmonton, for ferns and chrysanthemums; to Messrs. W. Wells and Co., Merstham, for chrysanthemums; to Messrs. J. Cypher and Sons, Cheltenham, for orchids; to Messrs. Stuart Low and Co., Enfield, for orchids; to Messrs. Sander and Sons, St. Albans, for orchids; to Mr. Shill, gardener to Baron Bruno Schröder, Egham, for orchids.

Silver Knightian.—To the superintendent of the Purfleet School Garden, Essex, for fruits.

Silver Banksian.—To Mr. Day, gardener to H. S. Goodson, Esq., Fairlawn, Putney, for orchids; to Messrs. Hassall and Co., Southgate, for orchids; to Messrs. H. Cannell and Sons, Swanley, for succulents; to Messrs. Cragg, Harrison, and Cragg, Hounslow, for chrysanthemums; to Messrs. W. Cutbush and Son, Highgate, for carnations and roses; to Messrs. Young and Co., Hatherley, for carnations; to Messrs. Dobbie and Co., Edinburgh, for parsley.

Bronze Flora.—To the Misses Price and Fyfe, for chrysanthemums and carnations; to Messrs. T. S. Ware, Feltham, for hardy plants.

Bronze Banksian.—To Mr. P. Purnell, Streatham, for celosias and crotons; to Mrs. Percy Westmacott, Ascot, for begonias.

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## National Sweet Pea Society.

There was a fairly good attendance at the annual meeting of this society, held at the Hotel Windsor, Westminster, at half-past two p.m. on Thursday, October 17. Mr. Robert Sydenham presided.

After minutes, letters, and other preliminary matters had been disposed of, the Report of the Committee and the Financial Statement for 1912 were read. We append an abridged account.

### REPORT OF COMMITTEE FOR 1912.

Following the usual and excellent custom the Report was circulated among the members present, and its division into special subjects rendered reference easy. Of the Trials, Awards to Novelties, and the London Exhibition we need say little, as we have dealt with these matters in due season. Reference was made to the wonderfully international character of the annual dinner, owing to the presence of so many members from over the seas, and, as might have been expected, the success of the members of the Society at the Great International Exhibition in May, 1912, called for special comment.

One hundred and eighty-six new members were added to the list, and at the time of closing the accounts about the same number of old members had omitted to pay their subscription for 1912. Doubtless many of these omissions will be rectified before the new list of members is issued. There are over 1,200 members, and these include some resident in Japan, Peru, Russia, Switzerland, France, Germany, Australia, New Zealand, Canada, South Africa, and the United States.

Arrangements have been already made for holding the Society's trials at the Burbage Experimental Station, Hinckley, in 1913, under the conduct of Major C. C. Hurst, F.L.S. The committee understands that it will not be possible to hold trials at Sutton Green again, therefore a larger test will be made at Hinckley. The "Annual" and Schedule for 1913 will be issued to members during the first week in December, 1912. Mr. Lester Morse will contribute his "Impressions of the London Show"; Dr. Boxall has promised "Notes on Sweet Peas in New Zealand," and in addition to the Reports, Audit, Prize List of 1912, and List of Members, the "Annual" will include the Conference Proceedings and many items of special interest.

The London Exhibition of 1913 will be held on Thursday, July 17, and will continue for the one day only. Arrangements are in progress for holding a provincial show in the North of England about the second week in August. The Carlisle Horticultural Society has promised a hearty welcome to the National Sweet Pea Society, and as Carlisle is very central, both for the North of England and the Scottish and Irish members, and moreover is in a district where there is plenty of enthusiasm for sweet peas, a splendid exhibition and a large accession of members may be anticipated.

### FINANCE.

The Society is to be congratulated upon its sound financial position. Early in the year £50 was placed on deposit, this amount bringing the Society's reserve fund up to £200. The profit on the year's working was less than in 1910 and 1911, but this may be largely accounted for by the shortening of the financial year by two months. Accounts were closed on September 30, instead of November 31. The Society has no outstanding liabilities except in respect of members who have already paid their subscriptions for 1913. Holding two sets of trials has necessarily increased the expenditure in this direction, and the alteration of the tiered staging for the exhibition is an extra item of expense. On the other hand the item for "Prizes Presented" shows a decrease of £31 4s., as compared with 1911, the sums being £59 9s. and £90 13s. respectively. But this decrease is more apparent than real, because many friends purchased and presented plate to the value of £28 7s., for competition in the district classes.

The turnover for the year was £892 1s. 4d., and the chief items of income were: Subscriptions, £335 19s. 9d.; fees from affiliated societies, £59 6s. 6d.; prizes presented, £59 9s.; trials charges, £57 5s. 9d.; gate money, £36 8s. 6d.; advertisements, £48 14s. 6d.; and vase hire, £16 9s. 4d. The chief items of expenditure were: Purchase of medals, etc., £55 19s. 6d.; trials expenses, £68 3s. 3d.; printing and stationery, £224 6s. 5d.; honorarium to secretary, £73 10s.; London Show, prizes and expenses, £113 4s. 8d.; postages and carriage, £46 1s. 6d.; annual meeting and conference expenses, £9 1s. 9d. Besides putting away £50, the Society carries forwards a balance of £53 11s. 5d., and the Secretary stated that £32 15s. 8d., due on 1912 account, had been received since September 30.

The President moved the adoption of the report and financial statement, and these were adopted. A vote of thanks to officers and committee, moved by Mr. John Collingridge, and seconded by Mr. C. Foreman, was heartily passed, and on the motion of Mr. W. Cuthbertson and Mr. Stevenson it was unanimously agreed that the Right Hon. Sir George O. Trevelyan, Bart., be elected

President, subject to his accepting the position. It appeared that Sir George had begged to be excused on the score of advancing years. Mr. Edward Sherwood was re-elected Treasurer; Mr. C. H. Curtis as Hon. Secretary, and voted a substantial honorarium; Mr. Herbert Smith, as Chairman of Committee; and Mr. Richard Gluyas as Auditor of the Society's Accounts.

### ELECTIONS AND DISCUSSION.

The election of the General Committee resulted in the addition of Messrs. J. Harrison Dick, W. H. Wilkins, T. H. Dipnall, and Bertrand W. Deal, to the existing list, to make good the losses by death and non-attendance. The ballot for the Floral Committee resulted in the election of Messrs. H. E. Bide, Robert Bolton, F. H. Chapman, A. Hallam, A. Ireland, Thomas Jones, G. W. Leak, Thomas Stevenson, and H. D. Tigwell.

Captain Ashworth, of Upton-on-Severn, took advantage of "Any other business" to move "That this meeting shall consider the situation created by the proposal of Mr. W. P. Wright to establish trials, and by the intention of Miss Hemus to endeavour to start a new society." Mr. W. Lumley seconded the motion. Captain Ashworth said that trials conducted by any one person could have no weight among people in general, and Miss Hemus' name had been used without authority in connection with the Reading proposal. He felt that the Society's Floral Committee was not constituted so as to give general satisfaction, and he considered that the traders should themselves have sufficient dignity to put this matter in order. Further, he thought members resident a long distance from London should have an opportunity of voting on any proposals made by the Committee or private members. Several members spoke to the motion, and though a good feeling prevailed there were moments when pleasantries seemed likely to degenerate into personalities. Mr. W. J. Unwin and Mr. G. W. Leak led matters into the proper channel, and the latter pointed out that when the General Committee was unanimous in wishing to exclude from the Floral Committee anyone having an interest in any variety on trial, and brought forward a rule to that effect, the annual meeting defeated the proposal by about 37 votes to 35. He also said it was too late to bring in such a rule now as due notice had to be given, but possibly a similar rule might in the near future be acceptable.

Captain Ashworth said that if there was a possibility of having the matter reconsidered, say, at the next annual meeting, or a little before, Miss Hemus would not go on with her scheme for a new society, but would, with him, do everything possible to further the interests of the N.S.P.S. He begged leave to withdraw his motion, and substitute the following, "It is recommended that the General Committee circulate to all members, for special vote by post, all proposals for the modification of the rules of the Society that may be brought forward before the next annual meeting." When doing this he said that on all occasions he had been treated in the most courteous manner possible at the meeting of the society. The motion was carried, and the meeting closed with a vote of thanks to the President.

### DINNER.

About the usual number stayed for dinner, and this pleasant little function was also presided over by Mr. Robert Sydenham. The only toasts were "The King" and "Our Society," and to the latter Mr. F. W. Harvey responded.

### CONFERENCE.

The North Room was fairly well filled by a few minutes after seven p.m., when the Conference proceedings commenced under the chairmanship of Mr. Herbert Smith, who introduced Major C. C. Hurst, F.L.S. Major Hurst read his paper slowly and most distinctly; his subject was "Rogues in Sweet Peas," and it is not too much to say that no finer pronouncement has ever been heard in connection with sweet pea breeding and the fixity of stocks. The paper was highly technical, and an unquestionable proof of the immense value of Mendelian methods in breeding and fixing sweet peas. Every raiser and seed grower should join the Society, if only for the purpose of securing the full text of this paper in the Society's "Annual," and for the opportunity they would then have of inspecting the Society's trials and Major Hurst's experiments at Burbage.

A brisk and profitable discussion followed. Mr. Sydenham asked whether pure lines from the seeds in one pod, or only from the seeds from one plant, should be grown. Major Hurst said that if plants from one seed pod could be kept distinct it would be better than from the one plant, but he thought it was hardly possible viewed economically. Mr. Ireland and Mr. Cuthbertson both referred to the variety Thomas Stevenson that lost the silver medal at the Society's trials this year because it had one rogue; only one plant of the same rogue had appeared in nearly half a mile of the variety at Mark's Tey. Major Hurst said that in this case evidently a grain of foreign pollen had reached the stigma of one flower the previous year.

Mr. Leak said it was not possible for many of them to give the time that Major Hurst did to experiment, nor was everybody capable of so closely and cleverly observing sweet peas. The lecture was a splendid one, and could only be appreciated fully when studied carefully in the "Annual" during the winter. Mr. Vernon Hill referred to cases of the reversion of Spencer forms to practically the original wild type in Spain and Sicily, one such case occurring in his mother's garden from seeds saved from the best varieties. Major Hurst considered that pollination by the wild form had occurred. Mr. Bide and Mr. Harvey added their experience of several matters, and Mr. E. W. King said that in California the growers had not fully appreciated the importance of rogueing the crops so as to get them quite true to type. Mr. Cuthbertson said that he took heart because Major Hurst had shown the possibility of breeding sweet peas so true that not more than five rogues per 1,000 need appear in the seeds distributed. The elimination of type rogues and of varieties with clamped keels seemed to be leading points to observe, but in his own opinion there was little fear of trouble arising from cross fertilisation by wind or insect agency. Messrs. Stevenson, Weston, and H. A. Perkin contributed to the discussion, and Major Hurst replied to numerous points raised.

Mr. Robert Bolton proposed, and Mr. W. Alsen seconded a vote of thanks to Major Hurst, and this was very heartily accorded. Thanks to Mr. Sydenham for providing cigars and cigarettes for the audience, and to Mr. Herbert Smith, for presiding, closed what will probably come to be regarded as the most valuable conference yet held.

## Broughty Ferry Horticultural Association.

The ordinary monthly meeting was held under the presidency of Mr. James Bethel on the evening of the 15th inst., when an admirable lecture was given by Mr. Robert Bell, Kinnaird Castle Gardens, who had for his subject, "Making and Planting of Herbaceous Borders."

After giving a definition of what was meant by the term "herbaceous," and pointing out errors which the inexperienced were ready to fall into, he proceeded to give a practical demonstration of the process of border making, drainage, trenching, and manuring, and backgrounds were dealt with. He gave a lucid description of the massing system as adopted in the gardens at Kinnaird Castle, where some of the borders were 15ft. wide by about 400ft. long. The blending of shades was sometimes a difficult matter, but he said that time and patience would overcome it. A short list of the newest and best plants grown in the borders at Kinnaird was given and profitable discussions followed, after which the lecturer was cordially thanked.

The monthly prize was won by Mr. David Keillor, who had a fine vase of pompon dahlias. Other exhibits were Michaelmas daisies from the president, and a branch of pear Beurré d'Amanlis, with fruits and flowers on the same spur.

## Dundee Horticultural Society.

The annual general business meeting was held in the Y.M.C.A. Hall on October 11. The President, W. S. Melville, Esq., J.P., presided over a sparsely attended meeting. The treasurer's financial statement showed a loss on the year's workings of £28 16s. 3d. The total income for the year was £1,076 1s. 5d., against an expenditure of £1,104 17s. 8d. In moving the adoption of the accounts, the Chairman attributed the loss to the rain on the Saturday afternoon, when there was a poor attendance, and also to the extra expense of the show, which was on a more extensive scale than usual.

Retiring office-bearers were re-elected with two exceptions, Messrs. Alex. Macrea and Robert Stewart filling up these vacancies. It was decided to hold the next show on August 28, 29, and 30, 1913, and to offer prizes to the extent of £250.

A new session was opened at the Technical College on the 18th inst., with a lecture on "Fungoid Diseases affecting Garden Crops," delivered by Mr. George P. Berry, Edinburgh and East of Scotland College of Agriculture. In dealing with his subject Mr. Berry briefly outlined the life history of mildew, rust, and rot, and gave recipes for prevention or cure of each. After this he dealt exhaustively with black scab or wart disease of potatoes, and the American gooseberry mildew, two comparatively new diseases to this locality, and scheduled as notifiable under the Pests Act of 1877 and 1907. The lecture was enhanced by the exhibition of specimens of the various diseases on the plants attacked.

## Croydon Gardeners' Society.

The meeting of this society, held on Tuesday, 15th inst., at the Sunflower Temperance Hotel, George Street, Croydon, was well attended, and the enthusiasm of the members was more than ever perceptible. Commencing with the competition of bottled fruit, in which four exhibitors took part, the result of very keen competition was eagerly awaited. Messrs. H. Alderman and W. H. Plowman were the judges, and awarded first honours to Mr. F. J. Hainge, of Kenley; the hon. secretary (Mr. Harry Boshier) was placed next, and Mr. W. Veness third. Mr. Oxtoby was awarded an extra prize. The judges were unanimous in their opinion that the four exhibits were of a very high standard.

Upon tables reaching round the room were other exhibits brought by members. Mr. F. W. Moore stage a dish of Brussels sprouts and a dish of Glou Morceau pears. Mr. E. Mann sent four dishes of apples. Mr. W. Coles put up a collection of hardy and half-hardy flowers and cauliflowers. Mr. W. Graves' exhibit was also cauliflowers. Mr. T. W. Hayden staged a vase of Climax Michaelmas daisies. A collection of outdoor chrysanthemums was staged by Mr. A. Edwards, and Mr. W. Tyrrell had similar flowers with the addition of Michaelmas daisies; and from the gardens of Coombe House Mr. M. E. Mills brought a collection of Michaelmas daisies. One of the donors of the prizes for the bottled fruit competition, Mr. T. R. Willis, staged a small collection of sterilised fruits. The hearty thanks of the meeting was given to all exhibitors.

To conclude the evening's proceedings Mr. H. Alderman, of Morden Hall Gardens, Mitcham, read a most interesting paper on "Gardening and Gardeners—Past and Present." Mr. Alderman has several times been heard by this Society, and his unassuming manner and generous spirit have made him many friends.

## Beckenham Horticultural Society.

The first lecture of the winter session of the above society was given by Mr. E. H. Jenkins, on "Cross Breeding and Hybridising." A subject always of absorbing interest was made more so by the clear enunciation of the many points so necessary to successful hybridising. The importance of selecting, by the aid of the microscope, only the finest pollen which is so potent in action, and the wonderful process which takes place when active pollen falls on a receptive stigma were emphasised. Hermetically sealed pollen will keep from three to six weeks, said Mr. Jenkins, a point of interest where operations are among both early and late-flowering plants. The lecturer spoke of cross-breeding not being all profit, and said that carnation growers were perfectly satisfied if they could obtain ten or twelve good varieties from a thousand seedlings.

## OBITUARY.

### MRS. D'OMBRAIN.

We regret to record the death of Mrs. D'Ombrain, the widow of the Rev. H. H. D'Ombrain, which occurred a short time since, on her 87th birthday. From its earliest days Mrs. D'Ombrain evinced the warmest interest in the National Rose Society, and this interest was maintained until her death.

### MR. JAMES KERR.

We have to record the death of Mr. James Kerr, who for several years carried on business as nurseryman, florist, and seedsman in association with his brother, Mr. George W. Kerr, in Dumfries, under the name of Kerr Brothers. The firm did a considerable business, but on its discontinuance Mr. James Kerr emigrated to New Zealand and settled at Gisborne, where he established the floral farm at Kaiti. This he had to leave on account of his wife's health. He was at that time in a serious condition of health, and the death of Mrs. Kerr so prostrated him that he could not recover, and he died in the hospital at Napier. Mr. Kerr was a good judge of florists' flowers, and was keenly interested in horticulture generally. His early death, leaving three young children, is regretted by many friends in this country.

**Origanum Dictamnus.**—The first time I met with this pretty little plant grown in a pot, was many years ago, in the window of a Surrey cottage. The good wife spoke of it as pink hops, which was certainly not an inappropriate title. Since then I have used it, and other allied kinds, for greenhouse decoration during the summer months, and find that they are much appreciated, possessing as they do a quiet beauty of their own. The drooping heads of pink flowers are disposed much as in those of the hop. It is a native of Crete, was introduced in 1551, and is none too hardy in our winters, so that it is best protected by a frame.—K.

**Hardy Flowering Shrubs.** — There are many hardy shrubs which are grown in large quantities in pots by many of our leading nurserymen, and can be utilised during the winter and spring months. Kalmia latifolia is a beautiful subject, and is very easy to manage, needing practically the same compost as the azaleas; it is necessary to select those which are well set with flower spikes, otherwise they will fail to bloom this year. Andromeda floribunda, Spiræa arguta, lilacs, Staphelia colchica, Prunus sinensis, Prunus triloba fl. pl., Choiseya ternata, Viburnum opulus, double white and rose cherries, laurestinus, rhododendrons, and Wistaria sinensis, are all most valuable subjects, and can be brought into bloom whenever required by placing them in heat. Many of those mentioned can be procured as standards, and this very greatly enhances their value for all purposes.—L. SMITH.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

HARDY PINGUICULAS.—G. O., Bristol: I am interesting myself in insectivorous plants, and should be glad if you will kindly tell me which species of pinguicula are likely to prove hardy in a sheltered, boggy position in a Bristol garden.—There are seven species that may be grown satisfactorily out of doors, especially in sheltered positions where the boggy nature of the soil is suitable. It is a good plan to make little colonies of each species, as in that way the plants are most interesting and attractive. Pinguicula alpina has white, yellow-throated flowers, and does well facing north; P. grandiflora is generally regarded as the finest of hardy species, and its violet-blue flowers, an inch long, are very attractive; P. hirtiflora hails from the uplands of Greece and Italy, and it has violet, yellow-eyed flowers; P. lusitanica is a native summer-flowering species, but is widely distributed through South-Western Europe, the lilac flowers have a yellow throat; P. lutea has yellow flowers that are not so flat as those of other kinds; P. vallisneriæfolia comes from Spain, and has lilac or soft-purple flowers, with paler centre; P. vulgaris, the common Bog Violet, closes the list, and its violet-coloured flowers are very charming from May to October.

SPRING-FLOWERING LAURUSTINUS.—A. H., Alresford: Can you tell me if there is an early spring-flowering species or variety of the useful laurustinus? — The laurustinus is a species of Viburnum—V. Tinus. It has numerous varieties, and most of these commence to flower in the late autumn, continuing to bloom through the winter and often on until Easter, according to weather and situation. Viburnum Tinus hirtum is one of the very best forms for autumn and winter flowering, and V. T. lucidum is the best for spring flowering, as it is later than the rest of the varieties.

NUPHARS.—J. M. D., Newbury: Being under the impression that Nuphar luteum was the only member of its genus, I recently challenged a statement to the contrary. Would you be good enough to say whether there are other species, and if there are, will you kindly name them, and say whether they are as meritorious as N. luteum for water gardening?—There are two native species of Nuphar, i.e., N. luteum and N. pumilum. They are, however, so much alike that quite often the one is mistaken for the other. N. pumilum has shorter anthers, and rather smaller, more rounded petals than N. luteum; the stigma is also different, rarely having more than ten rays to the ten to thirty rays of N. luteum. Both these species flower from June to August, and are desirable water plants. Nuphar advena is a useful North American species with erect, cordate leaves, and large yellow flowers that rise well above the water surface. The anthers are red, and the sepals purple-green.

PLANT FOODS.—M. C. G., Wharfedale: If you would be good enough to state what are the chief sources of plant food, under their respective headings, I shall be greatly obliged, because, as a beginner, I feel some difficulty in properly grouping the various manures.—The food of plants consists of oxygen, carbon, hydrogen, nitrogen, sulphur, phosphorus, potash, iron, lime, soda, magnesia, and chlorine. With the exception of nitrogen, potash, and phosphorous, most of these foods are obtainable by the plant from air, soil, and water. Sometimes a soil lacks a sufficiency of some material, such as lime, for certain crops, and so the natural supply must be supplemented. The chief sources of nitrogen are nitrate of soda, sulphate of ammonia, guano, soot, dried blood, and gas liquor. The leading sources of potash are kainit, sulphate of potash, muriate of potash, seaweed, and the ashes from all kinds of vegetable matter. Lime is useful in liberating potash locked up in the soil, and so rendering it available for plant food. Phosphatic manures are superphosphate of lime, bones, and bone meal, bone superphosphate, and basic slag.

FUNGUS ON GOOSEBERRY STEMS.—T. R. A., Lincoln: I am sending a piece of old gooseberry stem with a peculiar fungus-like growth upon it, made up apparently of several individuals growing one above the other. Kindly tell me what the growth is, and how to deal with it.—The curious woody fungus on the piece of old gooseberry stem indicates decreptitude. Evidently the bush is old and enfeebled, and it should be dug up and burned. The fungus is Fomes ribis, a perennial species that appears to confine its attention entirely to old and useless currant and gooseberry bushes. Get rid of your ancient bushes, and secure new and sturdy young stock.

JUNIPERS AS DANGEROUS PLANTS NEAR ORCHARDS.—E. N. V., Romford: Can you tell me whether there is any truth in the statement that junipers are dangerous plants to grow near orchards, or indeed near fruit trees of any kind? A gardening friend made the statement, but was not at all clear

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as to why junipers should be dangerous. Perhaps you can help us, as we are both very interested in hardy fruit culture.—That there is some truth in the statement will be evident when we say that certain kinds of fungi injurious to hawthorns, pears, medlars, and Mountain Ash, use the junipers as host plants. Just as the Black Wheat Rust uses the Barberry for a host, so several Cluster-cups (species of Gymosporangium) use the junipers as a host. The possibility of danger is very great, and where it is apprehended then the junipers near by should be destroyed. Without berberis there would be no wheat rust; if junipers were cleared away a number of fungus pests injurious to pears, etc., would cease to exist, because one part of the life cycle of these fungi can only be lived on a juniper.

## NAMES OF PLANTS.

O. B. W., Warrington.—1, Doodia aspera; 2, Strobilanthes Dyerianus.

M. J., Carlisle.—1, Retinospora tetragona aurea; 2, Symphoricarpus racemosus.

S. J., Wrexham.—1, Escallonia macrantha; 2, Cotoneaster horizontalis; 3, Gaultheria procumbens.

B. S. S., Epsom.—1, Costus igneus; 2, Adiantum cuneatum gracillimum; 3, Lomaria gibba; 4, Maranta Veitchi; 5, Ficus Parcelli.

M. E. M., Derby.—1, Epidendrum vitellinum majus; 2, Cypripedium Tityus; 3, Brassavola Digbyana; 4, Calanthe Veitchi; 5, Cattleya Harrisonæ; 6, a poor form of Cattleya labiata.

## NAMES OF FRUITS.

L. J., Lincoln.—Cornish Gilliflower.

R. T. E., Bangor.—1, Lord Derby; 2, not recognised.

O. M. M., Shields.—1, Mère de Ménage; 2, Norfolk Beefing; 3, Ribston Pippin.

B. P., Hook.—1, Emperor Alexander; 2, Fearn's Pippin; 3, Wealthy; 4, Margil.

F. S. B., Plymouth.—1, Beurré Clairgeau; 2, Cellini; 3, Egremont Russet; 4, Benoni; 5, Dutch Mignonne; 6, Gravenstein.

F. F., Barnstaple.—1, Beurré Diel; 2, Beurré Bosc; 3, Uvedale's St. Germain; 4, Lord Derby; 5, King of the Pippins; 6, Sturmer Pippin.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. 1912. October 13 to October 19. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | Temperature of the Air. At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Oct. 13—Sunday ...... | 4 30 | 50 | 50 | 63 | 33 |
| ,, 14—Monday ...... | — | 56 | 55 | 61 | 50 |
| ,, 15—Tuesday...... | 3 6 | 39 | 39 | 56 | 33 |
| ,, 16—Wednesday.. | 4 36 | 46 | 45 | 57 | 32 |
| ,, 17—Thursday.... | 6 54 | 50 | 48 | 56 | 44 |
| ,, 18—Friday........ | 6 12 | 47 | 46 | 57 | 36 |
| ,, 19—Saturday..... | 7 42 | 51 | 48 | 56 | 46 |
| Means | (total) 33 0 | 48 | 47 | 58 | 39 |

| Date. 1912. October 13 to October 19. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | Temperature of the Soil at 9 a.m. At 2 ft. deep. | Temperature of the Soil at 9 a.m. At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Oct. 13—Sunday ...... | — | 48 | 50 | 52 | 28 |
| ,, 14—Monday ...... | 0·02 | 51 | 50 | 52 | 44 |
| ,, 15—Tuesday...... | — | 49 | 50 | 52 | 27 |
| ,, 16—Wednesday.. | 0·04 | 48 | 50 | 52 | 26 |
| ,, 17—Thursday.... | — | 50 | 50 | 52 | 38 |
| ,, 18—Friday........ | — | 48 | 50 | 52 | 27 |
| ,, 19—Saturday .... | — | 50 | 50 | 52 | 36 |
| Means ... | (total) 0·06 | 49 | 50 | 52 | 32 |

## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Chrysanthemums are abundant, but the prices of flowers generally are firmer.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Arums | per doz. | 3 0 | to | 3 6 |
| Adiantum cuneatum | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri | per doz. bun. | 8 0 | | 12 0 |
| Bouvardia | per doz. bun. | 6 0 | | 7 0 |
| Carnations | per doz. | 1 0 | | 2 0 |
| ,, | per doz. bun. | 6 0 | | 12 0 |
| ,, Malmaison | per doz. | 8 0 | | 15 0 |
| Cattleyas | per doz. | 9 0 | | 15 0 |
| Chrysanthemums | per doz. bun. | 4 0 | | 10 0 |
| ,, | per doz. blooms | 1 0 | | 5 0 |
| Croton leaves | per bun. | 1 0 | | 1 6 |
| Eucharis | per doz. | 2 0 | | 2 6 |
| French fern | per doz. bun. | 2 6 | | 4 0 |
| Gardenias | per doz. | 2 0 | | 2 6 |
| Lapageria | per doz. | 2 0 | | 2 6 |
| Lilium auratum | per bun. | 4 0 | | 5 0 |
| ,, speciosum | per doz. | 1 0 | | 2 6 |
| ,, longiflorum | per doz. | 2 0 | | 3 0 |
| Lily of the Valley | per doz. bun. | 10 0 | | 18 0 |
| Marguerites | per doz. bun. | 2 6 | | 4 0 |
| Mignonette | per doz. bun. | 3 0 | | 5 0 |
| Odontoglossums | per doz. blms. | 2 6 | | 4 0 |
| Pelargoniums | per doz. bun. | 3 0 | | 6 0 |
| Physalis | per doz. bun. | 5 0 | | 6 0 |
| Roses | per doz. | 1 0 | | 5 0 |
| Smilax | per doz. trails | 2 0 | | 3 0 |
| Spiræa | per doz. bun. | 4 0 | | 6 0 |
| Statice | per doz. bun. | 2 0 | | 2 6 |
| Stephanotis | per 6 doz. blms. | 3 0 | | 4 0 |
| Tuberoses | per doz. | 0 6 | | 0 9 |
| Violas | per doz. bun. | 0 9 | | 1 0 |
| Violets | per doz. bun. | 1 6 | | 4 6 |

### Fruits.

Fruits continue in large supply, and prices are easy.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English | per bush. | 2 0 | to | 5 0 |
| ,, Cox's | per ½-sieve | 3 6 | | 8 0 |
| ,, Californian | per box | 6 0 | | 10 6 |
| ,, Nova Scotian | per case | 6 6 | | 8 0 |
| Bananas | per bun. | 4 0 | | 8 0 |
| Cobnuts | per doz. lbs. | 2 0 | | 2 3 |
| Cocoanuts | per 100 | 18 0 | | 23 0 |
| Cranberries | per case | 9 0 | | 12 0 |
| Figs | per doz. | 1 0 | | 3 0 |
| Grapes, English | per lb. | 0 6 | | 4 0 |
| ,, Guernsey | per lb. | 0 6 | | 1 0 |
| ,, Almeria | per barrel | 12 0 | | 18 0 |
| ,, Lisbon | per case | 7 0 | | 8 0 |
| Lemons | per case | 8 0 | | 30 0 |
| Medlars | per crate | 4 0 | | 5 0 |
| Melons | each | 0 9 | | 2 0 |
| ,, Cantaloupe | each | 2 0 | | 4 0 |
| Oranges | per case | 10 0 | | 30 0 |
| ,, Jamaica | per case | 10 0 | | 15 0 |
| ,, Cape | per case | 12 0 | | 21 0 |
| Peaches | per doz. | 4 0 | | 15 0 |
| ,, Canadian | per box | 3 0 | | 4 0 |
| Pears | per ½ bush. | 1 6 | | 4 6 |
| ,, French | per box | 2 0 | | 5 0 |
| ,, Californian | per case | 6 0 | | 10 0 |
| Pineapples | | 2 0 | | 5 0 |
| Plums, Californian | per case | 7 0 | | 12 0 |
| Pomegranates | per case | 7 0 | | 8 0 |
| Walnuts | per doz. lbs. | 2 6 | | 5 6 |

### Vegetables.

Supplies are large, but trade is good, and prices steady, at about recent quotations.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe | per doz. | 1 0 | to | 2 6 |
| Aubergines | per doz. | 2 0 | | 2 6 |
| Beet | per bush. | 2 0 | | 3 0 |
| Brussels Sprouts | per ½-bush. | 1 6 | | 2 0 |
| Cabbage | per tally. | 3 0 | | 5 0 |
| Carrots | per doz. bun. | 1 6 | | 2 0 |
| Cauliflowers | per tally | 4 0 | | 5 0 |
| Celery | per bun. | 1 0 | | 1 6 |
| Cucumbers | per doz. | 1 6 | | 2 6 |
| Endive | per doz. | 1 0 | | 2 0 |
| Horseradish | per doz. bun. | 10 0 | | 12 0 |
| Lettuce | per doz. | 0 6 | | 1 0 |
| Mint | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms | per doz. lbs. | 6 0 | | 10 0 |
| Onions | per bush. | 2 6 | | 4 0 |
| ,, Spanish | per case | 5 0 | | 6 0 |
| Parsley | per doz. bun. | 2 0 | | 3 6 |
| Parsnips | per bush. | 2 0 | | 3 0 |
| Radishes | per doz. bun. | 0 6 | | 1 0 |
| Spinach | per bush. | 1 6 | | 2 6 |
| Tomatoes, English | per doz. lbs. | 2 6 | | 3 6 |
| ,, Guernsey | per doz. lbs. | 2 0 | | 3 0 |
| Turnips | per doz. bun. | 2 0 | | 2 6 |
| Watercress | per doz. bun. | 0 4 | | 0 7 |

### LONDON POTATO MARKETS.

Business shows practically no improvement, and there is only a very quiet demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords | per ton | 80 0 | to | 90 0 |
| Kents | per ton | 80 0 | | 95 0 |
| Lincoln | per ton | 80 0 | | 95 0 |
| Blacklands | per ton | 70 0 | | 85 0 |

## SPRAYING FOR BIG BUD OF BLACK CURRANTS.

A small experiment was carried out by one of the officers of the Board of Agriculture at Harvington, Worcestershire, to test the efficacy of various sprays for combating big bud of black currants. The bushes occupied three-quarters of an acre of ground, but only a small proportion of them were treated. There were two varieties, Prince of Wales and Carter's Champion, all of them affected, the former having an estimated percentage of 60 big buds and the latter of 50.

The bushes were sprayed across the rows so as to eliminate differences solely due to the variety, and the sprays used were:

(1) Lime and sulphur in the dry form at the rate of one part of lime to four of sulphur. Air-slaked lime was used, as ground quicklime in small quantities could not be obtained.

(2) Quassia and soft soap at the rate of 2lb. of quassia chips, 1lb. of soft soap, and ten gallons of water. The quassia chips were boiled for two hours, and then the soft soap was added.

(3) Soft soap alone at the rate of 1lb. of soft soap to ten gallons of water.

The first three transverse rows were treated with lime and sulphur, the next four were left as control, the next two were sprayed with soft soap, the next four were left as control, and the next 2½ were sprayed with quassia and soft soap. The remaining and larger part of the plantation was left as control.

The two series of intervening control rows were left more to separate any overlapping effects than to act as strict controls.

On the first spraying, April 20, the sprays were applied as above. On the second spraying, May 4, the lime and sulphur was used in the proportion of 1 to 8. On the third spraying, May 25, pure sulphur was used instead of lime and sulphur.

---

We are retaining this column week by week to take our readers on "flying visits" to our new Exhibition Warehouses and Testing Grounds at Raynes Park, Wimbledon, which are always open to the public.—James Carter and Co., The King's Seedsmen.

### I.—IF IT WERE A THOUSAND MILES AWAY.

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Next week: "Five minutes with the Bulbs."

James Carter & Co.

On May 4 immense swarms of mites could be seen outside each big bud. They were also to be found in considerable numbers on the leaves and flowers. Many living mites were found on the bushes sprayed with quassia and soft soap, though the bushes were sprayed as thoroughly as possible. On May 25 slight scorching was seen on the young leaves of the bushes treated with lime and sulphur. A microscopical examination of big buds from treated bushes and those from control bushes showed but little difference. In each case swarms of mites could be seen at the opening of the buds. Though many of the big buds had dried up there were still plenty from which an active migration was going on.

On June 16 the scorching of the leaves on the "sulphured" bushes was more marked. All the big buds were dried up, but mites were found in the young buds just forming.

On November 4 the plantation was examined as the owner was grubbing the bushes. Sample twigs were taken from the various rows and submitted to microscopical examination. This was necessary, as in November all the buds that contain mites have not yet become "big."

The samples were taken quite indiscriminately, and represented a fair average of the buds. The big buds in each sample were counted with the following results.

| | Big Bud. | Normal Bud. | Percentage of Big Bud. |
|---|---|---|---|
| Control ................. | 68 | 102 | 66.7 |
| Lime and sulphur... | 76 | 167 | 45.5 |
| Quassia and soft soap | 69 | 135 | 51.1 |

The sample from those bushes treated with soft soap only were not counted, as they were obviously no better than the control. Thus the lime and sulphur treatment reduced the amount of disease to two-thirds of the untreated, and the quassia and soft soap to four-fifths.—"Journal of the Board of Agriculture."

## FORTHCOMING ENGAGEMENTS.

TUESDAY, October 29.—National Chrysanthemum Society's Exhibition at the Crystal Palace; three days.

Kent Commercial Fruit Show, at Maidstone; two days.

WEDNESDAY, October 30.—Kent County Chrysanthemum Show; two days.

Croydon Chrysanthemum Show; two days.

THURSDAY, October 31.—Torquay Chrysanthemum Show.

FRIDAY, November 1.—Hinckley Chrysanthemum Show.

SATURDAY, November 2.—French Horticultural Society of London.

TUESDAY, November 5.—Southampton Chrysanthemum Show; two days.

Chelmsford Chrysanthemum Show; two days.

Brighton Chrysanthemum Show; two days.

Bournemouth Chrysanthemum Show; two days.

Scottish Horticultural Association.

Royal Horticultural Society's Orchid Show; Committees meet at 12 o'clock; Lecture at 3 p.m. on "Double Flowers," by Miss E. R. Saunders; Scientific Committee at 4 o'clock.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex, highly recommends H. SMEE as SECOND JOURNEYMAN, in good establishment; quick and obliging; five years' experience; excellent references; age 23.

CAPTAIN GORDON highly recommends his GARDENER as Head Working, where two or more are kept; life experience; excellent references; age 31; no encumbrance. GARDENER, Southend, Wickwar, Gloucestershire.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43 Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

FOREMAN (Inside) or GARDENER (Second).—Mr. J. V. MACDONALD, Whetstone Gardens, Edgbaston, Birmingham, wishes to recommend THOMAS EVANS as above; age 27; good experience in Fruit and Plant Houses.

GARDENER seeks SITUATION, experienced inside and out; practical in fruit and rose-growing; highest references.—GARDENER, 8, Stanley Villas, Stanley Road, Carshalton-on-the-Hill, Surrey.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working) seeks Situation; life experience in good all-round gardening; age 40; married, two children; good references. HOARE, Wycombe Court Gardens, High Wycombe.

GARDENER (Head Working).—MR. COLLETT, Kirtlington Park Gardens, highly recommends his FOREMAN, H. STEDMAN, as above; 19 years' practical experience in all branches; age 35; married, two children; life abstainer; excellent references; disengaged when suited. H. STEDMAN, Bicester Lodge, Kirtlington Park, Oxon.

GARDENER (Head Working, where several are kept); thoroughly experienced in all branches; age 30; married when suited; excellent character. R. SCRIVEN, Combe Hill, Barton St. David, Taunton.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 14th.

"I beg to inform you that I have obtained a Situation as Second Gardener, so you may take my name off the Register. Thanking you very sincerely,

"Yours truly,
"W. S. C."

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER, Single-handed; 14 years' experience in general gardening; age 28; single. W. VAISEY, Barnsley Park Gardens, Cirencester.

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JOURNEYMAN (Inside) seeks SITUATION; eight years' experience; good references. J. BADNELL, 62, Greys Hill, Henley-on-Thames.

MR. MARINIER can very highly recommend M. BARTSCH to any Lady or Gentleman requiring a capable and trustworthy GARDENER; age 25; single; leaving La Touraine, Carlton Road, Weymouth.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Sunnyside, Moorfield Road, Orpington, Kent.

YOUNG MAN seeks SITUATION in or near Surrey, on Pleasure Grounds, under one or two; 18 years old; four years' experience; used to mowing machines; good references. A. SAYERS, Brosely Cottage, Bookham, Surrey.

YOUNG MAN seeks a SITUATION as IMPROVER (Inside or Inside and Out); Bothy preferred; good references; abstainer. ALBERT HOUSE, 29, Rowley Road, Reading, Berks.

YOUNG MAN seeks SITUATION (Inside and Out; age 21; strong and willing; six years' experience; three years' nursery, last place; good references; abstainer. W. COWARD, Old Broughton Road, Melksham, Wilts.

YOUNG MAN (25) seeks SITUATION as GROWER; Tomatoes, Cucumbers, Bulbs, Mushrooms, Cut Flowers, etc.; could take charge of small nursery; abstainer; good references; wages, 23s.; Midlands preferred. F. STUBBS, 16, Stanley Gardens, Cricklewood, London.

YOUNG MAN, 26 (Single) seeks SITUATION as COWMAN, and help in Garden; highly recommended by R. E. Campbell, Esq., Glenwood. C. T., Ivy Cottage, Callow Hill, Virginia Water, Surrey.

YOUNG MAN seeks SITUATION in private place to look after horse or pony cart, or help clean motor; live in cottage on the place; widowed mother will help in house if required; excellent characters; handy man; state wages; seven years' experience gardening. T. S. FEIST, 43, Brook Street, Polegate, Surrey.

## SITUATION COUPON

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**For NOVEMBER 2, 1912.**

**Please Repeat my Advertisement.**

Name............................................
Address............................................
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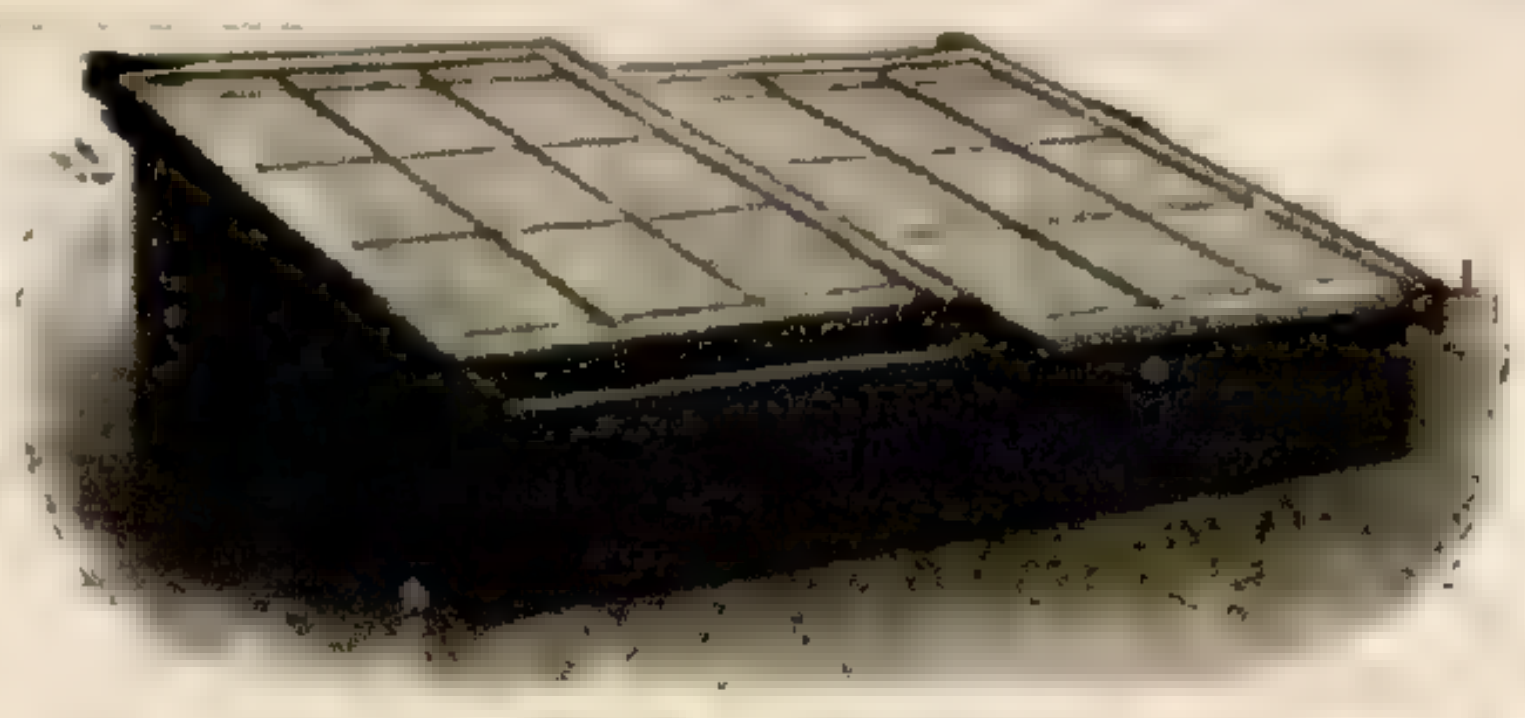

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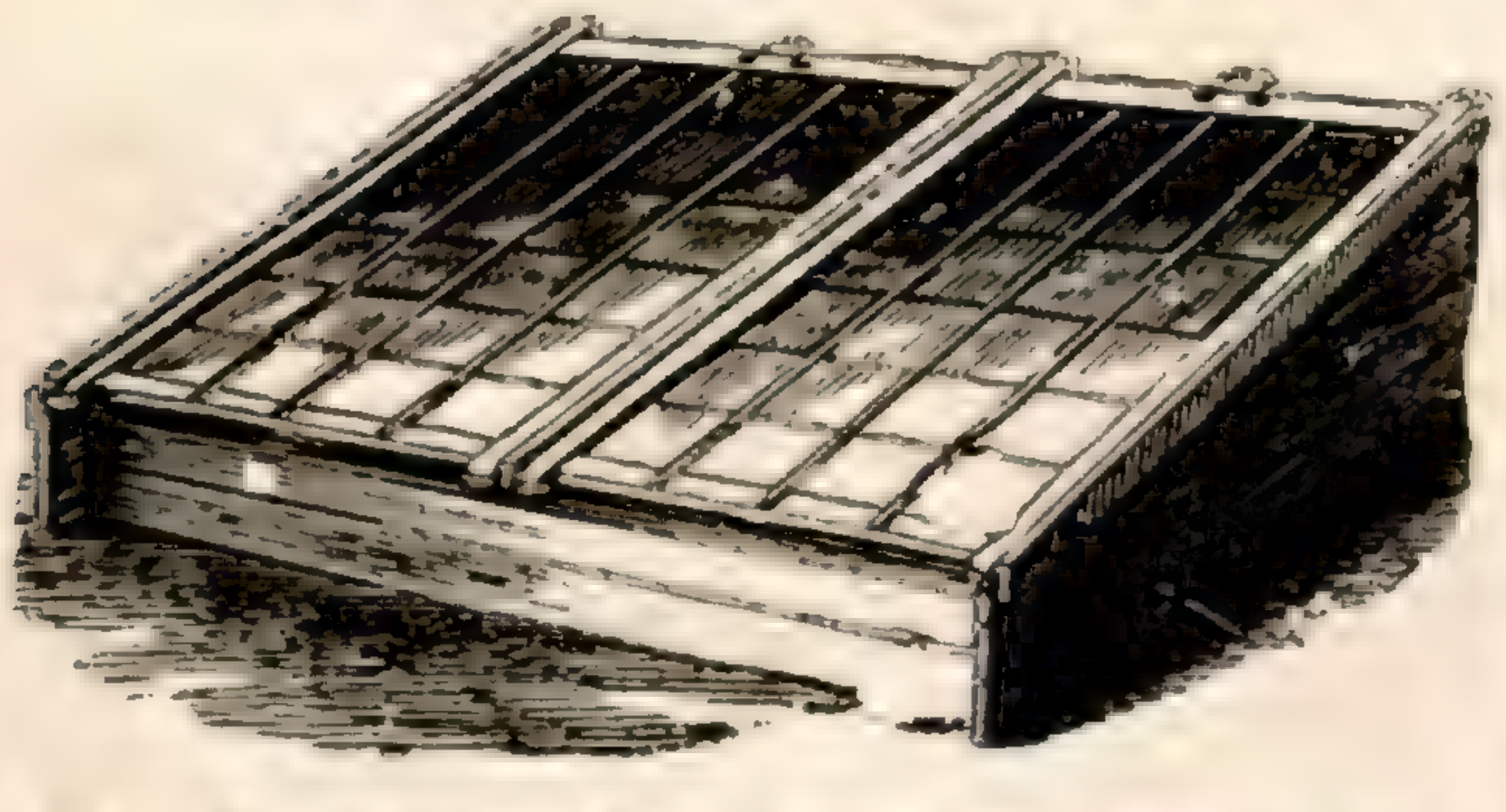

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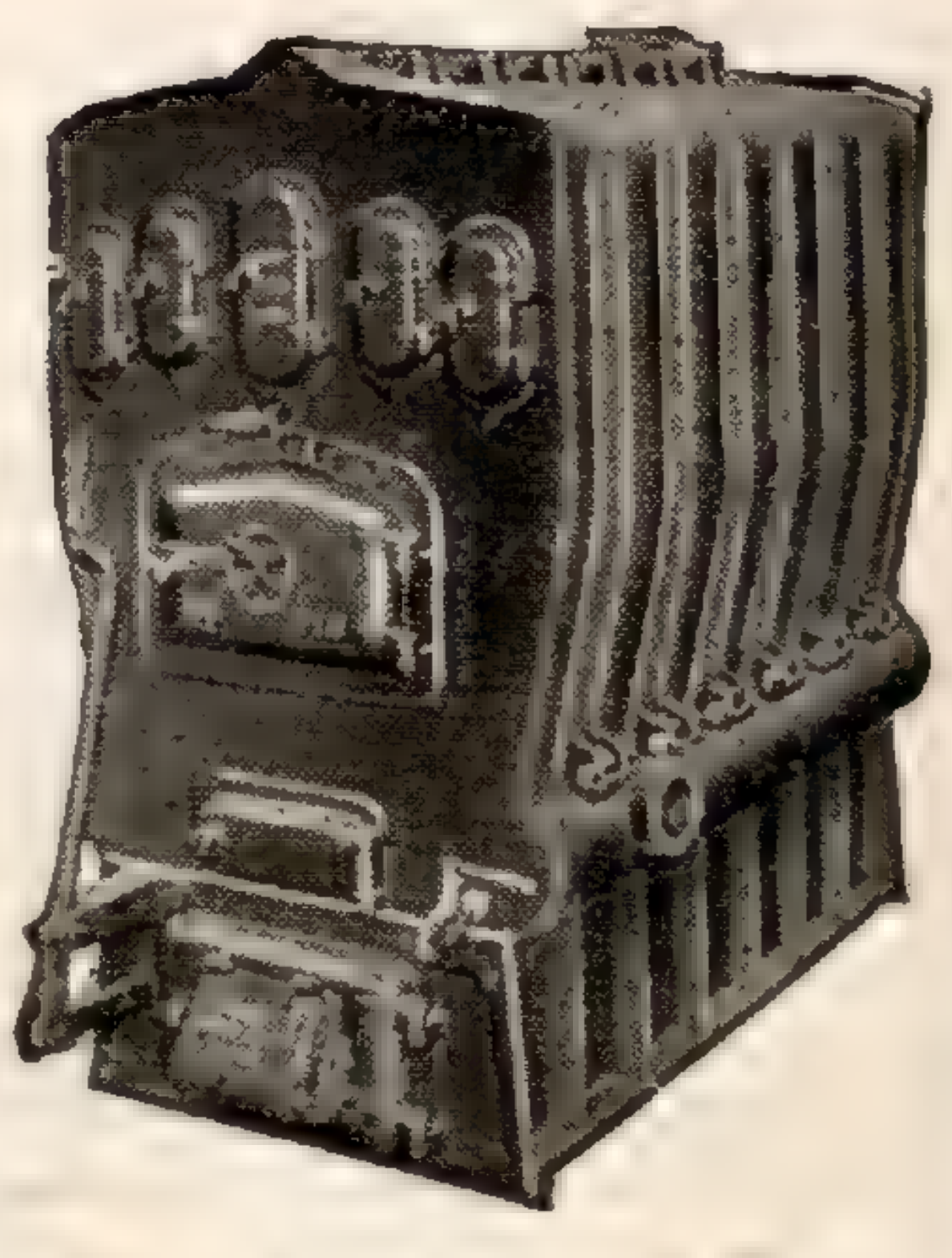

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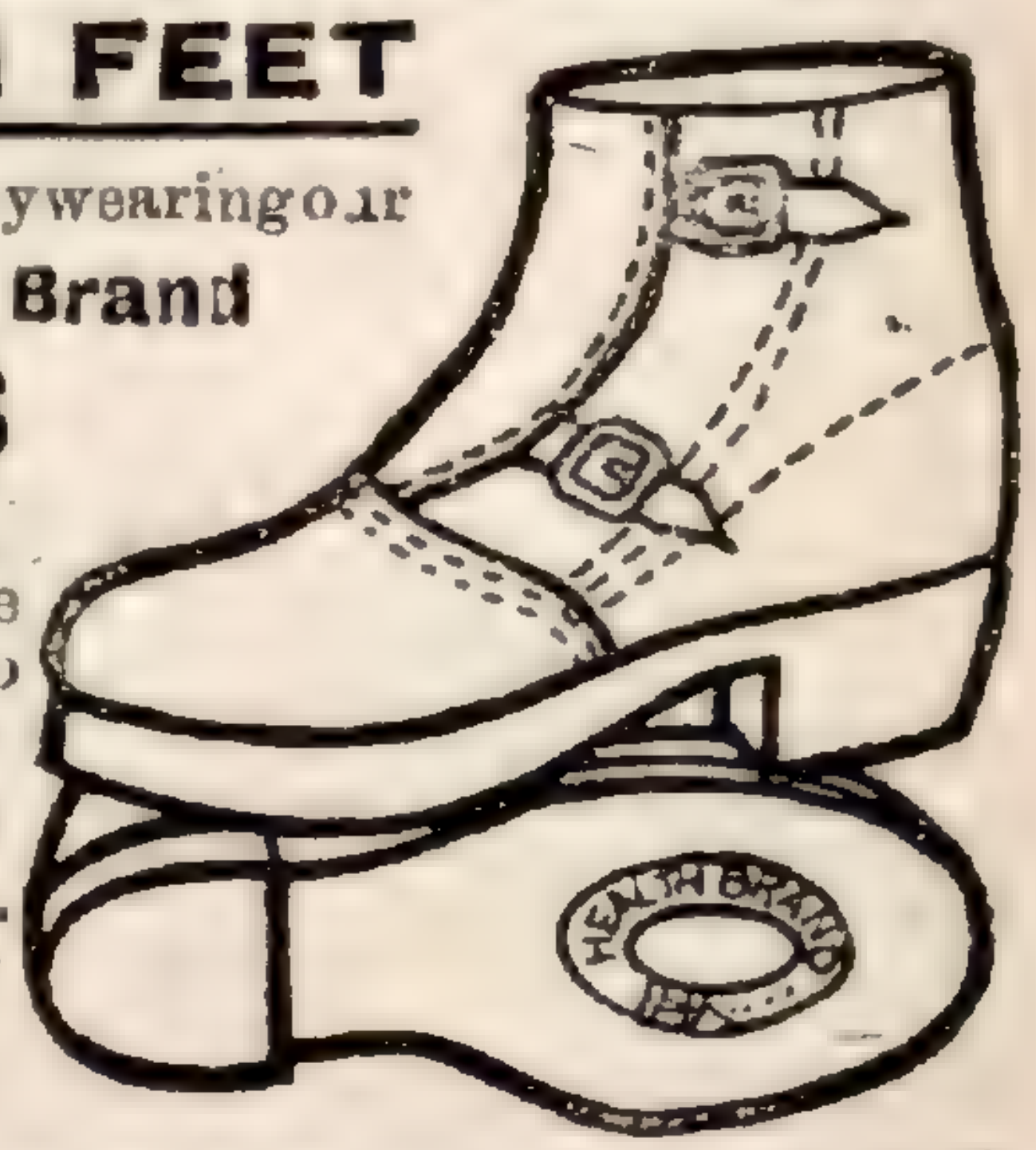

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VOL. LV.—No. 3,079. SATURDAY, NOVEMBER 2, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Fog.

A fog, in principle, is nothing more or less than a cloud which, instead of floating in the air above our heads, is resting upon the soil, and, very frequently, is so shallow in depth that on an otherwise clear night the moon and stars may be visible through it. It also frequently displays its cloud nature by its local and patchy occurrence, so that in towns one street may be densely obscured, while another closely adjacent may be quite clear. The presence of fog is usually determined by a perfect absence of wind and a definite change of temperature, which may act either way, such as a drop in aerial temperature, when the soil has been warmed, or a rise, when the soil has become cold, the difference in either case resulting in a chill of the surface layer of aerial moisture, which is thus condensed into watery particles, and so becomes visible. It is for this reason that fogs so often set in after sunset and disappear when the sun has risen long enough to exercise its warming power on the atmosphere A fog, in short, is an indication of a local super-suppuration, and a very few degrees' difference in the thermometer determines its existence or non-existence in the cold seasons of the year. In the country, where the air is pure, a fog or dense mist is a purely innocuous phenomenon, as we may judge by the healthy appearance of alpine plants, whose habitats are in or near the region of the clouds. In the vicinity of cities and towns however, where the air is laden with impurities, not only do these exercise a marked effect upon the fog itself, by forming nuclei, round which the aqueous particles condense, but the presence of these impurities renders the fog thicker, and dark in colour, instead of the pure normal white of clean aqueous vapour. It is thus that the "London particular" is formed, and in this vitiated state the fog is extremely detrimental both to man and the plant world by its poisonous effect upon the human lungs of the one, and the foliage of the other. To vegetation it is particularly harmful, since, while under dry conditions the deleterious matter present in the air does not adhere to the foliage, the fog, by condensing upon the leaves, deposits thereon not only the solid impurities it contains, which block up the stomata, but it carries some of these impurities, such as sulphurous acid, into their pores in a state of solution to act as one of the deadliest poisons to plant life. It is a curious fact that this year, in the earlier part of October, although the fogs which prevailed round London were apparently of the clean description, being quite white in colour, they proved, nevertheless, to be exceptionally virulent, since, quite independently of a few degrees of frost which accompanied them, the evergreen foliage of all herbaceous plants and ferns was found to be browned, and even killed, to a far greater extent than usual after the fog had disappeared. The particular fog which apparently was the cause of so much damage, was, we are informed, despite its apparent purity, of so foul a nature that white linen toilet cloths in the vicinity of open windows were so much blackened by the indraught of fog, that in a few hours all articles standing upon them, when lifted, showed where they had been by white silhouettes on a dark grey ground, owing to the deposited filth. The question has been mooted whether such a deposit, and its obvious poisonous effects, may not be partly due to suspended dust from tar-covered roads being precipitated by the action of the fog. A point in favour of such an idea is that it was practically the earliest of the fogs which was the worst. Both the deposit and its effects on vegetation we have ourselves personally witnessed. Happily, in these later days such great improvements have been made in lighting and diminution of smoke by the adoption of better methods of combustion, that the old-fashioned pea-soup fog is much more rarely seen, or when seen the "soup" is greatly diluted. The more common type nowadays is what is termed a sky fog, represented by a thick pall of mingled mist and smoke, which lies, seemingly, but little above the housetops, and shrouds us all in sunless gloom. Bad as this is however, it is devoid of either the toxic effects we have spoken of or the obstructive character of the ground fog, supposed to be typical of November, but, as we have seen, by no means exclusively so.

MR. JOHN McKINNON.

**Mr. John McKinnon,** whose portrait we have the pleasure of giving in this issue, has occupied his present position of head gardener to the Earl of Aberdeen, at Haddo House, seven years, and during this period he has so highly distinguished himself as to have taken a foremost place among the many good gardeners who are pursuing their avocation in the district of which the city of Aberdeen is the centre. In proof of this it is sufficient to recall the fact that on the reconstitution of the North of Scotland Horticultural Association, about two years since, Mr. McKinnon was elected as president. That he justified the honour that was done him was made abundantly evident by the fact that the membership closely approached three hundred during the first year, and that at the first annual meeting he was unanimously re-elected. Mr. McKinnon was appointed by the Earl of Aberdeen to the charge of Haddo House gardens in succession to the late Mr. Forrest, who retired at the time after thirty-seven years' service. The gardens of Haddo House are extensive, and the cultivation of the various kinds of plants, fruits, flowers, and vegetables that are in request in an establishment of the first class are grown largely and well. Where everything, both in the open and under glass, bears the impress of ripe judgment and cultural skill of a high order, it is difficult to particularise; but it may be said that Malmaison and tree carnations form one of the outstanding features. The collection is large, and the results obtained eminently satisfactory, the special attention given to these flowers being due to the high appreciation in which they are held by the Countess of Aberdeen. In addition to his duties as head gardener at Haddo House, Mr. McKinnon has the supervision of the garden at House of Cromar, a mansion recently built by the Earl of Aberdeen on his estate on Deeside, about twenty-five miles distant from Balmoral. Previous to entering on the charge of the Haddo House gardens Mr. McKinnon was head gardener at Eastwood Hill, near Glasgow, seven years, and before that foreman at Kilnside, in Renfrewshire, for two years, where he had charge of a fine collection of orchids.

**Cape Pelargoniums** appear to be regarded with but little favour by horticulturists in the Isle of Wight. The other evening Mr. C. Martin gave a lecture on the International Horticultural Exhibition held at Chelsea in May last, and, at the close, expressed his regret that the Isle of Wight Cup should have been awarded to the specimen pelargoniums from the gardens of Gunnersbury House. Mr. Linington, the chairman of the local committee for the Isle of Wight, also expressed his disappointment that the cup should have been awarded for scented geraniums rather than for something more worthy. We agree the cup might have been awarded to something different, but it could not have well been awarded to anything more worthy of distinction than the splendidly developed specimens that were shown by Mr. Leopold de Rothschild. So far as we are aware, the owner of the Gunnersbury House Gardens and his talented gardener have not expressed themselves as being otherwise than perfectly satisfied with the award, but some of the horticulturists who are in a position to fully appreciate the unique character of the collection, regarded it as deserving of a somewhat higher award. There is really nothing in this difference of opinion, for such differences have obtained from the earliest days of horticultural exhibitions, and are likely to continue as long as there are competitive gatherings.

**Orchid Show and Conference.**—The development which orchids have undergone in recent years has been so rapid and considerable that it has now become possible to hold an exhibition specially for those blooming in the autumn. Recognising this fact, the Council of the Royal Horticultural Society included in their programme for the current year an orchid show, which, as previously announced in these pages, will be held on Tuesday and Wednesday next, the 5th and 6th inst. Ten years ago such an exhibition was unthought of, and had it been suggested there would have been some difficulty in organising it on such lines as would have ensured any considerable degree of success, the present ability to hold one being mainly the result of the splendid work that has been accomplished by the hybridists, whose numbers have been greatly increased within recent years. Having regard to this fact, it is a matter of some importance that a conference on orchids will be held at the Royal Horticultural Hall on the second day of the show. There will be two sessions, one from 11 a.m. to 1 p.m., and the other from 2 to 4 p.m. At the morning session Professor Keeble will read a paper on "The Physiology of Fertilisation," and this will be followed by a paper by Major C. C. Hurst on "The Application of Genetics to Orchid Breeding." At the afternoon session papers on "Some Epiphytical Orchids" and "Albinism in Orchids" will be read by Mr. H. G. Alexander and Mr. R. G. Thwaites respectively. Mr. J. Gurney Fowler, chairman of the Orchid Committee, will be the president of the conference.

**National Sweet Pea Trials for 1913.**—The committee of the National Sweet Pea Society will hold trials of sweet peas at the Burbage Experiment Station, Leicestershire, conducted by Major C. C. Hurst, F.L.S., in 1913. No certificates or awards will be granted to novelties unless they are sent for trial. For the novelty trials a charge of 2s. 6d. per variety will be made, and novelties will be accepted only from the raiser or introducer. Thirty seeds of each novelty must reach the hon. secretary, Mr. C. H. Curtis, Adelaide Road, Brentford, Middlesex, before January 4, 1913. The seeds must be placed in plain packets, but each packet much bear a number or letter for purposes of identification. With the seeds there must be a letter bearing the sender's name at the top, the number or letter of each variety sent, and, opposite such letter or number, the name of the variety (if any), the colour section to which it belongs, and (if orange or salmon) whether it should be shaded. Sweet peas will also be tested for purity at a charge of 10s. per stock or variety. Not fewer than two dozen seeds should be sent. In every case the amount due for trial charges must accompany the seeds. Every sender will receive the report of the Floral Committee in the autumn of 1913.

**Presentation of Fruit to the Lord Mayor.**—In accordance with the annual custom, a presentation of fruit was made to the Lord Mayor of London by the Fruiterers' Company on Monday evening last. The presentation was made by the Master of the company, who, with the Wardens and Court, was subsequently entertained at dinner. The fruit was acknowledged to be the finest lot the company has yet presented to the Lord Mayor. It was contained in three large ornamental baskets, the centre one having four handles in the Grecian style, and when filled was about four feet high. As a central feature was a grand pineapple, flanked by Cannon Hall, Muscat of Alexandria, and Gros Colmar grapes, of superb quality and finish, the pyramid being composed of golden melons and highly-coloured apples and immense pears, the latter being arranged with due regard to a tasteful contrast of colour. The handles of the basket were charmingly decorated with Madame Abel Chatenay and Niphetos roses, which were arranged alternately, and enlivened with richly-coloured croton leaves and autumnal foliage. The oblong baskets at the end of the table were so arranged as to present the appearance of trophies of apples and pears, which were surmounted by pineapples of large size and fine finish. Conspicuous among the splendidly-developed pears were Doyenne du Comice, Beurré Diel, and Pitmaston Duchess, and the most noteworthy apples for brilliancy of colouring were King of the Pippins, Gascoyne's Scarlet, Cox's Pomona, Emperor Alexander, Cox's Orange Pippin, Twenty-Ounce, and Rival, and for their golden hues Lord Derby, Norfolk Beauty, Peasgood's Nonsuch, and Stirling Castle were the most remarkable. The tasteful arrangement of autumn-tinted foliage on the table, interspersed with specimen apples and pears, made a fine setting for the baskets of fruit and contributed much to the general effect. The work was ably done by Messrs. Brooks, of Regent Street, the Court fruiterers, under the direction of Mr. George Bunyard, V.M.H.

**National Rose Society's Exhibitions,** 1913.—The dates of the exhibitions that have been arranged by the National Rose Society for next year are as follows: Spring Show, at the Royal Horticultural Hall, May 1; Metropolitan Show, in the gardens of the Royal Botanic Society, Regent's Park, July 5; Provincial Show, at Gloucester, July 15; and Autumn Show, at the Royal Horticultural Hall, in September. The provincial exhibition will be held in conjunction with the show of the Gloucester Rose and Sweet Pea Society, which completes its twenty-fifth year in 1913. With Mr. Conway Jones as one of the more prominent members of the local society, and the promises of the hearty support of the Mayor and Corporation of Gloucester, the exhibition should be of quite exceptional interest.

**Daffodil versus Leek.**—On the insurance stamp Wales is represented by a daffodil, which is associated with the rose, thistle, and shamrock, and Welshmen have recently contended that the Welsh leek was really a daffodil. In connection with this controversy it is of interest to remember that the name is pure Anglo-Saxon, and, as Canon Ellacombe points out, it originally meant any vegetable; then it was restricted to any bulbous vegetable before it was finally restricted to the leek of gardens. According to Professor Wright, the "importance" of the leek was considered so much above that of any other vegetable that leac-tun, the leek garden, became the common name of the kitchen garden, and leac-ward, the leek-keeper, was used to designate the gardener. It is an interesting little controversy, and as we sympathise with the Welshmen, who are desirous of adopting the daffodil as the floral emblem of Wales, we regret our inability to find in any of the old books relating to plants, that have been published since 1535, any suggestion that the plant favoured by Wales was other than our leek.

**Morphology of the Leaf.**—Mr. O. F. Cook has, we learn from "Nature," published an interesting note in the "Journal" of the Washington Academy of Sciences on the morphology of the leaf in various members of the Prunus section of Rosaceæ, sometimes regarded as a separate family (Amygdalaceæ). The leaves of plum, peach, apricot, etc., have a joint at the base, just above the insertion of the stipules, as in many leguminous plants; the part below this joint does not fall off with the leaf-stalk, but remains alive and forms a supplementary bud-scale. This is regarded as a vegetative character which supports the view that the Amygdalaceæ are deserving of family rank, and also as strengthening the connection between the rosaceous and leguminous series. The fact that small leafy outgrowths sometimes replace the nectaries on the upper part of the leaf-stalk in various Amygdalaceæ suggests the view that the immediate ancestors of this family had compound leaves, these nectaries corresponding to the marginal glands of the leaf-blade and representing rudiments of divisions of compound leaves.

**Torquay Gardeners.**—The opening meeting of the winter session of the Torquay Gardeners' Association was of special interest. Mr. W. A. Masterman, one of the vice-presidents, gave an interesting address on the Royal International Horticultural Exhibition held at Chelsea in May last. In the course of the proceedings following the address, Mr. Masterman, on behalf of the members, presented Mr. A. Pidgeon with a silver watch as a mark of the appreciation of the services he has rendered the society as hon. librarian during the past eleven years. Mr. Pidgeon, who has retired from the office of librarian, is succeeded by his son, Mr. W. J. Pidgeon. The hon. secretary, Mr. G. Lee, has relinquished his office in consequence of his appointment as curator of the museum of the Torquay Natural History Society, and is succeeded by Mr. Holder.

MR. NORMAN DAVIS'S FINE GROUP OF CHRYSANTHEMUMS,
Which secured a large gold medal, and Messrs. Clay and Son's gold medal, at the National Chrysanthemum Society's Exhibition at the Crystal Palace on October 29. (See page 846.)

**Peach Growing in British Columbia.**—A fruit grower in Penticton—famous for its peaches—has recently picked and shipped ten tons of peaches from his ten-acre orchard, and estimates that there were ten tons still to gather from the same orchard. The fruit from the first picking was rather small owing to the inability of the grower to obtain labourers to thin the peaches. A grower with a similar holding in the same district has gathered a large quantity of peaches averaging half-pound each. A small quantity of Penticton peaches recently arrived in England, and was sent for the purpose of showing what fine fruit can be grown in this region. Examples of these peaches, from a district which has only been opened up about five years, were on view in the windows of the Canadian Government Emigration Offices, at Charing Cross, and at the offices of the Canadian Pacific Railway, the Grand Trunk Railway, and the Canadian Northern Railway.

**Colonial Fruits.**—At a recent sitting of the Dominions Royal Commission in London evidence was given on the necessity that exists in this country for more abundant supplies from the Colonies of plants suitable for the distillation of essential oils, and of the various kinds of fruits used in confectionery. With reference to the latter, Mr. Stanley Machin stated that he saw no reason why a larger proportion of the raw materials used in the United Kingdom in the confectionery and preserved fruit trades should not be produced within the Empire. For example, oranges, citrons, and lemons were imported in large quantities from Spain, Greece, Italy, etc., but were at present imported in comparatively small quantities from Malta, Australia, and the West India Islands. A most important factor in the jam and preserve-making industry was the supply of fruit pulp, especially apricot pulp, which at present was imported from the Colonies in only very small quantities. Australia had at times sent supplies to this market, the quality of which was good, but the export trade did not appear to have been extended to any extent. The British demand, which was very large, had, therefore, to be provided from Spain, Italy, France, and California. The supply of almonds from British possessions was valued at only £3,852, but immense quantities which were used in the trade, to the value of £949,627, and, presumably, could be grown in British possessions, were imported from France, Portugal, Italy, Spain, and Morocco.

## KENT COMMERCIAL FRUIT SHOW.

No one who visited the extensive and extremely interesting exhibition held in the Corn Exchange, Maidstone, on October 29 and 30 could fail to be impressed by the evidence here afforded of the growing importance of fruit farming in this country. It was not only the quantity and the quality of the fruit shown—excellent though this was—but also the intense interest evinced by the company of growers and experts who gathered, not only from Kent, but from far distant counties, that made one realise that at last our agriculturists and market gardeners, and even the country cottagers, are waking up to the fact that fruit culture, carried on upon systematic and businesslike lines, with the aid of science, is a pursuit with hitherto undreamt-of possibilities.

This was but the second annual show held in Kent under the auspices of the Kent Commercial Fruit Show Association, and with the support of the South Eastern Agricultural College. Last year the show was at Ashford, and everybody was pleased with the results of the first effort. There were on that occasion 550 boxes of apples staged in the competitive classes, but the judges on Tuesday last had over 1,200 boxes placed before them, thus showing that the society has quickly aroused the interest which everyone concerned so ardently desired. It must also be stated that most noticeable improvement was evidenced all round in the grading and packing of the fruit in comparison with last year, and this, of course, is really the great point, being that which has hitherto marked the dividing line between British and Colonial growers.

In the principal classes the fruits were shown packed in Federation standard boxes, the dimensions being 20in. long by 11in. wide and 10in. deep, while half-boxes used in some classes were 5in. deep and of the same length and breadth as the others. Obviously a great number of exhibits staged in this manner provided a display of great uniformity, and some might say monotony. Certainly, from a spectaclar point of view, there was a vast difference between this show and the R.H.S. fruit show, but from an economic point of view and for real value to the community at large this, it must be admitted, was the more important. The judging of the exhibits was of necessity carried out on entirely different lines from those adopted at the ordinary horticultural shows, and it may be stated that, in certain classes where excellence of packing was specially asked for, some of the best quality apples were left out of the prize list simply because the packing was not what may be called first-rate.

Apart from the judging itself, the most interesting item in the first day's programme was the auction sale of the exhibits. Some capital prices were made, especially of the winning lots, but the record—and a capital one it was—was reached by the first-prize lot of Bramley's Seedling. The six boxes, containing 63 apples in each, fetched 40s. per box, and there was a good deal of excitement among the bidders, several London buyers being keen on obtaining this exceptionally fine lot of Bramley's.

It is significant of the high esteem in which that fine apple Bramley's Seedling is held, that the first class in the schedule was for six boxes of this variety, and it may be added that there was an excellent entry of about three dozen lots, among which the judges had a hard task to find the winners. He must be hard to please who would be dissatisfied with Mr. G. E. Champion's first-prize set, which came from Linton, Maidstone. They were as even in size and shape as could well be, and were of as good a colour as ever we have seen this variety. Messrs. W. Skinner and Sons, Boughton Monchelsea, Maidstone, took second place, but their packing was not so neatly done as in the winning set. Close, indeed, to second was Mr. R. Ferguson, Maidstone, who was given third place, his fruits being sound and weighty examples. Mr. W. W. Hubble, Hunton, Maidstone, came fourth.

Newton Wonder, another deservedly popular apple, brought entries from widely separated localities, and here again the first prize went to six boxes that fully merited their honours. Messrs. Gaskain and Whiting, Dargate, Faversham, were the successful exhibitors, and their moderately-sized but very even fruits were packed diagonally in their boxes in a manner that ensured safe transit. Mr. C. Murdoch, Linton, Maidstone, came second, his fruits being beautifully ripe and of very attractive colour; Mr. F. Smith, Loddington, had wonderful size to his credit in his third-prize lot; the fourth going to much smaller fruits staged by Major W. A. Nicholson, West Malling. There were not a few who lingered over Mr. Smith's exhibit, remarking that third place was low in the scale for what were undoubtedly a wonderful lot of apples.

Lane's Prince Albert made a good class, and it was most interesting to note the wide difference in size, colour, and finish of the fruits sent from different districts. It would have been pardonable if some visitor had ventured the opinion that there was a mixture of varieties in the class. No one had cause to complain of the colour of the first-prize exhibit staged by the executors of the late R. Neve, Esq., Tenterden, but it must be admitted there were more even lots than this in the class. Mr. E. H. Chambers' second-prize set were bright, clean examples of reasonable size, but they did not seem to fit so comfortably into the boxes as could be wished. Mr. F. Neame, Faversham, who took third, had plain green fruits, as well as highly coloured: Major Nicholson's fourth-prize fruits had not a tinge of red about them.

One of the grandest of all the classes was that for six boxes of Blenheim Pippin. Nothing finer or more appetising could be desired than the great array of this superb and still highly-prized apple, and, needless to say, there was a constant group of admirers before this class. Messrs. Gaskain and Whiting led off with the most even, beautifully packed fruit, which were just as large as we like them, and of magnificent colour. Second place was taken by Mr. W. W. Hubble, whose fruits were good, but not so nicely packed as those of Mr. A. Hiskin, who secured third prize. There was not a bad box of fruit in the whole of this class, and for good packing it afforded an example to the whole show.

Lord Derby, a big, useful kitchen apple, found plenty of competitors, but this, in our opinion, is scarcely an apple for box-packing in an ordinary way. However, from an exhibition standpoint, this was a good class, and we can only commend Messrs. Gaskain and Whiting on their merited success in winning first prize with a splendid lot of fruit, whilst Mr. W. W. Hubble and Mr. F. Smith, who took second and third, had also good fruits.

Very pretty were the Worcester Pearmains, and one can readily understand that this handsome apple should fetch higher prices when neatly boxed than when presented in hampers or baskets. Mr. S. Smith had a grand lot, nice size, rich colour, and pleasing aroma; second prize winner was Mr. F. Smith, third place being given Mr. A. Miskin, Chart Sutton, Maidstone. A class was provided for three boxes of any one dessert apple other than Blenheim Orange or Worcester Pearmain. Messrs. Gaskain and Whiting scored with Allington Pippin, so highly developed as to be almost unrecognisable. Mr. R. Stephenson's Cox's Orange Pippins secured second place, and of these we may certainly say their colour could not be surpassed. Mr. S. Smith came in third with Loddington Pearmain. In the class for the best packed box Mr. A. Miskin proved successful, following three-two style of packing, with eye upwards. Mr. F. Smith was awarded the second prize, third place being taken by Major Nicholson.

There were many small classes for single boxes of both dessert and cooking apples, and there were also classes confined to small growers in Kent. We refrain from giving detailed lists of names of the winning exhibitors in these smaller classes, but suffice it to say right through the schedule we were pleased to see keen competition and excellent quality. One class, however, was the centre of considerable interest, it being for a half-box of a new dessert apple. Rival was the winning variety, staged by Mr. F. Duncanson. The prize in this class was a champion cup.

Pears were very few in comparison with the vast quantity of apples, but, nevertheless, some excellent fruits were staged. The winner for three half-boxes was Messrs. Gaskain and Whiting, the variety being Elektea, a long, shapely, green-skinned fruit that looks like an excellent keeper. Beurre Bachelier, shown by the same firm, was credited with another first prize. Mr. A. Hiskin took second with beautifully-coloured Doyenne du Comice. We are tempted to raise one protest, to the effect that the organisers of the show should insist upon every variety of fruit shown bearing a legibly-written label with its name. Another improvement in an excellently-managed show would be to have the address of each exhibitor on the class cards.

There were three challenge or champion cups presented, one being the Coupe Cup, which was awarded to Mr. Champion for his half-dozen boxes of Bramley's Seedling; the Garcia Cup, taken by Messrs. Gaskain and Whiting, with Lord Derby; and the George Mence Smith Cup, for the best single box of apples, was awarded to the same firm.

## MESSRS. G. BUNYARD AND CO.'S DISPLAY.

Messrs. G. Bunyard and Co., Lim., who, of course, were very much at home during the fruit show, filled a separate building on the opposite side of the thoroughfare to the exhibition itself, with a most beautiful collection of choice fruits. The display comprised upwards of 200 varieties of apples and pears, and, although in so vast a collection it is impossible to enumerate all that were worthy of mention, we must make a note of a few of the best. Of dessert apples, nothing could be finer than Allington Pippin, Rival, Cox's Orange, Coronation, and May Queen. A dessert apple that is just now at its best, and that very good, is Mother, a handsome fruit of great merit. Of culinary apples there were Bramley's Seedling, Newton Wonder, Lane's Prince Albert, and Warner's King, as well as Bismarcks, Lord Derby, and Golden Noble, the latter a beautiful clear yellow. Norfolk Beauty cannot be overlooked as an apple that is making great headway in the public favour. A few of the best pears were Doyenne du Comice, Marie Benoist, Charles Ernest, Santa Claus, Emile d'Heyst, President Dromard, and Josephine de Malines. Some good stewing pears were Uvedale's St. Germains (turning the scale at 2lb. each), Catillac, and Doyenne d'Alencon.

## NON-COMPETITIVE.

A highly-instructive exhibit came from the South-Eastern College, Wye, Kent. Boxes of apples, packed in various styles, such as diagonal, offset, straight, and fancy, each style having points of special adaptability to certain sizes and shapes of fruit. The boxes of specially-picked apples, separately wrapped in tissue paper, were highly commendable, and it was interesting to learn that a brisk demand has sprung up for British apples for export, packed in this particular manner. A very nice collection of both dessert and kitchen apples came from Messrs. Seabrook and Sons, Chelmsford, all the Kentish growers readily admitting that the exhibit bore indisputable testimony to the suitability of Essex soil and climate for pomology.

## APPLIANCES AND SUNDRIES.

These were largely exhibited, and although a good many of the preparations, machines, and tools on view were of the usual useful but well-known character, there were a few novelties that possessed merits and advantages that all growers for profit should be ready to recognise. Messrs. McDougall Bros., Manchester, had fruit tree washes that have, as a result of many experiments and careful analyses, been brought to a wonderful standard of efficiency. Messrs. Corfe and Son, Maidstone, showed their lime-sulphur solution, and branches of fruit trees infested with pests were shown in contrast to the clean wood resulting from proper spraying. Dedlee Spray for Aphis, Corfe's Arsenate of Lead, and Pure Nicotine were on this stand.

Messrs. Voss and Co., Lim., Millwall, E., brought their many useful chemical preparations, other large exhibitors in this line being Mr. M. Herrod, Wisbech; and Messrs. Lewis Berger and Sons, Lim., Homerton, London.

Among appliances the familiar Abol syringes of Messrs. E. A. White, Lim., Paddock Wood, were shown in a variety of patterns with nozzles and connections for all purposes Quite a collection of fruit adorned this stand demonstrating the value of Abol Fruit Tree wash as an aid to the production of good, clean fruit.

Among a host of Knapsack and larger spraying machines exhibited by the Four Oaks Spraying Machine Company, Sutton Coldfield, were a new Knapsack, fitted with an improved non-waste air chamber, and a capital pneumatic cylinder machine with pump attached.

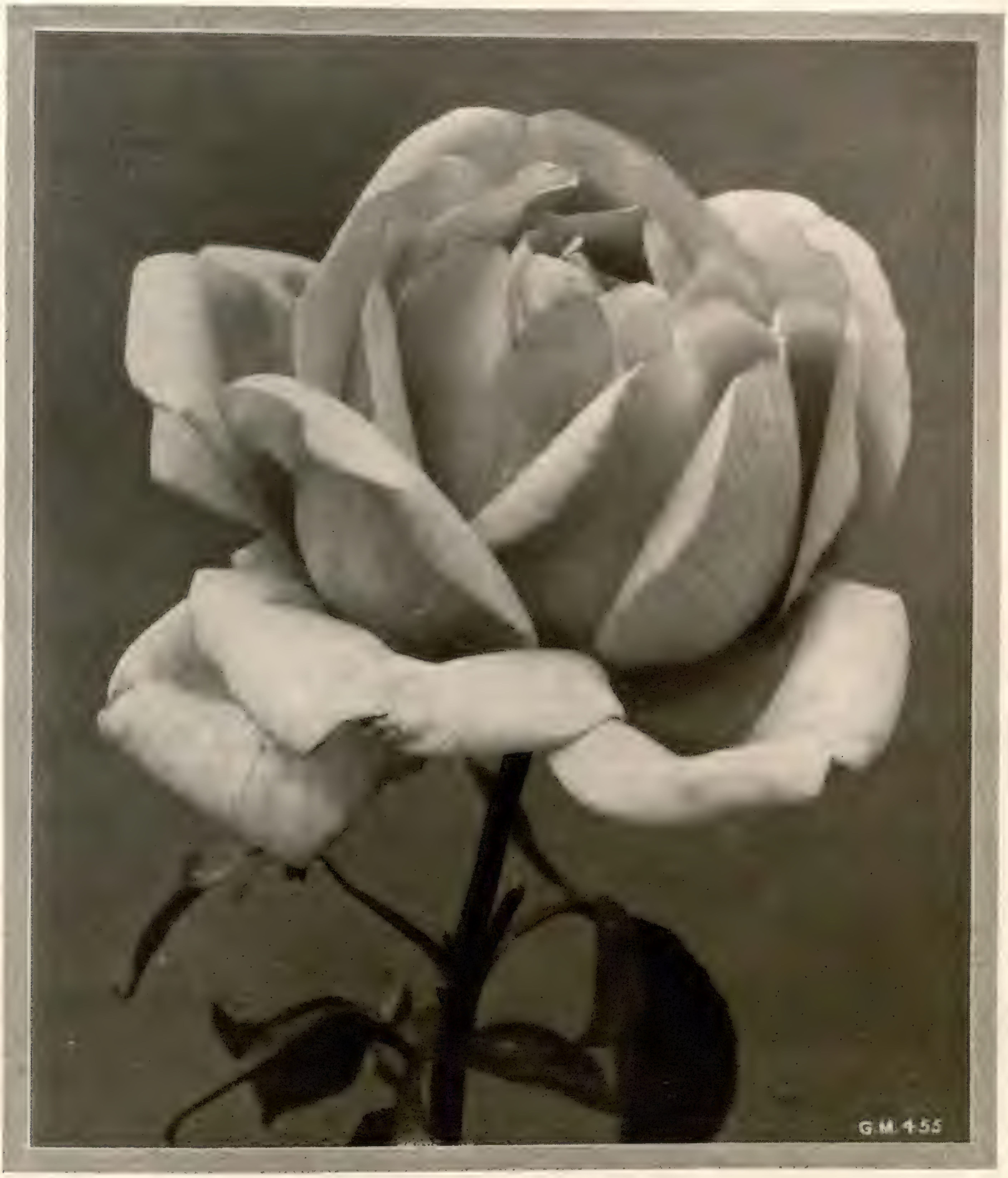
Messrs. Weeks and Son, Lim., Maidstone, were exhibitors of big machines suitable for orchard work, hop plantations, and potato fields; and Messrs. Drake and Fletcher had a whole range of various makers' machines in all shapes and sizes.

Messrs. Weeks and Son, Lim., had one of the most important appliances on view in the shape of a hand grading and packing table, which in a quite simple manner sorted apples into six different grades, and presented them conveniently for packing into boxes or hampers. Made of flannel-lined wood, the whole operation of grading can be done with the machine without the slightest damage to the fruit. The grading in the hands of an accustomed lad or girl can be done at the rate of a bushel in three minutes.

## MESSRS. ALEX. DICKSON AND SONS' ROSES.

As in the case of some other important towns that might be mentioned, the Newtown of the Ards has enjoyed considerable fame during a material part of its long and eventful history. At one time, and that somewhat remote, the town was noteworthy as the centre of numerous religious establishments, of which several were of much importance, as indicated by the ruins that remain to remind us of their greatness. Later Newtownards, to give the town its more modern designation, became famous as a centre of the linen industry, its manufactures of this fabric continuing to be regarded with much favour, and, as the result thereof, maintain their high place in the markets. Now it has attained to so high a position as a great centre of rose growing and rose raising that it has become a household word wherever roses are grown and appreciated, or, in other words, throughout the civilised world. In thus briefly referring to a point that is not without interest, it must not be assumed that an attempt will be made to give a sketch of the history of the town. It would be a pleasant task, but at the present time the writer is more concerned with the many beautiful roses that we owe to the activities of the Messrs. Alex. Dickson and Sons, and contribute so liberally to the charms and interest of many thousands of gardens.

If a question were asked as to the length of the time over which the firm has given special attention to the cross-fertilisation and the raising of seedling roses, a fairly correct answer would be about a quarter of a century. It may be a few more years than twenty-five since they entered on the work which has brought them so much renown, for there are roses of their raising in the catalogue of the National Rose Society that were introduced to cultivation twenty-one years ago. The Royal Nurseries have a history extending over a century or so, and were founded by Mr. Alexander Dickson, the father of Mr. George Dickson, the venerable and highly respected head of the firm, and under his skilful management the business assumed large proportions long before he relinquished his business life. Mr. A. Dickson devoted a considerable share of his attention to the hybridisation and cross-fertilisation of plants, and chief among his successes were numerous Cape heaths that were remarkable for their great beauty. Mr. George Dickson, following on much the same lines as his father, achieved such a measure of success as to necessitate a considerable extension of the boundaries of the nurseries from time to time. Notwithstanding the increased demands that were made upon his time and attention



H.T. ROSE MRS. MACKELLAR.

The flowers soft yellow. Raised by Messrs. Alex. Dickson and Sons, and received an Award of Merit from the R.H.S., on September 24, 1912.

by the extension of the operations of the firm, Mr. G. Dickson did not at any period of his active business life lose sight of his responsibilities as a citizen, and, as a consequence, he took a very prominent part in local affairs. As evidence of the high estimation in which the public services that he so willingly rendered were held by his neighbours, it may be mentioned that he was chairman of the Newtownards Horticultural Society for fifty years, and on the occasion of the jubilee of his chairmanship in 1905, he was entertained at a public dinner and presented with his portrait in oils. He was also for a long period a member of the Board of Guardians for the town, and five years its chairman, and on his retirement in 1906, in consequence of his advancing years, he was presented with his portrait in oils at a public luncheon given in his honour. The following year the Council of the Royal Horticultural Society conferred upon him the well-merited distinction of the Victoria Medal of Honour, a distinction that gave pleasure not only to his immediate friends, but to all who were acquainted with the recipient and his work. Although no longer able, owing to his great age, to take an active part in the management of the business, which has now devolved on his talented sons, he continues to take a keen interest in what is being done.

As so well-known to all who are in any way acquainted with what has been accomplished at Newtownards in the development of the rose, Mr. Alex. Dickson has from the first devoted special attention to this branch of the firm's activities, and the success has been achieved by him in conjunction with Mr. G. Dickson, jun., is little short of marvellous. During the period over which the raising of seedling roses has extended, between 120 and 130 varieties have been introduced to cultivation, and if every one of this number has not been able to hold its own in its particular class and shade of colour, a surprisingly large proportion of them have maintained a very prominent position among the leading varieties, new and old. The most conclusive proof of the staying powers of the Newtownards roses is perhaps to be found in the catalogue of the National Rose Society for the current year. This catalogue contains 600 varieties selected by rosarians who are well acquainted with the distinctive characteristics and merits of the roses, well nigh innumerable, now in cultivation, and of these fifty were raised by Messrs. A. Dickson and Sons. This fact is of special interest as showing that, while a full share of attention has been devoted to the production of varieties remarkable for the fine form and attractive colouring of the flowers, the importance of a good constitution and free and continuous flowering has been constantly kept in mind.

In giving attention to the roses that have been introduced within the past three years, it was interesting to see how great is the demand for novelties, this demand being undoubtedly stimulated by the knowledge that the seedling roses raised by the firm are subjected to a long and thorough test, especially with regard to constitution and freedom and continuity of flowering before they are selected for distribution. As mentioned by that distinguished rosarian, Mr. H. E. Molyneux, in our issue of Octobed 19, 20,000 stocks have been worked with that remarkably distinct and highly effective single rose Fireflame, which obtained the award of a gold medal at the Southampton exhibition of the National Rose Society in June last. So large a number of stocks worked with one variety is enough to fill one with astonishment, and would probably have done so had not the glorious display of colour produced by the breadths of maidens of the variety diverted attention from them. The flowers are larger in size and similar in shape to those of Irish Elegance, but the colour is an effective shade of old gold. It cannot well fail to rank high as a garden rose, and for decorative purposes in a cut state, the flowers will, unless my judgment is at fault, far surpass in popularity those of Irish Elegance, high as that unquestionably is.

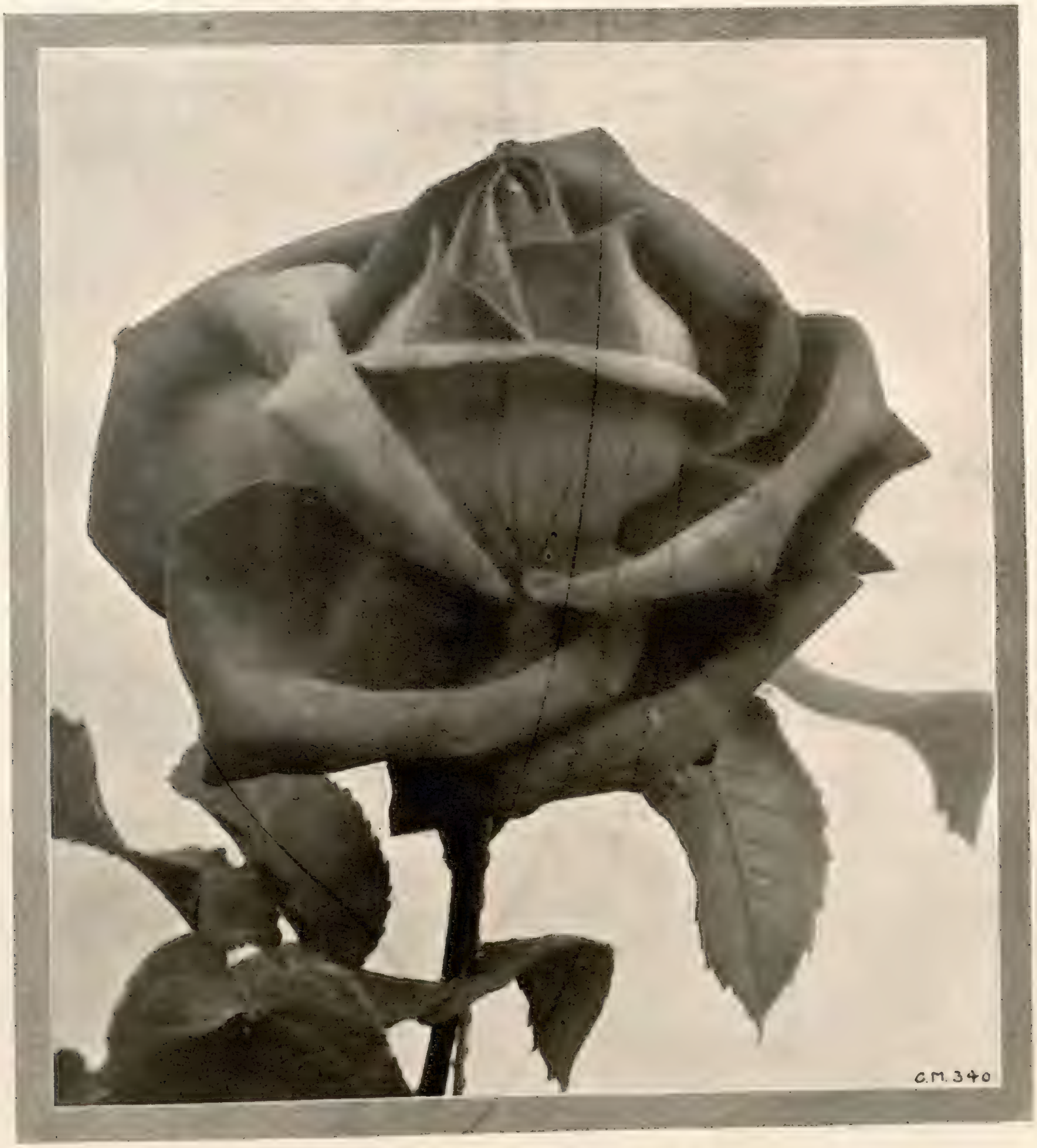
Especially interesting to me in walking through the quarters in the nurseries that are devoted to the most recent of the new varieties, were the great breadths of George Dickson (H.T.), H. Vessey Machin (H.T.), and Edward Bohane (H.T.), a trio of crimson roses of such high merit as to render it difficult to speak of them in measured terms. George Dickson is in every way worthy of the distinguished name it bears, and will unquestionably attain to a high degree of popularity among exhibitors. The flowers are large and splendidly built, and the colour is a rich velvety crimson. In 1911 this variety received the award of a gold medal at the National Rose Society's exhibition at Ulverston, the silver medal for the best rose in the show at Bath on July 12, the silver medal for the best H.T. at Helensburgh on July 14, the first prize for the best H.T. at Gourock on July 22, and the silver medal for a new rose at the Yorkshire Agricultural Society's Show, July 22. This year it was awarded the silver medal for the best H.T. shown in trade collections at the exhibitions held by the National Rose Society in London and Belfast on July 9 and 19 respectively, and on September 24 an Award of Merit was made in its favour by the Royal Horticultural Society's Floral Committee. Greater distinction a new rose could not well obtain. As in the case of the variety immediately preceding it, H. Vessey Machin bears the name of a distinguished rosarian who is held in the highest estimation, and is in every way worthy of it. The flowers are of large size with stout and reflexed petals, and the colour is rich crimson. It received the award of a gold medal at the National Rose Society's exhibition at Belfast on July 19. Edward Bohane (H.T.) is a grand crimson flower, large in size, of superb form, and delightfully fragrant. This has yet to win its gold medal, but when the time comes it is not likely to prove a difficult task. It was exhibited for the first time at the exhibition held by the Royal Horticultural Society on September 24, when it unanimously received an Award of Merit.

Very distinct in character and colour to the three fine roses referred to in the preceding paragraph is Mrs. Mackellar (H.T.), which the firm submitted to the Floral Committee of the Royal Horticultural Society on September 24, when it received an Award of Merit. When at Newtownards this variety greatly impressed me, for it has a vigorous habit, and is free in flowering, and of much promise as a garden rose, while the blooms are of so high a quality as to be able to render good service in a competitive gathering. The flowers are of large size, fine form, and delightfully fragrant, and the colour is a soft yet bright shade of yellow. Especially attractive, also, were the breadths of the exquisitely beautiful decorative rose, Queen Mary, which received the award of a silver-gilt medal from the National Rose Society on July 9. It has a free branching habit, the flowers are borne in great profusion, and the blooms as they commence to open are bright red, and when fully expanded the petals are rich yellow with a broad margin of brilliant rose.

The novelties of 1911 form a large and important group, and in making a critical inspection of them in going through the breadths in the nurseries, note was made of the following as being of quite exceptional merit: Alexander Hill Gray (T.), an important addition to its class, the blooms of large size, superb form, and of so rich a shade of yellow as to suggest the colouring of Marechal Niel; Carine (H.T.), a beautiful decorative rose that is highly effective in the garden, the flowers being of fine form, and borne on stout stems, while the colouring is a delightful combination of blush, carmine, fawn and salmon; Duchess of Westminster (H.T.) is a distinct variety, bearing large, finely-formed flowers, the colour rose-madder; an excellent exhibition rose, and described as especially suitable for pot culture. Ferniehurst (H.T.) is an attractive variety, of value both for exhibition and the garden, the flowers of good size and fine form, and the colour fawn suffused with rose-pink, deepening to copper colour in the centre. Lady Barham (H.T.), a grand exhibition rose, the blooms large, and the colour a beautiful shade of coral pink. Lady Greenall (H.T.), a superb addition to the rich orange-yellow roses now becoming so popular, and will be found of special value to exhibitors. Lady Margaret Boscawen (H.T.) is a valuable garden rose with fawn-pink flowers, which are produced in the most profuse manner; and Melody (H.T.), a beautiful garden rose, remarkably free in blooming and very effective, the colour being saffron-yellow passing to primrose at the edges of the petals.

One of the oldest of the Newtownards roses that have a place in the National Rose Society's catalogue is Margaret Dickson (H.T.), which was introduced in 1891, and is one of the best of the strong-growing blush-coloured roses for the garden, making a fine standard. The others include: Avoca (H.T.), a distinct and effective variety, suitable both for the garden and exhibition stage, the flowers rich scarlet-crimson, and remarkable for their fragrance; Charles J. Grahame (H.T.), a richly-coloured rose, useful both for exhibition and the garden, the flowers large, fragrant, and of a bright crimson hue; Countess of Annesley (H.T.), a vigorous garden rose, with fragrant flowers of a pleasing rose-salmon hue; Countess of Derby (H.T.), also a fine garden variety, the flowers soft rose coloured and very freely produced; Dean Hole (H.T.), a valuable variety, suitable for the garden and exhibition stage, the blooms large, fragrant, and of fine form, and the colour soft rose; Dorothy Page Roberts (H.T.), a beautiful pink bedding rose; Dr. J. Campbell Hall (H.T.), rose, shaded white; and Dr. O'Donel Browne (H.T.), carmine, are two excellent garden varieties, the second of the two being also of much value for exhibition; Duchess of Wellington is a distinct garden rose, strong in growth, and bearing saffron-yellow flowers that have the additional merit of being fragrant.

Prominent among the varieties that are equally valuable for exhibition and the garden is Florence Pemberton (H.T.), a charming rose with cream-white flowers suffused at the margins with pale rose, and one of the best of its colour for standards; G. C. Waud (H.T.), one of the varieties distributed by the firm four years since, is of special excellence, the colour an effective shade of red-rose, and the blooms are of fine form, possessing the delicate perfume of the tea-scented varieties; while an excellent exhibition rose of its colour, it possesses much value for garden decoration; Harry Kirk (T.), is a vigorous growing variety with sulphur-yellow flowers, that has proved of much value as a bedding rose, and should be largely planted; Hugh Watson (H.P.) has proved a useful addition to the crimson hybrid perpetuals, it being valuable for the garden and exhibition stage, and the shapely blooms are delightfully fragrant. The single varieties of the Irish Elegance type are so well known and highly appreciated that they need hardly be mentioned. They all make effective displays of colour in the garden, and the variety mentioned is unquestionably the most popular of all the single roses for the decoration of the dinner table. The brilliant crimson Liberty (H.T.) is one of the best bedding roses of its colour, and excellent for pot culture, and is useful for the supply of roses for decorative purposes in a cut state. M. H. Walsh (H.P.) is a good crimson rose for exhibition and garden decoration, its blooms being not only suitable for taking part in a close competition, but are very fragrant. Mrs. Sharman Crawford (H.T.) is an excellent variety which has long been in cultivation, and is still considered one of the best light pink varieties for bedding and standards, and useful for exhibition.



H.T. ROSE GEORGE DICKSON.

Flowers rich crimson. Raised by Messrs. Alex. Dickson and Sons, and received the N.R.S. Gold Medal in 1911 and the R.H.S. Award of Merit, September 24, 1912.

Of surprising interest were the many beautiful roses, of which there were considerable breadths, under number, and many are the notes that were made with reference to them. But until such times as they have received their names no useful purpose would be served in referring to them other than to say that they include many varieties which indicate the remarkable progress that is being made in the development of new shades of colour. Time might doubtless have been pleasantly spent in a walk through the departments other than that which is devoted to roses, but this latter, which includes many large fields as well as the huge quarters in the nurseries, contained so much of interest that the end of a fairly long day was reached before it was exhausted. G.

## FAGUS BETULOIDES.

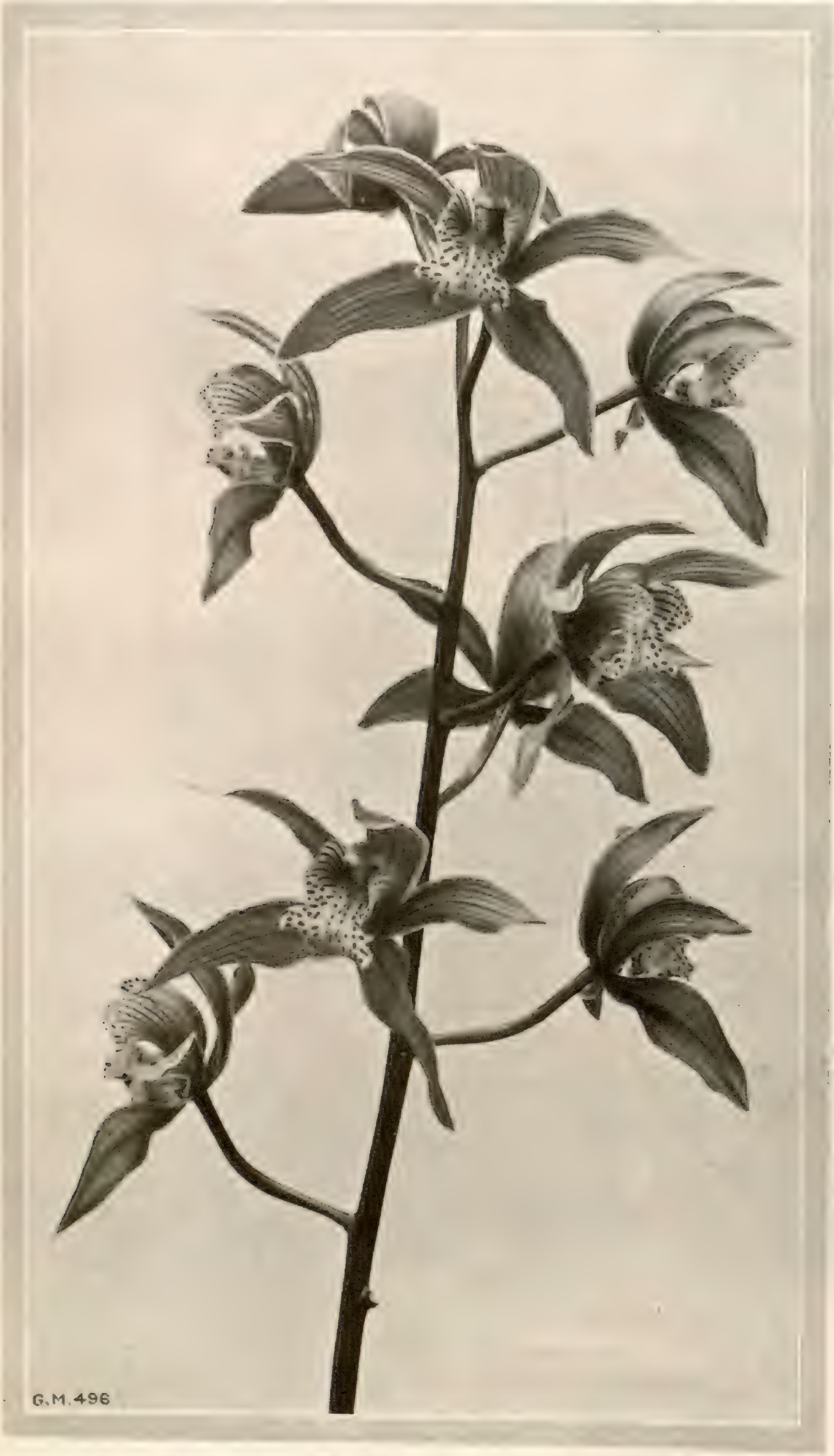
Although this evergreen beech is too tender for general cultivation in the British Isles, there are places in the south and south-west counties where it thrives fairly satisfactorily, and, could it be obtained more easily, it would doubtless become a popular tree. Unfortunately, no one appears to be able to raise a good stock of plants, and there are numerous difficulties in the way of introducing seeds from its native habitat. It is found wild in the extreme south of South America in a latitude very similar to that of the South of England. Its headquarters appear to be in Tierra del Fuego, and its presence there was described more than half a century ago in Captain King's "Voyage of the Adventure and Beagle," for on page 576 the following passage occurs: "At Port Famine and in the neighbourhood the evergreen beech grows in the greatest abundance, and reaches a very large size. Trees of this species three feet in diameter are abundant; of four feet there are many, and there is one tree (perhaps the very same noticed by Commodore Byron), which measures seven feet in diameter for seventeen feet above the roots, and then divides into three large branches, each of which is three feet through." It is further stated that this tree forms the prevailing feature in the scenery of Tierra del Fuego.

In the British Isles it is seen as a bush or small tree usually below eighteen feet in height. The small oval leaves are thick in texture, and dark green in colour, and the fruits, which, though very small, resemble those of the common beech in shape, are sometimes produced, but, judging from the scarcity of the species, they are usually unfertile. It is possible to raise plants by layering branches, but it is a slow process, and although cuttings have been known to root, the general results of propagation by this method of procedure have not been satisfactory. W. D.

## NEW PLANTS, ETC.

### CYMBIDIUM DORIS.

This is a quite new hybrid, and has been raised by crossing the tall, spiked, pink C insigne with the large-flowered, arching C. Tracyanum. It has a fairly tall spike that carries a number of flowers of large size. The sepals and petals are creamy, but with thin lines of red-brown and a pink suffusion. The lip is very reminiscent of C. Tracyanum, is waved, reflexed at the apex, pale cream-yellow, with red-brown markings chiefly towards the margins. Our illustration represents the flower spike about one-half the natural size. F.C.C., R.H.S., October 22. Messrs. J. and A. McBean, Cooksbridge.



G.M.496

CYMBIDIUM DORIS.

A fine new hybrid from C. insigne and C. Tracyanum; flowers about twice as large as illustrated, creamy-buff, and pink, with red-brown markings. F.C.C., R.H.S., October 22. Messrs. J. and A. McBean, Cooksbridge.

### CYPRIPEDIUM PALLAS ATHENE.

A handsome hybrid of unknown parentage (see p. 813), but obviously a descendant from C. insigne Harefield Hall. The broad dorsal sepal is white, with a green base and purple markings, while the petals and lip are green and brown. F.C.C., R.H.S., October 22. Mr. W. R. Lee, Plumpton Hall, Heywood, Lancs.

### CATTLEYA LABIATA OPAL.

A large-flowered white form that has a faint tinge of pink on the yellow-throated labellum. The plant exhibited carried four shapely and substantial flowers. F.C.C., R.H.S., October 22. Baron Bruno Schroder.

### CATTLEYA MAGGIE RAPHAEL, GOODSON'S VAR.

A fine form of a popular hybrid, and one that has a very handsome crimson lip, lined with yellow. A.M., R.H.S., October 22. H. S. Goodson, Esq.

### CATTLEYA PRINCESS MARY.

A beautiful hybrid from C. Warneri alba and C. Dowiana. It has white sepals and petals, and a gold, white, and purple lip. Pantia Ralli, Esq., Ashstead Park, Leatherhead.

### LÆLIO-CATTLEYA GOLDEN ORIOLE, HOLFORD'S VARIETY.

This very bright autumn-flowering hybrid is derived from L.-c. Charlesworthi and Cattleya aurea. The sepals and petals are a trifle narrow, and bright orange-yellow, while the large lip is light crimson, freely veined and shaded with gold. A.M., R.H.S., October 22. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### LÆLIO-CATTLEYA HEMPTINNEI.

This is a handsome hybrid between Cattleya Dowiana aurea and L.-c. Rouselensis. The flowers are of medium size, substantial, and bright. The sepals and petals are deep yellow and the lip is of similar colour with dark red markings. A.M., R.H.S., October 22. Comte Joseph de Hemptinne, St. Denis, Ghent.

### SOPHRO-LÆLIO-CATTLEYA ZANDHAGE.

A shapely flower with soft rose-coloured sepals and petals, and a broad red-crimson lip The parentage was given as Cattleya Enid and Sophro-lælia Heatonensis. A.M., R.H.S., October 22. Mr. E. H. Davidson, Orchid Dene, Twyford.

### SOPHRO-LÆLIO-CATTLEYA MENIPPE, VAR. H. S. GOODSON.

A rather small flower, shapely, and of a deep reddish-rose colour with darker, crimson-tinted lip. A.M., R.H.S., October 22. H. S. Goodson, Esq. (gardener, Mr. Day), Fairlawn, Putney.

### BRASSO-CATTLEYA DIGBYANO-MOSSIÆ THE DELL VARIETY.

This is a lovely orchid with very large, white flowers, the lip being particularly well developed and remarkably fringed. Towards the base of the lip there is a small, pale-yellow area. F.C.C., R.H.S., October 22. Baron Bruno Schroder (gardener, Mr. J. E. Shill), The Dell, Egham.

### SCOLOPENDRIUM VULGARE CRISPUM NOBILE BOLTON'S BROAD FORM.

A splendid hardy fern with a name most unfortunately long. The fronds are particularly broad, and some of them 2½ft. long; all are finely frilled and of a rich green hue. A first-rate specimen, fully a yard across, was exhibited. F.C.C., R.H.S., October 22. Mr. W. B. Cranfield, East Lodge, Enfield Chase.

### NEPHROLEPIS MILLSI.

A neat plumose form, and of more erect and open habit than most of the recent introductions. The fronds are finely divided and elegant, but not of "mossy" character. A.M., R.H.S., October 22. Mr. W. A. Manda, St. Albans.

### CHRYSANTHEMUMS.

Toddles.—A very brilliant crimson single variety with pointed florets, and a narrow yellow zone around the yellow disk. Award for colour. Mr. H. W. Thorp, Worthing.

Bob Pulling.—A splendid, large yellow Japanese variety, previously described. A.M., R.H.S., October 22. Mr. H. J. Jones, Lewisham.

Hon. Mrs. John Ward.—A large Japanese variety with long, drooping florets, fairly broad, and of a lovely deep primrose. A sport from White Queen. F.C.C., N.C.S., October 21; A.M., R.H.S., October 22. Mr. C. Beckett, gardener to the Hon. J. Ward, Chilton, Hungerford.

Master Rex.—A very distinct and handsome Japanese variety, with loosely curling and twisting florets that make up a capital bloom. The colour is bright amber. F.C.C., N.C.S., October 21. Mr. G. Mileham, Leatherhead.

Mrs. Joan Miller.—A wide Japanese variety with broad florets that narrow and curl a little at the tips. The colour is bright rose-pink with silvery reverse. F.C.C., N.C.S., October 21. Mr. G. Mileham, Leatherhead.

Vera Potterton.—A very solid, reflexing Japanese variety of medium size. The inner florets are short, blunt, and broad. A fine pink shade. Commendation, N.C.S., October 21. Mr. Thos. Page, Hampton.

Mrs. John Maher. A medium sized Japanese variety, the graceful, refined flowers being carried on long, stiff stems. Pure white. F.C.C., N.C.S., October 21; A.M., R.H.S., October 22. Mr. Thomas Page, Hampton.

Sussex Yellow.—A very distinct rich yellow single variety with several rows of broad florets that recurve at the tips. A handsome variety. F.C.C., N.C.S., October 21. Mr. Norman Davis, Framfield, Sussex.

Ideality.—A lovely white single variety with broad florets, that recurve a very little at the tips. This variety is the result of crossing Mary Anderson with Mensa. F.C.C., N.C.S., October 21. Mr. Norman Davis, Framfield.

Mrs. Loo Thomson.—This is a large single variety of great promise, as it is a beautiful primrose sport from the well-known Mensa. F.C.C., N.C.S., October 21. A.M., R.H.S., October 22. Mr. Norman Davis.

Charles Kingsley.—Another grand single variety with substantial florets of a lovely shade of deep yellow. There is also the faintest possible tinting of bronze on some of the florets. F.C.C., N.C.S., October 21; A.M., R.H.S., October 22. Mr. Norman Davis, Framfield.

Phyllis Cragg.—A useful light pink reflexed Japanese variety, evidently a good substantial market variety, colour, stem, and form being alike good. Commendation, N.C.S., October 21. Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow.

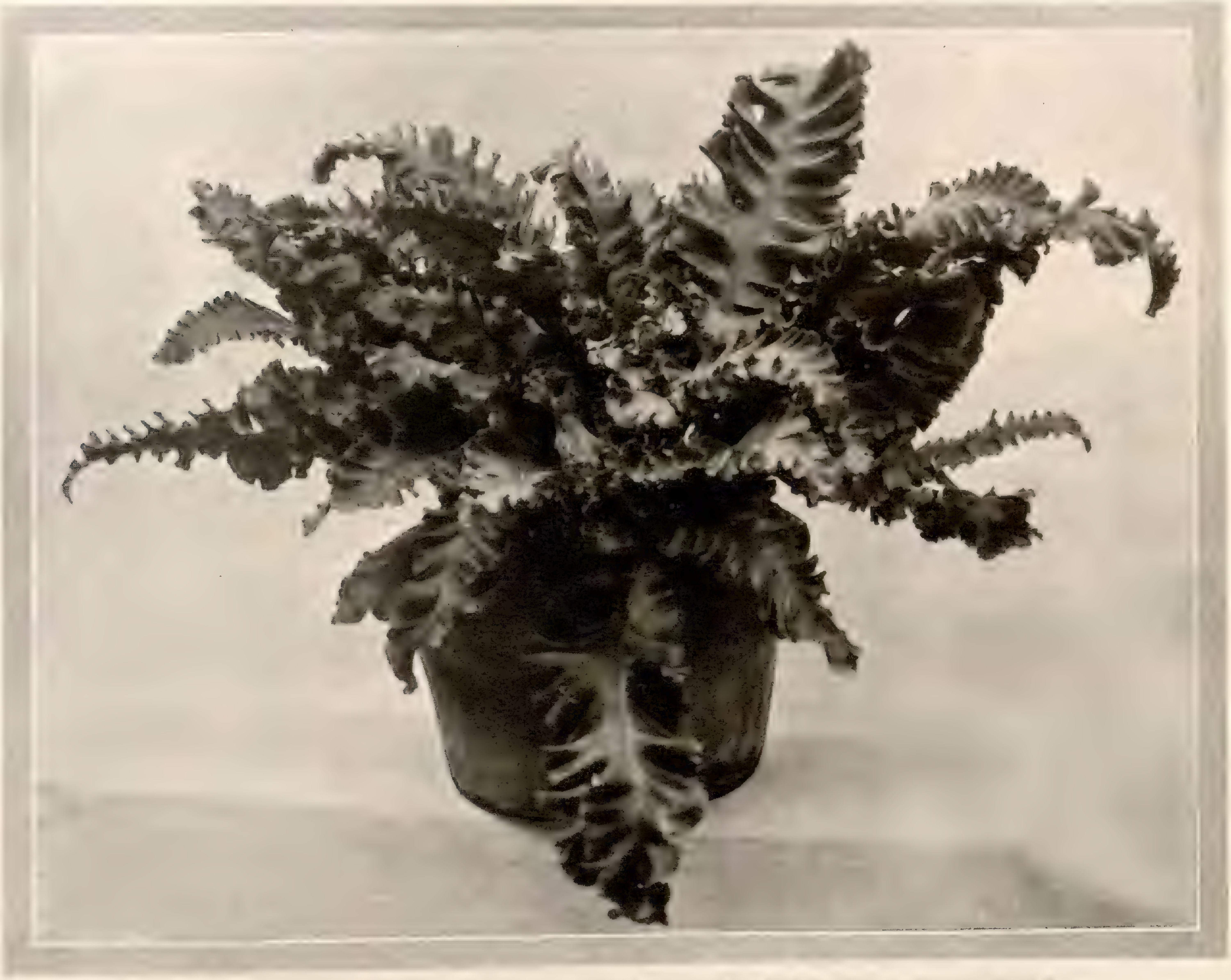
J. W. Streeter.—A primrose-yellow incurved variety, the flower shapely and solid. A sport from the white H. W. Thorp. F.C.C., October 21; A.M., R.H.S., October 22. Messrs. Cragg, Harrison, and Cragg, Hounslow.

Miss M. Borrer.—A large, free-flowering single variety, producing fine sprays of shapely rose-pink flowers. A.M., R.H.S., October 22. L. F. Harrison, Esq. (gardener, Mr. A. H. Chapman), Orchards, East Grinstead.

White Beauty.—A lovely medium-sized, single variety of the purest whiteness. A charming chrysanthemum grown in spray form. Commended, N.C.S., October 21. Mr. Philip Ladds, Swanley Junction.

Primrose Queen.—A good Japanese variety of elegant shape and refined appearance. The colour is light yellow, shading to pale primrose towards the tips of the outer petals. F.C.C., N.C.S., October 21. Mr. Martin Silsbury, Shanklin, Isle of Wight.

**Tomatoes.**—Those raised early in October will require putting into thumb pots. Use a sandy compost, and when potted place on shelves in a house with a temperature of 55 to 60 deg. Be very careful not to overwater the young plants.—G. E.



SCOLOPENDRIUM VULGARE CRISPUM NOBILE, BOLTON'S BROAD FORM.
A noble hardy fern with beautifully-frilled fronds. F.C.C., R.H.S. October 22. Mr. W. B. Cranfield, East Lodge, Enfield.

## EUCRYPHIA CORDIFOLIA.

The three species of eucryphia which are in cultivation are all natives of the Southern Hemisphere, two being found in Chili and other parts of South America, and the other in Tasmania. The two American species are more ornamental than the other, and of the two E. pinnatifolia is the best known, for, although not a common plant, good specimens are met with in gardens here and there throughout the southern counties, where its large white flowers, which bear some resemblance to the blossoms of a single camellia, are at their best in July.

The second species, E. cordifolia, is less well known, although an occasional specimen is seen. Its native habitat is said to be the humid forests of Chili, Chiloe and Valdivia, where it forms a large bush or small tree. It may be distinguished from E. pinnatifolia by its simple instead of pinnate leaves. These are broadly oblong, 2in. to 3in. long, and about 1¾in. in width, and, like those of the other species, evergreen in mild winters but deciduous when severe frost occurs. The white flowers, which are about 2in. across, appear singly from the leaf axils, the colour of the petals being relieved by the central mass of golden stamens.

It is said to have flowered for the first time out of doors in the Coombe Wood nursery of Messrs. J. Veitch and Sons, in 1897. As is the case with the better known species it dislikes root disturbance, and appears to give most satisfactory results when planted in rather light, well-drained loam into which a little peat has been dug. W. D.

## RAISING PERPETUAL-FLOWERING CARNATIONS FROM SEED.

The carnation is an old, old flower, and much time and money have been spent on tracing its history. The perpetual-flowering carnation is, as we all know, a florist's production of recent years, and those of us who were associated with the raising of new varieties when Miss Lizzie MacGowan was considered the limit of productiveness, realise the progress and great possibilities which lie before us. This work, however, can never progress unless seedlings are raised.

The percentage to-day is about one good novelty in five thousand seedlings, so that the chances of great success are small. It does not follow that if you raise five thousand seedlings you will procure a good novelty. On the other hand, you might raise only half a dozen and obtain a second Enchantress. The glorious uncertainty of it all adds interest to anyone possessed of a speculative mind. Only recently we paid perhaps the highest price ever given for the stock of a perpetual carnation in this country, and yet the variety was procured quite by chance; and last year I gave a city clerk a price well into two figures for a perpetual carnation seedling he obtained from an eighteenpenny packet of seed.

This may read like a chapter from the "Arabian Nights," but such are the possibilities if the best seeds are sown. You have to open quite a number of oysters before finding a pearl. Human nature itself is very much mixed, as one finds by taking stock of a crowd, and it is not to be marvelled at if seedlings of the perpetual carnation are mixed in quality.

The charm of perpetual carnation seedlings is that they will flower within nine months from the date of sowing the seeds, and the percentage of singles and "splitters" from good seeds is comparatively small. It is unnecessary to deal with the simple methods of raising seedlings and their culture afterwards, because those who grow carnation plants can raise seedlings. The best season to sow is a debatable point, but there is less importance in the best season to sow the seeds, than there is in when it was fertilised and ripened. As a rule, it is best to sow the seeds now or during the winter, so that the seedlings flower for the first time during spring and summer, when the useless ones can be discarded, and the others grown to produce flowers during the following dull season. If seeds are sown in spring large plants will be utilising valuable room in winter, and some of them will be useless. Hence winter sowing is the best.

It is always a surprise to me to see Marguerite carnations grown in pots for autumn flowering, when beautiful seedling perpetual varieties could be grown for the same expense in labour, and in the case of the latter there is always the chance of obtaining something of phenomenal merit. I believe there are instances of men having dug a well in their back garden and struck gold. But that does not occur as a general rule.

The perpetual carnation is a florist's flower, but no flower can live upon the past, and the present is soon gone. That is why new seedlings must be raised, so that the good work may go on, and our collections enriched from time to time with varieties that in some attributes are superior to the older forms.

Montagu C. Allwood.

Hayward's Heath.

## GARISH DAHLIAS.

I am afraid the remarkable effusion, or shall I call it a tirade, against the pæony-flowered dahlias from your correspondent, "C. T. D.," on page 783, has come rather late in the day to affect their popularity as garden flowers, a popularity they are fully entitled to, and this I venture to assure "C. T. D." they are likely to maintain. But evidently your correspondent judges the flowers as he sees them at the autumn flower shows, and he bewails the fact that they are irregular in outline and petal. Why, this is the very reason they caught the public eye, and came into favour at once as beautiful garden flowers. They were never intended to be exhibition flowers in any sense of the word, and are taken to flower shows by trade firms so that the public may have an opportunity of seeing them, and if your correspondent's knowledge of this section has only been obtained by these means, I feel sure he will excuse my saying his knowledge of this flower is very imperfect.

As to garishness, save the mark! Why should a bright colour be beautiful in one flower and garish in another? Why should scarlet in the double dahlia be a gem, and in the pæony-flowered "simply awful"? To me it is inexplicable. I have never yet heard anyone who even suggested that the pæony-flowered forms were an improvement on any existing class of dahlia, and I think "C. T. D." must have drawn on his imagination in making the suggestion. There is no doubt that this section owes much of its popularity to the superintendents of our public parks and gardens, as in these latter they have been, and are still, extensively used, and I do not think even "C. T. D." can regard these gentlemen as lacking in horticultural taste, but I do think they are often leaders of such taste, as seen in this particular flower.

I do not believe any single person is under the impression that the pæony-flowered dahlia is perfect, but to reduce it to the so-called refinement of the other dahlias would effectually kill its mission in this world, viz., to provide a bright display of flowers in our borders and beds during the autumn months. I admit it wants improving, not so much in the flower itself as in the stems. Many of the first introductions should now be consigned to the rubbish heap to make way for the improvements that have already been made in this direction during the past few years, as these have good sturdy habits and strong stems. As to colours, that is only a matter of individual taste, for we have in the section quite as many soft shades and tones as loud or bright ones.

I also notice "C. T. D." would like to put the old florist's rule-of-thumb round the collarette section, but I am afraid it is too late in the day to attempt such a thing, for there are already two distinct forms of the flower recognised—the French type, with rounded petals and a close-fitting collar, and the German type with pointed star-like petals and a loose, open collar. I am afraid your correspondent's knowledge of this section is of a somewhat cursory character, for he says their collars are invariably irregular, like a bad set of teeth; this is erroneous, for some sorts produce perfect collars. I have seen scores of them during the past season. To my mind it would be a mistake to attempt to adopt a close-fitting collar to the star-like type, for it would be entirely out of character, and take away that lightness and delicacy which at present is their chief charm.

I trust nothing in the shape of a standard of perfection will be drawn up by any society. Such a standard has not been adopted for the cactus varieties, and they seem to have come along pretty well during the past thirty years without one.

Doubtless "C. T. D.," in his closing remarks and advice to dahlia raisers and growers, thinks he is likely to guide the dahlia world, but in spite of his adopting the editorial "we," he is not likely to persuade people to follow him in his particular direction.

J. B. Riding.

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The note on "Garish Dahlias" from the pen of C. T. D." must, I feel sure, call forth criticism from many lovers of the pæony-flowered dahlias. This section has assuredly come to stay, for every year is placing them on a firmer footing, and I contend that they are most beautiful for garden decoration.

I raise no objection to "C. T. D.'s" eulogistic remarks about the more symmetrical show, fancy, pompon, and single dahlias; indeed, I go further, and say I heartily agree with him that they are perfectly lovely. I, however, take a broader view, and see beauty in the "ragged-looking pæony." May I suggest that he takes a somewhat autocratic view, and forgets that we are now living in the twentieth century, and faced with the problem of suiting a far wider range of tastes than was the case in the Victorian era.

In these gardens we grow all sections of dahlias. This year about 2,000 plants were used to furnish the dahlia garden, and nearly half of these belonged to the pæony-flowered section. The giant decorative, collarette, single, and pompon sorts we grow freely, and the show, fancy, cactus, dwarf cactus, stars, etc., in moderate numbers. The garden devoted to them was a magnificent sight from early in July to early in October, and was seen by many hundreds of people of all classes. It was interesting to observe the opinions expressed on the various sections, but I unhesitatingly say that the pæony-flowered and the collarette sorts strongly appealed to all.

Surely it is not too much to expect that, some few out of these hundreds of visitors possessed taste. Among the number was a member of one of the oldest dahlia-growing firms in this country. When the pæony-flowered section was introduced he had a strong objection to them but now he is a most enthusiastic lover of the section. I am sorry that "C. T. D.'s" protest did not appear a few weeks ago, before the frosts put all types on the same footing, as I should have been pleased to have extended to him an invitation to come and see our dahlias. Once having seen them, I should have been surprised if he had gone away unconverted as to their beauty and usefulness for garden adornment, or at least if he had gone away without a very considerable broadening of his view.

Arthur Cobb.

Duffryn Gardens, near Cardiff.

## STORING DAHLIA ROOTS.

Many roots of valuable dahlias are often lost through bad storing. Frost is not the cause of the loss in every case, although it does destroy great numbers. When only stored under loose straw on a floor, where cold draughts—often frosty ones—penetrate, the roots are soon ruined. Too often no fine, close-fitting material is used in addition to the straw or other litter, and then frosts reach the roots. Again, dahlia tubers are often stored in damp cellars or similar places, and the crowns become badly infested with fungus, and decay in the spring-time.

The best way to store the tubers is to select a comparatively dry shed free from cold draughts, to well embed the roots in clean sand, the latter just covering the crowns, and to put on a thin covering of straw, and more straw or mats in case of very severe frosts. Very rarely indeed will fungus attack the tubers when stored in such conditions, and in spring they will be plump and sound, and soon produce a number of young suckers suitable for propagation.

Geo. Garner.

## PERPETUAL CARNATION ROSETTE.

The activity of the American raisers of carnations would appear to be in no way abated, for they continue to place at the command of cultivators varieties that are at once distinct from or superior to the many and varied forms that are now generally grown. One of the most noteworthy of the new perpetual carnations with self-coloured flowers that have had their origin in the United States is the exquisitely beautiful variety Rosette which during the present autumn has been splendidly shown both by Messrs. Allwood Brothers, of Hayward's Heath, Sussex, and Messrs. Stuart Low and Co., Bush Hill Park, Enfield. Rosette is one of the most refined of the perpetual varieties, and has the merit of possessing a good constitution, and being very free in flowering. The flowers are rather above medium size, of exquisite form, and the colour is a delightful shade of rose-cerise. Not only is the form of the flowers all that could well be desired, but they have an exceptionally good calyx that is wholly free from the defect of splitting, a point of no small importance in carnations largely used for decorative purposes in a cut state. The flowers that we have the pleasure of illustrating were selected from a large number that were exhibited at a recent meeting of the Royal Horticultural Society by the Messrs. Allwood Brothers, and, it may be added, these were remarkable for their uniformity both as regards elegance of form and attractiveness of colour.

## NOTES ON PERPETUAL CARNATIONS.

A few notes concerning perpetual carnations, just before the commencement of the winter season, may perhaps be of interest to many. A glance around reveals a great improvement in the size of plants and blossoms, as compared with 1911. This I regard as being partly due to the fairly cool weather experienced last summer, and partly owing to the rigid selection of the best and strongest plants to provide the cuttings for the present stock.

The free use of salt spray has prevented any attack of red spider, and rust is practically an absentee this season, much to our pleasure. This insidious foe is somewhat troublesome with growers who have badly-ventilated houses, or who have a miscellaneous collection of plants to grow in the same houses, but to those who can grow their carnations away from the ordinary run of greenhouse plants this fungoid disease should occasion but little trouble. The great point is to secure an even temperature, plenty of air circulating amongst the plants, and to use a suitable spray at short intervals.

The new patent wire plant supports, which can be easily affixed to slender bamboo sticks, are ideal for pot plants. They are decidedly neat in appearance, and hold the growths in an erect position without bunching them as one had to when using raffia or other tying material. Moreover, one can freely cut the blossoms without any trouble or derangement of the growths left.

For blossoms which split the calyx I can heartily commend the use of the new wire calyx rings. They entirely supersede the old rubber rings, and are much easier to fix, hold the calyx firmly without pinching, and, being very thin and green in colour, are almost invisible.

Reverting to other matters, I would urge the free use of lime rubble and crushed oyster-shell for incorporation with soil for potting purposes, both being splendid agents for imparting health and vigour to carnations. They can also be used with other ingredients for the purpose of top-dressings.

A short time back I made a brief appeal for the increase of fragrance in carnations. Many otherwise grand flowers lack this necessary attribute, and it is time that raisers devoted more attention to securing a rich clove-like fragrance in addition to finely-formed, well-coloured blossoms. To ensure this, one would have to exercise care in the choice of seed and pollen parents, and make an even "more rigid" selection of the young flowering seedlings, but it would be worth while. A little group of seedlings, flowered for the first time during this past summer (1912), have been remarkable for their fragrance, but the main batch were almost devoid of perfume. A few special forms will be carried forward with the idea of bringing us a race of perpetual varieties whose strongest point shall be fragrance.

PERPETUAL CARNATION ROSETTE.
A beautiful variety with rich rose-cerise flowers.

Of our standard varieties I have this season again noted that for quickness to blossom and for continuity in flower production Elegance was first among the pinks, and that this year May Day was the first to crop freely. This is ideal for earliness. Elegance now promises well, and will not fail us for many months to come.

Marjorie is by far the earliest and freest white I have handled. It is not so large as the newer American whites, but it is the first of all with us, and successional flowers follow very quickly. Hitherto I have not had a poor bloom of this variety, and the stems are stiff, clean, and straight, and the calyx, petals, and form distinctly good. At times it is of the purest white, at others a soft rosy flush suffuses the interior of the blossoms, but it is always lasting and delightful.

Mrs. Crook, the crimson fancy, is very continuous, and a small batch is hardly ever out of flower. I like Regina more than ever; it is very fine, free and large, but Rex seems to be following Mrs. Burnett, which I like for its colour and perfume. Mikado is better than ever, standing on guard against its rivals, Geisha and Fairmount. La Mode cannot stand against these, in my opinion, and I fancy Geisha in particular is going to be very popular.

P. S. Hayward.

## NERINES.

Since the days when the old Nerine sarniensis (Guernsey Lily) was introduced many fine species and varieties of this showy genus have found their way into our gardens, but we do not find them grown to any considerable extent. Nerines, though not hardy, except in the most favoured spots in this country, are nevertheless well worthy of cultivation in all places where room can be afforded them. Most of them will succeed well in a cold frame, provided the frost is kept from them during the winter, and when all danger of frost is past they should be stood in a sunny position in the open until the foliage dies down. It is thought by some that repotting prevents the bulbs from flowering freely, but that is not my experience, and, having grown some hundreds, which bloomed most profusely, a few remarks upon management may be of general interest.

The nerine is a native of South Africa, and, with us, flowers in the autumn before the foliage has developed. When grown in pots, about five bulbs should be placed in 32's or 24's, according to the size of the bulbs and the variety grown, as some kinds make much larger bulbs than others, and their foliage, too, is much stronger, and therefore needs more room to develop. The bulbs should be potted up in August, and stood in a cold frame, so that the lights could be put over them to protect them from rain, as it is necessary to keep the soil dry until the flower-buds appear, when water should be given in moderate quantities. Air should be admitted freely both day and night so as to induce the flower stems to grow as stout as possible, and on no account should the plants be introduced into artificial heat, as this causes the flower-spikes to draw up spindly, and renders them incapable of supporting the flowers in an upright position. Large, well-ripened bulbs should produce two trusses of bloom each; it is seldom they produce more. As the flower-stems appear before the leaves, it will be necessary when using these plants for decorative purposes to employ other foliage to cover the pots.

When the plants have gone out of flower they should be stood in a cold frame, and here the foliage will continue to grow provided frost is excluded, so that by spring it will have become thoroughly developed. When all danger of severe frost is past, the pots should be stood in a sunny position in the open where the bulbs will become ripened and the foliage die off, so that a rest may be given them before repotting in August.

The most popular kinds grown in pots are N. Fothergilli. This has a fair-sized bulb, and as the foliage is rather broad it requires more pot room than some of the smaller-growing kinds. The flower stems are stout, carrying from six to eight or more bright crimson flowers. There is a variety known as N. Fothergilli major, which is similar in every respect except that it grows larger. N. sarniensis is a smaller-growing kind, producing bright red flowers on slender stems in September and October. This is most useful for cutting, as the individual flowers remain in perfection for a considerable time, and, having such a light, elegant appearance, are exquisite for arranging in vases. This species will grow in the open in sheltered situations near the sea in the southern counties, but I have always found it do much better when given the protection of a cold frame, as the foliage is apt to be injured by frost, and when this happens the bulbs receive a check, and so do not bloom so freely afterwards.

N. coruscans is another good kind, producing fine scarlet flowers; it is worthy of cultivation, and should be given a place where there is only room for two or three kinds. N. Bowdeni is of recent introduction, and rather a strong grower, making bulbs and foliage similar to that of N. Fothergilli major, but the flowers are of a beautiful pink colour. There are many other kinds worthy of inclusion, and as all seed freely, there is no difficulty in raising hybrids. Seed germinates freely, and soon produces good bulbs, so that there is no difficulty in working up a stock of these plants.

H. C. Prinsep.

## PERENNIALS FOR SPRING FLOWERING.

One of the most striking instances of neglect of plants is the manner in which most of the spring-blooming perennials are either not employed at all, or else so inefficiently that their whole merits are wasted. Bedding out with herbaceous plants for summer is becoming popular, whether they are left to spread in the ground or are lifted later for border enrichment, but the beauties that blossom from March to the end of May are seldom placed anywhere but as isolated specimens on rockeries.

A notable example of fine gardening was given in the front garden of a villa in a southern county last year; the precise site was a four-feet wide border against a white stone house, facing south-west. The back row consisted of Daphne Mezereum shrubs, alternately trained to the wall and set forward as bushes, the next row was of Megasea speciosa Leichtlini, the third of Pulmonaria mollis, and the fourth was an edging belt composed of the single crimson primrose Miss Massey, double lilac and double white primroses. The megasea is an exceedingly showy form, fifteen inches high, producing handsome foliage and clear rose blooms; the pulmonaria, with its mingling of blue and rose, harmonised with the peach of the double primroses in a fashion that an artist would anticipate.

Window-boxes above were remarkable for the use of another neglected spring perennial, in front of and between miniature golden shrubs; this was Megasea Stracheyi, which gives an immense amount of April florescence, of pale pink, at a height of six inches. In ornamental stone urns near were double rose and gold tulips edged by purple pansies, and pink, as distinct from white, arabis. This was a worthy attempt to bring neglected plants into prominence.

Orobus vernus is an instance of a pleasing perennial, one foot high. Although the blue-lilac blossoms cannot be called striking, they give a particularly agreeable contrast to the gold, orange, and brown of double wallflowers, those giants that our grandfathers cultivated to perfection, but which are now seldom seen attaining the height and wealth of spikes of which the plant is capable. There is a double white variety of this orobus that is passing out of notice; still it is not more valuable than the double white arabis that has succeeded it. Other blue and white flowering early perennials are the six-inch Omphalodes verna and O. v. alba.

A shrub often classed among herbaceous plants and belonging to the order rosaceæ is Nuttallia cerasiformis. This should become a denizen of every garden. Growing ultimately to a height of four feet, it gives early white blossom, and is suited, like the daphne, to wall-training if this method is preferred. By-the-bye, two familiar shrubs make a satisfactory effect nailed against a warm wall, giving their already early fresh green leafage some weeks sooner than in the open. These are the red or yellow American currants and the Snowberry Tree (Symphoricarpus). In front of these might be grouped Japanese primroses, in any locality where ordinary primroses thrive, with auriculas perhaps, or the twelve-inch yellow Potentilla pyrenaica, or the two-feet Potentilla rupestris, white. Primula japonica should not be grown near a red-brick wall, as its crimson shade clashes.

Uncommon spring effects can be gained, too, by filling borders with a crimson-and-gold variety of German iris, and purple Helleborus orientalis, with giant polyanthuses for an edging. Small standards of the Japanese quince will give an exquisite show at intervals along a terrace border; beneath them crimson pansies would make plenty of colour, with double blue and white hepaticas for an earlier display. The double rose hepatica will make a harmony as a carpet to a small shrubbery of golden privet, the whole being improved by the proximity of copper beeches, forming new leaves later as companion to the yellow shrub, deep-lined German iris being set in clumps here and there, with a ring of Darwin tulips around each.

Purple, as distinct from violet, German iris, constitute one of the herbaceous border's richest hues in early May; the double red daisy, Bellis perennis, adds to the glowing appearance if lavishly planted for a foreground, tall purple columbines will add to the iris hue, or succeed it; purple pansies will not be out of place, and the edging may be of rose, crimson, mauve, not lavender, and purple aubrietia, that useful miniature perennial that begins early and is loth to discontinue blooming. It is by concentrating colour that notable masses are gained at a season when brilliance and richness of hue are otherwise missed.

Giant gold pansies are so valuable that it is surprising how seldom they are separated from those of other tints. If they are cultivated in rich deep soil, with different doronicums, and edged by several sorts of yellow madwort, or alyssum, the result will be an early bed, or stretch of border, of brightness scarcely ever witnessed until summer.

Dicentra eximia is a dwarf plant of no especial value as a specimen, but capable of assisting excellently in bed-filling. As a close carpet its ruddy bloom and lovely foliage will tone delightfully with crimson polyanthuses and wallflowers. Lastly, the Lady's Smock (Cardamine pratense fl. pl.) should not be despised. Its pale purple colour is a fit companion for yellow and violet German irises and columbines, edged by hybrid primroses. M. H.

**Barkerias.**—The different species of these Mexican orchids are now classed with epidendrums. B. elegans, B. spectabilis, B. Lindleyana, and B. Skinneri are difficult plants to cultivate and keep in a presentable condition for long together. They are best grown in shallow pans, suspended close up to the roof glass, where they obtain the maximum amount of light, giving them plenty of water during the growing season, and resting them afterwards as advised for the other Mexican species. They do best in a compost similar to that used for cattleyas and lælias, but care must be taken not to overburden the roots with compost by placing them in large receptacles. The house in which these and other Mexican species are grown must be well ventilated on all favourable occasions, especially at night, as they enjoy a buoyant and airy atmosphere at all times, therefore very little damping down will be necessary unless there is much sun heat, or an extra amount of fire heat has to be used, owing to extreme weather.—J. T. Barker.

## CROCUS SPECIES.

It is scarcely possible to conceive of failure with the various species and varieties of crocus, as they are generally regarded as among the easiest of all bulbs to grow, but, unlike most other bulbous plants, they resent deep planting, and where this is practised, much of their strength is dissipated, and the flowers are not equal to those produced by similar bulbs, placed at a depth of only two inches in the soil. Planting of croci should begin early, commencing with the autumn-flowering species, as these flower toward the end of September and during October. C. speciosus is one of the hardiest and largest, strong bulbs producing six to a dozen flowers of bright pure blue, pencilled with a deeper shade. C. Aitchisoni is a selected form, even more vigorous than the type, with darker flowers. C. zonatus is much smaller, but exceedingly free, the flowers being of a pretty rose-lilac shade. C. pulchellus produces lavender-blue flowers, intermediate in size between C. zonatus and C. speciosus; the anthers in this species are much paler in colour than the normal orange of most kinds. C. longiflorus has rose-lilac flowers. C. hyemalis Foxi produces white flowers, veined purple, and C. sativus gives purple-lilac flowers with dark-coloured veins and brilliant orange stigma, the latter producing the saffron of commerce. The last-named species gives only indifferent results on some soils, and even with favourable conditions it must always be well-established to flower freely.

Following the autumn kinds are those that flower some time during winter, and include C. biflorus, with white flowers, pencilled violet; C. chrysanthus, with various shades of yellow; C. Susianus, golden-yellow; C. Imperati, variable, but mostly shades of violet; C. Sieberi, pale blue, with dark yellow base; and C. vitellinus, with bright yellow flowers.

Of the spring-flowering species, C. aureus produces golden-yellow flowers, the varieties concolor and pallidas giving sulphur and primrose self-coloured flowers respectively. C. Tommasinianus is a dainty species, with silvery-grey and pale lavender-coloured flowers. C. vernus gives white flowers pencilled purple, and of this there are several distinct forms. C. versicolor, the Scotch crocus, produces white flowers pencilled with reddish-purple.

All the species and varieties of crocus are admirable for planting in short grass, under trees, at edges of walks, in woodlands, or around lawns. The winter and spring-flowering kinds, named above, are generally characterised by smaller flowers than the popular large-flowering Dutch forms, and for this reason they provide a distinct contrast and welcome change, producing most pleasing effects, either in garden or woodland, when planted with a liberal hand.

Thomas Smith.

Coombe Court Gardens.

**Border Chrysanthemums.**—These are making a charming display, and will continue to do so for some little time if the weather remains open. Keep them carefully tied to their supports, and stir the soil with the hoe. It is often convenient to lift a number to flower under glass when the early-flowering section is not largely grown in pots. Provided that the roots are well soaked when they are lifted they are none the worse for the disturbance. After the outdoor plants have finished flowering they should be lifted and placed in boxes, so that they can be stored in cold frames for the winter. See that a label is carefully attached to each variety.—J. Gardner.

## EDUCATION AND TRAINING OF YOUNG GARDENERS.

(Continued from page 793.)

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### The Importance of Little Things.

Young gardeners do not, methinks, attach sufficient importance to this. Everything they do should be done well. Once this fact is impressed upon them in their daily routine and practice the better will it be for them. A carelessly-written letter—I have had many such from young gardeners myself, and I have made mental note of it—points to other things besides their writing. A carelessly-written label, a plant tied in a slovenly manner, plants in pots stood down in a careless way and not level, all indicate the kind of workman he is. Carelessness in the arrangement of flowering plants for colour effect, the inability to see and remove faded foliage and flowers, both reflect upon the workman himself. In many cases it takes quite as much time in the long run to do work in a slipshod manner as it does to do it in a proper way. Method should, as far as it is practicable, enter into all phases of gardening. Two instances occur just now to me to illustrate this—the careful packing of fruits in a rational manner as contrasted with the same done in a careless way—the packing of flowers so that they will withstand the possible rough treatment of transit is most important. It pays to pack well.

### The Use of Spare Hours.

This is a valuable asset to every young gardener, if he will but take advantage of it. First, I would advise him to keep a diary of the work he does from day to day, add to these notes as occasion may occur later on. This will be much better than mental notes. Every young man should know wherein he is weak. If it be in writing, or any of the elementary essentials, he should in the long winter evenings do his utmost to improve his education. In the longer days he should have time to take every advantage in acquiring the names, the characteristics, and other features of fruits, flowers, and even vegetables. I have noted that young men are not so well up in the names of trees, shrubs, and hardy border flowers as they should be. No gardener would, I am sure, object to the young men moving about the gardens in order to accomplish this; it can be done without anyone obtruding himself where he should not, at certain times, be found. All that is needed in this is discretion.

Visiting other gardens is a most important factor in the education of young gardeners, as it is also to the older men. Young men, at such times, should cultivate the art of mental observation, and should be able to write up notes afterwards that will prove useful later on in life. To see the same garden at different periods of the year is also most instructive, especially so if alterations and extensions are being made.

### The Present-day Literature. Its Great Advantages.

In speaking of literature I do so in its broadest sense. I mean not only the weekly gardening periodicals, and some monthly ones, too, but also the various (and the many) works that have issued from the press during the past few years. When I was a young man there were but few such then in circulation; this remark refers to both the periodicals and the individual works on gardening. I say without any hesitation that gardeners of all ages and conditions, their employers and amateurs also, were never so well informed upon matters horticultural as at the present day. It is no excuse to a man if he now fails to obtain information in a general way. The illustrations, too, that are so well rendered now, add much to the knowledge that is supplied in the observations made thereon in the letterpress. All phases of gardening are dealt with in the most up-to-date manner. Therefore the young gardener of the present day has inestimable advantages over his somewhat remote predecessors. The rising generation of gardeners cannot too highly value this great boon. But is it taken advantage of as it should be? I must candidly say I think it is not. I have alluded to illustrations—this needs amplifying. These illustrations are not merely examples of products taken at exhibitions, and the like, but also of how to do certain work in the most workmanlike manner.

### Its Temptations and Snares.

Whilst the increase I have alluded to has been for the good of the gardening fraternity, there has also been an increase in cheap, trashy literature, some of which should be burned as soon as it is printed. Some of these inferior products of the printing press have an undoubted fascination for young (and other) men. This is not only in the daily issues with sensational headings, but also in the cheap, trashy serials and novelettes that are spread broadcast over the land. Our young gardeners will do well to avoid all such, and keep their minds upon subjects that will assist them to advance in the pursuits of their profession, and also in literature that is entertaining, yet instructive.

### The Boon of Technical and Continuation Schools.

The value of these to the rising generation cannot well be over-estimated. In the South of England their importance is now being recognised, and we are following in the wake of the Northern and Midland districts in this. Young gardeners should, wherever they can, take advantage of the classes that are arranged for the mutual benefit of young people. It will pay to make a sacrifice in time and in money, too, to accomplish this. Here again one cannot say what subject to take and what not to take, but it should be something that will benefit the rising aspirant in his profession. I am fully convinced that the better a young gardener is equipped in all things that pertain to his profession, the better will it be for him in after-life. He should be conversational to such a degree as to be able to hold his own and to be able to give the why and wherefore both of success and of failure—the latter often occurs.

### The Future of the Younger Gardeners.

My reference to this is that, if I had my time over again, Mr. Editor, I should follow the same profession, but I might take advantages of my past experiences, and so endeavour to benefit by them. Is there a future for young gardeners, some may ask? My reply to this is yes, there is, beyond any question, but the rising generation must equip themselves with every possible adjunct to their profession. This is, in my opinion, the correct way to raise the social status of gardeners. It must be done individually. Mutual help is beneficial beyond any question. This should be cheerfully rendered by every gardener to his fellow gardeners. There should also always be mutual trust and confidence between employer and employed. When this obtains it is better for all parties concerned.

Jas. Hudson, V.M.H.

**Calanthes** of the C. vestita and C. Veitchi groups are now showing their flower-spikes. Expose the plants fully to the light, and admit air freely whenever the outside conditions permit. Water must not be withheld until the foliage has decayed, for if the plants are allowed to suffer the roots perish, the pseudo-bulbs fail to ripen satisfactorily, and next year the growths are smaller than they ought to be. If a little liquid manure water has been given them occasionally, the spikes should be strong, and able to produce richly-coloured, well-formed flowers. From this time onwards water should be carefully applied until the flowers are fully developed, gradually decreasing the amount until the foliage falls away; very little is required during the flowering period.—J. T. Barker.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

MEXICAN LÆLIAS. — The principal species of these most useful plants are L. albida, L. autumnalis, L. Marriottiana, L. Gouldiana, and L. anceps. Those most usually met with, and generally grown are L. autumnalis and L. anceps, and when well grown few plants produce more lovely flowers than these at Christmas time. Where a representative collection of the forms of L. anceps is grown, there is great variety, from the pure white L. anceps alba to the deeply-coloured L. a. Chamberlainiana, besides the many varieties with flowers of intermediate shades of colour. L. autumnalis and its chaste variety L. a. alba make a strong contrast when seen in bloom side by side, and this great diversity in colour of the same species makes orchid growing interesting and fascinating. L. Gouldiana, with its deeply-coloured yet bright flowers, which blooms at a later season than those previously mentioned, and where these Mexican lælias are grown, it should not be left out, for, thanks to our collectors, it may now be obtained at reasonable prices. At the present time many of these plants are developing their flower spikes, and care should be taken that none of the spikes are allowed to get so near the roof glass as to suffer injury from cold or condensed moisture. In low-roofed house, where there is insufficient head-room for the long spikes they should be carefully tied down to neat stakes, training them in the direction where they will obtain all the sun and light possible. These lælias delight in sunshine and light at all times, and even during hot weather it is only necessary to shade them during the hottest and brightest part of the day to prevent scorching. The plants should be carefully examined at night, and after each watering, as woodlice and other pests feed upon the young roots at this season, and do considerable harm. During the flowering season the plants need only sufficient water to keep the compost moist, and afterwards still less will suffice until growth recommences. The usual Mexican or cattleya house temperature will answer requirements.

ODONTOGLOSSUMS, such as O. citrosmum, which requires more heat than those that are grown in the cool-house, generally thrive when grown under similar conditions to the barkerias. They succeed grown in baskets or shallow pans suspended from the roof, and now that they are completing their growths they may be placed in the warmest and lightest part of the house, giving them water whenever they require it until growth is complete, when only sufficient to prevent shrivelling must be given them. Such plants as O. grande and O. Schlieperianum, that have recently bloomed, should be placed on a dry shelf, or in a similar position in the cool intermediate house, where they will rest. O. Insleayi and its varieties, that are now producing their flower-spikes, must be copiously supplied with water until the flowers fade, when they may be treated in like manner. Slugs being very partial to the succulent flower spikes of these species, the plants are best placed upon pest-proof stands to keep them out of harm's way.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

THE PRINCIPAL WORK in the houses at this time will be the care of and attention to the different subjects that have lately been housed. It is not necessary to employ much heat, especially if the weather remains open and bright during the day, but as the evenings approach the fires must be made up so that there may be a brisk circulation in the pipes at night. There must be artificial heat during wet days, or dampness will soon work havoc, but the plants must also have fresh air whenever the weather conditions will permit.

CHRYSANTHEMUMS.—The Japanese and incurved varieties are opening their blooms rapidly. Examine each plant, and remove all side shoots. Earwigs will often be discovered hiding in the hollow canes which are used for supports. Caterpillars are most destructive to the blooms, and, being the exact colour of the leaves, are often most difficult to detect; these will be found hiding during the day on the reverse side of the petals of the blooms or underneath the leaves, and they must be picked off and destroyed. Any stakes projecting above the bud should be cut down just underneath it. In rearranging the groups the plants should not be stood too closely together or loss of leaves will result; tall plants should be stood in the back with some brought forward at intervals to form mounds, the dwarf ones being used to fill the spaces between. Artistic arrangement is most essential in the conservatory. When the blooms are half developed liquid manure is no longer required. Should green-fly make its appearance the houses must be fumigated two or three times in succession.

PRIMULAS AND CINERARIAS. — Primulas are growing quickly, and will require a lot of feeding if well rooted, and the flower spikes may now be left to develop. Cinerarias also will be growing freely, and, if large specimens are required, the plants growing in 5in. pots may now be potted on into 10in.

ACHIMENES AND GESNERIAS will now have finished flowering, and be gradually dying down; they should be carefully stored away in a dry place, leaving them in their pots until the spring. It is quite possible now, by taking off the young growths of cannas, and potting them regularly (as I have previously described in this Calendar) to obtain splendid spikes of these glorious flowers all the year round. Should it, however, be necessary to increase the stock of any particular variety, the old stools may be kept over during the winter. The pots should be stood underneath the stage, and the plants kept dry, and allowed to rest by withholding water.

LACHENALIAS AND FREESIAS. — Batches should be potted up at intervals, and stood in cold frames, six bulbs of lachenalias placed in each 5in. pot will be sufficient, while nine bulbs of freesias can be accommodated in the same sized pot. These plants like rich fibrous loam, with a little leaf-soil and coarse sand; they should be potted firmly, one inch underneath the surface of the soil, and covered with a layer of cocoanut-fibre or moss until well rooted.

SPANISH IRIS.—These are delightful subjects for pots, and should be treated in the same way as lachenalias. They must not be subjected to forcing or the flowers will all come blind.—Lewis Smith, Cadland, Southampton.

## HARDY FRUITS.

PRUNING.—An early start is advisable when much pruning has to be done, so that the work may be well advanced before bad weather sets in. Take advantage of the mild periods to carry out such operations, which may be more expeditiously performed during genial climatic conditions. The Morello cherry trees should be first pruned; trees that have received proper treatment will need but a general thinning of the barren shoots, and the removal of spurs and snags resulting from the shortening back of superfluous shoots last winter. For my own part I prefer to cut away such shoots altogether, but some growers convert them into spurs by leaving them about an inch in length, these generally bear fruit, hence the reason for leaving them, but they should be cut clean out the following autumn. It is, I believe, generally understood that the Morello trained on walls produces its fruit on the previous year's growth similar to the peach and nectarine and is trained in much the same way with the exception of the spacing of the growths, the foliage of the Morello taking up much less room than the peach, consequently the shoots may be laid in closer together, but, as a rule, the shoots should not be less than four inches apart. The Morello may be severely thinned, and therefore, where crowded together, many branches and shoots may be removed to correct this evil, with no injury to the trees. The oldest and least productive branches should be cut out, and strong young shoots laid in to take their places. It may be necessary to shorten back some of the main branches for the purpose of making space to lay in young and vigorous shoots. When pruning young trees of any kind, keep the centre open, first building up the wings; it is then an easy matter to fill up the middle without seriously affecting the side branches. If the trees are railed, let the rails be drawn out with the exception of a few to hold the main branches in position, the trees may then be sprayed with a winter wash.

STRAWBERRIES.—Advantage should be taken of a fine day to run the hoe through the land to keep down weeds and aerate the soil; constant stirring of the surface soil is most beneficial to young plants. By this time the old decaying leaves of established plants should have been removed and burnt. A dressing of bone-flour and sulphate of potash lightly forked in will prove beneficial to the plants on most soils of a light or medium character; for heavy soils potash may be present, and freshly-slaked lime would be of more value; 2½oz. of bone-flour and 1½oz. of sulphate of potash to the square yard may be used as a dressing.

THE FRUIT ROOM.—All specked and decayed fruits should be promptly removed, otherwise they quickly spoil their immediate neighbours; care must be exercised in handling the sound specimens. With the lengthy spell of mild weather experienced of late, it has been somewhat difficult to keep down the temperature of the fruit room. It is a good plan to close the room during the day, and open wide all means for admitting air throughout the night, closing them the first thing in the morning.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

ASPARAGUS.—The growth of this choice vegetable should now be quite ripe enough for cutting down; a good sharp hook in capable hands will soon cut the growths close to the ground's surface. Follow this with a clearance of weeds and rubbish. Then lightly prick over the beds with a fork to aerate the soil. It will be a great advantage to strew over the beds burnt garden refuse and soot. After a week or ten days of such airing apply a winter dressing of decayed farm-yard manure for the autumnal rains to carry to the roots. On light and naturally-drained soils this is exceedingly advantageous, but wherever the soil is very wet, and therefore retentive, it is the better plan to have an alley between each bed, to provide for winter drainage.

BROCCOLI.—A few varieties will be forming heads, and should therefore be examined two or three times a week. Protect them from frosts and wet by tying the leaves together over the heads. Quite early in November the winter and spring broccoli should be heeled over; this procedure, as a rule, saves 90 per cent. of the plants during the most severe winters. The "heeling" is accomplished by taking out a "spit" of soil immediately north of the plant, then gradually tip the plant over to the north, the spit from in front of the following plant being placed evenly on and around the one already laid over, close up to the leaves.

LEEKS. — Carry out the final blanching when the foliage is dry, and before severe weather sets in. When completed apply a top-dressing of long stable litter, to prevent heavy rains from washing the earth into the stems, and to ward off severe frosts. Celery should receive its final earthing. Previous to this apply a good dressing of freshly slaked lime around the stems.

TARRAGON, MINT, and CHIVES should be placed in the forcing pit as the demands require. Dress the mint and tarragon beds liberally with old decaying hotbed manure and wood ashes, previously cutting down the old stems.—G. Ellwood, Swanmore Gardens.

# EXHIBITIONS AND MEETINGS.

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## National Chrysanthemum Society.

Favoured with fine weather and a capital competition the National Chrysanthemum Society's exhibition, held at the Crystal Palace on October 29, 30, and 31, was one of the best held during recent years. The bright opening day brought out the rich colours of the flowers, and everybody and everything seemed to be in good humour. Mr Thomas Stevenson's successes provided one of the great features of the show, while the trade displays made respectively by Mr. Norman Davis, Messrs. Wells and Co., and Mr. H. J. Jones were among the finest exhibits the chrysanthemum world has ever seen. Floral art was well represented, and the smaller growers turned out well in the various classes provided for them.

The Society's Floral Committee had a busy time, no fewer than seventy-four varieties being submitted to their judgment. Several visitors from over seas were present at the judges' luncheon, these including a gentleman from Mombassa, Mr. Cox from South Africa, and Mr. W. Duckham, a well-known American grower.

### PRINCIPAL VASE CLASS.

In the great vase class a competitor has to stage a dozen varieties, three blooms of each, in large vases. Five competitors came forward on this occasion, and the premier award of £9 fell to Mr. Thomas Stevenson, gardener to E. G. Mocatta, Esq., Woburn Place, Addlestone, who staged large, fresh, and bright blooms of Lady Talbot, Master James, Hon. Mrs. Lopes, Miss Alice Finch, Frances Joliffe, Mrs. R. A. Witty, Madame J. Rivol, Queenie Chandler, Mrs. R. Luxford, Wm. Turner, Fred Chandler, and F. S. Vallis (superb). Mr. F. Beeson, gardener to J. Newton Mappin, Esq., Headley Park, Epsom, come second, and some of his best varieties were Mrs. A. T. Miller, Henry Poulton, Reg. Vallis, Edith Smith, and Lady Talbot. The third award fell to Mr. W. Rigby, gardener to the Rev. A. C. Cooper Marsden, Borstaldene, Bickley.

Only one exhibitor came forward in the class for a dozen vases of incurved blooms, distinct, and this was Mr. G. Hunt, gardener to Pantia Ralli, Esq., Ashstead Park, Epsom, who was awarded the first prize for fine flowers of G. G. Evans, Bocace, Mrs. G. Judson, Clara Wells, W. J. Higgs, Buttercup, Frank Trestrian, Mrs. G. Denyer, C. H. Curtis, Calypso, Romana, and Wiseman.

### JAPANESE BLOOMS.

The President's silver bowl for the best two dozen Japanese varieties was competed for by thirteen exhibitors. It fell to the all-conquering Mr. Stevenson, who in his set had very fine specimens of Hon. Mrs. Lopes, Miss Roope, Fred Chandler, Wm. Turner, F. S. Vallis, and Mrs. Gilbert Drabble. The second prize went to Mr. W. Sargent, gardener to G. L. Wigg, Esq., Rockshan, Merstham; third to Mr. G. Hunt; and fourth to Mr. H. Lloyd, gardener to Captain Wiener, Ewell Castle, Ewell.

In an open class for a dozen Japanese blooms, arranged for effect with foliage and plants, Mr. N. Davis provided the prizes. There were nine competitors, and Mr. T. Stevenson led the way once more with some grand blooms of Frances Joliffe, Queen Mary, F. S. Vallis, etc., associated with ferns and crotons; Mr. A. Smith, the Convent Gardens, Roehampton, came second, and Mr. G. Mileham, gardener to A. T. Miller, Esq., Emlyn House, Leatherhead, third.

Mr. T. Beeson had the best vase of two blooms of a white Japanese variety, and won with Mrs. A. T. Miller; eight competitors. For three flowers of a yellow variety Mr. W. Evans, Marlow, scored with wonderfully large and graceful specimens of Lady Talbot; eleven competitors. In the any other colour class Mr. D. Fairweather, gardener to R. H. B. Marsham, Esq., Bifrons Park, Canterbury, scored with Francis Rowe in good form; Mr. E. Guile second with Reginald Vallis; twelve entries.

### HOLMES' MEMORIAL CUP CLASS.

Seven competitors came forward in the competition for the Holmes Memorial Cup in a class for forty-eight Japanese blooms, distinct. The premier position was awarded to Mr. Thomas Stevenson, who had a capital lot of bright, clear blooms, some of which were scarcely yet at their best. A few of special merit were F. S. Vallis, Mrs. Gilbert Drabble, Queen Mary, Superbe, Thomas Lunt, Miss Roope, His Majesty, Hon. Mrs. Lopes, Wm. Turner, W. See, Gladys Herbert, Lady Talbot, and Frances Joliffe. Mr. G. Hunt came second, and he was not far behind Mr. Stevenson; while third place fell to Mr. E. Guile, gardener to Sir Carl Meyer, Bart., Shotgrove, Newport, Essex; and fourth to Mr. C. Wood, gardener to E. J. Thal, Esq., Frensham Place, Farnham.

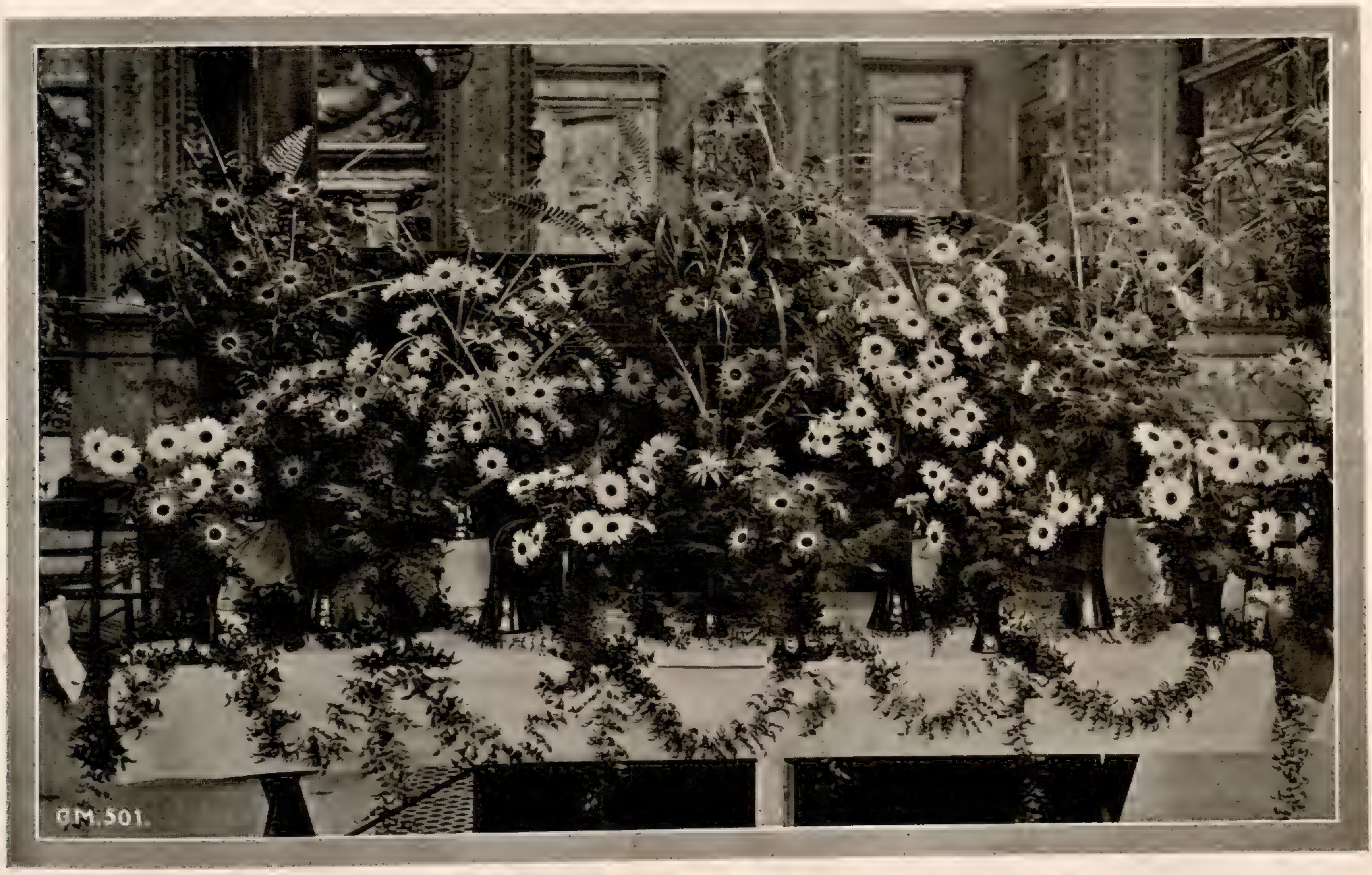
### THE SOCIETIES' CLASS.

The Challenge Trophy, offered for competition among affiliated societies, was won by the Dulwich Chrysanthemum Society. This year the class was for three vases each of single Japanese and incurved varieties; the Dulwich Society staged a grand lot of blooms, and their big vases of fine single flowers were especially good. Second prize fell to the Finchley Chrysanthemum Society, and third to the Reigate and District Chrysanthemum Society.

### SINGLE, INCURVED, AND ANEMONE VARIETIES.

The silver rose bowl presented by C. E. Shea, Esq., for the best table of single varieties, the flowers to have been grown by the exhibitor and arranged for effect, was won by Mr. A. Robertson, gardener to F. J. Yarrow, 18, Abbey Road, St. John's Wood. Good blooms of Mensa, Mary Richardson, and other popular sorts, were set up pleasingly with suitable foliage, and over-crowding had been carefully avoided. None of the varieties were labelled, consequently the exhibit lost a great deal of its educational value. The second prize, given by friends of the Society, fell to Mr. F. G. Bealing, Bassett, Southampton. Five tables were staged.

For the best display of singles, not less than three varieties, Mr. Thomas Stevenson was a capital first with large vases of grand blooms of White Pagram, Edith Pagram, Ceddie Mason, Snowflake, Chas. Dickens, Bronze Pagram, Yellow Purity, and Miss



FIRST PRIZE TABLE OF SINGLE CHRYSANTHEMUMS.

Staged at the Crystal Palace on October 29, by Mr. A. Robertson, gardener to F. J. Yarrow, Esq., Abbey Road, St. John's Wood, N.W.

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Mabel Booth; Mr. F. G. Bealing was a good second, and Mr. G. Mileham third out of four entries.

A very interesting class, for six vases of anemone varieties, attracted considerable attention. Mr. T. J. Broom, gardener to Miss Langworthy, Gays House, Holyport, lew with good blooms of Mrs. H. Eland (very fine), La Marguerite, Miss A. Lowe, John Bunyan, Mrs. N. Bunn, and Mdme. C. Lebocqz; second prize fell to Mr. W. Parsey, gardener to C. O. Clark, Esq., Ackray, Shortlands, and third to Mr. J. Foster, gardener to Lady Yule, Hanstead House, Bricket Wood. There were seven competitors, and yet many people had imagined that anemone varieties had practically gone out of cultivation!

Anemone pompons were very pleasingly shown by Mr. F. Fitzwater, Bushey Lodge Gardens, Teddington, who gained first prize for a pair of vases, and was followed by Mr. T. J. Broom. For six vases of these pretty flowers, Mr. Fitzwater was again first, showing Antonius, Rose Marguerite, Perle, Mrs. Astie, Marie Stuart, and Emily Rowbottom; Mr. J. Foster second, and Mr. T. J. Broom third. Pompon varieties were very well and freely shown. For six vases, Mr. J. W. Hussey, Bouverie House, Exeter, was a fine first with shapely blooms of Mdlle. E. Dordan, W. Westlake, Black Douglas, and Prince of Orange; Mr. F. Fitzwater came second, and Mr. J. Foster third; eight competitors.

The best dozen incurved blooms staged on boards were from the veteran Mr. G. Hunt, who scored with good examples of Buttercup, Mrs. G. Denyer, Romance, Mrs. F. Judson, W. J. Higgs, Clara Wells, Lady Isabel, Bocace, Duchess of Fife, G. F. Evans, and Marjorie Shiea; Mr. A. Jones, gardener to Miss Wybury, Hadley Manor, Barnet, second, and Mr. T. G. Broom third. For six incurved blooms, one variety, Mr. T. Beeson led from seven entrants with massive brilliant flowers of Buttercup; Mr. R. Evans, gardener to Miss Flattery, The Orchard, Marlow, second, and Mr. A. Jones third.

## DECORATIVE EXHIBITS.

There were two classes for table decorations, one for yellow and bronze blooms and one for other colours. In the former there were nine competitors, and Mr. A. W. Trossell, Albemarle Road, Twickenham, scored with an elegant arrangement of bronze and pale yellow blooms; Mr. T. W. Stevens, Laurie Park Gardens, Sydenham, second, and Mr. R. F. Felton, Hanover Square, third, the latter showing a low design of flowers in small, silvered baskets. Twelve competed in the other class, and Mrs. A. R. Bide, Farnham, scored with a pleasing arrangement of pink flowers; Mr. T. W. Stevens second, and Mr. L. Wheeler, The Gardens, Wood Hall, Dulwich, third.

For a vase of single blooms, Mr. D. B. Crane, Woodview, Highgate, scored easily with a very pleasing arrangement of fine blooms; if the design had been a few inches higher it would have been better. Mr. W. Dennis, Woodhall Gardens, Dulwich, second, and Mr. Robertson third; nine entries.

Five hand baskets of chrysanthemums were displayed, and premier honours fell to Mrs. Brewster, St. Peter's Street, Canterbury, for golden Japanese and single sorts, associated with croton leaves; Mrs. S. A. Cole, Addiscombe Avenue, Croydon, came second with yellow and bronze flowers, and Mrs. A. R. Bide, Highlands, Farnham, was third with light bronzy-buff flowers.

Mrs. Brewster scored for a basket of autumn foliage and berries with a striking design, composed largely of Honesty seed vessels, clematis fruits, and physalis, symphoricarpus, privet, and pyracantha berries; Mrs. R. Allen Hope, Devonshire House, Addlestone, second, and Miss A. Bashford, Barrow Hedges Farm, Carshalton, third.

## AMATEURS' DIVISION.

Mr. J. Bedson, gardener to R. Barber, Esq., South Hill, Bromley, led in the amateurs' division for a dozen Japanese blooms with a capital set of even flowers; Mr. C. Pullen, gardener to G. Fores, Esq., Blenheim, Raynes Park, second, and Mr. W. Rigby third. Mr. Loo Thomson, Ailsa Craig, Formby, Liverpool, had a fine half-dozen vases of singles, securing first prize for grand flowers of Felix, Bronze Pagram, J. H. Greswolde Williams, Ceddie Mason, and Mrs. H. J. Hampson.

Six fine flowers of Lady Talbot won first prize for Mr. C. Pullen in the class for six flowers of one variety; Mr. W. Parsey, Ackray Gardens, Shortlands, second, with Mrs. R. H. B. Marsham, a fine white. Mr. C. Fox, Tunbridge Wells, scored in another class for a dozen Japanese blooms, with Mr. Gooding, Edenbridge, second.

Out of eight entries for six Japanese blooms Mr. H. E. Campkin, Bournemouth Park Road, Southend-on-Sea, led with fine flowers of Master James, Hon. Mrs. Lopes, Mrs. G. C. Kelly, Frances Joliffe, Master David, and Mrs. A. T. Miller; Mr. C. Fox second, and Mr. H. W. Mason, Ferndale Road, Banstead, third. For six blooms in three varieties, Mr. Campkin was again first, followed by Mr. C. Fox and Mr. L. White, Thornton Heath; seven competitors.

Other successful competitors in the smaller amateur classes were: Mr. C. Fox, Mr. Rigby, Mr. T. W. Stevens, Mr. J. W. Martin, Addlestone (fine vase of singles), Mr. L. Dyer, Upper Norwood; and Mr. J. Vanstone, Hollymead, Tulse Hill; Mr. C. Libberty, Howood Lodge Gardens, Bromley; Mr. J. W. Hussey; Mr. D. B. Crane; and Mr. Loo Thomson.

## FRUITS AND VEGETABLES.

In the fruit classes Mr. W. Howe, gardener to Lady Tate, Park Hill, Streatham, was awarded first prize for three bunches of black grapes; and Mr. A. Jefferies, Moor Hall Gardens, Harlow, was placed second with three very fine clusters of Appley Towers that seemed to be worthy of a better position. Mr. Jefferies was first for white grapes with good bunches of Muscat of Alexandria; Mr. E. C. Wickens, Tewkesbury Lodge Gardens, Forest Hill, second. Mr. Wickens was first for Gros Colmar grapes.

Apples were well shown, and leading awards fell to Mr. A. Smith, Mr. W. Lintott, and Mr. A. Basile, Woburn Park Gardens, Weybridge.

Mr. A. Basile, gardener to the Rev. McMurdie, Woburn Park, Weybridge, had things all his own way in the only class for a collection of vegetables, winning Mr. Sydenham's prize with a grand lot of leeks, onions, tomatoes, parsnips, carrots, Factor potatoes, celery, and Autumn Giant cauliflowers, and Brussels sprouts.

## TRADE EXHIBITS.

In front of the Royal box, and facing the orchestra, Mr. Norman Davis, Framfield, staged a magnificent group of cut chrysanthemums, associated with palms, crotons, ferns, and autumn foliage. This was a great effort, and both in its artistic disposition and the high quality of the blooms it was a display of the very highest merit. From end to end the group was about thirty yards long. In general outline it consisted of a large semi-circular central group, a smaller group on either side, and then larger groups at each end. In the central feature the rich crimson His Majesty was grouped in the foreground, and behind it were large vases and growing plants of Mrs. Lopes, Amber Queen, Mrs. Totty, D. B. Crane, Lady Talbot, Mdme. Paolo Radaelli, Buttercup, H. J. Thorp, J. W. Molyneux, and White Queen. A dozen or so of splendid large anemone-flowered varieties filled one of the small groups, and these graceful flowers attracted a great deal of attention. Pompons in variety, incurved sorts of the Rundle section, and some reflexed flowers filled the other small group. The right-hand end was filled with decorative and market varieties, represented both by plants and stands of cut flowers. At the opposite end Mr. Davis grouped a grand lot of single varieties, and here Mensa, Miss Mary Pope, Sussex Yellow, Celia, Ideality, and Mrs. Loo Thompson were very finely shown. The beauty of this exhibition was unquestioned, but its great interest lay in the fact that every section of the flower was well represented, from the most diminutive sort up to the largest Japanese varieties. It was probably the largest and finest exhibit ever contributed to an exhibition of the N.C.S.

Another splendid group was the one staged in very bold style by Messrs. W. Wells and Co., Merstham. This was 72ft. long by 10ft. deep, and tall stands of wonderfully fine blooms were the outstanding feature, these being arranged over smaller stands, and vases of single and decorative varieties, though some tall stands of bright singles figured in the background. Of course, full use was made of ferns, palms, and coloured foliage, and every attention was paid to the production of a pleasing effect. Particularly fine were the glorious flowers of the splendid Japanese varieties Queen Mary, a magnificent white; Mrs. R. Luxford, chestnut; Wm. Turner, white; H. E. Converse, buff and red; Mrs. L. Thorn, yellow; Mrs. C. H. Totty, pink; Mrs. G. Lloyd Wigg, pale yellow; and D. B. Crane, deep yellow. For size of blooms this exhibit was unsurpassed.

A large and very effective group of cut chrysanthemums, arranged with great taste by Mr. H. J. Jones, Ryecroft, Lewisham, extended across the front of the orchestra. Palms, ferns, Helxine Solieroli, and autumn-tinted foliage were all freely used to produce a pleasing display. The outline of the group was pleasingly curved, and there was an excellent finish to the whole. Towards the back were tall stands, each containing about two dozen show blooms of Japanese varieties, smaller stands of singles and reflexed varieties being placed to right and left. In the centre large vases and baskets of fine flowers of Miss Roope, Frances Joliffe, Bob Pulling, Miss Elsie Davis, Joan Stretton, J. Surrey, Mrs. R. C. Pulling, Don Q. (a new incurved), G. J. Beer, Mrs. Tickle, and Francis Rowe were set over ferns and crotons, and produced a grand effect. Single varieties were very pleasingly disposed in the flanking groups, and these included a number of new and promising seedlings. Mrs. H. J. Jones, an immense new yellowish-green Japanese variety, was very conspicuous in this fine exhibit.

A very attractive and interesting exhibit from Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow, was arranged on the floor.

A few palms and crotons were used, and the setting was of ferns. Rising over the latter were about four dozen very big vases of single, Japanese, and incurved varieties, as grown for market by the Heston firm. The flowers were very firm, on long stems, and from a dozen and a-half to three dozen in each vase. The singles were notably good, and we were specially struck with Mensa, Portia, Jessica, Miss M. Walker, Merstham Gem, Florrie King, White Pagram, Celia, and Ceddie Mason.

Messrs. H. Cannell and Sons, Swanley, showed apples and pears in fine condition and in considerable numbers, and this firm also made a bright display with pelargoniums and chrysanthemums. Roses are indeed perpetual in these days, and we have them exhibited all the season through. Messrs. Hobbies, Lim., Dereham, showed a quite nice lot of blooms from the open, including such varieties as Madame Abel Chatenay, Madame Ravary, General McArthur, Mdme. M. Soupert, and Mrs. B. R. Cant. Perpetual carnations were prettily displayed by Messrs. Young and Co., Hatherley, who disposed their flowers of Marmion, Geisha, May Day, Enchantress, Mrs. Greswold Williams, and Scarlet Glow very elegantly.

Choice ferns and good strains of cyclamen and Primula obconica made up an interesting exhibit from Messrs. H. B. May and Sons, Edmonton. Other trade displays included a few new varieties from Mr. W. J. Godfrey, Exmouth; a stand of blooms from Messrs. J. Stredwick and Son, St. Leonards; a table of fruit from Messrs. J. Peed and Sons, West Norwood, and floral arrangements by Mr. T. Williams, Oxford Road, Ealing.

### MEDALS.

Large Gold Medal and Messrs. Clay and Sons' Gold Medal for the best non-competitive exhibit.—To Mr. Norman Davis, Framfield.

Gold Medal.—To Messrs. W. Wells and Co., Merstham; to Mr. H. J. Jones, Ryecroft, Lewisham.

Small Gold.—Messrs. J. Peed and Son, West Norwood.

Silver-gilt.—To Messrs. H. Cannell and Sons, Swanley—one for fruits and one for flowers.

Large Silver.—To Messrs. J. Peed and Sons, West Norwood, for fruit.

Silver.—To Messrs. Young and Co., Hatherley, Cheltenham, for perpetual carnations.

### FLORAL COMMITTEE'S OUTING.

The members of the Floral Committee were kindly invited to visit Woburn Place, Addlestone, by E. G. Mocatta, Esq., on Saturday afternoon, October 26, to view the chrysanthemums. The party was met at Addlestone Station by Mr. Thomas Stevenson, who has charge of the gardens, and is so justly celebrated for his culture of sweet peas and chrysanthemums, but these are by no means the only specialities at Woburn Place. The chrysanthemums were flowering in three houses, and the committee were fortunate in seeing the collection before the flowers had been cut for the shows. Mr. Stevenson cultivates about 320 plants of Japanese varieties in large pots, and about 140 in smaller sizes.

In addition, a large number of decorative and single varieties are grown for house and conservatory decoration, and right well are they done, too. Market Red was in splendid form, as were also the dwarfer types, such as Caprice du Printemps, Kathleen Thompson, White Cap, Yellow Cap, and Primrose Cap, while the single varieties producing masses of flower were Manor House, Terra Cotta, very free; Snowflake, a fine white; Charles Dickens, deep yellow; White Pagram, Bronze Pagram, a very rich colour; Edith Pagram, Sylvia Slade, and many others.

The incurved varieties are not grown now, but the Japanese varieties include all the latest novelties, while, needless to add, the cultivation displayed was of the highest possible order, and called for much commendation from the visitors. The bulk of the plants are arranged in a long, narrow peach house, where they seem to flourish under ideal conditions. To guard against damping the entire floor was covered with short-cut straw, which evidently answers well in this case, for not a sign of damping was noticed. The following varieties are but a few of the best specimens noticed: Mrs. R. E. Witty, reddish terra cotta, good throughout the collection; Wm. Turner, pure white, will surely make Mrs. Gilbert Drabble look to her laurels, it is a magnificent flower; H. E. Converse, very fine; Fred Chandler, red with a gold reverse; Fred Green, a rich velvety-purple, very fine in colour; Marie Loomes, rich terra cotta; Master James, carrying excellent flowers of a rich hue; while Lady Talbot, with long, narrow petals, was very handsome; Bob Pulling, a fine rich yellow; and the Hon. Mrs. Lopes were carrying very heavy, deep flowers. Francis Joliffe appeared to be a favourite, for it is largely grown. Japan was equally striking. Queen Mary is a most promising variety, while His Majesty fully bears out its promising character. W. Gee was very deep in colour, as was also Mrs. R. Luxford, a fine Indian-red, with a gold reverse; while Bessie Godfrey has still to be reckoned with as a yellow. There were numbers of other varieties, all deserving notice, but the foregoing are enough to give a general idea of the collection.

The rose garden is very extensive, and planted with all the most modern varieties, which are represented by six or twelve plants of each sort, while the pergolas, covered, as they are, with all the best varieties, must be a fine sight in the summer and autumn months. The water garden is large and most artistically arranged, not that one wanted to admire anything in the water line that afternoon, for with typical floral committee weather it rained most persistently the whole afternoon. In the kitchen garden an arch of fruit trees runs the entire length of the garden, and as only two or three trees of each variety are grown, the collection must be a very comprehensive one. The gourd arch or pergola is a most substantial erection, and must be a novel sight when carrying its collection of fruits, as exhibited by Mr. Stevenson last year at Vincent Square. In the houses the same thoroughness prevails. At the time of the visit salvias, primulas, cyclamen, cinerarias, acalyphas, Begonia Gloire de Lorraine, with crotons, dracænas, abutilons, etc., were all in splendid condition. Orchids are now being added; already two houses are devoted to them, and another another one is in course of construction.

The Committee were kindly entertained to tea by Mr. Mocatta, to whom the best thanks of the Committee were accorded.

## Hereford Fruit and Chrysanthemum Society.

OCTOBER 23 and 24.

A fine show was held by this society on the above dates in the Shire Hall, Hereford. The schedule provided upwards of 120 classes, which were, with few exceptions, well filled with produce of excellent quality. Apples had the lion's share of classes, and made a remarkably fine display. Of other fruits, pears and grapes were present in very good quality, while vegetables and farm roots were largely staged in splendid condition. Chrysanthemums are at no time a very prominent feature at this society's show, but the classes devoted to them are for blooms arranged in vases, and these do much, together with trade exhibits of a similar character, to beautify the hall, and relieve monotony. The arrangements were, as is invariably the case at Hereford, perfectly carried out, and the judging commenced punctually, for which credit is due to Mr. E. S. Jones, the secretary, and his assistants.

### OPEN CLASSES.

In the class for collection of fruit, six dishes, three creditable exhibits were staged, the leading one coming from Mr. G. C. Liddle, gardener to Sir J. Cotterell, Garnons. His dishes were Gros Colmar grapes of excellent quality, Muscat of Alexandria grapes, Cox's Orange Pippin apples, a fine dish of Doyenne du Comice pears, Coe's Golden Drop plums, and a melon. Mr. Sykes, gardener to Colonel Henry, of Hatfield, followed with almost equally good dishes, and H. F. Hollins, Esq., Maidstone Court, was third. Mr. Liddle was first for Gros Colmar grapes, and staged splendidly coloured large bunches; General Clive, Perrystone Court, was second, and Mr. Sykes a close third. The prizes for any other black grapes were taken by Mr. Liddle, Mrs. Woodhouse, and H. F. Hollins Esq. There was only one exhibitor of white grapes, and Mr. Sykes was deservedly awarded first prize.

For fifty dishes of culinary and dessert apples, arranged with foliage decorations, Mr. C. W. Powell, Warham Court, took the lead with good examples of leading varieties, nicely arranged in white baskets. The following dishes were noted as specially good: Rival, Blenheim Orange, Ribston Pippin, Charles Ross, King of the Pippins, Crimson Queening, Adam's Pearmain, Cox's Orange Pippin, King of Tomkins County, Devonshire Red, Allington Pippin, King Edward VII., Lord Nelson, Hoary Morning, Cornish Giant, Sandringham, Bismarck, Twenty Ounce, Cox's Pomona, Emperor Alexander, Warner's King, King's Acre Bountiful, Hollandbury, Hambling's Seedling, The Queen, and Newton Wonder. Messrs. Pewtress Brothers, Tillington Nursery, came second, losing ground amongst their dessert varieties.

The class for thirty dishes of apples brought only one exhibitor—Mr. Stenefield, gardener to Mrs. Hill, Moreton Court, who, however, secured first prize for clean, large fruits of leading varieties arranged with foliage decorations. Twelve dishes of culinary apples made a capital class, in which five exhibitors competed, and there was little difference in the quality of the prize-winner's fruits. Mr. Kelly, gardener to Messrs. Getting and Newton, Glewston Court, Ross, was placed first with the following good set: Bismarck, Warner's King, Ecklinville, Hambling's Seedling, Peasgood's Nonsuch, Gloria Mundi, Tibbett's Pearmain, Lord Derby, Newton Wonder, Bramley's Seedling, Cox's

We are retaining this column week by week to take our readers on "flying visits" to our new Warehouses and Testing Grounds at Raynes Park, S.W., which are always open to the public.—James Carter and Co., The King's Seedsmen.

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Only by paying a visit to Raynes Park can one gain any idea of the fascination of bulb cultivation. Innumerable little stories might be told as wonderful as that of the Lily of the Valley crowns, which spend from six to nine months in the freezing chambers, and are brought out in solid lumps of ice, to spring into the purest of blooms within three or four weeks.

Here, at Raynes Park, one may purchase a bulb for a five-pound-note, or a thousand for a guinea—and every bulb carries an insurance policy in the actual trials to be seen at our Trial Grounds in the spring.

We recently paid £76 for 20 Narcissus bulbs. The world-renowned King Alfred Daffodil, the bulbs of which are now marketed at 2s. each, was sold in its first year at several guineas each.

Like most other things, bulbs may be had at all prices; but only good bulbs from a house of prestige repay their cost in the abundant realisation of long months of anticipation. It is no use *wishing* one had paid a little more when springtime brings its disappointments.

Next Week: "Indoor Gardening."

James Carter & Co.

Pomona, and Sandringham. Captain W. S. R. Cox, Ashe Leigh, Ross, followed, and Mr. H. Taylor, gardener to John Riley Esq., Putley, was third.

For eight dishes of dessert apples, Mr. G. H. Holden, gardener to A. G. Burney, Esq., took the lead among four competitors, with good fruits of Adam's Pearmain, Cox's Orange Pippin, Egremont Russet, Rival, King of the Pippins, Wealthy, Charles Ross, and James Grieve; Mr. Taylor, gardener to J. Riley, Esq., Putley, second, and Mr. Kelly third.

In the single dish classes many of the best fruits were to be found. The leading prize-winners were: For Cox's Orange Pippin, Captain W. S. R. Cox; Ribston Pippin, the Rev. G. H. Devonport; Blenheim Orange, Messrs. Pewtress Brothers; King of the Pippins, E. N. Caddick, Esq.; Warner's King, Captain Cox; Bramley's Seedling, Mr. Kelly; Lane's Prince Albert, Mr. Kelly; Wellington, Messrs. Pewtress Brothers; Gascoigne's Scarlet, E. W. Caddick, Esq.; Peasgood's Nonsuch, A. G. Burney, Esq.; Newton Wonder, J. Riley, Esq.; Annie Elizabeth, Mr. C. W. Powell; Lord Derby, Mr. C. W. Powell; Allington Pippin, R. M. Whiting, Esq.; Rival, R. M. Whiting, Esq.

Apples packed in boxes, for which five classes were devoted, created considerable interest, and were also instructive. One prize was offered in each class. Splendid boxes were in the Newton Wonder class, the best being brought by Mr. Stevens, gardener to Captain Clive, Whitfield. His fruit was of very high quality, and firmly packed without being bruised; Captain W. C. R. Cox secured the prize for Lane's Prince Albert, and also for Cox's Orange Pippin, staging in each case a fine lot of fruit; Bramley's Seedling brought Mr. C. W. Powell again to the front, and Messrs. Pewtress Brothers scored with Blenheim Orange.

For a dozen dishes of pears arranged with foliage decorations, Mr. Parrott, gardener to A. W. Foster, Esq., Brockhampton Court, was placed first. He had moderately large and clean fruits of Doyenne du Comice, Beurre Bosc, Marie Louise d'Uccle, Pitmaston Duchess, Marie Louise, Emile d'Heyst, Josephine de Malines, Charles Ernest, Beurre Alexander Lucas, Durondeau, Brown Beurre, and Glou Morceau; the Rev. G. H. Devonport was second, and Sir R. Lucas Tooth, Holme Lacy, third. In the class for eight dishes of pears six good lots were staged, the best coming from Sir J. Cotterell, Garnons, who had fine fruits of Marie Louise, Doyenne du Comice, Pitmaston Duchess, Easter Beurre, Beurre Bosc, Nouvelle Fulvie, Beurre Superfin, and Le Lectier. Mr. C. W. Powell was a close second. Mr. Sykes was third.

### CHRYSANTHEMUMS, ETC.

J. Corner, Esq., Mr. Parrott, A. G. Burney, Esq., and C. F. Holford, Esq., were the most successful exhibitors of chrysanthemums; the Hon. Mrs. Wilmot, Mrs. Ramsden, and Mrs. W. T. Cook, scored for baskets of outdoor ornamental foliage, grasses, and berries; and Mrs. W. Spencer, Goodrich, Mrs. Griffiths, and Mrs. Hyde led for table decorations, and secured prizes in the order named.

Among trade exhibits, Mr. Wilson, Hereford, had a large stand of choice wreaths, crosses, bouquets, etc. The King's Acre Nursery Company, Hereford, staged about seventy dishes of apples and pears in fine condition, together with many beautifully arranged floral devices; while Messrs. Young and Co., Hatherley, Cheltenham, had choice carnations in variety, which attracted considerable attention.

### CHAMPION CLASSES.

The best dish of pears was one of Doyenne du Comice staged by Sir R. Lucas Tooth, Among dessert apples King of the Pippins from C. W. Caddick, Esq., was the best, while the best culinary apples were example of Bismarck staged by Captain W. S. C. Cox. The best dish of dessert apples shown by a cottager was of Cox's Orange Pippin from Mr. A. Webb, Glewston, Ross.

## Croydon.

OCTOBER 30 and 31.

The Croydon Society has once more changed the venue of its exhibition. Some years ago the show was held in the Public Hall, where the light was not good, and the display spread over several rooms. Then the Adult School was occupied for several years, but the available space was not sufficient. This year the Public Baths, Scarbrook Road, were utilised, and as the hall is finely lighted from the top and high up the sides, and as room seems ample, it is very likely the show will be held here for some years to come.

The exhibition was of varied character, flowers, plants, fruits, and vegetables being all well represented, and, on the whole, the competition was good, as the Croydon gardeners are a very enthusiastic set. It should be remembered that there are no classes for flowers on boards at Croydon.

There were a few non-competitive exhibits, these including a fine lot of apples from the Barnham Nurseries, Barnham; an interesting set of photographs of the Royal International Horticultural Exhibition, from Mr. T. A. Terry, St. James Road, Croydon; and a small set of the newer chrysanthemums from Messrs. W. Wells and Co., Merstham.

Mr. F. Oxtoby (the secretary), gardener to J. J. Reid, Esq., Coombe Lodge, Croydon, contributed a collection of bottled fruits, and a quite large group of decorative chrysanthemums. Mr. Boshier, sent bottled fruits and vegetables, and Mr. W. Veness, George Street, also sent bottled fruits and preserves —these three exhibits were of great interest and educational value.

### OPEN CLASSES.

The new Challenge Cup, value twelve guineas, offered for the best eighteen chrysanthemums, in vases, was won by Mr. W. Howarth, gardener to Wickham Noakes, Esq., J.P., Selsden Park, with a very fair set, consisting of Maud Jeffries, John Peed, Henry Poulton, Rev. R. R. Coet, Pockett's Crimson, Mrs. L. Thorne, Sir A. Rollit, Rose Perfection, Evangeline, Valerie Greenham, F. S. Vallis, Splendour, Sir F. Crisp, Lady Talbot, Shanklin, White Queen, Mary Poulton, and Reginald Vallis. The second prize fell to Mr. W. Fleet, gardener to G. A. Allen, Esq., Wynnstow, Limpsfield, for smaller but very fresh flowers. The cup will be held only for the year ensuing, but the winner will have a silver shield, suitably engraved, to commemorate his win.

In the open class for ten blooms in not fewer than two varieties, Mr. Fleet was the only exhibitor, and he was awarded the first prize for capital examples of Reg. Vallis, Mrs. A. T. Miller, White Queen, and Frances Joliffe. Mr. T. Finch, gardener to G. H. Fisher, Esq., Down's View, Godstone Road, Purley, led for two vases of incurved blooms, with Mr. W. Pauley, gardener to Dr. Jackson, Brigstock Road, Thornton Heath, second; and Mr. A. G. Osmond, gardener to C. H. Wells, Esq., Avenue Road, South Norwood third, all showing very well.

Single chrysanthemums are always well shown at Croydon, and this year they were finer than ever. Mr. G. Fisher, gardener to C. Lazenby, Esq., Oakfield, Eden Park, Beckenham, staged the best three vases, and his flowers included Mensa, Ceddie Mason, Edith Pagram, Mary Richardson, and Bronze Pagram. Mr. T. Finch was a close second, and Mr. F. J. Hainge, gardener to H. Hales, Esq., Elmwood, Kenley, third; four good entries.

### LOCAL CLASSES.

Five competitors entered for the silver cup presented by Mr. and Mrs. G. J. Allen. The class was for fifteen Japanese blooms, set up in three vases. This is a local competition, and the cup is the fourth of its kind given by Mr. and Mrs. Allen. A competitor who comes first two years out of three holds the cup for good. Mr. R. Gladwell, gardener to A. Gosheron, Esq. Tennison Road, South Norwood, was placed first, and he showed fine flowers of Frances Joliffe, Madame Paolo Radælli, Mrs. Gilbert Drabble, Alice Lemon, Reg. Vallis, and Master David. Not fewer than three varieties had to be shown. Mr. W. Howarth, who won the cup in 1911, came second, and was several points down; Mr. W. Pauley third.

Mr. Mills was first for six vases of decorative chrysanthemums, the flowers undisbudded, and cut from the open ground; he had immense bunches associated with autumn foliage, but, like two other competitors, failed to label his varieties. Mr. Finch was a close second, and Mr. F. J. Hainge third. For ten Japanese blooms, in two vases, Mr. T. Finch led, and showed Lady Talbot and Mrs. A. T. Miller in good form; Mr. G. Fisher had White Queen, Sir Frank Crisp, and Hon. Mrs. Lopes in his second prize set; and Mr. L. Gooch, Frocester, South Norwood, came third; eight entries.

Mr. Finch, Mr. L. Gooch, Mr. A. J. Hart (gardener to Mrs. Thrale, Coombe Road), Mr. Howarth, and Mr. C. C. Hunt, Stroud Road, were prominent prize winners in other classes.

### GROUPS AND PLANTS.

Mr. T. W. Collyer was placed first for a group of chrysanthemums, and he made good use of well-grown material, though his stakes were somewhat obtrusive. Mr. F. J. Hainge came second, and his well-flowered single varieties gave him a great advantage over Mr. A. Edgerton, gardener to W. Valder, Esq., Beechwood, Croham Park Avenue, who was third.

Three miscellaneous groups were arranged, but the competitors were rather at a disadvantage, as they had to stage their plants on the broad tiers at the side of the hall. Mr. G. Lewry, gardener to Miss Blake, Duppas Hill, Croydon, gained first prize, and used chrysanthemums, cyclamens, begonias, bouvardias, cypripediums, and cattleyas with suitable foliage plants. Mr. F. J. Hainge came second, and Mr. T. H. West, Rydal Mount, Croham Park Avenue, third. Mr. T. Finch, Mr. F. J. Hainge, and Mr. Collyer were placed as named for three plants of single chrysanthemums, Mr. Finch scoring with very fine, freely-grown specimens of Mary Richardson.

Mr. W. Lintott was easily first for nine table plants with eight beautiful crotons and Dracæna Marden Gem. Mr. G. Fisher just managed to beat Mr. Mills for six begonias of the Lorraine type, among five competitors.

### FRUITS AND VEGETABLES.

Mr. W. Pauley scored for six dishes of dessert and three of culinary apples, and had excellent dishes of Bramley's Seedling, Lord Derby, Cox's Orange Pippin, and Ribston Pippin; Mr. H. J. Alderman, gardener to H. H. König, Esq., Ardenrun Place, Blindley Heath, second. For six dishes of pears, Mr. Pauley was again first, followed by Mr. Lintott, gardener to Sir Walpole Greenwell, Bart., Marden Park.

Mr. Lintott led for two bunches of grapes with large clusters of Alicante; Mr. F. W. Collier, gardener to A. H. Allen, Esq., Wandle Court, Beddington, second, with Muscat of Alexandria; and Mr. J. H. Alderman third with Alicante, the bunches somewhat unevenly berried.

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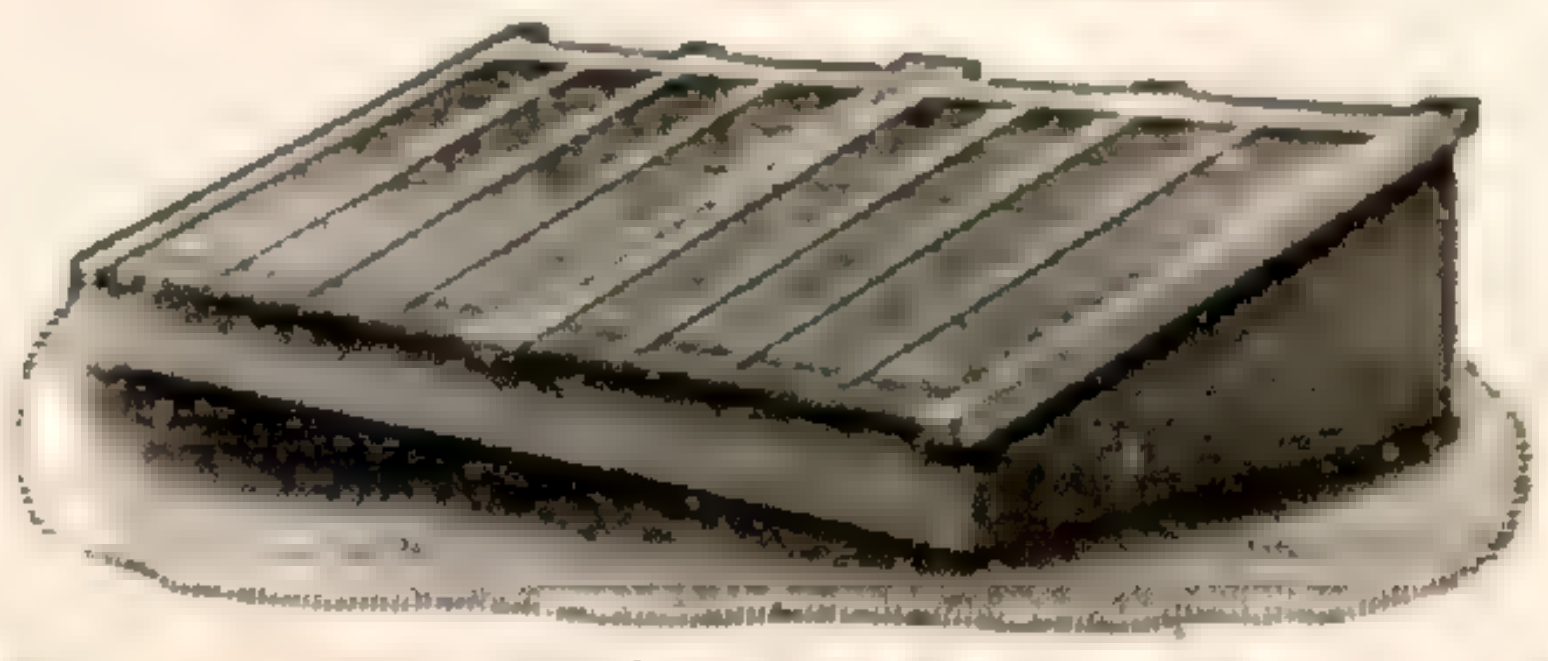

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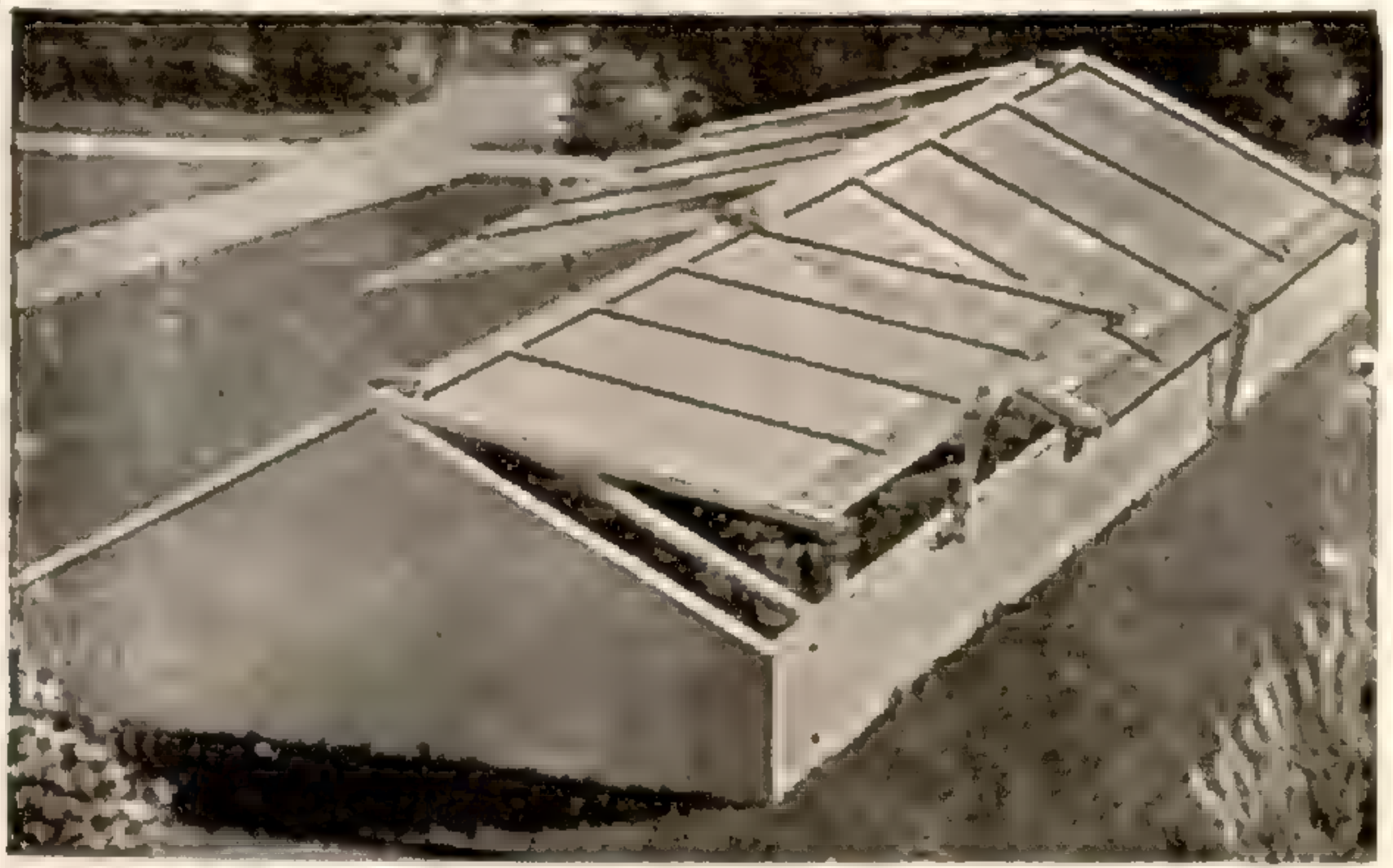

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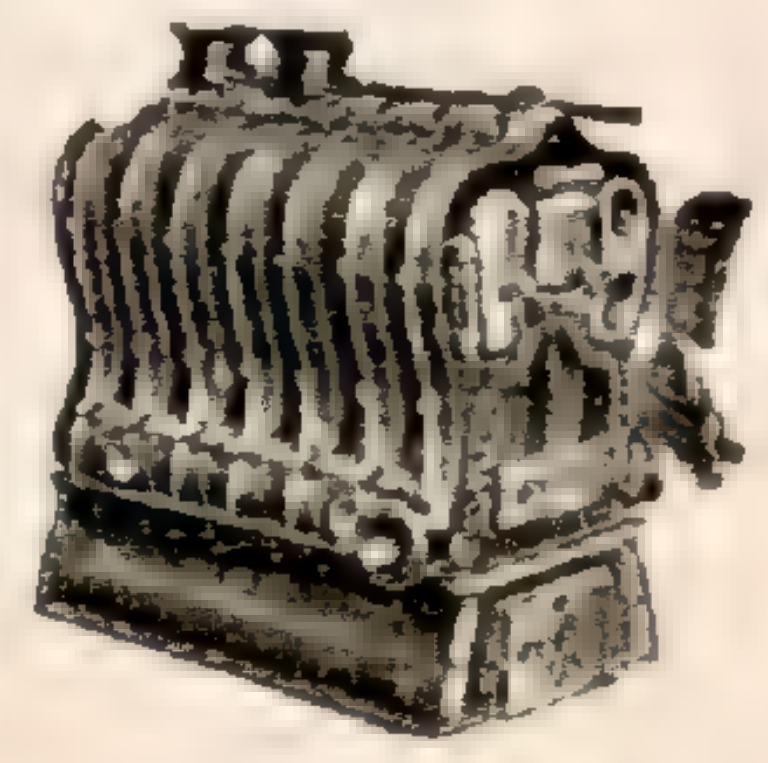

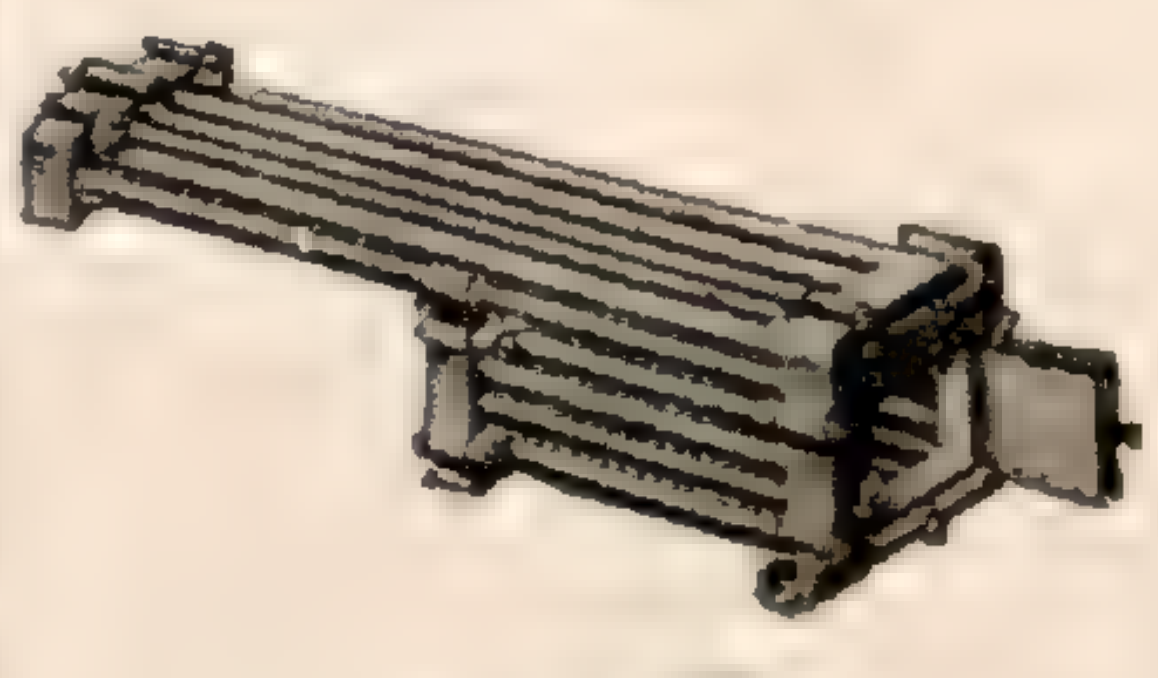

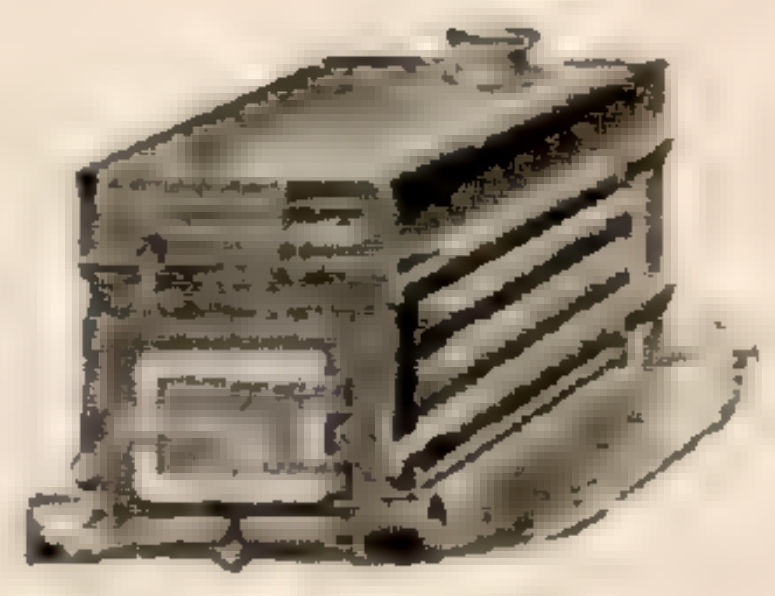

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# ANSWERS TO CORRESPONDENTS.

CALANTHES.—A. M.: Can you tell me what is wrong with the calanthe bulbs I am sending?—Everything is wrong, indeed we do not remember to have seen such miserable specimens of calanthe bulbs. It might be possible to bring the plants back into a healthy condition, but several years of patient care would be necessary. The best advice we can give you is to burn all the puny specimens, and obtain a few strong bulbs to start with as soon as the flowering season is over, taking care to secure clean, healthy stock. We commend to your regular notice our weekly article on orchid culture, appearing under "Work for the Week."

RIDGING SOIL.—H. W., Rye: I wish to ridge a plot of ground this autumn, and shall be much obliged if you will kindly inform me, through the Gardeners' Magazine, how to proceed.—There are several methods of ridging soil, and the basal idea of every method is to dig the soil so as to leave as great a surface exposed to the elements as possible. One method is to dig is a straight line across the plot, merely inverting each spit of soil in the line; then place every spit from the next spade-wide line on top of the line previously dug. If this is continued over the whole plot there will be a series of ridges and furrows, as no soil is placed in the trenches from which soil is taken to form the ridge; in other words each ridge will expose about two spits' depth of soil on either side. Another method is to mark out the plot and arrange for the ridges and furrows to be each two spits wide.

HIRING LANTERN SLIDES FOR HORTICULTURAL LECTURES.—In addition to the information we have already given to correspondents desirous of hiring lantern slides illustrative of horticultural subjects, we may state that Mr. G. Gregory, 60, Canterbury Road, Croydon, has over a score of sets, these varying from 50 to 100 slides and representing a wide range of horticultural activities. Mr. Gregory is an Old Kewite, was for many years a head gardener in the Midlands, and his intimate association with the institution and management of the Croydon Gardeners' Mutual Improvement Association renders him especially conversant with the needs of similar societies.

HOW DODDER GROWS.—S. E. J., Baddow: I shall be very glad if you will publish a brief account of the germination and growth of dodder.—There are several species of dodder, but they all grow in a similar manner. The embryo of the dodder seed is simple and thread-like, and coiled spirally round the fleshy albumen, while the radicle is thickened. The seeds seem to germinate best during damp seasons. At a suitable temperature they will germinate in five to eight days. When a seed germinates the thread-like coil unwinds gradually, the radicle end taking root in the soil, the remainder meanwhile lengthening, and when it reaches a suitable host commencing to twine itself round the stem, to which it attaches itself firmly by means of the suckers or haustoria. Should the thread-like stems fail to reach a suitable host plant, they die. The plant now extends its thread-like stems to neighbouring plants, and large patches may rapidly become infested and overcome, the dodder soon leaving its hold of the soil, and living wholly on the host plant. On becoming firmly established the dodder grows and spreads rapidly, produces flowers, and, if nothing be done to prevent it, seeds are formed and the soil is re-sown. Small fragments of the stems, constituting veritable cuttings, may suffice to establish new centres of infestation, attaching themselves to fresh plants. It is believed that dodder may also be spread by means of little tubercles, which are formed in winter. Dodders are annual seed-producing plants, and are no doubt chiefly distributed by seed included amongst agricultural seeds. The harm by dodder is best explained by stating that the plants possess no chloroplasts, and are unable to take up carbon dioxide from the air like ordinary green plants, but after leaving their hold of the soil, they depend entirely for food material on the ready-made products absorbed from its host plant, which therefore becomes exhausted and dies.

### NAMES OF PLANTS.

N. J., Brough.—1, Jacobinia chrysostephana; 2, Tabernamontana coronaria fl. pl.

L. S. S., Torquay.—1, Choisya ternata; 2, leaves of Taxodium distichum; 3, Exacum affine.

H. H. M., Romsey.—1, Skimmia japonica; 2, Begonia Haageana; 3, Cypripedium Actæus; 4, Nertera depressa.

R. E., Totnes.—1, Pittosporum Tobira; 2, Maxillaria picta; 3, Odontoglossum Pescatorei; 4, Masdevallia Tovarensis; 5, Ruscus racemosus; 6, Areca lutescens.

M. E. C., Kenilworth.—1, Terminalia elegans; 2, Oncidium cucullatum; 3, Irisine Lindeni; 4, Eriostemon myoporoides; 5, Pothos celatocaulis; 6, Carpinus betulus.

### NAMES OF FRUITS.

W. C. J., Brecon.—Emile d'Heyst.

T. H. W., Gomshall.—Doyenne du Comice.

T. G., Woodbridge.—1, American Mother; 2, New Hawthornden.

E. C., Bletchley.—1, Peasgood's Nonsuch; 2, a very fine King of the Pippins; 3, London Pippin.

M. W., Sunbury.—1, Hambledon Deux Ans; 2, Rambour Franc; 3, Washington; 4, Norfolk Beefing; 5, not recognised.

F. S. R., Fareham.—1, Cornish Aromatic; 2, Gloria Mundi; 3, probably Adam's Pearmain; 4, a deformed specimen, not recognised; 5, Beurre Diel.

# OBITUARY.

### DR. M. C. COOKE.

We record with regret the death of Dr. M. C. Cooke, for twelve years in charge of the Cryptogamic Department of the Herbarium of the Royal Botanic Gardens. According to the "Kew Bulletin" "Cooke was born at Honing, in Norfolk. At the age of nine he went to reside with an uncle at Ilford, and commenced the study of botany, being, as a child, first interested in flowering plants. His attention was soon attracted to fungi, at first from an edible standpoint, but soon, as Cooke himself often stated, the fungi exercised such a spell over his entire existence, that his interest in these plants ceased only when he peacefully passed away at his residence in Kentish Town, a few days after his 87th birthday. Being dependent on his own resources from an early age, Cooke was, in turn, an assistant in a drapery establishment, teacher in a National school, and a lawyer's clerk. He afterwards obtained a more congenial appointment as assistant in the India Museum. On the abolition of this institution, Cooke spent some time at the South Kensington Museum, in the Mycological Department, and afterwards came to the Herbarium at the Royal Botanic Gardens, Kew, where he was also placed in charge of the mycological section. Cooke remained at Kew from 1880 to 1892, when he retired on a pension. During this time Cooke incorporated his own herbarium, containing 46,000 specimens, with the existing collection at Kew as well as the collection of fungi presented to Kew by the Rev. M. J. Berkeley. Cooke's figures of fungi, mostly coloured, and numbering 25,000 plates, are also at Kew.

"His first important work was the 'Handbook of British Fungi,' in two volumes, published in 1871, followed by 'Mycographia,' or coloured figures of fungi from all parts of the world, 113 plates; 'Handbook of Australian Fungi,' and 'Illustrations of British Fungi,' 1,200 coloured plates. In addition to the above, over 300 articles on mycological subjects are credited to Cooke by Lindau and Sydow: for a period of 15 years he also edited 'Grevillea,' a journal devoted to cryptogamic botany."

We would add that this distinguished mycologist was for many years a member of the R. H. S. Scientific Committee.

# CITY OF LONDON ROSE SOCIETY.

A meeting of those interested in the proposed rose society for the City of London was held at the Cannon Street Hotel on Wednesday evening. Mr. Stewart Hogg occupied the chair, and there were present: Mr. Arthur E. Protheroe, Mr. Howard Straker, Mr. J. B. Ellis, Mr. Gerald W. Butcher, Mr. P. S. Fitter, Mr. Norris Gibson, Mr. C. Palmer, Mr. A. E. Gregston, Mr. Henry Beard, Mr. P. G. Howlett, Mr. John Collingridge, Mr. H. V. Lucas, Mr. W. Stevens, Mr. A. Turner, Mr. F. W. Harvey, Mr. G. Drayson, Mr. E. M. Lunn, Mr. E. B. Kelley, Mr. C. W. Edwards, and Mr. R. Escofet.

The meeting decided to form a society with the title of "The City of London Rose Society," the membership being limited to bona fide workers in the City of London, i.e., those regularly attending or having offices in the City. It was resolved to ask the Lord Mayor to accept the office of president. Mr. A. E. Protheroe, of 67 and 68, Cheapside, E.C., was appointed secretary and treasurer, and Mr. P. Goddard assistant secretary. A committee was chosen, and a minimum subscription of five shillings agreed upon. The aim of the society is to encourage rose growing amongst City men, and to provide an opportunity of exhibiting to many who, although enthusiastic growers, do not exhibit at the large shows now held.

## FORTHCOMING ENGAGEMENTS

TUESDAY, November 5.—Southampton Chrysanthemum Show; two days.
Chelmsford Chrysanthemum Show; two days.
Brighton Chrysanthemum Show; two days.
Bournemouth Chrysanthemum Show; two days.
Undercliffe (I. of W.) Chrysanthemum Show; three days.
Birmingham Chrysanthemum Show; three days.
Scottish Horticultural Association.
Royal Horticultural Society's Orchid Show; Committees meet at 12 o'clock; Lecture at 3 p.m. on "Double Flowers," by Miss E. R. Saunders; Scientific Committee at 4 o'clock.

WEDNESDAY, November 6.—Royal Horticultural Society's Orchid Show and Conference; Conference begins at 11 a.m., and continues, with a luncheon interval, to 4 o'clock. Mr. J. Gurney Fowler will preside, and papers will be read by Mr. H. Alexander, Professor Keeble, Major C. C. Hurst, and Mr. R. G. Thwaites.
Northampton Chrysanthemum Show; two days.
Bath Chrysanthemum Show; two days.
Dulwich Chrysanthemum Show; two days.
Cardiff Chrysanthemum Show; two days.
Hertford Chrysanthemum Show; two days.
Dover Chrysanthemum Show.

THURSDAY, November 7.—Exeter Chrysanthemum Show; two days.
Cambridge Chrysanthemum Show.
Newport (Mon.) Chrysanthemum Show.
Linnean Society Meeting.

FRIDAY, November 8.—Derby Chrysanthemum Show; two days.
Lowestoft Chrysanthemum Show; two days.
Nottingham Chrysanthemum Show; two days.
Windsor Chrysanthemum Show.

SATURDAY, November 9.—Burton Chrysanthemum Show.
North Lonsdale Chrysanthemum Show.
Formby Horticultural Society.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

---

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

ACTIVE YOUNG MAN desires SITUATION as Single-handed; all round experience, Inside and Out; single; age 27. E. BELL, Hall Cottage, Higher Bebington, Cheshire.

CAPTAIN GORDON highly recommends his Gardener as Head Working, where two or more are kept; life experience; excellent references; age 31; no encumbrance. GARDENER, Southend, Wickwar, Gloucestershire.

E. DEAN, Esq., highly recommends GARDENER (Head or Single-handed); 5½ years with him; 29 years' experience Inside and Out; age 43 Apply WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

FOREMAN (Inside) or GARDENER (Second).—Mr. J. V. MACDONALD, Whetstone Gardens, Edgbaston, Birmingham, wishes to recommend THOMAS EVANS as above; age 27; good experience in Fruit and Plant Houses.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working) seeks Situation; life experience in good all-round gardening; age 40; married, two children; good references. HOARE, Wycombe Court Gardens, High Wycombe.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head Working), where two or three are kept; life experience in all branches, including Flowers, Fruit, and Vegetables; also Herbaceous Plants. S. KERSLAKE, Delbury, Hope Street, Wordsley, Stourbridge.

**Read what our Advertisers write re " Gardeners' Magazine."**

October 28th.

"Having got a situation through your paper, I wish my name to be taken off your Register. Thanking you very much,

Yours truly,
J. S.

**The " GARDENERS' MAGAZINE " is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Second of five or six); Inside, or Inside and out; thoroughly experienced, Fruit, Plants, Decorating; two years second; excellent references; disengaged; age 27; married when suited. Address, W. LYDE, North Ripley, Christchurch.

GARDENER (head of two or three); 22 years' practical experience, all branches; Inside and Out; age 38 years; married, no family; life abstainer; at liberty. Address, J. SIMMONS, Potbridge, Winchfield, Hants.

GARDENER (Head Working). — Mr. EUSTACE PALMER, Drayton House, Sherfield-on-Loddon, Hants, wishes to RECOMMEND E. PRESTON, care of W. Johnson, Bishopstone, Shrivenham, Berks, as HEAD GARDENER of four or more; thirteen and a-half years' good character in present situation; practical experience in all branches, Inside and Out; understands acetylene plant, oil engines, land and stock; thoroughly honest and trustworthy; age 40; married, no children.

IMPROVER (age 16), a strong Lad, seeks engagement as above; had some experience; Bothy preferred; abstainer; disengaged. Apply, W. RYE, Great Mowshurst Farm, Edenbridge, Kent.

JOURNEYMAN age 19, seeks SITUATION in a good garden; four years' experience; can be well recommended. J. WHITMAN, Newland Park Gardens, Chalfont St. Giles, Bucks.

ROCK-WORKER, wants JOB; Rock-water and Japanese Gardens, Ferneries, Winter Gardens, etc.; hour or piece; life experience. Apply, ROCK-WORKER, Thames Ditton.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Sunnyside, Moorfield Road, Orpington, Kent.

YOUNG MAN seeks SITUATION (Inside and Out; age 21; strong and willing; six years' experience; three years' nursery, last place; good references; abstainer. W. COWARD, Old Broughton Road, Melksham, Wilts.

YOUNG MAN (24), as UNDER in Gentleman's Garden or Market Garden; near S.W. London preferred; good references. Apply, ARTHUR SAYERS, Wendover Cottage, Westergate, near Chichester, Sussex.

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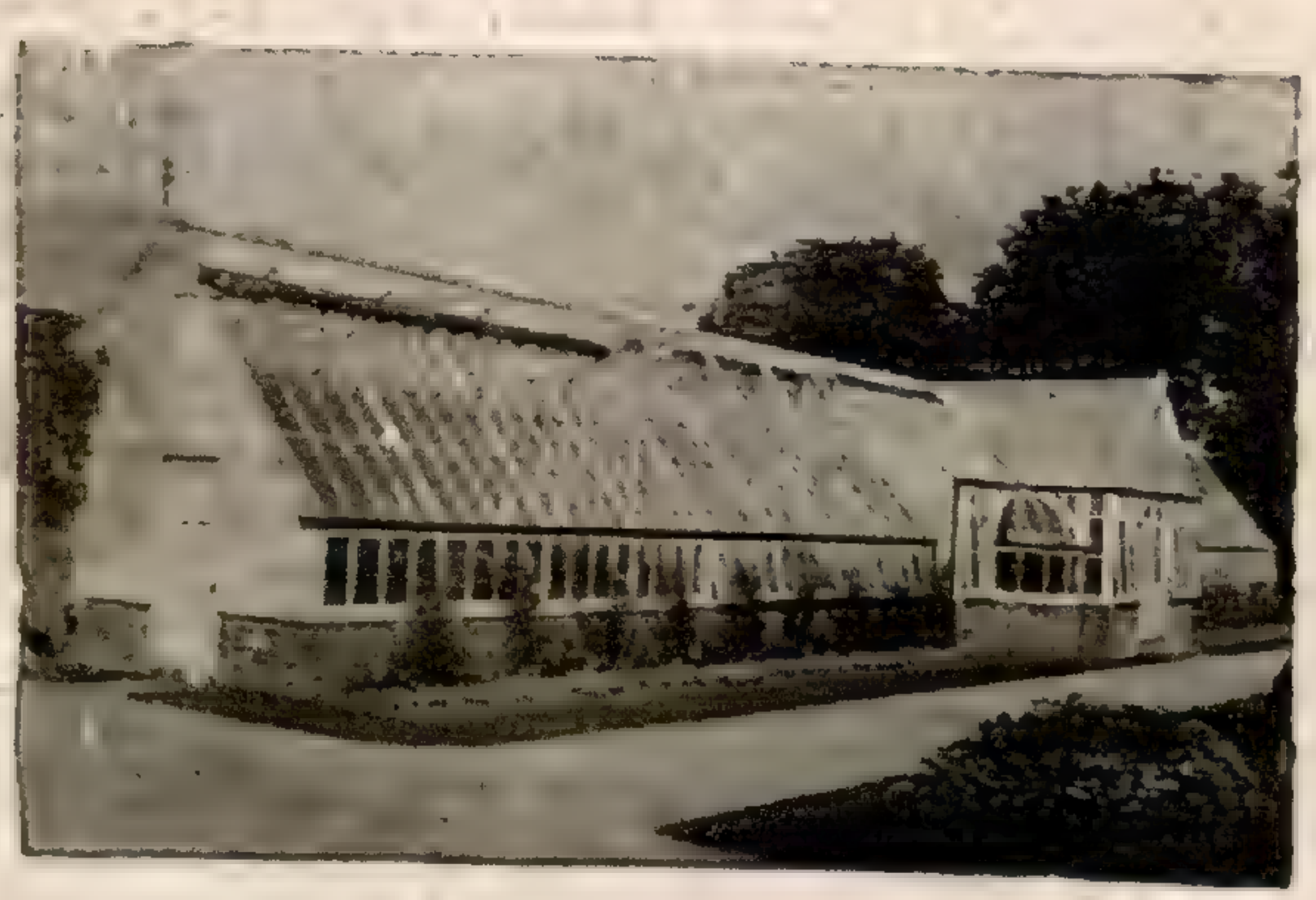

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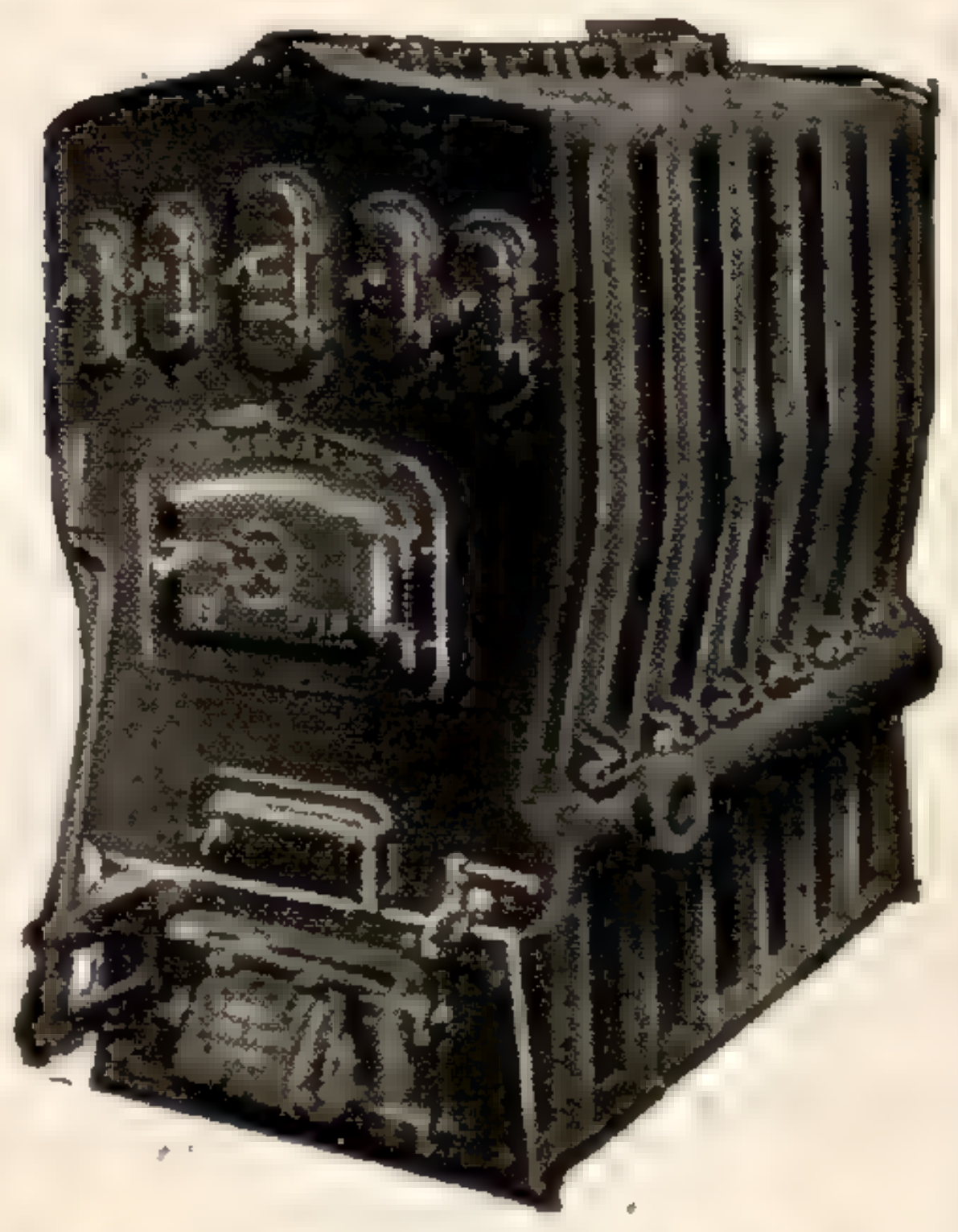

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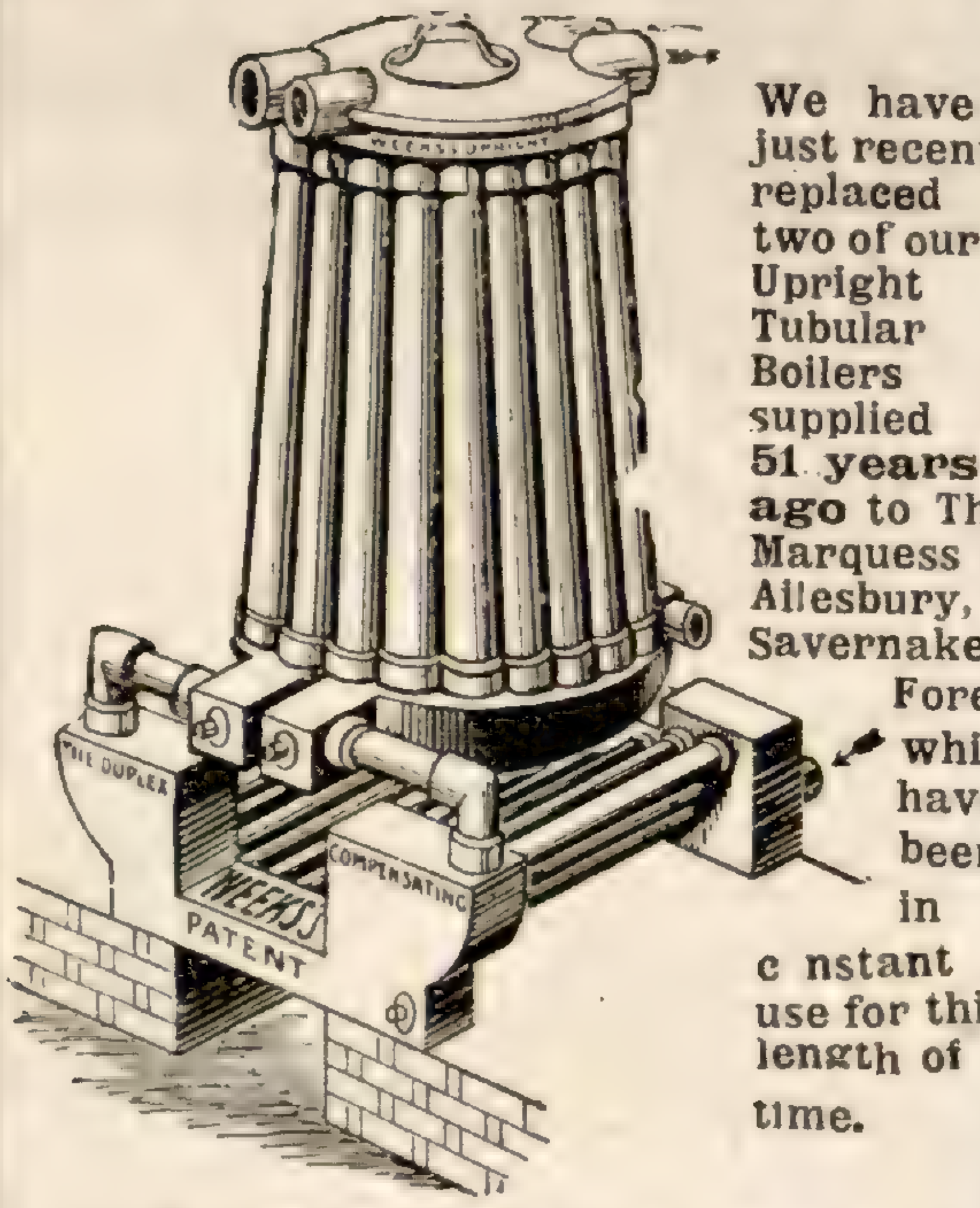

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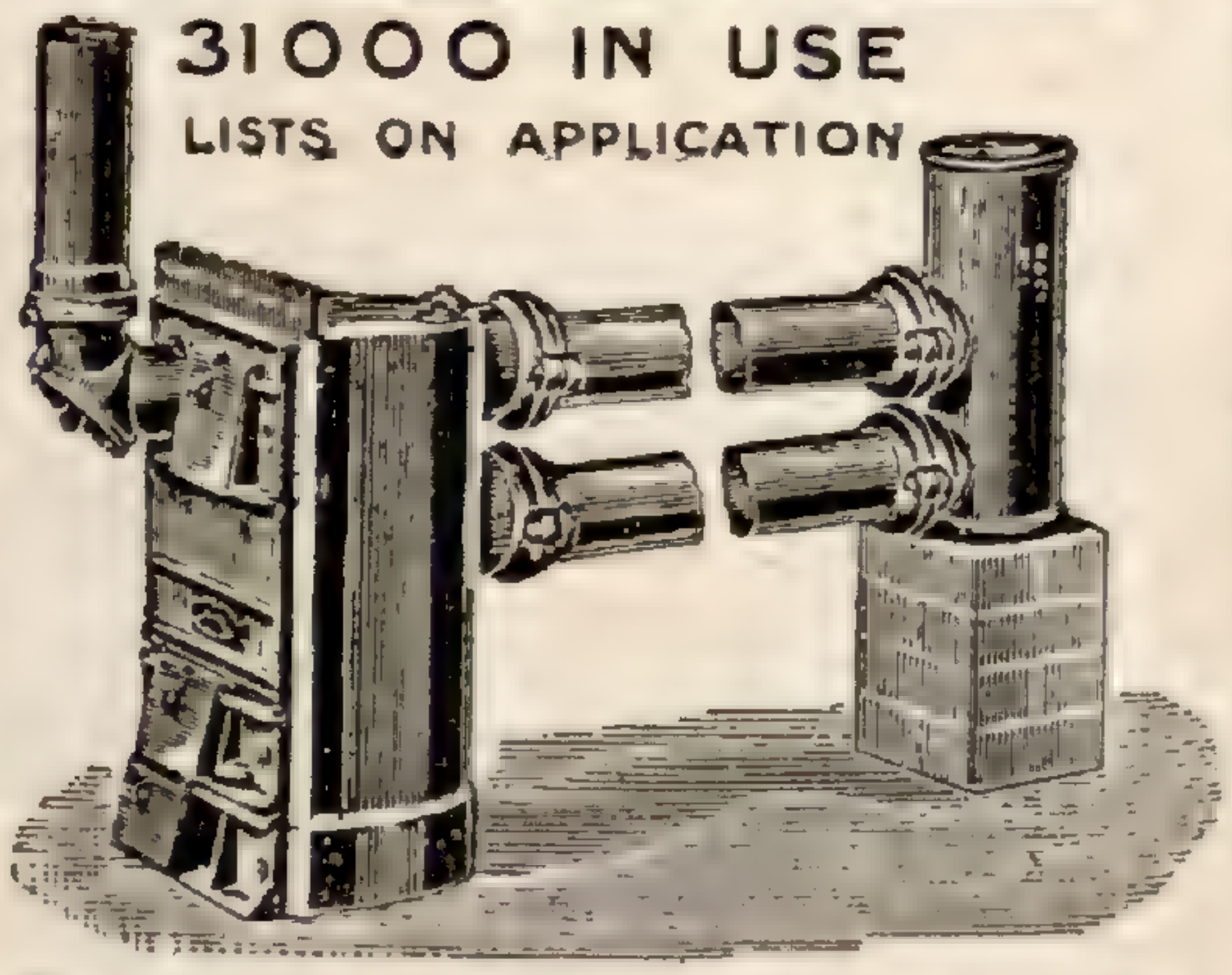

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VOL. LV.—No. 3,080. SATURDAY, NOVEMBER 9, 1912.

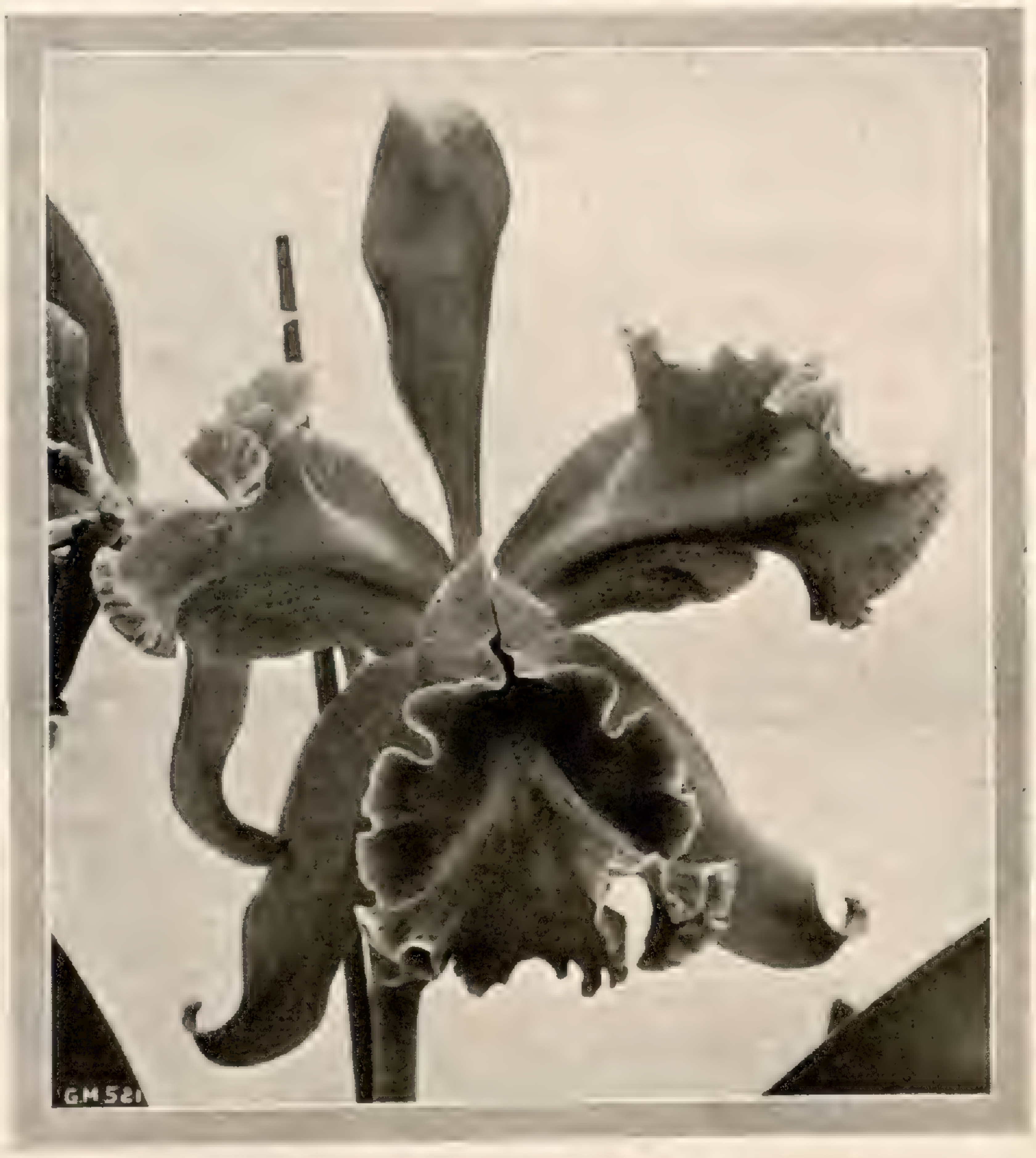
# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

◆

### The Orchid Cult.

The exhibition of orchids that yield the most freely of their floral wealth during the autumn months, which has been held by the Royal Horticultural Society during the past week, and the conference associated therewith, have been of immense interest as evidence of continued progress in the development of these fascinating plants, and of the great value of those flowering at this season of the year for contributing to the attractions of the garden under glass, when the flowers in the herbaceous border and on the rockery have reached the vanishing point. These two functions have again brought into prominence the high position to which orchids have attained in gardens, not only in those whose owners have no occasion for considering overmuch the question of cost, but in those where economy has to be carefully studied, many of these belonging to amateurs who are actively engaged in business or professional work, and do much of the work themselves. We are also reminded of the high position orchids have taken in connection with the Temple Shows, and of the assistance they have rendered these exhibitions in attaining the high degree of popularity they have so long enjoyed. It is hardly necessary to recall the fact that the collections of orchids formed one of the most interesting and attractive features of the Royal International Horticultural Exhibitions held at Chelsea in May last; but it may be mentioned as a point of some importance that immense advances are also being made on the Continent, as evidenced by the large and beautiful displays seen at Ghent and elsewhere on the occasion of the great exhibitions. The more beautiful of the kinds, whatever may be their season of flowering, can hardly fail to obtain full appreciation from genuine flower lovers; but those kinds that bloom during the autumn months have special claims for consideration, and, happily, these claims are recognised, if not quite so fully as one could wish. The greater proportion of them are not only wondrously beautiful, but they represent much thought, rare judgment, and persistent effort on the part of those who are engaged in the interesting, and, we would hope, profitable work of creating new forms among orchids. Especially do we find proof of the great beauty of the hybrids flowering in autumn, and the remarkable success that has been achieved by hybridists, in the hybrids which have the attractively-coloured Cattleya labiata as one of their parents. Some twenty-five years have elapsed since the autumn-flowering variety of this species was re-introduced to European collections, and during this comparatively short period it has been so freely utilised by raisers that, apart from the varieties, the hybrids now form a large and beautiful group. If we turn from the cattleyas and the lælio-cattleyas, that are now producing such rich colour effects, to the cypripediums we shall find that immense advances have been made in these, and that a very considerable proportion of the newer forms are of much value for contributing to the attractions of plant structures in which an intermediate temperature is maintained from early in autumn until the season of spring is well advanced. The list of hybrids at the command of the cultivator is a long one, and it includes some that, because of their rarity, are high in price, but a representative collection possessing much merit may be made without their inclusion. There is no great difficulty in the successful cultivation of cypripediums, and a structure well adapted to their requirements can be provided at a comparatively small cost. The form of their flowers may not be in accordance with the taste of some owners of gardens, and when this is the case no useful purpose would be served in growing them. To many the distinctive shape of their flowers is an added charm, and this being so, attention may with advantage be directed to the fact that a considerable proportion of the cypripediums suffer but little from the effects of the fogs experienced in the neighbourhood of large towns. In addition the flowers retain their freshness and beauty for a long time upon the plants, and they will remain in good condition for a fortnight or so after they have been cut, and their stems put in water. The extension of the cultivation of orchids in gardens of moderate size has proceeded somewhat rapidly within recent years, and it is now a quite common occurrence to meet with from one to three houses wholly devoted to orchids in gardens in which but a few years since they were wholly absent. It is of interest also to find that increased attention is being paid to the raising of seedlings in gardens in which orchids are not regarded as a speciality, and if hybrids of exceptional excellence are not frequently raised in such gardens it may be attributed to the inability of those in charge to utilise the finer forms in their work of hybridisation. In gardens where orchids are appreciated the selection made should not be limited to the autumn-flowering kinds, or indeed to the cattleyas, lælio-cattleyas, or cypripediums, for if this is done much of the pleasure that may be derived from them is lost. Where it is not desired to do more than grow orchids for beautifying the plant houses and supplying cut flowers, the kinds that require ultra-tropical conditions, or cannot be readily grown with success owing to some constitutional



LÆLIO-CATTLEYA ORION VAR. OTHELLO.

A beautiful hybrid, with bronzy sepals, soft crimson petals, and rich ruby-crimson lip. F.C.C., R.H.S., November 5. Messrs. Charlesworth and Co., about two-thirds full size. (See p. 863.)

peculiarity, and the costly hybrids should be left to the specialists. There are more than sufficient for the purpose indicated without them. It would indeed be well were cultivators to give more attention to the many dendrobiums, odontoglossums, oncidiums, and the summer-flowering cattleyas and lælias, all of which are at once beautiful and inexpensive, for they would derive much pleasure from them. Especially does it appear desirable that the many beautiful dendrobiums which the hybridists have placed at their disposal should be more largely grown, for their value is great from the decorative point of view, and the exquisite beauty of their flowers may be fully enjoyed without the necessity of being subjected to a tropical heat, which is certainly not pleasant. We have no wish to exalt the orchids at the expense of other meritorious classes of plants, but with a full knowledge of what has been accomplished by the strenuous endeavour of the hybridist, and the great extension of their culture, it has not been less a duty than a pleasure at the present time to acknowledge the indebtedness of those who appreciate the charms of orchids to the raisers, and to suggest that to many gardens their introduction would give an added charm. The magnificent exhibition at the Horticultural Hall will have had the effect of focussing attention on the numerous, highly interesting, and immensely attractive kinds flowering late in the year, a point of no small importance, seeing that they bloom at a time when the flowers are very few in the open, and the genial warmth of the structures in which they are grown is usually much appreciated.

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**Dr. M. C. Cooke.**—On the authority of the "Kew Bulletin," we recorded in our issue of the 2nd inst., the death of Dr. M. C. Cooke, and gave a brief sketch of his life and work. We now find that the announcement of the death of this distinguished fungologist was premature, and we are pleased to learn from Dr. Cooke that he is in the enjoyment of good health.

**Garden Clubs.**—At the recent conference of societies in affiliation with the Royal Horticultural Society, the question was raised with regard to the advisability of forming garden clubs for the purpose of assisting allotment holders in purchasing tools, manure, seeds, etc., under the most favourable conditions. As stated by Mr. Jay, of St. Barnabas, Sutton, a club has been formed in connection with the local society with which he is associated for the purpose of affording allotment holders and occupiers of cottage gardens facilities for saving, during the periods in which employment is brisk, the money necessary for the purchase of the manure, seeds, etc., necessary in the cultivation of their allotments and gardens, which have usually to be obtained at a dull season. Sir Daniel Morris, who presided, briefly referred to what had been done in the West Indies in this direction during his administration of the Agricultural Department of these dependencies. In subsequently discussing the question of garden clubs with us, Sir Daniel Morris expressed the opinion that, conducted on proper lines, such clubs would prove most helpful to those whose earnings are somewhat variable, and who are not well acquainted with the best methods of procedure in obtaining seeds, etc., provided they are conducted on proper lines. From his experience, it is essential to success that the treasurer should be of some position in the district. It would be useful, as well as interesting, to know what has been already done in this matter in the United Kingdom, and also to learn the views of those who are interested in cottage gardens and allotments, and we shall be very pleased to hear from those of our many friends who are in a position to give any information of the matter.

**Pæony-flowered Dahlia.** — Mr. C. E. Pearson writes as follows with reference to pæony-flowered dahlias: "C. T. D." appears to have stirred up trouble by his outspoken remarks on these wretched abortions, but I think every word he wrote was true and to the point. Mr. Cobb says we must suit a wider range of taste than was formerly the case, but is it not rather a want of taste that our unfortunate growers have to cater for? Many of those who grow and exhibit these coloured rags for commercial reasons abhor them in their own souls, but must provide what the public asks for. Admiration for crude colour is a primitive instinct, but appreciation of "form" is a much higher and rarer endowment, as may be seen every year by comparing the crowd in the Academy picture galleries with the solitude of the sculpture rooms. In horticulture, the limited appreciation of the numerous lovely forms of our British ferns tells the same tale. The pæony-flowered dahlia makes a fine splash of colour, and may be endured at such a distance that its colour effect alone is seen; but that any true flower-lover can permit a closer approach is a marvel passing comprehension.

**Dahlia Useful.** — About ten days since we received somewhat of a surprise in the form of a box of blooms of Dahlia Useful, from Mr. J. T. West, of Brentwood, for at Kew the frost had cut dahlias down to the ground some days previously. This variety belongs to the decorative section, and received the first-class certificate of the National Dahlia Society, and the Royal Horticultural Society's Award of Merit at the meeting of the Joint Committee of the two societies that was held at Westminster at the end of September. The variety is remarkable for its short-jointed growth, and for its long and erect flower stems. The blooms are about four inches in diameter, of a rich rose-pink hue, and produced in the most profuse manner.

**Northern Fruit Congress**, 1913. —The arrangements for the Fruit Congress that will be held in co-operation with the North of England Horticultural Society at Kendal, October 15 and 16, 1913, are being proceeded with, and already considerable progress has been made. A large and representative meeting was recently held at Kendal to form an Executive Committee to carry out the arrangements for the show and congress, when the acting-secretary, Mrs. F. W. Crewdson, reported subscriptions and guarantees (including £30 guaranteed at the meeting) to the amount of £70; also a challenge cup from the High Sheriff, W. D. Crewdson, Esq.; this in addition to the Straker and Voss Cups already in hand. It was also reported that Lord Henry Bentinck has promised to open the Congress. The Royal Horticultural Society have promised to send delegates and award medals. The Department of Agriculture of the Board of Agriculture is arranging to put up an exhibit of potatoes and diseases of potatoes. Papers on the following subjects will be included in the programme: "Land Tenure and Fruit-growing," "Diseases of Potatoes," "Organisation of the Damson Industry," "Conditions Necessary to Successful Fruit-growing" (local). The Rev. J. Bernard Hall has been asked to lecture on "Apple Culture," at 2.15, in the Town Hall, Kendal, on the 16th inst., in order to arouse interest in the congress and show.

**Saltaire Rose Society.**—We are pleased to learn that this enterprising society continues in a flourishing condition. A few evenings since the society held its annual dinner at the Victoria Hotel, Bradford, and, in responding to the toast of his health, the President (Mr. H. Sutcliffe Smith) said that the society had made rapid progress of late years, both as regards its members and exhibitions. He stated that in 1910 the entries and exhibitors at the show numbered 575 and 109; in 1912 they reached 781 and 143, the number of entries being a record in the history of the society. Owing to the dull weather which had attended the last show, however, the gate receipts had shown a decrease, having fallen to £294, as compared with £369 in 1911, but the society was in a sound financial position, and it now had a total of no fewer than 723 subscribers. Next year, said Mr. Smith, it was intended to hold the show about July 8, and it had been arranged that in conjunction with it the show of the North of England Horticultural Society should again be held.

**An Additional Public Park for Maxwelltown, Dumfries.** — Next year the Parish Council of Troqueer, which parish includes the Burgh of Maxwelltown, Dumfries, enters upon the possession of a park of about twenty acres. The park lies close to the river Nith, and was bequeathed to trustees to be handed over to the Parish Council by the late Mr. J. Gibson Starke, of Troqueerholm, of which estate it forms a part. The testator also left £100 as the neucleus of a fund for laying out the park, and the rents of the land, which are occupied under lease by an agricultural tenant, are being accumulated for the same purpose. Some difficulty arose on the question of power to administer, the parish not being a Landward, but a combined Burghal and Landward one, and therefore having no power to rate the burgh for the maintenance of a park. The Local Government Board has given its opinion that the Council can administer the trust; and in the meantime the Council, of which Mr. S. Arnott, J.P., one of our contributors, is chairman, will endeavour to do so, although some of the members have been in favour of the Council leasing it to the Town Council, which has power to rate for the purpose.

**National Chrysanthemum Society.**—The arrangements for the Special Show and Conference to be held at Essex Hall, Essex Street, Strand, London, W.C., on Wednesday, November 20, 1912, are as follows: The show will be open to the members and the public at one p.m. The novelties submitted to the Floral Committee will be on view in the Lower Hall at four p.m. The committee will meet at three p.m., and all exhibits for this meeting must be staged by 2.30 p.m. as usual. The conference will be held in the Lower Hall, and will commence at seven p.m. Dr. E. J. Russell will deliver a lecture on "Soil Sterilisation" (illustrated by lantern slides), to be followed by a full discussion. The president of the society, Sir Albert Rollit, D.C.L., LL.D., will take the chair. The annual dinner will be held at the Holborn Restaurant, W.C., on Wednesday, November 27, 1912, at 6.15 p.m. for 6.45 p.m. Sir Albert Rollit, D.C.L., LL.D., president of the society, will preside, and the challenge trophy, the Holmes memorial cups and medals will be presented to the winners during the evening.

# CONFERENCE ON ORCHIDS.

It is many years ago, in 1885 to be correct, since the Royal Horticultural Society held a conference in connection with Orchids, their cultivation and hybridisation. This conference was held at the society's old gardens at Chiswick.

On the present occasion Mr. J. Gurney Fowler, the society's treasurer, presided, and at the opening of the Conference, at 10 a.m. on Wednesday, November 6, referred to the splendid autumn exhibition of orchids in the Royal Horticultural Hall, below, and pointed out that when the exhibition was suggested the idea of holding a conference in conjunction with it was well received, and now carried into effect.

There was a fair attendance, including: Sir G. Holford, Sir Harry J. Veitch, Messrs. R. A. Rolfe, De Barri Crawshay, J. Fraser, W. Cobb, F. Hanbury, J. O Brien, W. H. White, H. Alexander, Gurney Wilson, F. J. Chittenden, H. G. Thwaites, Briscoe, Curtis, Hatcher, J. Cypher, etc.

CATTLEYA PEETERSI WESTONBIRT VARIETY.

A magnificent cattleya, the deep purple colouring and gold-marked throat of the labellum being admirably set off by the white sepals and petals. F.C.C., R.H.S., November 5. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester. (See p. 863.)

## PHYSIOLOGY OF FERTILISATION OF ORCHIDS.

Professor F. Keeble, M.A., D.Sc., dealt with this intricate and vastly interesting subject. He pointed out that a long series of events occurred beween the application of the pollen to the stigma, and the harvesting of the seeds. He covered fairly well-understood ground when, by means of slides, he showed how the pollen germinates on the stigmatic surface and sends its pollen tubes down the column, carrying its nucleus down to the ovary, entering the ovule (or unfertile and embryo seed), and discharging that nucleus (male element) into close contact with the female nucleus. He showed how the nuclei remained in close contact for a while and then fused intimately. From this fused mass, forming a single cell or zygote, arose the material that eventually produced the desired plant. Professor Keeble pointed out that it was formerly believed that the egg cell of the ovule could not develop without the influence of the male element (pollen). But it was now found that unfertile eggs of sea urchins could be made to produce young by means of chemical stimulus and without the intervention of the male element (spermatozoa). Many plants do produce seeds without pollination, as in the case of hawkweeds, alchemillas, and other parthenogenetic plants, and here, it would seem, that development was due to mechanical stimulus. Frogs had been produced from unfertile eggs stimulated by puncturing, and in the case of Zygopetalum Mackayi, fertilised with pollen of odontoglossum, the resulting seedlings showed no hybrid influence at all, but came true Zygopetalum Mackayi, thus also suggesting stimulative influence only. Professor Keeble pointed out that the effects of pollination might be threefold—(1) fertilisation; (2) stimulative; and (3) chemical.

Mr. O'Brien referred to several instances of the stimulative influence of grit or dust upon the stigma of flowers. An interesting matter arose in the discussion, and it was whether there was any possibility of two pollen tubes fertilising one ovule. Professor Keeble said not. Then arose the question of whether a flower could be successfully fertilised with several kinds of pollen (i.e., pollen from different species or genera), with the result that distinct hybrids could be produced from the same pod of seeds. Professor Keeble considered it possible, and Mr. De Barri Crawshay pointed out that he had proved this problem in one case, as he crossed Odontoglossum Harryanum with O. Lambeanum, and the fine, slightly spotted O. crispum Angel, and the results were O. crispum-Harryanum and O. Rosefieldiense, these representing distinct hybrids.

## APPLICATION OF GENETICS TO ORCHID BREEDING.

Major Hurst, F.L.S., one of our leading workers in Mendelism, read a highly technical paper upon the above subject. He paid tribute to the great work of the R.H.S. to propagate the science of genetics at several conferences, and then pointed out that among orchids 40 genera and 300 species had been already used in breeding, and there were no fewer than 2,000 primary hybrids, while secondary hybrids and varietal forms were beyond computation. Major Hurst pointed out how few fine hybrids were obtained from the large batches of seedlings raised, and it would be a great advance if things could be so managed that there were fewer "weeds" in proportion to the "desirables." The only way, said Major Hurst, was along the lines of Mendelian principles, and already good work was being done in this direction. Major Hurst considered that it was necessary to secure pure breeding orchids for stud purposes, and so label them that they could always be identified, and the divisionally propagated plants of a known good breeder would acquire a value and reputation such as that possessed by a fine sire or brood mare among horses.

A good-looking orchid that gained a F.C.C. need not necessarily prove a good stud plant, but the parents of such a high-class orchid were worthy of the greatest care as breeders. Seeing what splendid orchids were now produced in England, Major Hurst considered that by the application of Mendelian laws, and the production of fine plants, there was no good reason why British raisers should not provide all the finest stud orchids for the world, just as now Great Britain provides the finest stud animals in horses, cattle, etc. Major Hurst tabulated a great deal of his findings respecting hybridisation and future possibilities, and the publication of these tables will be eagerly looked forward to. Major Hurst considered that the mating of complex hybrids was scarcely likely to prove economically useful, and he advised sticking to the mating of primary hybrids.

His final conclusion was that the application of the principles of genetics to orchid breeding leads one to conclude that from the economic and eugenic point of view, the only sound method to adopt in orchid breeding is to make a fresh start, by selecting a choice stud of the best individuals of the best varieties of the best species of the best genera, due preference being given to those stud individuals that have already bred a winner of the F.C.C. at the Royal Horticultural Society, and have also proved themselves to be homozygous in their good qualities. These selected stud orchids should be combined by crossing in every possible way in order to make superior primary stud hybrids. Finally, these superior stud hybrids can be combined in any way that the breeder may think fit, in accordance with the particular subjects he may have in view.

Mr. De Barri Crawshay very highly complimented Major Hurst upon his paper, and referred to the great value of a fine stud parent in breeding orchids, and he said that Odontoglossum crispum Luciani had never produced a poor offspring.

The morning's proceedings concluded with thanks to Professor Keeble and Major Hurst for their excellent contributions to the conference.

### AFTERNOON SESSION.

The afternoon session commenced at two o'clock, Mr. J. Gurney Fowler again presiding. The attendance was again moderate, but rather larger than in the morning. The proceedings opened with a paper on

### SOME EPIPHYTAL ORCHIDS.

This was an essentially practical paper, and in it Mr. H. Alexander, orchid grower to Sir George Holford, Westonbirt, gave valuable hints upon the cultivation of such orchids as cattleyas, lælias, dendrobiums, and other epiphytes. Needless to say, this paper was listened to with close attention because of Mr. Alexander's splendid reputation as a grower, and also because of his popularity, for success has not rendered him dogmatic.

We may refer to just a few of the points emphasised. He said that the soft, sappy, and strong growth produced by the use of soft rooting material, such as leaf-soil, was by no means the best for orchids. Lighter houses for the plants were needed, and the admission of greater light than usually afforded was desirable. The value of fresh air he very strongly emphasised, and he pointed out that ventilation at night was quite as beneficial and important as ventilation by day; closing the ventilation at night to keep up temperature was a fallacy, a reasonable temperature and plenty of fresh air being far more desirable. A suitable condition of the atmosphere as regards moisture was, Mr. Alexander stated, of far more importance than any special rooting compost. Excessive watering at the roots was answerable for a vast number of failures. Rainwater was to be preferred to tap water. Mr. Alexander strongly objected to the use of any manures, as experience had shown him that these stimulants had a bad effect on epiphytic orchids. Excessive drying during the resting season Mr. Alexander deprecated, and he stated emphatically that heat, air, light, and moisture, with close observation and light houses, held the secret of success with epiphytic orchids.

Mr. Alexander's paper was not a long one. Mr. O'Brien, who, long years ago, had charge of the Westonbirt collection, referred to the splendid cultivation of the collection under the care of Mr. Alexander. He considered that the retention of old back bulbs in so many epiphytic orchids was detrimental to the fullest success, and he believed he was one of the first to appreciate this fact. He suggested that an under-supply of water to cattleyas would prove far more successful than an over-supply. Mr. J. Fraser spoke of the great value of clear light and pure air to orchids, and considered that the roots of epiphytes should not be covered up in the same way as those of terrestrial orchids. In answer to a question, Mr. Alexander said that the minimum temperature during the winter for Vanda cærulea should be 50 degrees. Sir Harry Veitch asked what other orchids were grown in the same house as the Westonbirt vandas, but Mr. Alexander said he had a house devoted to V. cærulea, but, though abundance of air was always provided, the best plants were invariably those nearest the ventilators. Good light and plenty of air were necessary to produce substantial flowers and brilliant blue colouring. He stated that all the vandas shown that day had been under his care for from five to thirteen years. The discussion on Mr. Alexander's paper was very brisk, and he had to answer a number of questions.

### ALBINISM IN ORCHIDS.

The final paper, by Mr. H. G. Thwaites, was on "Albinism in Orchids." This was a very difficult subject and a rather controversial one. Mr. Thwaites stated how he had tried to produce white seedling orchids, and had secured many coloured ones in the progeny of two white parents. Some whites seemed to contain a colour factor not discernible to the eye, but rendered very obvious in the progeny. He found it difficult, if not impossible, to differentiate between the pure white and the apparently pure white, save by experience in the progeny of each.

Mr. Thwaites put forward the theory that, as white was a combination of all the colours in the spectrum, so white in orchids was, in some wonderful way, built up by colour. He had produced white flowers by crossing purple with yellow flowers. Dendrobium nobile virginale, fertilised with its own pollen, invariably produced white flowers, and the same could be said of Cattleya labiata alba crossed with another white, C. labiata. Other examples were also given, but in other cases where the white forms were only apparently white, the progeny invariably came with some amount of colouring. A plant which flowers white one year and comes slightly coloured the next, could be made to give white flowers the third year if the buds were opened in the dark. A plant that gave pure white flowers year after year under good cultivation was the only true albino, and only by mating true albinos could true albino seedlings be produced. Mr. Thwaites asserted that plants proved to be true albinos after several years' cultivation would never, if mated, produce coloured progeny.

Major Hurst suggested that "white" in orchids was not white in the sense of a proper combination of the colours of the spectrum, but was rather due to the entire "absence" of colour. Mr. J. Fraser, Prof. Bateson, Mr. de Barri Crawshay, and others took part in the discussion, but they seemed to miss the point Mr. Thwaites had in view, i.e., the production of true albino hybrids with certainty

Sir George Holford, at the conclusion, said that orchids could only be grown to the highest perfection if the houses were well-built, and set in an open, light, and airy position, and failures were often due to bad housing and bad positions rather than to the want of care on the part of the grower. He moved, and Mr. de Barri Crawshay seconded, a vote of thanks, that was heartily accorded the chairman and those who had read papers.

The proceedings were carried through with briskness, and concluded promptly at 4 p.m.

## SPANISH AND ENGLISH IRISES.

The bulbous irises known respectively as Spanish and English varieties are among the handsomest in a family replete with good garden plants, while their decorative qualities, whether disclosed among border subjects or employed as cut flowers, appeal to everyone. One occasionally hears them described as the "Orchids of the Garden," and certainly, having regard to their rich and varied colours, the term is not inappropriate; in one respect, however, they differ in a marked degree, for whereas orchids are relatively costly to purchase and maintain, these irises are among the least expensive of garden plants.

The Spanish Iris (Iris xiphium) is the earliest of the two to flower, being in season toward the end of May and throughout June. It is more slender in growth, more graceful in flower, and produces a smaller bulb than the English iris, and, although it does not exhibit the same diversity of colouring as the latter, yet a large number of its varieties have flowers of a yellow shade, a colour singularly absent from the English section. Spanish irises succeed best in a light, loamy soil, in well-drained positions, either exposed to sun or with light shade, the latter having distinct merit in affording successional flowers.

The English Iris (Iris xiphioides) is characterised by having large massive flowers on stout stems that, in the self varieties, produce a rich effect when grown in mass; many of the varieties have mottled flowers, while in not a few the standards are distinctly coloured from the falls. The varieties succeed best in medium, heavy loam, being partial to a greater degree of moisture than the Spanish type. When planting either kind, it is advisable to choose ground that has been well manured for a previous crop, rather than employ fresh manure when planting the bulbs. The best season for planting is from September up to November, for although late planting may prove successful, early planting is advisable, as it gives a long growing season that invariably results in a good floral display. Both Spanish and English irises lend themselves to grouping in many informal ways, such as in shrubbery beds and borders, or in open positions in wild gardens, while they afford a desirable change and welcome addition to the choice flower border; when accommodated in perennial borders, however, the bulbs should be interplanted with violas, campanulas of the carpathica or even persicifolia types, or pentstemons of the Newbury Gem class, so that no blank occurs when the irises pass out of flower, while the further claims of indoor decoration should be specially provided for by planting a bed to cut from in the reserve garden, as these are among the most elegant and lasting of cut flowers in their season. It is not necessary to lift and replant the bulbs every year; as a rule, Spanish irises require replanting every second year, and the English every third year. Only the larger bulbs should be replanted to flower the following season.

Numerous varieties of both Spanish and English irises are offered in all good bulb merchants' catalogues, so that it is comparatively easy to choose colours that appeal to individual tastes. Where only a few bulbs of a kind are required, it is a good plan to purchase a collection of named sorts, as by this means greater variety is obtained, while it enables one to appreciate the wide range of colouring these beautiful bulbs exhibit.

THOMAS SMITH.

Coombe Court Gardens.

# MESSRS. HUGH DICKSON'S ROSES.

Nearly fifty years have elapsed since the late Mr. Hugh Dickson became a citizen of Belfast and established the Royal Nurseries, which for a considerable portion of this somewhat lengthy period have occupied a prominent position among the establishments in the United Kingdom that are especially associated with roses. Although it is not intended to deal with the history of the firm, interesting as it would undoubtedly be, it will be of interest to recall the fact that the late Mr. Hugh Dickson was a brother of Mr. George Dickson, as it reminds us that he shared with him a strong affection for the rose, and that his son, the present members of the firm of Hugh Dickson, Lim., have, like their grandfather, the late Mr. Alexander Dickson, given much attention to cross-fertilisation, and as the result have achieved a brilliant success in the creation of new roses.

The nurseries, which are remarkable alike for their extent, the judgment shown in their planning, and for their high keeping, are situate on the southern boundaries of the city, and about two miles from the centre thereof. This distance is readily covered by means of an excellent service of tramcars which pass the main entrance, and the short journey is not without both pleasure and interest. The route is for the most part through Belmont, one of the most delightful of the residential suburbs of Belfast, and affords abundant evidence that not only is business in a flourishing state, but that those who are engaged therein and sufficiently prosperous to live in the suburb are for the most part keenly interested in gardening. Many are the residences passed on the way that possess architectural features of a high order, and not less numerous are the tastefully-designed and skilfully-planted gardens in which, among other suitable subjects, roses of various classes are fully represented. Excellent object-lessons in the utilisation of roses as aids in beautifying the garden may indeed be obtained in the majority of the leading gardens that are passed. Not less noteworthy in this respect are the nurseries, which can hardly fail to possess much value educationally to the passer-by, as well as to those who take advantage of their opportunities for making a more or less prolonged visit. Roses are freely used in forming a setting to the residence of Mr. Hugh Dickson, not in such manner as to suggest that they have been planted for the purposes of advertisement, but rather for the purpose of demonstrating their great value for beautifying the immediate surroundings of the house, and suggesting the manner in which they can be most successfully employed.

On the breadth of turf that separates the residence from the road are several beds devoted to dwarf roses, which here, as elsewhere, have been placed under the conditions favourable to their full development, and, in consequence, make a vigorous growth and produce a profusion of finely-developed blooms. To the south-west of the entrance are numerous big beds of roses with a pergola as a background, this being quite distinct in design, characterised by lightness and elegance, and affording a splendid opportunity for demonstrating the charms of the polyanthas, the wichuraianas, and other rambling roses. As will be readily seen, the sides of the pergola are formed with a series of arches supported by stout uprights, and lightly connected at the top by cross-pieces. The design has much to recommend it to the notice of those who devote any considerable share of their attention to rambling roses. It is picturesque, and by almost wholly dispensing with the cross arches as generally used, the spaces between the two sides is so light that the roses grow and bloom freely on the inner sides, and thus afford much entertainment to those who use the walk. Readers will be able to determine how far such a pergola is adapted to their tastes and requirements from the illustration given herewith, for the photograph from which it was reproduced was taken from a point which included one of the arches that had been recently replanted for the purpose of showing the design of the woodwork. The arrangement of the beds alongside the pergola is good, and, with reference to them it will be hardly necessary to point out that, when dwarf roses are associated with pergolas it is far preferable to arrange them in beds separated by narrow walks than to plant them in borders flanking the woodwork. Not only is the crowding up of the climbing roses to an injurious extent avoided, but the plants can more readily receive any attention that may be necessary, and the flowers be more freely enjoyed.

PORTION OF FIELD CONTAINING 80,000 PLANTS OF NEW ROSES
In the Nurseries of Messrs. Hugh Dickson, Lim., Belfast.

A walk through the houses devoted to the all-important work of cross-fertilisation, the ripening of the crops of rose seed, and the raising of seedling roses, was of intense interest; and, with Mr. Hugh Dickson and Mr. Alex. Dickson as guides, one could have wished that the time available had been longer. Both, as so well-known, are the keenest of rosarians, both are fully conversant with the scientific and practical aspects of cross-fertilisation in its relation to the rose, and they are equally ready to discuss the various points of interest connected therewith. Consequently an hour or so was all too short for obtaining information first-hand on various points that suggested themselves as one passed through the several structures. In the earlier days of raising seedling roses it was the practice of many, more especially on the Continent, to depend upon plants growing in open beds and borders for the supplies of seed. Now all this in changed, and the seed is wholly saved from plants grown under glass, and with but few exceptions in pots. The plants selected for seed-bearing are mostly grown in six-inch pots, and presumably started into activity somewhat in advance of the plants growing in the open, with the assistance of a moderate amount of artificial heat. Plants started under such conditions in a structure that is freely ventilated bear flowers that are less double than usual, are more readily pollinated, and produce liberal crops of seed.

ROSES AT BELFAST RIPENING THEIR CROP OF SEED.

It is gratifying to be able to illustrate some fruiting plants and several seedlings that were raised from seed sown early in the year, and had reached the flowering stage. One of these is bearing a bloom that suggests some degree of promise, but what the final results will be has yet to be determined. Much weeding out is done the first year, the others being grown two or more years, and, it may be, be decided whether they shall be placed at the disposal of the flower-loving public or consigned to the lethal chamber. This final decision must be a difficult matter under any circumstances, and especially so in the case of this firm, who, in accordance with their existing rule, do not introduce to cultivation more than four varieties in any one year.

Turning from the plants bearing this year's crop of seed, so rich in potentialities, the seedlings in various stages of development, and the many interesting questions associated with the creation of new forms, it was a pleasure to find oneself, after a very short walk, in the midst of the new varieties that had created so much interest among rosarians at the exhibitions of the current year. These were growing in large fields, and in one of them there were at least 80,000 plants of new roses, these including the varieties that were brought into prominence during the past summer, and such as are being grown on for presentation to public notice next year or for further trial. Eighty thousand plants is a big number, and it is of interest as showing how great is the demand for new roses of merit ,and how strenuous is the endeavour that is being made to meet it. The huge expanse of plants impressed me in another way, and to assist my readers in realising how great are the operations of the firm in connection with novelties, an illustration is given herewith of a portion of the principal field. Unfortunately a heavy rain was sweeping across the field when the photograph was taken, and heavy rains, whatever may be their merits in other respects, are not favourable to photography. However that may be, the illustration conveys a fairly good idea of the extent of the culture of new roses by the firm.

Naturally the varieties that were first looked for were those that had received distinction at the exhibitions held by the National Rose Society, and one of the earliest to come under notice was Coronation, a glorious hybrid tea that had received a gold medal of this society at Belfast a few days previously. There is full justification for the belief that it will be of much value for exhibition, the large blooms being of grand form, and the colour a delightful shade of peach-pink. The breadth of plants in the field afforded ample evidence that the constitution is robust, and the flowers freely produced, while the foliage is so stout and leathery in texture as to suggest the difficulty which mildew will have in becoming established on the leaves. Of the value of Coronation for exhibition there can be no doubt, and, judging from the appearance of the plants growing under ordinary conditions, it cannot well fail in rendering good service in the garden. H. E. Richardson, a distinct hybrid tea, which also received the award of a gold medal at Belfast, is very different both in character and colour to the foregoing, and may be described as a valuable addition to the crimson roses already in cultivation. The blooms are of medium size, fine form, delightfully fragrant, and of a deep yet glowing crimson hue. Rather strong in growth and free in flowering, it should be most valuable in the garden, both for decorative effect and supplying blooms for indoor decorations.

Very beautiful in its shade of colour is Mrs. Mona Hunting, a distinct hybrid tea, which had an Award of Merit made in its favour at the R.H.S. Holland House show, and received the N.R.S. silver-gilt medal the following week at the Royal Botanic Society's Gardens. The flowers are of large size and superb form, and the colour an exquisite shade of chamois-yellow. The habit is good, and the flowers freely produced; and, as seen growing in the nursery quarters, it gave promise of proving a fine garden rose, as well as being valuable for competitive purposes. Mrs. R. D. McClure, a beautiful hybrid tea, with blooms of a rich salmon-rose hue, should make a fine garden rose, and also be able to render good service on the exhibition stage. The colouring reminds one of the Lyon Rose, and the habit is good. This received the N.R.S. gold medal at Belfast, and Mrs. James Lynas, a distinct, free-blooming hybrid tea, with large blush-pink flowers of fine form, that is highly attractive as seen growing in the open, received a silver-gilt medal.

The extension of the operations of the firm having rendered the acquisition of additional land necessary, a large farm a short distance from the nurseries was purchased two or three years since, and is being turned to good account. It occupies an ideal site for roses, the country being so open that the plants have the fullest exposure to sunlight and air, and the soil is deep and friable. Already some eighty acres are occupied by roses, and the fields of dwarfs and standards bearing many thousands of blooms produced an impression that will not be readily effaced from the mind of the writer. Here were found all the finest varieties in cultivation, without reference to place of origin, and a whole day might have been profitably spent among them in an endeavour to clear up doubtful points relating to the relative merits of varieties that closely approach each other in some of their principal characteristics. This, however, was not possible, and the time at disposal was devoted to a critical inspection of some of the most noteworthy of the varieties that have been raised by the firm. Especially noteworthy were those famous crimson roses, Hugh Dickson and J. B. Clark, which were introduced some years since, and are still two of the finest roses of their colour, and of the highest value for culture in standard form

The four varieties distributed by the firm this year are fully justifying the distinctions they received during 1911. King George V. (H.T.) is proving a fine addition to the dark crimson roses, the flowers are large, full, and of good form, and the colour is rich velvety crimson. Mrs. David Baillie (H.T.) has a strong, free-branching habit is profuse in blooming, and the flowers are of a rich carmine hue. As seen in the nursery, it is an excellent garden rose. Mrs. Richard Draper (H.T.) is a remarkably fine exhibition variety, the flowers are of large size, and superb form, and the colour an exquisite shade of satin pink. Last, but certainly not the least of the four, is Mrs. Sam Ross (H.T.), a highly meritorious variety with large and finely formed flowers, remarkable for their stout and handsome petals; the colour ranges between pale straw and chamois-yellow. Having regard to its high quality and exquisite colouring, this may be considered one of the finest roses of its year. With the exception of Mrs. David Baillie, for which a silver medal was awarded, the foregoing varieties received the distinction of a gold medal.

The quarters devoted to the roses of 1911 were especially interesting, as the varieties are, as a matter of course, to be seen in much larger numbers than in the year of their introduction. Very beautiful was Countess of Shaftesbury, a grand exhibition hybrid tea with flowers of large size, superb form, and a charming carmine-pink hue. It has the merit of having a good habit, and being free in flowering. Leslie Holland is a hybrid tea, so fine in form and brilliant in colour that when shown at the R.H.S. exhibition at Olympia in 1911 it quite startled the rosarians. The blooms are large, and the colour scarlet-crimson. Mrs. Charles E. Allan is a fine hybrid tea, of much value for the garden, the habit being good, and the flowers produced in great abundance, the colour being pale orange passing in the process of expansion to deep yellow in the centre and yellow-buff at the margins of the petals. Mrs. Frank Workman, a hybrid tea with large rose-pink flowers, is also a fine garden rose.

The older varieties of special merit include Lady Pirrie, a hybrid tea of immense value for massing in the flower garden. The habit is free-branching, the flowers are borne in profusion, and the colour is an effective combination of copper, salmon, and apricot-yellow. Marchioness of Waterford, a hybrid tea with large, finely-formed flowers of a bright salmon-pink; and Mrs. James White, a hybrid tea of a rich crushed-strawberry hue, are both of much merit, and evidently appreciated by rosarians.

The value of single roses in the garden and home have not been overlooked by the firm, and mention must be made of the two charming varieties they have introduced under the names of Miss Muriel Jamison and Simplicity. The first-named has large bright orange-yellow flowers, and the flowers of the other are pure white.

G.

PERGOLA AND ROSE BEDS

In the Nurseries of Messrs. Hugh Dickson, Lim., Belfast.

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**Fuchsias as Basket Plants.**—Although fuchsias are largely used for various decorative purposes, it is questionable if their merits for suspended baskets are recognised to the extent that they might be. Owing to their pendulous nature, the flowers are seen to considerable advantage when viewed from below.—W. T.

## NOTES ON ALPINE FLOWERS.

### Malvastrum Gilliesi.

This was more frequently called Modiola Gilliesi long ago, but the recognised name of Malvastrum Gilliesi appears to be taking hold better than others which have been substituted for well-known garden appellations to satisfy the botanist. It is a pretty little trailing plant, with neat flowers, like those of some of the hardy geraniums, and borne in a satisfactory way if the plant is in a sunny position in light soil. Sun and a dry soil appear to be essential. One would also add shelter, and, in most places, winter protection, as the tuberous roots will not stand much frost. The flowers are red, and the whole plant does not rise to more than six inches or so high. I have called it "trailing," because it sends out runners, and these will sometimes root and can be taken off when rooted. I regret to say that its want of entire hardiness is too pronounced to make it a plant for northern or midland gardens. It may possibly be kept in the garden without protection in winter for a year or two, but, sooner or later, it is sure to perish.

### Campanula Zoysi.

Every now and then we read glowing accounts of the ease with which this very choice and distinct dwarf bellflower can be grown. Unfortunately, it is not everyone who has justification for writing with enthusiasm of the gem-like C. Zoysi as a plant which gives boundless and perennial satisfaction. Not that we can well find fault with its hardiness, as it seems hardy, so far as endurance of our winters is concerned, while it does not specially affect any soil.

Nor does it call for the nice dispensing of composts and top-dressings which seem the elixir vitæ of many alpines. Neither does aspect make much difference to it. Its failing is that it is a toothsome morsel for the slug, and that vile enemy is too generally present in the rock garden, slaughter him as we may. The curious thing is that a plant of C. Zoysi may be exempt from the attentions of the slug for years, and may grow into a nice clump as much as two feet across, to make us wax proud and forget the Nemesis which is awaiting us. Then some spring we may wake up and find C. Zoysi all cropped to the ground, and looking as far removed from life as the good Queen Anne of proverbial quotation. We may be cheered by an apparent revival of the plant by fresh growths from the cropped crowns, but the gourmand slug is usually so gratified by his repast that he is certain to return to repeat his enjoyment, with the almost unfailing result that our delightful plant is no longer in the land of the living. Yet C. Zoysi is such a lovely thing, with its dainty leaves and its exquisite blue, curiously bottle-shaped flowers, that we are always hoping against hope and replacing our plants, only to meet again with the same disappointment, without, in many cases, having time to enjoy its beauties for long. And so we cry "Ichabod," and try something else instead of this delightful native of Styria.

SEEDLING ROSES AT BELFAST BEARING THEIR FIRST FLOWERS.

### Veronica repens.

The native island of the Great Napoleon —Corsica—has given us at least one charming speedwell, which to know is to love, and which to lose makes "an aching void," which must be filled at the earliest possible opportunity. The writer well recollects his first plant of this exquisite little veronica. It found its way into his garden some six or seven-and-twenty years ago, and ere it came into flower it was held in but scant regard. Its little leaves on the small creeping branches were neat, and made a nice green carpet, but one did not expect to see a completed effect of the kind which followed. In spring this carpet of green became thickly dappled over with the most charming tiny flowers of white, pencilled with lilac in such a manner that they looked like pale blue stars on this earth-veil of verdure. Then the quiet, gentle beauty of this speedwell was revealed, and it leaped at once into the affections of its grower. One found that it disliked drought; and it was in very dry soil, and the east winds of spring sought to parch it up. This caused its removal to a half-shady, moister place, where it throve well, but until then it received many a good canful of water, to its great delight and to the benefit of its owner. To those who know it not one would say: "Do not expect a showy speedwell, but only a dainty little alpine."

### Lady Larpent's Leadwort.

This is the old alliterative English name of Ceratostigma plumbaginoides, which in former days we were wont to call by the easier name of Plumbago Larpentæ. It also is one of the long-known and long-loved plants which one would not like to have absent from our gardens. In autumn, when we have begun to find our rock gardens grow less attractive because of the waning away of our flowers with the shortening days, it then comes with its exquisite blue flowers, and affords us delight on sunny rockwork, especially if well among the stones and in a dry place. The lover of the gentianella and other gentians thinks of these as he studies the colouring of Lady Larpent's leadwort. Nor is his gratification ended then, for as the season advances these comparatively unattractive leaves assume gorgeous colouring of red, maroon, and other tints. Truly a valuable plant, this ceratostigma should find its way into all rock gardens where its delights can be enjoyed as September and October come round.

### Dianthus Freyni.

If the reader looks up a catalogue in which Dianthus Freyni is listed, he will probably find that the price is such as will make him shake his head and turn away with the thought that for the cost of one small plant he could regale himself with three, four, or five other beauties. Not that it is as costly as many alpines, but it is generally expensive enough to make the would-be purchaser pause before he decides to buy it. Yet he had better consider well ere he ties his purse-strings against the call of Dianthus Freyni. It is well to warn him, however, that some fail with it, and that, like many other charming things, this pink has to be studied in its way if it is to become and to remain a happy occupant of the garden. Yet it is worth some trouble, for does it not make one of the daintiest cushions imaginable of small leaves, close-set together, adorned in due course with small rose flowers of gem-like character? It is not now in the writer's garden, succumbing to some unavoidable neglect, caused by entrusting his pet plants during a short absence to the tender mercies of a willing, though unlearned friend. But it throve for years in a flat pocket of the rockery, in sand, grit, and loam, with small grit and stones about it, and with plenty of water in dry weather and top-dressings of almost pure sand twice a year—in spring and autumn. Though absent now, it will not be long a stranger to the writer's garden. S. Arnott.

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## THE BLUE ASH.

Among the numerous kinds of ash suitable for planting in the British Isles, this is very distinct on account of its four-angled branches, which suggested the specific name of quadrangulata.

Fraxinus quadrangulata is a native of the United States, where, in the rich moist valleys of Southern Indiana and Illinois it is said to attain a height of 120ft., with a trunk 3ft. to 4ft. in diameter, although in less favourable localities its maximum height is given as 75ft., and its trunk diameter as 2½ft. There is no reason to suppose that it will be of service for forest planting in this country, although it may well be used for gardens and parks. In America, however, it enters into the various uses to which other ash wood is put. Except for its young branches being remarkable for their well-developed angles there is nothing to stamp it as very distinct from some other kinds, the popular name having nothing to do with the general aspect of the tree, but on account of a blue dye which is obtained by soaking the inner bark in water. A figure and description of the tree occurs in "Hough's Handbook of Trees of the Northern States and Canada," p. 389. W. D.

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**Abelia rupestris.**—Also known by the names of Abelia chinensis and Abelia uniflora, this is an exceedingly pretty little shrub, that flowers during the late summer and early autumn months. It forms a neat twiggy bush, with slender shoots, clothed with shining green-pointed leaves. The funnel-shaped flowers are borne in partially drooping clusters at the points of the shoots. They are in colour white, shaded with pink. It is a choice little shrub that must not be placed in conjunction with strong-growing subjects.—W.

## THE POSSIBILITIES OF A SCHOOL GARDEN—IV.

### As a Means of Education.

Not long ago a body of school managers of the average rural type, consisting of the vicar of the parish, several local farmers (it is strange, by the way, but nevertheless true, that agriculturists quite overwhelm horticulturists in point of numbers as school managers), the village grocer, and so on, were discussing the desirability of establishing a gardening class at the village school. It may be said in passing that the vicar was the only educated man amongst the managers, and perhaps, in fact, the only one who really believed in education, and it was at his instigation, prompted by the schoolmaster, that the proposal was brought forward. The farmers could not quite see what good it was to go to the expense of buying tools and seeds, and renting ground for the purpose of letting the boys grow a few potatoes, onions, and other things, and if work was the idea they would rather favour the idea of letting the boys leave school at twelve years old instead of keeping them a year longer. "Besides," urged the farmers, and this was a great point with them, "the lads can learn gardening at home."

I have already pointed out in a former article what the learning of gardening at home amounts to in the majority of cases, and I mention this instance now just to illustrate how limited is the vision of a great many rural school managers as regards the possibilities of a school garden. To them it means nothing more than planting a few potatoes and sowing sundry seeds on very much the same haphazard lines as these operations are often performed in village allotments, but as for school gardening having any educational value, well, they have no conception of it. I repeat what I have said before, that if school gardening was nothing more than a manual process, qualified to make boys handy in the use of tools, and teaching them how to work, it would be worth its place in the school curriculum, but in the hands of a capable teacher it goes much further than this, and its bearing on general education may be very marked.

Even the attitude of a good many people as regards gardening as a manual process is difficult to understand, for when, after grumbling about the same type of education being applied to the country as the town school, and claiming that it is all book work and nothing practical, eminently practical subjects like gardening and allied woodwork are introduced, they turn round and say that the time-table is overcrowded, and these things—the very subjects they have been clamouring for—are taught at the expense of something else. Dear, dear! What are education authorities to do to suit everybody?

Referring, however, to the possibilities of a school garden as a means of education, the very-much-discussed, and I am afraid, also, the very-much-misunderstood word correlation comes in. And what does the word mean? Simply making use of the material offered by the garden for teaching other subjects in the school, and those teachers who have gone the furthest in this direction realise how much further it is possible to go, their only trouble being that the boys leave school too soon for them.

The teacher who thoroughly grasps the true spirit of correlation begins at the commencement of the gardening year by drawing up a scheme and asking himself, so to speak, how can I use the garden in teaching, say, composition, nature study, drawing, mensuration, arithmetic, and developing, along with the above, powers of observation and habits of tidiness and good order? One may go one way to work, another may take a different course, and no dogmatic lines should be laid down, but with his scheme at the teacher's elbow as his guide, the school garden may be the best in the parish in point of cultivation, and be made such an aid to education that you can see evidence of it all over the school. Neither in point of education need the garden be confined to the boys who work the plots, and when you see a class of tiny infants learning to count by means of the number of plants in a row on a garden plot, you may depend that this is far more real to them than sitting on a form in a class-room using their fingers or a string of beads for the purpose.

What would some of us have given in our own school days, if, instead of writing compositions on Æsop's fables until we grew weary of the very name of the book, or painfully set down sentence after sentence in dictation lessons, we had had a garden to write about, the progress of crops to record, and that garden, mind you, our very own. I have seen, too, how this writing habit, when it is about something that is living and real, grows, for I have observed boys at the beginning chewing their pens and asking the teacher what they shall put, but later they have not been able to say half what they want in the time set aside for this task.

Don't you remember those freehand drawing cards we had? How we used to rub out and measure and measure and rub out until the leaves of the drawing-book were riddled with holes, and the copies looked as if they had been brought into close contact with a blacklead brush. We could not have drawn anything from Nature to save our lives, but now in drawing lessons the boy goes to his garden, takes a leaf, a seedling, a root, a flower, or a plant, puts it in front of him, and draws the object as Nature made it, either with pencil, pen or directly in colour with a brush. There were those mensuration lessons, too, those plans on the board for scale drawing, that belonged only to the board, as they did not teach us how to measure a piece of land out of doors, and make a plan of it. The boy now puts reality into his scale drawing, for he measures the school garden, makes his plan of it to scale, and does the same thing in respect of the cropping arrangement of his plot.

There was the old arithmetic, too, the dealing with impossible figures, and the working out of problems relating to things we had never seen or hardly heard of. In many cases now the garden provides material for arithmetic, the problems dealing in the seasons for different operations with measurements, digging, and cultivating, seed sowing, thinning, planting, quantities per perch and acre, values, and so on, and the figures are not imaginary, but real, for it is customary to keep accurate records of weight and quantities of the produce obtained from the garden.

Even geography is associated with the garden, the history of different crops being studied, their native countries being discovered, and their wanderings traced in such a way that the geographical features of this and other lands are impressed on the mind of the boy from the fact that the plants and crops grown in the school garden were first obtained from this, that, or the other place. As a case in point, take the potato! How closely it is associated with the geography of this and other lands, while it also has a connection with the history of different peoples and different times. To know all about the origin and wanderings of our most important vegetable commodity is a fascinating story to put before a school boy if it is done in an interesting manner, and it will be a wonder if at the end of it, the potato does not appeal to him in a different light than it ever did before. I pointed out in a recent article what a field for Nature study the school garden may be with its soil, its plants, its insects, its weeds, and the rest, so I need add nothing under this heading, but, writing as one who modestly claims to know something about school gardens, though I never had a school plot of my own, I contend that this addition to the school curriculum, quite apart from its practical and strictly utility value, has added a distinct means of education which never existed before. H.

## ROSE NOTES.

The splendid and steady manner in which our roses are ripening promises to carry them happily through any but an exceptionally severe winter. That roses are by no means confined to the summer months was again most unmistakably demonstrated at the autumn show of the National Rose Society, which was about the finest of a series of good autumnal exhibitions. At that date, and a little before, a large number of our most useful roses were in as full growth and flower as at any time during the season, but the second week of October quite finished them here in Mid-Sussex.

From present appearances there is a good prospect of early transplanting, which almost all agree to be the best, providing soil, weather, and the efficient ripening of wood are suitable. The great need for making up fresh beds in an efficient manner cannot be too strongly recommended, for the permanent qualities of any beds and borders greatly depends upon the condition of the lower soil, which will then be permeated with roots, and we can only secure the proper conditions when preparing the beds before planting takes place.

To loosen the ground is in itself a good thing, but to do this and encourage the roots to occupy what is not of permanent benefit to them cannot be so wise as seizing such a favourable opportunity to make this lower soil more desirable. Top roots can be fed at any time.

It may not be out of place to call attention to the great benefits of firmer planting than is generally practised, and a little more consideration should be given to the natural growth and habits of different varieties, as well as their colours. To plant rows or beds of any given colour without some attention to growth frequently results in disappointment that cannot be excused when we have such a vast choice to select from, and many otherwise excellent collections of roses lose much of their beauties for want of a little care in this direction.

It is the same with climbers upon walls, fences, or buildings, a more careful selection as regards growth and average times of flowering being necessary. One can so easily have a grand show at almost any given time, or a continuous feast, that is not quite so gorgeous, throughout the season.

The cutting back of coarse roots and the careful trimming of any bruised ends does not receive enough attention. A clean cut means a clutch of healthy roots. Nor do we cut away enough of the wood at the time of planting. It is of no benefit to leave so much that will be a great strain upon the sap and unestablished roots, especially as most of this wood will have to be cut away at early spring pruning. I would partly prune at planting-time for this reason. Rosarian.

## THE COLUTEAS.

The genus colutea is composed of a few species of strong-growing shrubs of the easiest possible culture, natives chiefly of Southern Europe and Asia Minor. The popular name of Bladder Senna is often applied indiscriminately to all the species, though it appears to have originally been used in connection with C. arborescens only. This name was apparently suggested by the bladder-like fruits, and by the leaves possessing properties akin to those of the true senna, which is the dried leaves of various species of cassia.

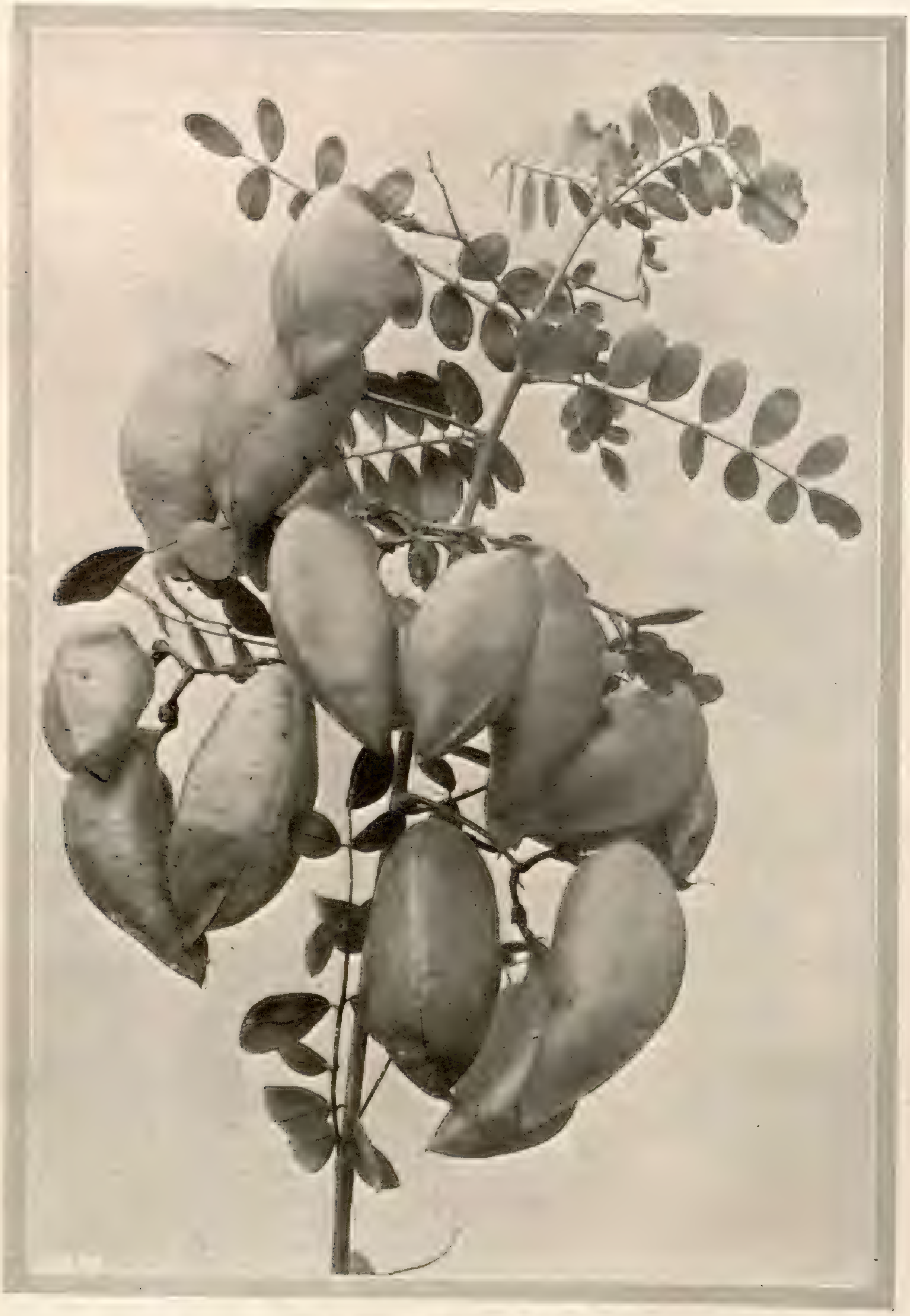
The principal use to which the coluteas are put is that of garden decoration, although they are of value in the reclaiming of poor and waste ground; for it has been found that the stronger-growing kinds are among the easiest shrubs to establish on the waste heaps near collieries, than which it would be difficult to find more unlikely material for plant growth. For shrubbery planting, the coluteas may be used for town or country, and they may be depended on to blossom well, and be interesting afterwards by reason of their curiously-inflated, parchment-like seed-pods. The wilder parts of the garden are more appropriate for them than prominent positions on lawns, for there are many neater shrubs. Therefore care should be taken not to make them too conspicuous. When left unattended, they form large and fairly dense bushes, but the most flowers and largest seed-pods are obtained from plants which are cut back annually in spring. These produce very vigorous shoots, which blossom well.

The commonest species is C. arborescens, a native of the Mediterranean region. It is said to have been grown in this country for about 350 years. It is well known as a bush from 8 to 12ft. high, with long pinnate, rather glaucous, leaves, yellow pea-shaped flowers, and fruits from 2 to 3½in. long, and from 1 to 2½in. wide. A couple of varieties are attributed to it. These are crispa, with smaller leaves, which have wrinkled margins; and bullata, a stiff-growing plant, of stunted appearance, which is only of value on account of its singular habit, for it blossoms indifferently.

C. cilicica has much in common with the last-named. A difference may be observed in the flowers, however, for in this case the wing petals exceed the keel petals in length; while in C. arborescens the reverse is the case. It is a native of Asia Minor, and is sometimes called C. longialata. C. cruenta, an Oriental species, has rather small, rounded leaflets, and brownish flowers; and it is really more decorative than the type.

An illustration of the fruits of C. istria accompanies this note, and gives a good idea of what a plant covered with mature fruits looks like. It belongs to Asia Minor, and is distinguished by its small glaucous leaflets, and brownish or copper-coloured flowers, a certain resemblance being noticeable between it and C. cruenta. Like most of the other species, it has several synonyms, of which one of the best known is C. halepica. Although one or two other kinds are known, these are the most distinct for general planting.

W. Dallimore.



COLUTEA ISTREA.

An interesting species, remarkable for the large size of its bladder-like fruits.

## NEW PLANTS.

### CEROPEGIA THORNCROFTI.

A very curious twining plant from the Transvaal. The flowers are in small axillary clusters. Individually the blooms are about 1½in. long, inflated at the base, cylindrical along the middle, and with curved lobes at the top, which are connate at the tips. The colour is white and purple. "Bot. Mag.," t. 8,458.

### OSMANTHUS DELAVAYI.

A pretty, hardy evergreen shrub from the mountains of Lankong, in Yunnan. It is freely branched, and has small deep green leaves that are sharply serrated along the margins. The small white flowers are carried in terminal clusters, and they are quite fragrant. "Bot. Mag.," t. 8,459.

### ELSHOLTZIA STAUNTONI.

A Chinese plant bearing considerable resemblance to a veronica. It is hardy, and forms a shrub 4ft. to 5ft. high, with broadly, lanceolate, acuminate leaves. The rose-purple flowers form a dense erect spike from 3in. to 6in. long. Should prove a useful plant for pleasure grounds or the semi-wild garden. "Bot. Mag.," t. 8,460.

### FURCRÆA ELEGANS.

A Mexican plant closely allied to the agaves. The spine-tipped leaves are sometimes as much as 8ft. long, while the inflorescence may rise to a height of 25ft. The flowers are about 2½in. across, pale green, shaded with brown on the outside. "Bot. Mag.," t. 8,461.

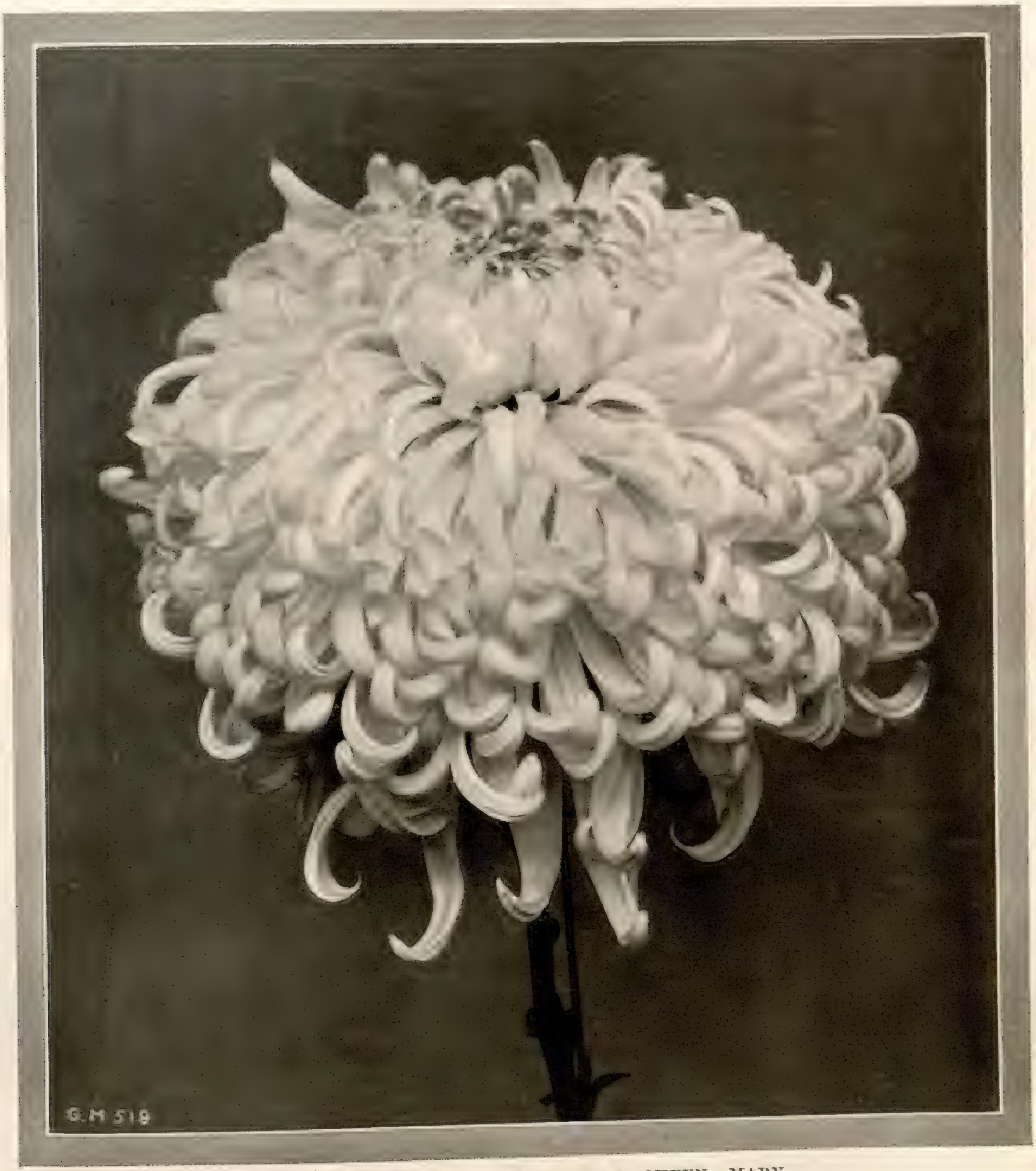
### CHRYSANTHEMUMS.

Gladiator.—A large and elegant single variety, with rich red flowers, and a narrow yellow zone round the disk. Commendation, N.C.S., October 29. Mr. Thos. Page, Hampton.

Ivernia.—A very beautiful and refined Japanese variety, of show size. The drooping florets are buff, freely suffused with rosy-bronze. F.C.C., N.C.S., October 29. Messrs. J. Stredwick and Son, St. Leonards.

Miss Thelma Hartman.—A very large and shapely incurved variety that promises well for exhibition purposes. The colour is blush. F.C.C., N.C.S., October 29. Mr. W. Jinks, Thames Ditton.

Miss N. Borrer.—A beautiful pink single variety, previously described. Commendation for colour, N.C.S., October 29. Mr. Chapman, gardener to L. F. Harrison, Esq., Orchards, East Grinstead.



NEW JAPANESE CHRYSANTHEMUM QUEEN MARY.

Flowers pure white. F.C.C., N.C.S., October 29 Messrs. W. Wells and Co., Merstham. The bloom illustrated is about two-thirds its full size.

**Jessica.**—A very handsome large-flowered single variety It belongs to the Pagram section, and is of a bright rich red-bronze shade, with some yellow showing through. Commendation, N.C.S., October 29. Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow.

**Sidney Lawrence.**—A good-sized single variety, with from three to four rows of florets The colour is a pretty shade of light amber. Mr. I. Lawrence, Shoreham, Sevenoaks.

**His Majesty.**—A superb Japanese variety, with fairly broad, evenly drooping florets. The blooms are of large size and of the richest deep crimson shade imaginable. A refined flower of great beauty. F.C.C., N.C.S., October 29. Mr. Norman Davis, Framfield, Sussex.

**Calgary.**—A large single variety of good form and substance. The colour is Indian red, with a narrow deep yellow zone around the disk. Commendation, N.C.S., October 29. Messrs. P. Ladds and Son, Swanley Junction.

**Miss Gertie Ladds.**—Another fine large single variety of good form. The colour is very bright chestnut-crimson. F.C.C., N.C.S., October 29. Messrs. P. Ladds and Son, Swanley Junction.

**Charles Hall.**—A medium-sized, elegant single variety of the most brilliant crimson-scarlet colouring. Commendation for colour N.C.S., October 29. Messrs. P. Ladds and Son, Swanley Junction.

**Frances Rowe.**—A large, long-petalled Japanese variety, with reddish-bronze colouring and golden reverse. A promising and distinct variety. F.C.C., N.C.S., October 29. Mr. H. J. Jones, Ryecroft, Lewisham.

**Miss A. E. Roope.**—A first-rate yellow Japanese variety, with broad, curling florets that make up a large and bold flower. The yellow shade is very rich. F.C.C., N.C.S., October 29. Mr. H. J. Jones, Ryecroft, Lewisham.

**Miss Elsie Davis.**—This is a bold incurving Japanese variety of amaranth colouring, and with silvery-rose reverse, the latter shade being most in evidence. F.C.C., N.C.S., October 29. Mr. H. J. Jones, Ryecroft, Lewisham.

**Queen Mary.**—A magnificent pure white Japanese variety of grand form and wonderful size. It has broad florets, and these incurve loosely and gracefully at the tips. The florets are stout, so that the flowers should keep well and travel well. F.C.C., N.C.S., October 29. Messrs. W. Wells and Co., Merstham.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

PLEIONES are among those orchids that have to be especially attended to during the present month. Most of these pretty species are natives of India, and grow chiefly on rocks in mountainous regions, and are commonly known as "Indian Crocuses." Their flowering season extends from the end of September to the middle of November, and there is one species, P. humilis, which produces its flowers in the spring. Such well-known species as P. laginaria, P. Wallichiana, P. præcox, P. concolor, and P. maculata, are now in bloom, and will make a delightful show for a week or two to come, providing no water is allowed to settle on them. On examination it will be observed that the green shoots from which the flowers have sprung are in reality new growths, and, under proper treatment, will form bulbs. These shoots, within a short time after flowering, will produce numerous young roots from their bases, and then is the proper time to repot. The young roots lengthen rapidly, and are easily broken when handled, therefore the plants should be repotted directly roots are formed.

POTTING.—Pots or pans must be provided with plenty of clean crocks for drainage, as it is important the water should pass through the compost quickly. Over the crocks place a thin layer of rough sphagnum moss.

COMPOST.—The potting compost may consist of loam, peat, and Osmunda fibre in equal parts, with all the earthy particles removed, and a quantity of sphagnum moss equal to one of the fibre, with a fair sprinkling of crushed crocks or coarse silver sand. The Osmunda fibre should be cut up moderately fine, and pulled thoroughly to pieces, as it mixes better with the other materials treated in this manner, than when used in a coarse, rough state. Before repotting, turn the plants carefully out of their pots or pans, carefully pick out the old potting material, and remove the decayed and worthless bulbs. In fixing them in their new receptacles it is not advisable to break the clumps up more than is necessary, but each bulb must have room to develop, and they should be so arranged that when in flower they cover the whole of the surface with their lovely blooms. Pot the plants with moderate firmness, and the spaces between the pseudo-bulbs should be filled in with the roughest of the compost, which is easily accomplished by starting from one side of the pot or pan, and working to the other. When repotting is finished the plants may have a slight watering to settle the compost around them, and they should be placed in a moist position, where they will receive all the light possible, in a house having an intermediate temperature.

CULTURE.—For a few weeks very little water will be required, but as the new roots enter the compost and the foliage begins to extend, the supply must be gradually increased; but when thoroughly established and the pans are full of roots, weak liquid manure may be given occasionally with beneficial results.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

PALMS.—To maintain the warmth-loving palms in a healthy condition it is necessary to keep the foliage scrupulously clean, as well as the structure in which they are grown. A general overhauling of the palm house should be carried out at least twice a year, viz., in the spring and about this time. Should circumstances not allow of emptying the house while the glass and wood-work is being thoroughly cleaned, then the plants may be tied up loosely and placed at one end of the house, afterwards moving them back to the clean part for the completion of the work. The most troublesome insect pests are red-spider and small scale. The latter is very injurious, and when allowed to become numerous is difficult to eradicate. The best plan is to brush or sponge the affected parts with a fairly strong solution of one of the insecticides recommended for the purpose, and leave this upon them for a few days. The insects will then be loosened and easily sponged off with warm, soapy water. Examine the drainage of the receptacles in which the plants are growing, and, if faulty, rectify it. Although it is inadvisable to give any of the plants a large shift at this season, yet, if any are cramped for root-room, they should receive a slight shift Others will be benefitted by pricking over the surface and top-dressing with loamy soil, to which is added a little dried cow-manure and a sprinkling of soot and bone-meal. When the work is completed, give a heavy syringing with tepid rain water. Watering palms during the dull season requires great care, for while some species should not become at all dry, others are very impatient of an excess of water. The cultivator can, by close watchfulness, acquire experience as to the requirements of the various species in this respect, and will act accordingly.

POINSETTIA PULCHERRIMA. — The brilliant scarlet bracts will now be showing, and the plants should be so arranged that they are seen to the best advantage. Care must be taken that there is no drip from the roof, or the bracts will be disfigured. Keep the heads of the plants well up to the light, and avoid overcrowding, or the bottom leaves will turn yellow and fall. Well-grown plants should be clothed with green leafage to within a few inches of the surface soil. Use water of the same temperature as that of the house, and apply it in the morning. Continue to give periodical applications of weak manure until the bracts are nearly developed, for if this manurial assistance be discontinued too soon, there will ensue a check, consequently the heads will not be so fine. A golden rule to bear in mind is to keep the roots active by judicious watering and feeding.—H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

EARLY PERMANENT VINES.—Where it is necessary to obtain ripe grapes in April, the house should be closed not later than the middle of this month; tie the rods down so that the buds will break evenly the whole length of the canes. At this season of the year, when vegetation is slow to respond to artificial means, it is necessary to commence with a night temperature of 50 to 55 degrees and a day temperature of from 55 to 58 degrees; lightly spray the rods several times a day, and to assist in maintaining a moist atmosphere in the house, keep the evaporating trays filled with water. Carefully examine the borders, and if water is required, give the whole bulk of soil a good soaking with clean water, heated to a temperature of 85 degrees. Exercise care when damping down, otherwise the soil will become sour. Admit air when possible to sweeten the atmosphere of the house, but not in such a manner as to cause cold draughts or any serious lowering of the temperature. When the young growths appear the night temperature must be about 60 degrees with a day temperature ranging from 65 to 68 degrees. Great care must be exercised when forcing vines in the winter months; attend assiduously to every detail or failure will be the result. If there are outside borders to the vineries that are to be forced at this season of the year, they should be covered a foot thick with oak or beech leaves, finishing the surface off, with a few inches of long stable litter to prevent the leaves from being blown about.

EARLY POT VINES.—In many gardens the practice of using vines grown in pots is adopted for supplying the early crop of grapes. Presuming the vines were pruned back to their proper length last month, they should be thoroughly washed with warm, soapy water to which a little flowers of sulphur has been added. Make sure that the drainage is in perfect order; this is very essential, as large quantities of water will be given as growth develops and the days lengthen. Many ways and means are adopted to provide the bottom heat, which is absolutely essential for the vines at this season of the year. It can be provided by the use of stable litter and leaves well mixed together, and the pots plunged in this material, which must be renewed occasionally to maintain a gentle heat. The method we adopt here is to remove the soil from the melon or cucumber beds in a span or lean-to house, which is provided with hot-water pipes to give bottom heat; the stable litter and leaves are placed in these chambers, and made very firm by treading. The pots are plunged into this material, and the hot water-pipes are not made use of until the heat from the fermenting material is exhausted. Where a house of this description is not available, the pot vines can be plunged in 20in. pots, and placed upon the hot water-pipes in the house; we adopted this plan some few years ago, and the results were all that could be desired. When the pots are placed into position the canes should be tied down to ensure an even "break."—HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

PLANTING ROSES.—With the advent of November it is time to commence this work, and where the ground is not already prepared no time should be lost in making it ready. Roses prefer a deep rich loam, but when the natural soil is not of such a suitable nature, it is necessary to suitably enrich it with well-rotted farmyard manure, and, in the case of light, open soils, the addition of some good heavy loam, even approaching clay in consistency, will be an advantage. Deep cultivation is preferable to ordinary digging, as it must be remembered the plants are to occupy the ground for some time, and a little extra care in preparations will be amply repaid. Roses usually succeed best where the subsoil is well drained; in low-lying situations it is frequently necessary to provide artificial drainage by placing broken bricks or some similar material in the bottom of the trench two feet deep as cultivation proceeds. It is, of course, essential to have the ground in a moderately dry condition at the time of planting. Make the holes wide enough to spread out the roots fully, and if the soil is at all lumpy, it is an advantage to have some fine compost at hand to place immediately over the roots. Make the soil firm about the plants as the work proceeds, and, after planting, apply a top-dressing of short half-rotted manure.

PROTECTION.—In many districts it is necessary to protect tea roses and hybrid teas during the winter. Nothing is more suitable for the purpose than dry bracken, which should be neatly twisted around the plants at the present time. When it is necessary to give shelter to tender shrubs, a few spruce branches placed around them will usually be sufficient. Heavy coverings are not recommended, as they are liable to make the plants rather tender, in which case they suffer upon the removal of the protecting material in the spring. Gunneras should be well protected with leaves or long stable litter, the latter for preference. Finely-sifted coal ashes placed over herbaceous plants is the best form of protection for those that need it.

GENERAL WORK.—Border chrysanthemums must be taken up, placed in boxes, and kept in cold frames for the winter. See that each variety is labelled correctly. Salvia patens should be treated in the same way. Take up gladioli and montbretia corms, and store them in a frost-proof shed. It is quite necessary to take up the latter, as when exposed to excessive wet and cold they frequently perish. Give air to violets and bedding plants in frames on favourable occasions, and protect them from frost at night by covering them with mats or straw.—J. GARDNER, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## ROYAL HORTICULTURAL SOCIETY'S EXHIBITION OF ORCHIDS.

On Tuesday and Wednesday, November 5 and 6, the Royal Horticultural Hall presented an unusual appearance, because the general arrangement of long tables was largely dispensed with and smaller tables of varying size and shape were used, to the very great advantage of the exhibition. This novel arrangement was at the suggestion of the Orchid Committee; indeed, this committee practically ruled affairs on this occasion, and orchids in a great array of glorious colouring and wondrous grace and beauty filled the greater part of the big hall.

Right well did amateurs and nurserymen turn out to support the efforts made to produce an autumn display of these useful and bright flowers, and the Orchid Committee is to be congratulated upon their work in arranging for this exhibition. Orchid lovers know the value of autumn-flowering orchids, but a large display of this kind was necessary to bring the fact in a striking fashion before the general public.

Thirty-two classes were provided, and several sets of judges commenced their work promptly at eleven o'clock, and were finished in about an hour. In some classes there were no entries, while in others the competition was keen. Every group staged was competitive, and awards were made in accordance with their value, the prizes being cups and medals.

Some idea of the extent and importance of the orchid display may be gathered from the fact that it exceeded the largest combined display of orchids ever made at the Temple Show by fully 1,000ft.

### OPEN CLASSES.

In the open class, for a large group of orchids there were two entries. Messrs. Charlesworth and Co., Hayward's Heath, put up a brilliant group, the whole of the centre being filled with the vivid Epidendrum vitellinum majus; from this mass of orange colour rose a few fine spikes of the white Odontoglossum armainvilliersense xanthotes. Vanda cærulea, Oncidium varicosum Rogersi, and Cattleya labiata, and C. Portia figured largely on the left of each, with L.-c. Bella alba, the rich L.-c. Orion Othello, and the beautiful yellow and purple Cattleya Rhoda The Jewel. On the other side graceful oncidiums, combined with Cattleya labiata, C. Bowringiana, Brasso-cattleya Mariæ, while in the foreground were beautiful plants of Cattleya Venus Princess, yellow and crimson; Odontoglossum Aireworth, and the white, yellow-spotted Odontoglossum eximium xanthotes. A gold medal was awarded.

In the same class came Messrs. Sander and Sons, St. Albans, who won a gold medal with a very fine and interesting exhibit. In the centre a lovely lot of Cattleya Fabia was grouped over maidenhair ferns, and in this set C. Fabia Her Majesty, with white sepals and petals, was notably beautiful. At each end of the display outstanding groups of Cattleya Fabia, C. labiata, C. l. La Vierge (white), C. McMastersi, the handsome L.-c. Prism, and Brasso-cattleya Mdme. Chas. Maron were effectively set. Between these imposing portions there were bays with a low groundwork of cypripediums, and here we noticed good specimens of C. insigne Sanderæ, C. i. Harefield Hall, C. Edith Lucas, C. Mandiæ, C. Leeanum, C. Chas. Richman, etc. Rising over the cypripediums were L.-c. Walter Gott, rich mauve and purple, the free-flowering pale mauve Cattleya Ashtoni, Dendrobium Goldei, Cattleya Mrs. Pitt, Odontioda Bradshawiæ, and nestling in the foreground was a lovely little group of Indian crocuses—Pleione præcox and P. lagenaria.

One of the very finest of the many splendid groups in the hall was that composed of cattleyas, lælio-cattleyas, and brasso-cattleyas in an open class. It merited and received the highest awards (a gold medal and a silver-gilt Lindley medal), and included five certificated plants. Every plant was set apart from its neighbour, as is usual in the case of exhibits from Westonbirt. Such an exhibit of the cattleya family has never before been staged in November, and Sir George Holford and his grower, Mr. Alexander, are to be heartily congratulated upon the magnificent collection. Purple, mauve, crimson, gold, yellow, cream, ruby, orange, and white were colours gloriously represented. This cattleya group occupied an area of about 350 square feet, and contained about 200 plants, all of them as nearly perfect as possible. Of the splendid autumn-flowering C. Fabia there were no fewer than fifty-five plants, carrying a total of over seventy spikes and 260 gorgeous blooms. The white forms of C. labiata—Mrs. E. Ashworth, Gilmouriæ, G. G. Whitelegge, and Madame Louis de Hemptinne were especially choice, while C. Peetersi Westonbirt var. (F.C.C.), with white, purple, and gold flowers; C. Hardyana La Perle (A.M.), a fine form, with white sepals and petals, and a glowing purple and white lip, were two outstanding gems. Lælio-cattleya Golden Fleece (A.M.), vivid yellow; L.-c. Cappei Charlesworthi, extra fine and brilliant; L.-c. Neleus, from L.-c. Iris and C. Ophir; L.-c. Amber, a fine new yellow; and L.-c. Golden Beauty, formed a group of most decorative orchids; while of special fine form, lovely colouring, and elegance were Brasso-cattleya Euterpe, B.-c. Pluto, B.-c. Siren, and B.-c. Gigas Digbyana, all with fringed lips. Cattleya Dusseldorfei Undine, and C. fulvescens, Westonbirt var., are two other beautiful orchids that cannot be omitted from this brief reference to a glorious exhibit.

Only one group of Vanda cærulea was forthcoming in the open class for this orchid, but it was a superb one, and consisted of about forty-five grand specimens, splendidly grown and beautifully arranged over about fifty spikes of Oncidium variocosum Rogersi by Mr. H. Alexander, orchid grower to Sir George Holford, Westonbirt, Tetbury, Gloucester. The blue vandas over the golden oncidiums provided a rare and beautiful effect. Rarely have finer examples of V. cærulea been seen, and not only was the culture fine, but every plant represented a first-rate form, the flowers large and shapely. Many of the spikes carried twenty flowers, the largest having thirty blooms. One specimen—Vanda cærulea Lady Holford (F.C.C.)—stood out prominently, and it carried two of the seventy spikes that composed this splendid group. A gold medal and a silver-gilt Lindley medal were awarded.

Messrs. Mansell and Hatcher, Rawdon, Leeds, presented a fine arrangement, and grouped their plants in two bold and wide mounds and three low bays. In the loftier portions the outstanding features were Cattleya labiata, the glorious C. Fabia, C. aurea, C. Mrs. Pitt, C. Armstrongiæ, and golden oncidiums in great sprays. In the bays, cypripediums were much in evidence, a large plant of C. insigne Harefield Hall standing out prominently. Odontoglossum eximum, O. Lambeauianum, and O. crispum were well represented, and Platyclinis Cobbianum, Cattleya labiata alba, and Odontioda Devossiana were other good things. The Rawdon firm received a large silver cup.

### AMATEURS.

Four exhibits were to be found in the amateurs' class for a group of orchids arranged on a space of 150ft., and here G. F. Moore, Esq., Chardwar, Bourton-on-the-Water, gained a gold medal with a charming group, in which varieties of Dendrobium phalænopsis Schroderiana were largely and gracefully disposed in three mound-like groupings. Cattleya labiata, C. Mantini, C. Portia, and C. Fabia occupied the intervening spaces, and the groundwork was composed of cypripediums, and here there were splendid lots of C. insigne Sanderæ, C. Mandiæ, C. Niobe superbum, C. Clio, C. Thalia Mrs. F. Wellesley, C. Arzia Fairieanum, and C. The Baron.

In the same class a large group of orchids, finely arranged by Mr. Collier, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, lacked brilliant colouring, and the central mound of Cattleya Portia cærulea gave the display a cold appearance. This variety looked as though it had tried to emulate Vanda cærulea, and failed. Dendrobium phalænopsis and Vanda cærulea figured well in other parts of the exhibit, and L.-c. Rothschildiana, Cattleya labiata, C. Peetersi, and C. Portia were good. Cypripediums were presented in great variety, and a few good odontoglossums were on view, while Odontioda Bradshawiæ Gattonensis, rich orange-scarlet (F.C.C.), was the gem of a fine contribution. (Large Silver Cup.)

H. S. Goodson, Esq. (gardener, Mr. G. Day), Fairlawn, Putney, contributed a goodly group, but somewhat formal. Purple cattleyas and lælia-cattleyas were associated with odontoglossums to form a background, but almost all the forward part of the exhibit consisted of cypripediums, and among the latter C. Mandiæ and C. insigne Sanderæ were very much in evidence; a few Sophro-cattleyas and Sophro-lælia-cattleyas, with deeply-coloured flowers, occupied a central position. (Small Silver Cup.) J. Gurney Fowler, Esq. (gardener, Mr. Davis), Glebelands, South Woodford, put up a high pyramidal group, composed chiefly of cypripediums surrounded by Cattleya labiata, oncidiums, and odontoglossums. The exhibit was very formal in outline, but it contained good examples of Cypripedium Hera Eryades, C. insigne Harefield Hall, C. Ville de Paris, C. Corona, and large numbers of forms of C. insigne.

A group of special importance was contributed by E. R. Ashton, Esq. (gardener, Mr. A. Young), Broadlands, Camden Park, Tunbridge Wells, in the amateurs' class for a display not exceeding 100 square feet. Well-grown plants were capitally arranged with palms, ferns, and moss, and crowding was avoided. Cattleya aurea, C. Fabia, the new white, purple, gold and crimson C. Oberon (A.M.), Brasso-cattleya Hyeæ (A.M.), a fine substantial hybrid between Cattleya Harrisonæ and Brassavola Digbyana; L.-c. Luminosa, L.-c. Beryl, L.-c. Beacon, golden-orange and ruby-crimson; and the fine old L.-c. callistoglossa were a few of the gems in this collection. A Silver Cup was worthily won. Around the groups set up by F. Du Cane Godman, Esq., South Lodge, Horsham, the beautiful yellow-flowered Oncidium cheirophorum was used as an edging, and this old species was well shown and greatly admired. Vanda cærulea, golden oncidiums, and odontoglossums filled the raised centre, while Cattleya aurea, C. Fabia, Cypripedium Mandiæ, C. Rossetti, and Cattleya Mantini nobilior were of special merit in other parts of the group. (Silver Flora Medal.)

Only one group was forthcoming in the amateurs' class for a display of cypripediums. This was from the Westonbirt collection, and a few oncidiums and palms served to enhance the effectiveness of the exhibit. It was a very interesting group, set up on a diamond-shaped table. There were fine examples of C. Mandiæ, C. insigne Sanderæ, C. nitens-Leeanum Hannibal, C. Actæus Benoia, very fine; the pure white C. Boltoni with four flowers, and such extra special sorts as C. Muriel, finely formed; C. Lucifer, C. Prism, C. Leeanum Corona, C. Chapmani, Westonbirt var., and C. Niobe, Westonbirt var.

The chief award for three specimen orchids (a Silver-gilt Banksian Medal) fell to Mr. H. J. Chapman, gardener to Mrs. Norman

Cookson, Oakwood, Wylam-on-Tyne, for Calanthe Angela, rich dark crimson; C. Cooksoniæ, large, pure white; and Odontioda Bradshawiæ Cooksoniæ, brilliant orange-scarlet, purple, and pink—one of the very finest odontiodas.

Botanical orchids were shown only by Sir Jeremiah Colman, Bart., Gatton Park, Reigate, and his group attracted not a little attention from lovers of the curious; Dendrobium Cœlogyne, Stenoglottis longifolia, Ornithidium sophronitis, and Angræcum distichum were a few notable species. This interesting collection gained a Silver Cup.

### NURSERYMEN.

A large circular group, occupying a central position in the hall, was greatly admired. It was from Messrs. Stuart Low and Co., Enfield, and its towering structure, as well as the grace and beauty of its arrangement, attracted everyone. The white Dendrobium formosum giganteum crowned the group, and springing out from below these were many long sprays of the golden Oncidium varicosum, with plants of Cattleya labiata, C. Harrisonæ, and Dendrobium Phalænopsis Schroderiana. The latter orchid was also arranged in outstanding vases at intervals around the group, other vases being filled with golden oncidiums. In the body of this circular pyramid plants of particular interest were Brasso-cattleya Imperatrice de Russie, with a long white and yellow lip; the chaste Cymbidium erythrostylum, the gorgeous Lælio-cattleya Luminosa, Cattleya Endora gigas, C. aurea, C. Octave Doin, and Vanda Kimballiana. The Messrs. Low were awarded a well-deserved Gold Medal.

A particularly pleasing group from Messrs. J. and A. McBean was especially graceful because of the host of arching spikes of Odontoglossum crispum, with O. eximum McBean var. (A.M.), and Odontioda Charlesworthi, it contained. Rich colouring was provided by Cattleya aurea, Epidendrum vitellinum majus, Cattleya labiata, C. Bowringiana, C. Fabia, and the handsome Vanda Sanderiana, while Cypripedium insigne Sanderæ, finely grown, filled the central foreground. This exhibit gained the premier award in the class for nurserymen, the space occupied not to exceed 100 sq. ft., and it gained a Silver Cup.

In the same class a very pleasing group of orchids, especially noticeable for the tasteful arrangement of flowering and foliage plants, maintained the reputation of Messrs. J. Cypher and Sons (Silver-gilt Flora Medal). Good use was made of the graceful Dendrobium Phalænopsis Schroderiana, Oncidium varicosum, and odontoglossums, while under these a fine selection of cypripediums was disposed advantageously, with Platyclinis Cobbiana, Odontoglossum grande, Cattleya Bowringiana, C. Fabia, L.-c. Luminosa, and Oncidium ornithorhynchum. The ever-popular Cypripedium insigne Sanderæ filled a large part of the group from Mr. E. V. Low, Hayward's Heath, and formed a good setting for the white-flowered Cattleya labiata Le President, C. l. Daphne, C. l. La Vierge, and C. I. W. R. Lee, the latter carrying eight lovely blooms. (Silver Flora Medal.)

The group in this class from Mr. Harry Dixon, Spencer Park Nursery, Wandsworth Common, was prettily arranged; Odontoglossum crispum, Vanda cærulea, Cattleya Fabia, Oncidium varicosum, and cypripediums were the leading subjects. (Silver Banksian Medal.) Very interesting plants were grouped by Mr. S. W. Flory, Tracey's Nursery, Twickenham, and of special importance were Cymbidium Tracyanum, with very large spikes, Odontioda Charlesworthi, Odontoglossum Lambeauianum, and Brasso-cattleya Meroniæ. (Silver Banksian Medal.)

The beautiful Calanthe Harrisi with pure white flowers, was largely and well shown in a group from Messrs. J. Veitch and Sons, Chelsea. This was not a large group, but it contained good examples of Lælio-cattleya Queen Alexandra, Brasso-cattleya Ilene, with a gold-throated lip; L.-c. Lamorna, a promising hybrid between L.-c. Dominiana and C. Hardyana; L.-c. Nysa, and L.-c. Priam. (Silver Banksian Medal.) The little group from Messrs. W. Baylor, Hartland, and Sons, Cork, suffered in the matter of arrangement, and in many cases the paper-bound sticks used for packing and carriage had not been removed. A little batch of Cypripedium triumphans in this group attracted attention. (Bronze Banksian Medal.)

Messrs. J. Cypher and Sons, Cheltenham, invariably show cypripediums well, and on this occasion they had a handsome exhibit of these plants, and used palms and ferns and crotons with their orchids. At all four corners they had delightful batches of the lovely yellow and white C. insigne Sanderæ, while in the centre were C. i. Harefield Hall, C. Fulshawense, C. Sir Redvers Buller, the pretty C. Minos Veitchi, and the bold C. Felicity. (Silver Cup.) Mr. G. W. Miller, Clarkson's Nurseries, Wisbech, contributed cypripediums in this class, and the chief kinds staged were C. insigne Sanderæ, C. triumphans, C. Spicerianum, C. Mandiæ, and C. Massaianum. (Silver Banksian Medal.)

The best specimen orchid in the nurserymen's division was a large Cymbidium Tracyanum, carrying several sturdy spikes of large cream and red-brown flowers. This was shown by Mr. S. W. Flory, Twickenham, and gained a Silver Banksian Medal.

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## Royal Horticultural Society's Miscellaneous Show.

The Floral Committee had numerous novelties to consider, but the groups coming under their adjudication were few, as the hall was, as already notified, given over largely to orchids.

An exceedingly bright bank of winter-flowering begonias from Messrs. J. Veitch and Sons, Chelsea, again demonstrated the value of these flowers; B. Elatior, B. Mrs. Heal, and B. The Gem are all first rate, while in B. Emita (A.M.), orange-apricot; and B. Optima (A.M.), buff-pink, the firm has two fine new introductions that show a break-away from the commoner carmine shades. The same firm exhibited a famous lot of dwarf chrysanthemums in pots, finely grown and freely flowered. On several occasions we have referred to these wonderfully decorative specimens so finely grown at the firm's Feltham nursery.

Winter-flowering begonias were largely shown by Messrs. William Cutbush and Son, Highgate; a bright bank of plants from this firm included batches of B. Julius, B. Emily Clibran, B. Beauty of Hale, the very useful B. Ensign, B. Winter Cheer, and the new white, B. Lady Waterlow. Mr. G. Reuthe showed a number of nerines and saxifrages. Perpetual carnations in considerable variety were well shown by Messrs. Allwood Bros., Haywards Heath, and Messrs. Stuart Low and Co., Enfield, had a small exhibit of these popular flowers.

The bertolonias and sonerilas from Mr. L. R. Russell, Richmond, were delightful, and we wish we had space to refer more fully to these elegant and brilliant foliage plants. A fine orange tree, grown from a pip, without grafting, and cultivated within seven miles of Charing Cross, was submitted by Messrs. Felton and Sons, Hanover Square; its fine crop of fruits attracted no small attention. The grand Queen Mary chrysanthemum and the scarcely-less fine Mrs. Gilbert Drabble were conspicuous in the exhibit from Messrs. Wells and Co., Merstham. Viscount Ridley, Blagdon, contributed perpetual carnations; and Messrs. Cragg, Harrison, and Cragg sent some splendid new single chrysanthemums.

The large group of ferns from Messrs. H. B. May and Sons, Edmonton, contained many of the newer things, notably Adiantum micropinnulum, Nephrolepis exaltata muscosa, N. e. Willmottæ (A.M.), very graceful and finely divided; N. Whitmanni compacta, and Osmunda palustris undulata. Begonia Carmen and B. Pink Beauty, two fibrous-rooted varieties of great beauty, were submitted by Messrs. Blackmore and Langdon, Twerton, Bath; the pink variety is very charming, and it is the result of a secondary cross, B. semperflorens gracilis being the predominant parent.

Mr. H. J. Jones, Ryecroft, Lewisham, and others sent a few new chrysanthemums.

### CERTIFICATES AND AWARDS.

We hope to describe the following in our next issue:

First Class Certificate.—To Odontoglossum Aurora (Lambeauianum x Rossi rubescens), from Messrs. J. Veitch and Sons, Chelsea; to Cattleya Peetersi, Westonbirt var., and to Vanda cœrulea Lady Holford, from Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester; to Odontioda Bradshawiæ Gattonensis, from Sir Jeremiah Colman, Bart. (gardener, Mr. Collier), Gatton Park, Reigate; to Lælio-cattleya Orion var. Othello, from Messrs. Charlesworth and Co., Haywards Heath.

Award of Merit.—To Lælio-cattleya Walter Gott, from Messrs. Sander and Sons, St. Albans; to Cattleya Fabia Gloriosa, C. Fabia Sunset, C. Hardyana La Perle, Lælio-cattleya Golden Fleece, and Cypripedium Muriel, from Sir George Holford; to Cattleya Venus var. Princess, and Cattleya Rhoda The Jewel, from Messrs. Charlesworth and Co., Haywards Heath; to Brasso-cattleya Hyeæ, and Cattleya Oberon, from E. R. Ashton, Esq., Broadlands, Camden Park; to Cypripedium Latamianum, from J. Gurney Fowler, Esq., Glebelands, South Woodford; to Odontoglossum eximium McBean's var., from Messrs. J. and A. McBean, Cooksbridge; to Begonia Emita and B. Optima, from Messrs. James Veitch and Sons, Chelsea; to Chrysanthemum Queen Mary, from Messrs. W. Wells and Co., Merstham; to Hoheria populnea, from the Countess of Ilchester; to Carnation St. Nicholas, from Mesrs. Stuart Low and Co., Enfield; to chrysanthemums Miss A. E. Roope and Hector Menzies, from Mr. H. J. Jones, Lewisham; to chrysanthemums Portia and Snow Queen, from Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow; to chrysanthemum Mr. Leonard Harrison, from Mr. Harrison, East Grinstead.

### MEDALS.

The following awards were made to miscellaneous displays:

Silver Gilt Banksian. To Messrs. James Veitch and Sons, Chelsea, for winter-flowering begonias and chrysanthemums.

Silver Flora.—To Mr. L. R. Russell, Richmond, for bertolonias and sonerilas.

Silver Banksian.—To Messrs. William Cutbush and Son, Highgate, for winter-flowering begonias; and to Messrs. H. B. May and Sons, Edmonton, for ferns.

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## R.H.S. Scientific Committee.

BORDEAUX INJURY.—Mr. A. W. Hill showed, on behalf of Mr. Massee, some apples to illustrate the russeting due to the action of Bordeaux mixture upon their skins.

ANTIRRHINUM SPORTING.—Mr. Chittenden showed from a garden near London stems of an antirrhinum bearing short, leafy growths in the axils of the bracts instead of flowers. The leaves were very small. A similar specimen was subsequently sent by Messrs. R. Veitch, of Exeter, like the former in every way.

JAVANESE RHODODENDRON SPORTING.—Sir George Holford exhibited a small rhododendron raised from the cross R. javanicum Ruby × R. j. Ne Plus Ultra. It bore two inflorescences, one having bright red flowers, the other not quite so deep in colour and with yellow corolla tubes. The two parents had both crimson-scarlet flowers of slightly different shades. The flowers on the two trusses were of the same age. Ten plants of the cross had flowers, each bearing flowers of a richer colour than either of the parents, but none of the others had shown similar sporting proclivities.

GREY OAK.—Dr. Voelcker sent a piece of oak wood of a peculiar greyish-blue colour from a tree struck by lightning. The committee thought the coloration was probably the result of exposure to sun and air, especially as the tint approached that of weathered oak palings.

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## Birmingham Chrysanthemum Show.

A good show? Yes; but not a show to compare with those of former years. Such was the general verdict of those who attended the exhibition in Bingley Hall, which opened on November 5 for three days. With that verdict we agree; but, let it be understood, the comparison with bygone shows must not be taken to imply that there is anything wrong at Birmingham, but that, in common with other chrysanthemum shows, the changes that have been made in the style and character of the exhibitions have resulted in an entirely different sort of show, and, in consequence of the fact that shows apparently have now less attraction for the general public than they had twenty, or even ten, years ago, diminishing patronage entails restrictions in one form and another that make the standard of all-round excellence difficult to maintain.

Birmingham for years held the foremost position among chrysanthemum shows in the provinces, and even yet it is questionable whether any show out of London surpasses the Bingley Hall Exhibition. One certainly misses the big classes for Japanese and incurves shown on boards, although the flowers in vases make a bold and more artistic display.

Chrysanthemums, however, are far from being the only feature here, it being as much of a fruit and vegetable show as anything else. There used to be big exhibits of floral designs, but these have passed away. Perpetual carnations are now provided for, but the primula and cyclamen classes do not nowadays bring the strong entry they did when the whole of the spacious gallery was utilised for the strongly-contested classes of pot plants. Mr. Alfred Noakes is still the secretary, and we were pleased to see most of the old faces among the officials of the society; and, as has ever been the case, the whole arrangements were carried out in a methodical and business-like manner, everything working smoothly, and to the general satisfaction.

### PLANTS.

In each of the two classes for groups of chrysanthemums there were two entries, and really fine the exhibits were. The biggest class was for a group occupying 16ft. by 10ft., and cut blooms in addition to plants were allowed, ferns and foliage being used for furnishing. The first prize was awarded to Mr. Alfred Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, Edgbaston. Mr. Cryer has won many a prize at this show, and it may at once be said that the group which faced the judges on Tuesday was in his best style, the quality of the flowers being enhanced by tasteful arrangement. Mr. G. Corbett, gardener to Hume Pinsent, Esq., Harborne, was worthily awarded second prize, just a touch of weakness being evident in the finishing off of his group in front.

The other groups each occupied 12ft. by 8ft., exhibitors in the preceding class being excluded. The winner was Mr. L. Fewkes, gardener to H. Green, Esq., Gravelly Hill, who had excellent plants, arranged in rather formal style. His follower was Mr. Bullock, gardener to T. W. Piggott, Esq., The Lions, Moseley, the arrangement in this exhibit being of a looser, lighter character, while many grand flowers were staged.

Big specimen plants have lost the prestige they once held, and there was but one entry in the class for six plants of large-flowering chrysanthemums, the exhibitor being Mr. A. Cryer, who showed Mrs. J. B. Bryce, John Wainwright, Mdme. Ferlat, H. W. Thorp, Frank Trestian, and Souvenir de Wm. Clibran. Mr. Cryer also had everything his own way with three Japanese, and for single specimens, scoring also for three singles over two other competitors; Mr. Bostock, gardener to E. Martineau, Esq., Edgbaston, being second; and Mr. Bullock third.

### CUT FLOWERS.

Six vases of Japanese varieties, each containing three blooms, but all distinct, had four entries, and it was here that one found the quality, and saw the true results of skilful cultivation. The coveted first prize was won by Mr. J. R. Tooley, gardener to H. Andrews, Esq., Toddington Manor, Winchcombe. Among the finest of a glorious set of flowers were Master James, A. T. Miller, and Mrs. Lopes, which occupied one vase in front of the stand, but Lady Talbot and F. Joliffe were also splendid blooms. Mr. H. Woolman, Shirley, was a close second, the whole of his flowers being particularly bright and fresh. Third place was taken by Mr. E. J. Brooks, gardener to Lieut.-Colonel Beech, Coventry; fourth prize being awarded to C. W. Catt, Esq., Duffield, Derby. Four vases of three blooms each, in four distinct varieties, found Mr. Brooks at the head of the prize-winners, with immense but beautifully developed flowers of Hon. Mrs. Lopes, Lady Talbot, F. S. Vallis, and Francis Joliffe. Three yellows and an amber-coloured variety did not make so varied an exhibit as we should like to see, but we have nothing but praise for the quality of the flowers. Mr. W. H. Westbury, gardener to J. H. Wheatley, Esq., Berkswell Hall, who was placed second, showed a vase of Mrs. G. C. Kelly, one flower of whch was just a bit too open in the centre; D. B. Crane, Mdme. G. Rivol, and Hon. Mrs. Lopes were his other varieties. Mr. Tooley accounted for third prize; Mr. Alex. Hoyle, Coventry, taking fourth.

An excellent and well-filled class was that for twelve vases, each containing one bloom of a distinct Japanese variety, set up with small plants and foliage. The chief award was secured by Mr. H. S. Foster, gardener to F. E. Muntz, Esq., Umberslade. The exhibit contained flowers of medium size, quite large enough to show their individual charms to advantage, and the small crotons and maidenhair ferns used made a beautiful setting to the flowers, which were of pleasing shades of colour. Second prize went to Mr. Tooley, who arranged his exhibit against a background of green baize, and used Asparagus Sprengeri with copper-coloured berberis foliage to show off the flowers. Mr. E. Avery, gardener to J. B. Brooks, Esq., J.P., Finstall Park, Bromsgrove, took third.

Incurved varieties have sadly fallen away from the high position of former days, and the classes provided on this occasion failed to bring really good competition, the best exhibitors being Mr. Bullock, Mr. A. Cryer, and Mr. H. F. Keep.

Local and amateur classes were provided with a liberal hand, and there were some good exhibits in the Japanese and decorative classes, whilst in that for twelve vases for market varieties, Mr. Norman Davies, Framfield, scored with some splendid bunches of very serviceable kinds, such as True Gold, Black Prince, Christmas Gift, Felton's Favourite, and others of a like character. Mr. Davis's exhibit of a group of cut chrysanthemums, Japanese and incurved, arranged with ferns and foliage on table space 18ft. by 5ft., was awarded a first prize, which it richly deserved. Beautiful flowers of Thomas Lunt, His Majesty, a new mahogany-crimson variety, Amber Queen, and other Japanese were well supported by Clara Wells, H. W. Thorpe, Romance, and other good incurves. A challenge shield accompanied the cash prize of £8 for this exhibit.

### FRUIT.

There was abundant evidence from the manner in which visitors lingered around the fruit exhibited that its attractions were almost, if not fully, as great as were those of the floral and purely ornamental exhibits, and the trade exhibitors who put up their exhibits for commercial purposes appeared to be meeting many people who were prepared to do business. The most attractive class was one for a 10ft. by 5ft. table of British-grown fruit, including grapes, the principal winner being Mr. Geo. Mullins, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury. Mr. Mullins had some beautifully coloured bunches of grapes, including Gros Maroc, Gros Colmar, Alicante, and Muscat of Alexandria. The bunches, although not extremely large, were beautifully balanced, and carried in every instance most perfect bloom. Some melons and quite a collection of the best dessert apples and pears made up the stand, which was decorated with small plants, autumn foliage, and rowan berries.

A table of hardy British-grown fruits found Mr. E. Parry, gardener to Sir R. L. Lucas Tooth, Bart., Holm Tracey, Hereford, at the top of the list. The space occupied was 12ft. by 8ft., affording room for a goodly number of dishes, and there were splendid examples of Doyenne du Comice, Beurré Diel, Beurré Hardy, Beurré Berkmans, and other pears, many kinds of apples, and such things as medlars, walnuts, white currants, and Coe's Golden Drop plums.

Mr. Mullins, Eastnor Castle Gardens, led the way with six bunches of grapes, showing Muscat of Alexandria of rich amber colour and good size. Black Alicante and Gros Maroc were the black varieties shown. Mr. J. R. Tooley followed for second place. Mr. Tooley's three bunches of Black Alicante were awarded first in their class, Mr. Mullins taking second place, but leading again in the whites, Mr. Henry Taylor, gardener to the Right Hon. Lord Hatherton, Teddesley Park, Penkridge, following.

### MISCELLANEOUS PLANTS AND FLOWERS.

Messrs. Young and Co., Cheltenham, took first prize for a collection of perpetual-flowering carnations, the quality of the flowers, selection of varieties, and blending of colours being worthy of the award; second prize winner in this class was Mr. Mortimer, Farnham. Mr. John Farmer, gardener to L. Spiers, Esq., Edgbaston, had the best dozen plants of Begonia Gloire de Lorraine, and nice stocky plants they were, literally smothered in bloom; second prize went to Mrs. R. Peyton, Edgbaston, whose plants were well flowered, but not so nicely trained. Mr. Foster's six plants were even better specimens than his dozen. Some really good cyclamen were shown by the Rev. H. Buckston, Sutton Hall, Derby, most of the flowers being of the fringed or crested type. Pink, white, salmon, and crimson were all good, and the foliage was attractively marbled.

### TABLE DECORATIONS.

There was a class for dinner table decoration on an 8ft. by 4ft. table, and there were no less than nineteen entries, occupying the whole width of the hall, standing side by side with just a pathway between each pair. The judges must have had a very difficult task to pick out the winners, but the table arranged by Mr. J. V. MacDonald, gardener to Sir C. H. Kenrick, Edgbaston, was awarded first. Bronze-crimson chrysanthemums, selaginella, and croton leaves were used with good taste. Mrs. Batchelor, Hampton-in-Arden, used a single yellow chrysanthemum with trails of ampelopsis and small sprays of maidenhair fern. Her effort was rewarded with second prize; whilst Mrs. Greaves, Wormington, took third with a prettily-coloured single chrysanthemum in a lilac shade.

### VEGETABLES.

The whole of the vegetable classes were provided by various seed firms, and, taking the exhibits all round, they made a big and very meritorious display. The biggest array was to be seen in the classes provided by Robert Sydenham Limited, Birmingham, the exhibits in which occupied table space from one end of the hall to the other. In the open class for a collection of nine varieties there were six entries, the winner among whom was Mr. Thomas Jones, Bryn Penylan, Ruabon, followed by Mr. J. White, Bampton, Oxon. In the local class, restricted to a seven-mile radius of Birmingham, there were seven entries, the winner being Mr. E. Deakin, Hay Mills, Birmingham; Mr. F. Whitbread, Yardley, coming second.

Other classes were provided by Messrs. Sutton and Sons, Reading, who had ten entries in their class for nine dishes. The winner was Mr. E. Beckett, Aldenham House, Elstree, who showed in his own inimitable style produce of high excellence. Second prize went to Mr. J. Hudson, Leicester; and third to Mr. J. F. Barratt, Overton. Messrs. Dickson and Robinson's prizes were offered for exhibits of nine Premier onions, won by Mr. Thomas Jones, Ruabon, his bulbs being perfect specimens. Other classes for Moneymaker tomato and Exhibition leeks were also won by Mr. Jones; carrots being won by Mr. E. Winchester.

Messrs. Webb and Sons' collection brought nine good entries, the winner being Mr. J. F. Barratt, Overton, his carrots and parsnips being extremely good both in type and colour. Mr. J. Hudson, Leicester, second, and Mr. H. Andrews, Toddington Manor, Winchcombe, third. In all the exhibits it was noticeable that the potatoes and the Brussels sprouts were very strong points, whilst most of the exhibitors also staged good dishes of Webb's Emperor tomato.

### NON-COMPETITIVE.

The non-competitive exhibits added greatly to the extent and interest of the show, being as varied in character as they were excellent in quality. One of the first of the stands to attract attention was that put up by Messrs. Dickson and Robinson, Manchester, who made a bold and striking display of the newer perennial asters, together with tall stands of single and decorative chrysanthemums. The group was arranged upon the ground, the many varieties and extensive range of colours in both the subjects named being so displayed as to show to great advantage both their individual merits and a charming gradation of colours. Messrs. Clibrans' winter-flowering begonias, arranged on a table, were so brilliant in colour as to immediately arrest attention, and one heard spontaneous exclamations of delight from visitors on all hands.

From Messrs. E. Webb and Sons, Wordsley, put up in their accustomed style, a stand of finely-grown vegetables, celosias, begonias, and cut flowers of chrysanthemums being used to set off the exhibit. Another excellent display of vegetables came from Messrs. W. H. Simpson and Sons, Birmingham.

Conifers and shrubs have always been well shown at Birmingham, and once more capital exhibits were staged by Messrs. J. Waterer and Sons, Lim., Bagshot; Messrs. Bakers, Wolverhampton; and Messrs. Hewitt and Co., Solihull.

Among the exhibitors of large-flowering chrysanthemums, Mr. H. Woolman, the local grower, staged an exhibit of high-class flowers, the satin-pink flowers of Miss Cora Stoop, the deep-tinted Pockett's Crimson, and a big stand of White Queen making a trio of distinct and very pleasing varieties. The biggest flowers in the show were artistically arranged by Messrs. W. Wells and Sons, Lim., Merstham. Their blooms of Queen Mary were of immense size, but full of refinement, other good ones being Mrs. Lloyd Wigg, Mrs. G. Drabble, and a most charming new variety named Mrs. Drexel. This is a delicate satin-pink of very pleasing form and all-round excellence. Singles of good colours were plentifully used to advantage as a setting to the big blooms.

Mr. W. J. Godfrey, Exmouth, had a nice lot of flowers, the crimson and bronze shades being intermixed with yellows. Godfrey's Success, an improved form of Bessie Godfrey; Mrs. N. Molyneux, a soft amber, overlaid with carmine; and Frank Molyneux, a very promising crimson, were all excellent. Pelargoniums were also shown by Mr. Godfrey, Scarlet, Captivation, vivid orange scarlet; His Majesty, rich crimson, being a few among the many good sorts.

King's Acre Nurseries, Lim., Hereford, were large exhibitors of fruit. The centre of their stand was occupied by tall epergnes, furnished with beautifully-coloured apples and pears, whilst piled-up baskets of both dessert and culinary apples were set up in great numbers. It is sufficient to say that few really good varieties were missing from the collection, the quality of the fruit being superb. Mr. C. W. Powell, Warham, showed packed boxes of apples, the boxes containing an average of forty pounds of picked fruit. It was a very good exhibit, bearing testimony to the fact that our agriculturists—Mr. Powell is a farmer—are entering thoroughly into the spirit of high-class culture and careful handling of fruit. The Herefordshire Fruit Growers' Association were large exhibitors, but their packing left room for improvement, and it seemed to us that the use of blue paper considerably detracted from the colour of the fruit. Still another exhibit of apples was brought by Messrs. Pewtress Brothers, Tillington, Hereford, Cox's Pomona, Adam's Pearmain, and other choice dessert varieties being of good quality. A long length of tabling was filled with choice ferns by Mr. H. N. Ellison, West Bromwich, who showed also hybrid gerberas and bowls of lily of the valley. A perfect blaze of colour was produced by a big batch of Begonia Ideal, one of the most attractive of the winter-flowering hybrids exhibited by Mr. Arthur Shambrook, gardener to Rev. Henry Buckston, Sutton Hall, Derby.

### SUNDRIES.

There were a number of elaborate exhibits of all manner of garden requisites, prominent among which was a big display of useful articles arranged by Messrs. Robinson Bros., Lim., Ryders Green, West Bromwich. Their recently-introduced liquid insecticide or soil steriliser was one of the principal lines. Pine Spray Fluid, Carmona Fertilisers, and many other excellent preparations were on view, as well as Alpha spraying machines. The Four Oaks Spraying Machine Company, Sutton Coldfield, had not only their knapsack machines, but also a variety of tank machines, including some on wheels with attachments to meet the requirements of hop and potato growers, as well as for orchard work. The well-known undentable syringes in various patterns were likewise displayed.

Messrs. Wm. Wood and Sons, Lim., Wood Green, London, had what may be described as an all-round collection of gardeners' requirements, ranging from peat and loam to highly-concentrated chemical manures and insecticides, also from twine and stakes to high-class cutlery. Hagon's moth trap, exhibited on this stand, received a special Certificate of Merit.

Mr. A. Edwards, Arnold, Nottingham, showed examples of his Edwardian ware, which, tastefully furnished with single chrysanthemums and perpetual carnations, made a cheery display, and demonstrated their value as suitable receptacles for these and similar flowers. The Patent Safety Ladder Company, Peterborough, showed their adjustable ladders, which are so admirably adapted for use in fruit gathering, pruning, and creeper training operations.

### AWARDS.

Large Gold Medals.—Messrs. Waterer, Lim., Bagshot, Surrey; Messrs. Webb and Sons, Stourbridge; Messrs. Clibran and Sons, Altrincham; The King's Acre Nurseries, Hereford; Messrs. Dickson and Robinson, Manchester; the Rev. Buckston, Sutton Hall, Derby.

Small Gold Medal.—Mr. W. J. Godfrey, Exmouth; Messrs. Hewitt and Co., Birmingham; Hereford Fruit Association; Messrs. Pewtress Bros., Tillington, Hereford; Mr. C. W. Powell, Warham; Messrs. Wells and Co., Merstham; Mr. H. Woolman, Shirley, Birmingham; Messrs. Wood and Sons, Wood Green, London.

Silver-gilt Medal.—Messrs. Dickson and Robinson, Manchester; Mr. H. N. Ellison, West Bromwich; Messrs. Simpson and Sons, Birmingham; and Messrs. Thomson and Co., seedsmen, Birmingham.

Silver Medal.—Messrs. Bayliss and Co., Birmingham; Messrs. Bakers, Wolverhampton; Messrs. Hewitt and Co., Birmingham; The Patent Ladder Company, Peterborough; Messrs. J. Peed and Son, West Norwood; Messrs. Robinson Bros., West Bromwich; Messrs. Turton and Co., Greet, Birmingham; Miss Thompson, Sparkhill; and Messrs. White and Co., Worcester.

First-class Certificates (new chrysanthemums).—Mr. W. J. Godfrey, Exmouth, for Crimson Velvet, Godfrey's Success, and Mrs. N. Molyneaux; Messrs. Wells and Co., Merstham, for Mrs. Drexel and Owen May; Mr. Norman Davis, Framfield, for His Majesty (Japanese) and Mrs. Geo. Thomson (single).

## Torquay Chrysanthemum Show.

The chrysanthemum show of the Torquay District Gardeners' Association was held on October 31 in the large hall of the Bath Saloons, Torquay, and was in every way a very successful exhibition. The entries were even in excess of those of last year, which constituted a record, and the plants and flowers shown were particularly fine, while the competition was exceptionally keen, and in many cases there was little to choose between the first and second prize winners.

The prize for a group of chrysanthemums in form of a semi-circle, 9ft. across, was won by Mrs. Lyon, who also took the National Chrysanthemum Society's Certificate, with a splendid collection of immense blooms, many of which would have easily qualified for the show board. The second prize set, from Mrs. Richardson, was very little inferior. In the class for a group of single chrysanthemums, first prize was won by Mrs. Lyon, with a mass of beautiful plants fully 10ft. high, topped by a tall palm. For six trained chrysanthemums Mrs. Lyon won the first prize with very large and well-flowered plants, and in the class for three trained chrysanthemums, singles, she was again to the fore with good plants. For six flowering table plants first prize was won by Colonel Cary, and first prize in the class for six foliage table plants was won by Dr. Quick. First prize for three flowering table plants was won by Dr. Quick, and that for three foliage table plants by Dr. Leon. The first prize for six winter-flowering begonias was won by Mr. H. G. Cumming, and that for three solanums by Dr. Leon.

The cut blooms were of a very high order of merit, and were far larger and more perfect than those exhibited last year. The leading prize for twenty-four Japanese was won by Mrs. Lyon, who also obtained the prize for the best bloom in the show. First prizes were also won by Mrs. Lyon for eighteen Japanese, for twelve Japanese in vases, for six Japanese, yellow; for six Japanese, any colour; for six vases of single chrysanthemums, and for six Japanese, distinct; while Colonel Cary won first prize for six Japanese, white. For a vase of cut chrysanthemums, double, first prize was won by Mr. F. Perrett, and for a vase of single chrysanthemums first prize went to Mr. W. H. Veale, and for a basket of wild flowers and foliage, first prize was won by Mr. F. Perrett.

The class for table decorations attracted six entries, and the first prize was won by Mr. H. Damarell with a very light and graceful arrangement of small bronzy-red chrysanthemums and grasses. In the artisans' and cottagers' classes, first prize for six Japanese blooms was won by Mr. J. B. Daniels, who also took first prize for two dishes of apples. In vegetables Colonel Cary was to the fore, winning eight first prizes, but Mr. P. P. Alexander took first prize for a collection of twelve varieties. In the fruit classes Mr. P. P. Alexander took seven first prizes, and Colonel Cary six.

The exhibits of nurserymen added materially to the attractions of the show. The Devon Rosery, Torquay, furnished a very beautiful stand, with hundreds of cut roses, of great excellence, considering the lateness of the season, and numbers of cut carnations. They also showed Citrus sinensis in fruit, Cocos Weddelliana, Geonoma gracilis, Phœnix Roebelini, Nerine Bowdeni, Erica nivalis, E. autumnale gracilis, E. caffra, Pandanus Veitchi, tuberoses, Lilium longiflorum, crotons, Nephrolepis compacta, quantities of Begonia Gloire de Lorraine, Turnford Hall and B. Rothschild, with numbers of chrysanthemums. Their display of fruit was magnificent, over fifty dishes of superb apples being staged.

Messrs. Robert Veitch and Son, Exeter, had an interesting collection of plants, among which were Eugenia Ugni, Grevillea longifolia, Apera arundinacea, Jasminum nudiflorum, Pernettyas, Potentilla fruticosa, Plumbago capensis, Physalis alkekengi, P. Bunyardi, Liquidambar stryraciflua, Clematis Nellie Moser, Coronilla pygmæa, Acacia platyptera, Pentstemon heterophyllus, Berberis Wilsoni, Brachysema acuminata, Gnidia carinata, Primula malacoides, Acacia ovata, Symphoricarpus occidentalis, covered with white berries, Rhapiolepis Delacouri, Stransyasia undulata, Pancratium macrostephana, and numbers of winter-flowering carnations.

Mr. W. B. Smale, Torquay, staged Chinese primulas, cinerarias, Æschyanthus pulcher, pelargoniums, florists' abutilons, Cytisus racemosus, Salvia fulgens, dracænas, and chrysanthemums, among which were the new Mrs. M. Brockman, bright pink, and Harry Wood, crimson-scarlet. Messrs. Burridge and Sons, Torquay, showed Lilium speciosum rosea, ericas, spiræas, and a collection of chrysanthemums, while Mr. R. W. Hodder, Torquay, had some very fine cyclamen.

## Portsmouth.

OCTOBER 30, 31, and NOVEMBER 1.

The twenty-sixth annual autumn display was held in the Town Hall, and was quite one of the best of the series. Cut blooms were numerous and of excellent quality, and groups of chrysanthemums were a strong feature, adding much to the attractiveness of the display. Fruits and vegetables were abundant, and trade displays were prominent and excellent in their composition. The arrangements were of the best order in the hands of Messrs. Gill and Terry, the secretaries, and an influential committee.

Cut blooms were well provided for in seven open classes, as well as an adequate number for growers in Portsea Island only.

For thirty-six Japanese in not less than eighteen varieties and not more than two of any one variety, a silver cup value £20, with substantial money prizes, was offered, which brought out eight competitors. Mr. W. Baxter, gardener to Captain Dalgety, Lockerby Hall, Romsey, was easily first with a set of remarkable flowers, large, richly-coloured, and effectively staged. Some of the finest varieties were F. S. Vallis, Hon. Mrs. Lopes (extra fine), G. Hemming, Kara Dow (deep and attractive in colour), White Queen, D. B. Crane, Master James, W. A. Etherington, Mdme. G. Rivol, Eclipse, William Turner, and Colonel Lawrence. Mr. A. E. Usher, gardener to Sir R. Baker, Bart., Ranstone, Blandford, was second, with smaller, uneven blooms; Kara Dow, Mrs. A. T. Miller, W. Rawlings, Mrs. G. C. Kelly, and the Hon. Mrs. Lopes were the most striking. Mr. G. Hunt, gardener to Pantia Ralli, Esq., Ashtead Park, Epsom, third.

In a class for two dozen Japanese, five entered, the best coming from Mr. Martin Silsbury, Shanklin, Isle of Wight, and naturally his was an interesting exhibit, containing many of the newer sorts, such as Fred Green, a rich velvety-purple colour; White Queen; Thomas Lunt, a huge crimson flower with gold reverse to the broad florets; Queenie Chandler, soft primrose; Mrs. Gilbert Drabble, marble white, said to be one of the largest varieties in cultivation; Queen Mary, white, flushed with blush; F. T. Mew, rich wine-crimson; Japan, with incurving florets, deep yellow with an orange suffusion. The second award was made in favour of Mr. Hunt, who had smaller but handsome blooms of Mrs. G. C. Kelly. Mr. H. Herbert, gardener to Sir F. Fitzwygram, Leigh Park, Havant, third.

For twelve Japanese, distinct, five competed, and with a bright set Mr. A. J. Marsh, gardener to M. Hodgson, Esq., Moreton House, Martyn Worthy, Winchester, won easily with high-class specimens of Master James, Frances Joliffe, the Hon. Mrs Lopes, and Maud Williamson (deep rose with silver reverse). Mr. Edwards, gardener to W. Garton, Esq., Sarisbury Court, Southampton, second. The last-named annexed the premier award in a combined class for a dozen Japanese, and as many incurved blooms with an even set; Mr. Herbert following closely.

Incurved blooms were not numerous, owing to the early date. Mr. G. Hunt was first for twenty-four with a surprisingly good set of such sorts as Romance, C. H. Curtis, Buttercup, Frank Trestian, Calypso, Triomphe de Montbrun, and the newer Mrs. Percy N. Wiseman. Mrs. Marsh won with twelve specimens, incurved, with huge flowers, quite on the side of coarseness; Mr. Edwards second with smaller, more refined specimens. Single-flowered varieties were remarkably well staged. Six competed in the class for six bunches, distinct, and Mr. Marsh led with an unnamed set of high quality flowers; Mr. C. Johnson, 10, Garner Street, Southsea, coming second.

Local classes were well filled. For twelve Japanese, distinct, Mr. F. Hope Terry, 139, Francis Avenue, Portsmouth, was easily first with handsome flowers. Mr. C. White, Garden Terrace, Southsea, won in the incurved section with medium-sized blossoms. Pompons were well staged, as they usually are here, by Mr. H. Snook, 52, Fitzroy Street, Portsmouth.

Plants were plentiful, especially in the group classes. The chief of the latter was one to occupy a space of 60 square feet, for which a silver cup was offered. Five competed, the premier award going to Mr. R. Burridge, Portsmouth, for dwarf plants, neatly arranged, and carrying fairly good blossoms; Mr. J. Jeffreys, 37, Clarence Parade, Southsea, was second with much finer flowers, but a faulty arrangement. In a smaller class Mrs. Hope Terry won a silver cup with a meritorious arrangement of well-grown plants; Mr. C. White second.

Mr. Papworth, gardener to the Parks Committee, arranged the best group of miscellaneous plants, his crotons, palms, ferns, chrysanthemums, primulas, etc., having an effective edging of Primula obconica of varied colours. Mr. Ellwood, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, was easily first for table plants.

The most tastefully arranged dinner-table was carried out in chrysanthemums, Mary Richardson (bronze) and Kitty Bourne (yellow), with bronze-tinted selaginella and asparagus, from Mrs. Rapley, Warblington, Havant. Mrs. Sturt, Stanstead Park Gardens, won for a basket of chrysanthemums and foliage, with an arrangement that left little to be desired.

Fruit was not largely shown, but it was good. Mr. Baxter, in a stiff competition, won for two bunches of grapes with Muscat of Alexandria. Mr. Ellwood had the best six dishes of apples, and Mr. G. Hoare, Woodfield, Havant, won for six dishes of pears.

Vegetables were fine. In one class, that for Messrs. Toogood's prize for six kinds, Mr. G. Hoare, Woodfield, Havant, was placed first with poor celery, leeks but nine inches long, onions three inches in diameter, and small tomatoes, but he had good cauliflowers and good King Edward potatoes. Mr. Ellwood was placed second with leeks fifteen inches long, good cauliflowers, superior celery, Ailsa Craig onions five inches in diameter, good tomatoes, and moderate potatoes. The judging in this class met with much criticism during the day. Mr. Ellwood was easily first for six dishes in the classes provided by both Messrs. Sutton and Sons and Messrs. E. Webb and Sons.

Among trade exhibits Messrs. Sutton and Sons, Reading, had an extremely good display of vegetables, consisting of about eighty dishes. The Barnham Nursery Company had three dozen dishes of excellent apples and pears.

## Bournemouth.

NOVEMBER 5 and 6.

The twenty-sixth annual exhibition of autumn flowers, fruits, and vegetables was held in the spacious winter gardens pavilion on the above dates. Sir Albert Rollit, president of the National Chrysanthemum Society had promised to formally open the show, but, unfortunately, illness prevented him being present. Sir Daniel Morris, V.M.H., F.R.H.S., president of the Bournemouth Horticultural Society, expressed, on behalf of Sir Albert Rollit, great regret that he was unable to attend. He also stated, at the opening ceremony, that Sir Albert had presented a medal to be awarded to the most meritorious exhibit in the show, and it had been won by Mr. Tooley, gardener to Hugh Andrews, Esq., who staged some wonderfully fine vases of chrysanthemums in a very effective manner. The Mayor of Bournemouth, in the place of Sir Albert Rollit, opened the show, and emphasised what Sir Daniel Morris had said relative to the excellence of the products, the greater proportion of which were locally grown. Orchids alone were scarce, on account of the great orchid show in London drawing to it many of the large growers.

### GROUPS.

Six large groups were arranged, consisting of miscellaneous plants and cut flowers. Mr. Usher, gardener to Sir Randolf Baker, Bart., was the winner, once more securing the silver challenge cup offered by G. H. Rolls, Esq., J.P., vice-chairman of the council. Palms, poinsettias, oncidiums, cattleyas, and crotons

NEWS FROM HEADQUARTERS.
WEEK BY WEEK.

Were the founders of our old-established city firms to come back to life and pay a visit to the scenes of their enterprises, what of all the latter-day changes would most surprise them ?

Possibly the marvels of the telephone; possibly the clattering typewriting machines or the wonders of the electric appliances; but, most probable of all, the "office-gardens"—the gay bowls and shapely glasses of delicately-scented hyacinths, nodding daffodils and graceful narcissus, presenting so daring a relief to the sombre atmosphere of the offices.

And if it be true that the spirits of our ancestors attend our Yuletide festivities, what must they think to see, in the depth of winter, windows, odd corners, and feast-laden tables beautifully decorated by a brave show of Lily of the Valley and Roman Hyacinths ?

For winter is no longer blossomless. Be the world outside never so barren, unpromising, or heavy with gloom, we may yet have the golden glory of the daffodil, the waxen beauty of the hyacinth, and the graceful charm of the narcissus, throughout the dreary months to Easter!

Twenty-five years ago Messrs. James Carter and Co. received from their China agents the first parcel of the Chinese Sacred Lily. This happy chance was the birth of Indoor Gardening, the Chinese Sacred Lilies doing so well in drainless bowls that experiments were undertaken, and to-day we have a list of Daffodils and Narcissus which give a home-beautifying hobby which every autumn finds its captivated followers vieing with each other to possess the most beautifying display of blossoms.

An almost inexhaustible variety of artistic bowls and glasses for indoor gardening attracts the admiring visitor to Raynes Park; and courteous members of the staff give him in a nutshell the whole of the fascinating story of indoor gardening.

JAMES CARTER & CO.,
Seedsmen to His Majesty the King,
Raynes Park, London, S.W.

were prominent in this group. Mr. Barrett, late secretary of the society, was a close second, having grandly-grown chrysanthemums and palms, set in cork pockets, crotons, dracænas, and a groundwork of ferns. Third honours went to Mr. Bridle, gardener to Lord Alington, who staged a lovely group containing cattleyas, carnations, begonias, and Francoa ramosa. This was very lightly arranged, and most effective. Mr. Evans, gardener to G. J. Fenwick, Esq., was a good fourth. The group arranged by Messrs. G. Watts and Sons, Limited, was also very attractive, and contained some lovely fresb plants of liliums, crotons, and chrysanthemums.

### CUT BLOOMS.

Mr. J. Stevenson, gardener to G. Mocatta, Esq., Woburn Place, Surrey, won easily in the class for twenty-four cut blooms on boards, not fewer than eighteen varieties. His blooms were: W. Turner (2), Mrs. R. A. Witty, Hon. Mrs. Lopes, F. S. Vallis (2), Queen Mary (2), Master James (2), William Gee, Thomas Lunt (2), Madame G. Rivol, Queenie Chandler, Frances Jolliffe, Frances Rowe, Fred Chandler, His Majesty, Lady Talbot (2), W. Mease, Miss A. E. Roope. The same exhibitor scored in the class for twelve Japanese incurved cut blooms on boards, having massive and fresh specimens of William Turner (2), Mrs. A. T. Bott, Willie Rawling (2), Mrs. W. Iggulden, Madame G. Rivol (2), Miss A. E. Roope, and Queen Mary. Mr. Usher was second, W. Rawlings, W. Turner, G. Mileham, 1908, and Madame R. Radaelli, being good. Mr. J. Stevenson, Wimborne, was a close third. As previously stated. Mr. Tooley won in the class for nine Japanese cut blooms in vases. He had massive, well-coloured ones of F. S. Vallis, Master James, Lady Talbot, Madame G. Rivol. Purity. Mrs. Mease, Hon. Mrs. Lopes, O. H. Broomhead, and Frances Jolliffe, all well set up. Mr. J. Stevenson was second. Mr. Kitcher, gardener to Major Wyndham Pain, had the best two vases of nine blooms in a vase, one variety in each, Reginald Vallis and Mrs. R. H. B. Marsham respectively. Mr. Cox, gardener to E. G. Duberley, Esq., being second.

Mr. Galpin, gardener to Mrs. Telfer, won in the class for six vases, distinct, Master James and R. Vallis being good; Messrs. J. H. Piggot and E. G. Cox being second and third respectively. Mr. Barrett, gardener to E. Howard May, Esq., had the best three bush plants; Mr. Evans was a close second. Singles in vases were lovely. Mr. C. Honey, gardener to J. T. Rayner, Esq., staged fine flowers; Mr. Burge, gardener to Rev. C. H. Burrows, was a close second, with lovely clean specimens; Mr. Galpin came third. The last-named scored in the class for six vases of undisbudded singles. Mr. Kitcher won in the class for twelve blooms on boards, not fewer than eight varieties; White Queen and Pockett's Crimson were really grand in this stand.

### TABLE DECORATIONS.

Twelve table decorations were in competition, the prizes going to Mrs. Cape, Messrs. J. H. Cape, Burge, and Geo. Garner respectively. The last-named won in the classes for shower bouquets and ladies' sprays.

### FRUIT.

Fruits were good, and extensively shown, nearly fifty bunches of grapes being staged. Messrs. Tooley, Garner, and Barrett being the chief prize-winners in the five classes. The bunches were of high quality. Mr. Usher had the best four dishes of pears, Mr. T. Stevenson was second. The last-named had the best four dishes of apples.

### VEGETABLES.

In the principal classes for collections Mr. Usher was invincible, putting up wonderfully fine leeks, celery, onions, and cauliflowers.

The amateurs' and children's sections were well filled, competition throughout being keen.

### NON-COMPETITIVE.

Gold Medals were awarded to Messrs. Stuart Low and Co. for carnations and orchids; and to Walter Child Clarke, Esq., for orchids and begonias.

Silver Medals.—To Mr. V. Slade, for zonal pelargoniums; to The Winter Gardens Management, for chrysanthemums and miscellaneous plants; to Messrs. Toogood and Sons, Southampton, for onions and marrows; to Mr. Welch, Park Nurseries, Bournemouth, for fibrous begonias and ericas; and to the Christchurch French Gardening Company, for vegetables and salads.

Highly Commended. — Messrs. Jarman and Co., for apples; Mr. J. Stevenson, for chrysanthemums; and Mr. Ingram, Parkstone, for miscellaneous plants.

## Southampton Horticultural Society.

NOVEMBER 5 and 6.

In the Coliseum the annual autumn show was held, and proved a success. Entries were fairly numerous. Cut blooms were well shown, and, as usual, the arrangements were of a satisfactory nature.

### PLANTS.

For a group of decorative, single, and other chrysanthemums, arranged with palms, ferns etc., there were no entries. For six plants, with not less than five blooms on each, suitable for conservatory decoration, Mr. C. Hosey, gardener to J. C. E. D'Esterre, Esq., Elmfield, Southampton, was first of three competitors, with well-flowered examples of popular varieties; Mr. F. G. Bealing, Bassett, second. Single-flowered varieties were provided for at Southampton in six varieties, the best coming from Mr. Allan Cooper, 115, Hill Lane, Southampton, an amateur —a remarkably fine exhibit of freely-flowered plants; Mr. Bealing, florist, second. Bush-grown plants were best shown by Mr. Hosey, who won for four varieties in quite an easy manner.

### CUT BLOOMS (OPEN).

In competition for twenty-four, in eight varieties, of Japanese blooms, three of each, to be staged in vases, Mr. W. Hall, gardener to Major Chichester, Embley Park, Romsey, was first, with full, solid blooms, well displayed, of such varieties as Mrs. L. Thorn, Frances Joliffe, Master James, F. S. Vallis, and W. Turner; Mr. C. Hosey second. The best vases of two white varieties, in an entry of four, came from Mr. W. Hall, Mrs. A. T. Miller and W. F. Lever were well represented; Mr. Hosey was here again second. In a class for three vases of any two varieties other than white, Mr. W. Hall followed up his previous successes by winning the premier prize with Lady Talbot and D. B. Crane.

Decorative varieties were provided for in a class for four distinct kinds, in sprays of not less than three blooms, excluding singles. Five competed, and the several arrangements made an interesting class. Mr. Bealing was first with a really fine display, Cannell's Late, Freda Bedford, Market Red, and Louise d'Or were capitally represented; Mr. G. Ellwood, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, second. In competition for the six vases of single-flowered varieties, distinct, to be shown disbudded, there were four entrants, the best coming from Mr. Bealing, who staged grandly-developed blooms of popular varieties; Mr. A. J. Marsh, gardener to M. Hodgson, Esq., Moreton House, Kingsworthy, Winchester, second.

A class was provided for three Japanese, incurved, anemones, or singles, arranged in a space 6ft. by 6ft., any foliage plants with a centre palm being allowed. Quality and effective arrangement were considered the leading features, and Mr. Bealing was the only exhibitor, and had an interesting display. Six vases of undisbudded single varieties were best shown by Mr. C. Dymott, Freemantle; Mr. A. J. Marsh a close second.

Cut blooms arranged on boards had seven classes allotted them, the leading one being for twenty-four Japanese in not less than sixteen varieties, or more than two of any one variety. There were four competitors, and Mr. W. Baxter, gardener to Captain F. G. Dalgetey, Lockerley Hall, Romsey, was an easy first, staging fully-developed blooms of F. S. Vallis, D. B. Crane, Lady Talbot, and Master James; second, Mr. W. Hall, with much smaller flowers. The best twelve Japanese, distinct, came from Mr. D. Edwards, gardener to W. Garton, Esq., Sarisbury Court, Southampton; and Mr. T. Hall, gardener to Ellen Lady Swaythling, South Stoneham House, second.

Incurved varieties had one class set apart for them, and this was for eighteen blooms in not less than twelve varieties. Mr. A. J. Marsh obtained the premier award with C. H. Curtis, Mrs. G. Denyer, and Romance were of high quality; Mr. Edwards second. The premier incurved bloom in the show was C. H. Curtis, from Mr. A. J. Marsh, a really good specimen of that old and still popular variety. Mr. W. Hall secured a like position in the Japanese section with a handsome specimen of A. Turner.

### LADIES' CLASSES.

The most elegant stand of chrysanthemums arranged with autumn foliage, etc., was one from Miss M. Snellgrove, London Road, Southampton—quite an effective effort; Mrs. E. Ladhams, Shirley, second; six entries. Baskets of autumn leaves, berries, etc., were numerous, the best coming from Mrs. Bealing; Miss Taylor, Bemerton Rectory, Salisbury, second.

### FRUIT.

Fruit was plentiful and good. The first prize for black grapes was won by Mr. W. Hall, who had Appley Towers in fine condition, a like honour falling, in the class for any white grape, to Mr. W. Baxter, who staged Muscat of Alexandria in remarkably fine condition. Dessert apples were numerous, and for four varieties Mr. T. Hall won with really typical examples of what dessert fruit should be. The premier award for four dishes of kitchen apples fell to Mr. D. Edwards. The leading award for pears in four sorts went to Mr. W. Hall; Mr. T. Hall second.

### VEGETABLES.

These were best shown by Mr. G. Ellwood, who won the premier award in Messrs. Toogood's class for six dishes, seven competing, and also for Messrs. Sutton and Sons' class for six dishes with excellent examples of cauliflowers, leeks, celery, carrots, and potatoes; Mr. H. Keep, Cottages, Aldermaston, Reading, second in Messrs. Sutton's class. Messrs. J. Carter and Co., London, had a remarkably fine display of vegetables, not for competition.

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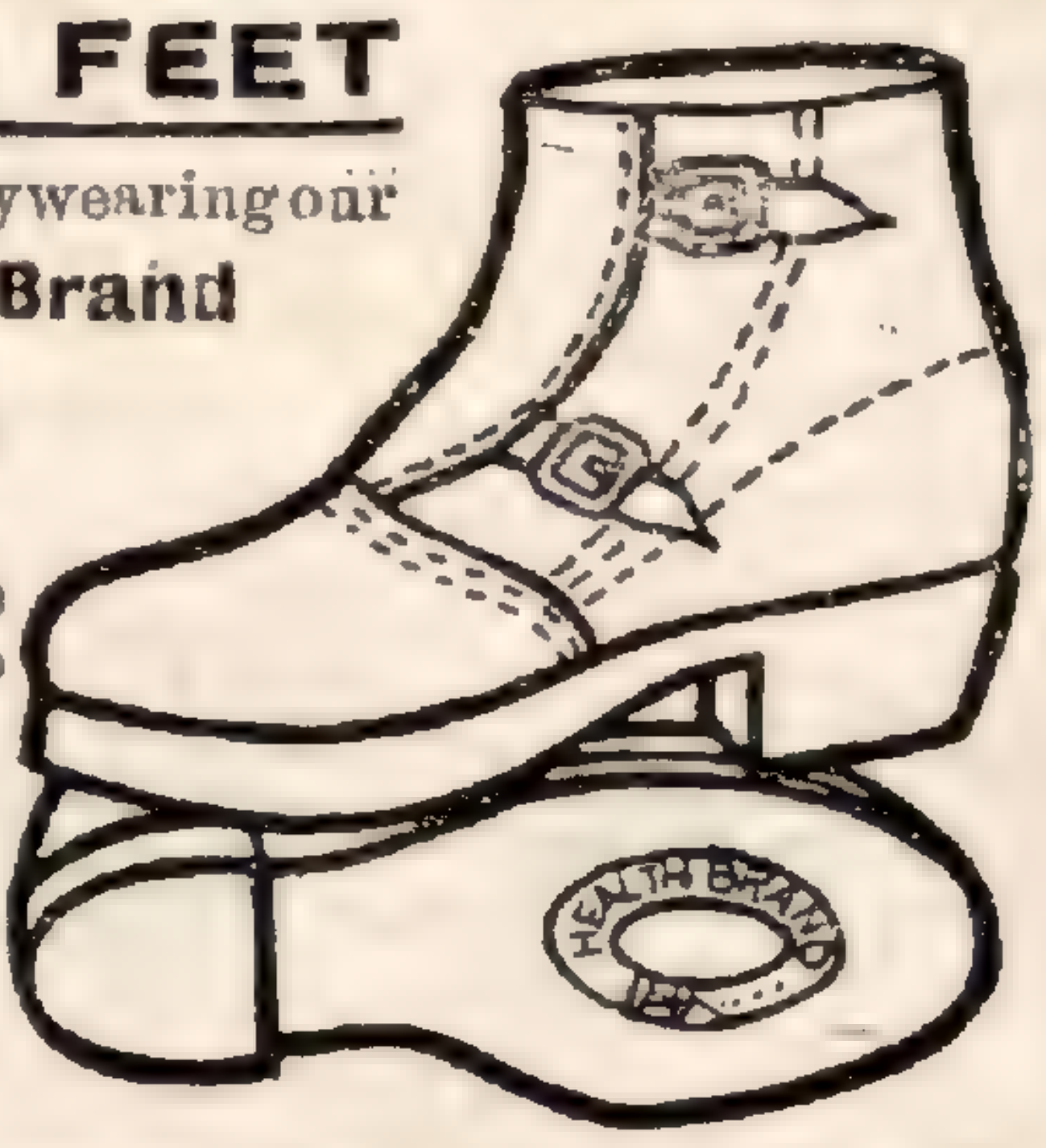

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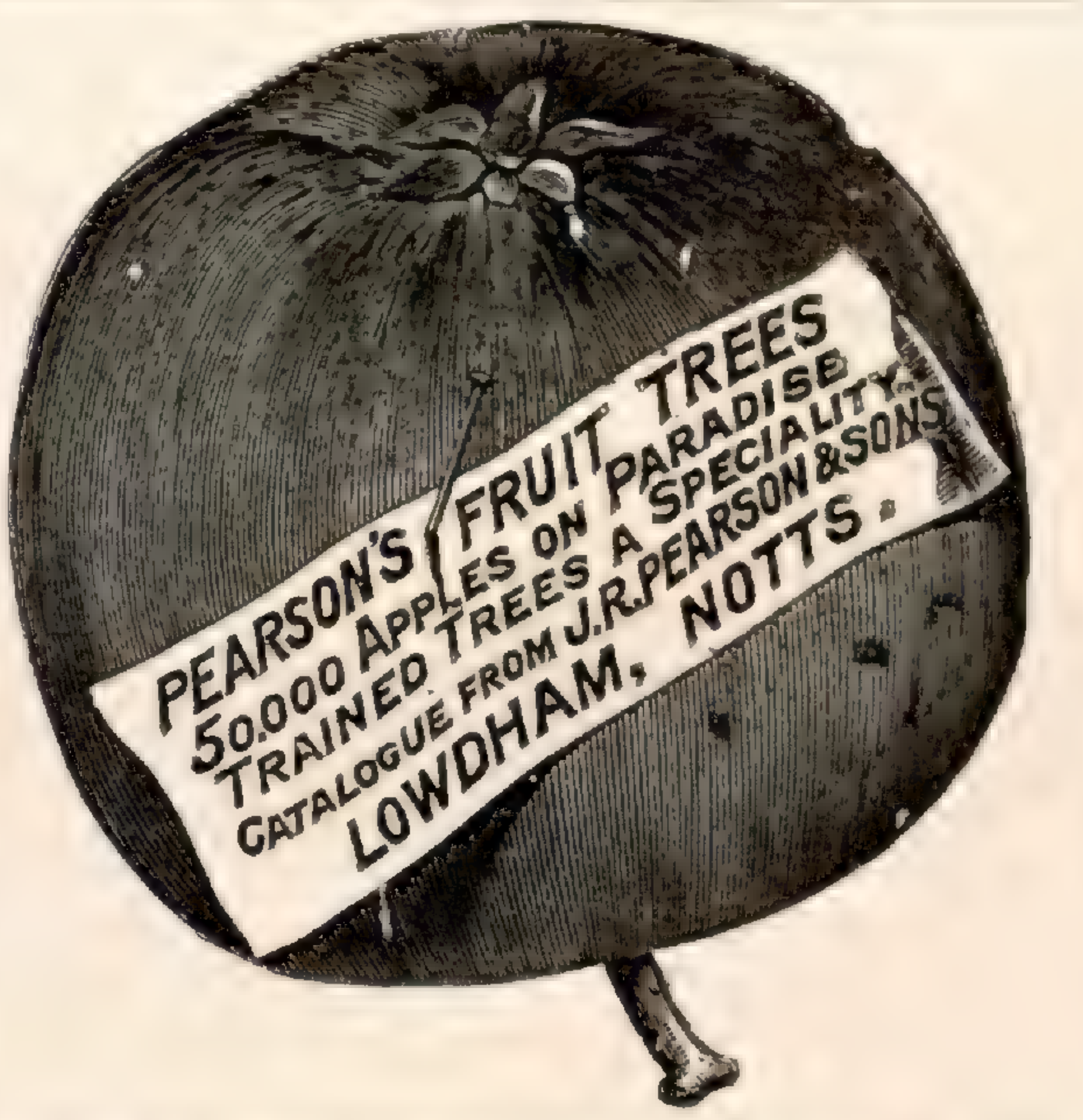
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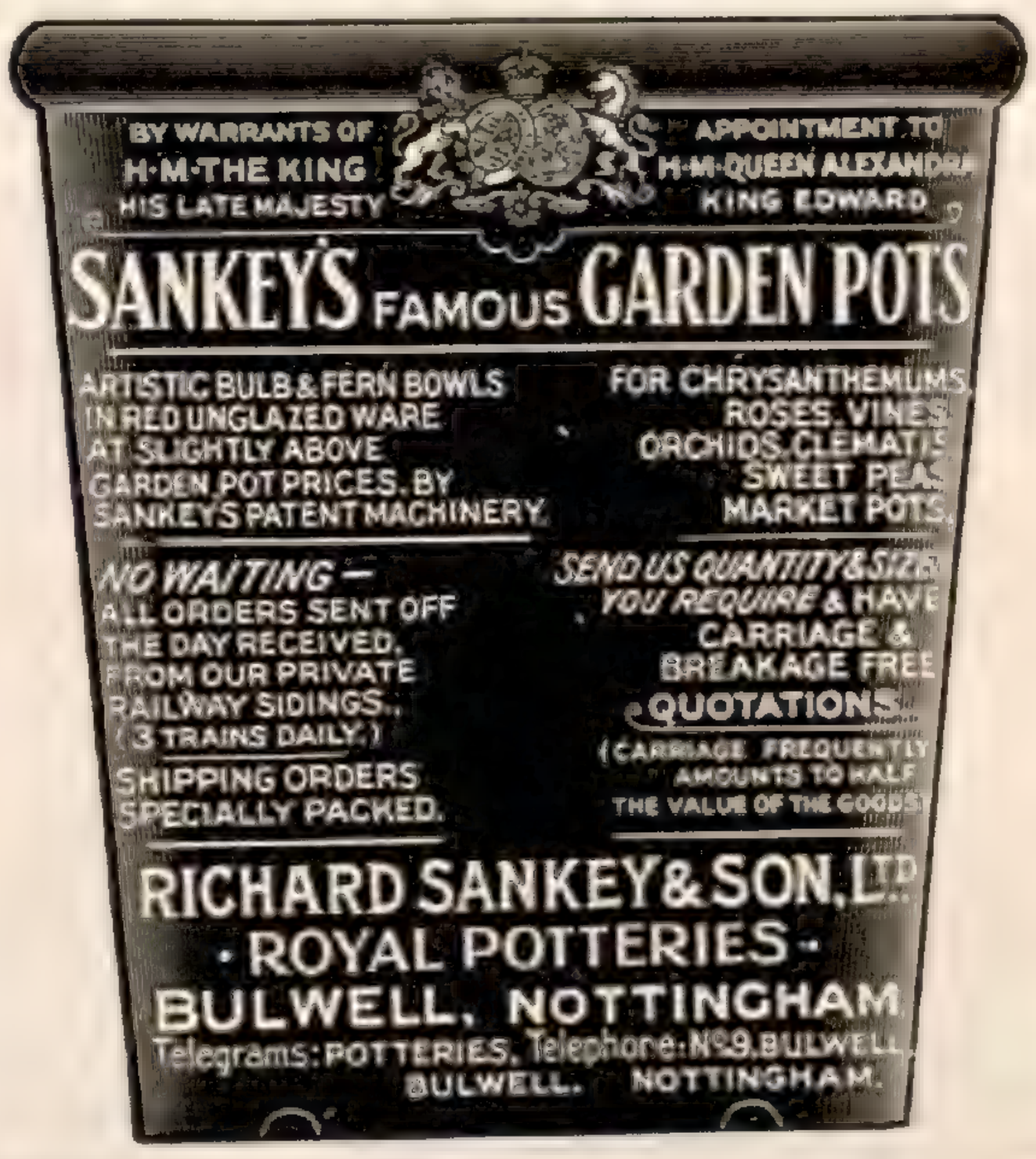

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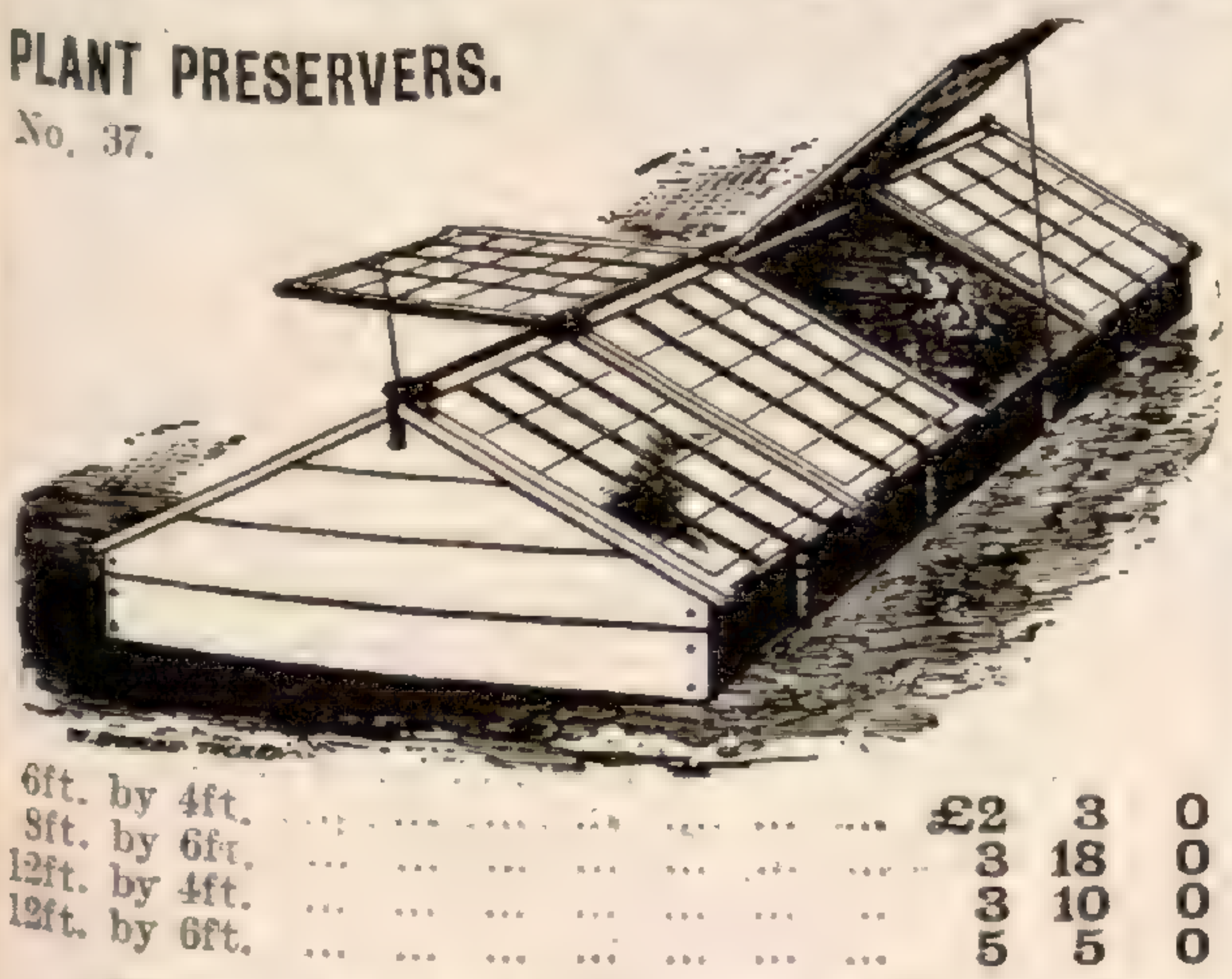

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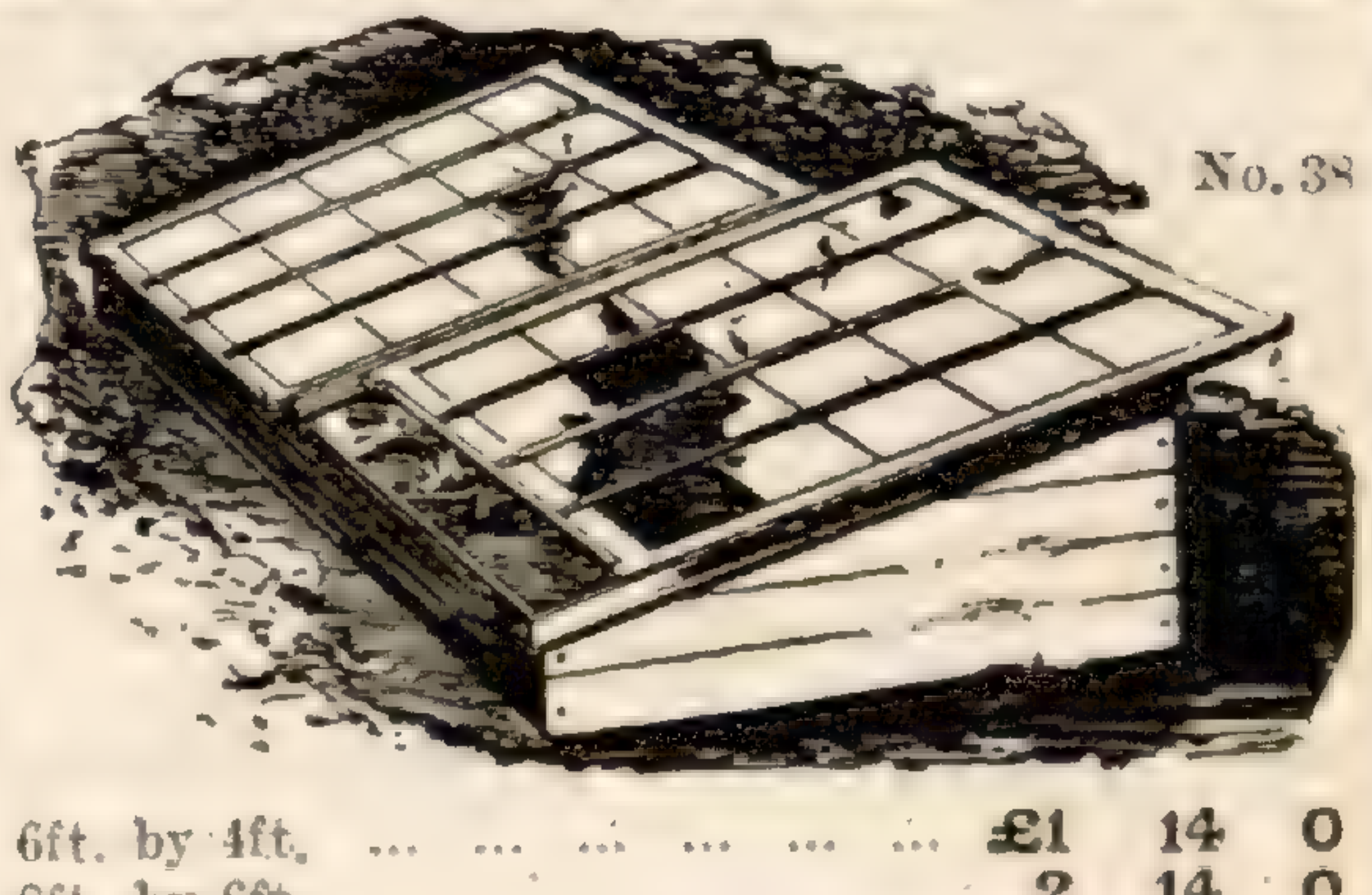

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## ANSWERS TO CORRESPONDENTS.

WM. KENT AND LANDSCAPE GARDENING.—D. F. D., Southport: I have read somewhere that Kent was the father of landscape gardening. Will you kindly explain this statement?—William Kent, who died in 1748, and was buried at Chiswick, was a contemporary of Horace Walpole. He found gardens laid out and planted in a very formal and artificial manner, topiary at its height, and water made to flow between rigidly straight banks. In Walpole's words, Kent was "painter enough to taste the charms of landscape, bold and of opinion alive enough to dare and to dictate, and born with a genius to strike out a system from the twilight of imperfect essays. He leaped the fence, and saw all nature was a garden. Thus the pencil of his imagination bestowed all the arts of landscape on the scenes he handled. But of all the beauties he added to the face of this beautiful country, none surpassed his management of water. Thus, dealing in none but the colours of nature, and catching its most favourite features, men saw a new creation opening before their eyes." Stowe, Claremont, and Holkam are among the places where Kent exercised his genius. Kent, Bridgman, Pope, and Addison have been styled the fathers of landscape gardening, as they successfully fought against the rigid formalism of the gardening seen in their earlier years.

YELLOW DESSERT PLUMS.—P. G., Abergavenny: Please give me the names of the best yellow dessert plums.—The following are all good yellow or yellowish dessert plums: Coe's Golden Drop, Bryanston Gage, Oullins Golden, Jefferson, Transparent Gage, and Washington.

OOLITIC ROCK.—M. L. D., Clifton: A few days ago I was told that some material I had always regarded as limestone was oolitic rock. I did not wish to confess my ignorance to the person who gave this information, but I should be glad if you will tell one of your regular readers just what oolitic rock is.—Some rocks, particularly some limestones, are composed of rounded particles, varying in size like mixed beads, but rarely exceeding the size of a pea. These particles generally consist of a grain of sand or bit of shell, around which some other substance has accumulated. In the case of oolitic limestone the bits of grit have become covered with layer after layer of carbonate of lime until the Oolites have formed. Another name for Oolites is Roestones, because of the resemblance small granules bear to the hard roe of a fish.

BEURRE CLAIRGEAU PEAR.—F. N. C., Brimscombe: I have a fine old tree of Beurre Clairgeau pear, and it generally bears well. Can you give me any information concerning the history of the variety?—Beurre Clairgeau pear was raised by M. Clairgeau, a gardener at the Rue de Bastille, Nantes. The variety was distributed by M. de Jonghe, of Brussels, who purchased the original tree in the early part of the nineteenth century.

HARDY EUCALYPTUS.—L. O., Brentwood: Are any species of eucalyptus hardy in this country; and, if so, will you kindly name them in the GARDENERS' MAGAZINE?—None of the species of eucalyptus can be considered really hardy in this country. Some few will thrive in very sheltered positions in favoured districts, but even then very severe weather may kill a big plant right out or cut it back to the ground. We have seen E. globulus reach a height of 25ft. at Wimbledon, but a severe winter killed it. In Cornwall and South Devon, and in some parts of Ireland, eucalyptus will assume considerable proportions, but they usually succumb after a few years to the cold and wet of our winters. As far north as Prestonkirk, at Whittinghame, the residence of the Right Hon. A. J. Balfour, M.P., we saw a very fine eucalyptus tree a few years ago, with trunk several feet thick. This particular plant has been referred to as Eucalyptus urnigera, but it is supposed to be a natural hybrid, and so has been named E. Whittinghami. Seedlings of this form have been planted freely on the estate, and no kind has proved so hardy. Eucalyptus coccifera, E. urnigera, and E. Gunni, with E. Whittinghami, are the hardiest known kinds, but, as already stated, their hardiness depends upon district, position, and the clemency of the winters.

HORSERADISH.—B. G., Bexley: We have a very large demand for horseradish, and the powers that be require the sticks to be as large as possible. By the fuss that is made one would imagine horseradish was to be served up like salsify or scorzonera. In the ordinary course of things horseradish is easily enough grown, but I want to do something better than ordinary, and so seek your advice.—Thoroughly trench a plot of ground that can be spared, and place a good layer of manure in the bottom of each trench. As soon as the soil has settled sufficiently and weather permits, lift a goodly portion of the old stock of horseradish and place the stout usable roots in fine soil or sand for use. Select the best of the roots left, and plant the straight one a foot apart in rows eighteen inches apart, leaving the crown six inches below the surface of the soil. Further, choose the straightest of the thong-like secondary roots, trim them, and plant them in similar fashion. Every portion of horseradish root will make a crown and grow. If a plantation is made in this fashion every year there will be no lack of good roots, provided the size of the plantation is in accord with the demands.

### NAMES OF PLANTS.

N. G., Banbury.—Cupressus Lawsoniana albo-spica.

T. B. C., Harpenden.—1, Chironia linoides (ixifera); 2, Lælia anceps.

O. F., Bungay.—1, Begonia rex; 2, B. imperialis; 3, Pilea muscosa; 4, Skimmia japonica.

S. G. P., Aberdeen. 1, Cypripedium Milo; 2, Cattleya labiata; 3, Cypripedium Actæus; 4, C. insigne, a very good form.

### NAMES OF FRUITS.

H. G., Bristol.—1, Probably Lamb Abbey Pearmain; 2, Margil; 3, Duchess's Favourite; 4 and 5, both rotten, the latter is probably Beurre Diel.

E. B., Tunbridge Wells.—1, Doyenne du Comice; 2, Beurre Diel; 3, Durondeau; 4, Forelle; 5, Beurre Superfin; 6, not recognised—a fine set of specimens.

## OBITUARY.

### MR. WILLIAM WATTS.

It is with much regret that we record the death, which occurred on October 29, after a short illness, of Mr. William Watts, a member of the firm of Messrs. G. Watts and Sons, Lim., Palace Nurseries, Bournemouth, in his 52nd year. Mr. Watts was an enthusiast in all that pertains to horticulture, and was a most successful propagator and plant grower. New plants always had a fair trial at his hands, and he was much interested in trials of both plants, fruits, and vegetables.

## GARDENING ENGAGEMENTS.

Mr. A. Beckett, of Myton Hall Gardens, York, has been appointed head gardener to J. Dymond, Esq., Burntwood, Barnsley.

Mr. Henry Newson, over two years gardener to the late B. E. Fletcher, Esq., Marlingford Hall, near Norwich, has been appointed head gardener to Edmond De Poix, Esq., Broome Place, near Bungay, Norfolk.

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## FORTHCOMING ENGAGEMENTS.

MONDAY, November 11.—National Chrysanthemum Society's Floral Committee, Essex Hall, Strand.
TUESDAY, November 12.—Manchester Chrysanthemum Show; three days.
Plymouth Chrysanthemum Show; two days.
Belfast Chrysanthemum Show; two days.
Weybridge Horticultural Society's Monthly Meeting.
WEDNESDAY, November 13.—Dorchester Chrysanthemum Show; two days.
Bristol Chrysanthemum Show; two days.
Barry Chrysanthemum Show; two days.
York Chrysanthemum Show; two days.
East Anglian Horticultural Club.
Buxton Chrysanthemum Show.
Colchester Chrysanthemum Show.
Reigate Chrysanthemum Show.
Winchester Chrysanthemum Show.
THURSDAY, November 14.—Edinburgh Chrysanthemum Show; three days.
Sheffield Chrysanthemum Show; three days.
Bridgwater Chrysanthemum Show.
Aberdare Chrysanthemum Show.
Cardiff Chrysanthemum Show.
FRIDAY, November 15.—Leeds Paxton Society's Chrysanthemum Show; two days.
Bradford Chrysanthemum Show; two days.
Blackburn Chrysanthemum Show; two days.
Bolton Chrysanthemum Show; two days.
Stockport Chrysanthemum Show; two days.
MONDAY, November 18.—National Chrysanthemum Society's Executive Committee, Carr's Restaurant, Strand, 7 p.m.
TUESDAY, November 19.—Royal Horticultural Society; committees meet at 12 o'clock; lecture at 3 p.m. on "Some of the Gardens of Bournemouth," by Dr. Hamilton; Scientific Committee at 4 o'clock.
Norwich Chrysanthemum Show; three days.
WEDNESDAY, November 20.—National Chrysanthemum Society's Late Exhibition, at Essex Hall, Strand; Conference in the evening, when Dr. Russell will lecture on "Soil Sterilisation."
Hull Chrysanthemum Show; three days.
North of England Horticultural Society, at Hull.
Newcastle Chrysanthemum Show; two days.
THURSDAY, November 21.—Linnean Society.

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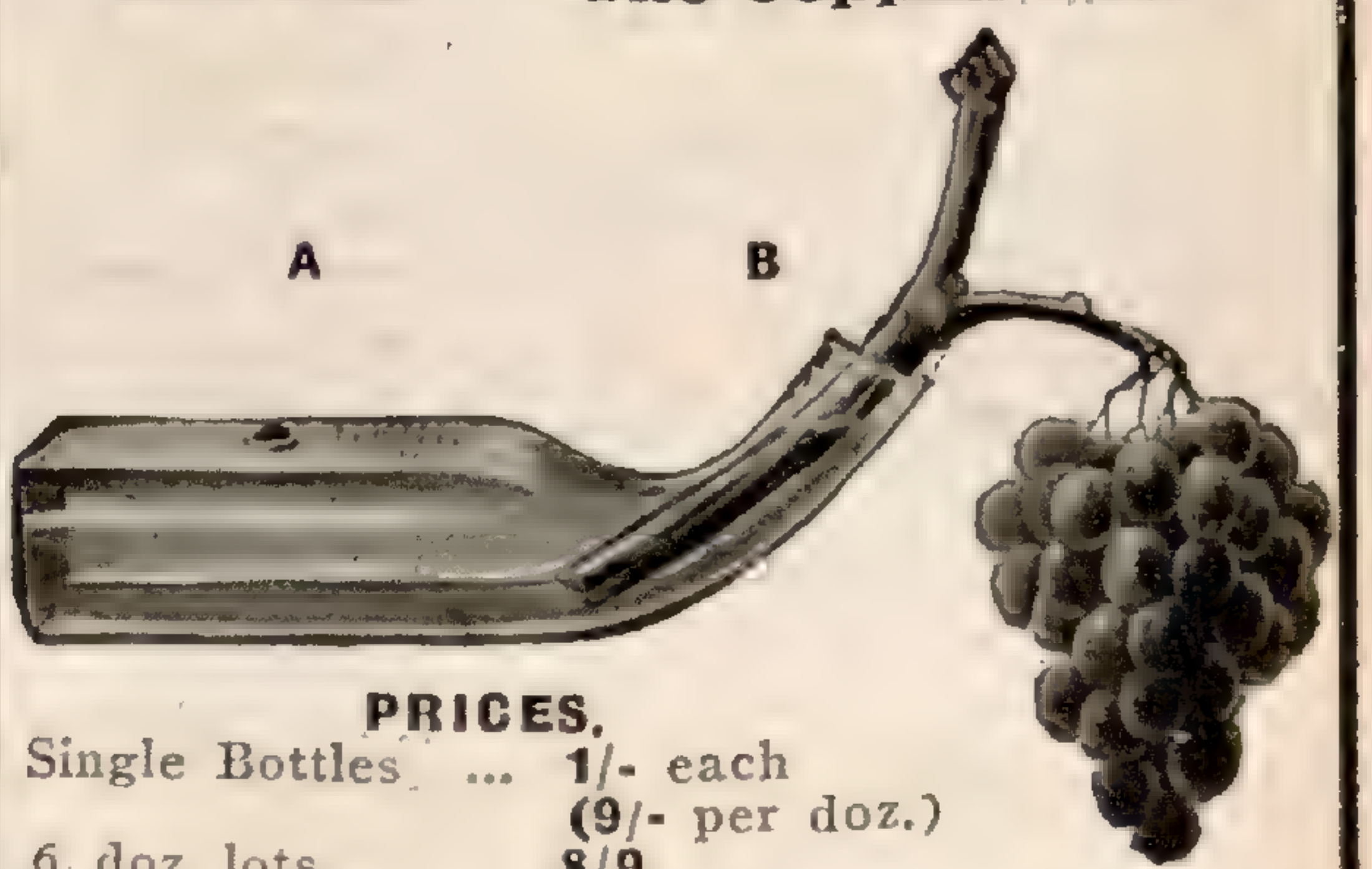

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Telephone—Palmers Green 377 & 378.
Telegrams—"Fungheto, London."

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

ACTIVE YOUNG MAN desires SITUATION as Single-handed; all round experience, Inside and Out; single; age 27. E. BELL, Hall Cottage, Higher Bebington, Cheshire.

B. H. BROOKS, Court Gardens, Brantham, near Manningtree, Essex, highly recommends H. SMEE as Journeyman (Second), Inside, in good establishment; 6 years' experience; excellent references; age 24; disengaged.

FOREMAN-GROWER seeks Re-engagement; 13 years' experience; Grapes, Tomatoes, Cucumbers, Chrysanthemums, Carnations, Forcing Bulbs, Mushrooms, etc.; first-class references. J. F. SEEKINGS, Whitestakes, near Preston, Lancs.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head or Single-handed), 29 years' experience, inside and out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Single-handed, or with Help); good experience; age 24; single. Apply, B. HOBBS, Houghton Grange Gardens, Houghton, nr. Huntingdon.

GARDENER (Head Working); thoroughly experienced in all branches; 2½ years Foreman here; previously two years and ten months at Hatfield; age 28. G. VALENTINE, The Gardens, Gorhambury, St. Albans.

GARDENER (head of two or three); 22 years' practical experience, all branches; Inside and Out; age 38 years; married, no family; life abstainer; at liberty. Address, J. SIMMONS, Potbridge, Winchfield, Hants.

JOURNEYMAN age 19, seeks SITUATION in a good garden; four years' experience; can be well recommended. J. WHITMAN, Newland Park Gardens, Chalfont St. Giles, Bucks.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Second of five or six); Inside, or Inside and out; thoroughly experienced, Fruit, Plants, Decorating; two years second; excellent references; disengaged; age 27; married when suited. Address, W. LYDE, North Ripley, Christchurch.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 28th.

"Having got a situation through your paper, I wish my name to be taken off your Register. Thanking you very much.

Yours truly,
J. S.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

IMPROVER in Gentleman's Garden or good Nursery; age 18; abstainer; strong, willing; 3½ years in present situation, Market Nursery. TED PIXLEY, care of J. W. Lawson, The Vinery, Harby, near Lincoln.

ROCK-WORKER, wants JOB; Rock-water and Japanese Gardens, Ferneries, Winter Gardens, etc.; hour or piece; life experience. Apply, ROCK-WORKER, Thames Ditton.

WM. BROOKES, Nuttall Temple Gardens, Nottingham, can thoroughly recommend a Youth, 18½ years, for Outside, or In and Out; over two years' reference; Bothy preferred.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Sunnyside, Moorfield Road, Orpington, Kent.

YOUNG MAN seeks SITUATION as Second or Single-handed; age 22; leaving through reducing; no circulars. R. CLITHEROW, 8, Aston Road, Raynes Park, S.W.

YOUNG MAN (21) desires GARDENING WORK in Private House; anywhere; prepared to be generally useful. No heavy work. JONES, 69, Green Lanes, Stoke Newington, London.

YOUNG MAN seeks SITUATION (Inside and Out; age 21; strong and willing; six years' experience; three years' nursery, last place; good references; abstainer. W. COWARD, Old Broughton Road, Melksham, Wilts.

YOUNG MAN seeks a SITUATION as IMPROVER (Inside or Inside and Out); Bothy preferred; good references; abstainer. ALBERT HOUSE, 29, Rowley Road, Reading, Berks.

YOUNG MAN (24), as UNDER in Gentleman's Garden or Market Garden; near S.W. London preferred; good references. Apply, ARTHUR SAYERS, Wendover Cottage, Westergate, near Chichester, Sussex.

## Situations Vacant.

GARDENERS WANTED for ONTARIO (Canada) Fruit and Vegetable Farms in March; £4 to £6 monthly, with board guaranteed; pay own fare. Councillor RUMSEY, Shrewsbury.

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YOUNG MAN, married, for general work in the garden. Apply, HEAD GARDENER, Woodside, Chenies, Rickmansworth, Herts.

## SITUATION COUPON

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**For NOVEMBER 16, 1912.**

**Please Repeat my Advertisement.**

Name............................................

Address.........................................

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Date.................................

**THIS COUPON**, duly filled up, should be forwarded not later than Tuesday, for the next issue.

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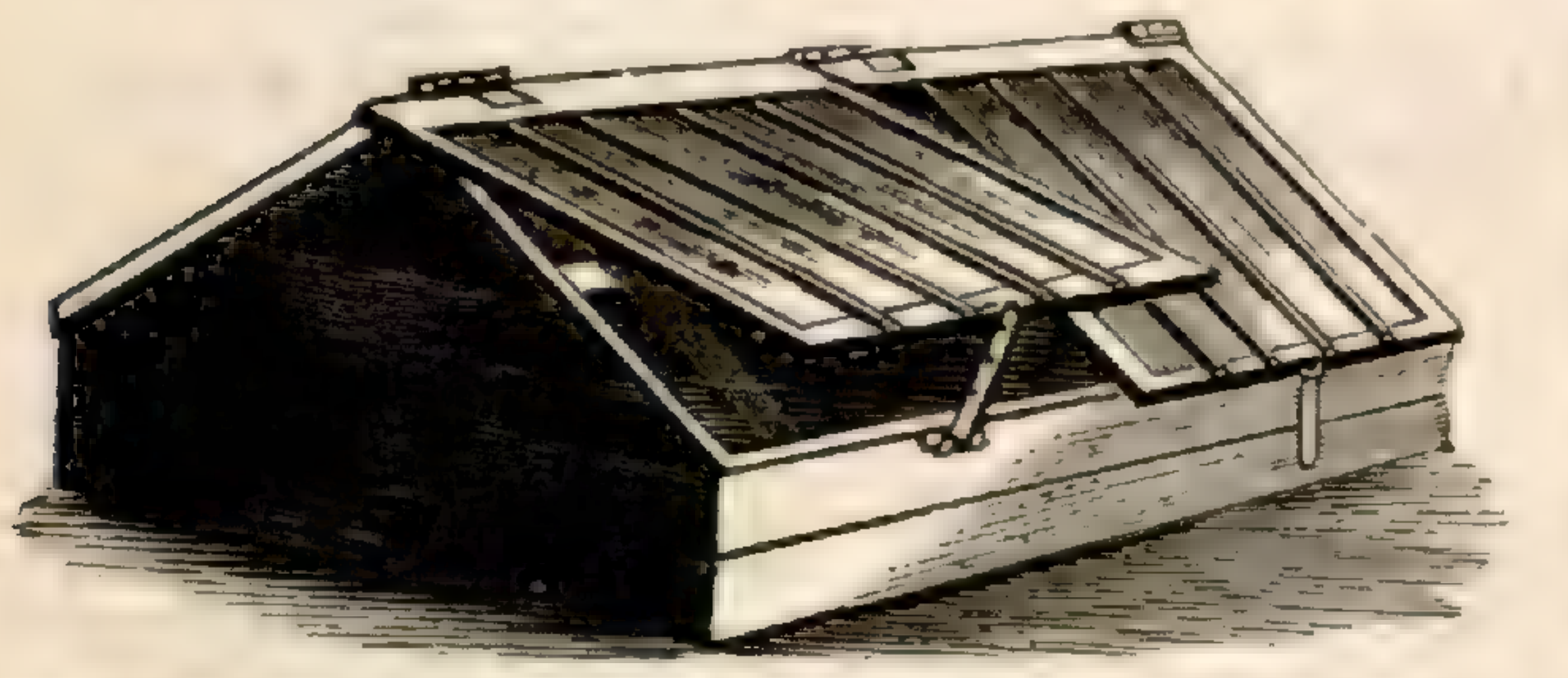

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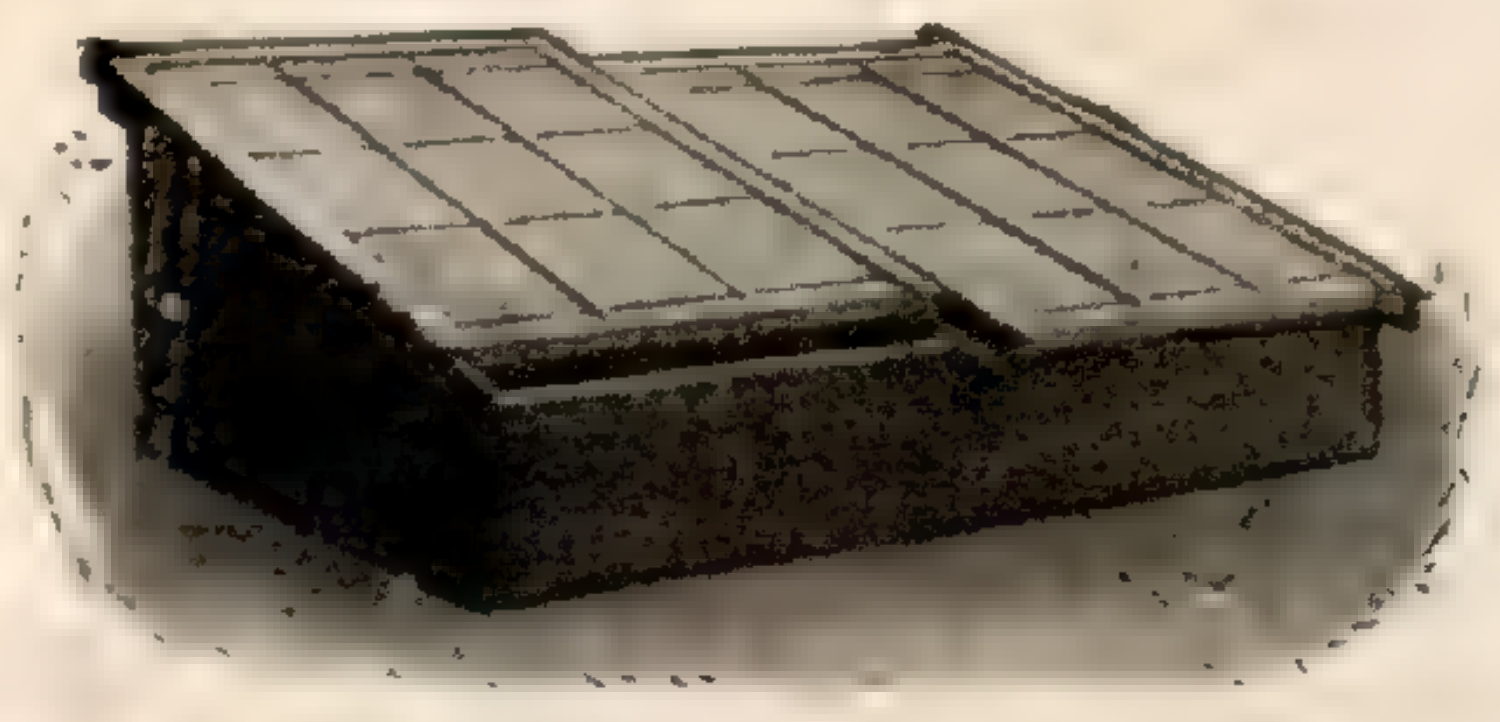

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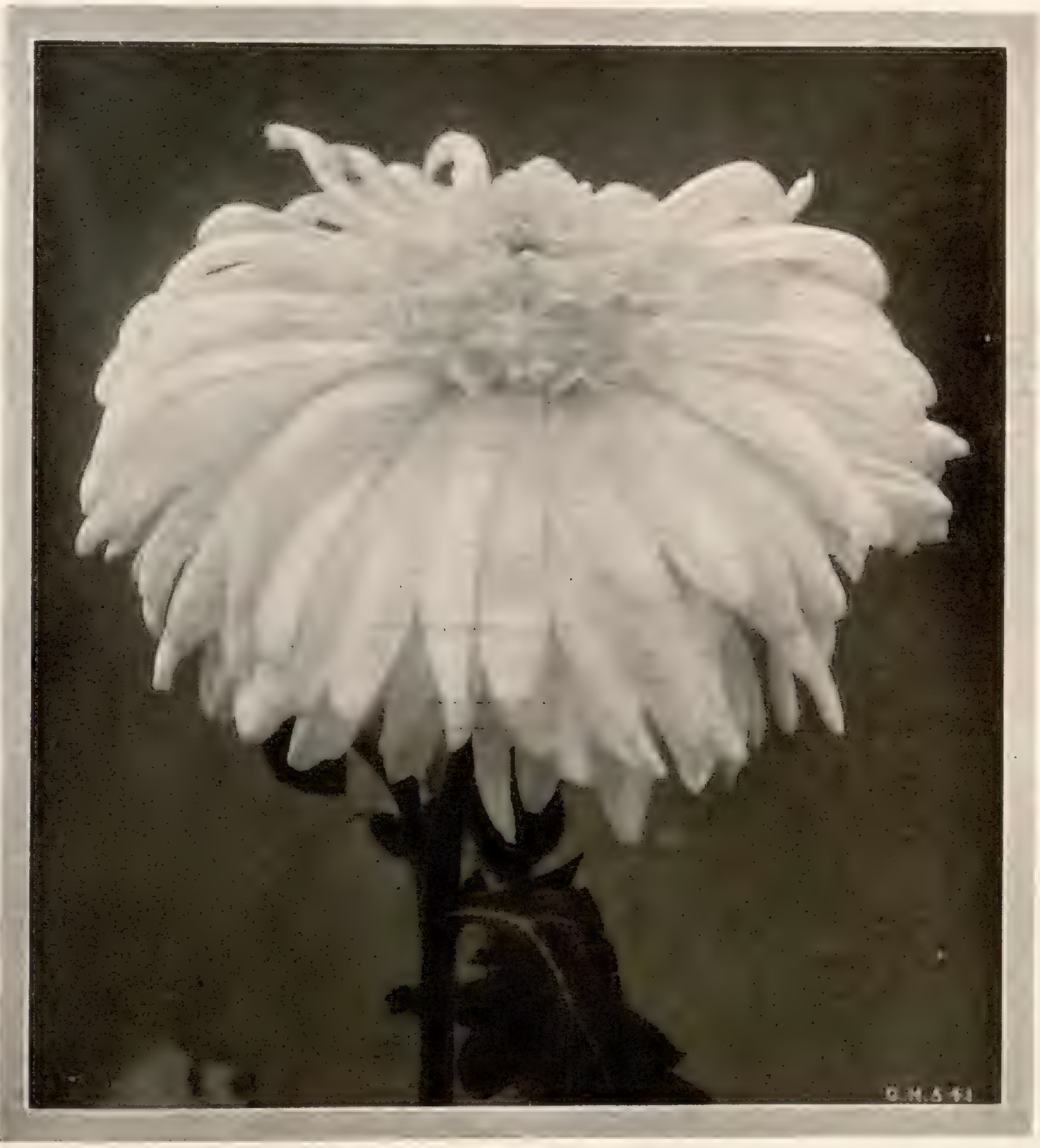
VOL. LV.—No. 3,081. SATURDAY, NOVEMBER 16, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Plant Locomotion.

The popular idea of a plant is that, unlike an animal, it is a fixed individual, which for the whole period of its existence is confined to the spot where it originated, being anchored thereto by its roots, and therefore devoid of locomotive powers. Like all such assumptions as regards Nature's creations we are, however, bound to find exceptions, and in this case there are many. In the first place, since adventitious plants produced by the strawberry, for instance, at the terminals and in the axils of long rambling runners or stolons are absolutely parts of the individual which produces them, we see here exemplified a travelling process which carries the plants over considerable areas. This is the type of an immense number of plants of many diverse genera, which by virtue of this power can propagate themselves widely without the aid of seed. So clearly is this locomotive faculty recognised that we have a so-called walking fern (Camptosorus rhyzophyllus), which, by means of terminal buds on the fronds, takes, as it were, stride after stride over the soil, rooting in as it proceeds, and thus justifying its popular name. Woodwardia radicans does precisely the same on a larger scale, and many others do the like. Then in another direction we have a large number of plants which travel by means of underground stolons, so that fresh individuals, but yet integral parts of those which produce them, crop up at greater or smaller distances, and so travel freely on their propagating mission. We have even in some cases plants which travel absolutely individually. The so-called Resurrection plant (Selaginella leptophylla), for instance, a native of dry, sandy areas, subjected only to occasional rains. This, when the drought sets in, contracts its pretty green rosettes into a compact ball, and, becoming detached from the soil, rolls about on the surface, until it drops into some sheltered nook, where, on the recurrence of the rainy season, it unfolds and roots in, and re-establishes itself unharmed, a true traveller indeed. It is, however, in connection with the seed that plants best exhibit their locomotive power. The seed, we must remember, is practically a plant packed up in a protecting husk of its own, independent altogether of the further protection afforded by pods, capsules, or other receptacles, and we have only to study the innumerable methods and contrivances by which these seeds are disseminated far and wide to see that Nature is a past master in locomotive construction. The balsam and woodsorrel adopt a sort of explosive method, forming capsules constructed of segments so arranged that as they ripen a greater and greater strain is exercised upon their curvature and elasticity until, yielding to this strain, they suddenly collapse and scatter their numerous seeds, catapult fashion, in all directions. A form of locomotion worthy of Jules Verne's invention, and, indeed, foreseen by him in his story of a journey to the moon—i.e., the aeroplane—is to some extent exemplified in the dandelion, and all the multitude of plants which use the air for the distribution of their seed. Here we see the seeds deftly attached to a sort of feathery parachute, so contrived that at the right moment they are let loose and borne aloft by the breeze to travel, it may be, miles to literally "fresh woods and pastures new." Many seeds, apparently devoid of any such adjuncts, are cunningly provided with means of profiting by the locomotive powers of other organisms. We walk, for instance, down a country lane, brushing the hedges and wayside weeds as we pass, and every here and there the cunning gorse grass seizes the opportunity to attach a dozen or so of its little kidney-shaped green seeds, clothed with tiny hooks, to our clothes, and possibly some playful companion may pelt us with the larger and pricklier ones of the burdock. In both cases we may unwittingly convey these seeds for miles before the clothes brush detaches them, and the dust bin or the wind completes the operation by finding them fresh quarters for development. In all



CHRYSANTHEMUM SNOW QUEEN.
A new anemone-centred single variety. Flower wholly pure white. A.M., R.H.S., November 5. Messrs. Cragg, Harrison, and Cragg. (See page 881.)

these and a myriad other instances we see, even where the plant itself seems devoid of locomotive power, it is nevertheless so contrived as to acquire it indirectly, if not directly, and to that extent our superficial idea of "plant fixture" must be modified.

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**Hardy Fruit Culture.**—The cultivation of hardy fruits will receive prominent attention in our next issue (November 23), and the articles for which arrangements have been made will have special reference to matters that have to be dealt with at this season of the year. The contributions to the issue will include articles on "Selection of Sites for Orchards," "Some Newer Apples," "Cultivation of Plums under Glass," "Bush Pear Trees," "Loganberries and Raspberries," "Estate Fruit Plantations," and "Dessert Apples for the North." The issue will be freely illustrated.

**The New Lord Provost of Edinburgh.**—Mr. R. K. Inches, who was appointed Lord Provost of Edinburgh on November 8, has been for the past three years the Convener of the Parks Committee of the City, and has, before and during his term of office as such, taken the warmest interest in the parks and open spaces of Edinburgh. Mr. Inches has been one of the warmest supporters of the different improvements recently carried out by the Parks Committee, and some of these have been of an important character, and have done much to beautify the city and to immensely improve the facilities for recreation for the inhabitants. Lord Provost Inches is a native of Edinburgh, and is the head of a firm of jewellers, and the Lord Provost himself is the personal holder of the ancient appointment of clockmaker to the King. The Lord Provost has been for a number of years a member of the Town Council, and has been at the head of several important committees, none, however, being more heartily taken up than that of Convener of the Parks Committee. A golfer himself, his interest in the game has been useful in his Convenership of the Parks Committee.

**New Director of Singapore Botanic Gardens.**—We learn from the "Kew Bulletin" that Mr. I. H. Burkill, Reporter on Economic Products to the Government of India, and Curator of the Industrial Section of the India Museum at Calcutta, has been appointed Director of the Singapore Botanic Gardens, in succession to Mr. H. N. Ridley, C.M.G., F.R.S., now retired.

**Women Gardeners** will soon have charge of the gardens in this country if all the statements that are made with reference to them are based on fact. Dr. Hamilton, the head of the Studley College, is reported to have stated, at a public meeting held a few days since, that women are gradually supplanting men as under-gardeners, because of their being neater-handed, more careful, and psychologically to have a greater affection for the plants they have to handle than have men. If this be the case, women will, in course of time supplant the men as head gardeners, for no man who has not had some experience as an under-gardener would venture to offer to take charge of a garden. This statement notwithstanding, neither head gardeners or under-gardeners need be greatly alarmed, for in writing and speaking on gardening women generally use the terms of gardeners and under-gardeners in a very loose manner. For example, Dr. Hamilton is said to have also stated that some women gardeners were making over £1,000 a year, but obviously she had not in her mind women who were annually receiving over £1,000 in wages as head-gardeners, but those who were growing for market, and should be spoken of as market growers. We hope the women who are "making" over £1,000 a year are more numerous than the women we have met with in private gardens who occupy the position of under-gardeners.

**Temperatures of August and September.**—With reference to the low temperature that obtained in London during the greater part of August and September, Dr. Mill states in "Symons's Meteorological Magazine" for October that the long record at Camden Square, dating from 1858, contains no instance of any previous August or September with a lower mean temperature. The mean for August, 57.9°, was 4.4° below the average, and it was the coolest August in the fifty-five years' record. In September the mean was 54.1°, or 3.6° below the average. In August the mean shade maximum was 66.6°. August, 1860 and 1912, are the only corresponding months in which the shade temperature failed to reach 77°. In 1912 the highest record was 73.2°. In September the mean maximum, 62.4°, was the lowest on record for that month, and the absolute maximum, 69.4°, was the lowest record in any September. It is of considerable interest that fifteen consecutive months with mean temperatures above the average, May, 1911, to July, 1912, should be followed by two months of unprecedentedly low temperature.

**Chrysanthemums at Wolverhampton.**—At the present time the spacious conservatory in the West Park, Wolverhampton, is rendered highly attractive by the large, splendidly-flowered collection of chrysanthemums arranged therein. For the first time since the initiation of these shows a group has been arranged in the centre of the building, and the addition of the 500 plants used in its composition greatly enhances both the interest and attractiveness of the display. Mr. Felstead, the able parks superintendent, evidently appreciates the distinctive charms of the several classes, for the large-flowering varieties contain due proportions of both the Japanese and incurved varieties. It was, indeed, quite refreshing to see the incurved varieties so well represented, and the single and other varieties with small or medium-sized blooms freely utilised in the several groups. Altogether there are 150 varieties represented in the exhibition, and as these consist of the best in their several classes and colours, visitors have an excellent opportunity for making selections adapted to their requirements.

**New Open Space for Birmingham.**—An important addition has been made to the open spaces of Birmingham by the conversion of an area of about five acres in the St. Bartholomew's Ward into a recreation ground. The site was previously occupied by slum property, and the difficulties that were met with in laying it out for the purpose to which it is now put must have been very great, for the old foundations had to be removed and the ground broken up to below their depth. This new open space, which is known as the Callow Fields Recreation Ground, has been divided into two portions; one has been laid out as a park, with trees and shrubs, gravel walks, band stand, and bowling green, and the other has been specially arranged and fitted up as a playground for children. The work of preparing and planting the ground has been carried out by Mr. Morter, the Parks Superintendent, and is striking testimony to his taste and skill. It is evident the authorities fully appreciate the success he has achieved, for at a recent meeting the Parks Committee unanimously passed the following resolution: "This committee desires to place on record their high appreciation of the excellent manner in which this work has been carried out by Mr. W. H. Morter, the Parks Superintendent, and his staff."

**A Youthful Medallist in Gardening.**—Thomas Hicks, of Oxford, who is in his thirteenth year, has been awarded the gold medal by the Oxfordshire Education Committee for progress in gardening during the current year. We heartily congratulate the boy on his success.

**British Potato Trade.**—Writing in reply to Sir G. Parker, Mr. Runciman says: "The potato yield of the United Kingdom, exclusive of the Isle of Man and Channel Islands, was as follows: 1905, 7,185,745 tons; 1906, 6,089,292; 1907, 5,223,973; 1908, 7,117,296; 1909, 6,877,272; 1910, 6,347,966; 1911, 7,520,168. The yield for 1912 in England and Wales was estimated on October 1st to be about 87 per cent. of an average. No estimates from Scotland and Ireland have yet been published." Sir G. Parker has asked the President of the Board of Trade whether he has had any communication from potato growers in England asking for his intervention to secure the same kind of facilities for British potato growers as the Board of Trade Journal affords to a Danish cooperative society by advertising its facilities free of charge in the Board of Trade Journal. Mr. Buxton writes:—"We have had no communication from potato growers in the United Kingdom desirous of disposing of their goods in Great Britain."

**The Wolverhampton Floral Fete**, which was held in July last, resulted, we are pleased to learn, in a profit of nearly £350. The committee were fortunate in having fine weather during the period over which the exhibition extended, and the several classes of the community in and around this great industrial centre were not slow to take advantage of their opportunities for seeing the exhibition, which is invariably of great excellence.

**The Season in the North.**—The chief features of the past summer and autumn, writes our Aberdeen correspondent, have been dull days and cold nights. Yet, strange to say, although the great majority of people have an idea to the contrary, the rainfall experienced has not been abnormally heavy; indeed, as has been proved from carefully-kept and correctly-compiled statistics at our northern observatories, the rainfall of the past summer and autumn has been actually below the average of these seasons in general by about 1¼ inches, the total from March to October inclusive being 18½ inches, as compared with the general average of 19¾ inches. With the exception of August and October, the rainfall did not show any abnormal excess over the average, and in both these months by only 1½in. respectively. In the midsummer month—well-named the "Sunless June"—the rainfall was only ¼in. above the normal, but the dull, foggy, damp, and cheerless weather then prevailing gave the man in the street the impression that the month was a particularly wet one. In March, April, May, July, and September, the rainfall was actually below the normal in each case. The weather now prevailing is cold, wet, and cheerless in the extreme. As indicative of the general coldness prevailing throughout the season, it may be mentioned that snow fell on a greater number of occasions during the past summer and autumn than in former years. The hills were capped on two occasions in September, and again at the beginning of October. Thus we had the somewhat unusual spectacle of snow on the hills and uncut grain in the fields with trees on which the rich tints of autumn were just beginning to appear.

**Proposed Tree-planting Scheme for Worcester Park.**—Worcester Park lies between Wimbledon and Epsom, and is a pretty, well-wooded Surrey village, not far from Kingston. It has an Amateur Gardeners' Society, and this society possesses a modest cash balance of £13 6s. 3d. Assuming that the summer flower show of 1913 proves successful, the society proposes to increase the amenities of Worcester Park by planting trees and erecting seats in suitable positions. This proposal would have delighted the late Mr. Alex. Dean, who took a keen interest in the society's doings.

**October Weather.** — As was the case in August and September, the temperature in October was below the average. At Greenwich the mean temperature for the month was 48 deg., or 2 deg. below the average. The mean maximum temperature was 57 deg., and the mean minimum temperature 39 deg., or 1 deg. and 4 degs. respectively below the average. The highest day temperature was 66 deg., which is the lowest October maximum during the past seven years. During the month 123 hours of bright sunshine were recorded, which has only been exceeded twice in October during the past thirty years. Rain fell at Greenwich on fourteen days, and the aggregate rainfall was 1.86in. or 0.99in. below the average.

**Success in School Gardening.**—The Bathurst Shield, which is offered for the best-arranged school garden in Wiltshire, has been won by the school of the small village of Corsley. The competition for the shield is open to all the schools in the county where instruction in gardening is given, and Mr. A. E. Leatham, the head master, may be heartily congratulated on the success the school under his charge has achieved.

**The Larch Saw-fly.**—Owing to the failure of the efforts that have been made to check the ravages of this pest, an immense amount of damage is being done in the plantations of larch in the Lake District. Thousands of larch trees that are infested with the larch saw-fly are being felled, the number of injured trees that have been cut down during the past three years exceeding 30,000. Need it be said that the felling of so large a number of trees represents a serious loss to the owners?

**A Multiplicity of Societies.**—On several occasions we have directed attention to the desirability of a concentration of effort in the endeavour to further the advance of horticulture, and in connection with this question the following cutting from the "Sussex Daily News" is of much interest: "Horticultural affairs in Mid-Sussex afford an interesting study. At Cuckfield there are no fewer than three separate organisations at work, one society operating the chrysanthemum interest, another roses and sweet peas, and the Cottagers' Horticultural Society providing the chief exhibition of the year. At Burgess Hill, one society runs the several horticultural events, and Haywards Heath's chief horticultural institution is its summer show, which is now about a quarter of a century old, and the same society organises the chrysanthemum or autumn interest. For several years a Gardeners' Mutual Improvement Society has existed as an independent organisation, yet in full sympathy with the greater society. A suggestion has been made that the two societies should amalgamate, and organise monthly competitions to stimulate general interest in horticulture. It is feared, however, that the chief horticultural society already has its hands full as regards its growing magnitude and responsibilities, and will not want to multiply its labours. If there is strength in amalgamation, why not go further and have a district amalgamation of horticultural societies?"

**Movements of Plants.**—At the first of the series of popular lectures that is being given at the Sheffield University, Mr. A. W. Bartlett, M.A., B.Sc., dealt with the various types of plant movement. With the aid of lantern slides, he described the manner in which plants seem to indicate the possession of some rudimentary forms of sensitiveness and almost intelligence, in their search for the essentials of their life and growth—light and food. Mr. Bartlett pointed out that movement was evidence of living as distinguished from dead matter, and the only reason that the movements of plants were not generally recognised was their slowness. After referring to the movements of bacteria and microscopic aquatic plants, which are actually able to progress through the water, the lecturer showed that while trees and plants firmly rooted in the soil are not able to change their location in this way, they move their limbs towards the required food and light. This was illustrated by means of a slide showing a plant in a pot, the position of which during growth was changed from vertical to horizontal, with the result that the stem and root respectively changed their direction upwards and downwards. The plant's search for light was also shown by means of a photograph of a fungi throwing off its spores in the direct path of a narrow beam of light, such spores being gathered on a sheet of glass through which this beam of light passed. In one of the pictures thrown on the screen plants were seen growing upside down—showing that the stimulus of light was greater than that of gravitation. The tip of the root was also sensitive to touch, thus avoiding stones and other hard substances in its growth through the soil, the movements of plants not being haphazard, but always with the purpose of assisting growth. The movements of insect-devouring plants and the sleep movements of those that open and close their flowers with each recurring day and night were also fully dealt with.

**School Gardens in Wiltshire.**—The report of the Education Committee of the Wilts County Council on the school gardens in the county, contains much interesting information relating to the progress that has been made in the teaching of gardening in elementary schools. The report states that there are now 96 schools where gardening is taught as a specal subject, last year there were 78, and in 1902 only five; 10 were at town schools and the rest in villages. There are still 27 village schools where no school gardens exist. In the northern Parliamentary division there are eight; north-western area, 12; eastern, 27; western, 23; southern, 26. The total area is 12 acres 3 roods, so that the average garden is 21 perches. The number of children under instruction for the full course was 1,211, of which number 1,146 are boys and 65 girls. The report says it is as yet impossible to conduct classes in every rural school, for in many of them the head teachers know nothing of the subject, and the employment of the practical gardener as teacher is open to many objections. The vacation courses for women teachers arranged by the Agricultural Education Committee should, it is considered, do much to overcome this difficulty. It is encouraging to note that the work of two women teachers is so good as to merit the awards as scheduled.

## NOTES FROM KEW.

### Calceolaria Forgeti.

Quite a batch of this comparatively new species is now in flower in the greenhouse. Compared with many others the flowers are small and unassuming, but they are very freely borne, and that, too, at this season of the year. Added to this it may prove of considerable value to the hybridist. Calceolaria Forgeti forms a low, dense, freely-branched sub-shrub, clothed with dark green leaves; while the flowers, which are of a pale sulphur tint, are almost round, being, in fact, quite bead-like in appearance.

### Lycoris aurea.

It is now getting on for twenty years since this bulbous plant attracted a very large share of attention, owing to the fact that a considerable number of imported and well-ripened bulbs flowered with a freedom to which we were hitherto unaccustomed. Taken altogether, however, this lycoris has not proved very amenable to cultivation, though, planted out in a border in the Succulent House, some flourishing examples are just now flowering freely. The conditions of plenty of light and sunshine that there prevail, together with a genial warmth, seem to suit it perfectly.

### Diospyros Kaki.

This, the Japanese Date Plum, which is in its native country so much valued as a fruit, is also of a highly ornamental character, as may be seen in the Succulent House, where a specimen planted out in one of the beds is bearing about forty of its large, showy, reddish-orange fruits. Another desirable feature is the fact that these retain their freshness for a considerable time.

### Senecio canalipes.

This forms such a bright annual feature in the Succulent House that it is surprising the species is not more generally met with. Unlike most of the senecios, it is a vigorous growing climber, clothed with lobed, rich green leaves; the flowers, which are freely borne at this season, being disposed in loose terminal corymbs. Individually they are just over half an inch in diameter, and of a rich deep yellow colour. Fully exposed to the sun, as in this house, it forms a very desirable rafter plant. It is in every way quite distinct from another climbing species, namely, Senecio macroglossus, sometimes popularly referred to as the German ivy.

### Begonia acuminata.

This old, yet uncommon, species from Jamaica is seen to considerable advantage as a basket plant in the T range. It is not particularly showy, but its habit of growth and profusion of bloom eminently fit it for such a position. It is one of the fibrous-rooted class, and forms a freely-branched plant, with spreading or partially drooping shoots. The leaves are from two inches to three inches in length, and taper towards the point, and the flowers, which are not more than an inch across, are white. The male blossoms are the more attractive. Though introduced as long ago as 1798 it is rarely seen outside of a botanic garden.

### Beloperone oblongata.

Among the more uncommon acanthads that flower at this season this beloperone must be included. It is just now in bloom in the intermediate portion of the T range. It is of a freely-branching, bushy habit of growth, and may be readily accommodated in a pot five inches to six inches in diameter.

The dark green leaves are oblong-lanceolate in shape, while the colour of the flowers is a kind of magenta-purple. Like most acanthaceous plants, it is of comparatively easy culture.

### Clerodendron splendens.

This climbing species, a native of tropical Africa, is now flowering with great freedom on one of the rafters of the T range. In this fashion it stands out as one of the finest climbers that we have for such a structure, the panicles of bright scarlet flowers supplying a wealth of colour quite distinct from any of the other occupants of the same house.

### Leianthus longifolius.

Formerly known as Lisianthus longifolius, this gentianwort, which is a native of the West Indies, is in flower in the intermediate portion of the T range. It forms a freely-branched plant about eighteen inches in height, clothed with ovate-lanceolate leaves about a couple of inches long. The flowers, which are borne in loose terminal panicles, have unusually long and weak pedicils, so that a plant in ful flower has a singularly lax appearance. The tube of the flower is funnel-shaped, expanding at the mouth into a five-pointed star about an inch across. The colour is clear yellow. An allied kind that I have not met with for a long time, but which was much talked about when first shown in the forties of last century, is Leianthus (Lisianthus) nigrescens, an almost black flower, which, when expanded, has the same firework-like contour as Leianthus longifolius itself.

### Pinguicula Kewensis.

Some two or three years ago a very distinct pinguicula was flowered at Kew under the name of P. Rosei. The general appearance of the plant suggests the well-known and charming Pinguicula caudata, but the flowers were of a purplish-violet tint. The flowers of P. Rosei are decidedly less attractive in colour than those of the older kind, but at the same time they afford a pleasing variety thereto. A hybrid between the two, and bearing the name of P. Kewensis, is now in flower in the orchid house. It is, in the colour of its blossoms, about midway between the two species above referred to.

### Callicarpa purpurea.

This has long been grown for the sake of its clusters of deep violet-purple berries. It is seen at its best when the long, flexible willow-like shoots are allowed to develop to their full extent, as they are then wreathed with berries for a considerable distance. For this reason the plants are usually grown as loose, open bushes, or as standards. A decided break away from this mode of treatment is to be seen in the Victoria Regia house, where a planted-out specimen is trained to the roof, and in this way it forms a very striking feature. The branches, six feet or more in length, are clothed with berries, which have acquired an unusual depth of colouring. Though the berries are so pretty the flowers are quite insignificant. For furnishing the end of a sunny structure, providing the requisite amount of heat is available, this callicarpa would form a pleasing break away from the different subjects generally employed for the purpose. K.

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**Pleione humilis** is now at rest, and should be kept suspended at the warm end of the cool house, or the cool end of the intermediate house, and should have sufficient water afforded to prevent the pseudobulbs shrivelling. It will flower early in the New Year.—J. T. Barker, The West Hill Gardens.

## CORONILLA VARIA.

If anyone wants a plant which will very soon spread into yards, and give a multitude of pink pea-shaped flowers in summer, let him try Coronilla varia. If, on the other hand, he wants a plant which will keep to its own quarters, and will not trouble him by invading the territories of other plants, let him keep this coronilla out of his garden. It is, truly, an inveterate wanderer, and will soon find its way among other flowers to their detriment, but to its own aggrandisement. Withal, it is handsome and graceful, and produces shoots of pretty leaves, which are adorned with charmingly coloured rose coronets. But for its habit of spreading at the roots and taking possession of too much space, it would be prized in every garden. As it is, however, it is wiser to plant it only in odd spots and in places where it can do no injury to other and less aggressive flowers. Planted on a dry bank it is quite at home, and is a charming picture in its season. It likes calcareous soil, though this is not essential. This coronilla comes as readily from seeds as any common annual, but is a true perennial in its way. S. Arnott.

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## STANDARD APPLE TREES ON GRASS.

Among the many good phases of gardening at Aldenham none is more striking than the orchard of apple trees on grass.

When Mr. Beckett took charge of these gardens, some twenty-seven years ago, the trees had been planted a few years in well-prepared stations, but the roots had reached the circumference of the stations, and were unable to enter the natural soil, which is clay. Therefore the trees were showing signs of "going back." Mr. Beckett decided to thoroughly overhaul the orchard, and in so doing trenched the whole of the ground to his customary depth of three feet, and added other trees to bring the varieties up to date.

With regular attention to pruning and surface culture the trees have made satisfactory progress, so that now it would be difficult to find a better grass orchard. The trees have ample space, and as they are regularly pruned the branches are not crowded but have space enough to develop fully; in many cases the branches sweep the ground gracefully. With such healthy trees Mr. Beckett does not find it necessary to spray at all in the summer, as aphides, scab, etc., are practically unknown here. When trees in many parts of the country were crippled with greenfly, and gave only small fruits, the trees at Aldenham House were pictures of health, and heavily laden with handsome fruit. Two years ago the grass was removed some four feet from the stems, so that the trees could be assisted in perfecting their heavy crops of fruit by the aid of copious supplies of sewage, which, naturally, during a season like that of 1911, was a boon to the trees.

The most remarkable trees in the orchard are those of Wellington, as they never fail to give full crops of handsome fruit; consequently Mr. Beckett regards this as the most desirable of all kitchen apples. Certainly I have not seen this variety succeed anywhere as it does here.

The following are the dimensions of some few of the trees: Wellington (Dumelow's Seedling), stem, 13 inches in diameter four feet from the ground. This tree has a circumference of 35 yards, and gave this season 21 bushels of handsome fruit. Hambledon Deux Ans is here thought most highly of; at five feet high the stem has a diameter of 14 inches, and has a branch circumference of 40 yards. An exceptionally handsome tree is one of Cox's Orange Pippin, 20 feet high, with a spread of branches eight yards in diameter; Blenheim Pippin, a superior form, has a branch circumference of 37 yards, and produced nineteen bushels of fruit this year. Fearn's Pippin is an exceptionally fine tree, 35 yards in circumference, and was loaded with highly-coloured fruits. Needless to say, most of the popular and desirable varieties, as Bramley's Seedling, Norfolk Beauty, Gascoigne's Scarlet, Bismarck, and Lane's Prince Albert, are fast growing into productive trees.

Swanmore Park. E. Molyneux.

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## CERCIDIPHYLLUM JAPONICUM.

It was with much pleasure that I read your special number, which was chiefly devoted to flowering trees and shrubs, and being much interested in it, and at present in the Kew Arboretum, you will permit me to correct a slight incorrectness on page 813 in the note on Cercidiphyllum japonicum. Your correspondent describes it as a rare shrub to be planted rather in a sheltered position, not being vigorous, and generally ranging from four to five feet high. As a matter of fact I have seen this tree many times and in many places. At Northampton I saw a tree about 15 feet high; at Hastings (Alexandra Park), 30 feet high, and in other English gardens I have seen trees of considerable dimensions. I have also seen it very often on the Continent. There are some remarkably fine specimens in the Imperial Gardens at Potsdam, fully half a dozen ranging from 30 to 50 feet high. In the Berlin Botanic Gardens at Dahlem are fast-growing trees that make two feet of growth every year. In Belvoir Park at Zurich, Switzerland, are plants on the open lawn 30 feet high, the temperature every year dropping down to 10 deg. Fahrenheit. Many fine specimens are found along the lake of Geneva, and in the parks of Paris. Professor Schwappach writes in the "Year Book" of the Dendrological Society of an experimental forest fifty miles from Berlin with an area of two acres. The trees therein are twenty years old and 45ft. high, the diameter of the stem 11ft. 5in., with most valuable timber. In the same book Mr. L. von Gniewosz, Konty, Poland, Russia, writes that Cercidiphyllum japonicum is the only deciduous tree on his estates not infected by fungoid diseases or attacked by insects. Beissner, the author of "Handbuch der Coniferen," writes of a tree 60ft. high, that was planted 1830 in a tree nursery near the Baltic Sea. In all other points I quite agree with your correspondent, more particularly with what he writes in praise of this most beautiful tree. E. Richli.

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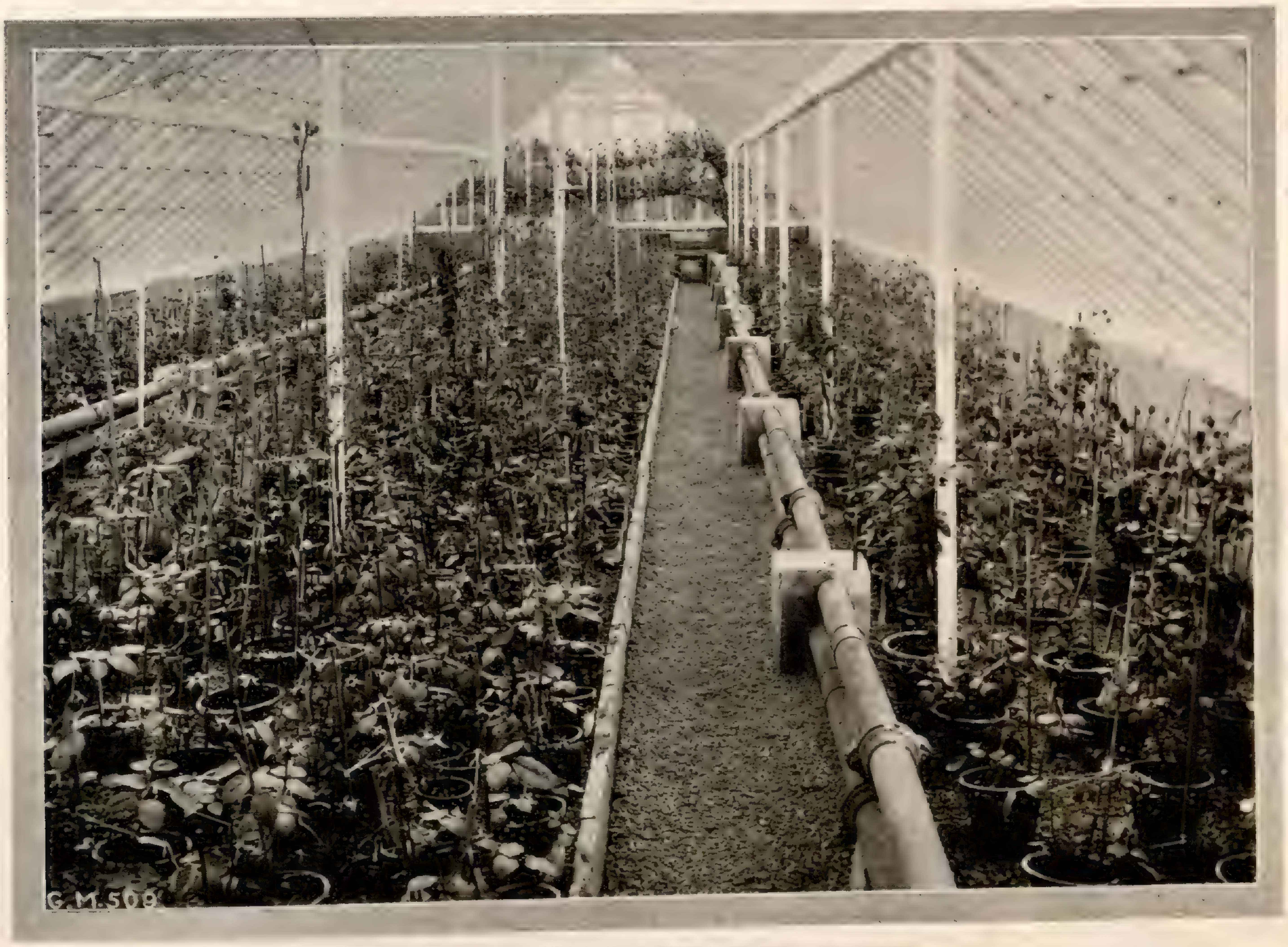
**Caustic Alkali Wash.**—Most fruit growers buy the powder in tins, prepared for use, and this will be found a handy way; those who may be desirous of making their own mixture may adopt the following formula: Take 1lb. caustic soda and 1lb. crude potash; dissolve by pouring boiling water over the chemicals, then add sufficient hot water to make ten gallons, and use while warm. Apply by means of a sprayer, and wear rubber gloves to prevent the wash from burning the hands.—W. Messenger.

**Forcing Asparagus.**—Asparagus is perhaps the easiest of all vegetables to force, especially where a good supply of crowns is available. It will force quite readily from November onwards on mild hotbeds, or in warm pits; a gentle bottom heat is required, and the bed must be fairly near the glass. When the bed is ready, lift and plant the crowns with the least possible delay, as the roots will quickly suffer from exposure. Place over the crowns from three to four inches of light soil, water well in, and syringe daily.—G. Ellwood.

# MESSRS. S. McGREDY & SON'S ROSES.

Long engaged in the cultivation of roses on a large scale for trade purposes Messrs. S. McGredy and Son turned their attention some years since to the raising of new varieties from seed. With clear views as to what they desired to accomplish they entered on this branch of their business with some degree of enthusiasm, and, proceeding in accordance with a well-devised plan, they achieved so high a degree of success that the roses which have had their origin at Portadown have brought the firm many high awards, and taken a prominent position in the rose garden. Portadown is a thriving town in Ulster, some twenty-five miles or so to the south-west of Belfast, and the nurseries occupy a fine position on the high ground a short distance to the north of the town. In that part of the nurseries in which business of a general character is carried on, and the offices are situate, there is much to interest, for there is a considerable area of glass, and both in the plant houses and in the open, good culture is strongly in evidence. To the rosarian, whose devotion to his favourite flower is such that he has but little room in his thoughts for other occupants of the garden, the great fields of roses, within a short walk, will be the chief attraction. Indeed, to visitors generally, the attractions of these immense areas of roses must, during the summer months, be very great, for therein may be seen, not only all the best varieties in cultivation, but tens of thousands of plants of novelties, there being in one plot alone upwards of 60,000 plants of the latter.



HOUSE OF SEED-BEARING ROSE PLANTS.

The department in which the glass-houses have a place is not wanting in interest to those who are more or less immediately concerned with roses, for here are the structures in which the important work of cross-fertilisation is systematically carried on, the annual crop of seed brought to maturity, the seedlings raised and nursed through the earlier stages, and those which pass the primary test are prepared for being transferred to the open quarters. Each of the several structures possess some point that attracts immediate attention, but to myself that in which the pollination of many hundreds of flowers is annually effected and the resulting crop of seed harvested is especially interesting. This was not the first time I have had the pleasure of being in a house well equipped for such work, but the fact did not lessen my appreciation of what was in progress in the Portadown nurseries, and it is with much satisfaction that the accompanying illustration of the seedling house is given. The photographic reproduction would, perhaps, have presented a more attractive appearance had specimen roses in bloom been grouped on the floor and the roof draped with climbing roses in bloom, but the purpose is not to give an object-lesson in the arrangement of roses, but to present in graphic form the method by which the seed is obtained and ripened. This, it may be added as a point of some interest, is the first time an illustration of a house of seed-bearing roses has been published in this or any other country.

The house is about one hundred feet in length by twenty feet in width, and the angle of the roof is such that the plants have full advantage of every ray of light. The intensity of the light is still further accentuated by the use of the whitest of white paint, and evidently no shading material is used at any period. With the exception of the large specimen at the north or far end of the house, the whole of the plants are in pots, those six and seven inches being the most generally used. Every one bears one or more heps or seed pods, the largest proportion having two, it not being considered advisable to tax the plants beyond their power of bringing to maturity seed of the highest possible quality. It is interesting to observe the variation in the shape of the heps, and also to note how greatly these even of the smallest plants exceed in size those produced in the open. Even with this increase many heps have not sufficient power of expansion to comfortably accommodate the seeds, and some of the latter may, in the case of not a few of the pods, be seen emerging from the opening at the top when the heps have attained their full size. The large specimen was carrying three hundred and ten heps, and, as it bears a heavy crop of seed each year, it may in these days of popular names, be described as the "mother of thousands." It is an unnamed variety, and is the seed-bearing parent of more than one gold medal rose. The raising of the seedlings commences early in the year, and the seed is sown in six-inch pots, and placed in a spacious span-roof house without side-lights. The illustration shows the manner in which the pots are arranged on the stages, and it might suggest that the photograph from which it has been reproduced was taken soon after the seeds were sown. This, however, was not the case. The seeds vary considerably in the length of time required for their germination, and the young plants are lifted out with the aid of a pointed stick and put singly into small pots when two or three inches high. Hence but few seedlings are seen at one time.

Proceeding to the fields of roses in quest of the varieties that received distinction during the past summer, it was gratifying to find that in their development the importance of a strong free-branching habit had not been overlooked. One of the first of these to attract attention was British Queen (H.T.), which evidently has a great future before it both in the garden and on the exhibition stage. It has a very free-branching habit, and, as a result, the pure white, finely-formed flowers are produced freely and continuously throughout the summer and autumn. The variety was awarded a silver-gilt medal at Belfast on July 19; after the exhibition several of the members of the N.R.S. Council saw the big breadth of which a portion is herewith illustrated, and when blooms were staged at the society's autumn show the higher award of a gold medal was given it. Colleen (H.T.) is a distinct variety, with large deep flowers of the richest pink, and remarkable for freedom of flowering. Lady Mary Ward (H.T.), which received a gold medal at Belfast, is dwarf in growth, and has medium-sized flowers of a rich orange colour, shaded yellow. Mrs. C. E. Pearson (H.T.) received the distinction of a gold medal at the N.R.S. autumn show, and is a valuable addition to what is known as the Pernetiana section; somewhat similar in colouring to the Lyon Rose, it is more effective, and has a strong, free-branching habit. Mrs. E. Part (H.T.) was made note of as a fine decorative rose, the blooms of good form and of a pleasing shade of salmon-red. This received a silver-gilt medal at Belfast, as did Mrs. F. Vanderbilt, H.T., a decorative variety of great promise, the flowers of medium size and the colour rich orange-red. Old Gold (H.T.), which attracted so much attention at the N.R.S. Metropolitan Show, when it received the distinction of a gold medal, was making a brilliant display, and demonstrating its usefulness for decorative purposes when the writer was at Portadown at the end of July, a day or two after the heavy storms of rain and wind had played havoc with roses throughout.

RAISING SEEDLING ROSES.

The varieties that were distributed by the firm this year were, it need hardly be said, of special interest from the fact that the big breadths afforded an excellent opportunity for formulating an opinion upon their habit, constitution, and freedom of flowering. British Queen, to which reference has been made, is one that was distributed in June last, and the others are Earl of Gosford (H.T.), a deep crimson variety of much merit, the blooms large, of excellent form and fragrant, and the growth strong; Mrs. Muir Mackean (H.T.), a charming variety, the flowers of full size, fine form, and freely produced throughout the season. It is regarded as suitable both for the exhibition stage and the garden, and it amply justifies that opinion. Mrs. W. H. Rowe (H.T.), a beautiful variety, remarkable for its bright rose-mauve colour, and also for the fine form of the flowers, which are freely produced. Prominent among the varieties sent out from Portadown in 1911 is the distinct and handsome Edward Mawley (H.T.), which has flowers distinct in form, with large petals and of a glowing crimson colour. Although of a high degree of utility for exhibition, it is of value in the garden, for it blooms freely, as evidenced by the large breadths of plants in the nurseries. Dorothy Ratcliffe (H.T.) is a pleasing rose, the blooms rather large, full, and well-finished, and the colour an attractive shade of coral-red. Mrs. Amy Hammond (H.T.) is a remarkably beautiful rose of much value, both for exhibition and garden decoration. The blooms are large and of superb form, and the colour a delightful combination of ivory and amber, passing to apricot in the centre; the growth is good, and the flowers freely produced. Mrs. J. H. Welch (H.T.) is a charming addition to the pink roses, the colour bright and the flowers large in size and good form, and the growth such as to render it most useful in the garden.

In walking through the large areas devoted to roses that have been in cultivation several years, it was interesting to note that the rich salmon-pink Countess of Gosford (H.T.), one of the first of the varieties raised by the firm to receive the distinction of a gold medal, was holding its own as one of the best of the varieties in its distinctive shade of colouring. Another rose of great excellence is Ethel Malcolm (H.T.), a charming ivory-white variety, with blooms of large size and high quality, and produced so freely as to place it in the front rank of garden roses. His Majesty (H T.), a handome crimson rose of high value for competitive purposes, with the added merit of possessing a delightful perfume. Mrs. Alfred Tate (H.T.), a beautiful rose, with long, pointed, fragrant blooms, the colour copper-red, shaded fawn, orange-yellow in the centre. It is free and continuous in flowering, and a good garden rose. Mrs. E. J. Holland (H.T.) is proving useful for exhibition, and the freedom with which it produces its handsome salmon-rose flowers suggests that it has much value for the garden. Mrs. Arthur E. Coxhead (H.T.) has fully justified the high opinion that was formed of its merits when submitted to public notice in 1910, and is proving useful alike for the garden and exhibition stage. The flowers, which are borne erect, are of a rich claret-red, and delightfully fragrant, the fragrance possessing the sweetness of the old Damask rose.

One other variety must be mentioned for its great value, and that is Mrs. Herbert Stevens, one of the most recent of the additions to the tea-scented section. The flowers are of good depth and substance, and are white, suffused with fawn in the centre, and produced freely and continuously throughout the season. Its hardy constitution, and abundant flower production, render it one of the best bedding roses in its class and colour. G.

## LILIUM SPECIOSUM.

This must be regarded as one of the most useful of all lilies, for though the flowers are not so gorgeous as those of Lilium auratum, it is by no means so erratic in its behaviour as the Golden-rayed Lily. Whereas at one time Lilium speciosum could only be had in flower during late summer and early autumn, its charming blossoms are now, owing to the system of retarding to which it readily lends itself, available practically throughout the entire year. When planted out in the open ground it will often continue to bloom till the nights become too cold for the flowers to open properly.

Time was when we obtained nearly all our supplies of this lily from Holland, but now immense importations are sent here every year from Japan, and reach this country during the winter months. The bulbs, as a rule, travel remarkably well, and under favourable treatment can be depended upon to yield satisfactory results.

Several of the Japanese forms are remarkable for their richly-coloured blossoms, some very fine ones being often sold under the name of Melpomene. In this form the bulb is often composed of two or three crowns, so that one accustomed to their handling can often, with fair accuracy, pick out Melpomene while in the bulb state. The principal white form is Krœtzeri, though album novum is finer, but much scarcer.

The bulbs from Holland are principally composed of rubrum and roseum, both with pink flowers varying in depth of colour, and album, whose expanded flowers are white, with the exterior chocolate. The flowers of the Japanese bulbs are a little later in expanding than those from Holland, but the Japanese ones flower somewhat earlier after the first season.

We are sometimes told to purchase these bulbs in early autumn, but as far as my experience goes, the finest bulbs from Japan do not, as a rule, reach this country before December. Of course, earlier ones are obtainable, but they are, generally speaking, not the equal of the later ones.

S. W.

## PLUMS.

The plum may be regarded as second only to the apple as an all-round useful fruit, as its use in a fresh state extends from midsummer to the end of October, and provides us with supplies of the highest excellence alike for the kitchen and the dessert table. Some kinds are the hardiest of our tree fruits, blossom sometimes enduring as much as ten degrees of frost without injury. There is hardly any soil or situation such as is usually met with in gardens, where some varieties of the plum cannot be grown with more or less success, so that we can often plant it where it would be of little use to plant any other fruit. One very profitable use to which some of the hardiest plums can be put is that of wind breaks to the orchard or plantation, some of the best kinds to plant for this purpose being strong, upright growers like Czar, Monarch, Orleans, Pershore, and Pond's Seedling, while an excellent belt outside these may be made of damsons planted rather closely together.

SPECIMEN SEED-BEARING ROSE WITH 310 HEPS
In the Royal Nurseries, Portadown.

Another good use to which plums can be put in country districts is as hedgerow trees around fields or meadows adjoining the house, and it is a common thing to see trees doing well along the margin of the horse pond. In such positions one must expect them to be raided at times, but when grown in such wholesale fashion this drawback may be ignored. The bullace is especially valuable for this purpose, as it is not such a temptation to the farm hands; it needs little, if any, attention, and the gathering of the main crop may be done at any time in mid-autumn when there is a slack season. I used to know a stock-yard at a farmhouse where bullace trees grew in the hedge and along the side of the pond, and in some seasons many bushels were gathered; and, as nothing else would have been growing there, the returns were clear profit, the purchaser picking them as he wanted them. Damsons lend themselves to use in the same way.

While very many cooking plums, and even some which are very fair for dessert, may be grown in any out-of-the-way place, it is very different with choice dessert varieties, especially those of the gage class, some of which are decidedly tender and their blossom very susceptible to frost, the pistils turning black after three or four degrees. Plums are very greedy of lime, and this is not to be wondered at when we consider the amount of solid matter removed by the stones, of which lime is an important constituent, and it is largely owing to the richness of the soil in this element that the fame of Kent and the valley of Evesham as plum districts is due. Though the commoner sorts may be grown anywhere with some degree of success, no matter what the soil or situation, with choice sorts favourable conditions are necessary if they are to do well. The old green gage is especially particular, as many know to their cost. Thus, if the soil is poor in lime this element must be applied in some form, such as old mortar rubbish, basic slag, or lime itself, while in a situation exposed to the wind between north and east a shelter of hardier trees must be planted.

The form of tree to be planted is an important point to consider. Most varieties succeed as standards, except the late dessert varieties, which need a wall if they are to acquire any flavour in most seasons. It is often recommended to grow plums in bush form, but they are by no means always the success claimed for them, especially with varieties belonging to the strong-growing gage class. Unless the soil is of a calcareous nature, and the situation fairly warm, so that they are likely to crop heavily, it would be better not to plant any but the surest bearers, such as Rivers' Early Prolific, Victoria, and Czar, in this form, or the planter will have a constant struggle with the laborious process of root pruning. With all forms of dwarf trees it is a good plan to take them up and root-prune them after the second year's growth, and with some strong growers, such as Oullin's Golden Gage and Monarch, even after the first season. The horizontal espalier form is sometimes recommended, but it is rather risky, branches often dying away, or at best becoming very weak, when depressed to get them into line with the rest of the tree. When buying fan-trained trees, those with a strong, upright central branch should be avoided if possible, as this will grow stronger than any of the other branches, and so make it difficult to maintain a well-balanced growth, a condition which it is especially desirable to maintain with trees of stone fruits. Some varieties do very well in the cordon form when they are properly attended to, but rank growers should not be chosen unless the district is an exceptionally favourable one to the plum.

Varieties are all too numerous, but there are a few which stand above the others for those with limited space. There are no varieties to beat Coe's Golden Drop, Jefferson, and Denniston's Superb, for dessert, but they need a wall or fence for the best results in any but the most favourable seasons. Golden Drop needs a good autumn in any case, and cracks badly in unsettled weather in late August and early September. Of cooking varieties Victoria is, of course, generally voted the most useful on account of its enormous cropping powers, but it is of indifferent quality, either as a dessert or kitchen plum. Rivers' Early Prolific is a contrast to this, being one of the best flavoured of all when cooked, and very fair for dessert when fully ripe. Czar is an excellent bearer, and, for late use, Monarch can hardly be improved upon.

ALGER PETTS.

## ROSES AFTER RAIN.

In a charming essay on "Bad Weather," Leigh Hunt tells us "It is not by grumbling against the elements that evil is to be done away, but by keeping oneself in good heart with one's fellow creatures. . . ."

We all know what pleasant companions and fellow travellers are those of our friends who can be cheerful in spite of the many minor evils the elements may introduce into a day's journey. We also know how depressing are those others whose philosophy succumbs to the first touch of misfortune or discomfort.

A walk round my garden after a pouring wet October day, followed by a gusty night, suggested to me the idea that roses are very like human beings in this respect, and that as we are fortunate if we include in our household some at least who "keep in good heart" through good and evil fortune, so we are wise if we plant liberally in our gardens those roses which look bright and cheerful even after stress of autumn storms and rains. Those who only grow exhibition varieties will find their rose borders looking rather melancholy as soon as any wet weather comes in autumn. There may be plenty of buds on such varieties as Madame Maurice de Luze or Mrs. Myles Kennedy, but the moist and cool nights have prevented them from opening quickly, and so their petals become stuck together and the bushes are made unsightly by the brown spongy balls, which is all the buds can develop into. Now and then we may find a brave Hugh Dickson or Frau Karl Druschki, but if we want to see how gay a rose garden can be in late October we must take a peep at one in which decorative roses are grown in quantity, though even among these there are many that lose their colour, and with it one of their chief charms, when the leaves begin to take to themselves autumnal hues.

Most of the yellow and cream roses are disappointing at this time of year. The two best of these shades in the garden are Sulphurea and Mrs. David Mackee. It is astonishing how such delicately coloured roses can keep fresh and clean looking after heavy rain, but these two varieties have discovered the secret, and I feel very grateful to them for yielding their soft creamy blossoms so late in the year. Sulphurea, indeed, seems to reserve itself for the autumn; in the summer it is rather niggardly in the matter of flowers. Of the flesh-coloured roses the stately Pharisaer and the deeper tinted Dorothy Page Roberts are two of the most rain-resisting. Dorothy Page Roberts is far more beautiful in late autumn than it was in the summer; it possesses the qualities that tend to make a good wet-weather rose, namely, a small number of very substantial petals. In cool weather these unfold gradually and curve themselves into most fascinating shapes. The only fault to be found with this variety as a rose for the garden is that it is not sufficiently free flowering.

But, beautiful as many of these light-coloured roses are in themselves and as cut flowers, in the autumn garden, they cannot compare in value with the bright pinks and crimsons, whose glowing flowers make spots of warmth and colour in the garden landscape, even in late October. Among the pinks, Gustav Grünerwald, Corallina, and Mrs. Wakefield Christie-Miller are good; while Grüss an Teplitz, Marquise de Salisbury, Ecarlate, and Liberty should all have a place for the sake of their late crimson blossoms. General MacArthur does not stand the rain so well as those I have mentioned. A newer variety, Mrs. Edward Powell, has been flowering very continuously this autumn, and it is well worth growing, as the bright clear crimson of its large petals is well set off by the very dark bronzy-green of the handsome foliage.

But were my "bad-weather" rose garden to be restricted to two varieties, I should have no hesitation in choosing what to plant. My pink rose would be Mrs. E G. Hill, and my crimson would be Richmond. Richmond is so well known there is no need to waste words in describing it; its bright crimson, fragrant buds open a better colour and shape in cool weather than they do in the heat of summer, and it blossoms with the freedom of a China rose. The brilliant coral-pink, Mrs. E. G. Hill, ought to be in every garden, for it is the only rose I know which really merits the description I read in some optimistic catalogue of a variety which "revels in all weathers!" October has almost passed away as I write, and its last days have been stormy and very wet, yet our groups of Mrs. E. G. Hill still hold erect their big sprays of glowing pink expanded blossoms and deep carmine buds. Yesterday I picked enough flowers from one group to make a table decoration entirely with this variety, and they lend quite a look of summer to our dining-table; and this morning (October 29), on visiting the same group after a rain-storm of unusual severity, I found fresh flowers and buds had opened, and there was scarcely a trace on the great shell-like petals of the bad weather which had worked havoc among the neighbouring roses.

It is surely a wonderful record for any plant to flower freely and continuously, as these two roses, Richmond and Mrs. E. G. Hill, have done here, from early June till the end of October, and to show promise, as they do, of blooming for many more weeks if only the frost will withhold its "icy hand." I would, before closing, remind readers that such generous output must be met by generous treatment. Such roses deserve the best soil of turfy loam and well-rotted manure that we can devise for them, and through May and June they appreciate weekly doses of well-diluted liquid manure. Insect pests, mildew, and other fungoid diseases must be kept under by constant hand-picking and syringing. In a word, we must give them our constant attention and they will repay us throughout the long summer and autumn months with their "bright, consummate flowers."

WHITE LADY.

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**A Muscat Vine Fruiting Late.**—Last spring I accidently broke away a lateral growth from a vine rod when the shoots were being tied down. For a time the spur remained without growth, then, well, back, a young shoot grew from it and bore a bunch of grapes. With the exception of once stopping the shoot and thinning out the berries nothing was done to this growth, sub-laterals being allowed to grow as they were not strong. The berries set as freely as Black Hamburghs, and, although they are rather under-sized and the bunch is small, the grapes have coloured very well indeed.—G. B.

**Rose Gruss an Teplitz.** — One often reads that roses should be pruned this way or that way, but I have a grand bush of Gruss an Teplitz that has scarcely been pruned at all. It was raised from a cutting, and, occupying an isolated position on grass, it was simply allowed to grow naturally. The result is a handsome bush, full of richly-coloured, highly-fragrant flowers and buds. Stout shoots are continually being produced from the base, and each is terminated by a large head of blossoms. The only pruning it gets is to shorten back two or three of the longest shoots in spring, and to cut out any exhausted wood.—S. W.

## HOLLOW TREES.

### The Prevention and Stopping of Hollow Stems.

There is no doubt that hollow places in the trunks and limbs of trees formed by decay are better filled up. If the cavity be a large one the appearance of the trunk is thereby improved, and if it be small and properly treated decay is often arrested and new bark encouraged to grow over the filled-up cavity. It prevents the entrance and accumulation of moisture, and thereby removes one of the chief predisposing conditions of decay.

The majority of such decayed hollows have their origin in snags left by branches broken off that have rotted back into the trunk because the new bark has not been able to grow over and seal up the wound. Branches removed by design, or broken off by wind or accident, should always be sawn off close to the trunk, and the sawn surface should then be coated over with ordinary coal tar. If a snag or stump is left the bark cannot grow over it; damp, fungoid parasites and decay sooner or later follow and gradually find their way towards and eventually into the trunk. Such is the most frequent beginning of cavities in the limbs and trunks of trees. The coating of tar renewed every two or three years, makes the wound watertight and fungus-proof; its object being to serve as a temporary bark until a new natural covering is formed. It is certain that the life of many trees, historically famous or otherwise notable, might be much prolonged if a close watch against the intrusion of decay into the trunks and main branches was maintained.

With regard to hollows that have already formed the following treatment is recommended: First clean out all the decayed material, especially the soft brown crumbling wood and the soppy mass frequently found at the bottom. Sound dead wood that has become dry and hard does not matter. Then wash the surface of the wood that is left exposed with a strong solution of carbolic acid. After allowing this a day or two to dry, a good thick coating of ordinary tar should be laid on. This antiseptic treatment is intended to destroy, as far as possible, fungoid parasites. It now remains to fill up the cavity. If this be a small one Portland cement may be used, and for round holes like those made by woodpeckers a plug of oak, cut to fit, will do. But if the hollow be large, the aid of the bricklayer may be obtained. After the bricks are laid the whole should be surfaced with cement. In the case of black trunks lampblack may be mixed with the outer layer of cement or it may be dusted over thickly with soot whilst wet. An intelligent workman may be able also to imitate the characteristic corrugations or markings of the trunk.

These, however, are mere refinements. The chief points are, the keeping out of moisture and the provision of a surface over which the new bark may grow. If a tree is in a state of vigorous growth, as many hollow trees are, the bark will in time close over the "stopping." But unless some surface is provided on which the new wood can set itself it forms the thickened rolls usually seen in hollow beech trees. In very hollow trees open on one side a curious spiral growth of wood is sometimes seen in place of these thickened rolls, which is due to the new wood continually being deposited on its own inner surface. A remarkable example of this curious growth is exhibited in No. IV. Museum at Kew, presented by Lord Iveagh. It is a section of elm trunk that was so hollow as to be merely a shell a few inches thick. On one side of the trunk was a longitudinal slit. The tree appears to have a good growth and to have made vigorous efforts to close up the opening, but having no surface on which to deposit a new wood and bark, and thus bridge over the gap between the two lips, it eventually formed by its continual growth on the inner side two remarkable spirals suggesting a pair of scrolls.—W. J. BEAN, in "Kew Bulletin."

# THE EDUCATION OF YOUNG GARDENERS.

Not for a long time have I read anything so cheerfully optimistic as the recent article in the Gardeners' Magazine on the education and training of young gardeners, by Mr. James Hudson, V.M.H., and it comes at a moment when certain severely practical men are apt to belittle the advantages of education where a gardener is concerned. The article carries weight because it is written by a gardener, an old gardener, and I may say one of Britain's most successful gardeners. The last time I saw the Gunnersbury veteran was at the International Show, when he was putting the finishing touches to that unique exhibit of fruits which won the admiration of all who saw it. If I mistake not Mr. Hudson then informed me that he had been exhibiting for half a century, and proposed to finish with the International. If I am correct, it was a fine finish, worthy of the man.

When you hear a gardener of Mr. Hudson's ability and reputation regretting that he never had the opportunities for education that young men have to-day you may depend that there is something in it; and, mind you, this regret is not confined to gardeners, for successful men in every walk of life express the same wish, i.e., that they had been given the opportunity of learning more when they were young.

Every line of the article written by Mr. Hudson is good, and the whole might well be taken as a guide by any young gardener who wishes to get on. It will do him more good than all the croakings of the pessimistic section who have been saying for years that gardening is going to the dogs, and the end to be achieved is not worth the effort that is required in order to take advantage of the educational facilities that are offered at the present day. Now, as in the past, the best men almost always come to the top, and the best men in the future will be those who educate themselves on the lines laid down by Mr. Hudson.

Let me support Mr. Hudson in his view that every young gardener should take a pride in his writing, and become competent in spelling and composition, because it is in these very things that so many fail. Very often a man's abilities as a gardener are measured, perhaps wrongly measured, by a badly-written, badly-composed, and incorrectly-spelt letter of application, and if some gardeners knew that they had lost their chances of obtaining a berth through this failing they would set out to improve themselves. Not long ago I had to read through about fifty letters of application from young gardeners for a post that was advertised, and, but the the pity of it, some of them might have been framed as humorous curiosities. But, what is perhaps more to the point, the writers of the four best letters were the individuals selected for interview.

I do not think it much matters whether a young gardener begins his practical training in a large establishment or a small one, as long as the training is thorough, but I do think it is good for him to have a year or two in the atmosphere of education, such as an establishment like Kew offers. I do not say that a year or two at Kew necessarily makes a man a better gardener than if he put in that year or two somewhere else, but Kew is a public school where young gardeners are concerned; its influence is broadening; in a word it is educational, and it has the effect of rubbing off the rough corners which are the natural consequence of no other experience than that obtained in a private establishment. I further contend that employers do not want in these days menial, cringing, servile individuals as gardeners; but men who are alert, well-educated, and intelligent; men who know their business as gardeners, and are able to express themselves in the King's English.

We hear a good deal in these days about the desirability of raising the status of gardeners; I ask—who are largely responsible for keeping that status down? The fault does not rest with the men who train themselves (and, after all, it is a matter of self-training) on the lines suggested by Mr Hudson, but rather those who have never thought the effort worth making.

Too often, I am afraid, it is men who call themselves gardeners that set out to discourage beginners where education is concerned, and as a case in point a course of horticultural instruction was given recently in a certain place. A local gardener was asked why he did not attend, and he answered, with a look of disdain, "Me attend; I shouldn't think of it. I've forgotten more than that man (the teacher) ever knew." And yet that veritable walking encyclopædia of horticultural knowledge has never aspired to anything above a situation as a single-handed gardener, or rather he has one boy under him, and he did his best to persuade that boy not to go to the class.

Unless I have read it wrongly, the train of thought running all the way through Mr. Hudson's article is "aim high." You may not get all the way, but you will get on the road and somewhere near to the goal. I cordially agree that it is gardeners themselves who must raise the social status of gardening, for no one else can do it, but it will not be done by trades unionism and menace so much as by education and self-improvement.

H.

PLOT OF H.T. ROSE BRITISH QUEEN
In the Royal Nurseries, Portadown.

## NEW PLANTS.

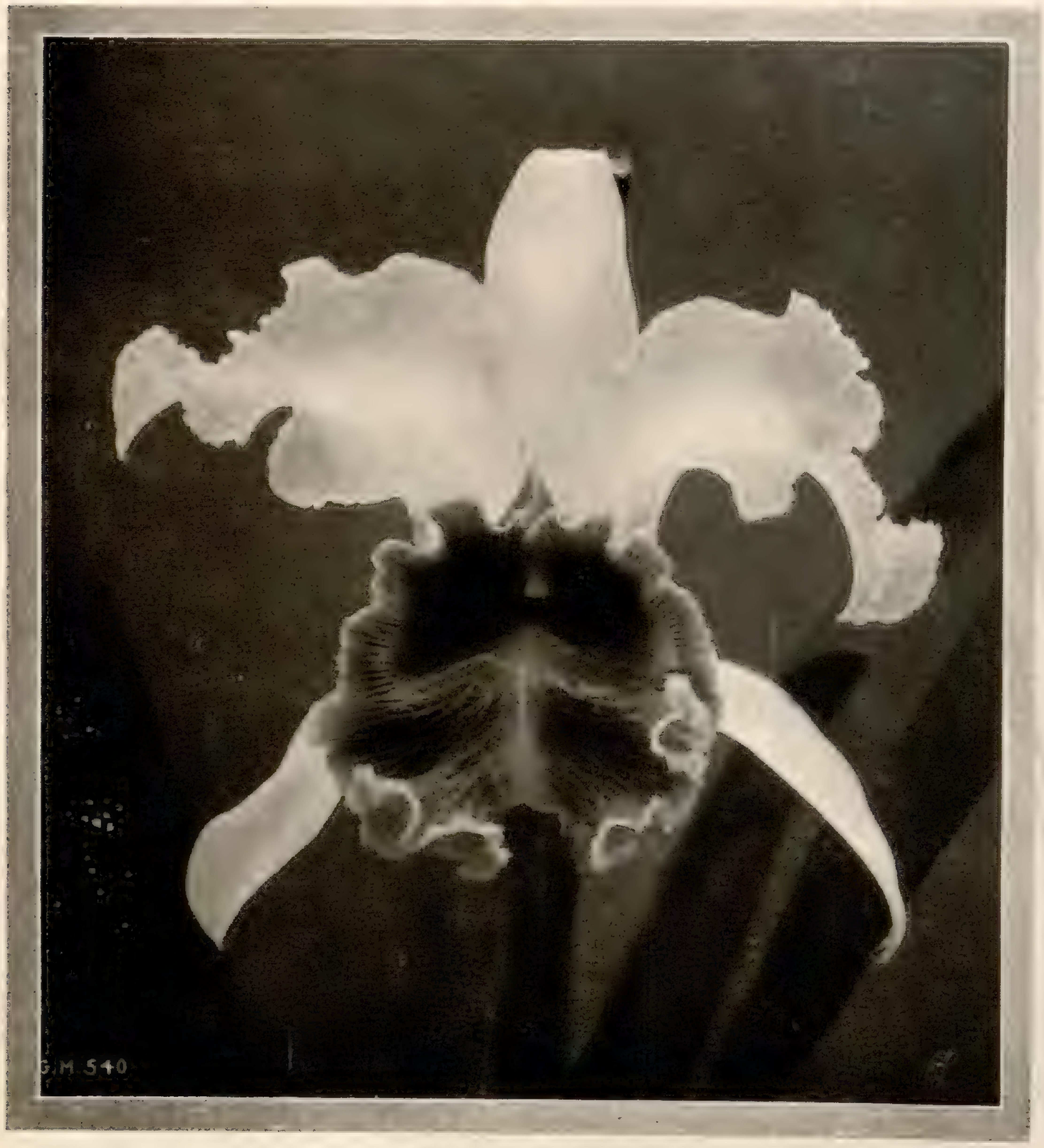
◆

### CATTLEYA PEETERSI WESTONBIRT VAR.

This very beautiful orchid has large blooms composed of white sepals and petals and a large lip, in which the gold veining at the base and throat combines finely with the deep ruby-purple apex. F.C.C., R.H.S., November 5. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Gloucester. (See p. 853.)

### CATTLEYA ORION VAR. OTHELLO.

The wonderful colouring in this hybrid attracted general attention. The petals are rich wine-purple, the sepals deep bronze, shaded with crimson, and the lip intense maroon, lightened with gold. This was illustrated on p. 851, and we regret that it was inadvertently described as a lælio-cattleya. F.C.C., R.H.S., November 5. Messrs. Charlesworth and Co., Haywards Heath.



CATTLEYA OBERON.

A handsome hybrid with a brilliant crimson purple, and gold lip, and light, broad petals, stained with bluish-rose at the margins. A.M., R.H.S., November 5. E. R. Ashton Esq., Broadlands, Camden Park.

### CATTLEYA RHODA THE JEWEL.

A very useful and effective variety, obtained by crossing C. Iris with C. Hardyana. The colouring is very pleasing, sepals and petals being rich deep yellow, while the lively crimson of the lip is accompanied by gold shading and veining. F.C.C., R.H.S., November 5. Messrs. Charlesworth and Co., Haywards Heath.

### VANDA CÆRULEA LADY HOLFORD.

A delightful variety, carrying large and shapely flowers, with clear blue shading on a lighter or electric-blue ground. The plant carried two grand spikes. F.C.C., R.H.S., November 5. Lieut.-Colonel Sir George Holford.

### ODONTIODA BRADSHAWIÆ GATTONENSIS.

A brilliant form, with large orange-scarlet flowers. One of the best varieties seen. F.C.C., R.H.S., November 5. Sir Jeremiah Colman, Bart. (gardener, Mr. Collier), Gatton Park, Reigate.

### ODONTOGLOSSUM AURORA.

A splendid Rossi hybrid, the parents being O. Rossi rubescens and O. Lambeauianum. The colouring is particularly rich. The sepals and petals are broad for the size of the flower, rosy at the margins, and crimson-bronze down the centre. The lip is wide and shapely, intense rose-purple, with a yellow crest on the small white disk. F.C.C., R.H.S., November 5. Messrs. J. Veitch and Sons, Chelsea.

### CATTLEYA HARDYANA LA PERLE.

This is a very fine form, the large flowers having white sepals and petals and a broad, handsome royal purple lip, with yellow throat and basal markings. A.M., R.H.S., November 5. Lieut.-Colonel Sir George Holford.

### CATTLEYA FABIA GLORIOSA.

One of the finest forms of this splendid autumn-flowering cattleya, and one in which purple, mauve, and golden colouring are wonderfully combined. The lip is very large and brilliant. A.M., R.H.S. Lieut.-Colonel Sir George Holford.

### CATTLEYA FABIA SUNSET.

Another beautiful orchid that must have been obtained from very fine forms of C. labiata and C. aurea. In this the purplish-rose of the sepals and petals forms a fine setting for the purple and yellow of the broad and frilled lip. A.M., R.H.S., November 5. Lieut.-Colonel Sir George Holford.

### CATTLEYA VENUS PRINCESS.

One of the very useful set of yellow autumn-flowering hybrids, C. Iris and C. Dowiana aurea being the parents. The sepals and petals are light yellow, and the lip is bright crimson with gold veining. A.M., R.H.S., November 5. Messrs. Charlesworth and Co., Haywards Heath.

### CYPRIPEDIUM MURIEL.

A shapely hybrid between C. Euryades and C. Cynthia. It is most like the first-named, and has red-purple marks on the white dorsal sepal, and brown and green colouring on the lip and petals. A.M., R.H.S., November 5. Lieut.-Colonel Sir George Holford.

### ODONTOGLOSSUM EXIMIUM McBEAN'S VAR.

This closely resembles a finely-blotched O. crispum; the flowers are rounded, white, and coloured freely with rich red-purple. A.M., R.H.S., November 5. Messrs. J. and A. McBean, Cooksbridge.

### CATTLEYA OBERON.

A large-flowered hybrid between C. Fabia and C. Hardyana. It resembles the latter very considerably, especially in the crimson-purple and gold lip. The broad petals are blush coloured, heavily shaded in a curious fashion with bluish-rose at the margins. A.M., R.H.S., November 5. E. R. Ashton, Esq., Broadlands, Camden Park.

### BRASSO-CATTLEYA HYEÆ ASHTON'S VAR.

A very useful and showy hybrid between Brassavola Digbyana and Cattleya Harrisonæ. The plant exhibited carried two large and very substantial flowers, with rosy sepals and petals, and a broad, fleshy, creamy-white lip that shows the influence of Brassavola Digbyana in its frilling. A.M., R.H.S., November 5. E. R. Ashton, Esq.

### LÆLIO-CATTLEYA WALTER GOTT.

In this handsome hybrid rich colouring is added to excellent shape and substance. The parents are L.-c. Bletchleyensis and C. bicolor. The sepals and petals are deep reddish-mauve, and the lip is dark rosy-crimson. A.M., R.H.S., November 5. Messrs. Sander and Sons, St. Albans.

### CYPRIPEDIUM GLEBELANDS.

A large cypripedium very like C. insigne Harefield Hall in size and colouring, but with deeper spotting on the dorsal sepal. The latter organ inclines forward somewhat. C. Lathameanum and C. insigne Chantini are the parents. A.M., R.H.S., November 5. J. Gurney Fowler, Esq. (gardener, Mr. Davis), Glebelands, South Woodford.

### BEGONIAS.

Optima.—A very distinct advance among winter-flowering begonias. The habit of the plant and its freedom of flowering are excellent, while its large single flowers are buff-pink or salmon-pink. A.M., R.H.S., November 5. Messrs. Jas. Veitch and Sons, Chelsea.

Emita.—This is even more striking than the foregoing, and a distinct break away in the matter of colouring. The flowers are of good size, and the colour is a curious shade of orange overlaying buff-pink. A very attractive variety belonging to the semi-tuberous class derived from B. Socotrana and the tuberous-rooted forms. A.M., R.H.S., November 5. Messrs. Jas. Veitch and Sons, Chelsea.

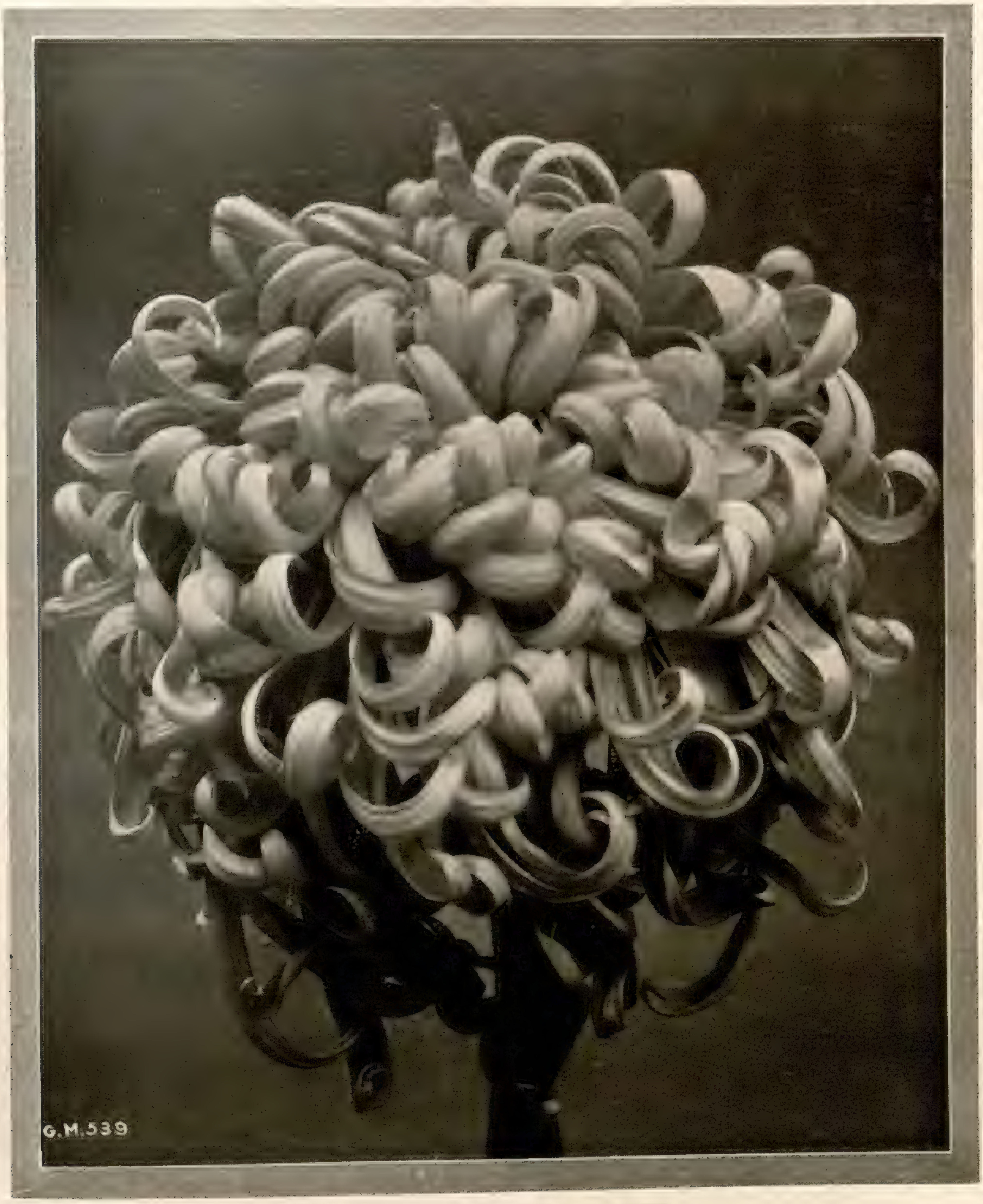
### HOHNERIA POPULNEA.

A malvaceous shrub from New Zealand and allied to Plagianthus Lyalli, and hardy only in favoured places in the southern counties. The flat, leathery leaves have the margins very prominently toothed. The white flowers, about half an inch across, are freely borne in little axillary clusters. A.M., R.H.S., November 5. Mary Countess of

Ilchester (gardener, Mr. H. Kempshall), Abbotsbury, Dorset.

### CARNATION.

St. Nicholas.—An American-raised perpetual variety of large size, good calyx, and rich carmine scarlet colouring. A.M., R.H.S., November 5. Messrs. Stuart Low and Co., Enfield.



CHRYSANTHEMUM MISS A. E. ROOPE.

A striking Japanese variety, with broad curling florets of very intense yellow colour. F.C.C., N.C.S., October 29; A.M., R.H.S., November 5. Mr. H. J. Jones, Ryecroft, Lewisham.

### CHRYSANTHEMUMS.

Miss A. E. Roope.—A splendid yellow Japanese variety, with broad curling florets (see p. 861). A.M., R.H.S., November 5. Mr. H. J. Jones, Ryecroft, Lewisham.

Hector Menzies.—A large single variety, with two or three rows of elegant light-yellow florets. A.M., R.H.S., November 5. Mr. H. J. Jones, Ryecroft, Lewisham.

Mrs. Leonard Harrison.—A fine single variety, with broad, brilliant chestnut-red florets, and a narrow yellow zone round the disk. A.M., R.H.S., November 5. Mr. L. Harrison, The Orchards, East Grinstead.

Snow Queen.—A charming white anemone variety of great grace and beauty. The disk or cushion is of modest proportions and the ray florets are ample and elegant. It is the result of an effort to create a new race of anemone-centred singles. A.M., R.H.S., November 5. Messrs. Cragg, Harrison, and Cragg, Hounslow.

Portia.—A splendid single variety of large size and fine form. The colour is reddish terra-cotta, with a yellow reverse that is occasionally evident. A.M., R.H.S., November 5. Messrs. Cragg, Harrison, and Cragg, Hounslow.

Enchantress.—A refined Japanese variety of medium size. It has fairly long drooping florets, the centre of the flower is white, but the outer florets are shaded with rose-pink, and some of the florets are edged with pink. F.C.C., N.C.S., November 11. Messrs. J. Stredwick and Son, St. Leonards.

Mrs. W. T. Smith.—A pleasing white Japanese variety, with loosely incurving florets. There is a pearly whiteness about the flower that gives it a very refined appearance. F.C.C., N.C.S., November 11. Mr. A. Smith, Convent Gardens, Roehampton.

Mrs. W. E. Tricker.—A very fine solid incurving Japanese variety, with broad, but pointed florets of a deep blush shade. Very handsome. F.C.C., N.C.S., November 11. Messrs. W. Wells and Co., Merstham.

Queen Mary.—Described and figured in our issue of November 9. A.M., R.H.S., November 5. Messrs. W. Wells and Co., Merstham. (See p. 861.)

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

CATTLEYAS.—Among the species of cattleyas which bloom at this season, C. labiata undoubtedly is one of the most useful, and the varieties include some of the most beautiful flowers imaginable. There are other species, such as C. Dowiana, which also produce their flowers at this season, all of which are most useful, and assist the cultivator in making his houses gay and attractive. Among the hybrid cattleyas and lælio-cattleyas, which, from a cultivator's standpoint, can be treated in the same way. there are numerous varieties which produce their blooms at this dull season of the year. I do not intend occupying space here by giving a long list of names of these hybrids, but would suggest that anyone who is an admirer of these most beautiful plants should pay a visit to an up-to-date nursery, or a private garden where a representative collection of these plants is grown. Many of these lovely plants are now in their full beauty, and the fine size, and their wide range of colour, bear testimony of the hybridist's art. The flowers should not exhaust the plants by being allowed to remain upon them too long, but after being open for a reasonable time they should be removed. Those pushing new roots from the base of the pseudo-bulbs may be repotted, if the compost in which they are growing is at all sour or decomposed.

WATERING.—All plants that have been repotted must be carefully watered until re-established. The watering of cattleyas, lælio-cattleyas, and also lælias during the winter is often a difficult matter, especially to the amateur and beginner. So varied are the conditions under which the plants are grown that I venture to give a few details to show how difficult it is to advise either on the application or reduction of water. In the first place, it is desirable to know the nature of the compost in which the plants are growing; secondly, if the plant is well rooted or not; thirdly, if the plant is potted firmly or loosely. Again, are the plants growing in a dry or humid position? All these points seem of minor importance, but all have a bearing on the amount of water which should be applied to the roots. As regards potting, this should all be done firmly. A great many users of Osmunda fibre have made the mistake of not potting firmly enough; all loose composts retain moisture much in the same way as a sponge.

SECONDARY GROWTH.—Many cattleyas at this season make secondary growth, but I have not found any ill effects from this, providing the plants are kept active until this growth is completed; it is often the means of the plant making extra leads. When once growth has started nothing is gained by checking it, therefore every encouragement should be given to develop the growth by placing the plants well up to the light, and watering them whenever they require it.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

MIGNONETTE.—This delightfully sweet-scented annual is always appreciated, and especially so when grown in pots for the decoration of the conservatory. It is of easy culture. Seeds sown in the first week of August, as advised, have germinated well, and the seedlings are now strong and healthy. These should be thinned out, leaving five plants in each five-inch pot to develop. They should now be removed to a cold vinery or peach-house, and be placed on a shelf near the glass, where abundance of air can be obtained, as this will tend to harden the plants, and keep them dwarf and sturdy.

CAMPANULA PYRAMIDALIS. — With the advent of frosts plants of this useful campanula should be lifted from the border, where they had been during the summer, and potted at once. Owing to the wet season the plants have grown well and will therefore require rather larger pots than usual. It will be found they are coarse-rooted, and care must be taken in lifting to maintain the ball of soil and roots intact, or the plants will suffer badly. Most of the plants will need a ten-inch pot. Ram the soil firmly, and after potting place in a cold frame or peach-house. Those grown in pots should also be placed under shelter; they will require very little water until growth again becomes active in the spring.

DIELYTRA SPECTABILIS. — A very valuable old favourite is this perennial, but to my mind it never looks so beautiful as when grown in pots and slightly forced. Plants can be purchased at very little cost at this season; they like a rich, fibrous compost, and after they are potted should be placed for a short time in a cold frame. They commence to root at once, and when well established may be placed in more warm and congenial quarters, where they quickly respond. The fine racemes of heart-shaped flowers are very effective, and the plants are most useful for placing in vases for house decoration. There is also an albino form of this, but the flowers are not pure white, but a bad cream; the constitution is not so good, and it is not nearly so effective and valuable as the type.

CLIMBERS.—Many of these will now have done flowering for this season, and need a period of rest. Plants which have been trained up the back wall and over the rafters of the roof may be slightly pruned back and tied together. Water should be withheld from the roots. Climbers always do best when planted out, and should any additions be required the present time is most opportune for planting. Most of the climbers like a rich compost with a good root run, but in the case of lapagerias a bed of peat must be prepared.

GENERAL REMARKS.—During wet days and when frost and snow occurs, the staff should be drafted into the houses to clean plants, woodwork, and glass. Get everything forward ready for the rush of work that always comes with the advent of the New Year.—Lewis Smith, Cadland Gardens, Southampton.

## HARDY FRUITS.

PLANTING FRUIT TREES AND BUSHES.—The planting of all kinds of fruit trees and bushes should be energetically proceeded with, taking advantage of every apportunity when the soil is in a suitable condition for the operation. By planting early, while the soil still retains a certain amount of warmth, quick root action is induced, and the trees will break freely next year, and make a stronger growth than would be the case were planting delayed until later period. When dealing with soil of a heavy, retentive nature care must be taken to avoid the great mistake of treading it down in such a manner as to make it resemble soft putty: the best plan is to have ready to hand some light material such as old sifted soil from the potting shed or well-rotted rubbish-heap material, and when planting place some of this over and about the roots, also adding a good portion to the soil for filling up; this will allow of firm planting. Half-standard trees should be immediately secured to a stout stake, which should be placed in position prior to planting the tree. Fruit trees, when they come to hand from the nursery, should be quickly unpacked and laid in, in moist soil or leaf-mould; should the roots happen to be dry—which may occur through delay in transit, plunge them in a tub or tank of water for two or three hours, and then lay them in, but the sooner, however, they are placed in their permanent quarters the better it will be for the future well-being of the tree. Carefully examine the roots before planting, cutting back the broken or bruised roots with a sharp knife.

PRUNING.—Having completed the pruning of Morello cherries, plums may be taken in hand. Young trees which have received due attention during the summer months will only need to have the chief shoots cut back somewhat, and a little thinning done to the young shoots that must be laid in for extension of the young trees. Trees which have filled their allotted space should have the spurs shortened back, particularly those which point outwards from the wall, even if by so doing a few bloom buds have to be sacrificed. Crowded spurs should be well thinned out, bearing in mind that the nearer the spurs are to the wall the more warmth and protection they will receive. The main branches should have ample space allowed for proper development of the foliage, and overcrowding should be strictly avoided. In some instances it is advisable to cut out some of the old and exhausted branches, and train in young growths from the base, and where the tree is still of a vigorous habit, it is possible to gradually replace old and exhausted branches with vigorous and fruitful young growths. Trees which have been neglected, and which have spurs standing out to some considerable distance from the wall, should have half of the spurs cut back to within one inch of their base and the remaining spurs treated in a similar manner the following winter.

DESSERT CHERRIES should be pruned on much the same lines as the plums; they are very impatient of the knife, and unless the cuts are clean and done with a sharp knife there is always a danger of gumming occurring. When the shoots are well pinched back during the summer, the use of the knife is reduced to a minimum. If the growth on dessert cherries is excessive, the root action must be restricted by root pruning.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

CAULIFLOWERS.—The May-sown batch will now be turning in, and will be found most useful to prolong the season of this delicious vegetable, for without a doubt cauliflowers are superior in flavour to the majority of the broccolis. Protect the small forming curds by tying them up. If a shortage in the supply occurs, take up a quantity with good balls of earth and roots attached, and plant thickly in pits or deep frames, giving a good watering. Use the lights as necessary. Both cauliflowers and broccolis should be treated in this way to maintain a regular supply of heads throughout the winter. Sutton's Winter Mammoth broccoli is one of the very best, as it follows the cauliflowers, and a good batch will last well into February. Prick off autumn-sown cauliflowers without delay in a cold frame.

GLOBE ARTICHOKES.—These will now require attention to safeguard them against much rain and frosts. Remove all old flower stems and decaying leaves, then place a good supply of cinder ashes around each plant; or, if preferred, long litter or bracken fern could be used. If the stock needs increasing, now is the time to proceed by dividing the plants, potting good suckers, or divisions, into ten-inch and twelve-inch pots, placing these for the winter in cold frames, plunging the pots in ashes.

FRENCH BEANS.—Wherever room is available, make a sowing now, using 60-sized pots, and placing five seeds in each. Eventually pot them into 24-sized pots for cropping. Maintain a temperature of 50 degrees in cold weather.

POTATOES.—Wherever a little room can be spared for a few early potatoes, it should be made use of. Proceed to prepare the sets, if not already done, by placing small tubers of May Queen and Express on end in boxes in a warm house. When sprouting has commenced place in pots or bloater boxes.

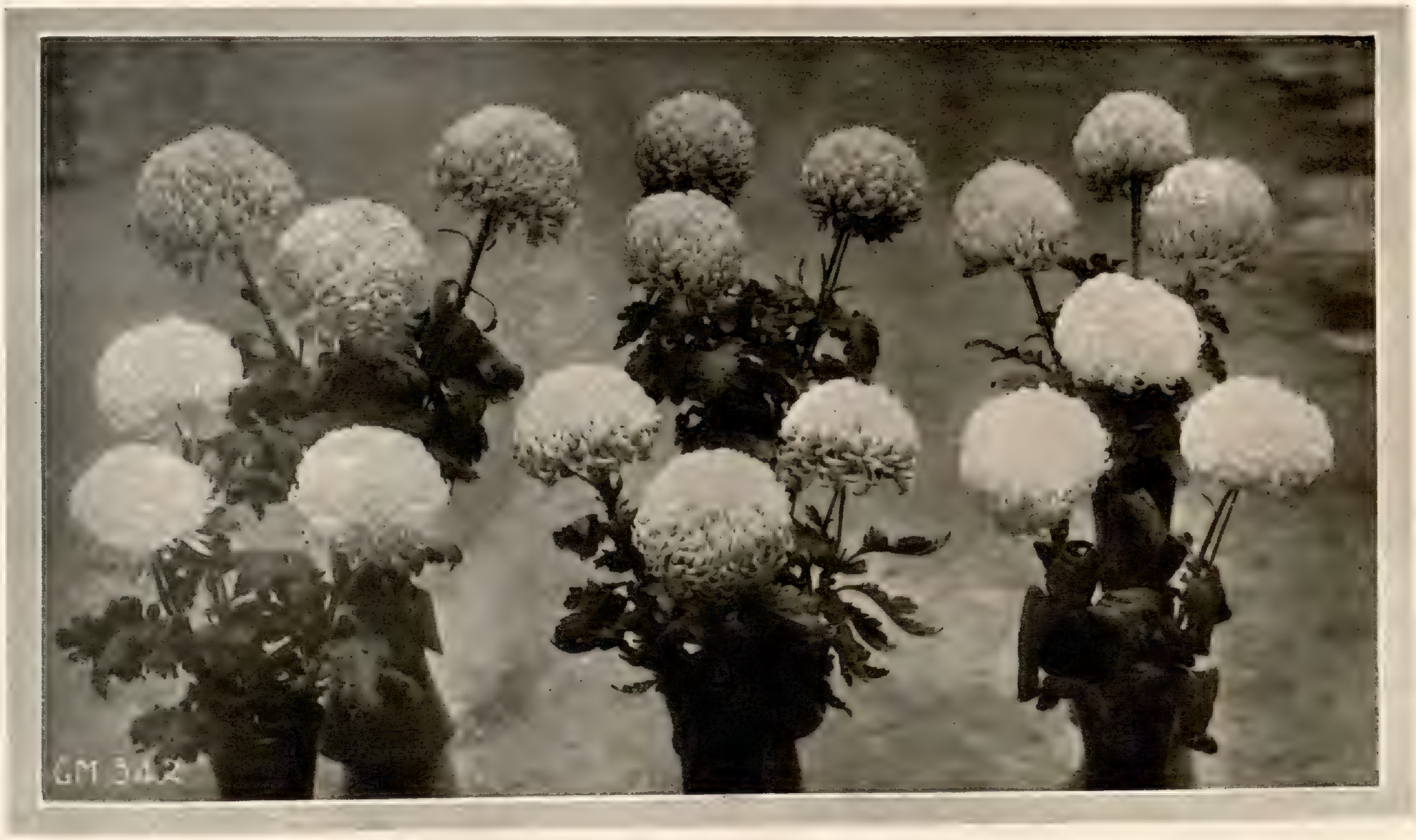
GENERAL.—Sow Shorthorn carrots on slight hotbeds, and make up other beds for asparagus, seakale, etc. Remove endive to safe quarters, but expose it to all favourable weather until required for blanching. Prick out late-sown lettuces into cold frames for spring planting. Watch winter spinach closely, and if shelter is required place fir boughs on the exposed sides. Dust soot over winter carrots, and collect all garden and other rubbish into a heap to rot, turning it occasionally. — Geo. Ellwood, Swanmore Gardens.

# EXHIBITIONS AND MEETINGS.

## Cambridgeshire Horticultural Society.

NOVEMBER 7.

This society, which is one of the oldest of the provincial organisations for the promotion of horticulture, held its annual autumn show on the date given above, and this was so great a success as to fully maintain the high reputation which it has so long enjoyed. As usual, the exhibition was held in the Corn Exchange, and, as for so many years past, this spacious building was filled to its utmost capacity with such products of the garden as are available at this season of the year. The society does not, as in some cases, rely upon any one class of subjects, but endeavours, by the provision of a comprehensive schedule, to have an exhibition that is fully representative of the garden in November, and in this endeavour a high degree of success was achieved. Chrysanthemums were so largely and well shown as to constitute a great and highly attractive feature. Of fruit there was an immense display, many hundreds of dishes being staged, and vegetables were splendidly shown. The arrangements were admirably carried out under the directions of Mr. Rupert Fuller, the honorary secretary, and the committee.



Ethel Thorpe.
Mrs. F. Judson.

Daisy Southam.
Mrs. G. Denyer.

Marjorie Shield.
Duchess of Fife.

FIRST PRIZE SIX VASES OF INCURVED CHRYSANTHEMUMS
Shown by Mr. G. Barker at the Cambridge Exhibition.

### CUT BLOOMS.

Several open classes were provided for chrysanthemum blooms with valuable prizes in addition to those in which the competition was limited to members, and the contributions to them were of so high a degree of excellence as to prove highly attractive to visitors. In the class for twenty-four blooms of Japanese varieties, distinct, Mr. G. Barker, gardener to Miss Gibson, obtained premier honours with large, fresh, and finely finished blooms of Frances Jolliffe, Mrs. T. A. Miller, Fred Green, Mrs. L. Thorn, Rose Pockett, Mrs. A. Herbert, Dorothy Gouldsmith, Marjorie Chandler, Marie Lomes, W. Turner, F. Chandler, G. Mileham, Lady Talbot, Bessie Godfrey, Victorian, Thorpe's Beauty, A. M. Thorpe, W. Mease, Lady E. Letchworth, Mrs. Gilbert Drabble, Duchess of Sutherland, and J. H. Silsbury. The competition was very keen in the members' class for eighteen blooms of Japanese varieties, and in this also Mr. Barker was first, staging splendidly-finished blooms, the varieties chiefly the same as those in his first-prize twenty-four. Mr. E. Dyson, gardener to W. P. Neal, Esq., Cherry Hinton Hall, was a very close second with blooms remarkable alike for their large size, bright colour, and high finish; and Mr. W. Hill, gardener to Sir J. J. Briscoe, Bourn Hall, Cambridge, who was third, staged an excellent set of blooms. Mr. W. Hill was successful in taking the premier awards for six and three blooms of Japanese varieties.

Incurved varieties were so admirably shown both in point of numbers and quality as to be considerably above the average. Mr. G. Barker was successful in taking the premier award for eighteen varieties with blooms of relative large size and admirable in colour and finish. The varieties were Mrs. F. Judson, Romance, Mrs. J. Wynn, Buttercup, W. J. Higgs, Mrs. G. Denyer, Reliance, Daisy Southam, and Mrs. C. Crooks. Mr. T. Todd, gardener to W. A. Briscoe, who was second, had splendidly-grown flowers, which, with a little more dressing might have obtained for him a higher place. Mr. G. Barker also won in the class for twelve incurved, and was closely followed by Mr. E. Dyson and Mr. T. Todd for the second and third places.

The classes for exhibition blooms in vases formed a good feature, for the blooms were throughout in a high state of development and well staged. The class for six varieties, incurved, three blooms of each, shown in vases, was of special interest as evidence that when in exhibition form the flowers of incurved varieties present a very attractive appearance, when arranged in vases, and might with advantage be more freely used for the decoration of indoor apartments. Indifferently-developed incurved blooms, on the other hand, are quite unsuitable for decorations, as they present a rough appearance that is far from pleasant. Mr. Barker scored with an exceptionally fine set, which we have much pleasure in illustrating herewith. The varieties were Ethel Thorpe, Daisy Southam, Marjorie Shield, Mrs. F. Judson, Mrs. G. Denyer, and Duchess of Fife. Mr. T. Todd was a good second. Very fine were the blooms shown in the corresponding class for Japanese varieties, and the prizetakers were Mr. G. Barker, Mr. Todd, and the Rev. C. F. Townley.

The contributions to the classes for decorative and single varieties grown without disbudding, and shown in vases, were so numerous and good as to constitute a delightful feature. Unfortunately, not one of the exhibitors named his flowers, and as a consequence the display possessed but little educational value. Hitherto the flowers in these classes have been carefully named, and we trust the committee will see to it next year that the exhibitors revert to the old practice of naming their flowers. Mr. A. Lelliott occupied the post of honour in the class for six vases of decorative varieties with flowers of high quality and tastefully arranged. Messrs. R. M. Jones and Son and Mr. Edwards were second and third. As for some years past Mr. W. Dobbs exhibited single varieties in splendid style, and the tastefully-arranged six vases with which he obtained premier honours were very beautiful. Mr. W. Hill and Mr. Edwards were first and second. Mr. Dobbs won also in the class for three vases of singles, and Mr. Kirkpatrick, gardener to R. L. Hudson, Esq., was a good second.

### PLANTS.

The groups arranged for effect were of a high order of merit, and the contributions to the classes for chrysanthemum plants were somewhat above the average. The premier award for a group of chrysanthemums, arranged for effect, was made in favour of the Hon. Mrs. Thornton, whose group was remarkable both for the splendid development of the flowers and tasteful arrangement, Mr. E. Dyson was second. Mr. G. Willers, Cambridge, was the most successful of the exhibitors in the classes for specimen plants of chrysanthemums, his successes including first for six and three Japanese, for one reflexed and one single variety. Salvias made a brilliant display of colour, and the most successful of the exhibitors of these were the Rev. F. C. Townley and Mr. Todd, the latter scoring also in the class for begonias with finely-flowered examples of Gloire de Lorraine.

### FRUIT.

The display of fruit was one of the largest we have seen at Cambridge, and the quality was high throughout. Apples and pears were especially well represented, there being several hundred dishes, in which were to be seen at their best all the finest varieties in general cultivation. Very keen was the contest for honours in the class for twelve dishes of apples, to consist of equal numbers of culinary and dessert varieties. Here Mr. J. H. Ridgwell was a splendid first, the fruit being rather large, richly coloured, and admirably finished. We noticed among the cooking apples Peasgood's Nonsuch, Lord Derby, Newton Wonder, and Tower of Glamis and especially noteworthy among the dessert varieties were the fruits of Cox's Orange Pippin. Mr. A. Lelliott was a capital second with a collection in which Lane's Prince Albert was represented at its best. Mr. T. Todd won for six dishes of apples comprising equal numbers of culinary and dessert varieties, Allington Pippin, Charles Rose, and Lane's Prince Albert being especially noteworthy. Mr. Todd was first also for three dishes of dessert apples, staging Blenheim Pippin, Cox's Orange Pippin, and Ribston Pippin at their best, the colour being exceptionally brilliant. In the corresponding class for three dishes of cooking apples Mr. J. H. Ridgwell occupied the first place with excellent examples of Alfriston, Bismarck, and Newton Wonder. Mr. A. Lelliott had the best dish of Lane's Prince Albert. Mr. R. Stephenson staged the best dish of Peasgood's Nonsuch, of Bramley's Seedling, and of King of the Pippins. The best dish of Cox's Orange Pippin was shown by Messrs. R. M. Jones and Son.

The prizes for baskets of apples to contain 20lb. of fruit gave rise, as in previous years, to a very interesting competition. For baskets of cooking apples Mr. W. Cole and Mr. J. H. Ridgwell were first and second with Newton Wonder in splendid condition; and Mr. R. Stephenson and Mr. J. H. Ridgwell occupied similar positions in the class for baskets of dessert apples, both staging Cox's Orange Pippin remarkable for brilliancy of colouring.

The principal class for pears was that for six dishes, and Mr. Todd won with exceptionally fine fruit of Beurré Bachelier, Duchesse d'Angoulême, Doyenne du Comice, Beurré Diel, Charles Ernest, and Le Lectier. Mr. W. Dobbs was a capital second. Mr. E. Dyson secured the premier award for three dishes of pears, with handsome fruits of Beurré Bachelier, Madame Treyve, and Doyenne du Comice. Mr. P. Hollis was a good second. Stewing pears were well shown by Mr. W. P. Hollis, Mr. E. Dyson, and Dr. Dalton. There was a spirited competition in the grape class, and the most successful of the several competitors were the Hon. Mrs. Thornton and Mr. W. Hill for Muscat of Alexandria, and Mr. E. Dyson and Mr. Kirkpatrick for Alicante.

### VEGETABLES.

There was a very strong competition in the society's class for ten kinds, and the Hon. Mrs. Thornton was first with a collection of great excellence, especially noteworthy being the leeks, carrots, and parsnips. Mr. A. Lelliott followed closely for second place, with a collection in which the Brussels sprouts were of high quality, and Mr. P. Hawkes was third. In the class for six kinds, in which Messrs. Sutton and Sons provided the prizes, the Hon. Mrs. Thornton occupied the premier position; and in Messrs. E. Webb and Sons' class Mr. Kirkpatrick was first.

### NON-COMPETITIVE EXHIBITS.

Owing to the space available being so fully occupied by the products in competition for the prizes, non-competitive exhibits are usually few in number at the society's autumn shows. On this occasion Mr. Kirkpatrick exhibited an attractive group of orchids, in which the finely-flowered examples of Cattleya labiata and Vanda cærulea were the most noteworthy. Mr. Ward, of Bishops Stortford, exhibited decorative chrysanthemums in variety, and Mr. Dunn, of Cambridge, staged several boxes of hybrid tea roses, the blooms fresh and otherwise of good quality.

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## Cardiff Chrysanthemum Society.

### NOVEMBER 6 and 7.

A capital show was held by this society in the Skating Rink, Cardiff, on the above dates, and this roomy structure afforded ample space, both for the exhibits and the visitors. Although there was a slight falling off in the usual number of entries, this was fully compensated for by the excellence of the exhibits, chrysanthemum blooms being especially good, and the miscellaneous contributions by the trade were in every way of a high order of merit. In the presence of a good attendance, and supported by the Lady Mayoress of Cardiff, Lady Ninian Stewart opened the show.

### VASE CLASSES FOR CUT BLOOMS.

The contributions of eight vases of Japanese varieties, three blooms in each, for which the society's challenge cup went with the first prize made a splendid class. Chief honours were deservedly secured by Mr. Farmer, gardener to the Marquess of Bute, Cardiff Castle, who had large, solid, highly-coloured examples of G. C. Kelly (one bloom receiving the National Chrysanthemum Society's certificate as the best bloom in the show); William Turner, fine; Bessie Godfrey, Lady Talbot, F. Mew, White Australia, etc. Mr. H. A. Allen, Penarth, who had a fine set of leading varieties, was second, and Mr. Joys, Courtyrala Gardens, was third. For six vases, Mr. S. J. T. Grinter took the lead with a fine set of blooms, and thus won the Vivian Challenge Cup; among them were F. S. Vallis, Master James, W. Gee, F. Jolliffe, and Lady Talbot. Mr. H. A. Allen was second, and Lord Aberdare third. The prizes for five blooms of any white variety brought four excellent exhibits, each consisting of Mrs. A. T. Miller. Mr. L. E. Treherne led, and was followed by Mr. Grinter and Mr. Edwards for second and third places. In a similar class for other than a white variety, the prizes were taken in the order named by Mr. Treherne, Mr. Edwards, and Mr. H. A. Allen. The class for one vase of single varieties brought some beautiful exhibits. The winning vase, containing mixed colours that blended charmingly, came from Mr. G. Screen, Penarth. Colonel Gaskell was second with a beautiful vase of Mrs. W. Buckingham, and Mr. G. Blower third.

### CUT BLOOMS.—COLLECTIONS.

In the class for twenty-four blooms of Japanese varieties, in not less than twelve varieties, the "Courtes" Challenge Cup formed part of the premier award, and was well won by Mr. H. A. Allen, with fine examples of Lady Talbot, G. C. Kelly, F. Joliffe, Bessie Godfrey, Mad. P. Radelli, etc. Mr. J. E. Davis, gardener to Godfrey L. Clark, Esq., Tahfgare, who was second, also staged well. Two splendid sets were staged in the class for twenty-four blooms, twelve each of Japanese and incurved. The Bell Harrison Challenge Cup was offered with the first prize, and Mr. Farmer, who was placed first, had splendid blooms of W. A. Etherington, Maud Jefferies, F. S. Vallis, President Viger, and White Australia among Japanese varieties, and Buttercup, Mrs. F. Judson, G. F. Evans, Frank Trestain, S. Thorp, and Mrs. G. Denyer among the incurved. Mr. Evans, gardener to Sir E. G. Philipps, Picton Castle, who was the other exhibitor, was strong with incurved varieties. The class for twelve blooms, distinct, Japanese, was especially good, and here again Mr. Farmer occupied the premier position with a splendidly finished lot of fine blooms. Mr. Allen was a good second, and Mr. Joys a capital third. A similar class for twelve blooms, in not less than six varieties, brought Mr. H. Skamp, Penarth, to the front, with Mr. S. J. T. Grinter and Mr. J. Lynn Thomas following in the order named. The class for twelve blooms, not less than four varieties, for which "The Empire" Challenge Cup was offered, again gave Mr. Allen the lead, with, as his best blooms, F. S. Vallis, Master James, F. Jolliffe, Bessie Godfrey, Mrs. A. T. Miller, etc. Mr. H. Edwards was a good second, and Mr. H. Skamp was third.

Incurved varieties were not provided for in so liberal a manner as at one time; nevertheless, they were well represented. For twelve blooms, distinct, splendid sets were staged, the blooms being large, solid, and perfectly formed. Mr. Farmer again secured leading honours, staging J. Agate, Bocasse, G. F. Evans, and Buttercup in especially good form, and Mr. Evans, who was second, also had a fine exhibit

### PLANTS.

The group of plants of single and large-flowering chrysanthemums, arranged with ornamental foliage plants in a space 60 sq. ft., was not well filled, but Messrs. William Treseder, Lim., nurserymen, Cardiff, who received the premier award, had an exceedingly beautiful arrangement, composed of splendidly flowered Japanese and single varieties, with a margin of crotons, palms, and ferns. Mr. A. Brown, gardener to the executors of the late James Howell, Esq., Grove House, was awarded the first prize for a group of chrysanthemums arranged in a space of 50 sq. ft. This was well arranged, and the blooms were fresh, moderately large, and the colours pleasingly blended and edged with ferns and grasses, which made a good finish; for this the National Chrysanthemum Society's certificate was awarded in addition to the first prize. In the class for single-flowered chrysanthemums, arranged in a space of 40 sq. ft., Mr. S. J. T. Grinter was awarded the first prize. This was a really fine group, arranged in the best style, the varieties being choice, well-grown, tastefully arranged, and edged with ferns. A silver cup was given in this class. Another class of this kind was for a group of chrysanthemums, in 32 sq. ft., for those not employing a gardener. Mr. N. Hatherdale, who arranged a creditable collection, was the only exhibitor. A group of miscellaneous plants, arranged in a space of 40 sq. ft., brought two competitors, who arranged these subjects with pleasing effect, Mr. McIntyre, gardener to Lady Hill, Rookwood, Llandaff, taking chief honours.

### MISCELLANEOUS PLANTS.

For six orchids, Mr. G. N. German was the leading prize-winner, and staged nice examples of Oncidium varicosum Rogersi, Calanthe Veitchi, Cypripedium Rothschildianum, and Cattleya labiata. For six Begonia Gloire de Lorraine, Mr. Davis, gardener to G. L. Clark, Esq., was first. For Roman hyacinths Mr. German was first, and for twelve plants for table decoration Mr. McIntyre, gardener to Lady Hill, obtained premier honours.

### FRUIT.

There were but few fruit classes provided, and with comparatively few exceptions the produce was not of a high order of merit. For six bunches of grapes, not less than two varieties, for which the Bruckwich Cup was offered as a first prize, Mr. Dobbs, gardener to Sir John Gunn, St. Mellons, was placed first amongst three exhibitors for fair examples of Mrs. Pearson, Muscat of Alexandria, Alicante, and Gros Colmar; Mr. G. H.

Brown, gardener to L. E. Treherne, Esq., Coedringlan, was second. Mr. G. H. Brown was first for two bunches of black grapes, with Mrs. Pince; second, Mr. A. Brown, with Alicante. For two bunches of white grapes, Mr. Dobbs led with Muscat of Alexandria; Mr. G. H. Brown coming second. Mr. Dobbs scored for six dishes of culinary apples with good samples of The Queen, Hambling's Seedling, Mère de Ménage, Newton Wonder, Peasgood's Nonsuch, and Lord Derby. Mr. McIntyre, gardener to Lady Hill, led for six dishes of dessert apples, and Mr. German had the best six dishes of dessert pears, showing Beurré Diel, Doyenne du Comice, Durondeau, Pitmaston Duchess, Beurré Hardy, and Le Lectier.

### VEGETABLES.

In the three classes devoted to vegetables first-rate produce was staged, which did great credit to the exhibitors. Mr. Dobbs had the best six dishes, and Mr. A. E. Collier, gardener to A. Parson, Esq.; Mr. Shewring, Llandaff; Mr. Chould, gardener to Lord Aberdare; and Mr. Huzzy, Whitchurch, were other prominent prize-winners.

### NON-COMPETITIVE.

The following awards were made: To Messrs. William Treseder, Cardiff, a gold medal for floral designs, roses, conifers; to Messrs. Clibran and Sons, Altrincham, a gold medal for chrysanthemums; to Messrs. S. Treseder and Sons, Cardiff, a silver-gilt medal for floral designs; to Mr. P. Thomas, Cardiff, a silver medal for floral designs; to Messrs. Cypher and Son, Cheltenham, silver medal for orchids; to Mr. Drake, Cardiff, certificate of merit for chrysanthemums; to Messrs. C. Williams and Son, Cardiff, certificate of merit for chrysanthemums; to Mr. Pettigrew, gardener to Earl of Plymouth, St. Fagan's Castle, certificate of merit for a group of begonias.

## Royal Horticultural Society.

### SCIENTIFIC COMMITTEE. NOVEMBER 5.

PRESENT.—Mr. E. A. Bowles, M.A., F.L.S., Sir H. Veitch, Prof. W. Bateson; Messrs. A. Rolfe, J. O'Brien, G. Gordon, R. H. Pearson, W. Hales, A. Worsley, and F. J. Chittenden (hon. secretary).

RICHARDIA ELLIOTIANA FRUITING.—Mr. A. Worsley showed a fruiting spadix of Richardia Elliotiana.

HORSE-CHESTNUT WITH TWIN PETIOLES.—Mr. Bowles showed petioles of horse-chestnut in pairs, springing from a connate base, from his garden at Waltham Cross. Only two such were found and the leaf-blades borne by them were quite normal.

APPLES WITH MORE THAN NORMAL SEEDS.—Mr. Chittenden drew attention to the production in some varieties of apple of more than the normal number of seeds. The usual number of ovules produced by the apple is two in each cell, and this is regarded as one of the chief characters separating Pyrus from Cydonia in which there are usually more than two. He had found in Frogmore Prolific a large number of fruits containing more than two seeds in a cell, and the same in Duchess's Favourite. Professor W. Somerville had first drawn his attention to the phenomenon some years ago in American apples, but he had not hitherto seen it in British apples. The seeds were borne in two series of two, one on each carpel margin.

VARIATIONS IN WILD FLOWERS.—Mr. T. H. Dipnall sent the following list of variations which he had noticed in the form and coloration of British wild flowers: (Double flowers) Ranunculus acris, Papaver Rhæas (one flower and another with all flowers semi-double), Cardamine pratensis, Saponaria officinalis, Silene noctiflora, Primula vulgaris and hose in hose, Sagittaria sagittifolia, Knautia arvensis (like a large lavender thrift). Colour Variations: (White) Viola odorata (common and red also), V. canina, Lychnis flos-cuculi, L. diurna, Geranium molle, G. lucidum, Ononis arvensis, Vicia sepium, Campanula rotundifolia, C. Trachelium, Myosotis sylvatica, Ajuga reptans, Lamium purpureum, Primula vulgaris, Orchis mascula, O. maculata, O. morio, Gymnadenia conopsea, Ophrys apifera, Agraphis nutans, Fritillaria meleagris, Adoxa moschatellina, Cnicus palustris, Centaurea nigra, Symphytum officinale. (Pale yellow) Ranunculus acris, Scrophularia nodosa, Sarothamnus (genista) scoparius. (Dull purple) Papaver Rhæas. (Pink) Cratægus oxyacanthus, Calystegia sepium, Primula vulgaris, Lychnis vespertina, Erica cinerea (very pale), Veronica chamædrys, Centaurea nigra (very pale), Orchis morio, Agraphis nutans. (Blue) Anagallis arvensis. (Pale blue) Agraphis nutans, Campanula Trachelium. (Salmon-pink) Papaver Rhæas.

CATASETUM MACROCARPUM, FEMALE FLOWER.—Mr. G. Rae Fraser, Letchmore Heath, Herts, sent an inflorescence of Catasetum macrocarpum bearing five female flowers, from the same plant as the one exhibited on October 8, 1910. He remarked that the plant has made three futile attempts to flower since them, and at the fourth has produced the present spike. Mr. R. A. Rolfe reports that it agrees with the plant figured as Monacanthus viridis, by Lindley, in the "Botanical Register" (t. 1752) from a plant which flowered with Lord Fitzwilliam, at Wentworth, and which is now known as the female of Catasetum macrocarpum, Rich. It is not, however, the original Monacanthus viridis, Lindl., which is the female of another species.

## Royal Horticultural Society of Aberdeen.

The members of this society held their annual meeting in the Music Hall Buildings, Aberdeen. There was a capital attendance, and Colonel Gill, of Dalhebity, chairman of directors, presided. The annual report was submitted, in which it was stated that, from a horticultural point of view, considering the rather unsatisfactory season, the annual show of the society held in the Duthie Public Park, Aberdeen, in August last, was, both in number and quality of exhibits, most creditable to all concerned; while the financial results were also satisfactory. The income for the year amounted to £488 11s. 6d., and the expenditure was £438 1s. 3d., leaving a surplus of £50 10s. 3d., which, with the credit balance of £27 7s. 10d. at the beginning of the season, left a balance of £77 18s. 1d. to be carried forward to next year's account.

In moving the adoption of the report, the Chairman said they could congratulate themselves on the very satisfactory state of their finances which showed a good profit. Ex-Baillie Todd, seconded. They had he said, a great deal to congratulate themselves upon. It had been suggested that they should start a reserve fund, and it was only wise that they should take the precaution of having something to fall back on. The report was unanimously adopted, and, on the motion of Mr. Todd, seconded by Mr. Robson, seedsman, it was agreed to start a reserve fund with the sum of £30.

The Chairman moved the re-election of the hon. president, hon. vice-presidents, and hon. directors, which was agreed to. Mr. Robson moved that Colonel Gill be re-appointed chairman of the directors. They had no schools of horticulture in the district, he said, as they had of forestry, supported by State aid, but as their association represented the industry in that district it behoved them to keep it well up-to-date. Colonel Gill was a very liberal patron and generous friend to horticulture. The motion was most cordially agreed to, and Colonel Gill returned thanks. Mr. Councillor Simpson was appointed vice-chairman, and Messrs. W. Reid and W. Wyllie were re-elected auditors. Mr. J. B. Rennett was heartily re-elected secretary and treasurer.

The following gentlemen, mostly professionals, were appointed directors for the ensuing year: Messrs. A. Douglas, W. Lockhart, J. Duncan, W. Adam, J. McDonald, W. Anderson, W. Clark, A. Duncan, A. M. Cocker, A. Brebner, J. Ritchie, J. Marr, A. Giles, J. George, W. Walker, John Yule, jun., Alex. Burns, W. Slora, J. Coutts, and W. Cumming.

A very harmonious meeting closed with the usual expressions of thanks to those chiefly concerned.

## Brighton.

The Brighton Horticultural Society's chrysanthemum show was held in the Dome and Corn Exchange on November 5 and 6. The entries showed an increase of 119 on those of 1911, while in the matter of quality the display was particularly good. Mr. Gaston and Mr. Balchin, secretary and treasurer respectively, have been busy securing new members, and have added 170 during the year. The society is not, however, so well supported as it should be, and a loss on the summer show was inevitable.

The leading cut-flower class was for three dozen Japanese blooms in not more than twenty-four varieties, and here Mr. M. Sargeant, gardener to G. Lloyd Wigg, Esq., Merstham, repeated his success of 1910, and won the president's silver cup with excellent flowers of popular exhibition varieties. He was followed in order of mention by Mr. J. Harris, gardener to Colonel J. P. Henty, Arundel; Mr. C. Hack, gardener to Mrs. L. Joad, Patching, Worthing; and Mr. J. E. Dickson, gardener to the Rev. F. S. Slater, Newick Park. For five vases of Japanese varieties, five blooms in each, representing not fewer than eighteen varieties, Mr. J. Jewell, gardener to H. Ramsbotham, Esq., Crowborough Warren, won the chief award with a goodly set; Messrs. J. Stredwick and Son, St. Leonard's, coming second, and Mr. Hugh Macfayden, gardener to L. Breitmeyer, Esq., Cuckfield Park, third.

Mr. C. Fox, Tunbridge Wells, an amateur who always shows well at Brighton, was once more first prize winner in the class for a dozen Japanese blooms, and, as this is his third successive win, he now holds for good the Amateurs' Challenge Trophy. Mr. J. Harris; Mr. A. E. Clarke, gardener to Dr. Rouse, Worthing; and Mr. G. H. Best, Worthing, were other leading prize-winners for cut flowers.

Groups of chrysanthemums were not so numerous as in former years. For a circular display of chrysanthemums and foliage plants, Mr. G. E. Chandler, gardener to S. C. Witting, Esq., Hollingbury Copse, Brighton, led the way, and secured a silver medal and first prize for a pleasing exhibit. For a group of chrysanthemums only, arranged in circular fashion, Mr. J. Addis, gardener to D. Tulk-Hart, Dyke Road, Brighton, was awarded the first prize, and was the only exhibitor. The silver cup for a dozen bush plants of pompon varieties was secured by Mr. G. H. Bennett, gardener to P. H. Bayer, Esq., Withdean. Mr. A. Sayers, gardener to S. Copestake, Esq., Hove; and Mr. S. Watkins, gardener to C. A. Wood, Esq., Preston, Brighton, followed, and their exhibits produced a fine effect in the big dome. Mr. Bennett also scored for half a dozen bush plants, and for half a dozen plants of single varieties, and in the latter class showed particularly well. Mr. T. Eastwood, gardener to Dr. Bryant, Tongdean, also showed well in the classes for bush chrysanthemums, and he had the best dozen primulas. Mr. J. E. Hickson showed the finest set of nine winter-flowering begonias, and Mr. W. Hill, gardener to G. W. Ryder, Esq., Keymer, had matters all his own way in the class for a table of orchids and foliage plants.

Fruits and vegetables were finely represented. In the former section Miss Smith, Withdean, won first prize, both for black and white grapes, Mr. A. Kemp, gardener to C. R. Scrase Dickens, Esq., Coolhurst, Horsham, coming second for white varieties, and Mr. W. Hill second in the black class. Mr. Hickson, Mr. C. Fox, and Mr. J. C. Reeves, gardener to Captain Blake, Rusper, did well in the classes for pears, while Mr. C. Earl, gardener to O. E. d'Avigdor Goldsmid, Esq., Tonbridge, and Mr. G. Stoner, gardener to A. A. Baines, Esq., The Old

Rectory, Westmeston, were leading prize-winners for apples.

Mr. W. Humphreys, gardener to F. W. Franks, Esq., Loam Pits, Tonbridge; Mr. W. Manton, gardener to Mrs. Mashiter, Hurst; and Mr. C. Earl all gained leading prizes in various vegetable classes, and showed excellent produce.

Non-competitive displays of considerable merit were staged by Messrs. W. Balchin and Sons, Brighton (Gold Medal); Messrs. J. Cheal and Sons, Crawley (Gold Medal); J. A. Nix, Esq., Tilgate, Crawley (Gold Medal, for fruits); Messrs. Toogood and Sons, Southampton (Gold Medal); Messrs. W. Wells and Co., Merstham, were awarded a silver-gilt medal, and silver medals fell to the Barnham Nurseries, Barnham; Messrs. Chantrey and Sons, Brighton; Messrs. J. E. Davis and Sons, Brighton; Mr. E. Jones, Patcham; Messrs. W. Miles and Co., Hove; Messrs. Peters and Co., North Street, Brighton; Mr. J. Price, gardener to Alderman J. Colman, J.P. (president), Hove; and Mr. F. Woollard, Lewes Road, Brighton.

## Windsor.

NOVEMBER 8.

The twenty-first annual show was held in the Royal Albert Institute, and was quite up to the average of former displays. This society is noted for its encouragement of the single-flowered chrysanthemum, and it is quite safe to say that nowhere can finer groups of plants of this section be seen than here. The decorative value of large Japanese blooms, in a mass, in vases, with suitable foliage, is another feature, and so are the displays of carnations. Fruit and vegetables are always remarkably fine here. The management, too, is of the best, but it cannot be said that the society is as well supported by the general public as it deserves.

In a class for a group of decorative chrysanthemums, 8ft. by 4ft., in a semi-circle, plants not to be disbudded, and an edging of moss or ferns allowed, the leading award was a challenge cup with a money prize added. Three competed, and as all staged single-flowered varieties, a fine effect was produced. Mr. G. West, gardener to F. Ricardo, Esq., was first with grandly-flowered plants of such effective varieties as Sylvia Slade, Ceddie Mason, Bronze Pagram, and Mensa, arranged in a not too formal bank, 10 feet high, with a neat edging of ferns. Mr. W. Cole, gardener to Mrs. E. B. Foster, Clewer Manor, was second with superior blooms, but poorly arranged; Mr. J. Orton, gardener to Colonel Cox, third.

The leading cut bloom class was for eight varieties, three blooms of each, in vases. The leading award was the King's Challenge Cup, with a cash prize, and naturally this coveted trophy induced a goodly entry. Five competed. Mr. C. Page, gardener to J. B. Fortescue, Esq., Dropmore, Maidenhead, was the winner with handsome blooms of F. S. Vallis, Alice Lemon, G. C. Kelly, Glaucous, Lady Talbot, Colonel H. E. Converse, T. Mew, and R. Vallis, all beautifully fresh. Mr. H. Hearn, gardener to Mrs. Gerald Goodlake, second with rather smaller specimens well staged; Mr. W. Willcocks, gardener to Sir R. Harvey, Slough, third. A class was provided for eighteen Japanese blooms, arranged for effect with any foliage, in a space 5ft. by 3ft. Mr. H. Hearn was first with superior blooms, none too well displayed; Mr. W. Holder, gardener to Mrs. Adair, second with a much more pleasing arrangement of smaller flowers.

Incurved varieties were well displayed in the class for twelve, distinct, by Mr. Page, who secured the leading award quite easily with full, shapely specimens of Beauty of Bucks (creamy-white with closely incurving florets), Clara Wells, Frank Trestian, W. Pascoe, Romance, F. Palmer, and Nellie Southam. Mr. R. Evans, gardener to Mrs. Slattery, second with smaller but neat examples. Mr. Page was equally successful for six incurved, any one variety, with fully finished specimens of Clara Wells.

Single-flowered varieties were remarkably well shown. For six varieties, five sprays of each, undisbudded, in vases, there were six entries, the best coming from Mr. G. West. Each spray carried from six to eight fully-developed blooms, which for decoration were very handsome. The leading varieties were Mensa, Merstham Gem, Mrs. R. C. Pulling, Ceddie Mason, Mrs. John Peed, and Crown Jewel Improved. Mr. W. Cole was a good second and Mr. Orton third.

An interesting class is that for twelve Japanese blooms, arranged with any natural foliage in one vase, a class which displays the value of the large blooms for decoration. Mr. W. Holder was first with handsome flowers of Frances Jolliffe effectively displayed with asparagus and crimson oak sprays; Mr. H. Hearn second with mixed flowers.

Several distinct classes were provided, and Mr. W. Lane, gardener to Sir E. Durning Lawrence led for twelve Japanese blooms in a keen competition. For three white and three yellow Japanese blooms in vases Mr. G. Baskett, gardener to P. Nelke, Esq., was first with medium-sized specimens of Mrs. Marsham and Willie Rawlings.

Miscellaneous plants arranged in groups on one side of the hall made a bright display. Mr. G. West, mainly with orchids, easily secured the leading place; Mr. J. Orton second with well-flowered orchids and palms, but none too well arranged.

Very handsome were the six specimens of Begonia Gloire de Lorraine from Mr. C. L. Branson, gardener to G. Hanbury, Esq., who was the only competitor, and who received the leading award. Carnations in pots were numerous, and for six Mr. G. West, with well-grown, freely-flowered specimens of May Day secured the leading position among four entrants.

Cut carnations were numerous. For three vases, distinct, Mr. G. West won with good blooms of Carola, Rose Doré, and Enchantress. Six competed. For one vase of twelve blooms the competition was keen, and Mr. T. H. Plowright, Windsor, won with meritorious blooms of Mikado, Winsor, Rose Doré, May Day, and White Lawson. The special prizes offered by Mr. Dutton, Iver, Bucks, for six vases induced a brisk competition, and Mr. G. West was first with really fine examples of Carola, R. F. Felton, Pink and White, Enchantress, Rose Doré, and May Day; Mr. W. Holder second.

Mr. W. Allan, gardener to Lord Hillingdon, Uxbridge, led for six dishes of pears with fine fruit; he also scored for white grapes with Muscat of Alexandria. For six dishes of apples Mr. C. Frost, gardener to L. H. Hanbury, Esq., won.

Mr. Charles Turner, Slough, had a remarkably fine collection of sixty dishes of apples and pears, not for competition. The new apple Arthur Turner was conspicuous, as well as Cox's Orange Pippin, Wealthy, Charles Ross, Bismarck, Allington, King of Pippins, Bramley's Seedling, and King Edward (gold medal).

## Manchester.

NOVEMBER 12, 13, and 14.

After a short period the Manchester Royal Botanical and Horticultural Society has resumed its autumn show, which on this occasion was held in the Town Hall, and proved most excellent, both as regards competitive and non-competitive contributions, proving that fine displays may still be produced in the North of the choicest products. Mr. P. Weathers and his council deserve the heartiest congratulations and thanks of the lovers of flowers in the County of Lancaster for the magnificent show the latter have had an opportunity of enjoying.

### PLANTS.

Chrysanthemum plants were not numerous, but those exhibited were all well grown and finely flowered. For nine large-flowered specimens Mr. J. Sedall, gardener to L. Breaslaurer, Esq., secured the leading award, and held a similar position in the class for six Japanese, the specimens in both instances evincing cultural skill of the highest order.

### CUT BLOOMS.

In the class for a display of cut flowers representative of all sections, and arranged for effect, open to nurserymen, Mr. W. J. Garner was awarded the Gold Medal offered as the first prize. The display occupied the whole of the front of the platform, and the cut blooms, which were arranged in vases, stands, etc., had a background consisting of bamboos, palms, and crotons. The effect was rich and tasteful, and the display was much admired. The prizes offered for forty-eight blooms, twenty-four Japanese and twenty-four incurved, distinct, varieties, brought two competitors, one of whom came from the South, and the coveted award was made in favour of Mr. G. Hunt, gardener to Pantia Ralli, Esq., Ashtead, who had a very fine stand. The most notable blooms were, of the Japanese, His Majesty, W. Mease, Marie Lomes, Mrs. Turner, Willie Rawlings, Pres. Viger, Glaucous, Superb, H. G. Coverse, Fred Chandler, and Purity; and of the incurved, H. Hearn, Amber Beauty, Mrs. F. Judson, Bocane, G. F. Evans, Romance, Mrs. B. Hankey, W. Pascoe, Fred Palmer, and Mrs. G. Denyon. Mr. C. Goves, gardener to Sir Gilbert Greenall, Bart., Warrington, was second with many fine blooms.

In the class for twenty-four blooms of incurved varieties, Mr. G. Hunt was first with a splendid stand, and he was first also for twelve varieties of incurved with blooms of high quality. Mr. J. Stoney, gardener to Lieut.-Colonel J. B. Gaskell, Woolton, was second; and Mr. H. Curtis, Widnes, third.

For thirty-six Japanese, Mr. C. Jones, Abergele, was first with a collection which contained many flowers of more than average merit. In competition for the prizes for eighteen Japanese, Mr. W. E. Wright, gardener to Lord Sheffield, was the winner of the premier award, with very heavy blooms; Mr. G. Hunt and Mr. J. Stoney were second and third respectively. For twelve varieties the prize-takers were Mr. W. E. Wright, Mr. G. Corbutt, gardener to Cornelius Lamb, Esq., and Mr. H. Curtis. For thirty-six blooms of miscellaneous varieties Mr. J. Stoney obtained premier honours with splendid blooms of Japanese, incurved and reflexed; Miss Lightbown was second. Mr. C. Gove was the first prize winner in the class for twelve Japanese, and also occupied the first place for twelve incurved varieties; the second places being occupied by Mr. J. W. Pritchard in the class for Japanese, and Mr. G. C. Demetriade in that for incurved.

In the classes for dinner table decorations there was an excellent competition, and the successful exhibitors were Messrs. J. Nixon, of Alderley Edge, W. J. Garner and H. B. Vernon. The best basket of chrysanthemums for effect was shown by Mr. J. Nixon, gardener to O. Robinson, Esq.; Mr. W. J. Garner and Mr. H. B. Vernon being second and third. For three bouquets, Mr. W. H. Garner won with lovely arrangements; Messrs. J. Nixon and A. Porter also showed well. In competition for the prizes for one bouquet Mr. O. Robinson obtained premier honours with a charming arrangement.

### MISCELLANEOUS PLANTS.

Roman hyacinths were well shown, and Mr. S. D. Petrocochino won with good plants bearing fine spikes. Chinese primulas were especially well shown by Mr. W. Bramwell, gardener to His Honour Judge Bradbury; and for six cyclamen he won with splendid specimens.

In the class for winter-flowering begonias Mrs. Gill occupied the first place with charming plants. Plants for the dinner-table were well shown by Mr. H. Mallion, gardener to G. F. M. Susman, Esq.

In competition for the best display of orchids, amateurs, W. R. Lea, Esq., secured the premier award—a gold medal—with a beautiful display; Colonel Rutherford was awarded the silver-gilt medal offered as the second prize; and Mrs. A. K. Wood and Mr. A. Warburton equal thirds.

### NON-COMPETITIVE.

This section was one of great merit, and the various contributions added greatly to the interest and value of the show. The following awards were made:

Gold Medals.—To Messrs. J. Cypher and Sons, for a fine bank of orchids, including a grand display of cypripediums, in which C. insigne Harefield Hall and C. insigne Sanderæ were prominent; to Messrs. Charlesworth and Co., for a beautiful display of orchids, in which odontoglossums and cattleyas in great variety and rare excellence were the most noteworthy; to Mr. R. W. Lee, for a beautiful display, in which the cattleyas and cypripediums were of exceptional merit; to Messrs. Dickson, Brown, and Tait, for a collection of fruit, chiefly apples, of excellent quality; and to Messrs. Clibrans, for an attractive display of begonias.

Silver-gilt Medal.—To Colonel Rutherford, for a pleasing contribution of orchids, in which were many fine varieties of cattleyas and cypripediums.

Silver Medal.—To Miss Wood, for a group of orchids, in which Vanda cærulea and cattleyas were of much merit; to Mr. Warburton, for well-grown orchids.

The arrangements were carried out by Mr. P. Weathers with his accustomed ability.

## Horticultural Club.

On Tuesday, the 5th instant, at the Hotel Windsor, this club held its monthly dinner under the chairmanship of Sir Harry J. Veitch, a good number of members and guests being present. Subsequently a most interesting lecture was given by Mr. F. Kingdon Ward, B.A., F.R.C.S., entitled "A Naturalist in Western China and Tibet," and illustrated by a large number of very beautiful lantern slides from photographs taken by the lecturer.

Mr. Ward, who shortly returns to China on another botanical expedition, accompanied the exhibition of the slides by explanatory remarks concerning the nature of the mountainous region which he traversed, and the wonderfully varied character of the plant life which all but pervaded it, the exceptions being considerable areas of arid waste which alternated curiously with adjacent regions where heavy rains fell for six months in the year

The lecture was peculiarly interesting in the light it threw upon the reasons of this variation. A range of mountains, 18,000 to 20,000ft. in height would, for instance, act as a rain screen by intercepting the rain-bearing winds from another range but a few miles distant, the result being that on the windward side the rainfall would be enormous, but on the leeward all but nil. This in its turn naturally greatly affected the character of the vegetation, as did also the winds engendered by different conditions and accentuated by the geographical contour of the land, tree growth being suppressed or encouraged, so that, while one side of a valley was only clothed with scrub or dwarf rhododendrons, the other side might be densely wooded. The difference in shelter thus induced also altered the plants of smaller growth, which, however, in the shape of Alpine flora, particularly of the Saxifrage, Androsace, and Meconopsis or Poppy tribe, constituted a general and particularly rich field for research, and a source, it was hoped, of many new additions to our hardy flower borders. Some slides, showing specimens of such growing in situ, evoked particular interest. Views of the great river Yangtse Kiang and some of the affluents showed some magnificent gorges through which they had eroded their way, between cliffs of several thousand feet elevation. Happily, despite rumours of dissension between the various sections of the inhabitants of the widely-extended region traversed, and even of English invasion, Mr. Ward found hospitality of a rough kind to prevail throughout his travels, and met with no serious adventures.

In the subsequent discussion, however, in which Sir Harry J. Veitch and Messrs. Barr, Druery, and others participated, some very gruesome accounts of sights seen and perils encountered by other explorers in the same regions were quite sufficient to demonstrate that the plant hunter practically took his life in his hand, and had need to possess plenty of pluck and diplomacy in addition to the all-essential botanical knowledge required in such pursuits.

A very hearty vote of thanks to Mr. Ward and wishes for a "bon voyage," and success at the end of his pending journey, concluded a most interesting function.

## Reading Gardeners' Association.

### FORTNIGHTLY MEETING.

The usual fortnightly meeting was held in the Abbey Hall, and the President (Mr. F. B. Parfitt) occupied the chair. The lecturer announced for the evening was a delegate from the kindred society at Bristol, who at the last moment was unfortunately prevented from journeying to Reading. His place was, however, admirably filled by a brother Bristolian, Mr. I. House, who is always welcomed by the Reading Association. The subject selected was "Hardy Perennials," and the lecturer prefaced his address by a humorous reference to propagation, stating it was his intention to say nothing on the point, nor to reply to any question, as he was always in doubt as to how much information he was expected to give, and how little, for his own sake, he ought to divulge, which was unsatisfactory to both himself and his audience.

In the first part of his paper Mr. House defined the term "hardy perennial herbaceous plants," and expressed regret that compilers of show schedules were not clear in their stipulations. Bulbous plants should not, in his opinion, be admissible in a class for hardy herbaceous plants, neither any of doubtful hardiness, nor others treated as greenhouse plants, for the purposes of competitive exhibition. He instanced plants which are not easily propagated, among others commending Ostrowskia magnifica, and giving his experience with it. Another list comprised those which are not generally successful, as Romneya Coulteri, supplementing it with cultural details. Mr. House also gave the names of a number of the newer and finer forms of better-known plants, such as phloxes, pyrethrums, montbretias, etc. In another section of his paper he gave the names of plants which are undesirable occupants of the herbaceous border on account of their predatory habits. He advised his audience as to the kinds of plants which are best left undisturbed for several years, like the forms of Aster amellus, Dictamnus Fraxinella, pæonies, etc., and enumerated others which are better for annual or biennial replanting. Mr. House also pointed out the injury which might follow the premature removal of stems, particularly where of large size, as in delphiniums. The lecturer's wide knowledge and enthusiasm for his subject led to very numerous queries being put to him.

On the motion of the President, an exceedingly hearty vote of thanks was accorded Mr. House.

### FLOWER SHOW.

The Reading Gardeners' Association held its annual exhibition on Thursday week in aid of the gardening charities. No prizes are awarded, everyone exhibits of his best on this occasion, and a grand display is produced.

By the courtesy of the secretary of the Association, we have received the following list of exhibitors and exhibits: Sir Rufus Isaacs, Fox Hill, Reading (gardener, E. Blackwell), group of chrysanthemums and fruit; F. B. Parfitt, Esq., Elmcroft, Caversham, president of the Society, twelve dishes of fruit; L. G. Sutton, Esq., Hillside, Reading, vice-president (gardener, F. Townsend), group of seedling chrysanthemums and circular group of primulas; Messrs. Sutton and Sons, group of chrysanthemums; University College, Reading (per Mr. F. G. Drew), group of chrysanthemums and collection of fruit; Mrs. Noble, Park Place, Henley (gardener, T. J. Powell), collection of fruit; Mrs. Cracroft Wilson, Bill Hill, Wokingham (gardener, R. A. Hatton), collection of fruit; J. Walter, Esq., Bear Wood (gardener, J. T. Tubb), collection of fruit); S. B. Joel, Esq., Maiden Erlegh (gardener, F. Johnson), group of plants and collection of fruit; T. R. Harman, Esq., Sindlesham House (gardener, T. Neve), twenty-five dishes of fruit; Mrs. Bland Garland (gardener, H. Wilson), twelve dishes of fruit; M. H. Foquet Sutton, Esq., Erlegh Park (gardener, H. C. Loader), group of seedling chrysanthemums and collection of vegetables; S. Griffith, Esq., Gordon Lodge (gardener, G. Carter), group of Gloire de Lorraine begonias; T. Alsopp, Esq., Downham Lodge (gardener, G. Hinton), collection of vegetables; H. Collins, Esq., Leopold House, Reading (gardener, A. F. Bailey), twelve dishes of fruit; G. Bryant, Esq., six dishes of fruit; E. Parker, Esq., twenty dishes of fruit; Mr. G. Stanton, Upper Culham, dried grasses, leaves, etc.; Leighton Park School (gardener, W. G. Tovey), zonal pelargoniums, vegetables, and fruit; Eric Palmer, Esq., Shinfield Grange (gardener, G. Smith), collection of vegetables and fruit; Mr. A. Webb, fifteen dishes of fruit; P. Keevil, Esq., (gardener, D. Turner), collection of vegetables; Mrs. Finch, Hurst Grove (gardener, G. West), collection of vegetables; J. Okey Taylor, Esq. (gardener, T. Brown), nine dishes of fruit; Mrs. Collins, Stoneham House (gardener, H. Goodger), collection of vegetables and apples; Mrs. Austen, Whitley Lodge (gardener, W. Bennett), eighteen dishes of fruit; W. Howard Palmer, Esq., Heathlands, Wokingham (gardener, W. C. Moles), collection of dwarf-growing chrysanthemums; Mrs. Bird (gardener, A. Abraham), collection of vegetables; L. R. Erskine, Esq., Binfield Manor (gardener, C. Earle), collection of vegetables; Captain Miller, Blandford Lodge (gardener, H. Reeves), display of pelargoniums and collection of fruit; Dr. C. M. Powell, Caversham (gardener, G. Boxall), ten dishes of fruit; Mr. E. J. Dore, Reading, potatoes and lettuce; Mr. W. Smith Cann, Shaftesbury, Dorset, two vases of violets.

## Eccles.

### NOVEMBER 8 and 9.

The twenty-sixth annual show of this Society was held in the Town Hall under somewhat dismal conditions, as the light was bad, and there was continuous rain. The entries, as usual, were excellent, filling to the utmost the limited space at command.

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The schedule comprised four sections—open, gardeners, amateurs, and novices, and under press of space the first can only be dealt with.

### CHRYSANTHEMUMS IN POTS.

In the class for a semi-circular group, nine feet by six feet, six exhibits were staged. Mr. J. W. Smith, gardener to James Brown, Esq., Heaton Mersey, occupied the position of honour with a well-arranged lot of bright, fresh flowers. Mr. W. Palethorpe, gardener to Miss G. Agnew, was second with a pleasing combination; and Mr. E. Pollitt, gardener to J. Symlie, Esq., was third.

For three pots of Japanese varieties Mr. Smith was again to the fore, with well-flowered plants and medium-sized blooms; this exhibitor evinced his capabilities as a grower by leading in the classes for three pots of incurved varieties; three pots of single-flowered; and six pots of Japanese, grown in six-inch pots, securing five firsts in six classes. For three disbudded chrysanthemums, Mr. W. Holmes, gardener to the Countess Scott Forbes, secured the leading award. For six table plants Mr. A. E. Fox, gardener to T. C. Ansdell, Esq., won with a charming lot in a strong competition. For six pots of Roman hyacinths, Mr. Fox was again to the fore with good spikes, considering the season. Begonia Gloire de Lorraine was best shown by Mr. Fox, who scored with large plants moderately flowered.

### CUT BLOOMS.

Of twenty-four blooms, twelve incurved and twelve Japanese, there were four lots. Mr. C. Goves, gardener to Sir Gilbert Greenall, Bart., Warrington, succeeded in securing the leading position, as last year, with a fine lot of well-finished blooms, the best being Lady Talbot, Eclipse, President Viger (which secured the award of merit for the best bloom in the open section), William Turner, Hon. Mrs. Lopes, Martin James, Frances Jolliffe, Mrs. J. Hygate, Pantia Ralli, Buttercup, Mrs. B. Hankey, Mrs. R. H. Hall, Romance, Mrs. G. Denyer, etc. Mr. G. Haigh, gardener to Sir W. H. Tate, Bart., Woolton, Liverpool, was an excellent second, his Hon. Mrs. Lopes and Buttercup being extra fine. Mr. J. Copper, gardener to H. Beck, Esq., Huyton, Liverpool, secured the remaining award. Mr. Goves, in the cut-flower section, surpassed the success of Mr. Smith in the plant section by winning firsts in all the open classes as follows: For twenty-four Japanese, in not less than twelve varieties; twelve incurved, distinct; twelve Japanese, distinct; and twelve blooms, six Japanese and six incurved; and he staged excellent flowers in each class.

The decorative exhibits at this exhibition are always well done. For three bouquets Mr. A. Porter led with charming arrangements of choice flowers; Mr. A. Adshead followed with good exhibits that lacked choiceness of bloom. For the single bouquet Mr. Porter again scored, and for the most tastefully-arranged epergne Mr. H. Mallion, gardener to E. F. M. Susman, Esq., led. For the most tastefully-arranged basket of cut chrysanthemums Mr. A. Adshead was to the front, and for six sprays Mr. A. Porter took the lead, while for three buttonholes Mr. M. Hodgson, gardener to E. Timberlake, Esq., won with lovely blooms of odontoglossums.

In the gardeners' section, confined to a radius of eight miles, Mr. J. W. Smith secured the challenge vase and first award for eighteen large-flowered blooms in six varieties, arranged in vases. The remaining prizes were well contested, the first-prize men being Messrs. J. W. Smith, W. Byrom, and W. Holmes.

### NON-COMPETITIVE.

A few non-competitive exhibits were staged. The Earl and Countess of Ellesmere contributed specimen palms; Messrs. Dickson, Brown, and Tait sent lily of the valley and Begonia Gloire de Lorraine; Messrs. Dickson and Robinson had a pleasing array of Michaelmas daisies and chrysanthemums; and Messrs. Frank Dicks and Co. set up palms, heaths, and potatoes.

## Haywards Heath.

On the 6th and 7th inst. the Haywards Heath Horticultural Society held its annual exhibition of chrysanthemums, and a finer show of these flowers has not been arranged by this society. Chrysanthemums, of course, were in chief evidence, but there were also carnations, begonias, violets, cyclamens, etc., and all combined to make a most effective display.

For a group of chrysanthemums Mr. W. Evans, gardener to Mrs. Stewart Mackenzie, of Seaforth, Lyndhurst, Warninglid, won the handsome silver challenge trophy presented by the President, Colonel Stephenson R. Clarke, C.B. This is the third year in succession that this gardener has carried off the cup, and so he was awarded the society's gold medal. His was a magnificent exhibit, the varieties shown including F. S. Vallis, Lady Talbot, Mrs. A. T. Miller, Bessie Godfrey, Merstham Blush, Geo. Hemming, Master Davies, and Master James. Mr. W. Evans obtained a double distinction, for he also won a new cup for carnations—given by Mrs. Stewart Mackenzie, of Seaforth—with a light and graceful exhibit. This was a new feature, and everyone agreed that it was an extremely pretty one. The prize stand included Enchantress, White Wonder, Gloriosa, Lady Alington, Scarlet Glow, and May Day. Second place in this class (open to the County of Sussex) was gained by Mr. H. Lazell, gardener to H. M. Knight, Esq., Beech Hurst, Haywards Heath. Mr. W. Evans won first prize for six Japanese chrysanthemums.

Among the trade exhibits, Mr. J. Box, of Lindfield, had a fine set of single chrysanthemums, including the new varieties, Ceddie Mason, Crimson Mary Richardson, Charles Hale, Chestnut Pagram, Emily Smith, Joan Edwards, J. H. G. Williams, Margaret Gray, Mrs. Tresham Gilbey, R. B. Burge, Snowflake, and Maggie Mailwell. This display, backed with palms, was a splendid piece of staging, and won a gold medal.

In the fruit section quality and quantity were both well maintained, and competition was good, especially in the classes for dishes of twelve apples, for prizes offered by the Rev. T. G. Wyatt. Those who were successful in gaining first places were Mr. J. E. Shirley (culinary) and Mr. G. Sweetman (dessert). A Silver-gilt Medal was awarded to Mr. H. Manton, gardener to W. A. Sturdy, Esq., Paxhill Park, Lindfield, for an excellent exhibit of fruit and vegetables, well put up; while Mr. W. H. Robbins, gardener to Mrs. Rodgers, Great Walstead, Lindfield, gained a Silver Medal for a fine lot of fruit. Mr. J. Sinnock, gardener at the Brighton County Borough Asylum, was awarded a Certificate of Merit for his fruit.

Begonia Gloire de Lorraine was very finely shown, and hardly any fault could be found with the lot put up by Mr. H. Lazell, who secured first prize. Also very good were the displays by Mr. W. Elvy, gardener to R. Foster, Esq., Summerhill, Lindfield, and Mr. W. Evans.

A rare plant on view was Delphinium macrocentron, in bloom. The seed of this was brought from British East Africa by Colonel S. R. Clarke. The plant was inspected with great interest by the large number of visitors.

As usual, the vegetable section of the show was productive of a good display of the fruits of the earth. Competition was especially keen in the classes for gentlemen's gardeners. In the class for a collection, Mr. J. E. Shirley, gardener to the Rev. T. G. Wyatt, St. Wilfrid's Parsonage, Haywards Heath, put up a fine lot, and was awarded first prize; second, third, and fourth prizes respectively were won by Mr. H. Manton, Mr. G. Grubb, gardener to L. B. Schlesinger, Esq., Bedales, and Mr. J. Perrett, gardener to J. Goddard, Esq., Handcross.

Also of great interest was a wild fruit competition for local school children, and many were the comments passed by admiring parents and friends of the winners.

## ANSWERS TO CORRESPONDENTS.

CYANIDING FRUIT HOUSES FOR THE DESTRUCTION OF MEALY BUG.—C. S., Chislehurst: Will you kindly state, through your "Answers" column, how to use cyanide of potassium for fumigating vineries and peach houses which are infested with mealy bug? Kindly give the amounts of cyanide, etc., necessary, and the methods of procedure.—We have dealt with this matter at some length on previous occasions, though not quite recently. There is no doubt that fumigation by means of cyanide of potassium is an excellent means of ridding houses of insect pests, but we must point out that some danger attaches to this method; therefore only the most careful people should use it, after making careful preparations. The vines and peaches must be quite dormant, and the houses at a temperature of 50 to 55 deg. when cyaniding is done. The materials and proportions for use are: Cyanide of potassium 1 part, sulphuric acid 1½ parts, and water 3¾ parts. One ounce of cyanide of potassium is given as the correct amount per 400 cubic feet of space in the houses to be fumigated. The houses must be made as airtight as possible before fumigating. The sulphuric acid should be poured very carefully and slowly into the water, the latter being placed in an earthenware vessel such as a wide jam jar. The cyanide of potassium, wrapped in thin blotting paper, should then be dropped into the diluted sulphuric acid, but the vessel into which the cyanide is dropped should be so near the exit door that it can be reached by the outstretched arm of the operator, who should immediately shut the door and stop up the chinks with gummed paper ready to hand. A better method is for the operator to introduce the cyanide to the diluted sulphuric acid, through the side light, the cyanide being placed at the end of a long rod, or so arranged that it can be lowered by means of a

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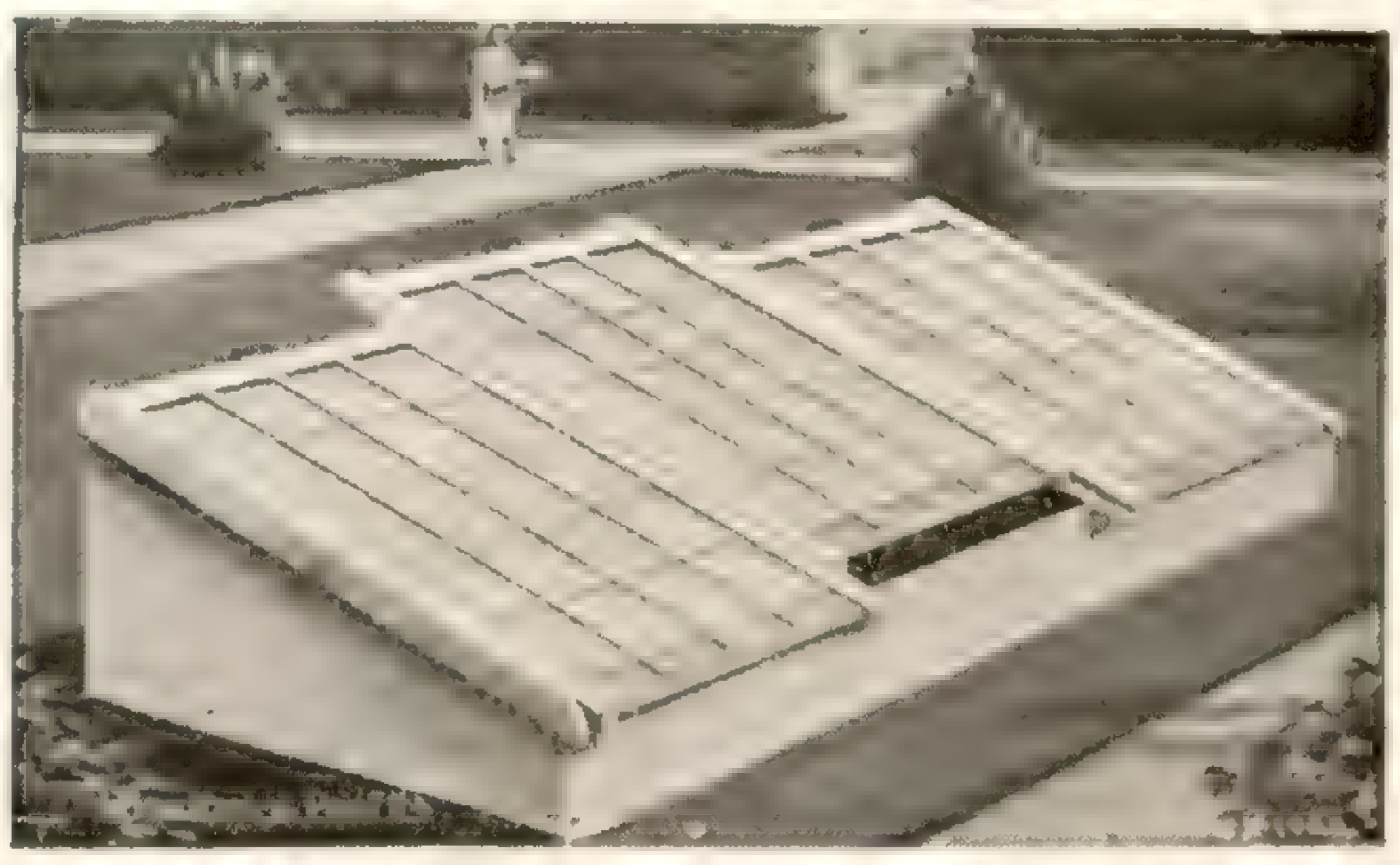

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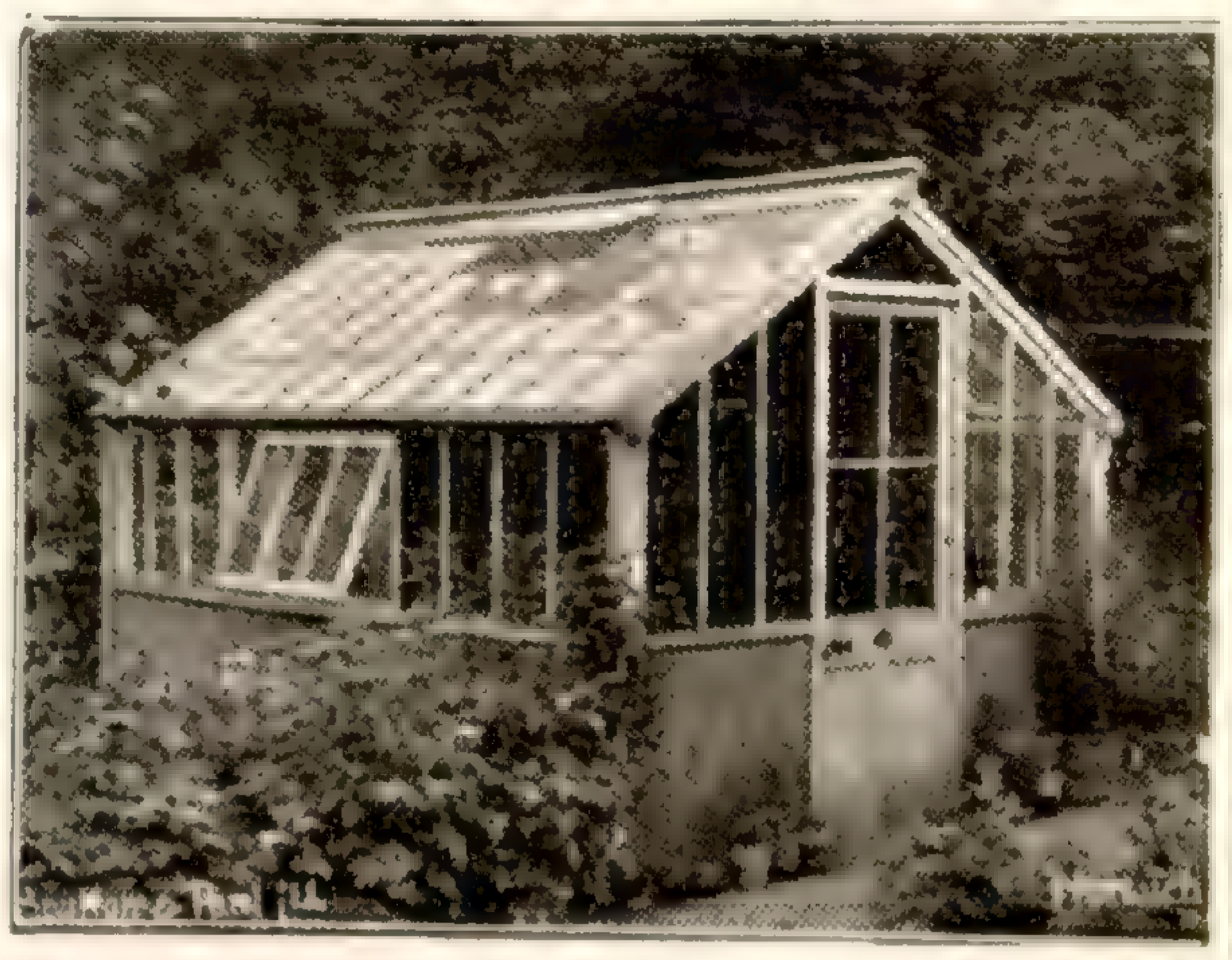

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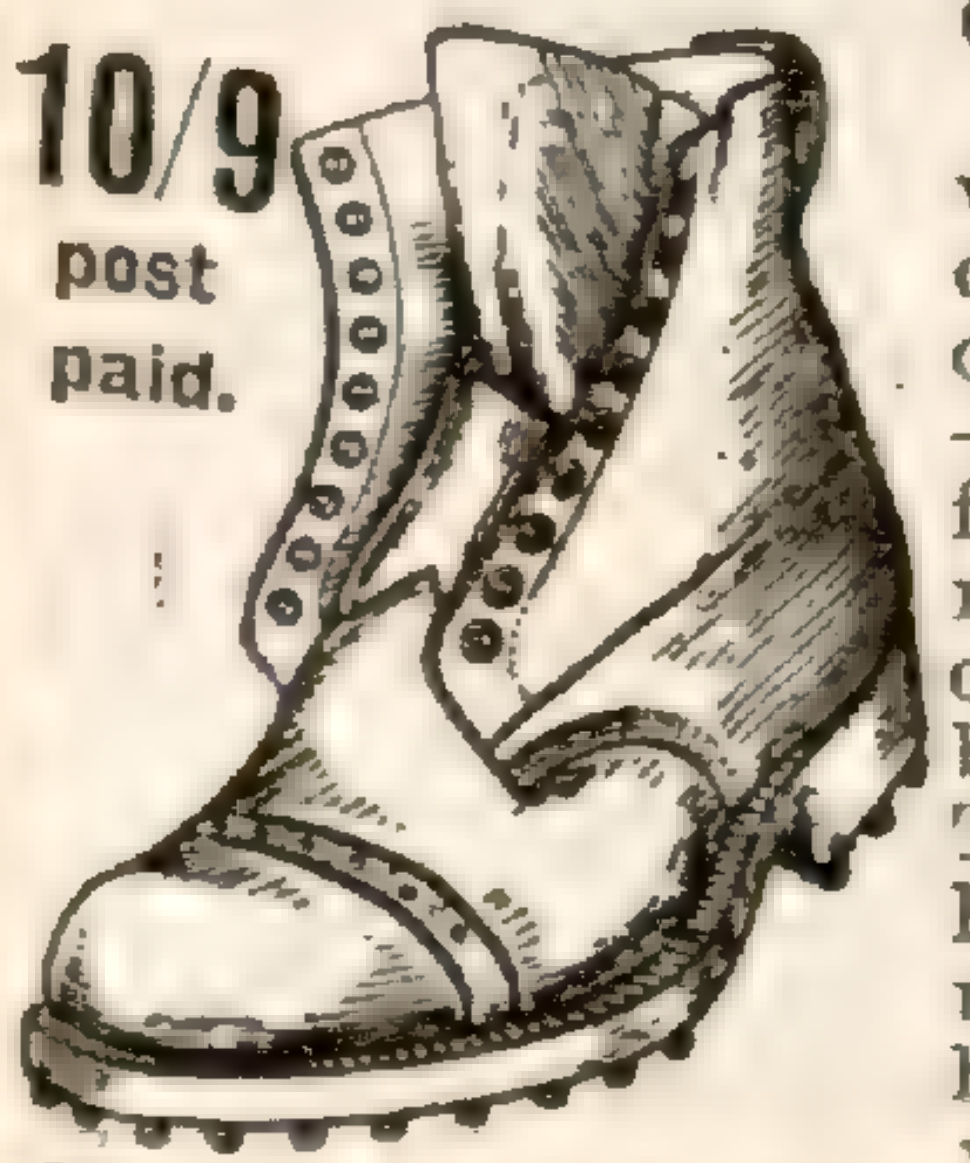

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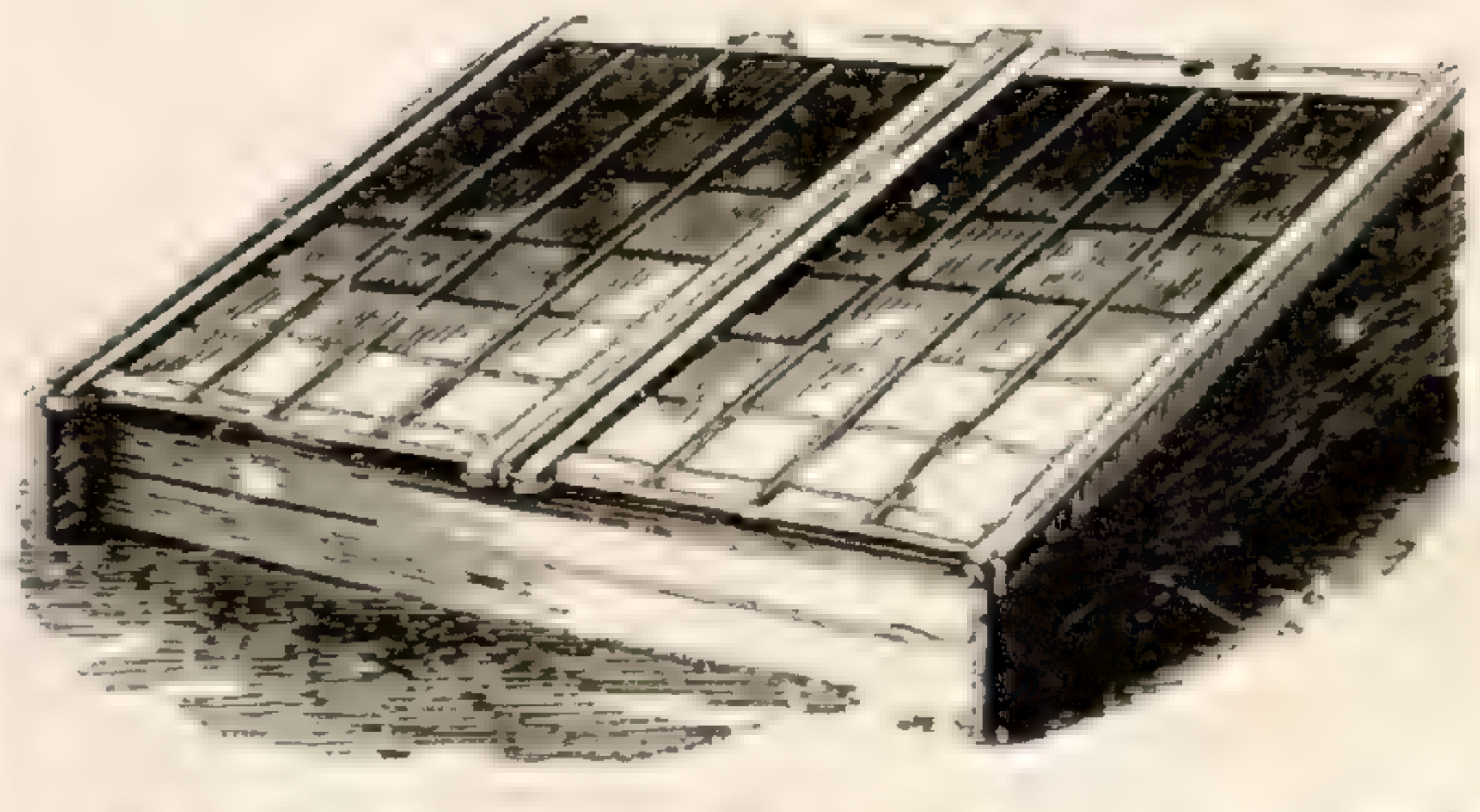

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| Sizes and Prices, Glazed and Painted. | | £ | s. | d. |
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DOMESTIC SERVANTS WANTED IN ONTARIO (CANADA).

Third specially conducted party of 100 domestics, comprising Cooks, Housemaids, House-Parlourmaids, and Generals, will sail 24th October. Wages from £2 10s. to £5 per month. Positions guaranteed. An experienced Ontario Government Matron accompanies each party to destination. Special Rates. Book early. Write for full official information to Department X. Y. Z., Ontario Government Building, 163, Strand, London, W.C.

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**ORNAMENTAL TREES, ROSES, FRUIT TREES,** AND **HARDY FLOWERS, etc.**

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pulley into the acid solution. Immediately the cyanide touches the solution the window must be shut, so that the fumes generated cannot reach the operator. The best plan is to place the diluted sulphuric acid in bottles fitted with a cork in which two slits are cut, one to admit air and the other to allow an even stream to flow upon the cyanide, and so provide for a slow and even generation of gas. In this case the cyanide should be placed at intervals along the path of the house, in enamel or earthenware bowls, and the bottles of sulphuric acid be so placed, in a little cage, that they can be readily tilted over. Everything being in readiness, the cord or cords attached to the tilting cages should be passed through the key-hole of the door; the operator must then go outside the house, shut the door, stop up the chinks, and then pull the cords so that the bottles are tilted and the sulphuric acid solution comes into contact with the cyanide. Keep everyone away from the house for at least an hour, but then, if ventilators can be opened from outside by means of a cord or stick, open them, but this must be done in such a way that the operator does not inhale the escaping fumes. Half an hour later fling the doors open, but the house should not be entered for another hour. Cyaniding should be done in the evening and in still weather. A leaflet on the subject is issued by the Board of Agriculture, and can be obtained free on application; the address is 4, Whitehall Place, London, S.W. It is necessary to point out that the cyanide fumes are deadly poison, and that carelessness in fumigating with it may mean death to the operator.

UNHEALTHY BEGONIAS.—A. M.: I am sending you a few leaves of Begonia Gloire de Lorraine, and should be glad if you can explain why they present such an unhealthy appearance. For some considerable time the plants grew well, and then they seemed to stop, and presently came to look very unhealthy. The begonias are growing in a temperature of from 55 to 60 degs.—The begonias have been growing in a confined moist atmosphere, and the leaves present very much the same appearance as do vine leaves when grown in a badly-ventilated vinery. The amount of moisture used in the house would, doubtless, not have been excessive had ventilation and heating been carried out satisfactorily. A great many of the failures that occur among the soft-wooded stove and greenhouse plants are due to an attempt to maintain the temperature of the house by keeping all the ventilators closed. Fresh air is very necessary, and the use of a little extra heat during damp, dull weather is a matter of great importance, as it will permit ventilation without materially reducing the temperature. Amateurs very frequently make the mistake of imagining that ventilation is only of service for the reduction of temperature.

RULES FOR AN AMATEURS' HORTICULTURAL SOCIETY.—M. D., Whetstone: I should be much obliged if, in a coming issue, you would give me some rules for starting a high-class amateur horticultural society, or tell me where I could obtain such rules.—Instead of publishing a list of rules for such a society, we suggest you write to the secretary of the National Amateur Gardeners' Association, Mr. F. A. Poulton, Rosemount, New Barnet, Herts, for a copy of the Association's rules. You might also write to Mr. H. R. Darlington, Park House, Potter's Bar, for a copy of the rules of the Potter's Bar Amateur Rose Society. In each case a stamped, addressed envelope, large enough to hold a schedule, will bring an early answer to your request.

CARNATIONS WITH BURST CALYX.—J. W. B., Mayfield: I have a house of perpetual carnations just coming into bloom, but a good many of the flowers came with a split calyx. Could you give me the reason of this trouble? The plants look very healthy.—The splitting or bursting of the calyx of a carnation bloom is often an inherent failing that no amount of careful cultivation will overcome; but excessive feeding is likely to aggravate the trouble. Small rubber rings placed round the calyx just as the blooms open will mitigate the evil, but if care is taken to select varieties which scarcely ever show a split calyx, then a great deal of trouble and disappointment may be avoided.

DR. M. C. COOKE.—A. H., Pinner: You will have seen our correction respecting Dr. M. C. Cooke. The announcement of his death appeared in the "Kew Bulletin," but Dr. Cooke is, we are glad to learn, very much alive.

### NAMES OF PLANTS.

W. W. S., Selby.—1, Begonia microphylla; 2, Rivina humilis; 3, Hibbertia dentata; 4, Cattleya labiata.

M. E. C., Derby.—1, Ruellia Portelliæ; 2, Thyrsacanthus rutilans; 3, Aglaonema costata; 4, Calanthe Veitchi.

B. P. N., Nottingham.—1, Epiphyllum truncatum; 2, not recognised, send when in flower; 3, Geonoma gracilis; 4, probably Raphiolepis ovata.

A. W., Bath.—1, Nepenthes Burkei; 2, Oncidium varicosum Rogersi; 3, Berberis aquifolia; 4, Cryptomeria elegans; 5, Dalechampia Roezliana.

H. G., Bray.—Crotons are difficult to name from a single leaf; so far as we can make them out yours are: 1, Reidi; 2, Golden Ring; 4, Interruptum aureum; 6, Lord Derby.

J. L., Wimbledon.—The fern is Scolopendrium vulgare crista-galli, and the grass is Elymus arenaria. The specimens of bamboo are not sufficient for identification, but we believe No. 2 is Phyllostachys nigra.

### NAMES OF FRUITS.

F. F., Portsea.—Beurré Sterckmans.

A. B., Uckfield.—1, Not recognised; 2, Souv. de Congres; 3, Golden Noble.

T. D. M., Maidenhead.—1, Dumelow's Seedling; 2, Sturmer Pippin; 3, Wealthy.

W. B., Eynsham.—1, Quite out of condition; 2, Swan's Egg; 3, Comte de Lamy.

E. C., Heytesbury.—1, Loddington; 2, Fearn's Pippin; 3, Ribston Pippin; 4, Beurré Diel.

G. L. S., Dorking.—1. Reinette de Canada; 2, Newton Wonder; 3, Lane's Prince Albert; 4, probably a very small Mère de Ménage.

## GARDENING ENGAGEMENTS.

Mr. Alex. Holm, for the past ten years nursery manager to Messrs. D. and W. Croll, Dalhousie Nurseries, Broughty Ferry, has been appointed general shop and nursery manager to Messrs. Thomas Kershaw and Sons, Lim., Keighley, Yorkshire. Mr. Holm takes up his new duties on November 28.

Mr. Alexander Innes, for nearly twenty years head gardener to W. D. Graham Menzies, Esq., of Hallyburton, has been appointed nursery manager to Messrs. D. and W. Croll at their Dalhousie Nurseries, Broughty Ferry. Mr. Innes takes up his new duties early in December, and, in common with his many friends, we would congratulate him on the appointment.

Mr. Donald McInnes, foreman at Glamis Castle Gardens, has been appointed head gardener to W. D. Graham Menzies, Esq., of Hallyburton, Coupar Angus, in succession to Mr. Alex. Innes.

## FORTHCOMING ENGAGEMENTS

MONDAY, November 18.—National Chrysanthemum Society's Executive Committee, Carr's Restaurant, Strand, 7 p.m.

TUESDAY, November 19.—Royal Horticultural Society; committees meet at 12 o'clock; lecture at 3 p.m. on "Some of the Gardens of Bournemouth," by Dr. Hamilton; Scientific Committee at 4 o'clock.

Norwich Chrysanthemum Show; three days.

WEDNESDAY, November 20.—National Chrysanthemum Society's Late Exhibition, at Essex Hall, Strand; Conference in the evening, when Dr. Russell will lecture on "Soil Sterilisation."

Hull Chrysanthemum Show; three days.

North of England Horticultural Society, at Hull.

Newcastle Chrysanthemum Show; two days.

THURSDAY, November 21.—Linnean Society.

FRIDAY, November 22.—Hawick Chrysanthemum Show; two days.

Aberdeen Chrysanthemum Show; two days.

Dunfermline Chrysanthemum Show, two days.

## OBITUARY.

◆

### MR. ALEXANDER DYER.

There passed away, at Manchester, the other day a gentleman who was a well-known seedsman and gardener at Kittybrewster, N.B. This was Mr. Alexander Dyer, who carried on for a long period a successful business at Kittybrewster in the premises now occupied by Mr. James Robertson, to whom he disposed of his interest some time ago. Mr. Dyer was greatly respected in the North of Scotland, and there is much regret felt at his death. Mrs. Dyer and two members of the family survive him.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.
Height above Sea-level, 150 feet.

| DATE. 1912. NOVEMBER 3 TO NOVEMBER 9. | SUNSHINE. | TEMPERATURE OF THE AIR. | | | |
|---|---|---|---|---|---|
| | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Nov. 3—Sunday | 2 30 | 34 | 31 | 47 | 26 |
| ,, 4—Monday | 0 24 | 42 | 41 | 53 | 30 |
| ,, 5—Tuesday | — | 47 | 47 | 52 | 41 |
| ,, 6—Wednesday | — | 48 | 48 | 51 | 48 |
| ,, 7—Thursday | 2 12 | 49 | 49 | 56 | 48 |
| ,, 8—Friday | — | 52 | 51 | 54 | 50 |
| ,, 9—Saturday | 0 6 | 50 | 49 | 55 | 49 |
| Means | (total) 5 12 | 46 | 45 | 53 | 41 |

| DATE. 1912. NOVEMBER 3 TO NOVEMBER 9. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Nov. 3—Sunday | trace | 42 | 47 | 51 | 18 |
| ,, 4—Monday | 0 25 | 43 | 45 | 50 | 22 |
| ,, 5—Tuesday | 0·02 | 45 | 46 | 50 | 39 |
| ,, 6—Wednesday | — | 47 | 46 | 49 | 45 |
| ,, 7—Thursday | — | 48 | 47 | 49 | 46 |
| ,, 8—Friday | — | 49 | 48 | 49 | 43 |
| ,, 9—Saturday | — | 50 | 48 | 49 | 48 |
| Means | (total) 0 27 | 46 | 47 | 49 | 37 |

## CATALOGUES RECEIVED.

AMOS PERRY, ENFIELD.—A particularly useful catalogue of rock garden and border plants, and in these directions it is a masterpiece of comprehensiveness.

GEO. COOLING AND SONS, BATH.—Roses occupy the larger part of this autumn list, but fruit trees, ornamental trees and shrubs, climbing plants, etc., also have a place in it.

MANSELL AND HATCHER, RAWDON, YORKS.—Under the title of "Orchids for Amateurs" this firm has issued an illustrated priced list of popular and useful orchids that do not offer any special difficulties of cultivation to amateurs.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

---

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

B. H. BROOKS, Court Gardens, Brantham, near Manningtree, Essex, highly recommends H. SMEE as Journeyman (Second), Inside, in good establishment; 6 years' experience; excellent references; age 24; disengaged.

FOREMAN-GROWER seeks Re-engagement; 13 years' experience; Grapes, Tomatoes, Cucumbers, Chrysanthemums, Carnations, Forcing Bulbs, Mushrooms, etc.; first-class references. C. F. SEEKINGS, Whitestakes, near Preston, Lancs.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working) requires SITUATION where three or more are kept; highest references; age 33; single. B. H. BROOKS, Court Gardens, Brantham, Manningtree, Essex.

GARDENER (Head or Single-handed), 29 years' experience, inside and out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head Working).—Mr. W. CHITTY, Head Gardener to J. P. Morgan, Esq., jun., Wall Hall, Watford, can with every confidence RECOMMEND his Foreman, Arthur Allen, age 33, who has been with him for the past four years, to any lady or gentleman.

GARDENER and FLORIST seeks SITUATION, Private or Trade; experience, 8 years abroad; Table and House Decoration; first-class experience, Inside and Out; forcing, propagating; quick, intelligent, hard working; good appearance; age 29. BERGER, 58, Doughty Street, London, W.C.

GARDENER (Second of five or six); Inside, or Inside and out; thoroughly experienced, Fruit, Plants, Decorating; two years second; excellent references; disengaged; age 27; married when suited. Address, W. LYDE, North Ripley, Christchurch.

GARDENER (Second or Third, or Single-handed not objected to); age 32; single; 10 years last place. Address, WYLES, Bekesbourne Hill, near Canterbury, Kent.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 28th.

"Having got a situation through your paper, I wish my name to be taken off your Register. Thanking you very much.

Yours truly,
J. S.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Head Working).—Major PITT, Pett Place, Charing, Kent, can highly recommend F. FOLKARD to any Lady or Gentleman requiring a practical man well up in Flowers and Fruit; age 31; married when suited.

GARDENER (Head) seeks RE-ENGAGEMENT; 17 years' practical experience; age 32; married; highest reference; can be recommended by late employer. MOUNSDON, Reading Road, Pangbourne.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head Working), life experience in all branches of the profession, including Fruit, Flowers, and Vegetables, early and late forcing; 12 years' reference. S. KERSLAKE, Delbury, Hope Street, Wordsley, Stourbridge.

GARDENER (Under); 5½ years' baronet's gardens; experienced Carnations, Herbaceous borders, Fruit, Vines, Chrysanthemums, Greenhouse and Stove Plants; can milk; use scythe; age 21; tall and strong; good references. F. GAGE, Angel Street, Hadleigh, Suffolk.

KEEN and reliable FOREMAN GROWER of all Market Produce seeks Situation in Market Nursery; life experience; age 35; married; good references. MOODY, 152, Victoria Road, East Leicester.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Sunnyside, Moorfield Road, Orpington, Kent.

YOUNG MAN, age 21, single, as GARDENER (Under); Flower and Kitchen Garden; four years' experience; excellent references; near London preferred. J. PURNELL, near Church, Crudwell, near Malmesbury, Wilts.

## Situations Vacant.

GARDENERS WANTED for ONTARIO (Canada) Fruit and Vegetable Farms in March; £4 to £6 monthly, with board guaranteed; pay own fare. Councillor RUMSEY, Shrewsbury.

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**For NOVEMBER 23, 1912.**

**Please Repeat my Advertisement.**

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**Address**..........................................

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**Date**..........................................

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Next week's **GARDENERS' MAGAZINE** will be of Special Interest to Growers of Hardy Fruit. It will include articles on :—**Selection of Sites for Orchards; Some Newer Apples; Cultivation of Plums under Glass; Bush Pear Trees; Loganberries and Raspberries; Estate Fruit Plantations; and Dessert Apples for the North.**

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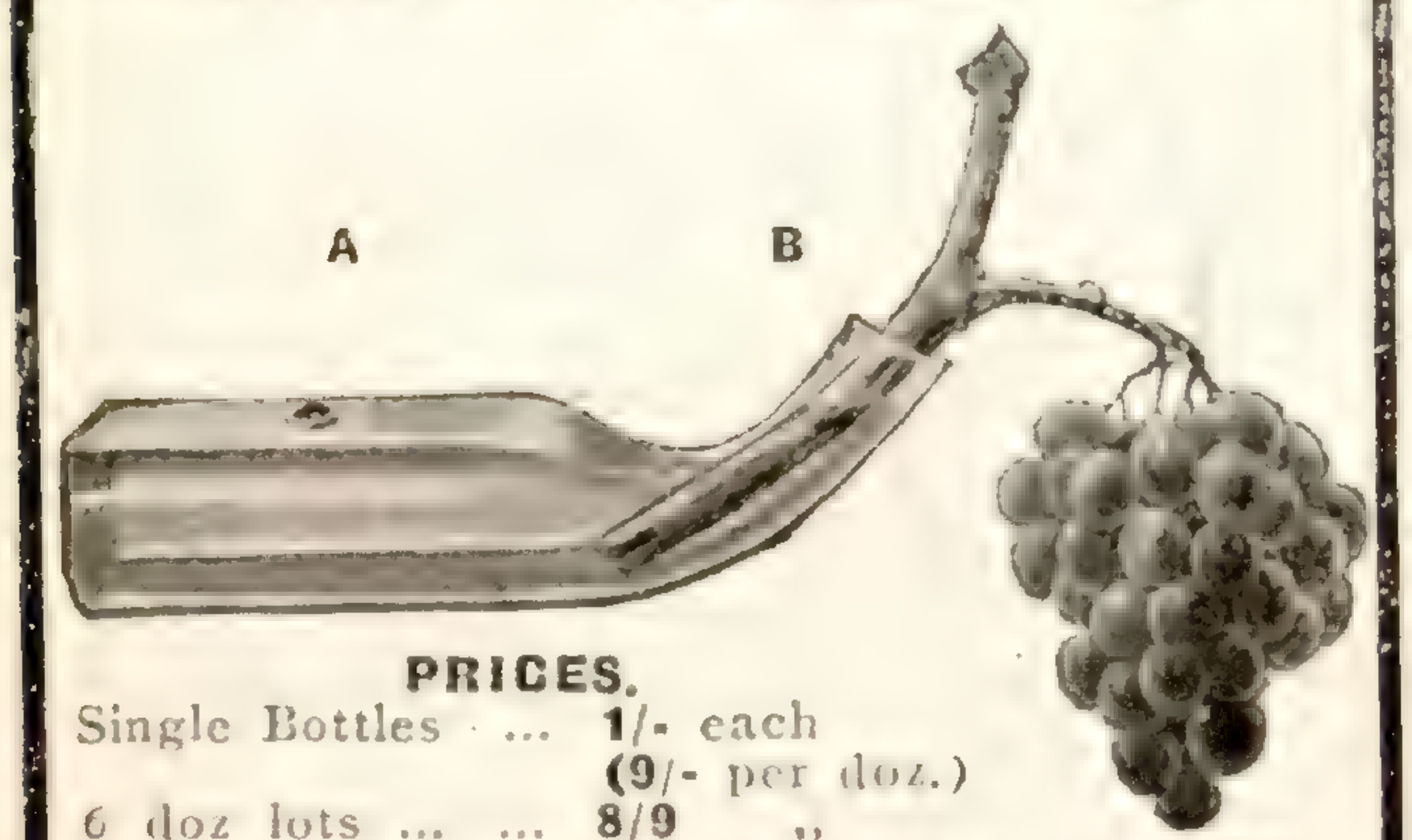

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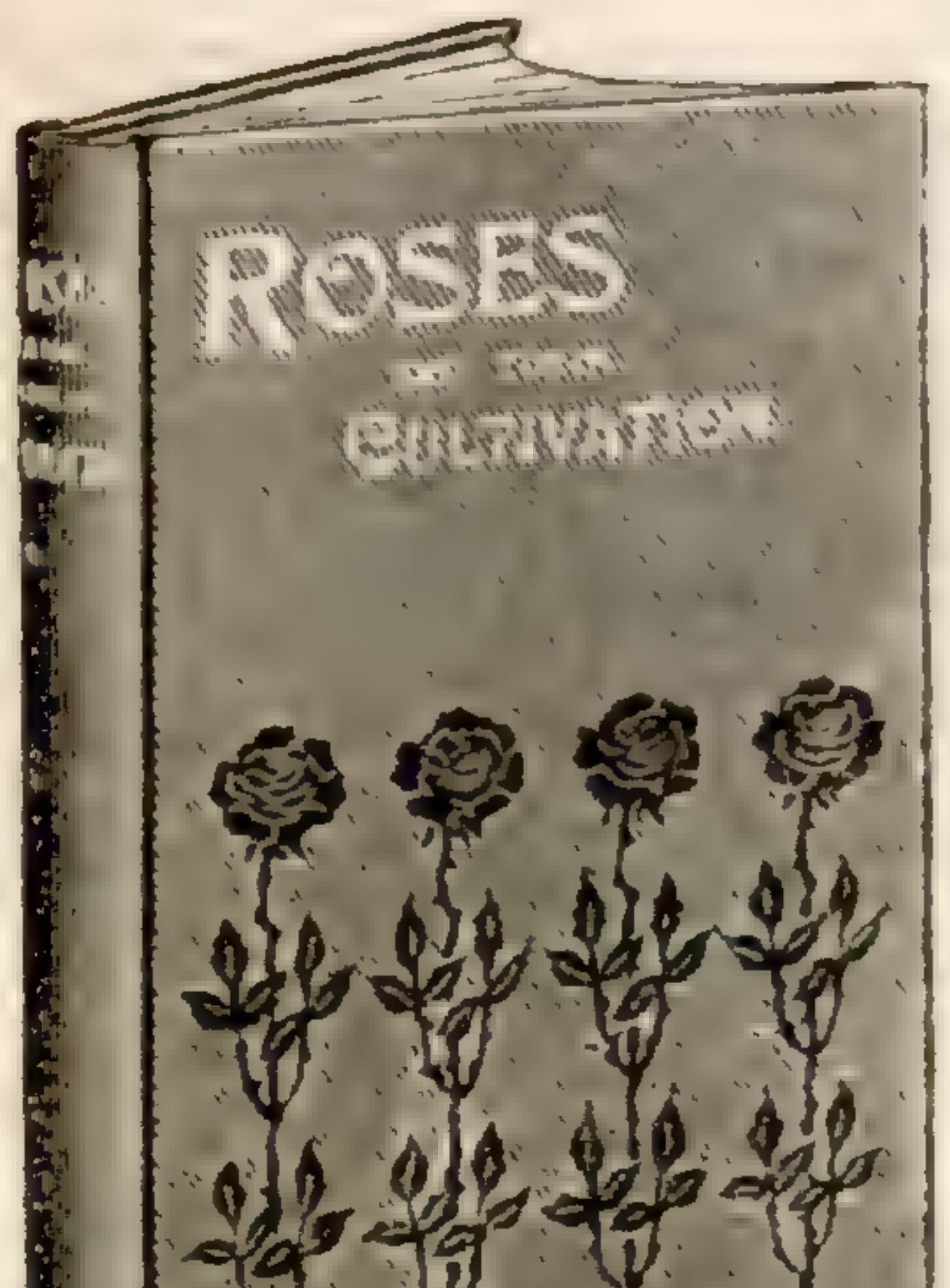

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**FRUIT CULTURE—Illustrated.**

# THE GARDENERS' MAGAZINE.

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SATURDAY, NOV. 23, 1912

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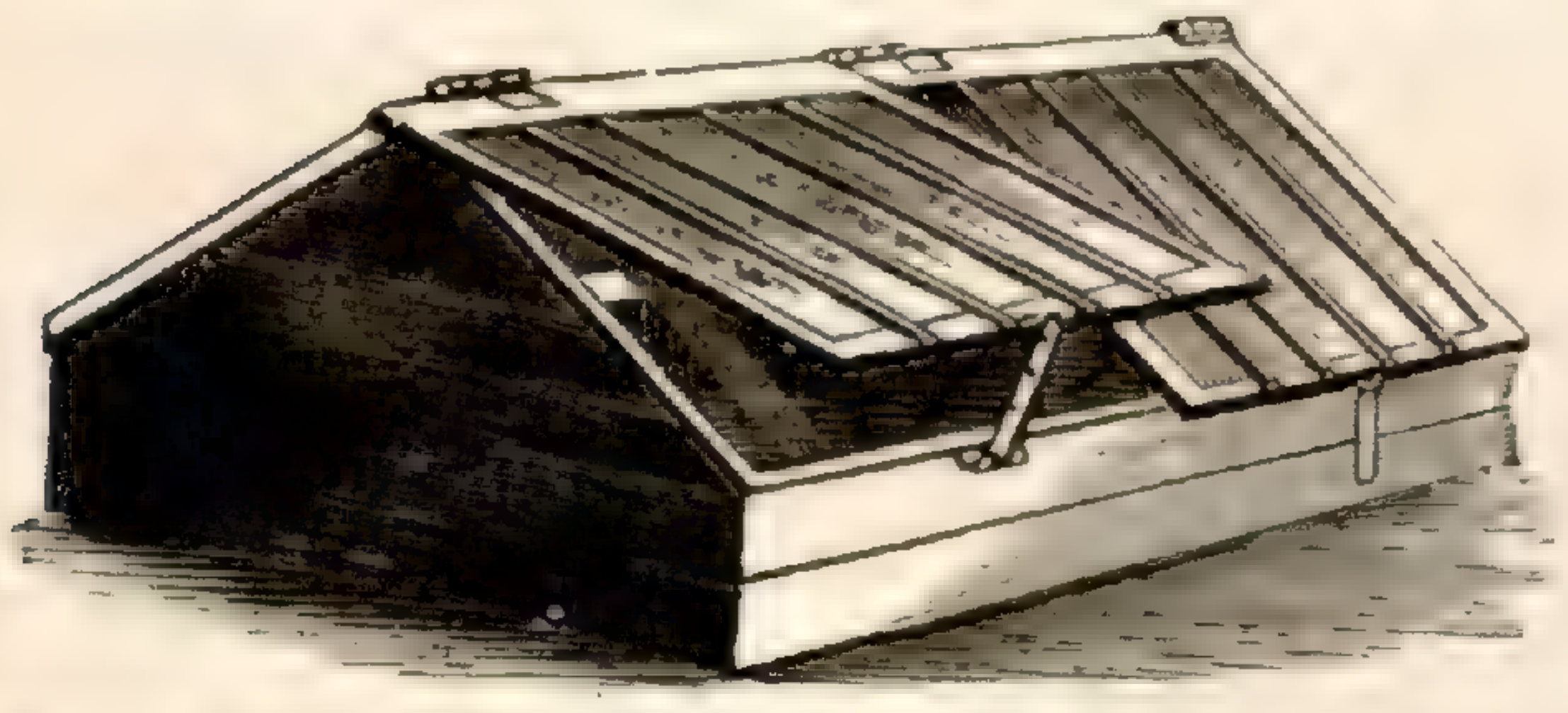

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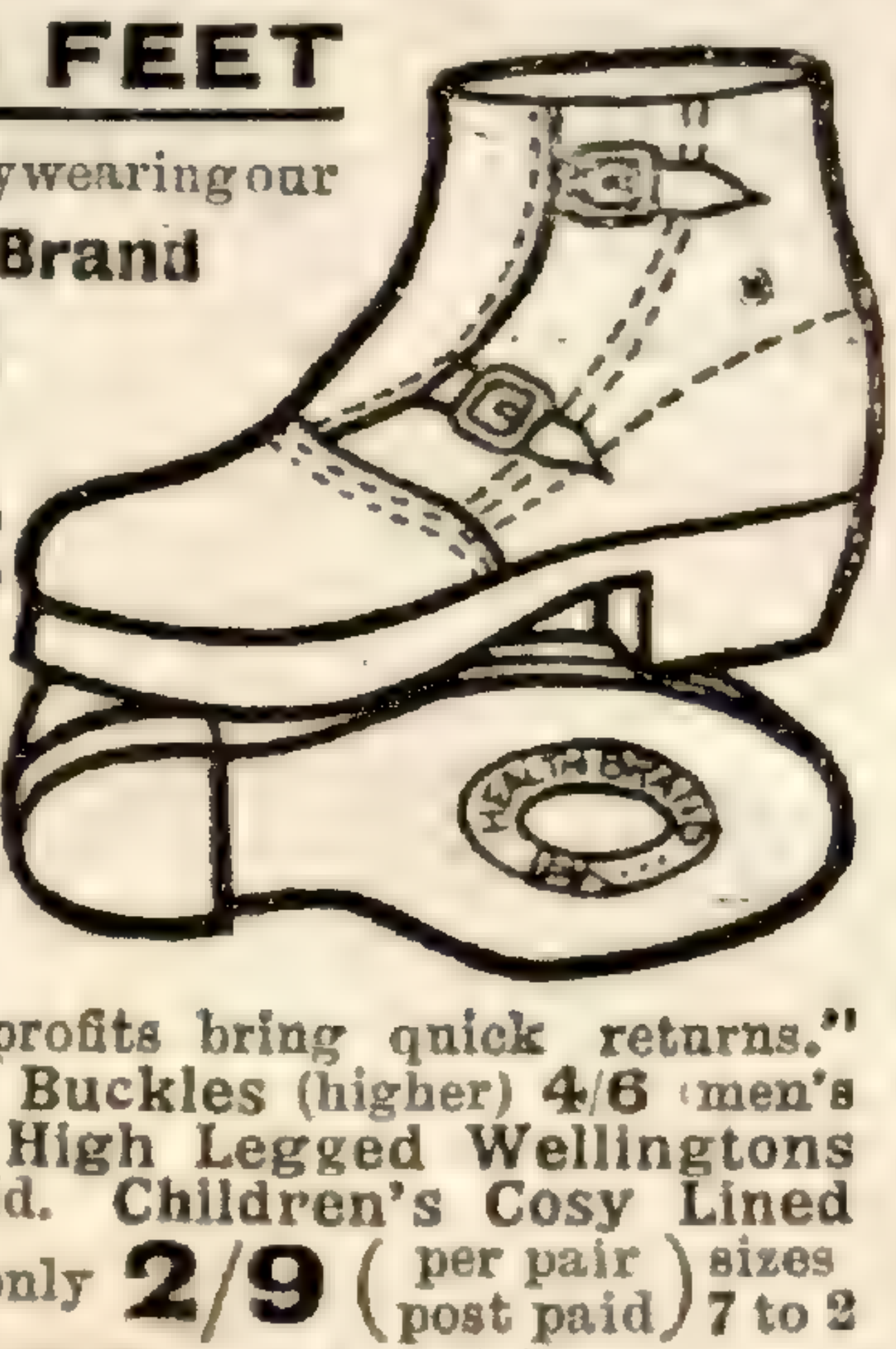

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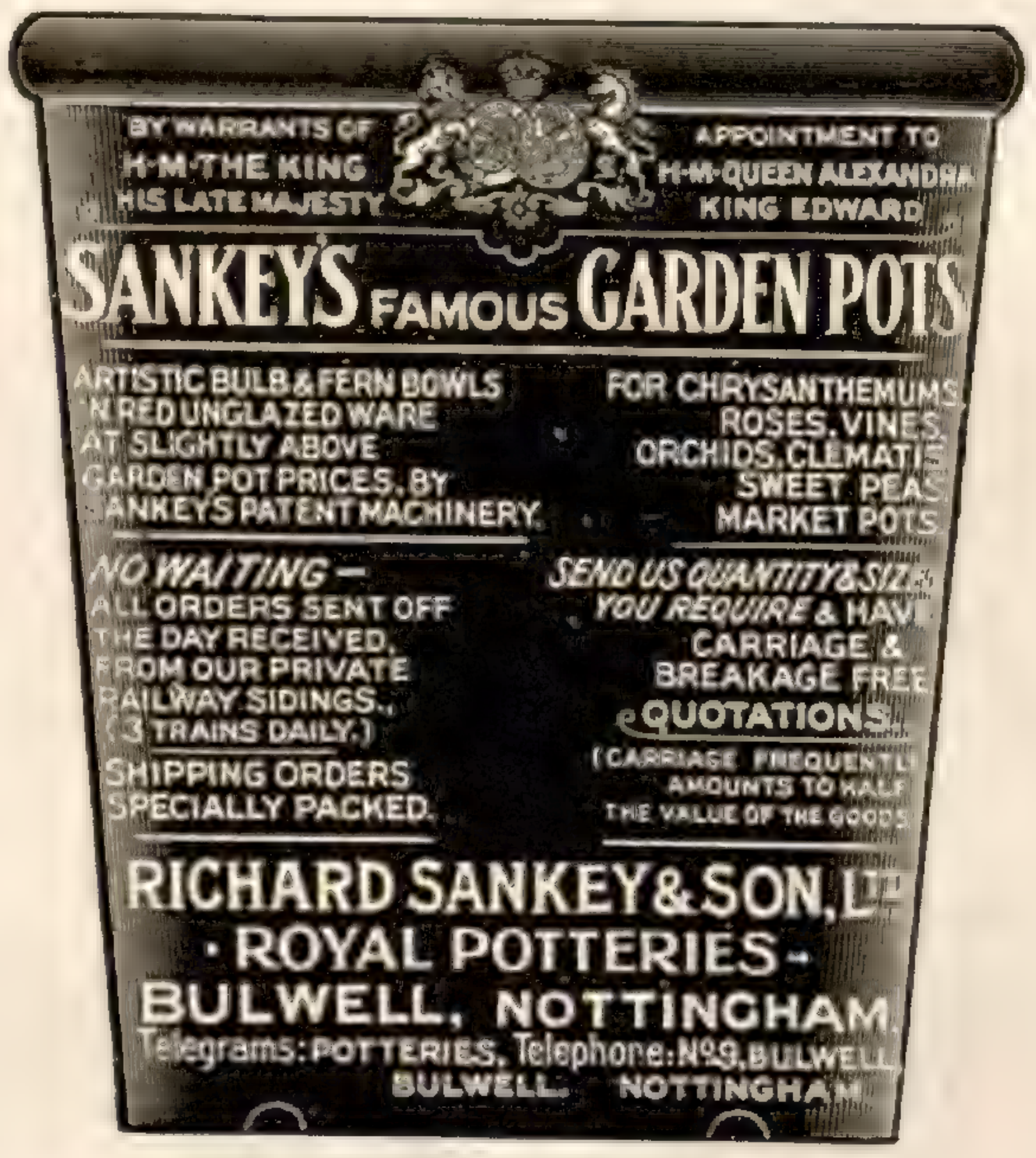

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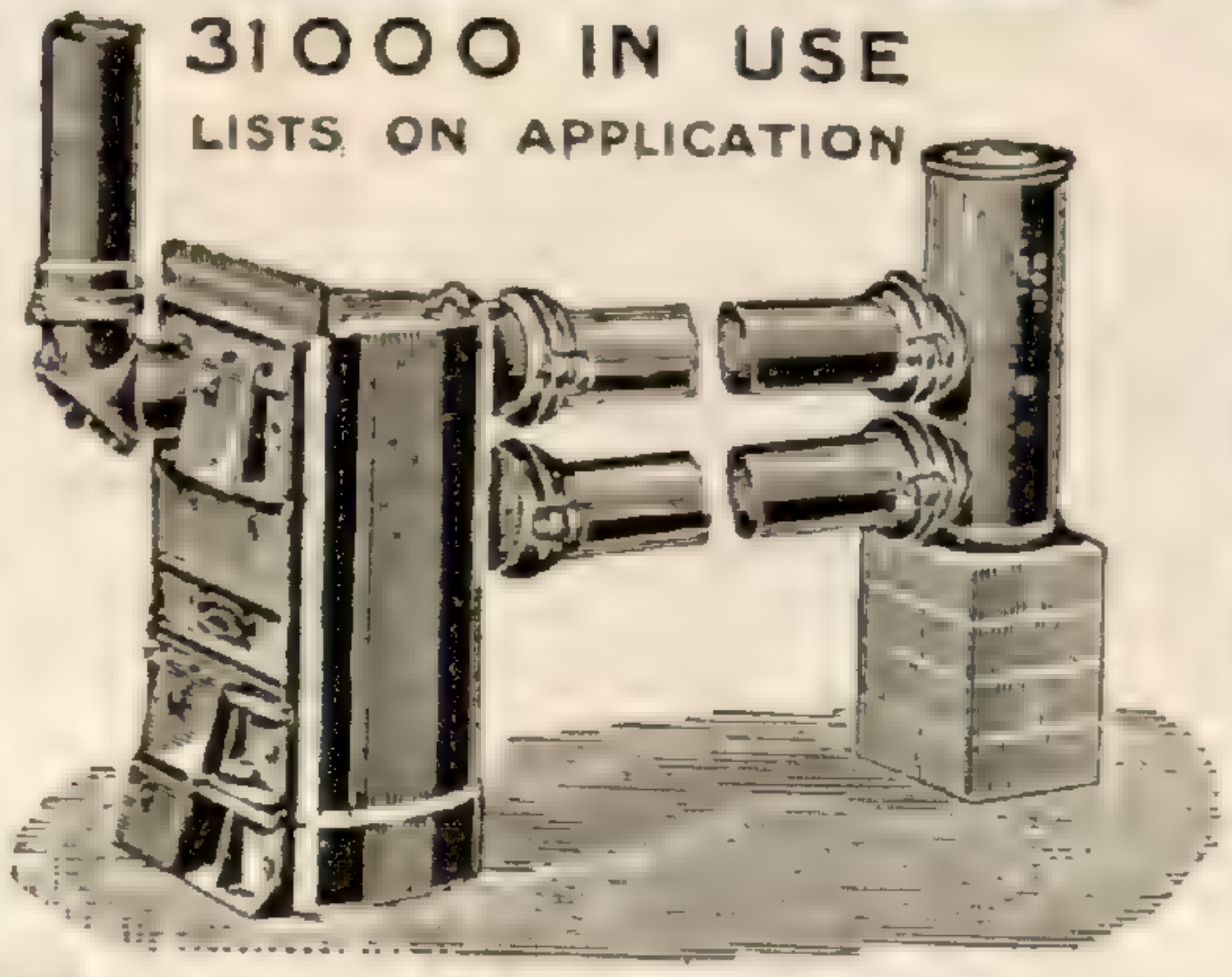

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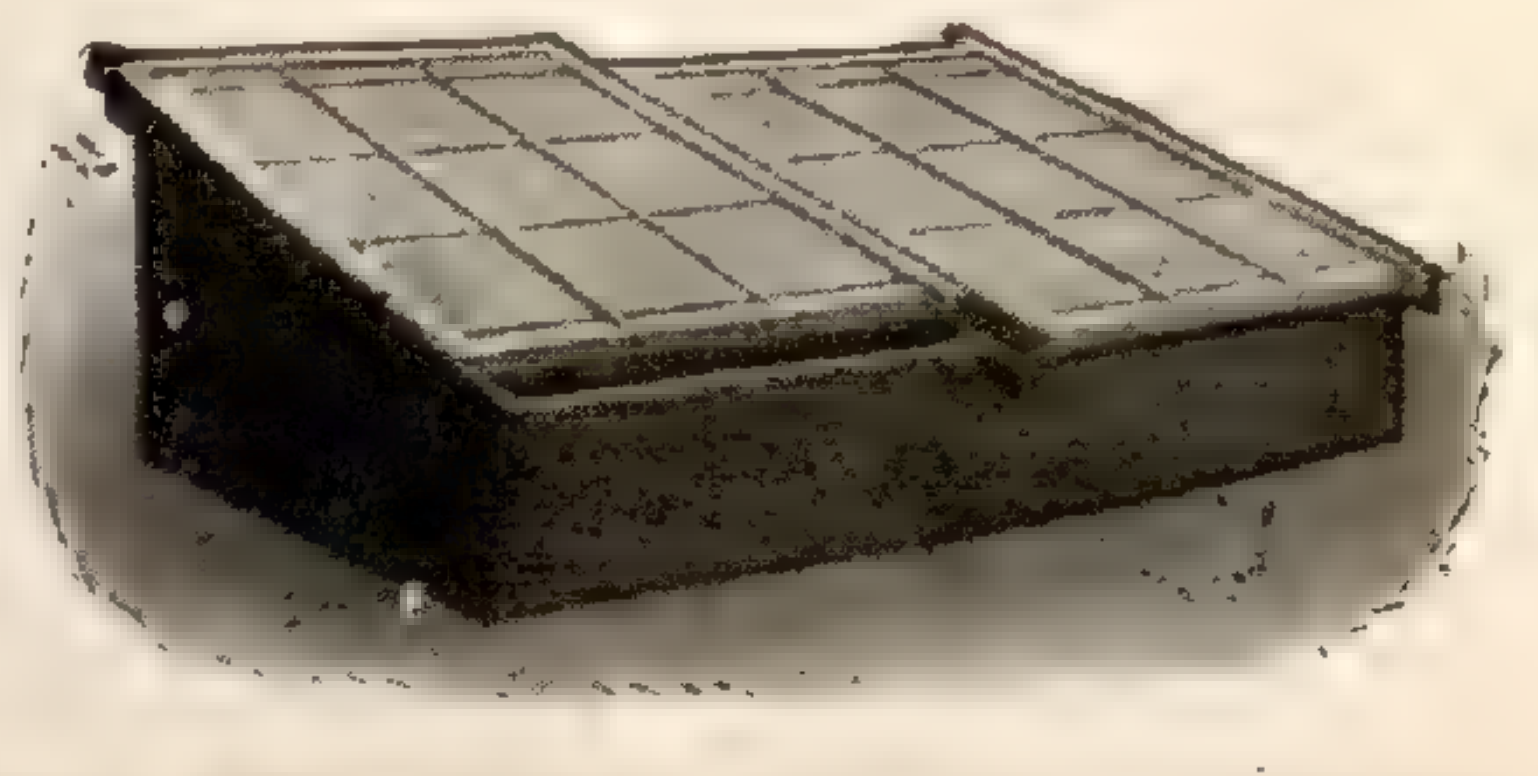

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VOL. LV.—No. 3,082. SATURDAY, NOVEMBER 23, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Skins.

It may safely be asserted that every living organism is enveloped in a skin of some kind, since it is impossible to conceive of the fluid contents of the cells which compose them being entirely unconfined, and the very fact of the existence of the cell, itself a walled-in receptacle, as the first essential of organic vitality, precludes such an idea. Even the most primitive, perhaps, of all organisms, the amœba, a mere jelly-like mass, possesses a skin of some sort, which, though permeable at all points, and thus able to take in solid food and excrete its indigestible remains at any part of its surface, is tough enough to retain its living content of protoplasm, and the all-essential nucleus. From this indefinite skin, however, of the primary simple cellular organisms, there has been engendered, in the process of evolution, a practically infinite diversity of very tangible and definite ones, which clothe both the animal and plant world with defensive armour, in the shape of skins and barks, which, in their turn, are often protected by external excrescent coverings of hair, scales, thorns, etc., again of great diversity. In the plant world we find this covering to fall into two great divisions, called, botanically, the exogenous and endogenous, of which the first may be exemplified by those trees which build up an annual ring of wood protected by an independent ring of bark, which forms an outer cylinder of skin enclosing the trunk, branches, and twigs; and the second by the great grass family, which forms no annual rings, and has the surface protected only by a tough, hard, woody deposit coherent with the internal material of the stems, there being no separable bark, and no concentric zone. In the endogens there are also other kinds of protective skins than barks proper; thus in the palms and yuccas, and tree ferns, etc., trunks are formed by the persistence of the extreme bases of their foliage, which survive in the form of scales, and so contribute to form a trunk, which they thus protect. In the exogenous tribes, to which most of our trees and shrubs belong, the nature of the bark varies greatly. Thus in the Plane trees it is smooth, rigid, and unyielding, the result being that as the trunk increases in diameter by the growth of the annual ring of wood within it, the bark is forced off in large flakes, showing, however, in that case, that a fresh layer has been engendered beneath it, and that, in point of fact, with such barks also an annual ring must be engendered outside that of the wood proper. Most trees, however, bear bark of a different character, which is permanent, and such barks are found to be pervaded with cracks and fissures, and by splitting and subsequent filling up they permit the internal wood ring to grow, while imperceptibly expanding in sympathy, and thus increasing correspondingly the diameter of the trunk, branches, and twigs. It is in this way that we arrive at the thick corrugated bark of the oak, which is carried to the extreme in the dense rough coating of the Cork Oak. This splitting of the bark, and subsequent filling up, finds its parallel in the thick armour of the tortoise, the armadillo, and other thick-skinned or shelled animals, whose shells increase in size, not by periodical shedding and renewal, but by accretion of growth round the edges of the plates which compose them, and it has been found that even the scales of fishes may reveal their age by similar annual or seasonal growth. The skins of plant foliage are formed on different lines, since they have but a temporary existence. They are usually very thin, and are permeated by innumerable small breathing pores, or stomata, to permit ingress and egress of the carbonic acid gas required by the cells for the nourishment of the plant, and the oxygen gas which it throws off when the carbon has been thence extracted. In connection with this class of skin many adjuncts have been evolved, mostly of a protective character, such as hairs, bristles, thorns, and glands, all of which serve their purpose in preventing undue transpiration, or the attacks of insect and other foes. In another direction there are the skins of fruits, which take many forms, from the film-like delicate skins of the strawberry tribe to the cast-iron ones of the nuts, culminating in the cocoanut and Brazil nut. In the fruits, indeed, we have skins of two distinct categories, viz., those of the pulps, which, as adjuncts to the seed, we see in the apples, pears, oranges, pomegranates, and others, and those of the seeds themselves. In these fruits we have only to dissect them until we arrive at the seed proper to note an immense difference. The seed is, so to speak, Nature's special care, and thus, while we find the pulps but thinly clad, the pips and stones are strongly armoured, and in the nut tribe, as already cited, they are often thrice-armoured where the exigencies of their environment, and the character of their foes have necessitated such a provision.

MR. F. JORDAN.

**Mr. F. Jordan,** head gardener to Lady Nunburnholme, Warter Priory, Pocklington, York, has had a distinguished career, and his name is well known among the ranks of exhibitors, especially in connection with fruit culture. But Mr. Jordan is not merely a successful exhibitor, he is one of the most capable of gardeners to be found in the United Kingdom, and that is saying a good deal. He commenced his gardening career at Grimston Garth, East Yorks, under the late Mr. Webster, with whom he remained three years. Then followed eighteen months in the nurseries of Messrs. W. Backhouse and Son, York, and a subsequent eighteen months at Huttons Ambo Hall, Malton. Seeking wider experience, he entered the gardens at Osberton Hall, Worksop, where, under the late

Mr. Woods, he learned all that clever fruit and vegetable grower could teach him, and to the influence of Mr. Woods Mr. Jordan attributes not a little of the success he has gained. Three years were spent at Osberton Hall Gardens, followed by nine and a-half years at Welbeck Abbey, where Mr. Jordan acted as foreman in the various departments with such success that in 1897 he was appointed head gardener to J. Corbett, Esq., Impney Hall, Droitwich. While at Droitwich Mr. Jordan exhibited both indoor and hardy fruits frequently at prominent exhibitions, and with great success. Mr. Jordan stayed at Impney Hall until the death of Mr. Corbett, and in 1906 he took charge of the gardens at Warter Priory. Lady Nunburnholme is a most enthusiastic gardener and garden lover, and she has made extensive new gardens and remodelled the old ones, and the work has been carried out under Mr. Jordan's capable superintendence. Those able to judge consider that if health and strength are continued to Mr. Jordan and his generous employer, the gardens at Warter Priory will presently become the most famous in a county containing many fine examples of horticultural skill.

**Cardiff Chrysanthemum Show,** of which a report appeared in a recent issue, resulted, we regret to learn, in a heavy loss. The deficit on the society's work during 1911 was rather heavy, and, with a view to make this season's show more attractive to the public, afternoon and evening concerts of a high-class character were included in the programme, but the attendance was poor on both days, and the experiment proved a failure.

**Cercidiphyllum japonicum.**—Sir Herbert Maxwell, Bart., sends us the following interesting note relating to this attractive tree: "Having raised some thousands of this tree from seed a few years ago, I was at a loss how to make use of the plants. Failing to obtain any information as to its stature I planted it as an ornamental shrub, until I happened to come across a notice of it in Mr. Veitch's 'Traveller's Notes,' in which he records having measured a specimen at Hakodate twenty-one feet in circumference of stem. Thereafter I began planting it as a forest tree. It is almost without a rival for autumnal colour." To fully appreciate the importance of the information given by Sir Herbert Maxwell, it is necessary to remember that his estate of Monreith is situate in Wigtownshire.

**R.H.S. Exhibitions and Meetings,** 1913.—The following exhibitions will be held by the Royal Horticultural Society during 1913: March 4 and 5, Bulb Show. April 15 and 16, Daffodil Show. May 20, 21, 22, Spring Show in the Gardens of the Royal Hospital, Chelsea. May 27 to 30, Rhododendron Show. July 1, 2, and 3, Show at Holland House. September 23, Vegetable Show. October 7, 9, and 10, Exhibition of British-grown Fruit. From the foregoing list of the exhibitions that will be held by the Royal Horticultural Society next year it will be seen that no longer will horticulturists have an opportunity of meeting their friends once a year in the classic gardens of the Inner Temple. It is somewhat difficult to repress a feeling of regret that these meetings have become a thing of the past, but the change was imperative, for the exhibitions have long outgrown the space afforded by the gardens, and the inspection of the exhibits in the congested tents has for some years past been attended with some difficulty, and not a little discomfort. The increased area at Chelsea will enable the Council to provide more spacious tents, ventilated in accordance with modern ideas, and we doubt not that they will take full advantage of their opportunities. With reference to the change, the Council state that it is with considerable reluctance they have found it necessary to change the site of the spring show, but the increased attendance, and consequent overcrowding, in recent years, compelled them to seek for a larger site. They have, therefore, accepted the invitation of the Governors of the Royal Hospital to hold the spring shows in future on the same site as the recent Royal International Horticultural Exhibition. The annual meeting will be held on February 11, when, as was the case this year, there will be no exhibition or other meeting. The dates on which meetings of the various committees will be held are as follows: January 7 and 21; February 4 and 18; March 4 and 18; April 1, 15, 29; May 14 (Wednesday, not Tuesday) and 20; June 3 and 17; July 1, 15, and 29; August 12 and 26; September 9 and 23; October 7 and 21; November 4 and 18; and December 2. By holding the first of the May meetings on Wednesday, May 14, the holding of an exhibition on a day following a Bank Holiday will be avoided next year. A conference on primulas will be held in the Lecture Room at Vincent Square in April next, on a date that has yet to be fixed, under the presidency of Sir John Llewelyn, Bart.

**York Flower Show and Gala.**—This great Northern horticultural event will next year take place on June 18 and the two following days. In sending us the dates of the exhibition, Mr. F. Arey, the secretary, informs us that, with a view to obviating the inconvenience caused to exhibitors by the old system of tents, the Council have purchased from Messrs. Piggott Brothers and Co., Lim., a portion of their patent ventilated tent which was erected by them at Chelsea last year for the Royal International Horticultural Exhibition, and that this will be erected by that firm for the ensuing flower show. The above new system of tents will give an increased area or floor space of at least 20 per cent., whilst the outer walls will be twelve feet in height, and, it is hoped, meet the requirements of exhibitors, and give ample scope for the display of their exhibits, no matter in what position they may be placed. The perfect ventilation of the tent will, it is hoped, prove a great boon to those whose duty compels them to remain therein during the show. The Council trust that the exhibitors will show their appreciation of its enterprise by making special efforts to come to York in June next, and thereby combine in maintaining the high status already attained by the York Show.

**R.H.S. Examinations,** 1913.—The dates of the examinations that will be held by the Royal Horticultural Society next year are as follows: January 6, Examination for gardeners employed in public parks and gardens; April 2, Examination in the principles and practice of Horticulture; April 23, Examination in cottage gardening—open to Elementary and Technical School teachers only.

**North of England Horticultural Society.**—The current issue of the monthly magazine of this society contains a personal appeal from the secretary, which, in the interest of horticulture in the North of England, will, we hope, receive the attention from the Fellows and members it so well merits. The appeal made by the Rev. J. Bernard Hall is to the effect that it is absolutely necessary to make an effort to obtain more Fellows and members, and also donations, sufficient to clear off the initial expenses. The members of Council and committees, and the auditor, deserve, Mr. Hall points out, the society's best thanks for their voluntary and valuable services, but he states, "Unless an effort is made to raise sufficient to cover the initial expenses on or before the annual meeting, on Wednesday, January 15, 1913, by each one of us using our personal influence, the society will have a crisis to face." Mr. Hall also states that he has no fear of the results of a combined movement, on the clear understanding that the society is to be for the seven Northern counties, and that its work is to be primarily educational and scientific, but the detailed office work is now so arduous that he cannot do all he would like to do in the way of personally initiating and developing a forward movement. He further adds, if his services are to be retained he must feel the society is wanted, and know that the necessary cash is forthcoming. At a meeting of the Leeds Committee of this society it was reported that the recent exhibition at Leeds resulted in a balance of £20, which has been handed over to the Leeds Workpeople's Hospital Fund, in accordance with the arrangements under which the show was held.

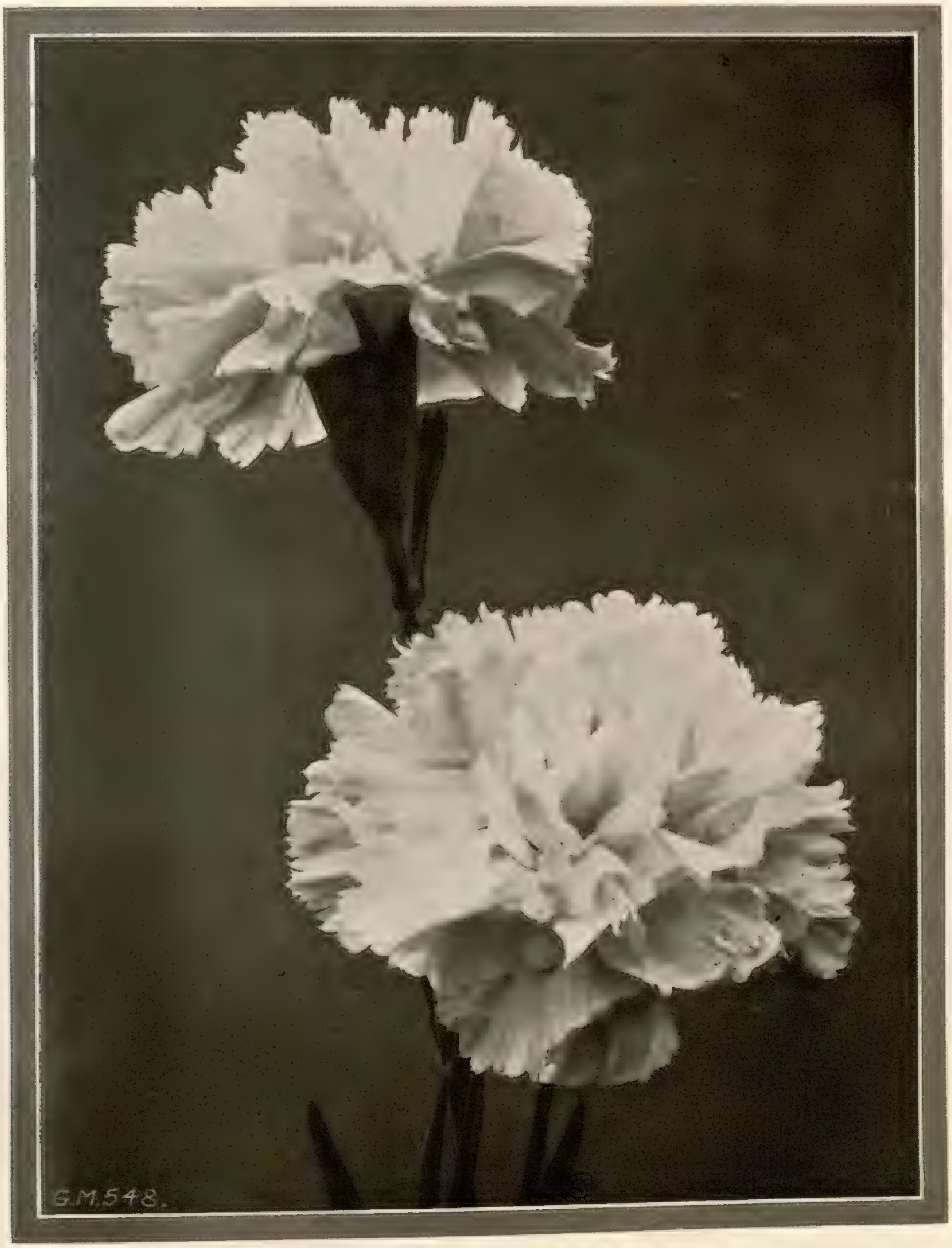
**Mr. James Eddie, F.R.H.S.,** nurseryman and seedsman, High Street, Inverurie, N.B., has been appointed third Bailie of the burgh, in which he has carried on business for many years. Mr. Eddie entered the Inverurie Town Council about four years ago, and last year his abilities were recognised by his being appointed Dean of Guild. His services in that capacity have now led to his attaining the position of Bailie, which will probably be only a step to still greater promotion in the burgh of Inverurie.

**Sale of Orchids at Manchester.**—At the sale by Messrs. Protheroe and Morris, at Manchester, of choice orchids from Mr. S. Gratrix's collection, good prices were obtained. The more noteworthy lots were Cypripedium Moonbeam, with three unflowered growths, 110 guineas; C. Actæus Bianca superbum, two strong growths and two breaks, 30 guineas; C. Alcibiades Illustrious, two unflowered growths and breaks, 30 guineas; C. Troilus Cravenianum, two unflowered growths, 27 guineas; and Odontoglossum Samuel Gratrix, two old bulbs and one new growth, 90 guineas.

**R.H.S. "Journal."**—The second part of the 38th volume of the "Journal" of the Royal Horticultural Society, which has just been published, contains much to interest those who are more or less immediately concerned with horticulture. The principal are: "Drought and Gardening," by Professor Bayley Balfour, M.A., F.R.S.; "The Flowers of Apples as an Aid in Identification," by Mr. E. A. Bunyard; "Tender Plants for Warm Corners," by Mr. R. J. Lynch, M.A., V.M.H.; "Professor J. Henslow as Ecologist," by "Professor J. S. Henslow as Ecologist," by "Present-day Water Lilies," by Mr. J. Hudson, V.M.H. The report on the Delphinium Trial held at Wisley is especially deserving the attention of raisers and cultivators of these stately-growing and beautiful hardy flowers.

**National Chrysanthemum Society.**—A beautiful exhibition was held at Essex Hall on November 20, to which we hope to refer in detail in our next issue. A score or more of new varieties came up for consideration, and the special prize offered for the best new single-flowered seedling was won by Messrs. Cragg, Harrison, and Cragg, Heston, with Portia, a large variety of reddish terra-cotta hue.

# ROYAL HORTICULTURAL SOCIETY.



NEW PERPETUAL CARNATION SNOWSTORM.

A large, pure white, deliciously fragrant variety. A.M., R.H.S., November 19. Mr. W. Lawrenson, Yarm-on-Tees.

The large and interesting exhibition held at Vincent Square, Westminster, on Tuesday, November 19, attracted very many visitors, and for two hours or more it was a very difficult matter to get from one part of the hall to another, because of the crowd. Among notable personalities who visited the hall there were the Right Hon. the Speaker, the Duke of Marlborough, Sir Albert Rollit, and Mr. and Mrs. Winston Churchill.

Chrysanthemums, carnations, and winter-flowering begonias were largely shown, orchids were fairly well represented, and so were trees and shrubs; while vegetables, fruits, and paintings of garden scenes and flowers were quite plentiful.

FLORAL COMMITTEE.

Trees and shrubs were very much in evidence on this occasion, and a large and interesting exhibit was staged across the end of the hall by Messrs. John Waterer and Sons, Lim., Bagshot. These were all evergreen subjects, chiefly conifers and hollies, with an edging of veronica. Golden yews, cupressus, and retinosporas were very charming, but probably the most effective plants were the long-stemmed standards of Retinospora filifera aurea, R. obtusa aurea, Ilex aquifolia argentea pendula, I. a. Watereri, I. a. aurea, Taxus adpressa, T. baccata aurea, and Thuia occidentalis pendula. Some of the hollies were grandly berried, notably a specimen of I. a. balearica with dense clusters of deep red fruits. The small-leaved Ilex crenata and I. c. aurea, and the black berried I. c. latifolia were very distinct; while the big pyramids of golden and silver hollies were grand specimens, and there was a fine example of the elegant Phillyrea Vilmorineana.

Another considerable group of shrubs was aranged on the floor by Mr. G. Reuthe, Keston. Though few of these were in bloom, one could not fail to be attracted by the handsome leafage of the numerous species of Himalayan rhododendrons.

A particularly good bank of winter-flowering begonias, from Messrs. Clibrans, Altrincham, indicated the value of these plants for November flowering. The begonias were capitally grown, and carried large numbers of flowers. Miss Clibran, Clibran's Pink, and Emily Clibran were finely represented, but the new varieties were even more brilliant—these were Splendour (A.M.), deep scarlet; Eclipse (A.M.), salmon-red; Scarlet Beauty (A.M.), bright scarlet; and Lucy Clibran (A.M.), buff, suffused rose; each secured recognition. Winter-flowering begonias were also presented in large numbers by Messrs. J. Veitch and Sons, and in their exhibit the variety The Gem was a blaze of brilliant carmine, while Winter Cheer, Julius, Success, and Ensign were all good and freely flowered. Another large exhibit of begonias was made by Messrs. Wm. Cutbush and Son, Highgate, and the white Lady Waterlow was a conspicuous variety; with these the Highgate firm showed dwarf polyantha roses and perpetual carnations.

Chrysanthemums made a brave show in the hall, and gave a splendid touch of colour. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, contributed a striking exhibit, in which there were bold stands of Japanese varieties, and beautiful bunches of such singles as Mensa, Florrie King, and Sylvia Slade. The new Japanese variety, Miss Roope, was very well shown. A corner group of singles from Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow, included beautiful vases of Elfrida, Elsa, Crimson Queen, Miss W. Wells, Merstham Jewel, Celia, and Mensa.

A bold group of single and decorative chrysanthemums came from Messrs. J. Veitch and Sons, Chelsea, and, as usual, the dwarf plants were capitally grown and beautifully flowered. The brilliant single named Feltham Crimson formed a fine central block in this effective display. Messrs. J. Peed and Sons presented single sorts in great variety, and set them up in light bunches. The single yellow variety, J. C. Pillman, was very finely shown by Messrs. H. Cannell and Sons, Swanley, in a group of chrysanthemums and cut pelargoniums.

Messrs. W. Wells and Co., Merstham, set up big pyramids of huge blooms of Japanese chrysanthemums Wm. Turner, Queen Mary, and Mrs. Drexel, with large groupings of the single varieties, Mensa, the yellow Phyllis Bryant, the crimson Brightness, and the decorative sorts Ada Brooke and December Gold, arranged in between the large blooms. A very bold and effective contribution. The Misses Price and Fife, Grove Park, Lee, displayed single chrysanthemums and some good carnation blooms. Single chrysanthemums were very well shown by Mr. T. Ward, Bishop's Stortford, popular varieties being well displayed. Mr. James Box, Lindfield, exhibited a very handsome group of singles close to one of the annexes. He had large bold stands of beautiful flowers of Ceddie Mason, crimson; Phyllis Bryant, yellow; The King, rose-red; Sylvia Slade, deep rose; Edith Pagram, Leo, and Chas. Hale.

Mr. Chapman, gardener to L. Harrison, Esq., Orchards, East Grinstead, sent a very bright single chrysanthemum named Michael Harrison (A.M.); from the Manor Nurseries, Cardiff, came Audrey (A.M.); Mr. H. J. Jones secured an A.M. for Miss Mary Fox; and Mr. A. Smith, The Convent Gardens, Roehampton, obtained a like award for the white Japanese variety, Mrs. W. T. Smith. Mr. May, gardener to the Countess of Macclesfield, Shirburne Castle, Watlington, showed a bright single chrysanthemum named Countess of Macclesfield.

A splendid lot of blooms of the new perpetual carnation Snowstorm (A.M.), set up by Mr. W. Lawrenson, Yarn-on-Tees, was a centre of attraction. This is a grand pure white, fringed variety of large size, great purity, and excellent substance. The calyx is good, and the flowers are very sweetly scented, like the Old Clove variety. Messrs. S. Low and Co., Enfield, had the new carnations Benora and Rosette on view among vases of popular sorts. The carnations shown by Messrs. Allwood Brothers, Hayward's Heath, contained two good new varieties, i.e., Salmon Enchantress, a salmon sport from an old and popular sort; and Mary Allwood, rich rosy-cerise, with broad outer petals, and making up a handsome bloom; an Award of Merit was granted in each instance. Sunstar, a good yellow variety, was conspicuous in the group of carnations submitted by Mr. C. Engelmann, Saffron Walden.

The handsome Polypodium Mandaianum was again finely shown by Mr. W. A. Manda, St. Albans, and he also showed the variegated Anthericum Mandaianum, which should prove a popular basket plant. Plumbago coccinea, with its slender, graceful spikes of small red flowers, was exhibited in some quantity by Mr. Fitch, gardener to Sir George Faudell-Phillips, Hertford. Cyclamens, poinsettias, and standard capsicums were associated with ferns by Messrs. H. B. May and Sons Edmonton.

Some interesting alpines, chiefly saxifrages, sedums, and other lowly plants, were contributed by Messrs. Whitelegg and Page, Chislehurst; Aubrietia Violet Queen was notably bright and good. Messrs. T. S. Ware, Lim., Feltham, showed a large collection of alpines, and the pan of Androsace coronopifolia, carrying its dainty white flowers, was very pretty. Saxifages in great variety, largely encrusted sorts, were shown in little pans by Messrs. J. Piper and Sons, Bayswater.

## ORCHID COMMITTEE.

A large and handsome group of orchids which attracted general attention was staged by Mr. Hunter, gardener to the Duke of Marlborough, Blenheim Palace. It consisted chiefly of the beautiful blue Vanda cærulea, and there were about two hundred and sixty fine spikes on two hundred and twenty plants, arranged over moss and ferns, with a large number of Cypripedium insigne and C. i. Sanderæ at the base The effect of the group was unfortunately largely spoiled by the use of vivid scarlet draping from the edge of the stage to the floor. There were some fine forms of Vanda cærulea staged, and among these we made special note of V. c. Curtisi, with undulating sepals and reticulating deep blue veins; V. c. Mrs. Spencer Churchill, deep blue; and V. c. Margaretta, with very broad segments.

Some capital cypripediums were shown by Messrs. J. Cypher and Sons, Cheltenham, and there were handsome, substantial flowers of C. Thalia gigantea, C. Leeanum giganteum, C. Milo Westonbirt var., C. Actæus gigantea, C. Mdme. Jules Hye, the bold C. Fulshawense, and the light-hued C. Milky Way. Messrs. Sander and Sons, St. Albans, brought up the handsome deep purple-lipped Lælio-cattleya Haroldiana, the finely-spotted Cypripedium Pyramus Black Prince, and the broad C. Dreadnought; Lælio-cattleya Statteriana was well shown in the group.

Orchids were shown by Messrs. J. Veitch and Sons, Chelsea, and the group consisted largely of cypripediums, with a few odontoglossums and Lælio-cattleya Pedro, L.-c. Priam, and L.-c. Nysa, C. Baron Schroder, C. Actæus Tracey's var., C. Regina, and C. Leeanum Clinkaberryanum were notable among the cypripediums. Very bright were the cypripediums exhibited by Messrs. Swan and Price, Keyfield, St. Albans.

Messrs. Hassall and Co., Southgate, sent a few cypripediums and odontoglossums, and Messrs. Charlesworth and Co., Hayward's Heath, staged Odontioda Bradshawiæ, the fine Cypripedium eboraicum, the quaint little Oncidioda Marjorie, produced from Oncidium Forbesi and Cochlioda Noetzliana; and Oncidium hybridum. Oncidium varicosum Rogersi, Vanda cærulea, Cattleya Armstrongæ, C. Fabia and L.-c. St. Gothard were among the best things in the group from Messrs. S. Low and Co., Enfield.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford, showed a few choice orchids, and secured an Award of Merit for Lælio-cattleya Scylla, a free-flowering yellow hybrid, and for Cypripedium Elatior, a neat and pretty hybrid from C. Leeanum and C. Baron Schroder. Mr. W. H. Davidson, Orchid Dene, Twyford, gained a First Class Certificate for a fine plant of Lælio-cattleya Bella Orchid Dene var., with large purple blooms. From Westonbirt, Tetbury, Mr. Alexander, orchid grower to Sir George Holford, brought up Cypripedium Latona (A.M.), a broad, shapely flower, white and green.

## FRUIT AND VEGETABLE COMMITTEE.

Vegetables, finely grown and finely staged from Messrs. Jas. Veitch and Sons, Chelsea, formed a very handsome and educational feature of the exhibition. There were a hundred varieties on view, and the background was formed of celery, kales, broccoli, capsicums, the brilliant-hued Chilian beet, and red cabbages. In the foreground a few of the best dishes from a goodly set were Hollow-crown parsnips, Ailsa Craig onions, the new Intermediate beet, white artichokes, celeriac, Snowball and Yellow Perfection turnips, Model carrots, and potatoes.

A very fine collection of fruit, consisting of about seventy dishes of clean, well-coloured apples, twenty-two dishes of pears, eighteen bunches of Black Hamburgh, Muscat of Alexandria, Cooper's Black, and Prince of Wales grapes, with three dishes of medlars, an Emerald Green melon, quinces, and nuts, was staged by Mr. Edwin Beckett, V.M.H., gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree.

A collection of cabbages and kales from Messrs. Jas. Carter and Co., Raynes Park, was interesting as showing the great variation in one species of plant. Model cabbage, the Russian kale, Couve Tronchuda, Christmas, Drumhead cabbage, White Prizetaker cabbage, and Drumhead kale were a few parlarly noticeable and useful sorts.

Mr. W. M. Bennett, gardener to C. Goring, Esq., Wiston Park Gardens, Steyning, contributed about thirty dishes of apples; and Mr. C. Prentice, gardener to Mrs. W. Gordon Cumming, Hartpury House, Gloucester, displayed about fifty dishes of apples and pears, grouped with small crotons and palms. Mr. Stanard, The Gardens, Panshanger, Hertford, was awarded a Cultural Commendation for a dish of White Ischia figs.

## CERTIFICATES AND AWARDS.

First-class Certificate.—To Lælio-cattleya Bella Orchid Dene variety, from Mr. W. H. Davidson, Orchid Dene, Twyford.

Award of Merit.—To Carnations Mary Allwood and Salmon Enchantress, from Messrs. Allwood Bros., Haywards Heath; to Carnation Snowstorm, from Mr. W. Lawrenson, Yarm-on-Tees; to winter-flowering begonias Eclipse, Scarlet Beauty, Lucy Clibran, and Splendour, from Messrs. Clibrans, Altrincham; to Chrysanthemum Miss May Fox, from Mr. H. J. Jones, Lewisham; to Chrysanthemum Mrs. W. T. Smith, from Mr. A. Smith, Convent Gardens, Roehampton; to Chrysanthemum Audrey, from Manor House Nurseries, Cardiff; to Chrysanthemum Michael Harrison, from Mr. Chapman, gardener to L. Harrison, Esq., Orchards, East Grinstead; to Cypripedium Latona, from Sir George Holford, Westonbirt, Tetbury; to Lælio-cattleya Scylla and Cypripedium Elatior, from F. Menteith Ogilvie, Esq., Oxford.

## MEDALS.

Gold.—To Messrs. J. Veitch and Sons, Chelsea, for vegetables; to Mr. Hunter, gardener to the Duke of Marlborough, Blenheim, for orchids, and also a Silver Lindley Medal; to Mr. E. Beckett, gardener to the Hon. Vicary Gibbs, Elstree, for fruit.

Silver-gilt Flora.—To Messrs. J. Waterer and Sons, Bagshot, for evergreen shrubs; to Messrs. W. Wells and Co., Merstham, for chrysanthemums.

Silver Flora.—To Messrs. Stuart Low and Co., Enfield, for orchids; to Mr. F. Galsworthy, Chertsey, for paintings of flowers; to Mr. H. J. Jones, Lewisham, for chrysanthemums; to Messrs. J. Veitch and Sons, Chelsea, for begonias and chrysanthemums.

Silver Knightian.—To Mr. Prentice, gardener to Mrs. W. Gordon Cumming, Hartpury House, Gloucester, for fruit; to Messrs. E. Westmacott and Co., Leadenhall Street, for South African preserves.

Silver Banksian.—To Mr. J. Box, Lindfield, for chrysanthemums; to Messrs. Clibrans, Altrincham, for begonias; to Messrs. Wm. Cutbush and Son, for carnations, begonias, etc.; to Messrs. H. B. May and Sons, Edmonton, for cyclamens and ferns; to Messrs. Jas. Carter and Co., Raynes Park, for cabbages and kales; to Mrs. Miller, Moyleen, Marlow, for preserves and sweetmeats; to Miss Sewell, South Kensington, for jams.

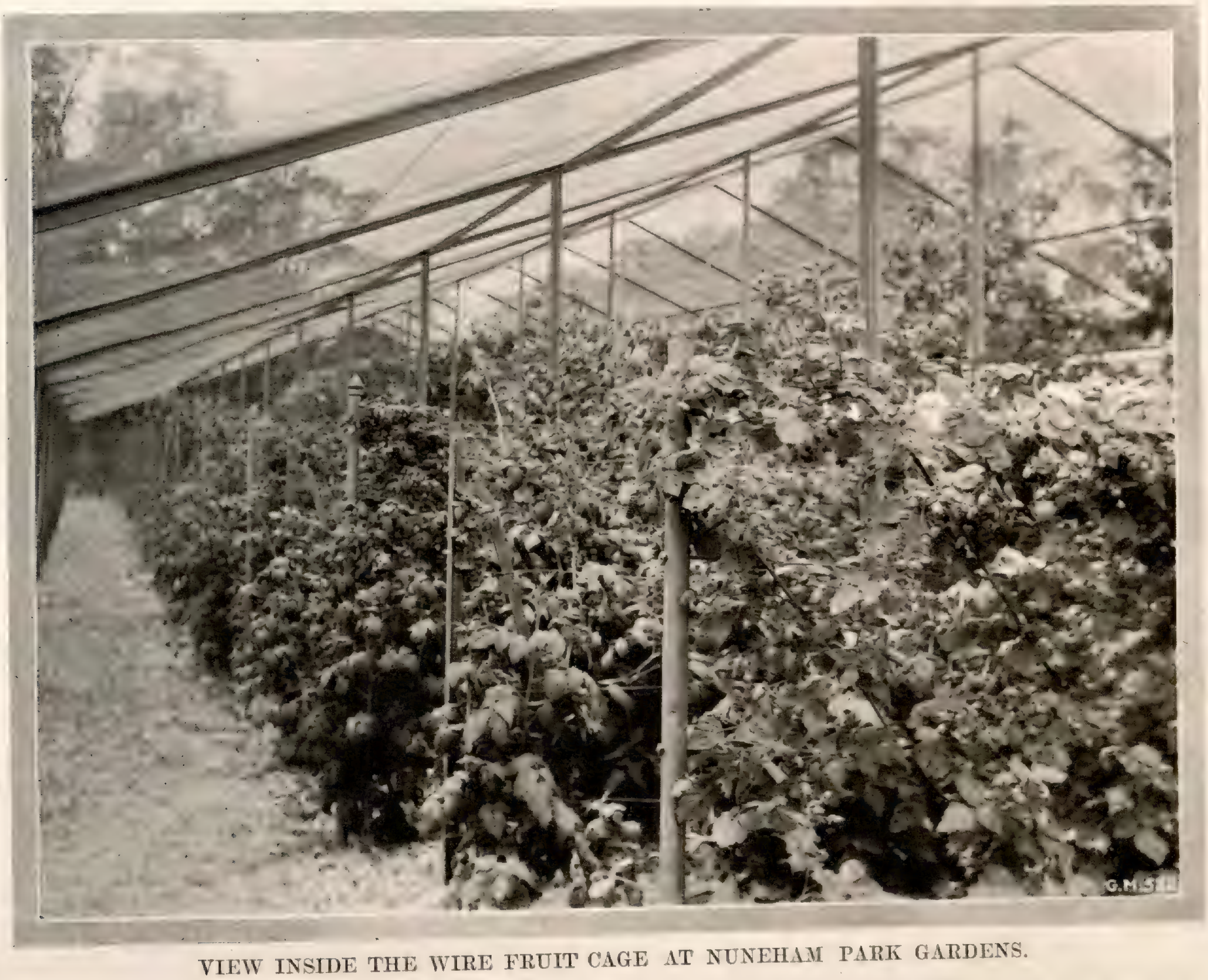
Bronze Banksian.—To Mr. Bennett, gardener to C. Goring, Esq., Wiston Park, Steyning, for fruit.

# THE WIRE FRUIT CAGE AT NUNEHAM PARK.

In some districts where birds are very plentiful considerable difficulty is experienced in preserving small fruits from their depredations. The use of fish-netting is by no means satisfactory, because one or two flaws in the netting will enable the birds to enter, and there is little satisfaction in catching and killing the feathered thief after it has devoured a considerable portion of the fruit crop. Further, the use of netting is likely to cause no small damage to the trees unless all the small fruits are in regular plots, so that a wooden framework can be erected and covered in with netting. But if this sort of thing has to be done annually it becomes a fairly serious problem, and at once suggests the desirability of a permanent protection, such as the one depicted here, which has done duty for several years at Nuneham Park Gardens, near Oxford.

This fruit enclosure was put up in 1907 by Messrs. Boulton and Paul, of Norwich, and is 187ft. long by 50ft. wide. Mr. C. E. Munday, head gardener to L. Harcourt, Esq., states that the structure is 16ft. 6in. high to the ridge, and 6ft. 6in. to the eaves, and therefore throws off snow easily. It runs east and west, and all the supports are of 1¾in. angle iron work. The netting used is ⅝in. mesh. Inside, espalier trellises are placed 5ft. apart, the wires being secured by screw-bolts to the supports to allow for tightening. About half the espaliers are devoted to loganberries and raspberries, and the other half to gooseberries; and the illustrations show how well the former respond to good cultivation in this wire cage.

Three gates along one side give entrance to the enclosure, and a 4ft. path divides the plantation north and south; while a path along each side allows ample room for wheeling, cleaning, etc. In every way this wire fruit cage has answered expectations, and crops are safe from birds.



VIEW INSIDE THE WIRE FRUIT CAGE AT NUNEHAM PARK GARDENS.

# ESTATE FRUIT PLANTATIONS.

The title of this article suggests its object, namely, to draw attention to the cultivation of mixed fruit on the home estate as a crop for the purpose of profit. This may be described as a more or less modern phase of fruit culture, but it is being developed, and is frequently under the charge of the head gardener. For centuries hardy fruits like apples, pears, and plums have been grown in orchards, and when the demand arose for more of these commodities the market gardener commenced by interspersing his vegetable plots with lines of trees, and this led up to devoting land entirely to fruit. The business is somewhat speculative, it has its ups and downs, its good seasons and bad seasons, its years when prices are good and others when they are below the average, but the steady increase in fruit growing as a commercial venture affords proof of its possibilities, and it is not likely that the demand for fruit will grow less, so long as the population increases and big towns encroach further and further into country districts.

The success of commercial fruit culture, however, depends very much on one condition, i.e., the class of fruit that is grown, the method of packing, and the way in which it is put upon the market. In a word, it is the best fruit that pays, and when we hear of gluts and low prices, it is very often a superabundance of second-rate produce in the market that is responsible for this. The object, then, of any man who sets out to grow fruit as a commercial venture should be to aim at the production of the very best, for it is nothing but this that has enabled foreign growers to get such a hold on British markets.

### Sites and Soil.

Nothing could be more mischievous than the doctrine, which I am afraid has been preached by irresponsible persons in the past, that fruit culture is an easy way to fortune, and that any man who has land may plant it with fruit with a reasonable assurance that it will yield him a profit. The fruit grower may assist Nature, but he must not attempt to dictate to her, and, before setting out to form a plantation, there should be reasonable assurance that the soil is adapted to fruit culture. This being so, it is the safest plan to start in a district where fruit is already grown, and there is evidence to show that the local conditions are suitable. There are many circumstances to bear in mind, for not only should the soil be deep and of a suitable character, but it should be well-drained; if not naturally, then artificially. There should be shelter from the prevailing winds, the position should be elevated enough to be reasonably safe from those late spring frosts that are so fatal in some seasons, and the position should be convenient for the purposes of hauling and general cultivation.

The selection of the site for a fruit plantation is not a matter that should be dismissed lightly, for too much care cannot be exercised over this at the outset, and a blunder at the beginning may lead quickly to disappointment and loss of money. When putting down land as a mixed fruit plantation, there is necessarily a big initial outlay, varying according to circumstances, but it is very essential that the land should be well cultivated, and, above all things, clean. To plant fruit on land that is foul with twitch or other obnoxious weeds is a fatal mistake, and if an arable field is planted, there should be no labour stinted in getting it clean. Under some circumstances, ploughing will suffice in preparing for planting, but in others it may be necessary to resort to the more expensive operation of digging or even double digging, particularly where grass land is being broken up for fruit, as it is very desirable that the turf be buried well beneath the surface. In short, the whole success of plantation fruit culture consists in doing things well, and the better the initial start the less will be the cultural expenditure later on.

### Arranging Plantations.

There are many different ways of arranging mixed estate plantations that are suited to different conditions, but the general object is to occupy the ground and get a return as quickly as possible. To this end a certain section of the trees will be of a permanent character, consisting of apples, pears, and plums, and the other portion will be temporary and comprising such fruits as gooseberries, currants, raspberries, and strawberries. I am aware, in writing this, that there are hundreds of acres of land devoted to these latter fruits, and where the object is to grow a quantity of soft fruit, this is obviously the course to pursue, but the estate plantation I have in view is permanently intended for hard fruits, and the berries are only included as an under crop to occupy ground, and give a return until the other trees occupy the space. It is quite a mistake to think that apples, pears, and plums can be grown permanently with small bush and berry fruits, because there comes a day when the latter have to give way to the former; therefore, if the main idea is to grow small fruits in bulk, the land should be given up to them entirely.

As a temporary crop, however, bush fruit will yield a profit for a few years after coming into bearing in a mixed plantation, and help to pay expenses until the permanent trees arrive at a fruit-bearing condition. In arranging the planting scheme then, the sites of permanent trees should be first selected, and the intervening spaces be filled with bushes.

### Types of Trees.

Apples are the fruits which claim first attention, and, valuable though standards are for orchards, the bush trees are the best for fruit plantations, because they come into bearing quickly, and most of the operations in respect of pruning and picking can be done from the ground. I do not much favour the practice of mixing up plums and pears and apples, but prefer breaks of these fruits distinct if they are all grown. Bush apples of moderate vigour do very well at 10ft. apart, but vigorous growers like Bramley's Seedling are not too close at 12ft. apart, and when planting it is well to consider what the tree will be like when fully developed. For the most part bush trees are worked on the Paradise stock for plantation work, but it is unwise for propagators to make hard-and-fast rules in the matter, because such excellent apples as Stirling Castle and Lane's Prince Albert are more permanently profitable if worked on the more vigorous free or crab stock.

The above remarks as to distances apply to pears in the bush or pyramid form, but plums are best as half-standards, and these may be planted at 15ft. apart. After deciding the positions of the permanent trees it will be seen how many bushes of gooseberries or currants can be accommodated at, say, 5ft. apart between the rows of trees and also between the specimens in the rows. Rows of strawberries, 2ft. apart, are often grown for a few years between lines of apples, and so are raspberries, but, owing to the natural habit of the latter fruit, I think they are better in breaks by themselves. Young, well-grown trees that have been cut back once in the nursery are suitable for planting, and hundreds of these specimens are sold every year for plantations, but let it be a rule to plant good trees, which, if dearer at the outset, are cheaper in the end.

Half-standard plums should have clean stems and good heads, gooseberries and red currants should be specimens raised from cuttings, with clean stems well above the ground, but the clean-stemmed bush is not desirable in black currants, where the object is to get as much young wood as possible every year from the base. H.

(To be continued.)

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## RASPBERRIES.

When properly treated the raspberry is one of the quickest of all our hardy fruits to come into bearing, even the strawberry not being able to give it many points in this respect, while an established plantation keeps up a good yield for many years, and the fruiting season is a fairly prolonged one. There is this peculiarity about the raspberry, though some of its roots run just under the surface, others go down very deeply, and this should be borne in mind when preparing the ground for planting. It should be dug a couple of feet deep, but the lowest spit should not be brought to the surface unless it is of an exceptionally good character. The finest raspberries I ever saw, both in luxuriance of growth and in size and quantity of fruit, were in the trough of a valley in the Black Forest, in South Germany, where the soil was black and spongy with the residue of decaying leaves, and was fed at every considerable rainfall by the washing down of similar materials from the forests of pines on the mountain slopes, which afforded a good deal of shade to the vegetation below. This shows us something of the raspberry's favourite habitat in a state of nature, and we all know it will stand more shade and dampness than almost any fruit, except the gooseberry.

There is little fear of doing the raspberry too well, and unless the soil is in very good heart where it is to be planted, it would be well to mix manure and organic refuse of all sorts with the whole depth of worked soil, and, in any case, bone meal and quarter-inch bones should be mixed with it to form a lasting reserve of phosphate of lime. The beginning of November is the best time to make a plantation, though, if the canes have to come from a distance, it would perhaps be worth while to wait another ten days for the leaves to fall. When moved from one part of the garden to another this may be done with advantage as early as the third week in October, unless it is a dry time, and they will scarcely feel the move. A store of bonfire ashes is a good thing to put over the roots, as they start very quickly in this. Any idea of fruit the first year should be given up, the canes being cut down in March to within a foot of the ground. If they are cut down in the autumn water will collect in the hollow stems, and frost following will cause them to split, with the result that they will die back, perhaps even to the root. A mulch of strawy manure should be put over the soil about the roots in case a hard winter should follow, when they might freeze out.

It is a common thing to see the soil of a raspberry plantation beaten down like a road all the summer and autumn, which is followed by the digging in of a little manure in the winter. This is the worst treatment possible. The raspberry, being such a surface rooter, should not be even hoed to a depth of more than half an inch, and not allowed to dry out. The surface should be kept loose all the spring, and a little nitrate of soda given during flowering-time, and at the end of May or beginning of June, according to the dryness of the season, a mulch of manure should be put all over the bed, and, if it is very dry, given a good soaking immediately afterwards to wash in some of the goodness, the mulch, in any ordinary season, keeping the surface from getting unduly dry until most of the fruit has been gathered. The mulch will make a clean surface to walk on in all weathers without kneading the soil.

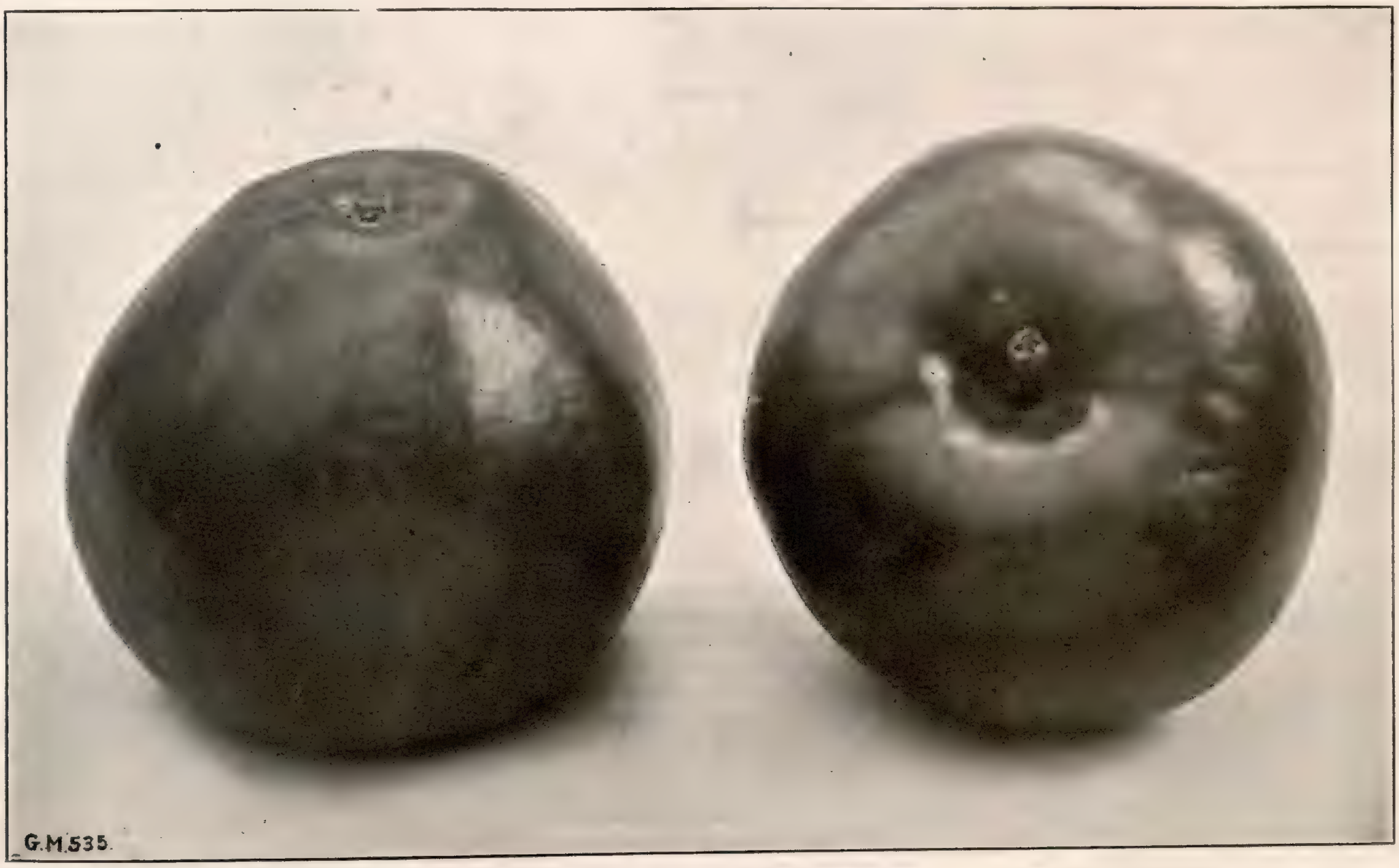
When the fruit has all been gathered, or there is not enough remaining to make it worth while to leave the old fruiting canes any longer, these should be cut out, as well as any superfluous young ones, and the rest tied in for the winter, taking care not to break the leaves off the young canes that are left if it can be avoided. Any shortening of canes which may seem to be necessary should be deferred till the plantation is overhauled in the early spring.

Of the various methods of supporting the canes, the fixing of bamboos horizontally along the rows and tying the canes to them is probably as good as any, and certainly better than tying the canes to stakes in groups. To prevent the canes sliding too much along the bamboos the raffia, or other material, should be first tied firmly to the bamboos and then loosely to the canes. At the time these operations are done the soil should receive a dressing of basic slag at the rate of five or six pounds to forty square yards, and this should be lightly hoed in, the mulch by this time breaking up, for the most part, under the hoe. If, however, the soil is a sandy or gravelly one, and not very rich in humus, it would be better to apply bone meal or steamed bone flour instead at the same rate, supplemented by three pounds of kainit in the winter to the same area. The mulch will probably have kept down the weeds, but two hoeings during September and October will keep under any that may establish themselves, and be very beneficial in other ways, after which the plantation will want no further attention till the early spring, when there will probably be a few dead canes to cut out, others to tie in, and some to shorten, while the surface should be lightly hoed as soon as it will work well, and thereafter kept from caking together till the mulch is applied early in the summer.

A word as to varieties must conclude these notes. As there is no one kind which is the best for all purposes, a compromise has to be made, unless two or three sorts are going to be planted. Superlative is generally considered the best raspberry to plant, as it is a heavy bearer of large fruit, and has an extended season, but it does not do well on all soils, being sometimes a failure on a tenacious clay, while the fruit is rather acid for dessert. Baumforth's Seedling is one of the best, being regarded as an improved Northumberland Fillbasket. The old Red Antwerp is still scarcely to be improved upon as a dessert fruit, being very rich and sweet. For preserving there is none better than Semper fidelis, which is more acid than most, and comes on after others are over, lasting throughout August and well into September. Norwich Wonder and Carter's Prolific are two good growers and heavy croppers. Alger Petts.

## SOME NEWER APPLES.

New apples do not make their appearance in any considerable numbers, and to those who have given any considerable share of their attention to the matter this is not surprising. In the first place, the raising of new apples cannot be very profitable, for the percentage of really first-class seedlings is small, and the trees have to be grown some years before their merits can be satisfactorily determined, and the raising of a sufficient stock of trees for distribution requires several years. Moreover, growers with so many varieties at their command do not readily take to new introductions. Speaking generally, a considerable area should not be planted with novelties until their suitability for the district and purpose for which they are required has been proved by trial; but it would be well were cultivators to plant novelties for that purpose more freely than is usually the case. The cost would not be great, the trees would afford much interest, and the trials would be of value in various ways. The following varieties of recent introduction can be recommended as well deserving the attention of fruit-growers.



G.M.535.

APPLE WILLIAM CRUMP.

A new dessert apple, raised by Mr. W. Crump, of Madresfield Court, which received an Award of Merit from the Royal Horticultural Society when first introduced.

### Arthur Turner (C. Turner).

A new and distinct culinary apple of great promise. The fruit is large, somewhat conical in outline, and distinctly handsome, the skin bright green flushed with red on the sunny side, changing when ripe to bright yellow. The tree is upright in growth ,highly productive, and bears large, richly-coloured flowers. The parentage appears to be somewhat doubtful, but the fruit reminds one of Hollandbury, without its brilliant colouring; the growth is more compact, and the tree is a heavier cropper. The cooking qualities are high, and the fine appearance of the fruit renders it of much value for exhibition. The season extends over October and November.

### Rev. W. Wilks (J. Veitch and Sons).

A culinary apple of undoubted merit, being quite unequalled for early fruiting by any other large-fruited variety with which I am acquainted. It was raised from a cross effected between Peasgood's Nonsuch and Ribston Pippin; the fruit is exceptionally large even on quite young trees, the skin pale yellow, with an occasional red flush on the sunny side, and the flesh is white, juicy, and pleasantly flavoured. It is in season during October.

### Admiration.

A dessert apple somewhat resembling in appearance Ribston Pippin. The fruits are of medium size, with green skin marked with red and yellow streaks, flesh moderately firm, fairly sweet, and with a pleasing aroma. The tree is fairly vigorous in growth and a good bearer, and the fruit is in use during November.

### Crimson Bramley (H. Merryweather and Son).

A distinct form of Bramley's Seedling that is described as differing from that famous apple in having a rich crimson skin. With me there is not much difference in the colour of the fruits of the new and old forms. Should it prove to be an improvement in this respect upon the old type, it cannot fail to be of much value. Of its superiority in cropping there cannot be two opinions, more especially in the young state. The early period at which it commences to bear fruit is a very strong point in its favour.

### Encore (C. Ross).

This is one of the several good apples raised by that veteran fruit-grower Mr. C. Ross. It originated from a cross effected between Warner's King and the Northern Greening. The fruits are large, with yellow skin flushed with red on the sunny side, the flesh crisp and pleasantly acid. In use from September to April.

### James Grieve (Dickson and Co.).

Although not new in the strict sense of the word, this apple has not been in cultivation a sufficient length of time to be generally grown. Therefore it should be useful to remind fruit-growers that it is an early dessert apple that cannot fail to become popular because of its merits, more especially for market. It is free in cropping, and the fruits are of medium size, with a skin attractively coloured crimson and yellow, and with reference to flavour it is quite one of the best of the September and October varieties.

### Lord Stradbrook.

With me this is a most promising late kitchen apple. The fruit is large and handsome; the skin is green with red markings, changing to yellow when ripe. When on the tree the skin is distinctly glaucous. In season during January.

### Norfolk Beauty (W. Allan).

From my earliest acquaintance with this apple I have had a high opinion of its merits as an early culinary variety, and still regard it as one of the best of the season. It is described as having been raised as the result of a cross between Warner's King and Waltham Abbey Seedling, and possesses some of the points of both these varieties. The fruits are large, with light yellow skin, marked with a few traces of russet. For culinary purposes it is not excelled by any apple of its season, which extends over October and November. It is admirably adapted for cultivation in bush form, and as an orchard standard it cannot fail to prove a success, for its manner of growth is exactly suited to that method of culture.

### Red Victoria (W. Miller).

An early culinary apple, in use during August. The fruits are large, with brilliant crimson skin; the flesh white, juicy, and excellent in flavour. Owing to its freedom in cropping, even in a young state, and its bright colour, it should prove a profitable market variety.

### St. Everard (J. Veitch and Sons).

This is said to be the finest flavoured early dessert apple in cultivation. The fruit is of medium size, with crimson skin nearly covered with russet; the flesh yellow, crisp, juicy, and with an aromatic flavour.

### William Crump (W. Crump).

A distinct dessert apple of so high a degree of excellence as to be worthy of the name it bears. The variety was raised from a cross effected between Cox's Orange Pippin and Worcester Pearmain, and the fruits have much the appearance of those of the latter, both in shape and colour. It is of much higher quality than Worcester Pearmain, the flavour being intermediate between that of the two parents. It is later, and has a much longer season than the last-named, the fruit keeping well into the New Year. E. MOLYNEUX.

## BUSH PEAR TREES.

Some fifteen years since, when forming a new garden in one of the home counties north of London, I set apart a space for the cultivation of fifty pear trees in bush form, and in twenty-four varieties. A rather open position, with a southern slope, was selected as the site for the plantation, and, knowing the susceptibility of the pear blossom to the injurious effects of easterly winds, a row of spruce firs was planted outside the boundary on the east side to break the force of these winds, and the screen thus formed has had a most beneficial effect in promoting the productiveness of the trees.

The soil is a moderately strong loam to a depth of about eighteen inches, and this rests upon stronger soil, closely approaching brick earth, but it does not form a very thick layer. My having a soil so favourable to the growth of pears has, of course, been a great advantage, for it has greatly reduced the attention necessary to maintain the trees in the best possible condition, and enabled the trees to bring their fruits to a high degree of perfection. Possibly we have not had to devote one-half the labour that is occasioned by trees growing in poor, gravelly soil or those so tenacious in texture and cold that in unfavourable seasons the trees fail to ripen their wood, and produce an abundance of flower buds.

Knowing the difficulties some of my friends experienced in reducing the vigour of the trees sufficiently to bring them into bearing, owing to the ground having been heavily manured previous to planting no manure was applied in the preparatory stage. I was further encouraged to refrain from the use of manure until after the trees had become established by the advice you have given on more than one occasion on this important point. The ground was prepared by the process of what is known as bastard trenching, and thereby broken up to a depth of two feet without any of the strong soil from the second spit being brought to the surface.

All the trees were on the quince stock, and were, at the time of planting, two and three years old. They had been trained into shape before leaving the nursery, a point of some importance when intended for the gardens of amateurs. They were planted eight feet apart in rows, with nine-feet spaces between them, and these spaces were given with a view to obviating the necessity for the free use of the knife at an early stage for the purpose of preventing them becoming crowded. The precaution was taken to provide stations of sufficient diameter to allow the roots to be spread out horizontally, the soil was carefully filled in about them, and trodden as firmly as possible. Then, to prevent loosening of the soil about the roots, the trees were securely fastened to stout stakes that had been driven into the ground previous to their being planted.

The original selection has been modified somewhat since the plantation was formed, and the following are those which can, according to my experience, be the most strongly recommended as

### The Best Pears for Bush Culture.

Beurré d'Amanlis.—Although not equal in flavour to some other of the early dessert pears it is decidedly good, and should be included in a selection exceeding twelve varieties. The fruit is large and of good appearance, the skin green and usually flushed with red on the side next the sun. The growth is rather spreading,, and the tree with but little manipulation forms a handsome bush, and is a constant and heavy cropper. In season during September.

Beurré Giffard.—A medium-sized pear of excellent quality, ripening in August. The fruits have a bright yellow skin, marked with deep red, and the flesh is white, juicy, and rather sweet. It succeeds best with me on the quince, and planters will do well to have their trees on that stock; unless their soil is light and naturally poor.

Beurré Fouqueray.—An excellent variety, the fruit of good shape and with light green skin, the flesh white, juicy, and richly flavoured. In season during October, and the fruits should be sent to table before they have become over ripe, as they deteriorate in flavour rather quickly after they have attained maturity. The tree makes a capital bush, and is very productive.

Beurré Perran.—A distinct and excellent pear, which was introduced to cultivation nearly twenty years ago, but does not appear to be much grown. It was added to my plantation eleven or twelve years ago, and it has given an excellent return. The fruits are above medium-size, and the skin is brown, and nearly covered with russet when borne by trees in the open, the flesh is greenish-white, juicy, and richly flavoured. In season during February.

Beurré Superfin may be described as one of the finest pears of its season for bush culture. The fruits are large and shapely, with pale green skin when ripe, freely marked with patches of russet; the flesh is white and richly flavoured. In season during October and November.

Charles Ernest.—A useful variety, not unlike in general appearance Souvenir du Congrès. The fruits are large, with a white, juicy, and richly-flavoured flesh. With me it bears most satisfactory crops, and is in season during December and January, when first-class pears are of much value.

Conference.—One of the best of the autumn pears, for the tree is so heavy a cropper as to render it of much value for market, and the flavour is remarkable for its richness. The growth is upright, and the tree, while making a fine bush, can be readily converted into a handsome pyramid. The fruits are large, distinctly pyriform, with green skin nearly covered with cinnamon-coloured russet. This variety is one of the most productive of the pears in my plantation. In use during October and November.

Doyenne du Comice.—This pear is so well known and highly appreciated that there is no occasion to dwell upon its merits. It must, however, be said that it is one of the very finest of the autumn pears, and should be planted more largely than any other pear of its season. Four trees were planted when my plantation was formed, but since then the number has been increased to six, to take the place of some indifferent varieties that were banished, and even now the supply is not more than sufficient to meet the demands of the household. The fruit is large and handsome, and the flesh is melting and richly flavoured. The severe thinning that is recommended by some writers is not advisable, as medium-sized fruits are more suitable for dessert, and the quality is higher than in the case of the large fruits. The growth should be repressed when necessary by root-pruning, and when the trees are heavily cropped a mulching of partly-decayed manure will be of great assistance. In season during November.

Jules Guyot.—This may, perhaps, be best described as an improved Williams' Bon Chretien. The fruit is large and handsome, the skin being rich yellow, and the flesh melting and of good flavour. As in the case of the variety immediately preceding, fruits of medium size are preferable. It is a heavy cropper, and the fruit should be gathered before it is fully ripe. In season during September.

Emile d'Heyst.—A rather large and handsome pear, which has a good constitution, as evidenced by the satisfactory condition of trees that I have seen in Northern gardens. The fruits are shapely, the skin is rich yellow, and the flesh straw colour, melting, and richly flavoured. This variety is one of the most regular croppers in my plantation, and the tree forms an excellent bush. In season during October and November.

Josephine de Malines.—A distinct, hardy, and productive variety. The fruits are of medium size, the skin pale green, marked with russet, the flesh melting, juicy, and richly flavoured. The growth is somewhat erect, and the tree forms a handsome bush, and bears with great regularity. In season from January till March, the length of time over which the fruit may be had in perfection depending in some degree upon the season.

Louise Bonne of Jersey.—Combining a hardy constitution with productiveness and high quality, this old and well-known pear cannot be too strongly recommended for cultivation in bush form. A description of the fruit would be superfluous, and all that need be said is to state that it is handsome and of high quality. The tree makes a fine bush and a handsome pyramid. In season during October.

Marguerite Marillat.—An excellent pear that well deserves more extended culture, although it attains maturity at a time when there are so many other good varieties in season. The tree is upright in growth, and makes a handsome bush, and is highly productive when on the quince stock, and on this stock it should be worked for bush culture. The fruits are large and handsome, the skin is bright yellow, flushed with red when ripe, and the flesh is melting and richly flavoured. The fruits should not be thinned too freely, as those of medium size are preferable. In season early in October.

Olivier de Serres.—Valuable for the late period of the pear season in which it is available for the table. The tree is rather free in bearing, and makes a good bush; the fruits are rather small, with greenish-yellow skin, nearly covered with brown russet, the flesh is juicy and richly flavoured. In season during the first three months of the year. W. H. H.

## DESSERT APPLES FOR THE NORTH COUNTRY.

Notwithstanding the great amount of information upon fruit growing, more particularly upon apple selection and culture, spread throughout the country by means of the horticultural press, horticultural and school instructors, as well as by several other means, the question is often asked: Which are the best varieties to plant? A question, by the way, though very simply advanced, is not always so easily answered, owing to the well-recognised fact that varieties of apples which may succeed in some parts, perhaps over large districts, may not be so satisfactory in others; hence it is somewhat difficult at times to give a reply that is thoroughly reliable.

The following list is of twelve well-tried varieties that may, with a fair degree of certainty, be depended upon to succeed in growth and maintain a supply of first-class fruit from the middle of August until April following, in most parts of the North of England and Scotland where soil and climatic conditions render it possible for apples to mature.

### Beauty of Bath.

A handsome, medium-sized, high-quality fruit, that for an early ripening variety keeps well, say, for a fortnight or rather more, after gathering. The tree is well adapted for cultivation in bush form, is seldom troubled with canker in the branches, and crops very regularly.

### Mr. Gladstone.

An angular, highly-coloured fruit of excellent quality. It is often recommended to be eaten direct from the tree, which infers that the fruit retains its high quality but a short time after being gathered, an inference that is scarcely correct, for if picked before it gets fully ripe it will keep a week or two without the least deterioration. The tree is a spreading and free grower, and bears freely on either the paradise or crab stock. It is inclined, if left to itself, to bear in alternate years, a matter that may easily be overcome by early reduction of the superfluous fruits one year, so that the energies of the tree are not unduly exhausted, with the result that more regularity of cropping ensues.

### Lady Sudeley.

The fruits of this are medium to large, mostly four-sided rather than round in form, and beautifully striped and mottled with red upon a yellow ground. An excellent apple for exhibition throughout September. The tree succeeds on either stock and in bush or standard style of training, and is very healthy in growth.

### Devonshire Quarrenden.

A very old variety, and still one of the best. As an orchard tree it grows and bears with great freedom, though if grafted upon the crab stock several years will elapse from the time of planting ere full crops will be produced, though if upon the paradise stock the waiting period is greatly reduced.

### Worcester Pearmain.

Though not richly flavoured, this is almost indispensable where large supplies of dessert apples are required, as it is a most constant cropper, is in season during the whole of October, and proves very useful at a time when, at most private residences, large parties are the order, and the variety and quantity of other fruits is diminishing daily.

### James Grieve.

Probably this is the most popular early winter apple at the present time, as the fruit is large and handsome in appearance and of excellent quality over a long season. The latter, if a little care is exercised in storing, may be made to extend from October to January. The tree grows and bears freely, quite small plants one or two years after planting being remarkable in this respect.

### Kerry Pippin.

A rather small, beautifully coloured, and highly-flavoured fruit; the tree is a very moderate grower both in dimensions and in the vigour of the branches, consequently it is well fitted for situations rather cramped for space, where it will prove both ornamental and useful.

### King of the Pippins.

One of the most constant fruiting varieties in cultivation, as well as being one of the most handsome. The wax-like appearance of the individual fruits, after being stored for a time, is very fascinating, while their texture and solidity are both favourable to long keeping, or for packing.

APPLE ARTHUR TURNER.

A new culinary apple, introduced by Mr. Charles Turner, of Slough, and given an Award of Merit by the Royal Horticultural Society in October last.

### Allington Pippin.

A comparatively new variety, but one that has of late been largely planted. Under favourable conditions—good soil and climate—the fruits become very large, shapely, and well coloured. The tree makes a pretty bush or pyramid—the branches, in the course of a few years, assuming quite a pendulous form, partly so from the natural habit of growth, but more so probably from the weight of fruit they sustain annually.

### Scarlet Nonpariel.

This is a very old variety, having been recognised for its sterling qualities for about a century. The fruits are small and rather flat in shape, but highly coloured, and of the highest quality. The tree succeeds in any form and is very prolific, and like some of the earlier ripening apples bears principally upon the points of the branches, which are slender; hence pruning should be very moderately carried out.

### Magnum Bonum.

Though not perhaps very extensively cultivated over a wide area of country, I, after many years' experience of its behaviour here, consider this one of the very best late-keeping apples, and the tree a good grower and most constant cropper. The fruits are large, rather flat in form, and become beautifully coloured in the spring months when fit for use.

### Reinette du Canada.

To do this variety justice it should be planted in a spot sheltered by a fence or other trees, where the storms of autumn do not readily reach it, so that the crop may remain upon the branches until the leaves fall, or well into November. Under these conditions the full measure of maturity may be assured, and shrivelling of the fruits quite late in the season, when ripening should take place, be thereby considerably mitigated.

The foregoing twelve varieties are all well adapted for cultivation in the open garden, though, of course, were they trained against a wall the fruits, especially in unfavourable seasons, would be larger and more highly coloured, but such treatment is unnecessary to secure good and full crops of serviceable produce that will answer all household purposes, and, as already stated, will provide a supply as long as dessert apples are possibly obtainable.

(To be continued.)

James Day.

Galloway House, Garlieston.

# A PLEA FOR PLUMS IN POTS.

A considerable amount of attention has been given to the culture of peaches, nectarines, and cherries in pots during the past decade, but plums in pots have not had the same amount of attention bestowed upon them. Yet the plum fully deserves to be grown in pots equally as much as either of these trio. I have forced them now for some fifteen seasons, so as to have ripe fruits early in May, and the same trees that I commenced with in 1898 are still doing well in nearly every instance.

Some of these trees formed part of the fruit exhibit set up at the Royal International Show in May last. No one could say that these trees had got at all out of bounds as regards either the size of the individual tree or of the pot in which it was grown.

A dish of well-ripened plums during May and June is most useful, and indeed valuable, for the dessert. These afford a variety in fruits when as yet there are not any too great a selection from which to choose. The plum, when forced, is amenable to the same course of treatment as the peach and nectarine under pot culture. If planted out it is just possible that the growth would be too vigorous, therefore I strongly recommend that none but pot plums be forced. By growing them in pots one has thorough control over the roots, and from the point of flavour the pot-grown fruit of the plum cannot be beaten.

PLUM EARLY PROLIFIC.

A well-fruited specimen of this excellent early plum, exhibited by Messrs. T. Rivers and Son, Sawbridgeworth, at the Royal International Horticultural Exhibition.

When not forced, but allowed to come on quite of their own accord, the results are equally satisfactory. Then one will see another advantage, also, viz.: in the control of the trees during wet or drizzling weather. Last autumn, as a case in point, I heard of several complaints of the plum crop being spoiled by the wet time that was experienced. Wasps, again, are great depredators upon the ripe fruit outside, but when under glass these pests give but little trouble. It is also possible to keep up a better succession of ripe fruits, without having at any time a superfluity, as more good kinds can be grown in the same space at command, and at the same time afford a greater variety. The "finish" imparted to pot-grown fruits can rarely be equalled and never surpassed out of doors.

## Forcing.

I will upon this point record my own experience. We start our earliest trees during the first week in December. These will yield ripe fruit from the beginning of May onwards through the month. The earliest to ripen is Early Prolific (syn. Early Rivers); then we have Blue Rock (forced this year for the first time); and then Early Transparent—the "crème de la crème" of all early pot plums. This latter variety will be found to yield ripe fruits for fully a fortnight from the same tree, and if so be a few fruits do not at the end fully mature, they will be useful for fruit compôtes. Jefferson, if started at the same time, will follow the Early Transparent Gage. This will carry the supply well on to the middle of June, and, if a further supply be needed, it should be through a second batch of trees started early in January.

Further away in the country a week or ten days later in starting will give the same results as with us under the murky skies of the London locality. We find no difficulty whatever in securing a crop. As a rule we have to thin severely, for it is a great mistake to attempt to carry too heavy a crop. When this is the case, many fruits will be spoiled and be only fit for cooking purposes. Plenty of blossom is invariably the rule, as no bud-dropping obtains as with some peaches and nectarines when forced early. We usually arrange our plums upon the north side of a span-roofed house that points east and west, and as near to the path as possible for convenience in the constant attention to pinching the shoots, and also for a sharp watch to be kept against insect pests.

We do not disbud, but prefer to pinch freely, and thus aim at producing fruiting spurs in due course for another season.

## Trees not Forced.

Our object with these, in our own particular case, is to retard them as much as possible, as ripe fruit during August is not greatly in request. These trees, in our case, set their fruits in an absolutely cool house where they stand until room can be found later on for them in other houses. Our intention is to secure ripe fruit throughout September, and as far into October as possible. Greater variety can be had when no forcing is attempted. Oullin's Golden Gage is one of the first to ripen under these conditions; Denniston's Superb will follow this, and then Early Transparent Gage will be ripening, and this again will be followed by Kirke's and Jefferson. After that the Golden Transparent will be ripening; this fine plum is, in my opinion, the very finest of all plums, from the point of flavour, of appearance, and of productiveness when under pot culture.

If this, or any other of the Transparent section of the Reine Claude family be planted in the open, there is always a tendency to luxuriant growth of a non-productive character. Transparent Gage (the type) will ripen in pots at about the same season. Then we have Coe's Golden Drop and Reine Claude de Bavay as well as Late Transparent, and, last of all, Ickworth Impératrice.

President, though not a high-class dessert plum, is, under pot culture, much improved, and it is at the same time of splendid appearance. Late Orange is also well worthy of notice by reason of its excellent cooking qualities as well as for its appearance. Primate, as a late cooking plum, is one of the best to grow.

From the standpoint of mere size, as contrasted with quality, I do not recommend any variety. To those who may contemplate starting to grow some plums in pots, my advice is: do not lose any time. Only such trees should now be purchased as have been potted this autumn, for only under exceptional circumstances is it advisable to pot so late as the end of November. James Hudson, V.M.H.

Gunnersbury House Gardens.

## KNIPHOFIAS.

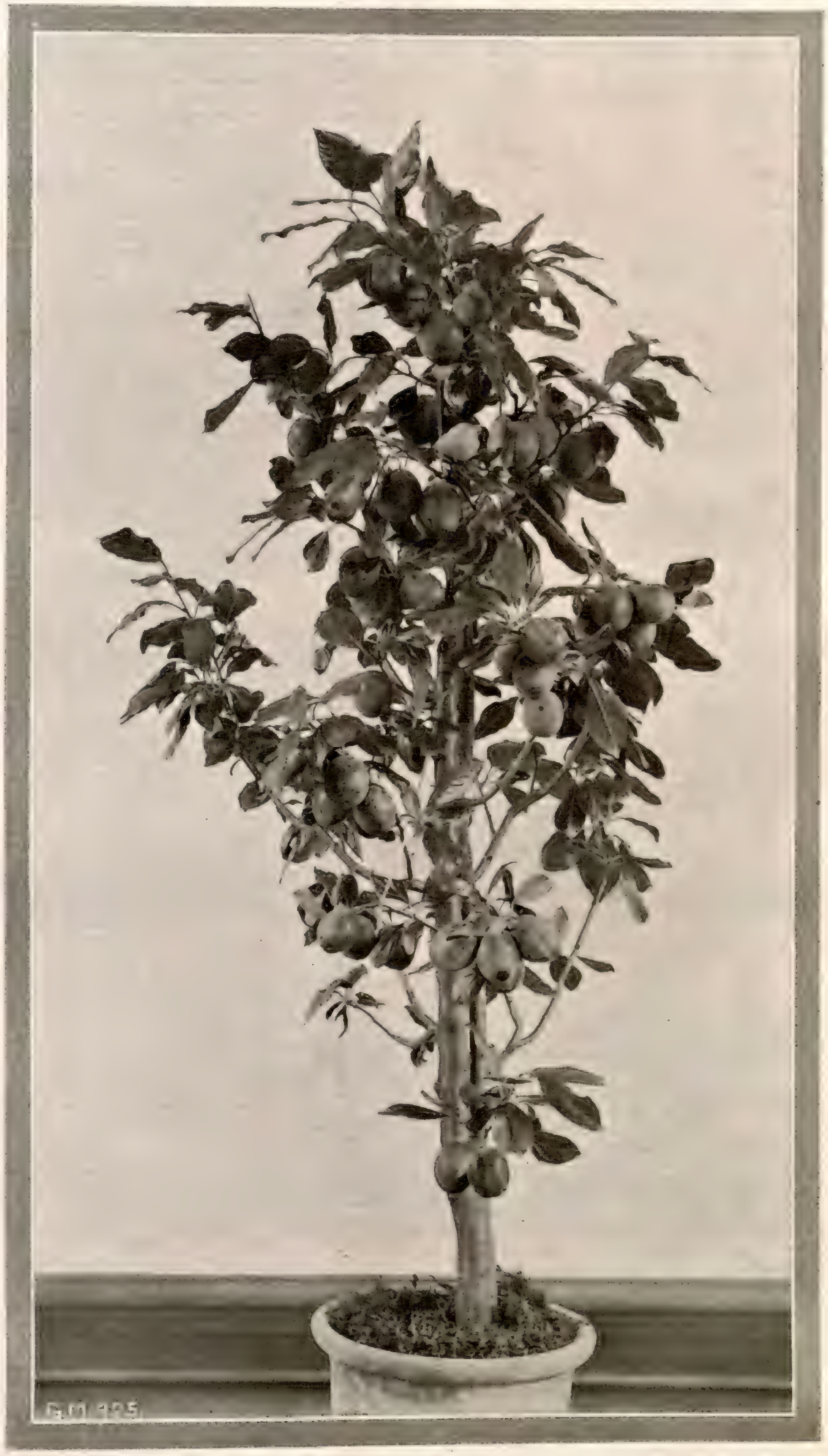
Formerly regarded exclusively as autumn-flowering subjects, Kniphofias (or Tritomas) now enjoy a much more extended season, as the majority of the newer varieties flower in advance of the older kinds, and are also characterised by greater refinement, both in the habit of the plants and the colour of the flowers. Their only weakness is that they are susceptible to the evil influence of excessive damp in winter, to counteract which they should be planted in well-drained soil, not directly under trees, but in a position fully open to sun and air. It is also advisable to place some protective material, such as dry bracken, around the crowns in October, in order to minimise the effect of damp.

The older kinds of kniphofia, when fully established, produced their spikes in such marvellous quantities that they stood out in bold relief, and the effect these stately subjects produced this last autumn was brilliant in the extreme, the orange flame of the flowers having fellowship with the autumn tints that suffuses the leaves of arborescent vegetation.

While Kniphofias show to excellent advantage in borders or beds, as perennial subjects and also adapt themselves for grouping among shrubs, they produce unique effects when inter-grouped with bamboos, phormiums, yuccas, musas, and plants of similar character, and the result is particularly satisfactory if carried out on a broad scale. A simple yet effective arrangement is to group them in wide borders with varieties of Michaelmas daisies (asters). In either arrangement the minimum disturbance is offered to the roots, which always resent interference during the dormant season. Kniphofias should only be planted while the ground is fairly warm. Early in autumn and late in spring are the two best seasons for carrying out this work.

The varieties of Kniphofia are numerous. K. uvaria, the old garden form, gives a variety named nobilis that is one of the grandest sights in the autumn garden when in flower; the spikes are brilliant orange-red, and attain a height of some six feet, with growth that is correspondingly vigorous. K. caulescens is a distinct species, flowering during early autumn, the foliage being very glaucous, and the flowers red and greenish-yellow. K. citrina is a dwarf summer-flowering kind, with small, neat heads of pale lemon colour. K. Lemon Queen is a seedling from the last-named, most refined in habit, with spikes of lemon-yellow flowers. K. corallina grows to a height of $2\frac{1}{2}$ feet, and produces spikes of coral-red flowers in great abundance. K. Macowani only attains a height of 18 inches, and bears bright coral-red flowers in profusion. K. Nelsoni is a dwarf, autumn-flowering kind, with spikes of bright orange flame colour. K. Rufus, grows 30 inches high, and has neat spikes, coloured lemon, orange, and red. K. Solfaterre is a pale-coloured hybrid, the flowers being amber and soft yellow on two-feet stems; it is one of the most distinct of the late summer-flowering kinds. K. Torchlight blooms in summer, having rich orange-scarlet flowers on three-feet stems. K. Star of Baden-Baden is a distinct shade of bronzy-yellow. K. John Benary has flowers of brilliant red and orange-yellow on three-feet stems, in autumn; and K. obelisque has massive spikes of chrome-yellow flowers on four-feet stems in autumn. Thomas Smith.

Coombe Court Gardens.



PLUM PRESIDENT.

A finely-fruited specimen of this valuable late plum, exhibited by Messrs. G. Bunyard and Co., of Maidstone, at one of the Royal Horticultural Society's shows during the present autumn.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

MASDEVALLIAS.—Those that were repotted during September will now be rooting freely, and making fresh leaf growth; but they must still have water given them very sparingly, as an excess of moisture to the roots at any time will result in the loss of many leaves and roots, which means the general decline of the plants. The black markings and spots which often disfigure the leaves of masdevallias are principally caused by excessive moisture at the roots, or an excess of atmospheric moisture during damp, cold weather. Now that it is necessary to use fire-heat to maintain the temperature, care must be taken to prevent aridity in the atmosphere, as a dry, parched atmosphere is most harmful at any season of the year. Much depends upon the situation of the house in which the plants are grown; should it be in a dry, exposed position, more atmospheric moisture can be supplied by damping between the pots, on the floor, etc., than would be requisite if the house were situated in a moist and damp situation.

M. TOVARENSIS, removed to the cool end of the intermediate house, as advised last month, are now in flower, or fast developing their flower-spikes of pure white flowers; these being produced upon the top of the stems, which vary in length from 4 to 6in., and bring the flowers well up above the foliage. Being of a very free-flowering nature and of compact growth, it is a valuable decorative subject. If the plants are in a shaded position in the intermediate house they will remain in flower for some five or six weeks. When grown in fairly large quantities, it is easy to make an effective display at this dull season of the year, especially if a few of the brilliant odontiodas are mixed with them. This masdevallia should always be removed when in flower from the house during vaporising, or the tails of the blooms will quickly turn to a brownish-pink colour and be spoilt. The flower-spikes should be cut away as soon as the flowers fade, although they may produce flowers again, but I think the practice of allowing them to flower more than once is injurious.

CYPRIPEDIUM INSIGNE AND ITS VARIETIES.—In the intermediate house the numerous varieties of this most useful orchid will for some time onward be in full beauty. In the more southern districts the flowers are possibly over before Christmas, but with us in the northern counties they are most valuable for cut flowers at that season. It is astonishing how long the flowers will last in a cut state if cut when they have been open a reasonable time. Perhaps at the present time there is not much inducement to grow the true species, especially where the better varieties, such as C. i. Harefield Hall, C. i. stupendum, C. i. Chantini, C. i. Thompsoni, and numerous others amongst the coloured varieties can be obtained. Besides the coloured varieties, we have now in quantity the beautiful yellow forms, all of which can be obtained at fairly reasonable prices. I refer to that section which includes C. i. Sanderæ, C. i. Sanderianum, C. i. Gloire de Audenghem, and C. i. Gladys. After these plants have finished flowering they may be repotted should this be a necessity. Keep them rather dry until the roots enter the new compost. By attending to this matter early some relief will be afforded in the work of repotting, which presses so heavily in the early days of the New Year.—J. T. BARKER, The West Hill Gardens.

## STOVE PLANTS.

PLUMBAGO ROSEA.—This useful species in undoubtedly one of the most beautiful of winter-flowering plants, and being compact in growth, large numbers may be grown in a comparatively small space. The rosy-scarlet flowers are borne on long spikes and/are of inestimable value for cutting purposes, as they last for a long time in water. For table decoration this plumbago is unique, and when associated with light fern, or asparagus fronds the effect under artificial light is charming. The plants will now be throwing up their inflorescences, and should be regularly fed with liquid farmyard manure, alternated with a safe artificial, until the flowers commence to open, when only clear water should be applied.

EUPHORBIA FULGENS.—This is another indispensable plant that requires every attention at the hands of the cultivator from now onwards. Flowers will be showing, and the plants must be kept not far from the roof-glass, which should be kept clean. I know of no plant more impatient of being over-watered or over-fed. The soil should be allowed to become fairly dry before water is given, and then it should be of about the same temperature as the air of the structure. Some manurial assistance should be continued until the flowers open, but it should be given well diluted, or the delicate roots will be injured. Cow or sheep manure, with soot added and placed in a bag in a tank or tub of rainwater, gives at once a safe and beneficial stimulant to this and other delicate-rooted plants.

GARDENIAS.—The plants we depend upon for providing flowers during winter are grown in 24-sized pots, and they are giving us occasional blooms, which are much appreciated during the dull days. Given a good holding soil with restricted root-room they produce plenty of stout shoots, each yielding a flower. As is well known gardenias are gross feeders, and when well established in their flowering pots frequent applications of liquid manure are essential to success. A fairly high temperature should also be maintained, accompanied by heavy syringings twice or thrice daily. Cut the flowers when about half open, and place in tepid water at once. If allowed to remain on the plant until fully expanded they quickly turn yellow and fade.

HIPPEASTRUMS. — Bulbs that were treated as advised in a previous calendar will by now be well ripened, and the pots may be laid on their sides on a dry shelf in an intermediate house until wanted for forcing. —H. T. MARTIN, Warren Wood Gardens.

## FRUITS UNDER GLASS.

LATE GRAPES.—For the past few weeks the weather in this locality has been very trying for ripe grapes. Generally, November is the most critical month of the year for ripe grapes hanging upon the vines, therefore take great care to maintain the atmosphere of the house at the proper temperature, allow a little heat to be kept in the pipes regularly, and ventilate the house night and day, but in accord with outside climatic conditions. Do not allow the borders to become dry, as this is a practice that should be heartily condemned; drought has not only an injurious effect upon the roots of the vines which are still active, but it also has a bad effect upon the foliage and fruit. It should be borne in mind that the longer the leaves can be maintained, the better and longer the grapes will keep in good condition. When watering is necessary it should be done early on a bright morning, with plenty of air admitted to the house; keep the pipes fairly warm to dispel the moisture before night, and maintain a night temperature of from 45 to 50 degrees at all times. Constant supervision will be necessary, removing at once all berries that show the least sign of decay; while all decayed leaves or partially decayed leaves should be taken away immediately.

PEACHES AND NECTARINES. — Push on the finish without delay the work of pruning, which should only consist of the removal with a sharp knife of all surplus wood not required to form a well-balanced tree. Thoroughly cleanse the trees with soapy water, or some approved insecticide; scrub down the glass and woodwork with strong soapy water, and finally wash the whole structure down with clean water applied forcibly with the garden engine. Whitewash the walls, and tie the trees out into their proper places immediately. This work should be done expeditiously, and the houses put in order without delay, so that no time will be lost when forcing commences. The earliest house should be closed up at the latter end of this month, but no fire heat will be required for a few weeks; the trees should be lightly sprayed over with tepid water on bright days, early in the forenoon. A temperature of 40 to 45 degrees will be sufficient, with artificial heat. Proceed with great care at this season of the year, as the trees respond very slowly to artificial heat, and many failures can be attributed to the fact that sufficient care and forethought is not exercised at the commencement.

THE GRAPE ROOM.—Keep the temperature as near 45 degrees as possible, and if this can be secured without the aid of artificial heat, so much the better. Carefully look over the bunches several times a week, and remove all berries that show the least sign of decay; keep the room fairly dark and the atmosphere as dry as possible.— HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

THE WATER GARDEN.—The decayed foliage of plants growing at the water's side should now be removed. Keep the pools themselves free from dead leaves. When it is intended to plant nymphæas in the spring, it is well to mark the vacant spaces at once, so that there will be no difficulty in placing the plants in the right positions. Aquatics can be divided and replanted during open weather, and the various plants that grow so luxuriantly near the water's edge can be treated in the same way. Among those suitable for this position the following should always be included: Astilbe Davidi, Spiræa aruncus and S. palmata, Lythrum roseum superbum, a most effective subject; Rodgersias in variety, and Saxifraga peltata; Lysimachia clethroides and Funkia Sieboldi, both especially attractive; while Iris Kæmpferi, I. sibirica, Osmunda regalis, Primula japonica, hemerocallis, and senecios in variety are quite indispensable. This selection only includes a few of the more desirable subjects for the purpose. The soil around the plants should be kept free from grass and weeds, and in many cases they will derive benefit from a top-dressing of rich soil or well-decayed manure.

LILY OF THE VALLEY.—Crowns of this lovely flowering subject can be planted now, and in choosing a site for them it is well to have a fairly shaded position, such as under a north wall. The ground should be liberally enriched with manure, and where it is of a heavy, retentive character, add a good supply of leaf-soil. Plant the crowns so that their tips are on a level with the surface, and apply a top-dressing of leaf-soil two inches thick after planting.

CHRISTMAS ROSES.—It is desirable to grow these in beds where they can be easily covered with frames in order to protect the blooms, otherwise they are frequently spoiled by the weather. Isolated plants are easily covered with handlights, and when so treated they produce good blooms by Christmas. Tidy up the beds and remove any decayed foliage around the plants. After the soil has been lightly pricked up with a fork a mulch of decayed manure placed around the plants is a great advantage.

EREMURUS.—These noble plants are frequently a source of much beauty in gardens where they succeed. To grow them successfully they require a deep, rich medium loam, and the site should be sheltered and well drained. They look well in shrubbery borders, or in the semi-wild garden where there is a suitable background to show them off to advantage. They may be planted now, but in preparing the stations for them great care is necessary. If the natural soil is of a tenacious character remove it entirely to a depth of three feet, and use a specially prepared compost that should be light and rich. It is desirable to protect the crowns with coal ashes during the winter.—J. GARDNER, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## Edinburgh Chrysanthemum Show.

The Scottish Horticultural Association held its annual exhibition in the Waverley Market, Edinburgh, on Thursday, Friday, and Saturday, November 14, 15, and 16. The weather was dry and cold, but, thanks to the effectiveness of the combined heating and ventilating apparatus recently installed by Messrs. Mackenzie and Moncur, Lim., the inside of the hall was kept at an equable and delightfully comfortable temperature throughout the show, so that in future exhibitors need fear no harm for their tender plants, nor need visitors fear discomfort from cold and draughts. The attendance of the public was very satisfactory, the drawings being £10 in excess of last year's.

There was a considerable decrease in the number of entries, but, on the other hand, in consequence of the council having decided that every competitor should pay a deposit as a guarantee that he would stage, there was a very marked difference in the proportion of entries staged as compared with former years. In fact, the staging was almost full, whereas formerly from 20 to 30 per cent. was not an unusual proportion of non-staged entries in some sections. In the vegetable classes, for example, the entries staged were scarcely less numerous than last year's, whereas fully one-half of the total deficiency in the entries occurred in this group. The show, however, appeared somewhat thinner owing to a falling off in the entries in the principal chrysanthemum big-bloom classes. In the leading class there were only two entrants, and the number was little more than half the average in the Scottish Challenge Cup class, and, taking them all over, the blooms were not so fine as usual.

THE FINE COLLECTION OF CHRYSANTHEMUMS.
for which Mr. T. Lunt, gardener to Captain A. Stirling, was awarded the City of Edinburgh Cup and £12 at the Scottish Horticultural Society's Exhibition.

### CUT FLOWERS.

In the leading class for cut blooms of Japanese chrysanthemums, viz., the City of Edinburgh Queen Victoria Memorial Class, for fifteen vases in 15 varieties, three blooms in each vase, Mr. Thomas Lunt, gardener to Captain Archibald Stirling of Keir, and Mr. James Fraser, gardener to Mrs. Simson, Bonaly Tower, Colinton, were the only entrants. Mr. Lunt was an easy first, and he was awarded the prize of £12 and the City of Edinburgh Cup, which, having been won by him for the third time, now becomes his property. The cup and the prizes are presented by the Magistrates and Town Council of Edinburgh. Mr. Lunt's varieties, with points awarded to them, were as follows:

| Variety shown. | Max. Pts. | Pts. Awarded. |
|---|---|---|
| Coronation | 12 | 8 |
| Hon. Mrs. Lopes | 12 | 9 |
| White Queen | 12 | 8½ |
| Geo. Hemming | 12 | 8½ |
| Mrs. L. Thorn | 12 | 10 |
| Mary Poulton | 12 | 10 |
| Lady Talbot | 12 | 9 |
| Mrs. A. T. Millar | 12 | 11 |
| Frances Jolliffe | 12 | 9 |
| Maud Williamson | 12 | 10 |
| Melchet Beauty | 12 | 8½ |
| Purity | 12 | 9 |
| F. S. Vallis | 12 | 9 |
| J. H. Silsbury | 12 | 9 |
| Wm. Turner | 12 | 10 |
| | 180 | 138½ |

It will be observed that the points awarded to Mr. Lunt are considerably under last year's (156), when he last won the cup, and this, no doubt, may be put down to the bad season.

In the Scottish Challenge Cup class, for eight vases, Japanese chrysanthemums, in eight varieties, three blooms in each vase, confined to Scottish gardeners and amateurs, there were six lots staged, and the challenge cup (to be held for a year) and first prize of £6 was carried off by Mr. James Small, gardener to John Graeme Thomson, Esq., of Norwood, Alloa. The second prize of £4 was awarded to Mr. R. Mackenzie, gardener to J. E. B. Baillie, Esq., of Dockform, Inverness. The third to Mr. H. MacSkimming, gardener to W. T. MacLellan, Auchenault, Helensburgh; and the fourth (£1) to Mr. D. McLean, gardener to Right Hon. R. C. Munro Ferguson, of Raith, Kirkcaldy. Mr. Small's varieties and the points awarded to them were as follows:

| Variety shown. | Max. Pts. | Pts. Awarded. |
|---|---|---|
| Wm. Turner | 12 | 11 |
| Frances Jolliffe | 12 | 8½ |
| Mrs. A. T. Millar | 12 | 10 |
| F. S. Vallis | 12 | 9 |
| Mrs. L. Thorn | 12 | 8½ |
| White Queen | 12 | 11 |
| Fred Chandler | 12 | 9½ |
| Lady Talbot | 12 | 8½ |
| | 96 | 76 |

Mr. R. Mackenzie had 74½ points, Mr. MacSkimming 72½, and Mr. McLean 71½ points out of 96. Mr. Small also won the silver medal for the best bloom in the show with his Wm. Turner in this class.

In the class for six vases Japanese chrysanthemums, in six varieties, three blooms in each vase, Mr. John Waldie, gardener to W. H. Dobie, Esq., Dollarbeg, Dollar, had 57 out of 72 points, and was awarded the first prize of £4; Mr. MacSkimming being second, Mr. D. McLean third, and Mr. L. McLean, gardener to David Thomson, Esq., Greenfield, Alloa, fourth. For twelve blooms Japanese chrysanthemums, in twelve varieties, shown on boards, Mr. T. Lunt was first, Mr. Small second, and Mr. R. Mackenzie third. Mr. Lunt was also first for two vases Japanese chrysanthemums of one variety, three blooms in each vase, and for four vases in twelve varieties, three blooms in each vase. Mr. G. Little, gardener to the Hon. Mrs. Askew Robertson, Ladykirk, Norham, was second, and Mr. D. McLean, Raith, third in the above two-vase class; Mr. L. McLean second, and Mr. A. S. Watt, Whiting Bay, Arran, third, in the above four-vase class. Mr. P. MacLachlan, gardener to C. E. Green, Esq., Liberton, was first in the class for four vases in four varieties, three blooms to each vase; Mr. R. Whannell, gardener to Colonel More Nisbet, The Drum, Gilmerton, being second; and Mr. T. Chapman, gardener to Jas. N. Graham, Esq., Carfin, Carluke, third; and in the class for two vases in six distinct varieties, three blooms in each vase, Mr. Whannell was first, and Mr. MacLachlan second. Mr. W. Galloway, gardener to the Earl of Wemyss, Gosford, was first in the class for three vases of chrysanthemums, in three varieties, not more than twelve sprays in a vase, for quality and decorative effect; Mr. W. Armstrong, gardener to Dr. Scott, Musselburgh, being second. Mr. D. Kidd, gardener to Lord Elphinstone, Carberry Tower, Musselburgh, was first for one vase of chrysanthemums, disbudded, and arranged for effect; Mr. A. McMillan, gardener to the Earl of Home, second; and for six vases singles, in six varieties, not more than twelve sprays in each vase, Mr. Galloway took first place, and Mr. Jas. Bruce, Davidson's Mains, second. Mr. A. Knight, gardener to Sir W. Lawson, Bart., Brayton, excelled in the class for three vases singles, in three varieties, not more than twelve sprays in each vase; Mr. A. McMillan, gardener to the Earl of Home, being second; and for three vases of the same kind, for quality and decorative effect, Mr. Galloway was first, and Mr. W. G. Pirie, gardener to C. W. Cowan, Esq., Dalhousie Castle, second. Mr. A. S. Watt, Whiting Bay, Arran, carried off the first of the prizes offered by Messrs. W. Wells and Co. for three blooms of Mrs. Gilbert Drabble, Mr. R. Mackenzie being second.

In the class for market growers, in which six vases chrysanthemums, in six varieties, three single and three double, were asked for, Mr. James Bruce, Davidson's Mains, and Messrs. Todd and Co., Musselburgh, who were the only entrants, took first and second place respectively.

Messrs. Wells and Co., Merstham, carried off the silver medal for the best new chrysanthemum not in commerce with a fine bloom of Queen Mary, Mr. G. Little, gardener to the Hon. Mrs. Askew Robertson, Ladykirk, Norham, obtaining the Bronze Medal with the Honourable Mrs. Askew Robinson.

There was good competition for two vases winter-flowering carnations, twelve flowers in each vase, and the first prize fell to Mr. A. Williams, gardener to Lord Stratheden and Campbell, Hartrigge, Jedburgh, and the second to Mr. A. A. Law, gardener to Wm. Baird, Esq., Elie, Fife.

### BOUQUETS.

Miss H. Newlands, Leith, carried off the first prize for one bride's bouquet and two bridesmaids' bouquets; bouquet of chrysanthemums, bouquet of carnations, and floral wreath respectively. Mr. A. Knight was first for one bouquet (chrysanthemums and carnations excluded), basket of flowers (chrysanthemums excluded), hand bouquet (chrysanthemums excluded), and basket of orchid blooms arranged for effect. Mr. J. Beats, gardener to Mrs. Boase, Binrock, Dundee, excelled for basket of chrysanthemums and bouquet of chrysanthemums. Mr. Kidd was first for floral decoration of dinner table (orchids excluded), and Mr. G. Scott, gardener to A. Sinclair Henderson, Esq., Seathwood, Dundee, was second. Mr. Kidd's decoration consisted of francoa and carnations, with groundwork of Ampelopsis Veitchi. In the other classes Mr. A. Horton, gardener to Colonel Claude Kane, St. Wolstans, co. Kildare, was first for a basket of hardy foliage and berries, arranged for effect; Mrs. J. B. Hamilton, Liberton, excelled for sprays of chrysanthemums for ladies' wear, and for the best arranged epergne of chrysanthemums; and Mrs. J. Donaldson, Kirn, was first for the best-arranged vase of chrysanthemums.

### CHRYSANTHEMUM PLANTS.

Chrysanthemum plants made a good show, though there was a smaller number staged than usual. The quality, however, was good, Mr. W. Michie, gardener to Lady Steel, Edinburgh, had first honours in the classes for six distinct varieties (single and pompon excluded); four Japanese (distinct); two varieties, distinct; one large-flowered and one single (marguerites excluded), while Mr. J. Fraser, Bonaly, excelled for six plants in 7in. pots. In the amateur classes the honours were divided between Mr. W. Aithie, Tranent, and Mr. Thos. L. Bell, Edinburgh.

### MISCELLANEOUS PLANTS.

In the plant classes the quality was about the average, and here also there was a smaller number staged than usual. In the palm classes, Mr. A. McMillan, Douglas Castle, was first for six palms in 7in. pots, and also for two specimen palms, while Mr. J. Templeton, gardener to Mrs. Rose, Richmond House, Glasgow, excelled for three specimen palms, and Mr. J. Macgregor, gardener to Sir Wm. Younger, Bart., Auchen Castle, Moffat, for one specimen palm. Mr. J. Wilson, gardener to Sir John Gilmour, Bart., Montrave, Leven, was first for six dracænas; Mr. D. McLean, Raith, for six Primula sinensis and six P. obconica; Mr. G. Anderson, gardener to Rt. Hon. A. J. Balfour, M.P., Whittinghame, for six table plants (excluding ferns); Mr. W. Robertson, gardener to Miss Balfour Melville, Pilrig House, Edinburgh, for six dwarf hardy ferns; Mr. A. Johnstone, Hay Lodge, Edinburgh, for six table ferns; Mr. J. Alexander, gardener to Mrs. Wauchope, Niddrie, for six Salvia splendens; Mr. J. McNeill, gardener to Major Thorburn, Craigerne, Peebles, for six Roman hyacinths; Mr. A. McMillan, Douglas Castle, for three pans lily of valley and six specimen ferns; Mr. A. Williams, Hartrigge, for six cyclamen and four winter-flowering begonias; Mr. A. Knight, for eight decorative foliage plants; Mr. J. Macgregor, Auchen Castle, for four decorative foliage plants.

### FRUIT.

Fruit, considering the season, was fairly good, but amongst the hardy kinds there was a distinct falling-off in quality and quantity. There were only two entrants for the collection of eight dishes, viz., Mr. D. Kidd, gardener to Lord Elphinstone, Carberry Tower, and Mr. W. Galloway, gardener to the Earl of Wemyss, Gosford, who were awarded the first and second prizes respectively. Mr. D. Halliday, gardener to W. Mackay, Esq., Ascog, Bute, was awarded first prize for four bunches grapes, distinct, but the prize was withheld on protest on the ground that two whites shown as Mrs. Pearson and Dr. Hogg were both of the former variety. Mr. Kidd was placed second, and Mr. W. G. Pirie, gardener to C. W. Cowan, Esq., Dalhousie Castle, third. In the two-bunch classes, Mr. Halliday was also first for Alicante and for any other variety. Mr. J. Waldie, gardener to W. H. Dobie, Esq., Dollarbeg, Dollar, was first for one black and one white; Mr. Pirie first for two bunches Muscat of Alexandria; Mr. J. Shiells, gardener to Sir James King, Carstairs House, for two Gros Colmar; Mr. A. Anderson, Whittinghame, for one Appley Towers; and M. J. McNeill for one Lady Hutt.

In the hardy fruit classes, Mr. J. Duff, gardener to Colonel Gordon, Threane House, Castle Douglas, was first for eighteen dishes apples, in not less than twelve varieties, grown in Scotland, for eighteen varieties apples, for six varieties culinary apples, and for six varieties dessert apples. Mr. W. Galloway excelled for six varieties of pears grown in Scotland, and Mr. Geo. McKinley, gardener to the American Ambassador, Wrest Park, for six varieties of pears. For three baskets of dessert apples and three bakets of culinary apples, each in three varieties, and 12lbs. each basket, confined to market gardeners, Mr. R. G. Sinclair, Congalton, Drem, was first in each class. There were two entrants for six bottles of preserved fresh fruit, and the first prize went to Mr. Thos. McPhail, gardener to Mrs. Hamilton Ogilvie, Archiefield, East Lothian.

### VEGETABLES.

For the collection of vegetables, nine distinct kinds, selected from a list in the prize schedule, there were five entrants, and the first prize of £3 3s. was awarded to Mr. R. Stuart, gardener to the Earl of Lauderdale, Thirlestane Castle, Lauder; Mr. W. P. Bell Bothwell Castle, being second, and Mr. W. Harper, gardener to J. R. Stewart Richardson, Esq., Bankfoot, Perth, third. Mr. Stuart's collection consisted of onions (Ailsa Craig), parsnips (Student), tomatoes (Perfection), cucumbers (Delicacy), leeks (Lyon), broccoli (Self-protecting Autumn), beet, potatoes (Gay Gordon), celery (Solid White).

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## West of England Chrysanthemum Society.

The annual chrysanthemum show of the above society was held in the Guildhall, Plymouth, on November 12, and was a great success. The entries were more numerous than usual, the competition was very keen, and in many cases the merits of the exhibits were so nearly equal that the judges experienced much difficulty in making their awards. The Earl of Morley has lately become the President of the society.

### CUT BLOOMS.

The cut blooms were far finer than those exhibited at Plymouth of late years, and the stands needed very careful judging. In the first class for twenty-four Japanese blooms the first prize was won by Lady Buller, who had very fine examples of Master David, W. Turner, Rose Pockett, F. S. Vallis, Miss L. Baker, and Lady Talbot; Lady Buller also occupied the post of honour in the class for eighteen Japanese, and also in that for six Japanese. In the class for twelve Japanese the premier award was made in favour of Mr. T. B. Bradshaw, his Mrs. David Syme and Hon. Mrs. Lopes being particularly fine. There were two classes for twelve vases of single chrysanthemums, one open, and the other confined to residents within fifteen miles of Plymouth, and the silver-gilt medal for which these two classes competed was won by Mrs. Bainbridge in the local class.

### PLANTS.

In the class for a miscellaneous group of stove and greenhouse plants, Mrs. Bainbridge was first with a very attractive and well-arranged collection of well-grown plants. In the centre was a good specimen of Arundinaria Falconeri, surrounding which were examples of Aralia Veitchi, Cypripedium insigne, Salvia leucantha, Urceolina aurea, Marguerite Boule de Neige, dieffenbachias, Eupatorium micranthum, coleus in variety, eulalias, Calanthe Veitchi, Panax Victoriæ, Aralia gracillima, single-flowered chrysanthemums, dracænas, crotons in variety, and maidenhair ferns. For a group of single chrysanthemums, the first prize was awarded to Dr. Burke, who had a very well set up collection of plants, bearing very fresh and well-coloured flowers. For four specimen Japanese chrysanthemums, the premier award was obtained by Mr. E. J. Hannaford, who also won the first prize for one white Japanese specimen chrysanthemum. For one Japanese specimen, any other colour, Mr. G. Hoskin was a capital first.

The first prizes for salvias, Chinese primulas, Primula stellata, zonal pelargoniums, and six table plants, were won by Mrs. Bainbridge; the first prize for six cyclamen was awarded to Lady Buller; while the first prize for six Begonia Gloire de Lorraine was won by Lieut.-General Sir R. Pole-Carew.

### SALADS, FRUIT, AND VEGETABLES.

In the class for a collection of salads in variety, a most attractive table was shown by Mrs. Bainbridge, who carried off the first prize. It was generally admitted that it was one of the prettiest contributions to the exhibition, the arrangement being excellent, and the colouring very bright. It was indeed quite good enough to win in London. Comprised in the collection were grape tomatoes, red and yellow, large yellow and red tomatoes, five sorts of capsicums, very bright in colour, chervil, chibbles, chives, American cress, Australian cress, Brazilian cress, watercress, mustard, taragon, Chinese cabbage, variegated chicory, red-leaved chicory, whitloof, Batavian endive, moss-curled endive, cos and cabbage lettuce, oak-leaved lettuce, asparagus-leaved lettuce, cucumbers, and long and turnip radishes.

The fruit was especially fine and well-coloured. For a collection of twenty-four dishes, Mr. H. St. Maur was successful in winning the first prize; while in the local class for twenty dishes the first prize was won by Lieut.-General Sir R. Pole-Carew.

Vegetables were good, and the majority of the prizes were won by Mr. Coryndon Matthews.

### NON-COMPETITIVE EXHIBITS.

The nurserymen's exhibits were particularly attractive, and contributed greatly to the success of the show. The Devon Rosery, Torquay, was awarded a gold medal for a splendid collection of fruit, in which considerably over a hundred varieties of apples were exhibited, as well as a large assortment of pears. The apples were large in size, and generally very finely coloured. Among those that attracted the greatest attention were Bismarck, Newton Wonder (very large and fine), Bramley's Seedling, Cox's Orange Pippin (beautifully coloured), Emperor Alexander, Peasgood's Nonsuch, Blenheim Pippin (very bright), Gascoigne's Scarlet, Passe Colmar pear, and three distinct varieties of medlar.

The King's Acre Nurseries, of Hereford, were awarded a gold medal for a remarkably fine collection of fruits. The most notable thing on this stand was the Apple Gloria Mundi, of which there were several specimens of gigantic size. Other fine fruits were King's Acre Bountiful, Lord Derby, Warner's King, and Mère de Ménage.

Messrs. Sutton and Sons, Reading, contributed a wonderful collection of vegetables, for which they received a gold medal. The stand was most tastefully arranged, and the produce was spotlessly clean, well set up, and remarkable for its excellent quality and freedom from coarseness. Every description of vegetable shown was a perfect example, and the tomatoes, cucumbers, potatoes, carrots, parsnips, leeks, Chilian beet, and kohl rabi could not be surpassed. Messrs. Robert Veitch and Son, Exeter, received a silver medal for their stand, which contained a large number of winter-flowering carnations, amongst which were noted Ceres, Lady Dainty, Bonfire, Sunstar, Beacon, Countess of Onslow, Mikado, and Triumph. Other plants included Zygopetalum Mackayi, Sarracenia exoniensis, Grevillea ornithopoda, G. longifolia, Physalis Bunyardi, Cryptomeria elegans, Citrus sinensis in fruit, Ilex cameliæfolia, Cotoneaster pannosa, C. angustifolia, and Symphoricarpus occidentalis, the last-named covered with snow-white berries.

## Liverpool Horticultural Association.

NOVEMBER 13 and 14.

This society held its show in the Corn Exchange on the above dates, and the entries were well up to the average, both in quantity and quality; these, with good staging, produced what was generally admitted to be the society's finest autumn exhibition, for every point of the spacious hall was well furnished with bright and telling exhibits.

### CHRYSANTHEMUMS IN POTS.

These are generally a feature at this show, the trained specimens being capable of holding their own with those at any exhibition. A considerable number were staged, and did credit to the growers, for the blooms were well regulated.

For three large-flowered trained plants, Mr. T. Hitchman, gardener to A. Earle, Esq., Childwall, secured the premier award with finely-flowered specimens; Mr. W. Wilson, gardener to W. Cunningham, Esq., Gateacre, a good second. For a single specimen Mr. T. Hitchman again led, followed by Mr. J. Armistead, gardener to Mrs. T. A. Vlaste. For three single-flowered specimens, Mr. W. Wilson took the coveted position with a charming trio, his Sylvia Slade and Stella being fine exhibitions of the trainer's skill; Mr. Hitchman held the next position. For one pompon, trained, Mr. T. Atkin, gardener to T. W. Wright, Esq., and Mr. J. Armistead were placed first and second respectively. Staked plants had three classes allotted to them, for six plants, three plants, and one plant, the first prize winners being Mr. E. R. Finch, gardener to W. J. Lockett, Esq.; Mr. T. Hitchman, and Mr. R. Cardwell, of Southport.

In the class for a group of singles arranged on 60 sq. ft., the prizes were awarded to Mr. F. Atkin, Mr. P. Caunce, gardener to G. Nicholson, Esq., and Mr. G. Osborne. For four Begonia Gloire de Lorraine, Mr. A. Wharton, gardener to J. Findlay, Esq., proved successful in a strong competition, while for three stove or greenhouse ferns, Mr. G. Eaton led with grand specimens, his Davallia Mooreana bordering on 12ft. in diameter. This latter exhibitor also excelled for one fern, with an immense Davallia fijiensis plumosus. Three orchids found Mr. H. E. Herd, gardener to G. L. Pilkington, Esq., Gateacre, to the fore, and for the single plant, Mr. J. McColl, gardener to J. W. Hughes, Esq., Allerton, won with Brassocattleya Maronæ. Two palms or cycads were best shown by Mr. Atkin, and for three examples in 8in. pots Mr. G. Osborne scored. Good salvias and cyclamen were put up by Messrs. E. R. French and J. Stoney.

### CUT FLOWERS.

Sixteen classes were devoted to this section, with highly satisfactory results, many good entries being staged that received no awards.

For thirty-six blooms, eighteen Japanese and eighteen incurved, in not less than twelve varieties of each section, the Tate silver challenge vase goes with the first prize. There were three competitors, the premier award going to last year's winner, Mr. C. Goves, gardener to Sir Gilbert Greenall, Bart., Warrington, for a good all-round lot, the best blooms being Romance, Mrs. R. F. Hall, Mrs. G. Denyer, G. F. Evans, William Turner (which gained the N.C.S. certificate for the best bloom in this section), Frances Jolliffe, F. S. Vallis, Hon. Mrs. Lopes, and Lady Talbot. Second prize fell to Mr. G. Haigh, gardener to Sir W. H. Tate, Bart., who had some excellent blooms, his Buttercup being selected for the N.C.S. certificate as the best incurved bloom in the show; Mr. H. Osborne, gardener to R. R. Heap, Esq., West Derby, was placed third.

The best eighteen incurved, in not less than twelve varieties, came from Mr. J. George, gardener to Thomas Henshaw, Esq., Roby, who won with a good stand. Mr. C. Osborne, gardener to A. Cook, Esq., Aigburth, followed, and in the class for twelve varieties Mr. J. Clark, gardener to Mrs. Clarke, Allerton Hall, took the lead, while for six blooms Mr. E. R. Finch scored.

The class for eighteen Japanese, in not less than twelve varieties, found Mr. C. Goves again to the fore, followed by Mr. G. Eaton, gardener to W. Tod, Esq., Allerton. In the class for twelve blooms, Mr. D. McKelvie won, and for six Mr. E. R. Finch was first. For six vases of Japanese blooms, three in each vase, Mr. G. Haigh had the leading lot, with Mr. D. McKelvie second. The class for six vases of single flowers, nine blooms in each vase, brought forth a grand competition, marvellous flowers being well staged. Mr. Loo Thomson, Formby, proved the victor, and hearty were the congratulations accorded this enthusiastic amateur; he had splendid specimens of Edith Pagram, Snowflake, Crimson King, etc. Messrs. G. Haigh and G. Eaton were the remaining prize-winners. For three vases, Mr. Thomson again proved the victor.

For the best basket of cut blooms Mr. E. Wharton took the lead, and for the decorated table, Mr. J. Williams, gardener to C. J. Procter, Esq., beat Miss Newsham with roses and carnations against chrysanthemums.

### FRUIT.

For six dishes of fruits, Mr. J. Taylor, gardener to F. Bibby, Esq., Shrewsbury, was well to the fore, having heavy bunches of Alicante and Muscat of Alexandria grapes, a fine melon, and excellent apples and pears; Mr. T. Ellsworthy was second. In the class for four bunches of grapes Mr. J. Wright, gardener to Edmund Lord, Esq., Rawtenstall, won well with fine Alicante and Muscat of Alexandria; Mr. Thos. Barclay, gardener to Mrs. S. Cook, St. Helen's, second. For two bunches of Alicante, Mr. W. Piper, gardener to W. H. Fernie, Esq., Thornton Hough, proved the winner, and for any other black Mr. E. R. Finch scored with good bunches of Gros Colmar. For two bunches of Muscats Mr. W. Wilson won with well-coloured bunches, and held his position for any other white with well-preserved bunches of Golden Queen. Apples and pears were in excellent quality, many being splendidly coloured.

### NON-COMPETITIVE.

The entries in this division were well up to the mark, and proved valuable features of the show.

Gold medals were awarded to Messrs. Mansell and Hatcher for a fine bank of orchids; to Messrs. R. P. Ker and Sons for a fine display of cyclamen, with palms, crotons, etc.; to Mr. J. W. Fletcher, gardener to R. L. de Doux, Esq., for a set of cypripediums; to Messrs. Fishlock Bros., for an extensive floral display; to Messrs. Stuart Low and Co. for a bank of carnations and orchids.

Silver medals went to Mr. W. Rowlands, for Begonia Gloire de Lorraine; to the Liverpool Orchid Company, for orchids; to Mr. C. A. Young, for carnations; to Mr. Norman Davis, for cut chrysanthemums; and to Mr. H. Middlehurst, for potatoes.

## Reigate.

The Reigate Society's twenty-fourth chrysanthemum show was held on November 13 at the Public Hall, Reigate, and it was a great success. The entries were unusually numerous, and the committee had no little difficulty in finding space for the large number of exhibits. It is unfortunate that the Society cannot find a more suitable place for the show, because if all the exhibits could have been arranged in one hall they would have provided a most imposing, interesting, and beautiful display. As it was, the hall proper did not accommodate half the show, and four other rooms were requisitioned. In these the light was poor and there was little room for visitors. The room devoted to the cottagers' exhibits was quite crowded with very fine blooms of Japanese and single varieties, which deserved more space and a better position. In this section Mr. Andrews won three cups, including one for the most points gained.

→ **Spraying** ←

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GREAT PERPETUAL - FLOWERING Carnation Show, Royal Horticultural Hall, Vincent Square, S.W., Tuesday, December 3rd, Non-competitive Exhibits only. Open 1 to 5 p.m.

WEDNESDAY, December 4, GRAND COMPETITION and GENERAL EXHIBITS, open 12 noon to 5 p.m., Admission 1s. Also a Conference on Carnations in the Lecture Hall, at 3.30 p.m. Mr. W. E. Wallace, Champion Carnation Grower, will open the discussion. For Schedules, etc., apply, E. F. HAWES, Ulysses, Fortune Green, N.W.

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However, the Reigate gardeners are very enthusiastic, and the committee do uncommonly well considering the disadvantages of the show site.

### CUT BLOOMS IN VASES.

The handsome challenge cup presented by Miss Wooley is for the best twenty-five Japanese blooms, in vases, five blooms in a vase, and not fewer than eighteen varieties. Mr. W. Sargent, gardener to G. Lloyd Wigg, Esq., Rockshaw, Merstham won the coveted award with clean, fresh flowers of W. Mease, President Viger, F. Payne, Bessie Godfrey, Marie Loomes, Mrs. R. A. Witty, Master James, Superbe, Frances Jolliffe, Purity, etc.; Mr. J. Beeson, gardener to J. N. Mappin, Esq., Headley Park, Epsom, was a good second, and Mr. W. Morgan, gardener to W. Ellis, Esq., The Woodlands, Reigate, third. Mr. Sargent was also the prize-winner in the open class for fifteen Japanese blooms in five vases.

A local class was for two vases each of Japanese, decorative, and single varieties, and there was a capital competition. The challenge vase was won by Mr. W. Prouting, gardener to H. Somers Somerset, Esq., Reigate Priory; Mr. F. Cordell, gardener to A. F. Blades, Rookfields, Reigate, second; and Mr. J. Delley, gardener to J. T. Mitchell, Esq., Bath Hill, third.

Mr. F. Phillips was placed first for six incurved blooms of one variety, in a vase, with particularly solid flowers of Souv. de Wm. Clibran; Mr. W. Hunt second, and Mr. W. M. Blackmore third, each showing Clara Wells in good form. For one vase of incurved blooms, six varieties, Mr. W. Hunt was to the front. The Wells silver-gilt medal for the best dozen Japanese blooms, in two vases, was won by Mr. F. Phillips, whose best flowers were of W. A. Etherington and Mrs. F. W. Vallis; Mr. Prouting second.

The best five Japanese blooms, white, in a vase, were of Wm. Turner from Mr. Sargent; Mr. Hunt coming second; both exhibited Wm. Turner in splendid condition. For five yellow Japanese blooms, one variety, Mr. Sargent beat Mr. Phillips, each showing Mrs. F. S. Vallis. In the "any other colour" class, Mr. Sargent was again first, with Marie Loomes, and Mr. Hunt second with W. Mease.

Single varieties were splendidly shown in several classes. Mr. W. Hunt scored for six vases, six sprays in each vase, with lovely blooms of Charles Kingsley, Merstham Gem, Mrs. W. Higgs, Mensa, J. B. Lowe, and Metta. Mr. W. M. Blackmore came second, and Mr. W. Prouting third. In another division singles were also very well shown, and the premier award for six vases fell to Mr. P. Sherlock, gardener to J. B. Crossfield, Esq., Undercroft, Reigate, for very fine flowers of Countess Egremont, Ceddie Mason, Snowflake, Metta, Mrs. F. Gilby, and an unnamed rose-pink variety; Mr. C. Washington second, and Mr. Cordell third. The four entries in this class made a handsome display.

Mr. Scutt was successful for one vase of six Japanese blooms in the small growers' section with fine examples of F. S. Vallis, G. Penford, Frances Jolliffe, W. Turner, R. C. Loomes, and Mrs. G. C. Kelly. Mr. J. Dilley, gardener to J. T. Mitchell, Esq., Baths Hill, second, and Mr. W. Hunt, gardener to G. Jackson, Esq., Cherchefelle, Reigate, third. Five entries.

For three vases of five blooms each, Japanese varieties, the Redhill Tradesmen's Cup was worthily won by Mr. J. Dilley with a fine set that included W. Turner, Reginald Vallis, H. E. Converse, Master David, and W. Mease in good form; Mr. W. Hunt second and Mr. F. Cordell third.

### GROUPS AND MISCELLANEOUS PLANTS.

The premier award for a group of single chrysanthemums was won by Mr. J. A. Steadman, gardener to Dr. E. C. Prince, The Shrubbery, with a very beautiful exhibit of semi-circular form, rising about 9ft. high at the back. It inclined a little to formality, but the flowers were delightful, and the colour blending of popular varieties was first rate. Mr. Thomas Kemp, gardener to C. V. Nicholl, Esq., Oakwood, Redstone Hill, was a capital second and Mr. J. Giles, gardener to Miss Talbot, Eastnor Cottage, third; four entries.

The only table group of Japanese blooms and foliage plants was the one set up in the corner by Mr. W. A. Dobson, and he was awarded first prize for a good effort.

Mr. Scutt scored for six Primula obconica, leading among six competitors with very richly-coloured forms; Mr. W. R. Blackwood, gardener to J. C. Auerbach, Esq., Hethersett, second, and Mr. W. Coldman, Highfield Gardens, third. Mr. Prouting scored for half a dozen begonias of the B. Gloire de Lorraine type, with freely-flowered, well-trained specimens of moderate size; Mr. W. A. Dobson, gardener to A. J. Waley, Esq., Stone House, second, and Mr. F. Phillips, gardener to Colonel Sir R. W. Inglis, Craigendorne, third.

Mr. W. Scutt, gardener to H. C. Shelton, Esq., Lowwood, Reigate, scored for six zonal pelargoniums with beautifully-flowered specimens in small 32's, his example of J. McLaren being particularly beautiful and smothered with pink and salmon flowers; Mr. Blackwood, gardener to J. Auerbach, Esq., Hethersett, second. Mr. W. M. Blackwood led for three bush plants of chrysanthemums with good bushes of Felton Favourite, W. Duckham, and Mrs. Greening.

In the classes for decorative exhibits Mrs. A. C. Brown, Brokes Lodge, Reigate, won the Adams Cup and first prize with a pretty exhibit of yellow and bronze flowers that was, however, a little too formally arranged round the base of the centrepiece. Miss Shelton second and Miss West, Firth Lodge, Reigate, third. Miss West and Miss Brown were first and second respectively for a vase of decorative chrysanthemums, and Mrs. Brown and Miss West scored for vases of single varieties.

Mr. Blackwood scored for black grapes, and was closely followed by Mr. J. Walder, gardener to Paul Von Fleischl, Esq., Shagbrook, Reigate; and both showed good clusters of Alicante.

There were a few non-competitive exhibits. Mr. C. Dales sent wreaths and other floral devices; Messrs. J. Cheal and Sons, Crawley, sent a collection of apples and pears; and Messrs. H. and A. Trower, Redhill, showed vegetables, ferns, and flowers.

## Bournemouth Gardeners' Association.

### ANNUAL CONCERT.

On October 15, a very successful concert was held in aid of the Royal Gardeners' Orphan Fund. The President, J. H. Ralph Smythe, Esq., being unavoidably absent, the chair was occupied by Mr. G. H. New, of Bournemouth, who made an earnest appeal for funds in aid of the work on behalf of orphan children of gardeners. He said there were three children in the Bournemouth district now receiving benefit from these funds.

A collection is taken, but no charge for admission to the concert made. On this occasion the sum collected amounted to three pounds nine shillings and ninepence. The artistes give their services free of charge, so that the whole amount collected is forwarded to the proper quarter. The concert was a very good one, the items being greatly appreciated by a large audience.

## Hull Chrysanthemum Show.

### NOVEMBER 20 and 21.

One of the most interesting of the floricultural events of the present year has been the revival of the Hull Chrysanthemum Society, which, for a period of twenty-one years exercised a great and highly beneficial influence upon the cultivation of chrysanthemums and their presentation to public notice. This influence was felt over the whole of the United Kingdom, for the fame of the society was such that exhibitors came from long distances to compete for the liberal prizes that were offered, and many were the visitors from widely separated districts to see what was being done at Hull, and in not a few instances to obtain object-lessons in the art of presenting chrysanthemums to public notice in the most attractive manner. Nowhere had the art of arranging groups attained to so high a degree of development as was to be seen at the exhibitions of the society, and, writing with a full knowledge of what has been accomplished by the leading societies in the United Kingdom, we have no hesitation in saying that nowhere have there been competitive groups of plants arranged for effect that were quite equal to those which formed so glorious a feature of the annual displays that for a long series of years filled the spacious halls of the Artillery Barracks to their utmost capacity.

While the influence exercised by the society was felt far beyond the boundaries of the East Riding of Yorkshire, in which Hull is situate, the influence for good was the greatest in the intermediate neighbourhood of the town, a statement that can be justified in a very few words. At the first exhibition of the society, which was held in the Assembly Rooms on November 20 and 21, 1884, the whole of the exhibits in competition for the prizes were contributed by growers from a distance, while at the last exhibition previous to the suspension of the society's activities in 1903, practically the whole of the competitive exhibits were from local growers, and the show was one of the finest the society had held. This great change is all the more remarkable when it is remembered that the cultivation of chrysanthemums received comparatively little attention in and around Hull until the society was formed, and it was largely owing to this fact that Mr. R. Falconer Jameson, the late Mr. Bohn, and some other gentlemen interested in these flowers were induced to form the society.

It is interesting to recall the fact that Mr. R. F. Jameson, the chairman of the executive committee of the revived society, was the first honorary secretary of the original body, a position he occupied some four or five years with singular ability and immense advantage to the society. He, indeed, filled the position of honorary secretary until he was elected chairman of committee, and succeeded by the late Mr. E. Harland, who a few months later was joined by Mr. James Dixon, and for sixteen years these gentlemen were the honorary co-secretaries, and rendered services of which it would be difficult to speak too highly. At the annual meeting held in 1903, Mr. Harland retired, and Mr. Dixon was joined by Lieut.-Colonel R. E. Johnson, who is now taking an active part in the work of the society as a member of committee, and on May 11 of the same year Messrs. Harland and Dixon were each presented with an illuminated address and a piece of plate in recognition of their services. Mr. James Dixon now fills the position of hon. secretary, and on the executive are a number of gentlemen who were long associated with the original society.

The cause of the suspension of activities in 1903 may be briefly explained. The committee aimed, on the initiation of the society, at a high ideal, and on its attainment they determined to carry on the work so long as the support was such as to enable them to maintain it, and no longer. At the first exhibition the success was so great that a profit of over £77 was realised, and the success continued until 1896, when there was a slackening in public interest, and this continued until 1902, when there was some revival and the annual subscriptions came in more freely. There seems to have been a relapse in the following year, and, as the result, the work of the society was suspended. In taking this course the executive acted wisely, for it was much better to have a few years' rest than to lower the standard for the purpose of maintaining a balance between the income and expenditure, as is done in so many cases.

During the past few years the question of reviving the chrysanthemum show has been raised in Hull on several occasions, but not until this year were steps taken to give practical effect to the wishes of those who were anxious that the shows should again be held. The exhibition on Wednesday and Thursday was held in the New City Hall, and the schedule of prizes was more comprehensive than on any previous occasion, with a view, it may be assumed, to render the display more varied and useful. The classes for cut blooms of chrysanthemums were arranged in four sections, and in the first of these the competition was open, and the classes were of the greatest importance. In two of them valuable silver cups were provided, in addition to liberal prizes in cash. The second section was open only to cultivators resident in the East Riding of Yorkshire and in Lincolnshire within twenty miles of Hull; and in the third section the competition was limited to amateurs, and in the fourth to allotment-holders. Then followed the sections for groups, plants in pots, table decorations, and fruits and vegetables.

Great as are the resources of the New City Hall, they were taxed to the utmost, for the competition was exceptionally keen in the whole of the classes. The great hall was devoted to groups arranged for effect, the cut blooms of chrysanthemums, the miscellaneous plants and the non-competitive collections of vegetables. In other halls and rooms were the floral arrangements and decorated dessert tables, the fruit, all the competitive collections of vegetables, and various non-competitive exhibits other than those of vegetables.

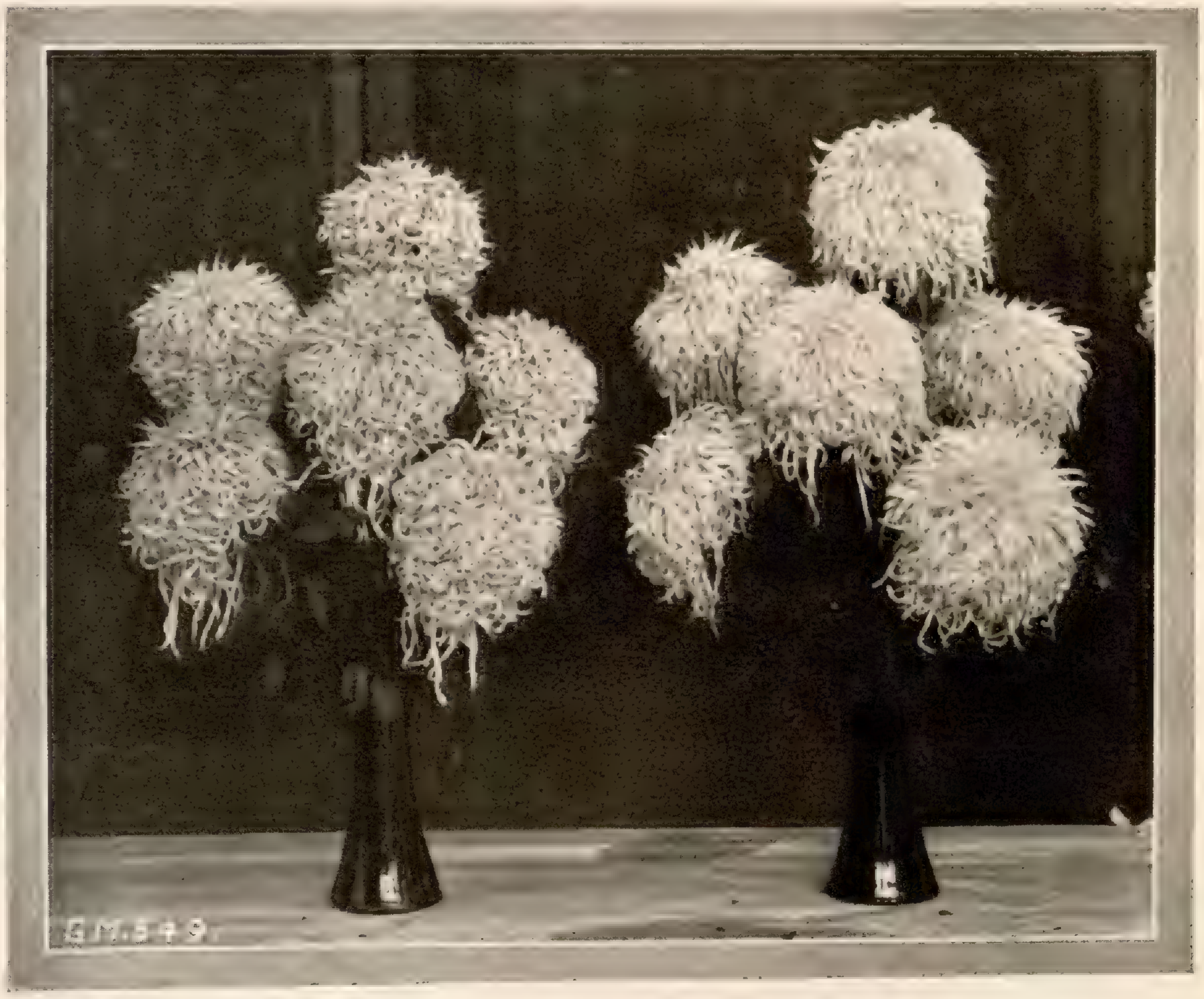
All the characteristics of the Hull chrysanthemum shows were revived; the arrangements were so admirably carried out as to be beyond praise. All the plants and flowers were staged in time for the judges to commence their duties at ten o'clock, and everything was in spick and span condition at 12.30 when the visitors were admitted, and the exhibition was opened by the Mayor of Hull, who was accompanied by the Sheriff and several members of the Corporation. A mere mention of this will show that Mr. J. Dixon and other members of the executive performed their duties in a manner deserving of the highest commendation. The judges were Mr. E. Molyneux, V.M.H., and Mr. J. W. Moorman, who had officiated for many consecutive years previous to the suspension of the exhibitions, and Mr. George Gordon, V.M.H., who had officiated from the foundation of the society in 1884.

## COMPETITION IN THE CLASSES FOR CUT BLOOMS.

The classes for cut blooms were numerous, and as the entries were many and the flowers remarkable for their high quality they formed an important and highly-attractive feature. The competition in the open class for twenty-four blooms of Japanese varieties was very strong, and the premier award, which included a valuable silver cup, was made in favour of Mr. F. J. Fleming, gardener to H. G. Hewitt, Esq., Weelsby Old Hall, Grimsby, who had a collection remark-for the splendid development and uniformity of the blooms. Especially noteworthy were those of Lady Talbot, Mrs. G. E. Kelly, W. Mease, Hon. Mrs. Lopes, Pres. Viger, Madame G. Rivol, Mrs. G. Drabble, Frances Jolliffe, and F. Green. Mr. G. W. Musk, gardener to Captain J. F. Laycock, Wiseton, Bawtry, Notts, followed closely for second place, with medium-sized blooms, high in finish, and bright in colour. Mr. A. Chandler, gardener to Arthur Jones, Esq., Coton House, Rugby, was third with blooms of high quality.

Incurved flowers were less numerically strong than the Japanese varieties, but the greater proportion of those staged were of exceptional quality. More epecially was this the case in the open class for eighteen, in which Mr. G. Wilson, gardener to Mrs. Hall-Watt, Bishop's Burton Hall, Beverley, was a splendid first. Among other blooms of great excellence were those of Madame Ferlat, Pantia Ralli, Mrs. F. Judson, Mrs. G. Denyer, Mrs. J. Seward, Romance, Buttercup, F. Palmer, and G. F. Evans. Mr. A. Chandler was a capital second.

The competition for the prizes for two vases each of yellow and white varieties, seven blooms in each vase, was very keen, and the several contributions produced a glorious and interesting display. Mr. A. Chandler was successful in winning the first prize in the class for two yellow varieties, with magnificent flowers of F. S. Vallis and Lady Talbot. Mr. G. W. Musk was a close second with two fine vases of blooms, those of F. S. Vallis representing that variety at its best. In the corresponding class for two vases of white varieties, Mr. G. Wilson scored with superb blooms of Purity and Mrs. A. T. Miller; Mr. Chandler was a capital second.



Lady Talbot. F. S. Vallis.

FIRST PRIZE TWO VASES OF YELLOW JAPANESE CHRYSANTHEMUMS.

Exhibited by Mr. A. Chandler at the Hull Chrysanthemum Show.

The competition was brisk, and the blooms of high quality in the class for six blooms of any one Japanese variety. The prizes were awarded to Mr. A. Chandler, Mr. A. Shearsmith, gardener to F. Costello, Esq., West Hill Lodge, Hessle; and Mr. G. Wilson, in the order of their names.

The contributions to the many classes for singles and decorative varieties were so numerous and meritorious as to form a bright and interesting feature. For twelve vases of singles, nine sprays, naturally grown, in each, Mr. M. Stather, Arlington Nursery, Cottingham, was first with finely-developed examples of well-known varieties. Mr. W. Allison, gardener to E. Kenneth Wilson, Esq., Little Tranby, Beverley, was a close second, with a collection of much excellence, and Mr. G. W. Musk was third with finely-veloped flowers. Equally well filled was the class for six vases of singles, five blooms of each, disbudded, and here the first prize was awarded to Mr. A. Drewery, gardener to H. Hildyard, Esq., Cherry Garth, Cottingham, for blooms of exceptional excellence, the varieties including Robert Thorpe, Bronze Pagram, Sylvia Slade, H. J. Williams, and Edith Pagram. Mr. M. Stather and Mr. G. Wilson were second and third respectively, both staging well.

The class for six vases of decorative varieties was a good one, and Mr. M. Stather and Mr. W. Smith, Holy Trinity Cottage, Hull, who were first and second respectively, are deserving of high praise for the excellence of their exhibits.

## LOCAL CLASSES FOR CUT BLOOMS.

The competition in the classes open only to residents in the East Riding of Yorkshire and such parts of Lincolnshire as are within twenty miles of Hull, was of the keenest. Mr. G. Burrows, gardener to Miss Bennett, Westlands, Grimsby, was successful in obtaining premier honours in the class for eighteen Japanese, with magnificent blooms of the leading varieties, the colouring being especially good. Mr. J. W. Backhouse, The Bar, Beverley, was a close second with blooms evincing cultural skill of a high order; and Mr. Hedley Smith, 43, Old Clee Road, Cleethorpes, who was third, also staged remarkably well. Very numerous were the entries in the class for twelve Japanese, and the blooms were of a high degree of excellence throughout. Mr. G. B. Burrows won with large and brightly-coloured blooms; and Mr. T. Hardcastle, gardener to A. G. Ayre, Esq., Tower Hill, Hessle, and Mr. A. Shearsmith were second and third with blooms of great excellence.

In competition for the prizes for incurved Mr. G. Jarvis, gardener to Mrs. Whitaker, Cliff House, Hessle, was a capital first; and Mr. J. W. Backhouse and Mr. T. Hardcastle followed closely for second and third places.

Both decorative and single chrysanthemums were admirably shown in the classes set apart for local growers, and Mr. Stather was a splendid first for six vases of decorative varieties, five blooms of each, disbudded with Felton's Favourite, and similar varieties.

For six vases of singles, naturally grown, Mr. A. Drewery was first with a very bright set, the blooms being especially remarkable for high finish. Mr. M. Stather and Mr. W. Allison were second and third.

The amateurs' classes were well filled. In the classes for Japanese the most successful exhibitors were Mr. H. H. Barlow, Glencoe, Hessle; Mr. T. Lazenby, Northolm Villa, Hessle; and Mr. J. E. Gibbins, Hessle. The principal prizes for incurved were awarded to Mr. J. E. Gibbins, Mr. H. H. Barlow, and Mr. J. R. Ellis, Hull. Chief among the prizetakers in the classes for single and decorative varieties were Mr. C. J. Mudd, Cottingham, and Mr. W. Smith.

### GROUPS.

There were four competitors in the great class for groups of chrysanthmums, and fine foliage plants arranged for effect, and, disposed in prominent positions on the ground floor of the great hall, they contributed liberally to the general effect. Mr. R. B. Witty, superintendent of the Public Parks and Gardens of Hull, arranged a magnificent group, in which both large and small-flowered chrysanthemums were used with rare taste and judgment. Very finely-coloured were the crotons used as a marginal fringe, and noteworthy for its high development was the large Kentia used as a centrepiece. The group was placed first in order of merit in its class, and Mr. Witty was awarded a large silver medal by the delegates of the North of England Horticultural Society. Next in order of merit was the group for which Mr. Jarvis, gardener to Mrs. Whitaker, Cliffe House, Hessle, was awarded the first prize, consisting of a silver cup and a sum of money. This was formed almost exclusively of Japanese varieties, the blooms throughout being of high quality, and the arrangement remarkable for the taste evinced. Mr. T. M. Petch, St. John's Street, Bridlington, was second with an excellent group, the development of the blooms being especially noteworthy. Mr. J. P. Cummings, Holderness Road, Hull, was third with a pleasing group, in which Japanese and single varieties were tastefully associated.

The arrangements in the class for decorated mirrors were so numerous and characterised by taste of so high an order as to constitute a very pleasing feature. Mr. G. Wilson, gardener to Mrs. Hall-Watt, Bishop Burton Hall, Beverley, was first of six competitors, with a remarkably bright and tasteful arrangement. At the base were crotons, poinsettias, variegated abutilons, dracænas, and other fine foliage plants. On either side were Japanese and single chrysanthemums and bamboos, the latter being carried over the top, where variegated abutilons were associated with them with good effect. Mr. T. M. Petch was an admirable second, albeit the top decoration was decidedly weak. Single and Japanese chrysanthemums were very tastefully used in the embellishment of the base and sides, and on one side a slender Kentia was deftly placed. Mr. T. Willey, gardener to H. Holland, Esq., The Sycamores, Cottingham, was a close third, with a very tasteful arrangement in which white chrysanthemums and feathery centaureas predominated.

Begonias of the Gloire de Lorraine type were splendidly shown, and the several collections of six produced a beautiful display of colour. Mr. T. Hardcastle, gardener to A. T. Ayres, Esq., Tower Hill, Hessle, was a splendid first, with finely-flowered pyramidal specimens, and Mr. Scales, gardener to A. Spring, Esq., Waylands, Hessle, second. Brilliantly-coloured salvias, lily of the valley, and attractive cyclamen were admirably shown.

### FLORAL DECORATIONS.

The large room devoted to table decorations and other floral arrangements presented a delightful appearance, and was a great source of attraction. There were four decorated dinner-tables, all possessing much merit, and the awards were made to Mrs. E. Robson, Tower Grange, Hull; Mrs. E. G. Bilton, Princes Avenue, Hull; and Miss E. S. Hardy, Middleton-on-the-Wolds, in the order of their names. Epergnes, baskets, bouquets, and ladies' sprays were all shown in a manner that reflected much credit upon the exhibitors.

### NON-COMPETITIVE EXHIBITS.

These were fairly numerous and of a high order of merit, with the result that they greatly enhanced the attractions and interest of the show. The North of England Horticultural Society sent a deputation to award medals to the more important of the exhibits not in competition for the prizes. The members of the deputation were Mr. J. S. Brunton, Mr. Hicks, Mr. Ker, Mr. J. P. Leadbetter, and Mr. Dolby, and the following awards were made:

Gold Medal.—To Messrs. Clibrans, Altrincham, for a large collection of vegetables.

Large Silver-gilt Medal.—To Messrs. Toogood and Son, Southampton, for a collection of vegetables.

Large Silver Medal.—To Mr. H. B. Witty, for his beautiful group of chrysanthemums and fine-foliage plants, arranged for effect; and to Messrs. E. P. Dixon and Son, Hull, for floral designs, flowers, and fruit.

Silver Medal.—To Messrs. Mansell and Hatcher, Leeds, for a fine group of orchids; and to Messrs. W. Wells and Co., Merstham, for a tastefully-arranged group of cut chrysanthemums, consisting chiefly of the newer varieties.

First Class Certificate.—To Messrs. W. Wells and Co., for Japanese chrysanthemum Queen Mary.

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## Kilmarnock Chrysanthemum Show.

The eighteenth annual show of the Kilmarnock Chrysanthemum Society was held in the Agricultural Hall, Kilmarnock, on November 15, and was one of good quality. The class for a table decoration, on a circular table, of plants, flowers, and foliage, arranged for effect, was again one of the outstanding features, and here Mr. James M'Gran, Goodham Gardens, led with a tasteful table of plants and flowers of very fine quality. Mr. A. Dewar, Dankeith Gardens was second, and Mr. James Muir, Crosbie Tower, Troon, third. In the gardeners' classes for pot plants some good chrysanthemums, primulas, begonias, and plants for table decoration were shown. Mr. R. J. Clark, Cambusdoon, Ayr, was first for three pots of chrysanthemums, and also for two pots of singles—a class growing in favour here. Mrs. Kennedy was first for two pots of Japanese, and Mr. A. J. Ferguson for two of pompons.

In the classes for plants grown on a single stem, Mr. Jas. Cochran took the first for Japanese, and also for singles. Mr. A. Methven, Galston, came first for Primula obconica, well done here; and Mr. R. J. Clark took a similar position for other primulas. Mr. Methven was first for six plants for table decoration; for three plants in flower or foliage; and for four pots of pelargoniums. Mr. W. Mair, Blair Gardens, led for begonias; Mr. Clark for salvias and palms.

Cut blooms were very good, though a little poorer in general quality than in some former seasons. In the leading class for twelve Japanese Mr. Jas. Muir, Crosbie Tower, Troon, came first, followed by Mr. P. Anderson, Ballochmyle, who was first in the class for six, for two vases white Japanese, and for six and three vases exhibition chrysanthemums. Mr. J. Muir was first for two vases of yellow Japanese and for six sprays chrysanthemums.

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⁂ We regret that owing to the extreme pressure upon our space we are unavoidably compelled to hold over the reports of Winchester, Hitchin, Woolton, Bolton, Blackpool, and National Chrysanthemum Society until our next issue.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

NITRATE OF SODA.—M. G., Shefford: I shall be obliged if you can tell me the chief source of nitrate of soda, and what is the annual output?—For the moment we have not the complete figures to hand, but we may state that nitrate of soda comes chiefly from South America, and principally from Chile. In 1911 the production in Chile amounted to 2,480,000 tons, an increase of 54,000 tons over 1910. The consumption of nitrate during 1911 was 108,000 tons more than in 1910, the United Kingdom and the United States using 10 per cent. more than in the previous year, while Holland increased its consumption of this fertiliser by 7 per cent., France by 4 per cent., Belgium by 7 per cent., and Italy by 12 per cent. It is estimated that the production of nitrate in Chile in 1912 will reach 2,535,000 tons, and it is stated by experts that the grounds now being worked contain enough nitrate to maintain the present rate of supply for thirty years.

DISEASE - IMMUNE POTATOES.—C. R. T., Wisbech: Seeing how bad potato disease has been in many districts this year, I am led to ask you what are the possibilities and probabilities of a variety immune from disease?—This is a large question. Some varieties of potatoes resist disease far better than others, and that leads us to hope that an immune variety may be raised. The difficulty seems to lie in the combination of immunity with a productiveness that will be of commercial value. Dr. Salaman has been

NEWS FROM HEADQUARTERS.
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6 Vanilla (Yellow Trumpet)
12 Poetaz C's White (Poetaz)
12 Poetaz C's Canary (Poetaz)
50 Emperor (Yellow Trumpet)
50 Barri Conspicuus (Barri)
50 Cynosure (Incomparabilis)
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THE GARDENERS' MAGAZINE may be obtained by order from all Newsagents, price Twopence, every Friday. If any difficulty be found, a copy will be posted weekly direct from the Publisher, 148 and 149, Aldersgate Street, London, on the following terms, Twelve Months, 10s. 6d.; Six Months, 5s. 6d.

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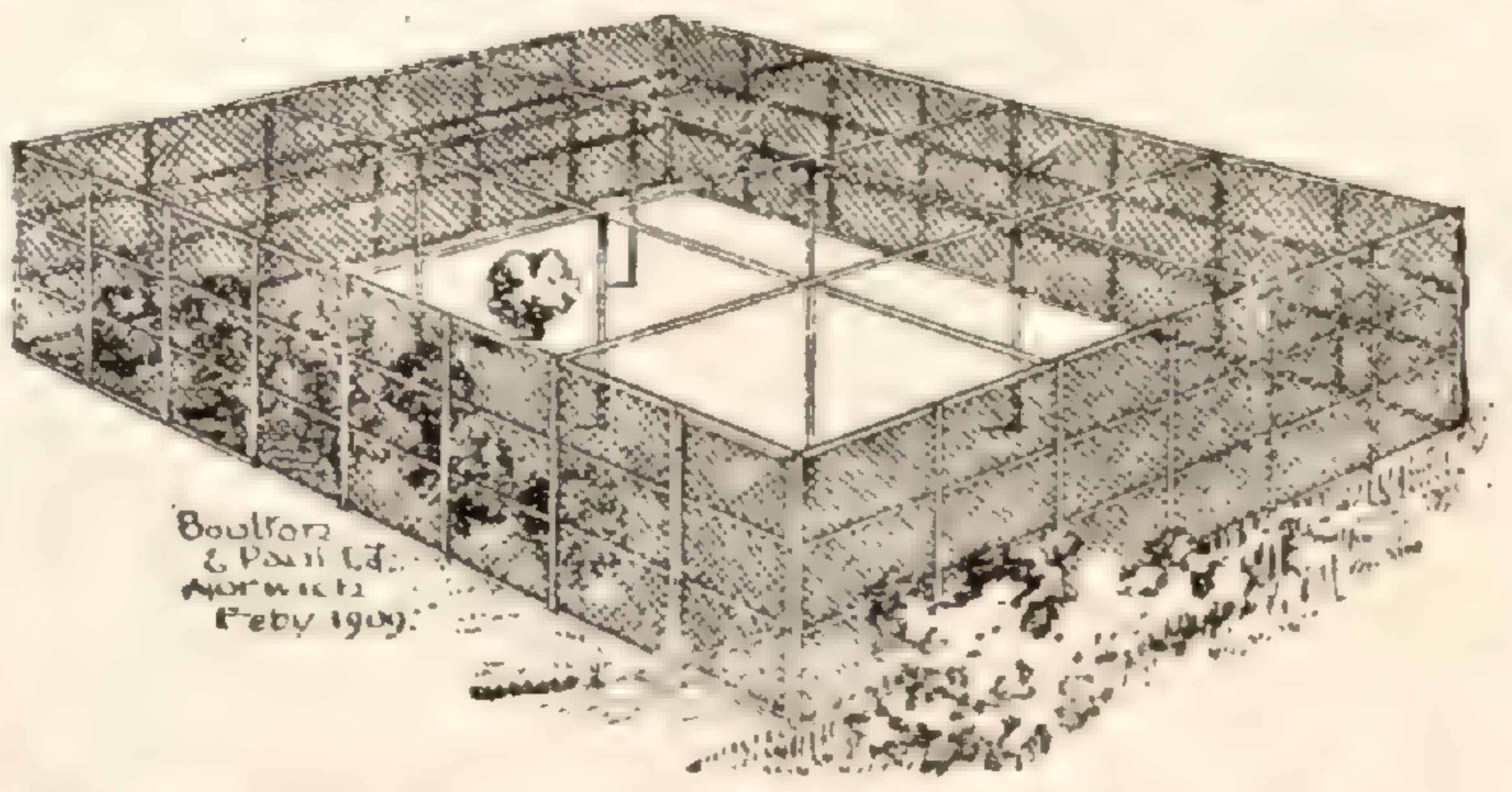
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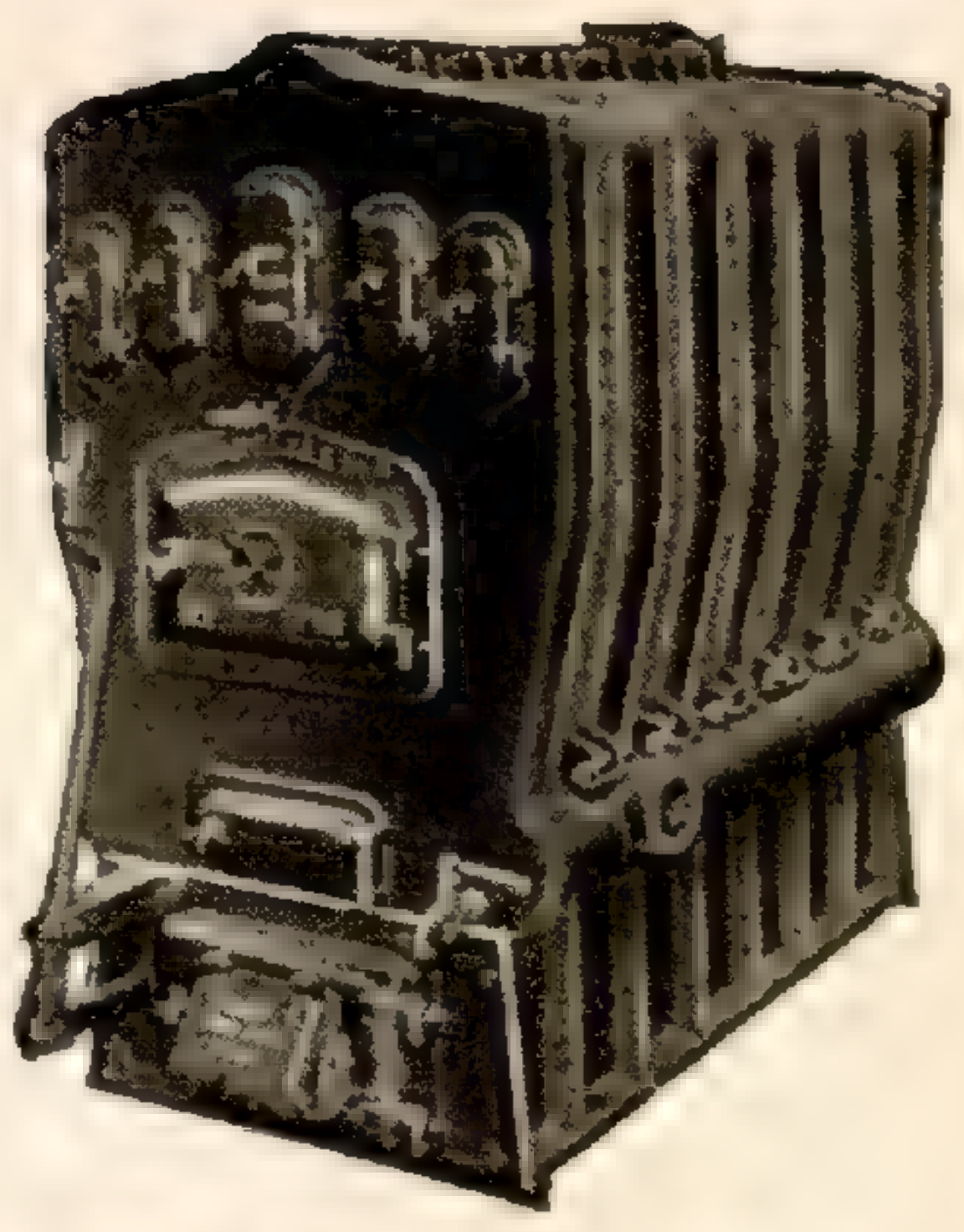

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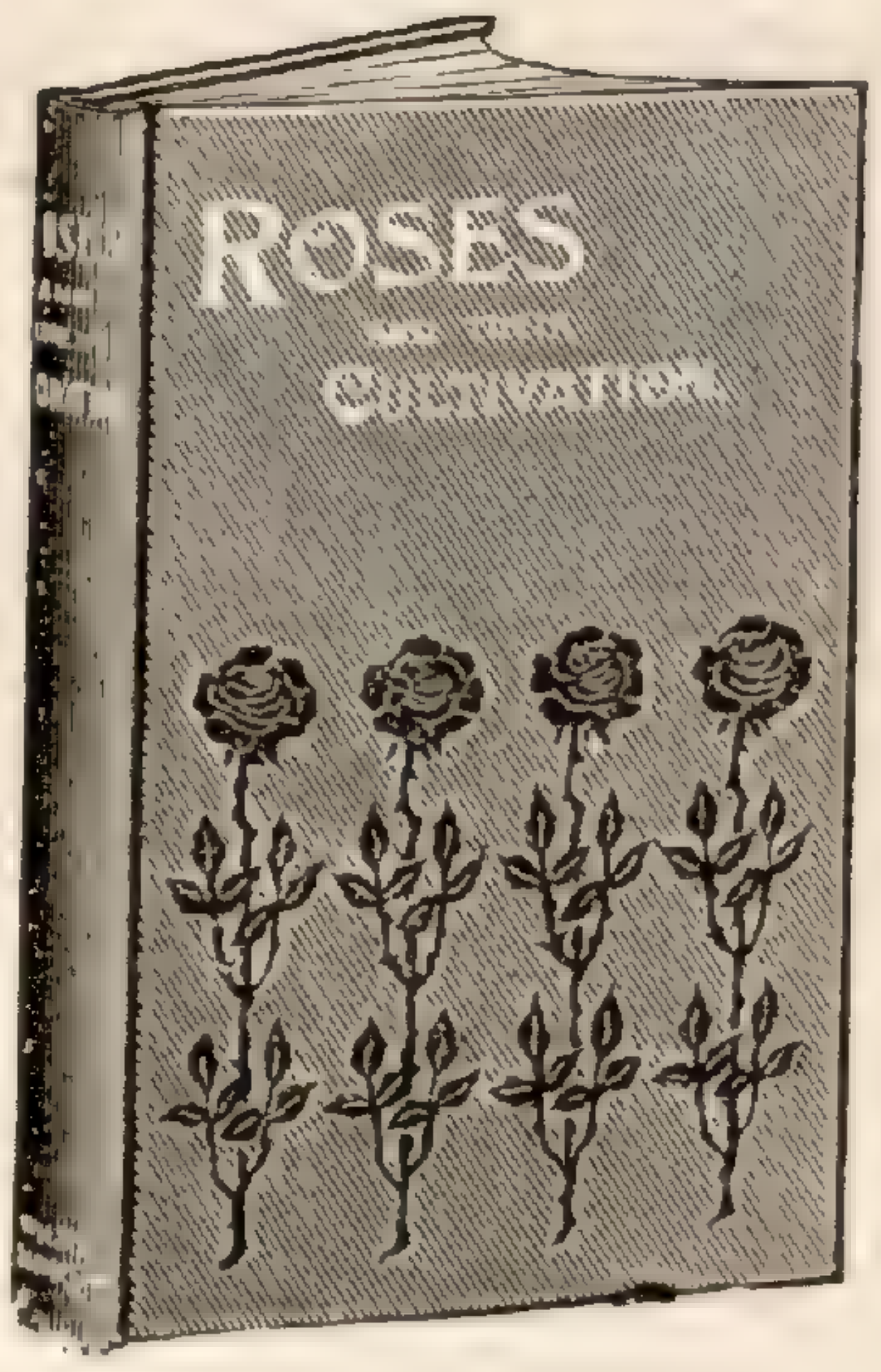

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experimenting with potatoes for several years, and he has shown, in the "Journal" of the Royal Horticultural Society, that, in 1909 and 1910, when disease was exceptionally prevalent, one-fourth of the seedlings of S. etuberosum were unaffected by disease, while the remainder perished. From these immune individuals numerous crosses have been made and large families formed. It is hoped that in the second-generation families the recessive quality of immunity may segregate out. Therefore, Dr. Salaman considers that a really immune potato, to which other desirable qualities may readily be added, is not an improbable feature of the future.

HORTICULTURAL EXHIBITION IN ST. PETERSBURG IN 1913.—A. A. G., Hull: Can you give me any information concerning the horticultural exhibition to be held in St. Petersburg next year?—An international horticultural exhibition will be opened at St. Petersburg at the end of April, 1913. It is being organised by the Russian Imperial Horticultural Society. The exhibition will comprise an agricultural section in addition to various floricultural and horticultural sections. Intending foreign exhibitors must give notice of their intention to exhibit to the Comité Exécutif de la Société Impériale d'Horticulture de Russie, St. Pétersbourg, Quai de la Cour, 32, before January 1, 1913. A copy of the regulations, programme, and awards may be seen at the office of the Board of Agriculture, 4, Whitehall Place, London, S.W.

BLACKENED CATTLEYA AND VANDA LEAVES.—E., Darlington: Could you tell me the cause of blackening in the leaves of cattleyas and vandas, examples of which I send you?—There is little doubt but that the evil is due to excessive moisture in the potting compost, coupled with a stagnant atmosphere. As a general rule, trouble among cattleyas is due to insufficient ventilation and excess of moisture about the roots. Give less water, stand the plants in a light position, ventilate freely, having due regard to the weather, and use a little extra fire-heat to maintain the temperature. You will find much help in our Orchid Notes under Work for the Week.

DO ROSE CUTTINGS COME TRUE?—Ignoramus, Enfield: If a cutting is taken from a rose bush and rooted, will it produce the same sort of rose as its parent, or will it have to be budded first?—A rose cutting will, when rooted and grown, produce precisely the same sort of roses as the plant from which it was taken. As a rule roses are propagated by budding, and the stocks used are seedling briar, cutting briar and Manetti; but sometimes "own-root" roses are offered for sale, and these are obtained from cuttings. Thus, if you root a cutting of Mdme. Abel Chatenay or Mrs. John Laing you will get flowers of those varieties in due course, without budding. Budding is the quicker method of increase.

FAILURE OF IVY-LEAVED PELARGONIUMS.—H. T., Oxford: I am sending a specimen of ivy-leaved pelargonium Souv. de Charles Turner, for examination, and should be glad to have your opinion of it. We had the house panted inside, as well as the staging, in the summer of 1911, and subsequently the pelargoniums lost every leaf. We cut the plants back and removed them to another house, and they then grew away well. This summer I had all the plants removed from the house painted last year, and had the paint washed, and the ventilators and doors left open for two months. In this house we have some good single chrysanthemums and Primula Kewensis, flowering well, but the pelargoniums are going just the same as before, the leaves shrivelling up and falling. We keep a fire going during damp and cold weather, and leave a little air on at night. Two gardener friends consider that the trouble is due to the odour from the paint. Kindly give your opinion to one who has taken the "G. M." for many years, and found it most useful.—The trouble cannot be due entirely to the paint, or some other subjects would have been affected. The leaves show no signs of disease, but their appearance suggests lack of light and excess of atmospheric moisture. It may be that from various local causes the stock has become debilitated. Have you grown any other pelargoniums in the same house, and, if so, with what success? Further, at what period of the year do the leaves commence to fall?

### NAMES OF PLANTS.

J. A. S., Bridgend.—Nægelia zebrina.

L. L., Buckingham.—1, Vallisneria spiralis; 2, a leaf of Gingko biloba.

S. H. A., Devonport.—1, Oncidium ornithorynchum; 2, O. pubes; 3, O. bicallosum.

B. F., Oswestry.—1, Struthiopteris germanica; 2, Polypodium propinquum; 3, Vaccineum Vitis Idæa.

E. J. W., Preston.—1, Luculia gratissima; 2, Cypripedium insigne Sanderæ; 3, Maxillaria variabilis; 4, Aglaonema costata; 5, Dracæna Baptisti.

G. B., Bournemouth: 1, a fine form of Begonia Gloire de Lorraine, probably the variety Mrs. Leopold de Rothschild; 2, Laportea moroides, the Poison Tree of Queensland—thanks for your prominent notification of its stinging powers; we know the plant quite well, and experienced its capabilities, under cultivation, a score of years ago, but if we had not known what to expect in the box we might have had an unpleasant shock.

### NAMES OF FRUITS.

G. M., Felixstowe.—Kerry Pippin.

N. R., Petersfield.—1, Bergamotte d'Esperen; 2, Alicante.

H. S. Y., Tewkesbury.—1, Margil; 2, Washington; 3, King of the Pippins.

P. W., Reading.—1, Court Pendu Plat; 2, Claygate Pearmain; 3, King of the Pippins.

F. E., Coggeshall.—1, Ribston Pippin; 2, Beurré Clairgeau; 3, Winter Nelis; 4, Catillac; 5, Tyler's Kernel.

W. S. T., Craven Arms.—1, Dumelow's Seedling; 2, not recognised; 3, Dutch Mignonne; 4, Emile d'Heyst.

W. N. R., Bickley.—1, Roundway Magnum Bonum; 2, Fearn's Pippin; 3, Warner's King; 4, Gascoigne's Scarlet.

C. T. D., Coventry.—1, Chelmsford Wonder; 2, Golden Noble; 3, Beurré Superfin; 4, Doyenne du Comice; 5, out of character, possibly Court Pendu Plat; 6, Uvedale's St. Germain.

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| Date. | Sunshine. | Temperature of the Air. | | | |
|---|---|---|---|---|---|
| 1912. November 10 to November 16. | | At 9 a.m. | | Day | Night |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. |
| | hr. m. | deg. | deg. | deg. | deg. |
| Nov. 10—Sunday | 0 24 | 44 | 42 | 51 | 42 |
| ,, 11—Monday | 1 24 | 41 | 38 | 45 | 39 |
| ,, 12—Tuesday | — | 38 | 37 | 42 | 36 |
| ,, 13—Wednesday | — | 39 | 37 | 43 | 36 |
| ,, 14—Thursday | 0 18 | 40 | 38 | 44 | 38 |
| ,, 15—Friday | 0 6 | 39 | 38 | 48 | 37 |
| ,, 16—Saturday | — | 45 | 45 | 49 | 39 |
| Means | (total) 2 12 | 41 | 39 | 46 | 38 |

| Date. | Rain. | Temperature of the Soil at 9 a.m. | | | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| 1912. November 10 to November 16. | | At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | |
| | ins. | deg. | deg. | deg. | deg. |
| Nov. 10—Sunday | 0·04 | 49 | 48 | 50 | 36 |
| ,, 11—Monday | 0 02 | 47 | 48 | 50 | 34 |
| ,, 12—Tuesday | 0·01 | 44 | 47 | 50 | 31 |
| ,, 13—Wednesday | 0·02 | 43 | 46 | 50 | 31 |
| ,, 14—Thursday | — | 43 | 45 | 50 | 32 |
| ,, 15—Friday | 0·01 | 43 | 45 | 50 | 34 |
| ,, 16—Saturday | 0·03 | 45 | 45 | 48 | 37 |
| Means | (total) 0·13 | 45 | 46 | 49 | 33 |

## OBITUARY.

◆

### MR. JOHN KINNAIRD.

There has just passed away, at the comparatively early age of 58 years, Mr. John Kinnaird, Burnieboozle, Aberdeen, an outstanding personality in the market gardening industry of the city of Aberdeen. The Kinnairds have for several generations been connected with the market gardening industry of Aberdeen, but no member of the family has left a better record of work well done than Mr. John Kinnaird. Burnieboozle, which contains over a hundred acres, is recognised as a model market garden, and the excellent and practical manner in which the grounds are laid out and tended earned for Mr. Kinnaird the warm admiration of every one of his professional brethren. He was eminently successful as a grower of vegetables and fruit, and, as our columns in past years can testify, he invariably took a very prominent place in the prize list at the annual shows of the Royal Horticultural Society of Aberdeen. He is survived by a widow and a son and daughter. The son, Mr. John Kinnaird, jun., has for long been associated with his father in the business, and so the continuity of the Kinnairds as Aberdeen market gardeners will be preserved.

### MR. JOHN ELLIOTT BURTON.

There passed away at Twickenham, on November 11, Mr. John Elliott Burton, in his eightieth year. Mr. Burton was a native of Flitwick, Beds, and had his early training in the Duke of Bedford's garden at Woburn Abbey; from there he received an appointment as head gardener to Lord John Russell at Rodboro' Manor, Gloucestershire, and later to Sir Edward Dean Paul, Bart., of Cambridge House, Twickenham. The interment took place at Twickenham Cemetery on November 16, preceded by service at St. Stephen's Church.

### SIR THOS. SKEWES-COX.

After a very brief illness, Sir Thos. Skewes-Cox died at Manor House, Petersham, Richmond, a few days ago. Sir Thomas was a solicitor, but in the Richmond district he was well known for his interest in horticulture and the support he gave to the Richmond Horticultural Society.

## FORTHCOMING ENGAGEMENTS.

WEDNESDAY, November 27.—National Chrysanthemum Society's Annual Dinner and Prize Distribution at the Holborn Restaurant, at 6.45 p.m. Sir Albert Rollit will preside.

TUESDAY, December 3.—Royal Horticultural Society; Committee meet at 12 o'clock; Lecture at 3 p.m. on "Vegetation of the Islands of Lake Maggiore," by Mdme. Tzikos St. Leger; Scientific Committee at 4 o'clock.

Scottish Horticultural Association.

WEDNESDAY, December 4.—Perpetual-flowering Carnation Society's Winter Exhibition at the Royal Exhibition Hall.

THURSDAY, December 5.—Linnean Society.

SATURDAY, December 7.—French Horticultural Society of London.

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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

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EXCELLENT GARDENER (34), eighteen years' references; sober and reliable. Apply, "R.," 60, St. Mary's Road, Lower Edmonton.

FLORIST and GARDENER (German), age 25, seeks SITUATION to improve his English; small salary; good references. G. K., 29, Colville Square Mansions, Bayswater.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working, where three or four are kept); thoroughly experienced, Inside and Out; age 32; married; abstainer; excellent references. W. MANN, St. Hilary Gardens, Cowbridge.

GARDENER.—Canon and Mrs. Mather, The Arches, Clevedon, wish to recommend their Gardener (Single-handed or Head of two); age 37; married; lifelong abstainer; well recommended; experience thorough in all branches. The Arches, Clevedon, Somerset.

GARDENER, age 17½, seeks SITUATION as Under Gardener; three years' experience, Inside and Out; good reference. G. DARBY, High Street, Witham, Essex.

GARDENER (Head or Single-handed), 29 years' experience, inside and out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head Working), and Wife, experienced Laundress, seeks SITUATION; 30 years' experience in all-round gardening; 12 years in present situation as above; no family; good references. Box 70, Office of this Paper.

GARDENER (Single-handed) seeks SITUATION; age 34; 15 years' experience in Nursery work and private situation. W. H. D., 220, Arlington Road, Camden Town, N.W.

GARDENER (Second of five or six); Inside, or Inside and out; thoroughly experienced, Fruit, Plants, Decorating; two years second; excellent references; disengaged; age 27; married when suited. Address, W. LYDE, North Ripley, Christchurch.

GARDENER (Head Working), where three or more are kept; life experience in all branches; 7½ years as Head in last situation; highest references; age 36; married, two children. E. A. CLAYDON, 7, Middleton Road, Salisbury, Wilts.

GARDENER (Head) seeks SITUATION, where one or two are kept. 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head of two, or good Single-handed); single; age 25; good experience in Vines, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places; leaving through no fault. J. STEPTOE, 59, Burlington Road, New Malden, Surrey. No circulars.

GARDENER (Head Working).—Major PITT, Pett Place, Charing, Kent, can highly recommend F. FOLKARD to any Lady or Gentleman requiring a practical man well up in Flowers and Fruit; age 31; married when suited.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 28th.

"Having got a situation through your paper, I wish my name to be taken off your Register. Thanking you very much.

Yours truly,
J. S.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Head) seeks RE-ENGAGEMENT; 17 years' practical experience; age 32; married; highest reference; can be recommended by late employer. MOUNSDON, Reading Road, Pangbourne.

GARDENER (Under); 5½ years' baronet's gardens; experienced Carnations, Herbaceous borders, Fruit, Vines, Chrysanthemums, Greenhouse and Stove Plants; can milk; use scythe; age 21; tall and strong; good references. F. GAGE, Angel Street, Hadleigh, Suffolk.

GARDENER, aged 29, married, no family, seeks place as Single-handed; ten, two, and one years' references. H. WILLIAMSON, 8, Capron Road, Dunstable, Beds.

GARDENER (Single-handed or with help); 6½ years' excellent character; age 35; married, three children; disengaged. W. HUMPHREYS, Nutley Grove, Reigate, Surrey.

JOURNEYMAN, Outside or Inside and Out; age 21; seven years' experience; well recommended; Bothy preferred. WILLIAM MEADEN, The Gardens, Holnest Park, Sherborne, Dorset.

KEEN and reliable FOREMAN GROWER of all Market Produce seeks Situation in Market Nursery; life experience; age 35; married; good references. MOODY, 152, Victoria Road, East Leicester.

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STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Paddock Cottage, High Street, Orpington, Kent.

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*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE."
*148 & 149, Aldersgate Street, London, E.C.*

**For NOVEMBER 30, 1912.**

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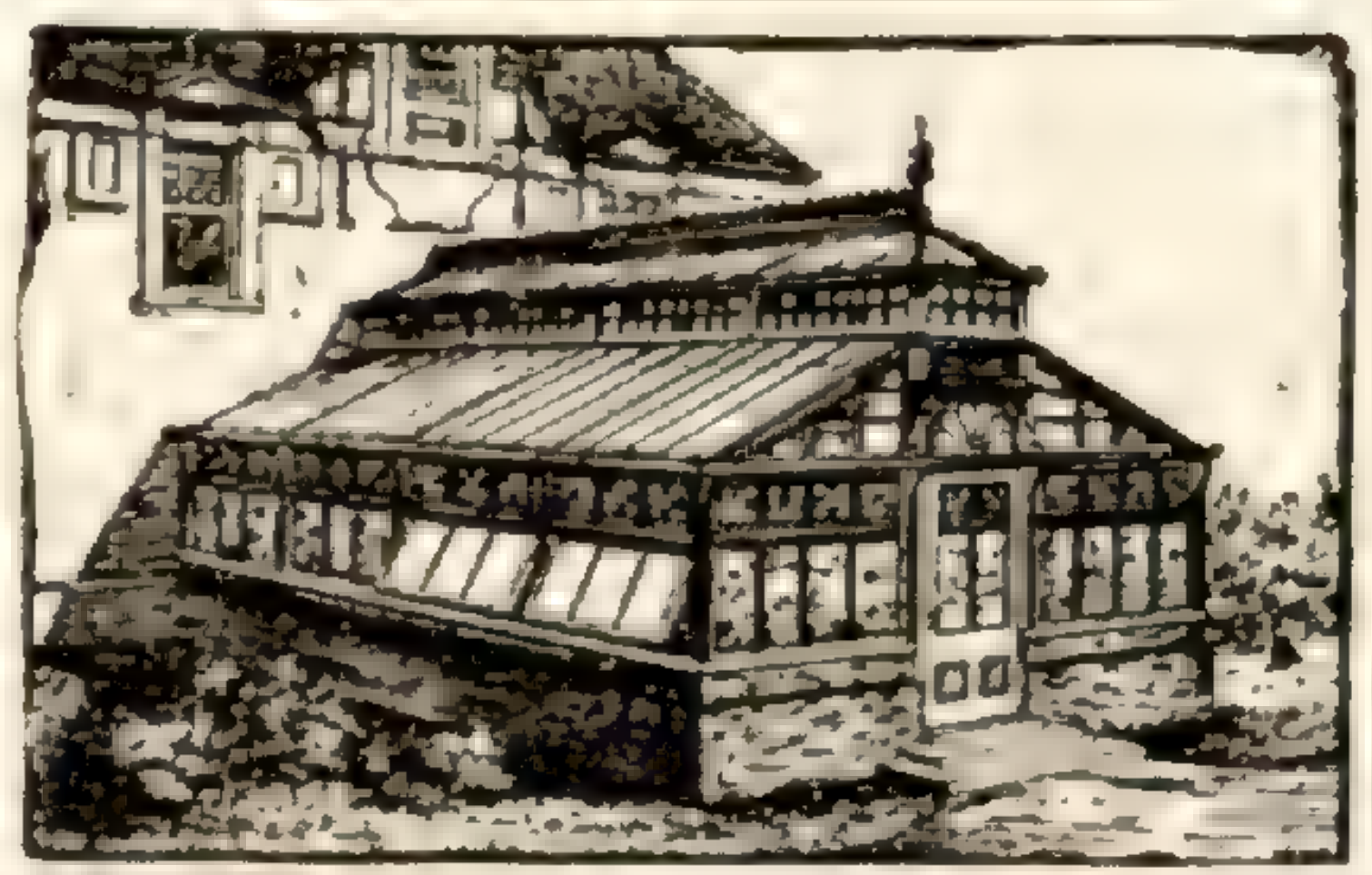

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## PLANTING FRUIT TREES.

# THE GARDENERS' MAGAZINE.

No. 3,083. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

SATURDAY, NOV. 30, 1912

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Notice is hereby Given that an ELECTION of CANDIDATES to receive the benefits of this Fund will take place at SIMPSON'S, 100, STRAND, London, W.C., on FRIDAY, February 7th, 1913. Nomination forms can be obtained from the Secretary, and must be returned to him not later than December 17th next, on which date the lists will be closed.

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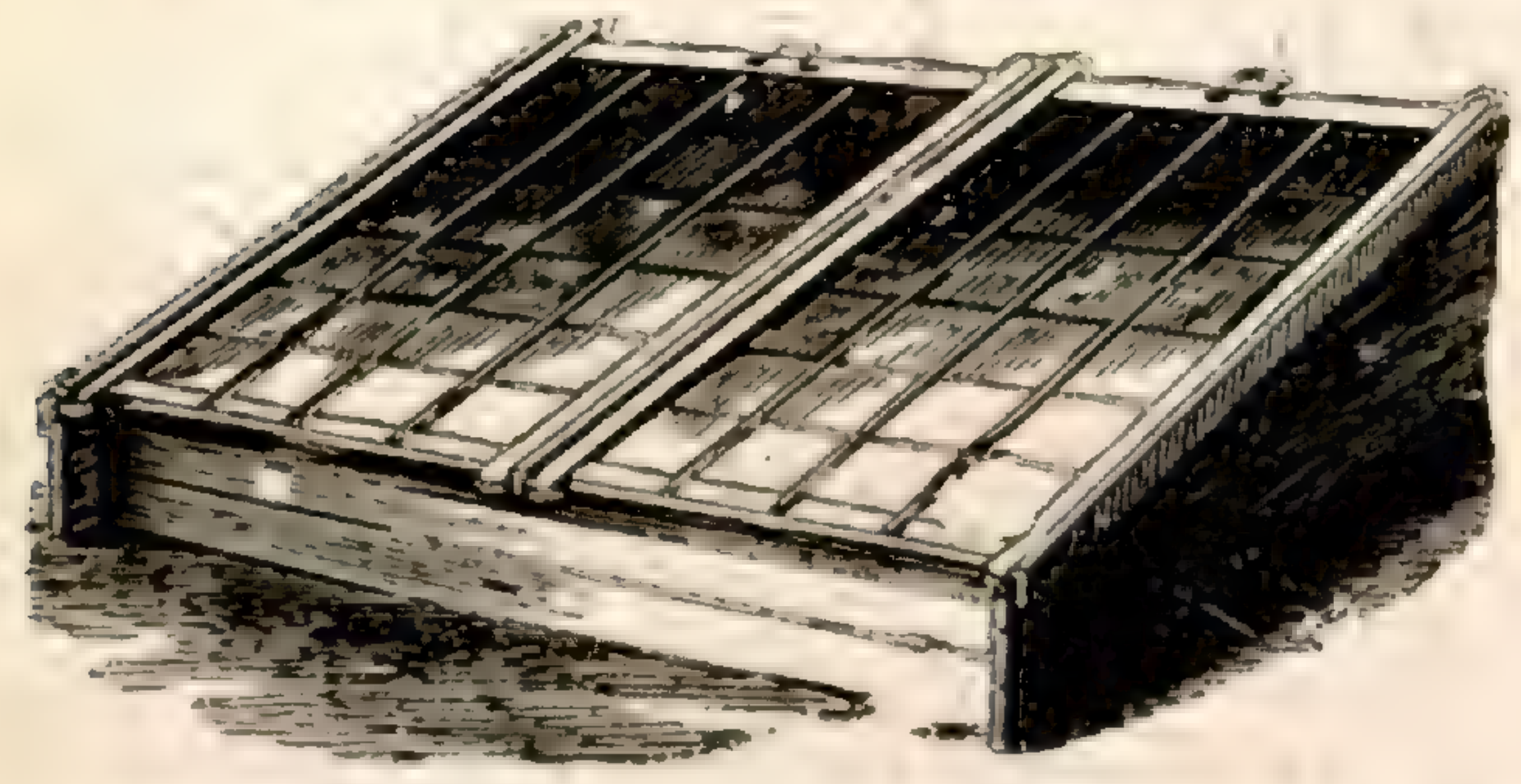

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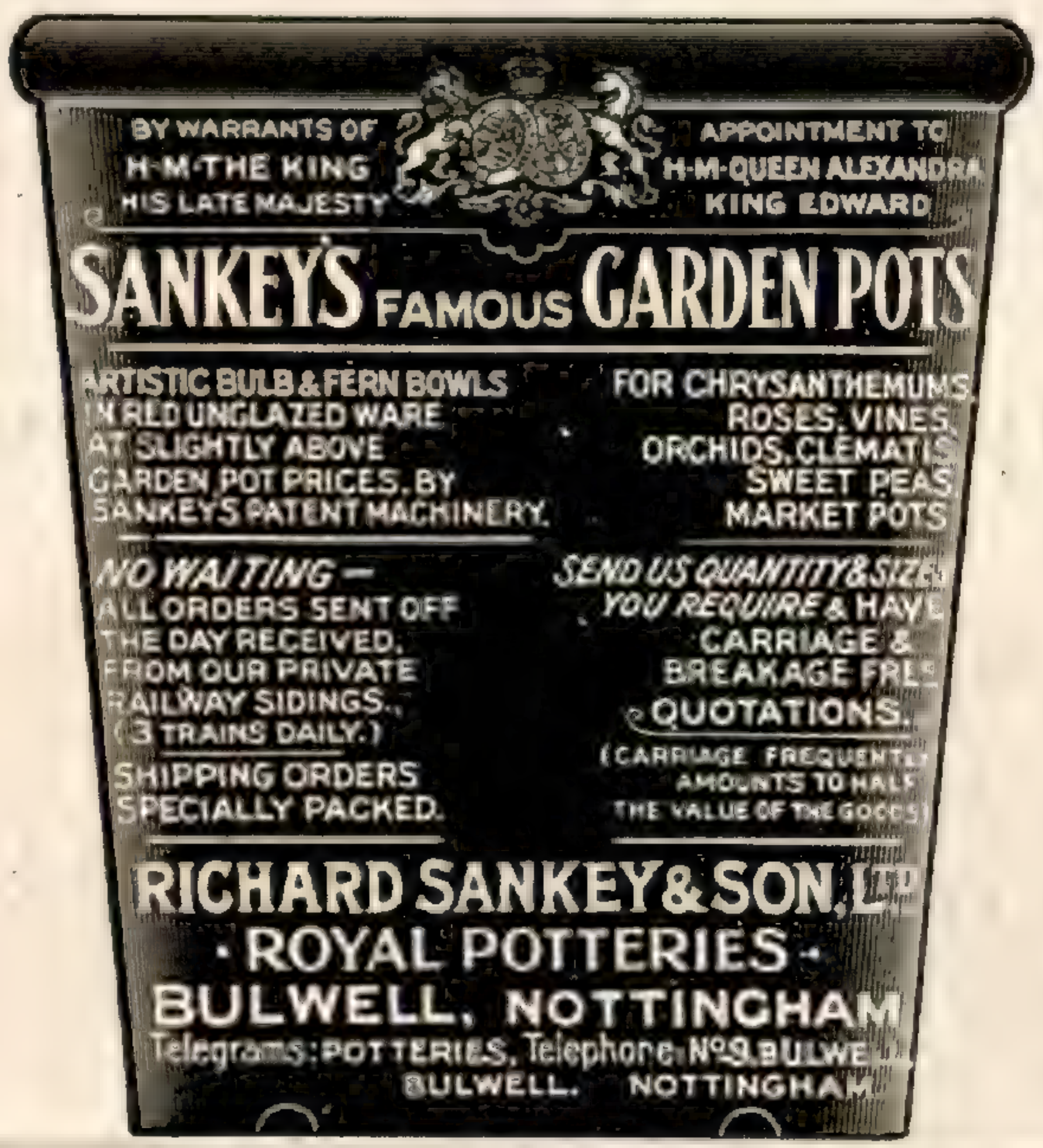

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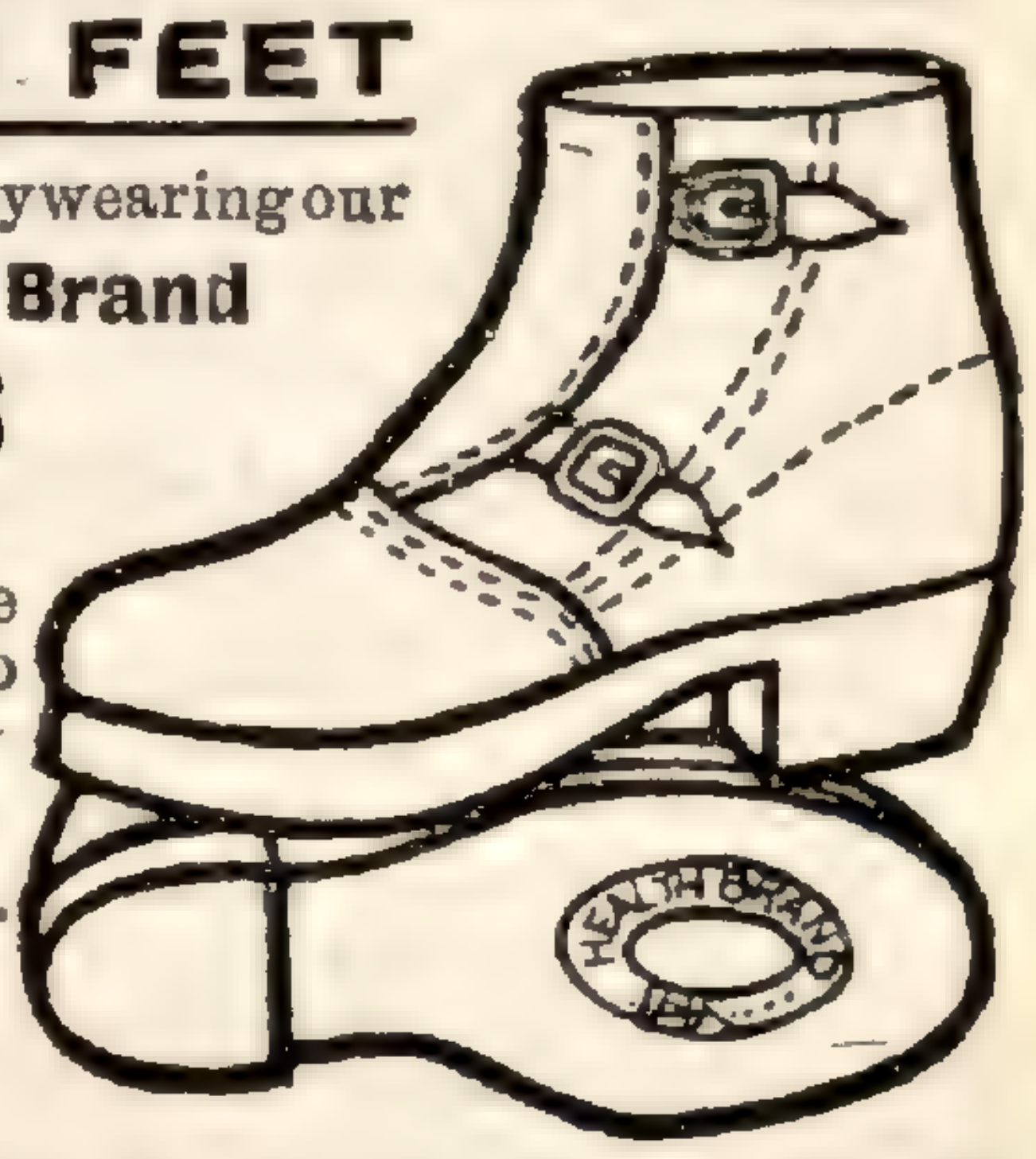

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VOL. LV.—No. 3,083. SATURDAY, NOVEMBER 30, 1912.

THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Chrysanthemum Season.

The exhibition season of the chrysanthemum has now practically run its course, and those who have visited any considerable number of the exhibitions that may be regarded as representative in character, are now in a position to express with some degree of authority their views on the season in relation to years which have immediately preceded it. We have visited many of the competitive gatherings, both in the north and south, and after a careful comparison of them we are strongly inclined to the opinion that the shows may, as a whole, be described as a good average. Some of our friends, whose opinions are entitled to respect, regard the exhibitions that have been held during the past season as below, while others consider them as above, the average of the past few years. Much, of course, depends upon the character of the exhibitions that have been visited by those who readily give expression to their opinions on the superiority or otherwise of the various shows. There is, of course, a consensus of opinion that the societies which devote their attention exclusively to the chrysanthemum do not possess the same degree of strength as that which enabled them to render splendid service in the cause of the flower from fifteen to twenty-five years ago. Societies, on the other hand, that do not set so severe a limit on their usefulness, have suffered less from the change in public taste, and have been able to hold gatherings that have been highly attractive, varied in interest, and financially successful. Of the greatest interest to large numbers of the fanciers of chrysanthemums were the two exhibitions held by the National Chrysanthemum Society at the Crystal Palace. The early October show was of special interest for the aid it rendered in bringing into prominence the most beautiful of the varieties that are available for beautifying the garden and decorating the conservatory and indoor apartments during the months of September and October. On the glorious display that was produced at the end of October by the joint efforts of amateur and trade cultivators much praise might be lavished, but it must suffice to record the fact that it was, in many respects, worthy of the best traditions of the society. There were no classes for the fine and shapely incurved varieties, because the date was so early as to render it practically impossible for these noble flowers to be shown at their best. Provisions were made for them at the Essex Hall show on the 20th inst., and a few of the growers were careful to take advantage of their opportunities for presenting examples of their skill in the growth of the incurved varieties. It is unfortunate this section, on which past generations of chrysanthemum growers lavished much love and skill, should have fallen on evil days, but the fact must be faced and looked at squarely. We regret the decadence of the incurved chrysanthemum, but we should certainly not advise growers to cultivate varieties that are not in accordance with the taste of their employers or themselves. There is also a slight decline in the growth of large flowers of the exhibition Japanese varieties, and there is some diversity of opinion as to the cause or causes by which this change has been brought about. Some growers consider the introduction of the vase classes as the sole cause. The change in the method of staging may have helped to reduce the numbers of large Japanese blooms, but it has not been the only cause. In proof of this, we have only to point out that when we suggested in these pages, some ten or eleven years since, that a few classes should be provided for Japanese varieties in vases, for the purpose of rendering the shows less monotonous, there had been a considerable decrease in their numbers. There was then an appreciable slackening of interest in big blooms on the part of the owners of gardens, and not a few had, after the novelty of prize-winning had worn off, an objection to so much attention being devoted to the production of exhibition blooms. In many instances, this objection was based on their consideration for their gardeners, knowing that the production of blooms of such quality as would bring honours in a keen contest at an exhibition of the first class imposes a heavy strain upon the cultivators. If the incurved varieties are no longer regarded with much favour by either cultivators or the public, and the large blooms of Japanese varieties are less popular than they were a decade or more ago, there is no occasion for those who appreciate the flower in its many attributes of beauty to regard the future of the chrysanthemum with any degree of apprehension. We venture to suggest that at no period in the history of the chrysanthemum in this country has it enjoyed a higher degree of popularity than at the present time. Twenty years ago its culture was, to a very large extent, confined to the glass structures, chiefly in the gardens of the wealthy, and now immense numbers are grown in open beds and borders in the gardens of all classes. The change in the trend of public taste, in its relation to chrysanthemums, has encouraged the raisers to devote special attention to the single, semi-double, and decorative varieties, and the success they have achieved has been such as to place at the disposal of cultivators a wealth of flowers remarkable for elegance and attractive colouring. At practically all the exhibitions the singles are largely shown in baskets, vases, and other receptacles, and some groups of wondrous beauty are arranged with these varieties, notably at Reigate and Windsor. The decorative chrysanthemums, which are really Japanese varieties with medium flowers, are not less valuable in their way, and it would be well were something done beyond what has been already accomplished in defining the class. It has afforded us considerable pleasure during the season to see how little those societies that invited miscellaneous flowers and

MR. A. G. GENTLE.

plants, fruits, and vegetables to their exhibitions suffered from the change of public public taste, as compared with those which confined their shows to chrysanthemums. Many years have elapsed since we first called attention to the necessity of interesting all classes of cultivators in the work of societies which hold autumn exhibitions, and it is to us immensely gratifying that our advice should have been so generally acted upon.

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**Mr. A. G. Gentle,** gardener to Mrs. Denison, Little Gaddesden, Berkhamstead, has been a most successful exhibitor for a number of years, and has shown vegetables of particular excellence at many of the leading exhibitions. High quality rather than size is Mr. Gentle's ideal. His first important success was in 1900, when he won the Sydenham Challenge Bowl for vegetables at the Royal Aquarium. He also won it the following year, and again in 1902, when it became his property. He holds five silver-gilt and three silver medals from the Royal Horticultural Society for vegetables exhibited during January and February. At the Royal International Horticultural Exhibition he won a silver-gilt and other awards for potatoes, the tubers being almost as fresh in May as new ones. At Birmingham, Liverpool, Norwich, Sandy, Hitchin, Luton, St. Albans, Crystal Palace, Chiswick, Bedford, Dunstable, Leamington, Bletchley, Watford, Hemel Hempstead, and Berkhamstead Mr. Gentle has secured premier awards for vegetables in keen competition. But he does not confine his attention to vegetables. He has been successful with sweet peas and with pentstemons, and gained an Award of Merit this year for Pentstemon Gaddesden Gem. Mrs. Denison has a collection of rare New Zealand and Australian plants, and this Mr. Gentle has managed capitally during his sixteen years' stay at Little Gaddesden. The beautiful Acacia cultriformis flowers grandly in the conservatory at this interesting garden, and flowering growths from it were illustrated in our issue of May 21, 1904. The Royal Horticultural Society subsequently granted a First-class Certificate for this fine species. Clethra arborea does well at Little Gaddesden, and one specimen is about 7ft. high and 5ft. through, and flowers profusely. Mrs. Denison is devoted to her garden, and takes a very keen and personal interest in all Mr. Gentle's successes.

**National Chrysanthemum Society's Exhibitions,** 1913. — The shows to be held by the National Chrysanthemum Society at the Crystal Palace in 1913 have now been definitely fixed for October 1 and 2 and November 5, 6, and 7, and the agreement has already been signed between the society and the authorities of the Crystal Palace. It is hoped that other chrysanthemum societies throughout the kingdom will kindly make a note of these dates with a view, as far as possible, to prevent clashing.

**Horticultural Inspectorships.**—The Board of Agriculture invites applications for two vacant inspectorships in their Horticultural Branch. The salary attached to the posts is £300, rising by annual increments to £400. Candidates must be between twenty-five and thirty-five years of age. The successful candidates will be appointed on probation, and they will be required to satisfy the Civil Service Commissioners within two years of their appointment as to their knowledge of the following subjects: (1) Elementary botany, (2) applied zoology with special reference to the diseases of plants, (3) the cultivation of farm and garden crops, (4) the Acts and Orders of the Board dealing with destructive insects and pests and kindred subjects. Applications must be addressed to the Secretary, Board of Agriculture, 3, St. James's Square, London, S.W., on or before December 1, 1912.

**"Botanical Magazine."**—Coloured plates are given of the following plants in the current issue of this publication: Eriopsis Helenæ, a distinct species, with yellow flowers suffused with red at the margin of the sepals and petals; it is a native of Peru, and flowered for the first time at St. Albans in 1897. Mesembryanthemum Pearsoni, a distinct and striking species, which was collected in 1910 by Mr. Pillans on the eastern slope of a ridge about twelve miles south of Nieuwerust during the expedition to the Orange River led, on behalf of the Percy Sladen Trustees, by Professor Pearson. It has short, thick, fleshy leaves, and from the centre rises a rose-red flower. Cornus controversa, one of the most elegant of small deciduous trees in cultivation. It has slender, erect stems, with horizontal branches, and rather large heads of white flowers. Iris caroliniana, an attractive species, which was first discovered by Mr. W. A. Manda, near Wilmington, in North Carolina, and flowered for the first time in cultivation in the Harvard Botanic Garden. It is rather closely allied to I. versicolor, and has soft purple flowers. Corokia virgata, an interesting shrub, a native of New Zealand, attaining a height ranging from six to twelve feet, and bearing small yellow flowers.

**Proposed Addition to Valentine's Park, Ilford.**—An effort is being made to increase the beauty of Valentine's Park, Ilford, by the addition of about twenty-two acres of land, including a mansion, fruit garden, and rose garden. The Ilford Urban Council is contributing £11,500 towards the purchase money, and £1,720 has been received by the Park Extension Committee, but a further £800 must be obtained by the close of the present month if the effort is to be successful. The acquisition of this piece of land is eminently desirable, as it is a beautiful spot, and would add materially to the attractiveness of Valentine's Park.

**Honour for Dr. Francis Darwin.**—The King has approved of the award made by the Council of the Royal Society of the Darwin Medal to Dr. Francis Darwin, F.R.S., for his work in conjunction with Charles Darwin, and for his researches in vegetable physiology.

**Horticultural Club.**—The house dinner of the Horticultural Club for the coming month will be held on Tuesday next (December 3), when Mr. Arthur W. Sutton will give a lecture entitled "My Desert Camping Tour to Mount Sinai." The lecture will be illustrated by 100 limelight views from original photographs taken by Mr. Sutton. As usual, the dinner will be at the Hotel Windsor, and commence at 6 p.m.

**Carnation Show and Conference.**—The Perpetual-flowering Carnation Society anticipates a fine exhibition of carnations at the Royal Horticultural Hall, on December 3 and 4. The non-competitive displays will be staged on December 3, in conjunction with the usual R.H.S. meeting, but the competitive exhibits will not be staged until December 4, and on that day the society is prepared to set up flowers sent in by amateur members who reside over fifty miles from London, and are unable to attend. The society's annual dinner will be held at the Holborn Restaurant at 6.30 p.m. on Tuesday, December 3, to be followed by the annual meeting, at 8 o'clock. A conference will be held at the Royal Horticultural Hall on Wednesday, December 4, at 3.30 p.m., when Mr. J. S. Brunton will preside, and a lecture on "The Culture of Perpetual-flowering Carnations" will be delivered by Mr. J. Gardner, The Gardens, Batsford Park, Moreton-in-the-Marsh, Gloucestershire. The discussion on this important subject will be opened by Mr. W. E. Wallace, the veteran grower, of Dunstable.

**Variation in Nephrolepis.**—Mr. William Marshall, V.M.H., recently sent an interesting plant of Nephrolepis exaltata todeaoides to the Royal Horticultural Society's Scientific Committee. It appears that after being once potted, it had been allowed to grow as it liked. It had given rise to fronds exactly similar to those of the type of N. exaltata and also to numerous other forms, including todeaoides, some with more, some with less, frequently divided pinnules than that plant. The case of this fern is a very curious one, paralleled, however, by certain other garden plants. The type was introduced from the Tropics about 1793, and gained the reputation of being the most useful of its genus and of wide cultivation. A few varieties were recognised during the nineteenth century, but it was not until after the beginning of the twentieth century that many made their appearance, and since then they have come thick and fast. The first of these apparently came from America, but others have appeared in England since. The striking exhibit of Messrs. H. B. May and Sons in the Science and Education Section at the Royal International Exhibition showed the origin and course of variation in the plants of this genus in a remarkable manner.

**Inoculation of Leguminous Plants.**—During the past two years experiments have been carried out by Dr. Voelcker in a field on plots of lucerne, white clover, and red clover, with a new inoculating material coming from America. This preparation, while much resembling previous ones that have been tried, differs somewhat from them in regard to the method of preserving the culture. In one case the leguminous seed was sown untreated; in the other the seed, previous to being sown, was inoculated with the material in question. One cutting was obtained in 1912 of each crop, the general result for the first year being to show in each case a slightly improved crop where inoculation had taken place. The increase, however, was not sufficiently large to allow of definite conclusions being drawn at this early stage.

**Early Potato Crop in Ireland.**—The report on the cultivation of early potatoes in Ireland, in the current issue of the "Journal" of the Irish Department of Agriculture, gives an interesting account of the development of this new feature in Irish agriculture. The report shows that the results obtained more than justify the action of the Department in inducing farmers in certain districts to enter into the remunerative work of raising early potatoes for market. According to the report, the net return in some instances has exceeded £70 per statute acre; in others more than £60; while upwards of £40 is quite common, the average in one large district being £43 8s. 4d. The crops were planted, the tubers having been already sprouted, in February, and dug in May or June, after which cabbage, broccoli, or turnips were planted, the second crop being valued at £10 to £12 per acre. The districts suitable for this form of intensive culture, of course, are circumscribed, but it is evident that, as regards the natural facilities for the production of early potatoes, Ireland compares favourably with Great Britain. Different types of potatoes have to be grown for the English and Glasgow markets, a kidney-shaped tuber, like the Ninety-fold, being preferred in England, and a round potato in Scotland.

**Town Planning at Croydon.**—A broad stretch of fine open country lies between Waddon Hill and Russell Hill, in the Borough of Croydon, and a scheme of town planning somewhat on garden city lines is to be prepared for dealing with this area of about six hundred acres.

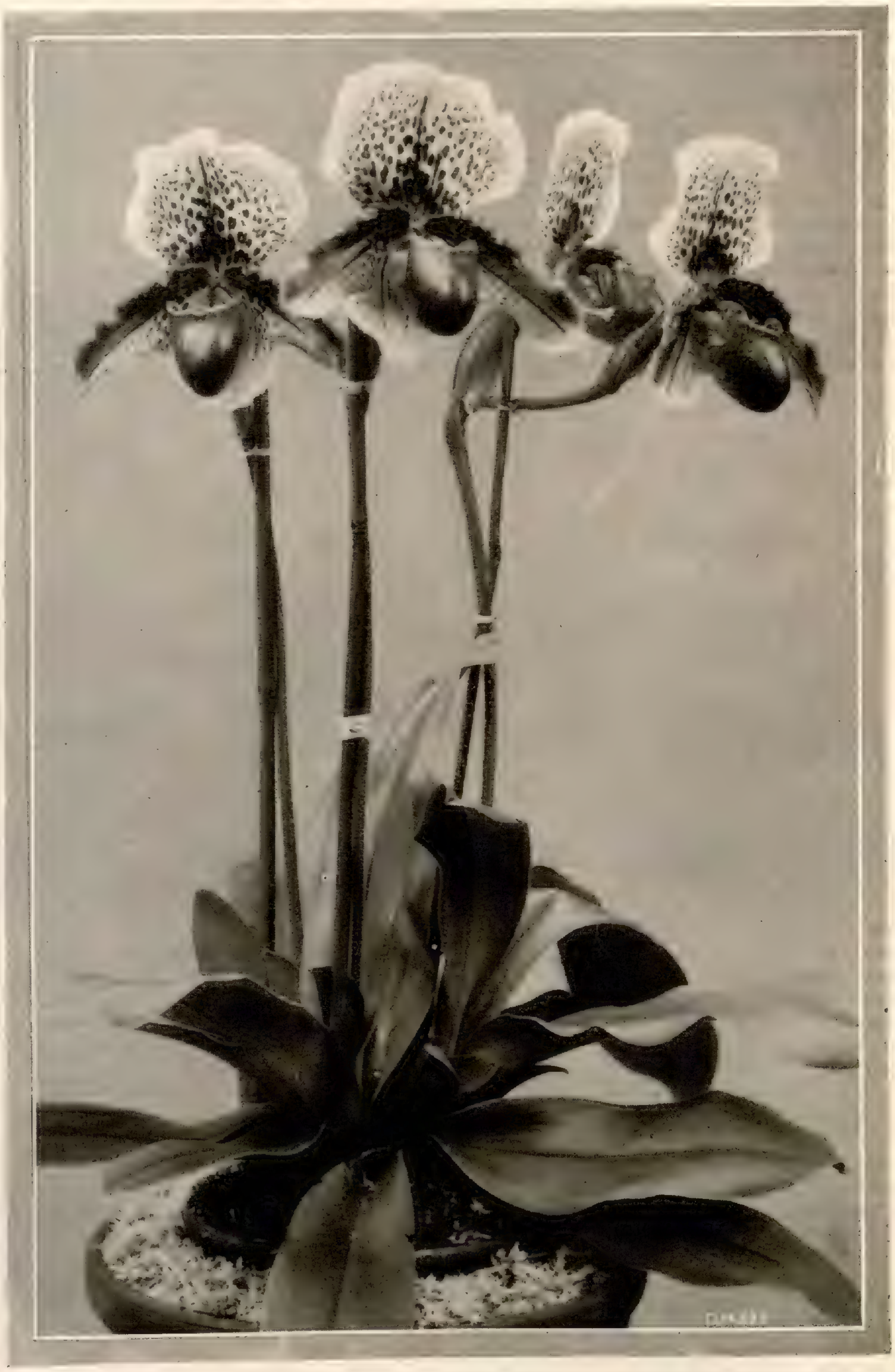
**Albino Form of Geranium Robertianum.**—In reply to an enquiry from the R.H.S. Scientific Committee, Mr. Eric M. Luckin, 58, High Street, Feltham, has written: "With reference to the enquiry as to wild albino forms of Geranium Robertianum, some four years ago I discovered a plant growing in a meadow bearing albino flowers, stems green. The two years following I revisited the spot and found the plant, but this year I failed to locate it, and fear it has been destroyed. The meadow is near Haywards Heath, Sussex."

**Larch Sawfly.**—In view of the injury that has been done by the larch sawfly in plantations in various parts of the country, it cannot be too widely known that an important bulletin on this pest has been published by the Canadian Department of Agriculture, Ottawa. It was written by Dr. C. Gordon Hewitt, and contains the results of investigations made by the author in England and in Canada. Dr. Hewitt holds the opinion that the pest can be controlled in the British Isles by its natural enemies, and the chapter on combating the sawfly by cultivating its parasitic enemies is worthy of consideraton. A description is given of experiments in subduing the pest in this way, and, although for climatic reasons the proceeding has not been effective in North America, it was fairly successful in Cumberland and in Wales. Among remedial measures described are spraying with solutions of arsenite of copper in the proportion of 1lb. to 130 gallons of water, Paris green in the proportion of ¼lb. to 40 gallons of water, or lead arsenate in the proportion of 2lb. to 40 gallons of water; destruction of cocoons; hand picking and crushing; jarring of trees, and tar branding.

**Potato Culture in England and Wales.**—From a preliminary statement issued by the Board of Agriculture we gather that the acreage under potatoes in England in 1912 was 436,948, and in Wales 25,955. The estimated production for the year is 2,113,409 tons in England, and 130,237 tons in Wales, or a total of 2,243,646 tons. The yield works out at about 4.85 tons per acre, and is the lowest since the returns were first made in 1884. The lowest previous tonnage per acre was 4.97, in 1900.

**Glacial Flora of the Grand Duchy of Baden.**—For some years past Dr. P. Stark has been engaged in the investigation of the glacial flora of the Grand Duchy of Baden, and the report on the results shows that the work accomplished was remarkable for its thoroughness. The report deals with both the flowering plants and mosses; and not only are such remains as stems and leaves described, but such matters as pollen spores and fragments of the epidermis. Containing much information on Alpine, Arctic, and moorland vegetation during glacial and post-glacial times, the report is of much interest from the ecological standpoint. The author evinces much caution with reference to inferring great changes of climate from the succession of plant remains in the glacial and interglacial peat deposits, and directs attention to the importance of taking into account ecological conditions other than variations in temperature.

**Eradication of Moss from Grass Land.**—During the past ten years a series of experiments have been conducted by the Cornwall County Council for the purpose of determining the method by which moss in pastures can be the most effectually eradicated. The four plots set apart for the purposes of the trial were manured as follows, the quantities of the fertilisers used being calculated at per acre: Plot 1.—6 cwt. superphosphate and 6 cwt. fine bone meal, applied separately. Plot 2.—6 cwt. superphosphate and 6 cwt. fine bone meal, applied at the same time as the manures on Plot 1, but mixed three months before. Plot 3.—6 cwt. basic superphosphate. Plot 4.—6 cwt. superphosphate. On Plots 1 and 4 the moss turned brown in from a week to ten days after the application of the manures, while on Plot 2 no appreciable effect could be observed until late in the autumn of the second year. In the case of Plot 2 the acid of the superphosphate had been neutralised by the bone meal. Close observation has shown on several occasions that on Plot 1 the acidity so affects the carpet of moss, which has often stood from 2 to 3in. high on the poor pasture upon which the experiments have been conducted, that the manure soon reaches the soil below, and takes effect. On Plot 2, on the other hand, the manure, which may be seen lying upon the carpet of moss months after it has been applied, is powerless to either injure the moss or to reach the soil below. The results of the trial should be of much interest to those who have mossy lawns under their care.



CYPRIPEDIUM ELATIOR.

A very effective hybrid, with yellowish-green sepals, petals and lip, and a white, purple-marked dorsal sepal. F.C.C., R.H.S., November 19. F. Menteith Ogilvie, Esq. (gardener, Mr. Balmforth), The Shrubbery, Oxford. (See p. 916.)

## THE LOGAN BERRY.

Although the logan berry has failed to fully justify the highly optimistic views to which expression was given by some cultivators on its introduction to British gardens it has proved of much value as an aid in increasing the supplies of soft fruits during the summer season. It has not, for example, supplanted the raspberry as some writers thought it would do, but its failure to accomplish that which would have been most undesirable, can hardly be regarded as a defect. It is, in the present state of our knowledge, difficult to understand why it should have been thought by anyone acquainted with the various kinds of soft fruits that the logan berry would prove so far superior to the raspberry that it would, in course of time, take its place. The two fruits belong to the same Natural Order, and possess a family likeness, but in other respects they are so distinct as to hardly come into competition with each other. This fact is now recognised by those who are well acquainted with the two fruits, and they are planted in such proportions as may be deemed advisable after fully considering the demands that are made by the household on the fruit supplies.

The logan berry is, in its way, a most valuable fruit, for, while it does not possess the richness of flavour characteristic of the raspberry, it has a flavour of its own that is much appreciated by many. It can hardly be regarded as a high-class dessert fruit, but for use in a cooked state, for conversion into jam, and for bottling, it cannot be too strongly recommended. The fruit possesses sufficient briskness to prevent it becoming insipid when bottled in syrup or made into jam, even when the sugar is used rather too freely.

As well known at the present time, the growth is so robust as to resemble, in some respects, that of the strong-growing blackberries, and therefore requires considerable space for its full development. The growths range, under normal conditions, from twelve to fifteen feet in length, and under exceptionally favourable conditions I have had them attain a length of twenty feet. With so wide a spread of branches it follows that the plants require considerable space and tall supports, and both must be given them to ensure a full measure of success. Boundary fences, ranging in height from six to eight feet, may be utilised in supporting them with the most satisfactory results. If they are to be grown in the open quarters a trellis about eight feet high should be provided, and if they are to be grown in parallel rows a ten-feet space should be allowed between them. In the formation of the trellises larch poles, five or six inches in diameter and ten feet in length, are used, and these are sunk in the ground to a depth of two feet to ensure their being so firmly fixed as to enable them to withstand the effects of strong winds. To connect the uprights together three or four strands of strong wire are stretched between the poles at equal distances apart, and secured to the uprights by means of staples of moderate strength.

To afford the plants room for their full development, arrange them about ten feet apart in the rows, but if it is desired to fill the space as quickly as possible put them six feet apart, and when they are becoming crowded take out every other plant. Autumn is the best time for planting, and in carrying out this operation open out a hole large enough for the roots to be spread out horizontally, fill in the soil about them with some care and tread firmly. Suckers are not very freely produced, but there will be no difficulty in obtaining ample supplies from the nurseries. It is advisable, as in the case of raspberries, to cut the canes down to within six inches or so from the ground level to obtain in the first year strong growths from the base.

The subsequent management will consist chiefly in cutting close to ground the growths that have fruited soon after the crop has been gathered. This is essential to allow space for the young growths to attain their full size and become well ripened. It sometimes happens that these are so numerous as to suggest injury from overcrowding. When this is the case, reduce their number to about two-thirds by the removal of those which present a weakly appearance. When the old growths have been removed, and the young ones have been thinned, train them to the wires, and in spring take from twelve to eighteen inches off the top, the proper rule being to cut them back to the firm wood. To logan berries growing on light soils a mulch of partly-decayed manure will be of considerable assistance. R. W.

## A BEAUTIFUL SPRING BED.

As spring bedding, or rather the display it produces, is of comparatively temporary character, seldom lasting in full beauty more than a month, or six weeks at the most, it is one of its essentials that the plants to be used for the purpose should not be difficult to raise. Few people who call themselves gardeners leave their flower beds vacant during the winter and spring, but spring bedding is still regarded by some as extra work which should be reduced to a minimum.

The bed to be described consists in part, or mainly if so desired, of the Leopard's Bane, known as Doronicum plantagineum excelsum, which has attained such widespread popularity during the last dozen years or so. Apart from the brilliant effect it produces in April and May, its large green leaves give an appearance of modified luxuriance during the winter which is very welcome. It is easy to propagate, the best time being as early in March as the soil is in good condition, when a nursery bed should be prepared, and some spare clumps taken up and pulled to pieces, every little piece with any root attached forming a nice plant by October, and needing no further trouble or attention after being planted unless the season is abnormally dry. A further advantage is that this plant will grow equally well in shade or sun, so that the best positions need not be given up to it, either for rearing the plants or flowering them.

This Leopard's Bane forms the framework of the bed and a setting for the bulbs to be planted in it. The kind of bulbs to be used depends upon the size of the clumps of Leopard's Bane, and the distance apart at which they are planted. For the sake of colour contrast tulips are better than narcissus, but in any case the bulbs should be planted in groups or clumps rather than singly. A good tulip to use for the purpose is the popular Keizerskroon, the golden-yellow and crimson forming both a blend and a contrast with the paler yellow of the Leopard's Bane. If later tulips are used they should be tall kinds, such as the Darwins, or some of the May-flowering section. Hyacinths are rather too formal for a free-growing bed of this kind, and rather too short as well, but there is no fear of any shade of tulip or hyacinth clashing with the clear yellow of the doronicum.

ALGER PETTS.

## RAIN AND IVI TREES.

In the paper read by Sir Everard Im Thurn, K.C.M.G., at a recent meeting of the Royal Horticultural Society on "Plant Life in a Tropical Island," the following reference was made to the Rain and Ivi trees in Fiji.

For my present purpose it is unnecessary to dwell long on the beauty, real though this is, of Suva. The gardens and open spaces, even over-filled with luxuriant but too unrestrained tropical vegetation, are more or less bright throughout the year with the too ubiquitous hibiscus, ixora, dracæna, oleander, croton, coleus, and bamboo. There are, however, two features in the vegetation outside the garden limits proper which are so prominent as to demand a few words of comment; these are the "Rain-trees" and the "Ivi-trees"—the latter the so-called "Tahiti chestnuts."

The rain-tree is the Inga Saman or Pithecolobium Saman of botanists. It is a native of tropical America, but because of its beauty and the splendid shade which it throws, it has been carried by white men to almost all tropical places, and has been largely planted as a town and road-side tree.

But in Fiji the rain-trees, like most other trees, do not grow as luxuriantly as in other tropical places, because of the occasional hurricanes. A row of these trees, planted quite long enough ago to have become perfect specimens elswhere, stands on the sea side of the road for more than half a mile from the Suva landing wharf up to the entrance to the Government House land; and twice during the six years I knew them hurricanes have bowled them over like a set of ninepins; and twice, at my intercession, they have been successfully set up again. But though under this treatment by nature and art they have not come to perfection, yet for a few mornings each spring I have been refreshed by the pale bright green of the soft young leaves, and the little tassels of pink flowers which at that season burst from the swelling leaf-buds of the rain-trees.

By the way, as I still often see in the corners of newspapers wonderful stories of the alleged reservoir-like qualities which are supposed to give the popular name to this tree, I may as well here explain the foundation of these yarns. It is noticeable that in very dry weather more moisture reaches the ground covered by the spreading branches of this tree than elsewhere. What happens is that the leaflets seem to have some power of accumulating the dew which falls at night even in the driest weather. At nightfall they fold together and hang downward (as in the better-known case of the "sensitive plant"), gradually discharging the accumulated moisture from each leaf-point, sometimes so abundantly that, to anyone standing in the early morning under one of these trees, the effect is as of a shower of rain.

The other tree which will certainly attract the stranger in Suva is the ivi, or native chestnut (Inocarpus edulis Forst). A group of gnarled and evidently old ivi trees occupies the greater part of the swampy paddock which lies between the sea and the hill on which Government House stands. The large roots writhe like great snakes over the ground; and from these roots rise the great buttressed trunks which carry the few twisted giant trunk branches. These magnificent old trees are splendidly beautiful in themselves, and should interest the plant-loving traveller in that each of their branches is in itself a wonderful garden of interlacing orchids, ferns, hoyas, and other plants in almost incredible variety. The Fijians formerly made much use of the fruit and timber of the tree, and planted it about their houses. The particular clump of which I have been speaking marks the site where the native town of Suva stood till, in 1882, the Fijian inhabitants were bought out and induced to remove to the other side of the bay, in order to make room for the modern town of Suva, the capital of the Colony.

## NEW PLANTS, ETC.

### CHRYSANTHEMUMS.

Mrs. G. W. C. Drexel.—A very large, spreading Japanese variety of good exhibition form. The long florets curl loosely and incurve a little at the points. Light silvery-pink about describes the shade of colour. F.C.C., N.C.S., November 11. Messrs. W. Wells and Co., Merstham.

Miss Mary Otter.—A medium-sized single variety of good form and substance. Rich golden-yellow. Commendation, N.C.S., November 11. Messrs. W. Wells and Co., Merstham.

Mrs. J. G. Day.—A fair-sized Japanese variety, with broad florets that curl somewhat at the tips, and make up a pleasing flower. The colour is very effective—rich golden-amber. F.C.C., N.C.S., November 11. Mr. H. J. Jones, Ryecroft, Lewisham.

Thorpe's Amaranth. — A medium-sized Japanese variety of decorative value. The colour is rosy-amaranth, with silvery-rose reverse. F.C.C., N.C.S., November 11. Mr. H. W. Thorpe, Worthing.

Ivor Grant.—A very beautiful, medium-sized single variety of excellent form and substance. The colour is bright rose-pink with a white zone round the dark yellow centre F.C.C., N.C.S., November 11. Mr. G. Mileham, Emlyn Gardens, Leatherhead.

Mdme. Depree.—A large incurved variety, solid, closely incurving, and with bluntly-pointed florets. The colour is cream-white, with a very pale blush tint on the outer florets. F.C.C., N.C.S., November 11. Mr. H. W. Thorpe, Worthing.

Juno.—A giant single variety with wonderful flowers, seven or eight inches across, and of a deep reddish-rose colour; there is a narrow white zone round the eye, and some of the florets are tipped with white. F.C.C., N.C.S., November 11. Mr. H. W. Thorpe, Worthing.

Prince of Wales.—A large and handsome Japanese variety that should prove useful alike for exhibition and general use. The florets are fairly broad, and of moderate length, and a few of them show the bronzy undersides. The general colour is rich crimson. F.C.C., N.C.S., November 21. Mr. Norman Davis, Framfield.

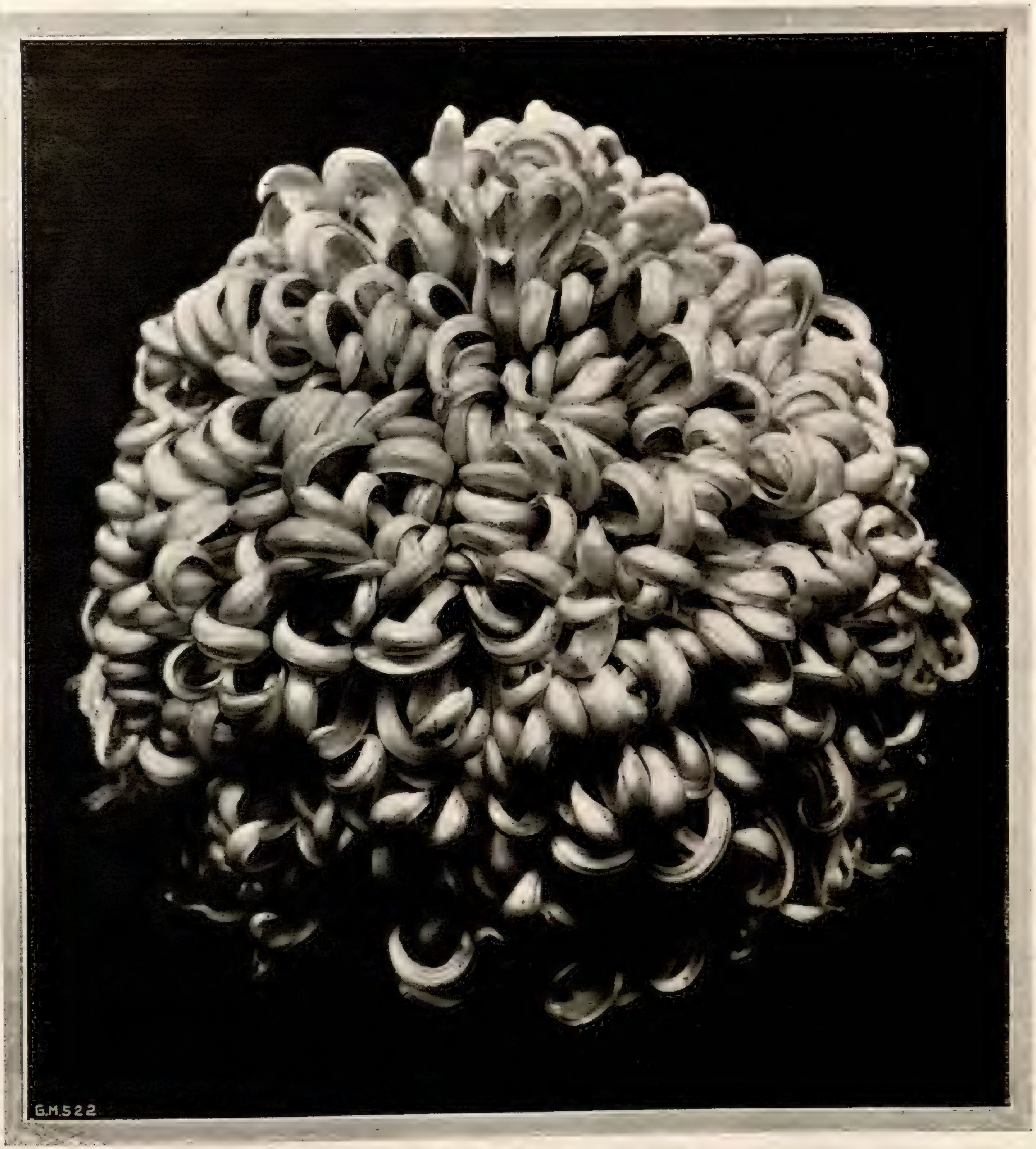
Bronze Beauty. — A delightful single variety, large-flowered, of excellent form and substance; the florets broad and blunt-tipped. The colour is a beautiful shade of orange-bronze. F.C.C., N.C.S., November 11. Mr. Philip Ladds, Swanley Junction.

Ethel Mortimer.—Another splendid large-flowered single, with three or four rows of florets. Fine form and substance. The colour is clear golden-yellow. F.C.C., N.C.S., November 11. Mr. Philip Ladds, Swanley Junction.

Cynthia. — A particularly handsome medium-sized Japanese variety of good decorative form. The colour is vivid crimson-amaranth or wine-red. Commendation, N.C.S., November 11. Mr. Walter Jinks, Thames Ditton.

Rowena.—A charming single variety of large size and good form. There are two rows of deep chestnut-crimson florets, and a narrow yellow zone round the dark yellow eye. F.C.C., N.C.S., November 11. Messrs. Cragg, Harrison, and Cragg, Heston, Hounslow.

Royalty.—A very showy medium-sized single variety of great beauty. The colour is bright



CHRYSANTHEMUM MRS. DREXEL.

A new Japanese variety, of large size and light silvery-pink colour. F.C.C., N.C.S., November 11. Messrs. W. Wells and Co., Merstham.

crimson, almost crimson-scarlet, and a shade that is wonderfully effective under bright light. F.C.C., N.C.S., November 21. Mr. Norman Davis.

Joey Saunders.—A very showy large-flowered single variety, with three rows of firm, shapely florets of a beautiful golden-buff shade. F.C.C., N.C.S., November 21. Mr. L. Lawrence, Shoreham, Sevenoaks.

Mrs. Roger Gregory.—A medium-sized single variety, with broad pink florets and a white zone round the yellow disk. Commendation, N.C.S., November 21. Mr. Lawrence, Shoreham, Sevenoaks.

Mrs. W. T. Smith.—A refined large-flowered Japanese variety, pure white, with broad, loosely incurving florets. A.M., R.H.S., November 21. Mr. A. Smith, The Convent Gardens, Roehampton.

Miss May Fox.—A large-flowered Japanese variety, soft pale yellow, with greenish-yellow centre. The florets are long and drooping. A.M., R.H.S., November 19. Mr. H. J. Jones, Ryecroft, Lewisham.

Michael Harrison.—A very handsome large-flowered single variety. It is reddish-bronze with a zone of yellow round the disk. A.M., R.H.S., November 19. L. F. Harrison, Esq. (gardener, Mr. A. Chapman), Orchards, East Grinstead.

### LÆLIO-CATTLEYA BELLA ORCHID DENE VAR.

An especially large-flowered and handsome form of the hybrid between Lælia purpurata and Cattleya labiata. The sepals and petals are light purplish lilac, and the lip is deep crimson-purple, with a white base. F.C.C., R.H.S., November 19. Mr. E. H. Davidson, Orchid Dene, Twyford.

### CYPRIPEDIUM ELATIOR.

A very showy, attractive, and yet refined flower, and a particularly good form of the hybrid between C. Leeanum and C. Baron Schroder. The petals are yellowish-green, shaded with purple, and the rounded dorsal sepal is white, freely marked with deep wine-purple. F.C.C., R.H.S., November 19. F. Menteith Ogilvie, Esq. (gardener, Mr. Balmforth), The Shrubbery, Oxford.

### WINTER-FLOWERING BEGONIAS.

The following varieties have been obtained by crossing B. socotrana and tuberous-rooted varieties.

Eclipse.—A semi-double variety, with a profusion of salmon-red flowers. Among the semi-double flowers are numerous single, fertile ones. A.M., R.H.S., November 19. Messrs. Clibrans, Altrincham.

Splendour.—This is a very useful variety, free-flowering, and of excellent habit, and bears an abundance of semi-double flowers of deep scarlet hue. A.M., R.H.S., November 19. Messrs. Clibrans, Altrincham.

Lucy Clibran.—A very distinct variety, strong-growing, and with large foliage and flowers. The latter are often three inches across, and the colour is buff, suffused with rose, the younger flowers showing a light orange tinting. A.M., R.H.S., November 19. Messrs. Clibrans, Altrincham.

Scarlet Beauty.—This has medium-sized, semi-double flowers of a bright scarlet shade, and these are freely produced; the plant is most effective. A.M., R.H.S., November 19. Messrs. Clibrans, Altrincham.

### CARNATIONS.

Snowstorm.—A beautiful white perpetual variety, large, fringed, and very fragrant. (See illustration on p. 893.) A.M., R.H.S., November 19. Mr. W. Lawrenson, Yarm-on-Tees.

Mary Allwood.—A fine, clove-scented perpetual variety, the flowers large, stems good, calyx entire, and the petals broad and smooth. The colour is salmon-red or rich rosy cerise. A.M., R.H.S., November 19. Messrs. Allwood Brothers, Wivelsfield, Hayward's Heath.

Salmon Enchantress.—A salmon-coloured sport from the well-known perpetual-flowered Enchantress, and of equal merit. A.M., R.H.S., November 19. Messrs. Allwood Brothers, Hayward's Heath.

## FRUIT AT MESSRS. W. SEABROOK AND SONS' NURSERIES.

We can imagine nothing more gratifying to a man imbued with an intense love of horticulture than that he should, from small beginnings, and by the exercise of his own energies, perseverance, and skill, build up a sound and extensive nursery business, and attain to a high and honoured position among the leading authorities in the particular branch which he has made his speciality. A striking example of such a man is Mr. W. Seabrook, of The Nurseries, Chelmsford, who for nearly half a century has devoted himself to a close study of all that concerns fruit culture in the British Isles, and is to-day proprietor of extensive, well-stocked fruit nurseries at Springfield, and Boreham, Chelmsford, as a result of personal care and labour for the past thirty years.

The headquarters of the firm are situated in a delightful spot at Springfield, about a mile from the town of Chelmsford. It stands on sloping ground surrounded by verdant meadows, except on one side where runs the main line of the Great Eastern Railway. It is on this nursery that Mr. Seabrook has carried out his many experiments, not a few of which have resulted in the discovery of improved methods of culture and treatment of our more important fruits. Quite early in the days of the paradise stock our friend appreciated its possibilities, and in a thorough and systematic manner he set to work to prove its value as a stock upon which to work apples for commercial purposes. It was not long before the discovery was made that all paradise stocks were not of equal merit, and with characteristic judgment, a selection of the best and most useful of them was made, and the stocks themselves were propagated from individual roots that proved to be productive of the best results. The wisdom and economic advantage of this course is evident to-day in the fine quality and productiveness of the trees grown by the firm. Almost any variety of apple may be seen in the form of well-grown trees, with abundant fibrous roots, which run wonderfully near the surface of the ground, inducing early and prolific cropping. The fact that the point of union between graft and stock is almost invisible, even in quite young trees, is strong evidence that the stocks used are capable of bringing the trees into free bearing at a very early age.

The month of October was at an end when we paid our visit of inspection, but even so late as this we saw bush trees about five feet in height carrying heavy crops of fruit. That handsome apple Bismarck was most conspicuous by reason of the quantity of large ruddy fruits that hung on trees protected by nets from the attentions of birds. This apple is held in high esteem by Mr. Seabrook, and large quantities of it are worked annually. Cox's Orange Pippin does extremely well at Chelmsford, and is consequently very largely grown. Here again we were told that the success is mainly due to careful selection of a type of stock that has proved exactly suited to the variety. Some idea of the extent to which fruit trees are produced by the firm was obtained from the fact that an order had just been accepted for ten thousand maiden Cox's Orange Pippin, and later in the day we saw the splendid "break" from which this big batch of trees would be drawn. This was at the Boreham Nursery, about four miles out from Chelmsford, where the firm has just added over forty acres for necessary extensions, both to the fruit tree and rose departments.

To quote a few figures, it may be said that there are a hundred thousand maiden trees on paradise and crab stocks; thirty to forty thousand two-year-olds and about as many three and four-year-olds. There is a fine batch of five or six thousand horizontal-trained trees, with, on an average, three or four tiers, and thousands of standards and half-standards. We made no note of the exact number of varieties grown, but can safely say that it would be a difficult matter to name a really first-class apple not included in the splendid collection.

There are, as everyone knows, a few sorts of both dessert and kitchen apples that every grower needs, and it was no surprise to us to find big batches of Lord Grosvenor, Lord Derby, Bramley's Seedling, and Warner's King, all of which are apples of high reputation as excellent croppers and cookers. King of Pippins, Worcester Pearmain, Allington Pippin, and Ribston Pippin may be named as the most popular of the dessert varieties after the prime favourite, Cox's Orange, which, without a doubt, is the best apple to grow where it will thrive as it does at these nurseries.

It is not only the maidens and quite young trees that do well here, but the large quantities of older trees in permanent quarters are equally fine, there being no sign of disease or the ravages of pests, but abundant evidence that the trees are in prime condition for the production of paying crops. The firm, by the way, make the production of fruit for market and for private customers equally important branches of the business as the propagation of young trees for sale, and those who have seen the highly creditable exhibits of home-grown fruit staged at the R.H.S. and other shows will be by no means surprised to read that the fruit rooms were found well filled with fruit of high quality. Mr. Seabrook has great faith in fruit growing for profit in this country, and entertains not the slightest fear of either colonial or foreign competition. He stipulates, of course, that the fruit farmer must have a thorough knowledge of his business, must have suitable land, and exercise judgment in selecting varieties suitable to his land and situation. He must spray and grease-band in season, prune wisely, and nourish liberally; and, having obtained his crop, he must grade and pack sensibly, and keep a keen eye open for the best market.

One matter that gave a clue to the whole secret of the success of this firm was forthcoming when we were shown a quarter of Lady Sudeley, an early apple of splendid market qualities. Mr. Seabrook soon found that this apple, on the richer soil in one part of his plantations, produced wood and foliage at the expense of fruit, whereas on poorer, shallow land at the top of the nursery the trees fruited freely. This was sufficient to show that the right course to adopt with this apple is to grow on poor land, but to feed liberally while the fruit is developing; and, thanks to the fibrous-rooting stocks used, the trees on the rich soil were lifted and successfully transplanted even at ages ranging from twelve to fifteen years.

We were much interested in a grand stock of black currants, which are as healthy a lot as ever we have seen. It is an early variety which has not yet been named; but the great thing is that it has not been affected with the terrible big-bud scourge, and customers have informed Mr. Seabrook that, even when planted beside affected bushes, the Seabrook stock has remained perfectly clean. Pears, too, are well and largely grown. Beurré Clairgeau is a special favourite here, and is spoken of as the most profitable variety to grow.

In a range of light, airy houses, some fine peach trees were seen, and, in reply to our remarks upon their splendid condition, Mr. Seabrook ventured the statement that the secret lies in the fact that the trees are not neglected after the crop is gathered, but are carefully nourished and kept thoroughly clean during that period when they are storing up vitality in readiness for next season's work.

Mr. Seabrook is assisted in the business by his two sons, who, having obtained business training elsewhere, joined their father, and now conduct the office work, attend exhibitions, and, in a whole-hearted manner, work together with one common ambition, i.e., to carry the name and fame of Seabrook and Sons still further.

## THE LING.

The common form of Ling—Calluna (or Erica) vulgaris—is more or less familiar to everyone, from the fact that it is the popular heather of our hills and moors, and during August and September it transforms them into glowing sheets of ruddy purple, presenting a colour picture of rare and refreshing beauty. The conditions under which it succeeds are generally indifferent in character, and as it withstands great exposure there is every reason for planting it extensively in gardens or grounds of a semi-wild nature.

The type has given rise to numerous varieties, and it is to these that planters should specially direct their attention, as they include some of our most beautiful hardy Ericaceous plants. Like the type, they succeed best in a sandy loam, although in this respect they are not fastidious, provided lime is not present, as in a soluble state this substance is highly injurious to the roots. The Ling is an evergreen, hard-wooded shrub, and requires the soil made very firm at planting. It is also beneficial to the plants to clip them over after flowering, as this induces a denser habit, and with those that are naturally dwarf, the result is a close, compact carpet of verdure.

Where the garden proper extends into the grounds, many positions will occur for including varieties of Ling. They are admirable as foreground subjects to azaleas, rhododendrons, kalmias, and allied plants, and with liliums like L. Hansoni, L. testaceum, L. umbellatum, L. tigrinum, and L. croceum inter-grouped among them, a woodland picture of great beauty will generally result. Probably the most popular varieties of Ling are Hammondi and Searlei; both have white flowers, and they form strong bushes up to two and three feet high. The latter is the most attractive, as the foliage has a definite mossy character that appeals to one, irrespective of the flowers. The variety flora plena is a most captivating subject, with silvery-purple flowers in the form of miniature rosettes; it is more spreading in habit than the foregoing, and bears clipping with impunity. Alporti forms a large bush with dark-coloured foliage and bright crimson flowers. Pilosa, pumila, and rigida are dwarf white-flowered forms; and hypnoides and pygmæa are purple coloured, also dwarf. Argentea and aurea are silvery and golden-leaved respectively, the former more compact in growth than aurea.

A most successful instance of the judicious use of the varieties of Ling, on an extended scale, is to be seen in the grounds of Pyrford Court, near Woking, the property of the Hon. Rupert Guinness. Each variety is massed in quantity and due regard given to the habit and colour of each, both as disclosed by the flowers and the foliage; and from the latter alone a most interesting colour scheme results, to which the pine trees and rustic stone paths form a most picturesque setting. Thomas Smith.

Coombe Court Gardens,
Kingston Hill.

A GROUP OF CALLUNA (ERICA) VULGARIS HAMMONDI.
In the gardens at Pyrford Court, near Woking.

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**A Heavy Crop of Potatoes.**—I have weighed and sorted an enormous crop of Factor potatoes. I used Scotch seed, a liberal dressing of Webbs' Special Potato Manure, and sprayed the haulm twice with Woburn mixture. They came out at 22 tons 10 cwt. to the acre, of which 18 tons are ware and the rest seed and chats. In this part of the country potatoes are not good.—J. S. S. Godwin, James House, Hadlow, Kent.

## PLANTING FRUIT TREES.

### Choice of Site.

Among the many impressions made upon the observer who has travelled amongst the orchards and fruit plantations of this country, the one which often strikes him most is the immense importance attaching to a right or wrong choice of a site for the orchard or plantation.

Fruit is so often planted in a haphazard manner, just anywhere, without proper thought and care being bestowed upon the question as to whether the field is suitable in any way.

The last few years has seen such a revolution in questions of transport, a revolution which is only just beginning, and has not yet reached the full extent of its possibilities, that one of the chief factors which formerly governed the choice of a site for fruit growing is fast losing its significance, i.e., the relative position of the proposed site to the market or markets it hopes to serve. At one time it was essential that it should be situate either within easy road distance of the market, which certainly limited it to twenty miles' radius, or close to a railway station with a good service of trains.

With the great strides which have been made in motor traction, the distance which fruit can be profitably carried by road has been certainly doubled, if not trebled, while in many cases it has rendered the grower absolutely independent of the railways for the carriage of his produce. Thus, one of the big factors in deciding on a site for fruit growing has been, to a great extent, eliminated. It is possible to give, therefore, greater attention to, and to be more discriminating in, the choice of the site, as judged from other standpoints.

The two great factors which remain are soil and site. Is the soil suitable, from the point of view of texture, and from its natural chemical constitution, and how does the land "lie" with respect to the surrounding country, and also with regard to its "tilt," if any?

First as regards "soil." The very best soil, from an all-round point of view, for fruit growing, that is, best to suit all kinds, is a good "holding" loam of a depth ranging from two to three feet, and has been well drained. Such a soil will grow healthy trees of all kinds of fruit, which will be of good size, the only point on which it may fail is in the colour of the skin, which may not be so good as some grown on more shallow and hotter lands.

The lighter loams, almost amounting to sands, which are often of good depth, are not quite so good as that just mentioned, and they are certainly poorer, and require more given to them in the way of manuring, but still must be considered favourable for fruit growing. Another type of soil frequently met with, which grows good and highly-coloured fruit, is a loam, often light, overlying a deposit of gravel. Very frequently the surface soil is of very little depth, and in such cases considerable quantities of manure rich in humus is needed, but if the requirements of the soil in this direction are attended to excellent fruit can be grown, while the colour will be unequalled by fruit produced on any other type of soil.

In contradistinction to the above there is a type of soil on which fruit should not be planted, in the opinion of the writer, that is a thin loam, often heavy, sometimes light and gravelly, overlying a stiff clay subsoil.

Trees in this soil grow fairly well for the first few years, while the roots are in the top soil, but when they reach the cold subsoil all sorts of trouble set in, and often, as in the case of apples, the trees are doomed.

A thoroughly clayey soil may suit some sorts of fruit, plums and black currants, and, to some extent, gooseberries, fairly well, but as it is so difficult to work, and costly in comparison with better soils, it cannot be said to be favourable for fruit culture.

With regard to the chemical constituents of the soil it is frequently, if not always, possible to supply any deficiency there may be found to exist in the soil on which it is intended to plant fruit, but it is advisable, in the case of badly worked, exhausted land, to bring the soil into a better state of cultivation some year or two before planting by the application of the necessary organic manure to supply humus, and also by the supply of chalk to renew any shortage there may be in the lime content of the soil.

The other point concerning the situation and aspect of the land is almost as important as that of the nature of the soil itself.

In the first place, low-lying land at the bottom of a valley, or in a hole anywhere, should not be chosen, as the frost in the spring always gathers in such places, and the damage is always more serious than on higher ground.

On the other hand, it is seldom wise to choose the top of a hill that is at all bleak and exposed to severe winds, as the fruit is likely to be dashed to the ground before it is mature enough to pick, and the trees themselves will often be damaged by being thrashed about by gales. The best position is midway between these two extremes, and, if it is possible, the land should have a slope towards the sun, that is to the south or west.

Such land is always slightly warmer than a dead flat, and appreciably so than lands which tilt either to the north or east.

It may be extremely difficult, in fact, impossible, to find a plot of land which fulfils to the full all these requirements, but if the intending planter has in mind that which is most desirable in every way, he can thoroughly weigh all the advantages and drawbacks any proposed plot may have, and then, after mature consideration, decide for himself the wisest course to pursue.

Pilgrim's Hatch. F. Hammond.

## COTONEASTERS.

The rockfoils, or cotoneasters, are an important group of shrubs, insomuch that the genus includes some of the most showy fruiting shrubs to be found in the garden, that some of the species are really good evergreens, and that nearly all the kinds thrive without any special cultural attention. Considerable variation in habit is noticed among the species, for while certain ones grow into very large bushes, or almost small trees, others rarely rise more than a foot or two above the ground, whilst at least one kind is of trailing habit. Their uses are many, for they are equally at home in shrubberies and specimen beds; some form handsome isolated specimens, others are useful for covering walls, while the strong-growing sorts may be planted about the outskirts of plantations. They have also the advantage of being suitable for both coastal and inland gardens, and of not being fastidious regarding soil, although that of a loamy character is most suitable.

Propagation is effected in a variety of ways. Seeds are the best means of increase for some kinds; in other instances cuttings prove more satisfactory; branches may be layered, and now and then plants are grafted. Little can be said against either of the three former methods, although there is really no necessity for layering, but cultivators should be warned against grafted plants. When propagation is carried on by grafting, the common whitethorn is usually selected for the stock. This produces suckery shoots rather freely even when quite a small section of stem is left between roots and scion, and it is a very difficult matter to keep them cut away after the cotoneaster has attained a fair size.

The rockfoils do not require much pruning, except when they are outgrowing their positions. In such cases it is an easy matter to draw out the longer branches during winter. When grown against walls it is a good plan to cut long shoots back or the weight of the front growth will probably tear the main branches from the wall. Insect pests do not trouble the cotoneaster much, although aphis and scale may now and then put in an appearance. The former may be destroyed by syringing with a solution of soft soap and quassia chips and water, and the latter by syringing several times during April and May with paraffin emulsion.

The genus is composed of about fifty species, some of which have been known for half a century or more, while others have but recently been introduced. They are widely distributed, some occurring in Europe, others in Asia, and the remainder in America. The headquarters of the family appears to be the Himalayas, but many are found in China. Those from the Himalayas and China are the most useful for decorative purposes. The American kinds do not appear to be in cultivation, but from herbarium specimens they seem to be less showy than the best of the generally known kinds, although they are very distinct.

In the following notes attention is directed to the most suitable sorts for garden use.

C. applanata.—This is a new species from Western China, which was introduced to British gardens early in the present century by Messrs. Veitch, who received seeds from their collector, Mr. Wilson. It is a tall-growing shrub, of rather loose habit, with small, broadly-oval leaves, which are silvery by reason of a dense pubescence on the under-surface, and dark green above. The flowers appear in small clusters from the leaf axils during May, and they are succeeded by bright red fruits, which commence to colour about the end of August. It promises to be quite one of the most ornamental species, and is likely to be widely grown in the near future.

C. bacillaris is a large-growing kind from the Himalayas. Mature bushes may be anything between twelve and twenty fee high, with a wide spread. The deciduous leaves are ovate in shape, and the white flowers are borne in flattened heads from axillary buds in May. They are followed by dull reddish-purple fruits, which are ripe in September. It is a good kind to use about the outskirts of a plantation, or at the back of a shrubbery, where a good block plant is required, but it is not one of the most showy species.

C. bullata.—So far as can be seen of this species it is likely to be one of the most useful of all, for it is very showy and easily grown, and although it was unknown ten or twelve years ago, it has already made many friends. Its large deciduous leaves are up to four and a-half inches in length and two inches in width. They are densely hairy on the under-surface, and the young wood is pubescent. The flowers are borne in large axillary panicles, and are followed by glossy-red fruits, which are at their best in September. It is an excellent shrubbery plant, and will also prove suitable for an isolated specimen.

C. buxifolia.—A Himalayan species which has been grown for nearly a century in British gardens. Belonging to the evergreen section it is recognised by its small oval, box-like leaves, which are dark green above and grey beneath by reason of a dense woolly pubescence. The conspicuous white flowers appear in May, and the bright red fruits mature towards the end of August, and hang for a considerable time in good condition. Growing from six to ten feet high, it is of vigorous constitution, and spreads rapidly, therefore a wide space of ground should be allowed.

C. Franchetti.—A comparatively new introduction from China, which was described with figures in the "Revue Horticole" ten years ago, and it was grown in French gardens prior to its introduction to the British Isles. Of vigorous habit, it attains a height of six or eight feet in less than ten years, and spreads to a considerable width. The ovate or ovate-lanceolate leaves are from one to one and a-half inches long, green above, grey and pubescent beneath. The flowers appear in small clusters from the leaf axils. They are white, flushed with rose, but not very showy. The fruits ripen in September, at which time the colour is scarlet. It has already proved itself to be a useful and decorative shrub.

C. frigida.—The most ornamental, and probably the best known, of the older and stronger-growing kinds. A native of the Himalayas, it grows into a very large bush, or, sometimes, a small tree. Numerous specimens twenty feet and upwards in height, with a head diameter of as much as forty feet, are to be found. The oval deciduous leaves are three to five inches long, and pale green in colour. As in other cases, the white flowers are borne from the leaf axils. They are showy, produced in large clusters, and are succeeded by bright red fruits. Individual heads of fruits sometimes exceed six inches in diameter. There is a variety with yellow berries, but it is not often grown.

C. horizontalis.—This was comparatively unknown in gardens twenty-five years ago, but is now quite plentiful. Its specific name was given on account of its peculiar manner of growth. Planted in the open it attains a height of one and a-half to two feet, but spreads over a considerable area of ground, its curiously flattened branches having a distinct and ornamental appearance. The small dark green leaves turn to gold and scarlet before they fall. No decorative value is attached to the flowers, for they are not in any way showy; the fruits are, however, bright red. When planted against a wall, as in the case of the fine specimen, herewith illustrated, at Gunnersbury House, it attains a height of quite twelve feet, the flat side branches standing clear of the wall for a couple of feet or so. It is a native of the Himalayas.

C. humifusa.—A new species from China, is distinct and curious by reason of its prostrate habit and long slender branches. Growing very fast, it soon covers a wide space of ground, and has proved itself to be a good plant for the rock garden. The ovate leaves are rather more than an inch long, and the fruits are bright red.

C. Lindleyi.—Another strong-growing species from the Himalayas. It has much in common with C. bacillaris, from which it can be separated by its shorter and rounder leaves. It is not necessary to include both kinds in ordinary collections.

C. microphylla.—An evergreen species from the Himalayas, much grown on account of its small leaves, compact habit, and generally useful character. Although often planted as a bush in the open ground, and growing from one to two feet high, it is frequently employed for covering walls, and for that purpose much can be said in its favour. Although of low stature when planted in the open, it grows fifteen feet or more in height against a wall. The white flowers are well shown against the dark leafage, and in autumn a good crop of red fruits may be seen. The variety glacialis is even more compact than the type.

C. moupinensis.—Found in the same region as C. bullata. The two species are very similar, except in the colour of the fruits, which in moupinensis is black.

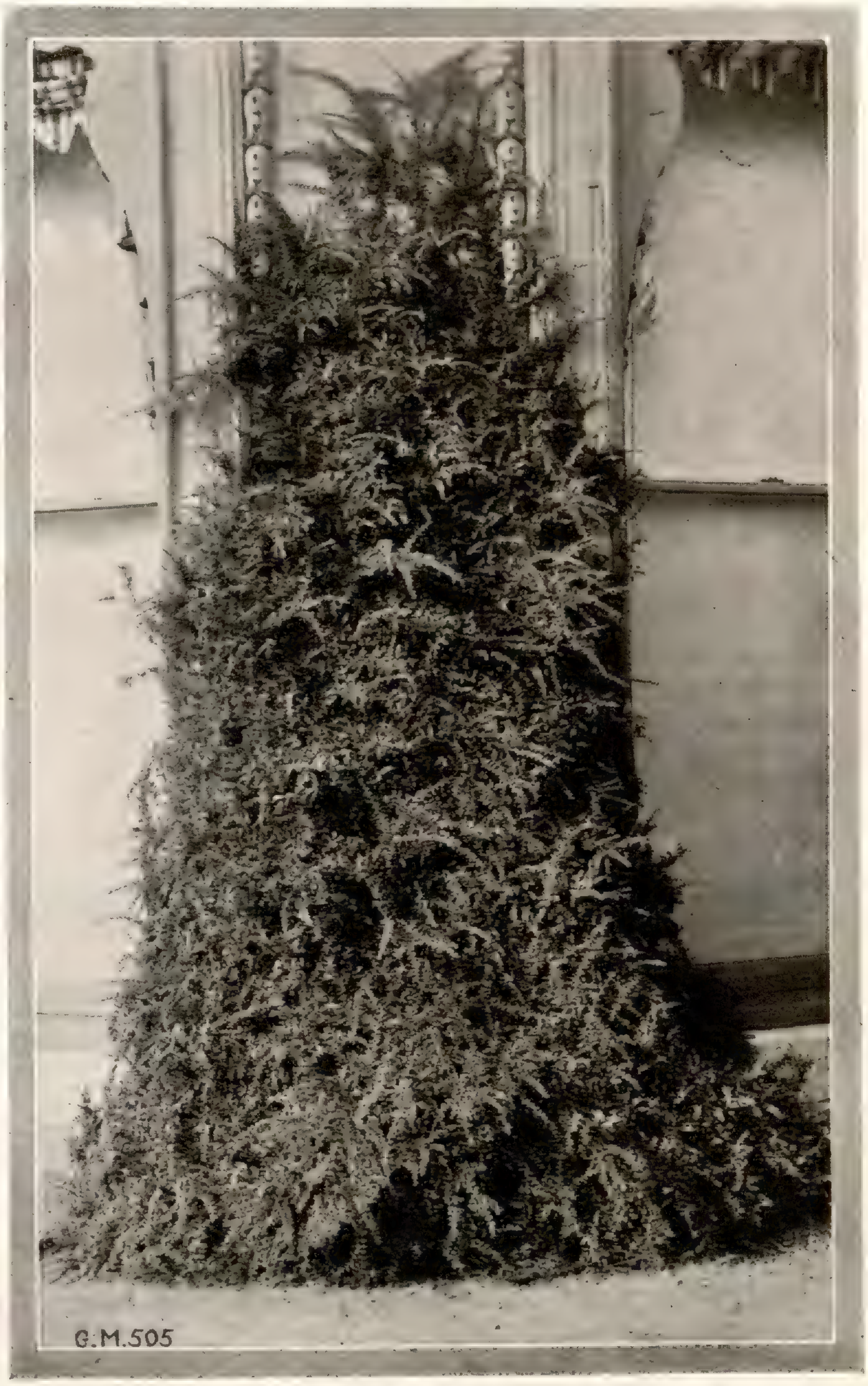
C. multiflora.—A deciduous species from China. Assuming the habit of a small tree, it may be seen with a short trunk, bearing a large head of branches, with numerous long, thin, wiry branchlets, from which showy white flowers are borne freely in May. Although easily one of the most conspicuous species when in flower, its red fruits are not produced freely enough to make much of a display.

C. pannosa.—Introduced to France from Yunnan during the closing years of the last century. Attaining a height of eight or ten feet, it forms a wide-spreading bush, with long slender branchlets, bearing small ovate leaves, which, together with the young shoots, are covered with a greyish pubescence, especially on the under-surface. The red fruits are borne in profusion, but lose much of their brightness by reason of a coating of short woolly hairs.

C. rotundifolia.—A very attractive species from the Himalayas. Growing three to four feet high, it bears small dark green semi-evergreen leaves, and large quantities of rich red berries, which are not troubled by birds to the same extent as are those of many other species. It thrives excellently as a bed or group in the open.

C. rugosa Henryi.—Another new species from China. Of loose habit, it appears as if it will attain a considerable height. The oblong leaves are four inches in length and an inch wide, and bunches of small red fruits are borne in profusion from axillary buds. It promises to become one of the most ornamental kinds.

C. Simonsi.—This is one of the best-known of all the cotoneasters. A Himalayan shrub, it is met with in gardens between six and fifteen feet in height. Its branches usually assume a rather stiff and upright habit, and they are clothed with semi-evergreen leaves. The flowers are not very showy, but the orange and scarlet fruits create a pleasing effect in autumn.



A WALL SPECIMEN OF COTONEASTER HORIZONTALIS.

When planted in the border or on the rockery, this handsome species grows more or less horizontally; but when growing against a wall, as in the case of the specimens at Gunnersbury House, it assumes an erect habit, and attains a considerable height. The specimen illustrated is about eight feet high.

C. thymifolia.—This resembles C. microphylla in many respects, although its evergreen leaves are somewhat narrower. Its white flowers and red fruits are equally showy. W. Dallimore.

Kew.

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**Cotyledon fulgens.**—This cotyledon, or echeveria as it is generally termed, will, in the greenhouse, produce its bright-coloured blossoms during the winter months. It is also a first-rate window plant.—K.

## EPIPHYLLUMS.

The showy-flowered Epiphyllum truncatum and its several varieties seem at the present day to be under a cloud, though for the embellishment of the warm greenhouse or intermediate structure towards the end of the year they are most valuable. They are mostly grafted as standards on to the Pereskia, and in this way their semi-pendulous habit of growth enables the flowers to be seen at their best. Beside this they are first-rate subjects for growing in suspended baskets, for which purpose they are better on their own roots than when grafted. They may be readily propagated by means of cuttings; indeed, good-sized branches will root without difficulty. Strange as it may appear, epiphyllums were at one time grown in considerable numbers in order to supply Covent Garden market with cut flowers, but that was in the days of formal bouquets when practically all flowers were wired. Then these epiphyllum flowers often formed a fringe around the outside of the bouquet, their peculiar oblique shape standing them in good stead for this purpose. W. T.

## MEDINILLA MAGNIFICA.

This interesting and beautiful shrub is not often met with, but it well deserves a place in every collection of stove plants. The flowers are produced in the form of gracefully drooping panicles, and are of a soft pink colour, while the foliage is very handsome, a single leaf often measuring ten inches in length and eight inches in breadth.

Cuttings taken off as soon as the young growth is produced, and inserted in small pots in a mixture of equal parts loam and peat, with a liberal supply of silver sand, and placed in a close case on gentle bottom heat, root freely, and will be ready to pot within a month or six weeks. When these young plants have made their first pair of leaves they should have the point of growth removed to encourage branching. They will soon form good plants, and should receive a liberal increase of root room each time they are repotted, for they are very free-rooting subjects. Medinilla magnifica thrives best in a night temperature of 70 degrees, rising to 80 degrees in the day, but will succeed in a lower temperature, even down to a minimum temperature of 60 degrees.

Very little shade is needed even in bright weather, as plants flower most freely when the wood is thoroughly ripened by the sun. Frequent syringings will be of great assistance, while watering occasionally with liquid manure or a solution of Clay's Fertilizer or peruvian guano, will be a great incentive to luxuriant growth. During the autumn months water should be gradually withheld, and during the winter only just sufficient should be given to prevent the leaves from shrivelling; this period of rest will cause the wood to thoroughly ripen, and thus ensure abundance of flower.

Branches should be shortened freely after flowering, for this will encourage compact, sturdy growth, and, at the same time, will keep the plants within reasonable dimensions; very little staking is required, a stake to the central growth and one for each of the main side growths being all that is necessary. Ralph E. Arnold.

Roselands, Cheltenham.

## AN EFFECTIVE BED OF VIOLAS.

The value of violas for the production of rich colour effects in the garden during the spring and summer months has had reference made to it in these pages on more than one occasion, and there can be no question as to our advocacy of their merits having contributed in no small degree to the popularity they now enjoy. There is a considerable variation in the suitability of the numerous varieties in cultivation for what is technically known as bedding purposes, but if the varieties that are compact in growth and free and continuous in flowering are selected, the results will not fail to be in the highest degree satisfactory. Planted in the course of the autumn season they become well established before the opening of the spring.

The early period at which the violas come into bloom is a strong point in their favour, for it enables them to join with bulbous and other hardy plants in beautifying the flower garden at a time when rich colouring is much appreciated. Moreover, they form a green carpet during the winter and early in the spring when all who have gardens would like to see the bare earth more or less hidden from view. Unlike other hardy plants that flower in spring the violas do not cease to yield of their floral wealth with the opening days of summer. They enjoy to the full a rather cool rooting medium, yet they will bloom freely throughout the summer, and, indeed, until the autumn is well advanced, provided their roots have the run of a deeply stirred and moderately rich root run. If they are associated with daffodils or tulips it is an easy matter to lift the bulbs when they have become ripened without appreciable injury to the violas. Then, if the soil is rather too light in texture to maintain them in a vigorous state in the autumn, asters of medium height or other suitable plants can be planted thinly among them after the bulbs have been lifted, for the purpose of maintaining the effectiveness of the beds until the autumn. In many gardens supplementary plants will be wholly unnecessary.

The remarkably fine bed herewith illustrated occupied a prominent position in Springburn Park, Glasgow, in 1911, and the photograph of which the illustration is a reproduction was taken early in September. The effects of the long drought and great heat that were experienced over the United Kingdom last year may not have been so hurtful to vegetation at Glasgow as in the South of England, but it was considerable. Yet the violas in this bed and elsewhere grew vigorously and bloomed profusely throughout the summer; and in September gave no signs of exhaustion. The bed was sixty feet in length, and some five or six feet in width. The centre was the rich purple J. B. Riding, and the flowers were so plentiful as to practically form a solid block of colour. On either side was a band of the lavender-coloured Come to Stay, and, as a marginal band, the white Countess of Hopetoun was used with good effect. Altogether, the bed was the most effective of the beds of violas that have yet come under our notice, and we congratulate Mr. J. Whitton, the superintendent of the Glasgow parks, and also the head gardener at Springburn, on the work achieved.

AN EFFECTIVE BED OF VIOLAS IN SPRINGBURN PARK, GLASGOW.

# NOTES ON CHERRIES IN POTS.

The cultivation of the cherry in pots is not by any means a new departure, the method having been fully demonstrated by the Messrs. Rivers and Son, of Sawbridgeworth, many years ago. Probably no other cultivators have such fine collections of specimen cherries in pots as this firm, and no conception can be formed of these splendid examples of cultural skill unless a visit be paid to Sawbridgeworth in the fruiting season. These fine trees, be it noted, do not leave the nurseries, for they are too big for all but the largest of vans. A visit to this home of pot cherries will amply repay anyone interested in superior cultivation.

## The Advantages of Pot Cultivation.

I was not, I must admit, a keen enthusiast for this method of culture until Mr. Leopold de Rothschild wished me to try my hand in this direction. That was in 1894, and since then we have annually forced a considerable number of trees. At first I started cautiously, but it was soon found there was much in the system to recommend it. Now we annually force our trees so as to obtain ripe fruit by the end of April. Our largest trees have been forced since the year mentioned above, a fact that is sufficient to prove the soundness of the system. It is very rare indeed that a well-established tree succumbs to canker, or any other form of disease. The growth of the cherry, when it is planted out, is notoriously vigorous, if precautions are not adopted to check this vigour. In pots, however, the growth is kept in check by the root limitation, and the result is spur-bearing, fruitful wood. Insects, too, are more easily kept in check under glass than upon the open wall or on standards.

Of course, it goes without saying that the season of the sweet cherry is thus considerably extended. It is possible, with two divisions, to have ripe fruit by the middle of April. We should do so at Gunnersbury, but the dreaded London fog during the flowering season is the deterrent. During the two months between the middle of April and the middle of June the crop under glass is available, and after that ripe fruit may be obtained from the open wall or from trees in pots, where the house has been kept absolutely cool. Cherries under glass, whether in pots or planted out, are under better control than upon the open wall, for no cracking then takes place, e.g., as during a damp drizzling day in early July, when the fruit is fully ripe. Nor have the birds the slightest chance of making a meal. By growing the late dessert kinds it is possible to have ripe fruit for close upon four months from under glass. Surely this fact is sufficient to recommend this system of cultivation!

## Forcing.

It is no doubt in the forcing of the cherry that some difficulty is experienced, even at the present day. I have heard it recommended to follow on the same lines as for peaches and nectarines, but this is too warm a treatment by almost, if not quite, five degrees. The cherry is very impatient of a closed house. Ventilation should be always allowed, even if a little frost be indicated outside. As long as I could maintain a minimum temperature of 40 degrees up to the time of the setting of the fruit, I would not close all the ventilators. Artificial warmth should be sparingly used, and the pipes should not at any time feel uncomfortably warm when the hand is placed upon them. The cherry will succeed best if forced with a free circulation of air.

No fruit tree responds so readily as the cherry, and the buds begin to swell very quickly indeed. If the treatment be too generous the wood buds may make a start too soon. In order to obtain ripe fruit about the end of April we partially close the cherry house about the middle of January, and syringe the trees twice or thrice daily. For the first two or three weeks no warmth in the pipes is allowed so long as the temperature does not fall lower than 36 degrees. We always move a hive of bees into the cherry house when a fairly good number of flowers have expanded. We find no other means so effectual in the pollination of the flowers. The first two years that I forced Early Rivers cherry this plan was not adopted, and the average set was not satisfactory. Ever since I have relied upon the bees we have not

CHERRY GUIGNE D'ANNONAY.

A black cherry, richly flavoured, and ripening early in the season; well suited for pot culture, as indicated by the specimen illustrated, which was exhibited by Messrs. T. Rivers and Son in May last.

had a failure, but, on the other hand, have had to thin the fruit freely on every tree. When the fruit is set, and seen to be swelling away freely, a light shading is put upon the roof. For this I use, and recommend it also, what is usually known as No. 3 shading. This is sufficient to break or diffuse the bright rays of the sun. The reason for shading is that, if the fruit swells away too rapidly at first, it is liable to drop after having turned yellow. A light shade will prevent this unpleasant experience.

When the fruit is fairly swelling it is just possible that a small caterpillar may do damage to the tender fruit by fastening them and the leaves together. A fumigation of the usual strength will prevent this. Hand picking is also desirable for the same ends. Of course, the shading is never used when the sun is not shining brightly. The range in which our cherries are forced runs east and west, thus the southern blind is most in use, the opposite one only being in request later on, when the afternoon sun is somewhat warm. One great advantage with cherries produced by trees grown in pots is that they remain in good condition for quite a fortnight, and, in some cases, for three weeks after they are ripe. But little pruning is necessary for cherries in pots, and it is better if done early with the finger and thumb, and then only to regulate the growth.

PART OF A BED OF GUSTAVE REGIS ROSE AT KEW.
This is a further illustration of the decorative value of pegged-down roses.

### Trees Not Forced.

These should be allowed to come on quite naturally, and with an abundance of air at all times; in other respects the treatment is practically on the same lines. With these it is possible to dispense with the bees, that is, of having the hive in the house; the bees, however, will find their way in, if there are any about. The use of the camel's-hair brush may be advisable if there are no bees. The syringe may be needed more frequently upon the nonforced trees during bright and sunny weather. For these trees I advise the use of a light blind; it is possible to dispense with it, but I prefer the safer course. When the fruit is fully ripe the blind serves a two-fold purpose.

### Varieties for Forcing.

Of black cherries (which appear to be the most popular colour) we force three or four varieties. The earliest to ripen is Guigne d'Annonay; this is about ten days in advance of Early Rivers, and is most useful from the point of earliness alone. It is a somewhat small cherry, but it has a relatively small stone, so the difference is not so manifest. It colours well, and is of excellent flavour, too. Early Rivers is the next to ripen. This is "par excellence" the best cherry of its colour for forcing. It crops freely, its fruits are of the largest size, and of the richest flavour, firm in flesh, and yet very juicy. Its constitution is also excellent. Bigarreau de Schreken is a fine, handsome cherry, possibly as large as any, and a good cropper; like all the Bigarreaus, it is firm, with the hammered appearance seen upon the Mill Hill Hamburgh grape. Knight's Early Black is only useful as a substitute for Guigne d'Annonay. Of white cherries the two best are Frogmore Early Bigarreau and the American cherry—Governor Wood. The former is very handsome indeed when fully coloured and ripened; it is very firm in flesh, and of large size; also a good cropper. Governor Wood is somewhat smaller, and, in point of flavour, is one of the sweetest. It is rather liable to bruise, and thereby become discoloured. Elton, a well-known and excellent cherry, may, perhaps, be classed with the whites, but it is, when well coloured, more of a red cherry. It is firm, and crops well. It is most essential to have at least one of the May Duke section—the old May Duke itself being as good as any. The object of this is for the sake of the pollen to aid in the pollination of the sweet cherries. The fruit of the May Duke is always useful for compotes, and for jellies as well.

James Hudson, V.M.H.

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**Yellow-berried Holly.**—Though the berries of this are often borne less freely than some of the scarlet-fruited kinds, it is from its distinct appearance and general all-round beauty well worthy of more attention than is usually bestowed upon it. Though red berries are numerous, those of a clear, decided yellow are scarce.—W.

## PEGGING DOWN ROSES.

In the Gardeners' Magazine of October 5 Mr. Osborne drew attention to the desirability of pegging down the growths of very vigorous roses used for bedding purposes. He also gave a list of roses found especially suitable for this method of cultivation, and of which there were good examples at Kew. Frau Karl Druschki was illustrated on that occasion, and we now give an illustration of a bed of Gustave Regis, a fragrant nankeen-yellow variety that flowers almost as freely in September as in June. This illustration shows a bed of the rose pegged down at Kew, and still further emphasises the value of the method advocated for garden decoration.

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## PÆONY-FLOWERED DAHLIAS.

I see on page 852 that somebody else beside "C. T. D." is looking out for trouble, and sure enough he will find it on this subject. Now, if Mr. C. E. Pearson is noted for anything, it is certainly his pertinacity and thoroughness; when he forms his likes and dislikes I doubt if the prophet Mahomet himself would change him or alter his opinion. Poor Pæony Dahlias, if only a tithe of the epithets Mr. C. E. Pearson has levelled at their ragged heads could have taken effect they would have been off the face of the earth long ago. It is particularly unfortunate for your correspondent that he has failed to bring this about, for if my memory serves me rightly, when they first appeared in this country, he promised them very short commons, and it seems to me that as his unfortunate prophecy has never been fulfilled, he has never turned his back on his arch enemy. The sight of pæony-flowered dahlias is equivalent to the proverbial red rag to a bull, and, like the latter animal, he never fails to "go" for them. Thus it happens that we see him endeavouring to assist "C. T. D." primarily, but with an eye to the main chance, for I do not think he could let an opportunity pass, even if he were to try to do so, so inherent in his dislike for these flowers. I am afraid his comparison between the number of people who appreciate beautiful pictures as against statuary is just a little too far fetched for most of us in the horticultural world. The latter may be the higher art, but it is a fortunate thing for most of us that we are not educated to that particular degree. What glorious colours we should lose, the shades of marble and bronze do not appeal to the majority of people, neither does form in a flower, thank goodness! If it did, what would become of the majority of our garden and bedding roses, our perpetual carnations, Alpine auriculas, pansies, violas, etc.? But these examples are sufficient to set Mr. Pearson thinking. If he would only get the expressions, such as "coloured rags," "abortions," etc., out of his mind and look at the newer forms of this type, I feel sure he would see some little beauty in them, which under present conditions he finds impossible.

J. B. R.

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**Phalænopsis.**—There are few orchids more difficult to manage during winter, especially when grown with other plants. When a house can be devoted to them many difficulties pass away. The succulent and sensitive nature of the leaves, and the absence of pseudo-bulbs for storing up nourishment, makes phalænopsis susceptible to injury, which renders keen watchfulness on the part of the grower necessary. P. Schilleriana, P. Aphrodite, P. amabilis, and others that are sending up their flower spikes, should be kept fairly moist at the roots. When giving water care should be taken that none of it remains in the centre of the plants. A most humid atmosphere must be maintained at all times with sufficient air to allow any excess of moisture to pass away.—J. T. Barker.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

WARM HOUSE ORCHIDS.—In the East Indian house, the majority of ærides, saccolabiums, angræcums, vandas, and renantheras have practically finished their growth, and although they are never absolutely dormant, they require at this season to be treated in many respects as resting plants. They have no pseudo-bulbs, and should not be kept so dry at the roots as the deciduous kinds; neither should they have water applied to them in such quantities as when in full growth. During winter it is only advisable to give sufficient water to keep the moss in which the plants are growing alive, and the plants plump and healthy. Ærides crispum, A. Lindleyanum, and A. Warneri should not be subjected to the heat of the East Indian house, but will be found to thrive better in a temperature a few degrees lower. The winter-flowering Angræcum sesquipedale and the hybrid A. Veitchi, now showing for flower, should receive more root moisture than those plants at rest, but the sphagnum moss must not be kept in a saturated condition; it should be allowed to become white, or fairly dry, between each operation.

RENANTHERA LOWI should not be exposed to sunshine at any time, therefore should be placed in as shady position as possible, and be shaded whenever the sun shines strongly.

VANDAS.—Vanda cærulea and the supposed natural hybrids from it, such as V. amœna, V. Charlesworthi, and V. Mooreana, although enjoying heat when in full growth, should not be grown in the East Indian house, but in a house in which a fairly high temperature is maintained, with abundance of air at all times. These may be placed in their winter quarters, and induced to rest; a temperature ranging from 55 to 60 degrees will answer their requirements. Fresh air should be given them at all seasons; indeed, a stagnant, stuffy atmosphere is detrimental to the majority of orchids at any season.

ONCIDIUM CAVENDISHIANUM, now showing flower spikes, should be well supplied with water at the roots, while its allied species, O. Lanceanum, being at rest, should only have sufficient to keep it from shrivelling. The pretty O. chierophorum, now pushing up its spikes, should be removed to the warm house, where the flowers will develop much better than if left in the cooler division, but when the flowers are fully open the plants may be returned to their growing quarters, as the flowers will then last for some considerable time in good condition if not injured by damp. After the flowers fade afford water sparingly till growth recommences, when any necessary repotting may be done.—J. T. BARKER, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

CHRYSANTHEMUMS.—Most of the large-flowered exhibition varieties are now over, or have been cut for decorations. Notes should have been taken at the shows of varieties of outstanding merit which appear to be an advance on older kinds, and these should be added to keep the collection up to date. It is not a wise policy to have a large number of varieties, many of them quite inferior and out of date, but rather the aim should be to grow only the best in each colour section. Flowers which have been shown well at important exhibitions this autumn are Frances Jolliffe, yellow, suffused rose; Mrs. L. Thorne, pale yellow; Thomas Lunt, crimson; His Majesty, deep crimson; Miss A. E. Roope, deep yellow; Lady Talbot, yellow; Gladys Herbert, pale pink; whilst the huge white Queen Mary quite outclassed all other whites in the Japanese section. Incurved varieties are still grown by a few, and have their admirers; the varieties of special merit are Buttercup, Romance, Duchess of Fife, Mrs. F. Judson, W. J. Higgs, and Lady Isabel. The single varieties still increase in number as well as quality, and these now interest me most, owing to their extreme usefulness, since we have to provide huge quantities for house and table decoration. The best of these are White Pagram, Bronze Pagram, Edith Pagram, Shasta, Miss Mabel Booth, and Mary Richardson, while the sweetly-scented, deep pink Ladysmith is still flowering splendidly here outside in the open border.

CUTTINGS.—As the plants are cut down they should be overlooked, and sufficient kept for producing cuttings; the surplus may be at once thrown away. Any cuttings which are ready may be inserted in clean 3in. pots. The soil should consist of two parts loam, one part leaf-soil, and one part coarse silver sand, all passed through a half-inch sieve. Place five cuttings in a pot, and put them in a cold frame to root. Very little water will be needed for some time, but the frame should be kept rather close, and the cuttings sprayed occasionally. Varieties which are slow in throwing up cuttings should be placed in a late vinery or heated pits where they get a little warmth; place them as close as possible to the glass to encourage a sturdy growth, and syringe them over each morning.

WINTER-FLOWERING CARNATIONS.—These are now giving a good account of themselves by producing first-rate blooms. Owing to the open autumn and absence of heavy fogs, the colours are brighter than usual, and the plants are growing freely. The pots are also quite full of roots, and liquid manure water should be given about twice a week. Soot water and fowl manure, given alternately, will be found excellent.

POTTING SOILS.—The time has again arrived for laying in a stock of loam sufficient to carry through the potting operations for another year. This is a very important matter, and one which may mean success or failure. It will be found that the top spit from an old pasture, which has been closely grazed by sheep, is the best for this purpose, not too heavy, but with plenty of fibre in it. The turves should be carted and stacked in layers, placing a layer of turf and a layer of well-rotten manure, and to every three such layers should be added a bushel of burnt earth or wood ashes, while some soot is always beneficial at the rate of half a bushel to the ton of soil.—LEWIS SMITH, Cadland Gardens.

## HARDY FRUITS.

BUSH FRUITS.—The pruning of various kinds of small bush fruits may now be undertaken. For gooseberries, the spurring method in vogue at one time is not so much practised, but more young wood is left to produce a heavier and finer crop of berries the following season. When this style of pruning is followed, some of the branches must be cut clean out from near the base to make room for the young growths, but sufficient space should be allowed for the ready gathering of the fruits. The different varieties of gooseberries vary much in habit of growth; some have a more or less pendulous form, others are of stiff, erect growth, and the pruning must be adapted to the various habits. Remove partially, or wholly, from the former those shoots which, if allowed to remain would, when weighted with fruits and foliage, touch the ground, thereby spoiling the fruits for use. When pruning on the spur system, the side growths should be cut hard back and the growths at the ends of the branches shortened more or less according to the size of the bush; it is advisable to leave a well-placed young shoot here and there to take the place of old or exhausted branches, merely shortening them according to their strength.

RED AND WHITE CURRANTS should be pruned on the spur system. Newly-planted bushes should be cut back to ensure a sufficiency of young growths to form the basis of a shapely bush.

BLACK CURRANTS require a different mode of pruning. The young growths on fully-grown bushes should not be shortened, with the exception of weak growths, which should have the tips removed; the oldest branches should be cut clean away, so as to give the bush a shapely appearance, and leave the other branches sufficiently wide apart to allow free access of light and air when in leaf. Growths arising from the roots should be preserved, as these will in due course take the place of those removed. A strong, free growth should be encouraged by surface manuring, as this will insure good-sized berries, and act as an antidote to the bud mite, which has become a scourge to the black currant in many parts of the country. So far, no certain cure or antidote seems to have been discovered; to a certain extent the pest may be kept under by spraying with quassia and soft soap, or by dusting the bushes with dry lime and sulphur. After a personal trial of these remedies I consider it the best plan to grub up and burn the affected bushes, and replant with a clean stock on ground not previously occupied by black currants.

GOOSEBERRY AND CURRANT BUSHES should be dressed with some mixture to prevent the birds taking the buds. One of the best preventives I have used is a solution of Bentley's quassia extract, used at the rate of half a pint to three gallons of rain-water, with a little freshly-slaked lime and some soot added. The dressing may have to be repeated during the winter.—W. MESSENGER, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

PEAS.—If room is available under glass for a small batch of peas, it should be taken advantage of, for nothing will be more appreciated next spring, weeks before any outside crop is fit to gather. Both pits and cool houses are suitable for their culture. Ways are various in which the seedlings can be raised and grown; perhaps the best and most accommodating plan is to sow the seeds direct into ten-inch pots, particularly if they are to fruit in the said pots. Otherwise, if they are to be planted out in the borders of the houses early in the year, it is better to sow four seeds in 60-sized pots. In the larger pots mentioned, use a few pieces of crock, and a small quantity of coarse, dried manure above to prevent clogging. For compost mix three parts decaying turf, one part of leaf-soil and mushroom-bed manure with a small quantity of burnt garden refuse; place this mixture firmly in the pots to within four inches of the rim, and press eight seeds into the soil in each pot, covering them with the finer particles. Eventually thin out to the five strongest plants, and fill the top space with occasional top-dressings as time goes on. Place the pots in a quite cool and well-aired house, and never hasten growth. Later on stake, tie, and syringe as required. Reading Giant and Edwin Beckett are first-rate marrowfat varieties for this purpose.

BROAD BEANS.—These may be treated in the same way as peas, but especial care is necessary at the flowering period, as only a fresh and buoyant atmosphere will ensure a good "set." Pinch out the tops previous to the flowering stage.

MUSHROOMS.—The earlier beds should now be in good bearing, and care must be taken not to overheat the house, or only partial crops will result. Maintain a uniform temperature of 50 degrees, and the beds will bear for a longer period, and the quality of the mushrooms will be superior than if subjected to greater heat. Well protect beds in cold sheds by placing extra coverings on them.

SALSIFY AND SCORZONERA should now be carefully lifted and placed in fine soil under a wall or hedge facing north; if severe frosts are expected, place litter over the store, but remove during mild weather.

CHICORY.—Bring a sufficient quantity forward by placing plants a few inches apart in any dark, warm place. Seakale, too, will now be found to force quite easily.—GEORGE ELLWOOD, Swanmore Gardens.

# EXHIBITIONS AND MEETINGS.

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## National Chrysanthemum Society.

The final exhibition of this society was held in the Essex Hall, Strand, on November 20, when the exhibition must have surpassed the ideas of the committee, for the hall was packed to such an extent that locomotion was practically impossible; while, at the same time, the exhibitors appeared to be cramped for room. The market element was very prominent, and their classes were enthusiastically criticised.

The Holmes Memorial Challenge Cup for incurved varieties had been reserved for this show, as the committee thought the large exhibition in October too early for this particular section. Strange to say, however, there were only three entrants for the class, which is always difficult at all times; but as the champion, Mr. G. Hunt, gardener to Pantia Ralli, Esq., Ashtead Park, Epsom, turned up, the decision appeared to be a foregone conclusion, and he simply romped home with the trophy; his flowers were good throughout, the whole making a clean, fresh exhibit. The most noteworthy flowers were G. F. Evans, Mrs. H. J. Jones, W. Pascoe, Amber Beauty, Marjorie Shield, May Phillips, Embleme Poitevin, Mrs. G. Denyer, Madame Ferlat, Colonel Kekewich, Mdlle. L. Faure, Souv. de W. Clibran, Clara Wells, Miss N. Threlfell, Doris Raynor, H. Hearn, Miss M. Lyne, The Egyptian, and Edwin Thorp. The second prize was awarded to Miss Langworthy (gardener, Mr. T. J. Broom), Gays House, Holyport, who staged fine examples of Clara Wells, G. F. Evans, Miss B. Hankey, Pearl Palace, Chas. Pacque, Frank Tristian, J. Wynne, C. H. Curtis, and Mrs. G. Denyer. The third prize falling to Mr. W. W. Mann, Ravenswood, Bexley (gardener, Mr. J. Simon), who certainly provided a capital third.

For a display of market chrysanthemums to fill a floor space of six feet by three feet, Mr. Norman Davis, Framfield, carried off the first prize with flying colours; the flowers were exceedingly bright and fresh. The varieties were December Gold, Western King, Christmas Gift, Maud Jefferies, R. F. Felton, Black Prince, Marquis of Linlithgow, Phœbe, Wells' Late Pink, Mrs. H. Luxford, and Godfrey's Perfection. The second prize was awarded to Mr. J. Tulley, Enfield Highway, who adopted a smaller type of flower. The best varieties here were Western King, Violet Lady, Beaumont, Niveus, Dr. Enguhard, Mrs. Wilcox, Cullingfordi and its yellow sport, and Embleme Poitevin. Messrs. Cragg, Harrison, and Cragg also exhibited in this class, staging some very fine examples of Ethel Thorp, Mrs. Powell, Freda Bedford, Exmouth Crimson, Lord Brook, Phœbe, December Gold, Mrs. Buckbee, and Matthew Hodgson; but the firm evidently failed to catch the judge's eye; why seemed to be a mystery to the majority of market growers present.

The class for three vases of singles only secured three entries, the first prize being awarded Messrs. Cragg, Harrison, and Cragg, Merivale Nurseries, Heston, who staged fine vases of Portia, Merstham Jewel, and Sandown Radiance.

There were nine entrants for a vase of single varieties, though only one prize was offered. This fell to the lot of Mr. P. Ladds, Swanley, who staged a grand vase of Bronze Beauty and Ethel Mortimer, both new varieties, the yellow and bronze combination being exquisite.

The competition for two vases of spidery, thread-petalled, pompon, or anemone pompon varieties secured two entrants, the first prize being won by Miss S. G. Abethell, Devonshire Lodge, Muswell Hill (gardener, Mr. E. P. Cooper), who arranged two very fine vases, utilising the following varieties: Miss G. Waterer, Julie Lagravère, Wm. Westlake, Arachnoideum, Mrs. Carter, and White Baby; while Mr. T. J. Broom was awarded second prize, having well-built vases of Mrs. Filkins, Mrs. W. Butters, W. Westlake, Toussaint Marrisant, and Agalina. For a vase of singles there were six fine entries of disbudded blooms, the first prize falling to Mr. Loo Thomson, Ailsa Craig, Formby, Liverpool.

Mr. J. Emberson, Walthamstow, was the only competitor for a basket of chrysanthemums, and was deservedly awarded the first prize. The scheme was yellow, gold, and crimson, the following varieties being employed: Romance, Market Red, Chas. Kingsley, Mrs. Filkins, Merstham Jewel, and Leo.

The non-competitive groups were undoubtedly a feature of the show. Mr. N. Davis, Framfield, Sussex, staged a grand exhibit in tall pyramids, with vases in front. The chief varieties were Mdme. P. Radaelli, Lady Talbot, Edith Jameson, Mdme. G. Rivol, Mrs. Gilbert Drabble, in splendid form, Mrs. G. C. Kelly, Prince of Wales, His Majesty, Mrs. T. B. Edwards, and Gorgeous, while the incurveds, pompons, and singles were well represented. Messrs. W. Wells and Co., Merstham, occupied the platform with a fine exhibit. The best features were huge bamboo stands of Mrs. Gilbert Drabble and Queen Mary. Frances Jolliffe, D. B. Crane, and Lady Talbot were also well represented, while the singles were not only well represented, but were staged with taste.

Mr. P. Ladds, Swanley, made a great effort, his background being formed with huge vases of Japanese varieties, which were of exhibition size, the finest examples being Mdme. P. Radaelli, Miss A. Brooker, Mdme. G. Rivol, December Gold, and W. Turner; while the smaller decorative varieties were Mrs. Cooper, Framfield Pink, a glorious colour, and Freda Bedford. The singles employed were bright and well-developed. Messrs. Cragg, Harrison, and Cragg staged a splendid group of chrysanthemums, typical of the highest form of market culture. The most striking varieties were F. Cooper, a bronze sport from Mrs. F. McNiece, D. Ingamells, Exmouth Crimson, Ethel Thorp, December Gold, Romance, Mrs. Buckbee, Foxhunter, and Mrs. J. Hygate. The singles were a great feature, notably Miss Hilda Wells, Portia, Mrs. W. Garner, and Pink Beauty.

## Conference on Soil Sterilisation.

There was a large attendance at Essex Hall during the evening to hear a lecture on "Soil Sterilisation" by Dr. E. J. Russell, of Rothamsted. Mr. Thos. Bevan presided.

Dr. Russell pointed out that "Soil Sterilisation" did not mean sterilisation as opposed to fertility, but was a term used to indicate a process of killing off most of the injurious bacteria in the soil, and also some of the weaker of the useful bacteria. The result of this partial sterilisation was to give a fair field to the hardiest of the useful soil bacteria, and thus increase the fertility of the soil. Various methods of sterilisation were noted, and steam at a temperature of 210 degrees, at high pressure, forced into old and "sick" soils, was considered the best. Heating in a kiln or over a furnace was considered a good method, but there was a possibility of overheating, and so defeating the end in view. Other tolnol, and petrol. Of these formaldehyde pyridene, calcium sulphide, carbolic, cresol, tolnol, and petrol. Of these formaldehyde appeared to be the next best method to steam heating, and Dr. Russell hoped that in the near future this, or a similar chemical, would provide a cheap and ready means of partially sterilising worn-out and unproductive soils. He suggested formaldehyde should be used at the rate of one part per thousand parts of soil, or about 2lb. per ton; but subsequently, he said, he believed 4oz. to the square yard would be sufficient.

Dealing with chrysanthemums, Dr. Russell pointed out that cuttings took longer to root in sterilised than in ordinary soil; there was some delay in root action, but subsequently the plants grew stronger than those in ordinary soil, and flowered earlier. He showed that soil which had produced tomatoes and cucumbers often contained a very large amount of manurial matter, even when thrown out as useless for further crops, but he showed that such soils, when partially sterilised, produced fine crops without any addition beyond the ordinary feeding as the plants progressed, and such soils had been used three or four times over, after fresh partial-sterilisation, without any apparent decrease in their fertility. By means of lantern slides the wonderful production of masses of fibrous roots in sterilised soil, as compared with ordinary soil, was made very apparent.

In answer to a question, Dr. Russell said that commercial formaldehyde could be obtained for about 6d. per lb. He also stated that, where soils remained long frozen, partial-sterilisation resulted to the great advantage of subsequent crops; and, in reply to Mr. Curtis, he said that the "drying-out" of soils had a similarly good effect on subcequent crops. Mr. T. Stevenson referred to some experiments made with chrysanthemums, and opined that he had overheated his soil. His plants rooted slowly, and growth was slow for some time, and then it was fast and strong, but never of the right kind to produce the best results. He also said he had used one gallon of formaldehyde in 200 gallons of water, and applied it to a plot six yards by twenty yards, to prevent "streak" in sweet peas, with the result that his plants were 25 per cent. better than previously, and they kept up their vigour all along.

Mr. Percy Cragg suggested that cuttings were not a success in treated soil, because of the large quantity of food material available, a sort of indigestion being set up. For several years they had used treated soil at Hounslow for ferns, and found that the ferns were ready for market two or three weeks earlier than in ordinary untreated soil. Not only did partial sterilsation render more plant food available, but it very largely eliminated disease and other pests. Mr. Hawes referred to a large plant erected in a cucumber nursery, where five tons of soil per day could be treated, and he suggested that, as this was a commercial matter, there was little doubt as to the efficacy of the treatment.

Mr. Fairlie, of Acton, told how he placed water in the bottom of a galvanised iron dust bin, and over this a sieve of soil; the whole was then placed over a fire until the soil was so hot that it could scarcely be handled. In soil so treated he had potted a thousand carnations, and the results at present seemed eminently satisfactory. He asked whether sterilised soil was of equal or greater value than first-rate fibrous loam. Dr. Russell suggested that where sweet loam of the very best kind could be readily obtained, there was scarcely any need for sterilisation, but he advised experiments and comparisons. Mr. W. Wells said that at Merstham they sterilised eighty cubic yards of soil; it was steam-heated for half an hour, and the cost was 5s. per yard. But time and money were saved, because the soil proved extremely useful, and all pests and weed seeds had been killed; he could not have bought new soil of equal value at 5s. per load. Mr. T. Weston and Mr. Norman Davis also took part in the discussion.

On the motion of Mr. Percy Cragg and Mr. D. B. Crane, a very hearty vote of thanks was accorded Dr. Russell, who said that his experiments with chrysanthemums would be continued. A vote of thanks to the chairman concluded the proceedings.

GREAT PERPETUAL - FLOWERING Carnation Show, Royal Horticultural Hall, Vincent Square, S.W., Tuesday, December 3rd, Non-competitive Exhibits only. Open 1 to 5 p.m.

WEDNESDAY, December 4, GRAND COMPETITION and GENERAL EXHIBITS, open 12 noon to 5 p.m., Admission 1s. Also a Conference on Carnations in the Lecture Hall, at 3.30 p.m. Mr. W. E. Wallace, Champion Carnation Grower, will open the discussion. For Schedules, etc., apply, E. F. HAWES, Ulysses, Fortune Green, N.W.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.
The 22nd Annual Show is fixed for 19th and 20th November, 1913.
JAMES DIXON, Hon. Secretary.
County Buildings, Hull.

NEXT YEAR BIRMINGHAM CHRYSANTHEMUM SHOW will be held at BINGLEY HALL, 11th, 12th, and 13th November, 1913.
ALFRED NOAKES, Secretary.
148, Bristol Street, Birmingham.

HORTICULTURAL SHOW ADVERTISEMENTS are inserted in this column at Sixpence per line, the minimum charge being Two Shillings and Sixpence. Offices, 148 and 149, Aldersgate Street, London, E.C.

## Woolton.

NOVEMBER 6.

The fourteenth exhbition of this society was held in the Church Hall, and, owing to removals and the early date selected, the entries showed a slight decrease on that of last year. The committee have been fortunate in securing three silver challenge vases during the year, making a fine total of cups to be competed for, which adds largely to the attractions of the show.

Mr. G. Haigh, gardener to Sir W. H. Tate, Bart., Highfield, Woolton, secured two cups, one for twenty-four Japanese cut blooms with a fine, heavy, fresh stand; the other for six vases of decorative flowers, four stems in each vase, with three blooms on each stem; this was an effective exhibit, arranged with a background of cork furnished with small plants and ornamental foliage. Mr. H. Howard, gardener to A. S. Mather, Esq., Beechwood, Woolton, had a walk over for the challenge cup for nine vases, distinct, single varieties, nine flowers in each vase. The blooms were good, but hardly up to the grand form usually found at this show. Mr. R. Hitchman, gardener to Mrs. Schintz, secured the challenge vase for six distinct kinds of vegetables with a very fine lot. Mr. Thomas Foster was the winner of the cup in the farmers' section, and Mr. John Radley in the cottagers' section.

Mr. Haigh was also successful in winning for four vases of incurved blooms, and for ten Japanese blooms in one vase with any foliage. This exhibitor secured the honour of staging the best incurved bloom in the show, this being a very fine Buttercup, and the best Japanese was a grand Hon. Mrs. Lopes. Mr. Stoney led for eighteen incurved blooms with an excellent stand, and Mr. J. Clark, gardener to Mrs. Clarke, Allerton Hall, occupied a similar position for eighteen Japanese. Mr. G. Lowe had the best dozen incurved blooms, and Mr. R. Hitchman the best twelve Japanese.

The bouquets and sprays and button-holes from under-gardeners were of high merit, the chief awards going to Mr. W. H. Richardson, Camp Hill; and Mr. J. Barker, of Highfield.

Some excellent grapes were staged, the best Muscat of Alexandria coming from Mr. J. Stoney, and the best black grapes (Alicantes) from Mr. W. Wilson, gardener to W. Cunningham, Esq., Gorsey Cop, Chilwall.

Chrysanthemums in pots were hardly at their best. Mr. R. Hitchman was first for three large-flowering, one Japanese and one anemone variety. Mr. W. Wilson scored for the best incurved and for a single variety, and Mr. Haigh had the best reflexed specimen.

Mr. J. McColl, gardener to J. W. Hughes, Esq., Allerton, had the leading orchids; Mr. G. Hodnett, gardener to A. G. Dent, Esq., The Riffel, Woolton, the best fern; while Mr. J. Stoney scored for a pair of Begonia Gloire de Lorraine, and Mr. G. Haigh showed the leading palm.

## Winchester.

NOVEMBER 13 and 14.

The annual autumn display was held in the Guildhall, and, if not quite so large as in some past years, the quality of the exhibits was quite up to the average, and few societies can present so complete a display of horticultural produce at this season of the year. The Winchester Society does not confine attention to chrysanthemums, but encourages miscellaneous plants, fruit, vegetables, and floral designs.

### PLANTS.

For the best group of chrysanthemums arranged in a space eight feet by seven feet, Mr. W. Kight, gardener to Lady Blaine, Barton Mark, Winchester, led with handsome blooms on well-arranged dwarf plants; Mr. F. W. Stone, gardener to the Rev. A. G. Bather, Sunnyside, Compton Road, Winchester, second, with smaller flowers. For nine plants, in not less than six varieties, with not less than five blooms on each plant, there were four entries, and Mr. G. Cousens, gardener to J. A. Fort, Esq., The College, Winchester, won the premier place with F. S. Vallis, W. Mease, and Lady Talbot; Mr. C. White, gardener to Captain C. Mitchell, R.N., West Highlands, second. For the same number of white and yellow varieties, Mr. Cousens was again successful with similar plants, and especially good were Nellie Pockett and F. S. Vallis; Mr. H. Gigg, gardener to Mrs. Moorson, Holyrood, Winchester, second. In a class for six plants, each to carry not less than eight blooms, Mr. F. W. Stone won with finely-flowered examples of Rose Pockett and Splendour; Mr. A. J. Marsh, gardener to W. Hodgson, Esq., Morton House, Winchester, second, and especially fine in his exhibit were Freda Bedford and David Ingamells. Single-flowered varieties were not numerous nor remarkable. The best of six plants came from Mr. W. J. Knight.

For a group of miscellaneous plants, arranged for effect, three entered, and Mr. J. Hayes, gardener to Captain R. J. Arbuthnot, St. Philips, Winchester, was first with a none too effective combination of colours; he had a groundwork of maidenhair ferns, Begonia Gloire de Lorraine in a mass, and a background of Salvia splendens; Mr. E. Hart, gardener to H. Trimmer, Esq., Hockley House, Twyford, second.

### CUT BLOOMS.

It was in this section of the show that the entries were less numerous than usual. The leading class was for twenty-four Japanese, in not less than eighteen varieties, and but three entered. Mr. C. Moore, gardener to E. J. Thal, Esq., Frensham Place, Farnham, was first with fully-developed, fresh specimens of Lady Talbot, Mrs. G. Drabble, W. Turner, Duchess of Sutherland. Hon. Mrs. Lopes, F. S. Vallis, Frances Jolliffe, Alice Lemon, and Splendour; Mr. A. J. Marsh second with slightly smaller blooms of Mrs. W. Iggulden, Mrs. H. Stevens, G. Rodwell, etc. For twelve blooms of six varieties, arranged in vases, Mr. C. Moore had the best of three sets, staging W. Turner, Frances Jolliffe, J. H. Silsbury, Mrs. G. Drabble, and F. S. Vallis as his best; Mr. T. Hall, gardener to Ellen, Lady Swaythling, South Stoneham House, Southampton, second, with desirable blooms of Rose Pockett, Mrs. J. C. Neil, and Lady Talbot.

Incurved varieties were sparsely shown. For twenty-four, in not less than eighteen varieties, two competed; Mr. Marsh led with large blooms, and Mr. Moore was second. The last-named won for twelve blooms with Clara Wells, Mrs. G. Denyer, Fred Palmer, and Frank Trestian; Mr. E. Hart second.

A class was provided for a vase of any section, arranged for effect, with any foliage; there were six competitors. Mr. R. Learmonth, gardener to J. Liddell, Esq., Sherfield Manor, Basingstoke, was first with F. S. Vallis, happily blended with oak and other foliage; Mr. G. Cousens second with H. Broomhead. Single-flowered varieties, not disbudded, made a pleasing display. Mr. E. Henderson, gardener to the Right Hon. Earl of Northbrook, Stratton Park, Micheldever, was first for six vases with Mensa, Leo, Old Gold, Mrs. Chamberlain, and Sylvia Slade; Mr. G. Ellwood, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, second. Decorative varieties, not disbudded, were good, and Mr. A. E. Taylor, 3, Hillside Terrace, Bar End, Winchester, won for six bunches with a really fine exhibit of Phœbus, Mrs. Buckbee, and Source d'Or; Mr. Ellwood second with Market Red and Mrs. Knox.

Carnations were good, and Mr. W. Last, gardener to Donald Nicols, Esq., Burntwood, Winchester, scored for six blooms with Carola, Enchantress, and a seedling; Mr. Learmonth second.

### LADIES' CLASSES.

The most tastefully arranged stand of single chrysanthemums, foliage, and grasses, suitable for table decoration, was contributed by Miss A. Cordery, 13, St. Thomas Street, Winchester. Three entered for a table of chrysanthemums, and Mrs. Bealing, The Nurseries, Bassett, Southampton, was easily first with bronze and yellow flowers effectively displayed along with oak and prunus foliage; Miss A. Cordery second.

### FRUIT AND VEGETABLES.

Fruit was numerous and good. Mr. T. Hall had the best black and white grapes—Lady Downes and Muscat of Alexandria, both of desirable quality. Dessert apples were best shown by Mr. Ellwood; and Mr. T. Hall led for kitchen varieties. Mr. Learmonth had the best four dishes of pears.

Vegetables were a fine display, and Mr. Ellwood annexed the premier award in both Messrs. Sutton and Sons' class for six varieties, and Messrs. Toogood and Sons' class, with excellent examples of leeks, celery, cauliflowers, tomatoes, onions, and potatoes.

### NON-COMPETITIVE EXHIBITS.

These were not numerous. Messrs. E. Hellier and Son, Winchester, arranged fruits, carnations, and Gloire de Lorraine begonias; Messrs. Jeffery and Son, Winchester, had cut shrubs and carnations; Mrs. Myers, Swanmore House, arranged a table of apples and autumn foliage; Messrs. B. Ladhams and Co., Shirley, Southampton, had rock plants in variety; and Messrs. Toogood and Sons, Southampton, staged vegetables.

## Bournemouth Gardeners' Association.

There was a very attractive exhibition of chrysanthemums and orchids at the meeting held by the members on November 19, when Mr. J. B. Stevenson gave his interesting paper on "Pruning Fruit Trees."

In the class for three vases of single chrysanthemums, distinct, six sprays in a vase, Mr. C. Nippard was placed first with a lovely lot of clean, fresh flowers; Mr. Pearce was second, and Mr. G. H. Heath third. In the class for three exhibition blooms in a vase, any varieties, Mr. Nippard again won, Messrs. C. Pearce and E. G. Cox being second and third respectively.

Some excellent ferns and begonias, Gloire de Lorraine, were staged in the class for the "points" prizes at the end of the season, by Messrs. Heath, Pearce, and Pavey. A Certificate of Merit was awarded to Mr. Hobbs for two fine specimens of Cypripedium insigne; and Mr. Smith, gardener to the Dowager Lady de Tabley, received a vote of thanks for a finely-flowered plant of Odontoglossum Rossi.

There was a good attendance of members, and Mr. G. Bunyard, of Maidstone, also attended, and was given a most cordial reception. He took part in the discussion which followed the reading of the paper on "Pruning" by Mr. Stevenson. The latter quoted the opinions of several high authorities on fruit culture, respecting the pruning of trees, and then gave his own, and the reasons why. He referred to a discussion which took place many years ago between a fruit grower and himself on pruning versus non-pruning. The advocate of non-pruning, said Mr. Stevenson, had since been converted, as his trees had not proved satisfactory unpruned.

The lecturer said pruning depended a great deal on the conditions under which the tree was planted. In the northern counties he thought that young trees should not be pruned the first year from planting. In the south he would lightly prune the trees in March, as they made growth so much sooner than in the north. He had carefully examined young trees and had found new roots an inch long a month after they had been planted and lightly surface-mulched. When trees had been brought to a free fruiting stage, the lecturer said that cropping would prevent very strong growth, and pruning would not be necessary on a large scale. To prevent extension when the tree had reached the limits of available space, the cultivator should prune leading shoots back to a fruit bud. He also referred to summer pruning and root-pruning.

There was a free discussion, and, on invitation, Mr. Bunyard gave his own opinions. He did not favour pruning the first year, and he also referred to the pruning of large standards, saying that the principle was to so prune and have the main branches so disposed apart that a man's shoulders and arms could be freely moved about in any part of the tree. After other members had spoken, and replies had been given to questions by Mr. Stevenson and Mr. Bunyard, cordial votes of thanks were passed to the lecturer and the chairman, Mr. G. Garner.

## Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—November 19.

Present: Mr. E. A. Bowles, M.A., F.E.S., F.L.S. (in the chair); Dr. A. B. Rendle, Prof. W. Bateson, Messrs. E. M. Holmes, A. Worsley, G. Wilson, R. H. Curtis, A. W. Sutton, W. E. Ledger, W. Hales, W. Fawcett, and F. J. Chittenden (hon. secretary).

THE GLASTONBURY THORN.—Mr. W. E. Ledger showed flowers of the well-known Glastonbury thorn from his garden at Wimbledon. This variety (Cratægus oxyacantha var. præcox) apparently flowers on short shoots, which have no definite resting period as in the normal form of the species, where spurs producing flowers in alternate years are the rule, with a definite winter rest. The Committee could call to mind no analogous cases among apples or pears, and would be glad to learn of any such that may be known.

DROSOPHYLLUM LUSITANICUM. — Mrs. Bergheim, of Belsize Park, sent plants of this interesting carnivorous plant. The genus is allied to Drosera, but the foliage is erect in habit, and the glandular tentacles are on the lower (exposed) surface of the leaves instead of the upper, as in Drosera.

MISTLETOE ON PEAR.—Sir Harry Veitch, V.M.H., sent two branches of pear, in which mistletoe had been sown, to illustrate the difficulty experienced in getting the parasite to establish itself on that tree. In both cases the seed had germinated, but the branches had died, and they were typical of all the infections tried.

ONCIDIODA × "MARJORIE."—Messrs. Charlesworth sent a plant resulting from a cross between Cochlioda Noezliana and Oncidium Forbesi. Several crosses between members of these genera have now flowered, and Messrs. Charlesworth were awarded a Certificate of Appreciation in 1910 in recognition of their work in demonstrating the possibility of uniting these genera, which, although sufficiently distinct morphologically are evidently closely allied physiologically.

IVY LEAVES DISEASED.—Mr. E. A. Bowles showed foliage of ivy from Waltham Cross having numerous pale brown spots with a purplish margin. No fungus could be discovered upon them nor sign of other cause.

## Newcastle.

The eighth annual show of the Newcastle-on-Tyne and District Chrysanthemum Society was held in the Town Hall and Corn Exchange on November 20 and 21. The exhibits, considering the unfavourable season, were remarkably good. There was a slight falling off in the quality of the large-flowered Japanese varieties in the open classes, but the district and local classes, and the single-vase classes, brought out the best competition in the history of the society. Bush plants were a striking feature, and it is interesting to note how keen the local amateurs become in this class. The vegetable classes brought out good competition, especially the leek classes, where the pitmen were well represented. The grapes, apples, and pears exhibited were the best that have ever been shown in connection with this society.

In the open class for twelve vases of Japenese chrysanthemums, not fewer than twelve varieties, three blooms in a vase, Mr. R. Addison, gardener to the Countess of Ravensworth, Cresswell Hall, Morpeth, was first, with an even and bright-coloured set, the most prominent varieties being Miss Elsie Fulton, George Hemming, F. S. Vallis, Reginald Vallis, A. T. Miller, Lady Talbot, and Eclipse; Mr. Jas. Kerr, gardener to Dr. J. B. Simpson, Bradley Hall, Wylam, was second, and his Hon. Mrs. Lopes, F. S. Vallis, and A. T. Miller were very fine; Mr. G. W. Musk, gardener to Captain Laycock, D.S.O., Wiseton, Bawtrey, Notts, third, with heavy flowers, rather wanting in brightness, but including three fine flowers of F. S. Vallis, which were afterwards awarded the medal for the finest vase in the show. For six vases of Japanese chrysanthemums, not fewer than six varieties, three blooms in a vase, Mr. R. Addison came first, Elsie Fulton, A. T. Miller, F. S. Vallis, and Lady Talbot being particularly fine; Mr. Askew, gardener to the Right Hon. W. Runciman, M.P., second; Mr. G. W. Musk third. For four vases, Japanese, Mr. A. W. Appleton, gardener to C. Lacy-Thompson, Esq., Farlam Hall, Cumberland, led, and Mr. G. W. Musk was second.

For three blooms (white), Mr. R. Addison led with White Queen; Mr. Appleton second with Mrs. A. T. Miller; and Mr. T. Reay, gardener to James Readhead, Esq., Weston Hall, South Shields, third. For three blooms (yellow), Mr. G. W. Musk scored with F. S. Vallis, very fine; Mr. J. Thomas, gardener to the Right Hon. Viscount Allendale, Byrwall Hall, Stocksfield, second. For three blooms, Japanese, any other colour, Mr. G. W. Musk was first, and Mr. Addison second. For four vases of incurved chrysanthemums, Mr. Askew led with H. W. Thorp, Buttercup, Marjory Shield, etc.; Mr. G. W. Musk second, and Mr. J. Thomas third. For a pair of vases, Mr. Askew was first, Mr. Musk second, and Mr. T. Reay third. For six vases of single varieties, dissimilar, Mr. G. W. Musk, Mr. Thomas, and Mr. T. Reay won the awards.

In the classes confined to the counties of Northumberland and Durham, Mr. Kerr was an easy first for four vases of Japanese varieties, and, having previously won the silver cup for two years, it has now become his own property. The varieties exhibited were Hon. Mrs. Lopes, Purity, F. S. Vallis, and Frances Jolliffe. Mr. J. Thomas second, and Mr. T. Elsdon, gardener to F. R. Shield, Esq., Leezes Hall, Burnopfield, third. For four vases grown within three miles of the Central Station, Mr. J. Hall, gardener to Mrs. Hunter, Wickham, was first; Mr. T. Bill, gardener to A. E. Bainbridge, Esq., second.

The bush plants provided the greatest attraction in the show. The fifteen guinea cup was won by Mr. Reay with beautifully grown plants of Cheltoni, Nellie Pockett, Viviand Morel, and Chas. Davis; Mr. W. Thomson, an amateur of South Shields, was a close second; and Mr. James Cooper, 13, Weston Park, South Shields, was third. For four bush plants (singles), Mr. Reay was again first, and Mr. T. Bell second.

For a group of chrysanthemums and other flowers and foliage plants, Mr. T. Bell led with a neatly arranged group; Mr. J. Hetherington, gardener to C. T. Kendell, Esq., Preston House, North Shields, second.

For a collection of vegetables, ten kinds, Mr. T. Carr, Blue Bell Cottages, Shields Row, led, with Mr. R. Shield, Swalwell, second, and Mr. T. Booth, Swalwell, third.

In the cup class for three leeks, Mr. W. Robly, Station Cottages, Fourstones, was first, the combined measurements of his three specimens being 157.4 cubic inches; Mr. J. Mowbray second, with 151.3 cubic inches; and Mr. Walter Telford, West Wylam, third, with 138.5 cubic inches. The competition was very keen. For two heads of celery Mr. W. Telford was an easy first.

In the fruit classes, for two bunches of white grapes, Mr. W. Smith, gardener to the Earl of Durham, Lambton Castle, led; and for two bunches of black grapes, Mr. J. Hetherington scored. For six dishes of cooking apples, Mr. Jas. Henderson, gardener to the Right Hon. Sir Edward Grey, Bart., Fullodon Hall, scored; and for six dishes of dessert apples, Mr. W. Lambert led the way.

There were numerous non-competitive groups, and notable among these was a group staged by Mr. Perry, gardener to Lord Ridley, Blagdon Hall, consisting of brilliantly coloured winter-flowering begonias, liliums, various orchids, and other flowering and foliage plants. The North of England Horticultural Society's medal was awarded to this exhibit. A similar award and a gold medal was awarded to Messrs. S. Finny and Co., Granger Street, Newcastle, for one of the finest exhibits of floral designs ever seen in the city. Gold medals were also awarded to Messrs. Sutton and Sons for a large exhibit of potatoes; and to Messrs. W. Lawrenson and Sons, 111, Pilgram Street, Newcastle, for a fine group of miscellaneous flowering and foliage plants. Silver medals were awarded to Messrs. Dicksons, Chester, for chrysanthemums; to Mr. W. A. Armstrong, for a large group of plants suitable for decorative purposes; to Messrs. Michie and Co., Alnwick, for a collection of apples; and to the Earl of Devon, Powderham Castle, Devon (gardener, Mr. Powell), for a collection of finely-coloured apples.

## Hitchin.

The Hitchin Society has pursued the even tenour of its way for many years. It invariably holds a good exhibition, though in extent and site this has varied a little in the course of time. On Thursday, November 14, the society held a capital show in the Town Hall. The table decorations were placed down the centre of the hall, while baskets, bowls, and vases of blooms, and the vases of single chrysanthemums, were accommodated in the Council Chamber upstairs. There is scarcely room to do the exhibits justice, but full advantage is taken of the available space, plant classes and vegetables being grouped on the deep platform or stage.

No boards are used at Hitchin, but all the cut flowers are displayed in vases. Fine quality was found throughout, and Mr. Jefferies' flowers were as fine as could possibly be. Fruits and vegetables were staged freely and well.

The silver challenge cup for six vases of Japanese chrysanthemums, three blooms of one variety in each vase, was won by Mr. A. Jefferies, gardener to J. Balfour, Esq., Moor Hall, Harlow, with superb, solid flowers of Fred Green, Wm. Turner, F. S. Vallis, Mrs. Gilbert Drabble, John Peed, and Lady Talbot; Mr. E. Kimms, gardener to W. B. Hawkins, Esq., Stagenhoe Park, Welwyn, second, with good blooms of Frances Jolliffe, Lady Talbot, and Hon. Mrs. Lopes; Mr. R. H. Crockford, gardener to M. R. Pryor, Esq., Weston Park, Stevenage, third; seven entries. Mr. Jefferies also secured premier award for twelve Japanese blooms, distinct, set up in four vases, and here he had Marie Loomes, Lady Talbot, H. Converse, and John Peed in fine form; Mr. T. J.

Hartless, gardener to T. Fenwick Harrison, Esq., King's Warden Bury, Hitchin, second with medium sized, fresh blooms; and Mr. E. Kimms third.

Five magnificent blooms of Wm. Turner won for Mr. Jefferies the chief award in the class for five white Japanese flowers, and probably no finer examples of this fine variety have ever been seen; one secured the prize as premier bloom in the show; Mr. R. H. Crockford second, and Mr. T. Pateman, gardener to C. A. Cain, Esq., The Node, Welwyn, third. For five coloured blooms Mr. Jefferies was again to the front, scoring with massive examples of F. S. Vallis; Mr. H. Brotherston, gardener to the Earl of Lytton, Knebworth House, Herts, second with F. S. Vallis. For half a dozen Japanese blooms, distinct, Mr. E. Seale, gardener to Lady J. van Houghnet, Bareleigh, Aston, Stevenage, was the premier prize winner, followed by Mr. F. Figg, gardener to Colonel F. W. Leaver, The Poplars, Codicote, Welwyn. Mr. Brotherston won the cup for four vases of chrysanthemums, and he showed very fresh examples of F. S. Vallis, Mrs. F. W. Vallis, J. C. Neville, and Mrs. R. Luxford; second prize fell to Mr. Seale. The best vase of incurved blooms came from Mr. E. Kimms, who showed five very solid blooms of C. H. Curtis; Mr. G. Calvert, gardener to J. R. Drake, Esq., Balchwood, St. Albans, second.

Mr. E. Orsman, gardener to S. Lucas, Esq., Hitchin, had the best group of chrysanthemums, and Mr. W. P. G. Clark, York Road, Hitchin, secretary of the society, was second, but each showed very formal groups. Mr. Titmus, gardener to W. Tindall Lucas, Esq., Foxholes, Hitchin, was awarded a first prize for a group of chrysanthemums and foliage plants, and his arrangement was much admired. Mr. Pateman was a good first for three Begonia Gloire de Lorraine, with Mr. T. J. Hartless second. Mr. E. Kimms led for six cyclamen, among four good exhibits; Mr. Hartless was second, and Mr. Brotherston third. Mr. Hartless led for table plants with especially neat examples, and he was second to Mr. E. Kimms for one orchid, the latter showing Cattleya Mrs. Whiteley with twenty flowers.

Mr. Robinson, gardener to F. Ransom, Esq., The Chilterns, Hitchin; and Mr. Titmus were first and second respectively for three specimen chrysanthemum plants, and each showed large bushes, freely flowered.

The best vase of outdoor flowers consisted of lupins, pentstemons, etc., from Mr. Brotherston, while Mr. A. Wilson, gardener to Miss P. Ransom, Benslow, came second with scabious and pentstemons, and Mr. Pateman was third. Mrs. C. Hill, Coleacre, Letchworth, led for a basket of chrysanthemums with a handsome arrangement of Mary Richardson and yellow singles, associated with berberis foliage; Miss A. R. Lucas, Tile House, second; and Mrs. W. G. P. Clark third. The best-arranged vase of single chrysanthemum was a splendid effort by Mr. W. Robinson, who had grand flowers, and a fine colour blending; Mr. E. Orsman was a good second, and Mr. Hartless third, among seven competitors.

The best-arranged vase of decorative chrysanthemums came from Mr. W. Robinson, who combined yellow, crimson, and white varieties; Mr. Hartless second, and Mr. A. Wilson third. Miss D. Armstrong scored for buttonholes. Mr. Hartless and Mr. Jefferies were placed first and second for a vase of perpetual carnations, and there seemed little to choose between them. Mr. Brotherston staged the best vase of outdoor roses in a good competition, and Miss A. R. Lucas scored for a vase or bowl of flowers with a good design in single chrysanthemums.

Mrs. Humbly, St. Staughton, St. Neots, scored for a table decoration with a pleasing arrangement of Mary Richardson chrysanthemums and selaginella sprays; Mrs. Crockford, Park Gardens, Weston, second, with light pink single flowers, and Miss Armstrong, Fish Pond Road, third.

Mr. Pateman scored for a collection of fruits arranged on a space 5ft. by 3ft., and he showed fine bunches of Lady Hutt and Alicante grapes and splendid apples and pears; Mr. Pateman was awarded a silver cup. Mr. C. E. Martin won second prize; he had good melons and some figs, as well as grapes, apples, and pears; he had greater variety than Mr. Pateman, but not such good quality.

Mr. Pateman led for six dishes of apples, for three dishes of pears, and for three dishes of culinary pears. Mr. R. H. Crockford led for black grapes, with Muscat Hamburgh, and Mr. A. Jefferies scored for white grapes.

In Messrs. Sutton's class for a collection of six kinds of vegetables, Mr. T. J. Hartless scored with beautiful broccoli and fine celery and onions; Mr. R. H. Crockford, Weston Park Gardens, Stevenage, second, and Mr. E. Kimms third. Mr. Hartless was also first in Messrs. Carter's class, and his leeks, celery, and onions were very fine; Mr. Kimms second, and Mr. C. E. Martin, gardener to the Viscount Hampden, The Hoo, Welwyn, third.

Mr. E. H. Palmer, Warrenhoe, Hertford, led in the society's class for six kinds of vegetables, and was followed by Mr. Isaac Fitzjohn, King's Walden, and Mr. J. Spriggs.

Messrs. Laxton Brothers, Bedford, contributed a very fine non-competitive collection of fruits, and Messrs. Abbiss Brothers, Hitchin, contributed a collection of plants.

## Norwich.

Held in St. Andrew's Hall, Norwich, on November 21, 22, and 23, the Norfolk and Norwich Chrysanthemum Show proved to be a great success. There seems to be no tendency (in spite of the critical remarks of some writers) to dispense with the large Japanese blooms. Here they were quite as good as ever, and some even better than usual. Incurved and pompon varieties seem to be losing favour with growers; but, on the other hand, singles and naturally-grown Japanese flowers are gaining popularity. Pot plants were a good feature, and the artistic arrangement of the circular groups was very marked. Fruit was a very strong section, more especially the apples. The wet season had been evidently beneficial to the vegetables, for one saw them in large numbers and much better than last season.

In dealing briefly with the winners we mention first the circular group of chrysanthemums and foliage plants; here Mr. T. Notley, gardener to E. G. Buxton, Esq., Catton Hall, won for the third year, and secured the cup as his own property. For forty-eight Japanese blooms, Sir Carl Meyer was first, but the best bloom in the show was in the second-prize lot from Sir S. Neumann, the variety being F. S. Vallis. For three dozen blooms, T. A. Rising, Esq., was first, while for twelve distinct Sir G. Lacon took the premier award. For six blooms of one variety, white, Sir S. Neumann led with fine examples of W. Turner, and he also led for six blooms of any other colour with F. S. Vallis. The best incurved came from Mr. W. Chettleburgh, gardener to Colonel Rous, Worstead, his blooms of Mrs. H. J. Highgate being very fine. He also staged a beautiful bright yellow sport from this same variety, which he calls The Colonel. Mr. H. Cockerill, gardener to G. E. White, Esq., Eaton, won the premier prizes for naturally-grown flowers, and also for singles.

Mr. W. Helson, gardener to Sir F. Adan, had the best collection of cut exotic flowers. Carnations were exceedingly well shown by the veteran gardener at Gunton Park, Mr. W. Allan. He can usually maintain his own with this flower as well as among fruits. The pot plants of Begonia Gloire de Lorraine from Dr. Osborne, Catton, were marvels of excellence. Mr. F. Endersley, gardener to J. H. Gurney Esq., Keswick, had far away the best plants of cyclamen, and his violets, too, were very fine.

Mr. T. Simpson gardener to the Earl of Stradbroke, Henham Hall, distinguished himself in the apple classes, winning first for a collection of dessert and for a collection of kitchen varieties. The best single dish of Cox's Orange Pippin came from Mr. W. Allan, while for a single dish, any other variety, the lot of Allington's Pippin, staged by Mr. Geo. Davison, gardener to Colonel Petre, Westwick, were models of excellence. Mr. Davison excelled in all the pear classes, and his Doyenne du Comice did one good to look upon. Grapes were not quite so good as we have seen them, the best three bunches, Alicante, came from Mr. E. Greene, gardener to Edmund Reeve, Esq., Catton Grange, and they had finished beautifully. Mr. W. Allan's bunch of Gros Colmar was easily first for a single bunch, and he also won first for a white bunch with a grand cluster of Muscat of Alexandria.

In the vegetable classes, good collections were put up by Miss Langworthy, Hon. A. E. Fellows, and Mr. W. Chettleburgh. Mr. A. Woodhouse, gardener to Sir H. Cozens-Hardy, achieved a marked success with potatoes, winning, in a strong competition, six firsts with only eight entries.

The trade growers contributed largely to the beauty of the display. Foremost came the local firm of Messrs. Daniels Bros., Lim., Norwich, and they did themselves great

AT HEADQUARTERS.

*Visitor to Raynes Park:* "You must need to stock a good many of these bright orange seed-pockets; I seem to have known them all my life."

*Manager:* "We have used them for the past sixty years. There are one and a-quarter millions stored in this room. . . . . Here are seventy-five thousand embossed green leather-board postal boxes."

*Visitor:* "They look strong enough to withstand the most vigorous assaults of the postal authorities."

*Manager:* "And they need be, for some of the seeds they carry are most costly. The Holborn Prize Primula seed, for example, is worth as much as £50 an ounce."

*Visitor:* "These are all packed by hand, of course?"

*Manager:* "Yes; but if you will come this way I will show you the filling machines with which we pack the regular illustrated pockets used for export. When I tell you that we occasionally get huge orders you will see that hand-packing would be out of the question."

*Visitor:* "These are the pockets you refer to?"

*Manager:* "Yes; there are close upon five millions of them on hand, but these will barely carry us along till next season. You will see the pockets carry educational matter which is of the greatest value to our customers in all parts of the globe. . . . This is one of the filling machines."

*Visitor:* "What a marvellous machine! Really, it is almost human! I wonder what some of your customers would say if they saw their packets being filled with it?"

*Manager:* "The machine interests everybody. It especially attracted a Cabinet Minister who paid us a visit a little while since. . . . . You would be surprised, I daresay, if you knew how much wrapping-paper we use."

*Visitor:* "Ten tons, at least, I should say."

*Manager:* "Nearer twenty-two tons! Two and a-half tons of tin case-lining, and sixty-seven tons of casing boards as well as enough packing twine to reach from Raynes Park, via Southampton, to New York."

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credit with a fine and educational exhibit. Hobbies, Lim., Dereham, had a large display of chrysanthemums, roses, and dahlias, and visitors were delighted with the arrangement. Messrs. Sutton and Sons, Reading, had a characteristic Sutton-like display of vegetables, etc. Messrs. W. Wells and Co., Merstham, had a bold bank of chrysanthemums. Mr. C. Engleman, Saffron Walden, had a grand lot of carnations, such as one does not often see at Norwich. Messrs. Fred Smith and Co., Woodbridge, were well represented by fine vegetables. Besides these there were a few other smaller collections.

The energetic hon. secretary, Mr. C. E. Pilling, is to be congratulated upon the smooth way in which his plans worked.

## Bolton.

NOVEMBER 15 and 16.

This society is deserving of high commendation for the able manner in which the exhibits were arranged in the Albert Hall.

In the class for a circular group of miscellaneous plants, twelve feet in diameter, arranged for effect, Mr. H. Shone, gardener to J. W. Makant, Esq., staged a charming combination, in which highly-coloured crotons, palms, and ferns were associated with fine Oncidium varicosum, cattleyas, and other flowering plants. He was justly entitled to the premier award. The class for a group of chrysanthemums, undisbudded, nine feet by six feet, brought out three competitors, all staging in somewhat similar style, the awards going to Mr. B. Hardy, gardener to Gerard S. Peck, Esq., Heaton; Mr. D. Wilson, gardener to Miss Anna M. Philips; and Mr. H. Bishop, gardener to George Hughes, Esq., Heaton, in the order named. The best group of large-flowering chrysanthemums came from Mr. D. Wilson, with Mr. H. Drinkwater, gardener to Herbert T. Parke, Esq., Chorley, as second; and Mr. Charles Smith, gardener to James Fletcher, Esq., Stoneclough, third. For a table of growing orchids Mr. G. H. Drinkwater secured the premier position with a charming bank, chiefly consisting of cypripediums at the base, with good forms of Cattleya labiata in quantity above, surmounted by Oncidium varicosum; the second award went to Mr. W. Holmes, gardener to J. McCartney, Esq., for a pleasing combination.

For two pots of large-flowering chrysanthemums, Mr. R. Cadwell proved the victor with heavily-flowered examples; this exhibitor also secured first prize for three pots of single varieties, and for one pot, with a fine mass of bloom. Mr. W. Austin scored for a palm with Phœnix reclinata; and for six table plants Mr. J. A. Beresford, gardener to J. C. Waterhouse, Esq., led the way; while for three begonias Mr. W. Taylor gardener to W. Edge, Esq., was successful. For six cyclamen, Mr. J. Trevana was the winner ; for six pots of Roman hyacinths, Mr. D. Wilson led; and for six primulas Mr. W. Reid, gardener to C. H. Chapman, Esq., scored.

For twenty-four blooms, twelve incurved and twelve Japanese, distinct, Mr. C. Goves, gardener to Sir Gilbert Greenall, Bart., Warrington, was first, with Mr. G. Haigh, gardener to Sir W. H. Tate, Bart., Woolton, second; and Mr. A. Chandler, gardener to A. James, Esq., Rugby, third. The best flowers in the winning stand were Mrs. G. Denyer, G. F. Evans, Romance, Marjorie Shields, F. S. Vallis, A. T. Miller, W. Turner, and W. A. Etherington. Prizes for thirty-six Japanese, in not less than twenty-four varieties, brought four good stands, and Mr. C. Jones, of Abergele, proved the winner with a very fine lot, that included Lady Talbot, Frances Jolliffe, Master James, President Viger, W. Mease, Mdme. G. Rivol, and His Majesty; Messrs. C. Goves and A. Chandler were second and third respectively. For six vases of singles the awards went to Messrs. A. Adshead, H. Shone, and W. P. Rylands.

For two bunches of black grapes, Mr. W. Burgess, gardener to John Harwood, Esq., was first, with Mr. H. Shone second. For two bunches of white grapes, Messrs. J. C. Waterhouse and James Amphlett, Colwyn Bay, were placed as named.

In the local classes leading prize-winners were: Mr. L. Southern, gardener to T. M. Percy, Esq.; Mr. W. Byrom, gardener to Viscount Brackley; Mr. W. Wainwright, Mr. T. B. Henderson, and Mr. W. Eckersley.

The exhibition was managed by Mr. R. Smith, chairman; Mr. Henry Shone, treasurer; and Mr. George Corbett, secretary, and a capable committee.

Messrs. Dicksons, Chester, staged an exhibit of apples and cut chrysanthemums; and the Liverpool Orchid Company, Gateacre, put up a table of orchids.

## Reading Gardeners' Association.

The fortnightly meeting of this Association was held in the Abbey Hall (by kind permission of Messrs. Sutton and Sons) last week, when, notwithstanding the unfavourable weather, there was, as usual, a good attendance. Mr. F. G. Drew, chairman of the committee, presided at the opening of the meeting, but as he on this occasion had undertaken to give a lecture, he later vacated the seat to Mr. E. Blackwell (vice-chairman).

The all-important question of "Fruit Tree Stocks" was the subject of Mr. Drew's lecture. He touched lightly on the historical aspect of the subject, pointing out that, as with gardeners of the present day, the old-time fruit growers were not agreed as to the use or value of many of the stocks then in vogue, much of their advice being very conflicting. The origin, as well as the use, of the stocks employed to-day for the various kinds of fruits were treated with in turn, as well as their influence on the growth and the fruit of the respective kinds for which they are used. The lecturer also gave his experience as to the comparative values of various stocks on different types of soil. Trees worked on apple and pear stocks in different stages of growth were exhibited, and also specimens of the stocks themselves, showing their respective root systems, characteristic growth, etc.

At the conclusion of his lecture, Mr. Drew was accorded a very hearty vote of thanks.

A fine collection of vegetables was the leading feature among the exhibits. This was staged by Mr. F. Townsend, head gardener to the vice-president, Mr. Leonard Sutton, Hillside, Reading, who was awarded a certificate for cultural skill. Mr. G. Smith, gardener to Mr. Eric Palmer, Shenfield Grange, exhibited an excellent collection of apples and pears, the latter being particularly good; and Mr. G. Carter, gardener to Mr. S. Griffith, showed a specimen tillandsia.

## Ancient Society of York Florists.

At the monthly meeting of this society a lecture on apples, at once interesting and instructive, was given in the De Grey Rooms, York, by the Rev. J. Bernard Hall, secretary of the North of England Horticultural Society. There was a large attendance, and the chair was occupied by Alderman E. W. Purnell, president of the society.

The Rev. J. Bernard Hall, referring to an observation by the chairman in the course of his introductory speech, stated at the commencement of his lecture that, so far as they knew, apples did not exist in the days of Adam. It was a quince, or some sort of an orange, but still they could go on calling it an apple. With regard to his subject, he gave them much useful information with regard to the planting and pruning of the trees, and he particularly pointed out that it was very necessary to perform the latter operation with a clean knife. He said that the apple sucker could be got rid of by the use of tobacco juice or nicotine, which did not hurt the blossom or the bees, and it must not be forgotten that the latter were absolutely necessary in a garden. Speaking of the beauty of the apple tree, he said that if English people were not such materialists, and more like the Japanese and Chinese, in whose countries he had spent two years, they would grow apples purely for the beautiful blossom. He asked them not to forget to plant in their orchards crab apples, which were not only beautiful to look at, but gave them apple jelly, and they possessed a strong pollen. In dealing with the diseases of apple trees, the lecturer referred to scab, which was dirt disease, and which, he said, they would not get rid of unless they got rid of the dead and decaying wood, subsequently spraying with lime sulphur. Scab was always worst on the apples with the hardest skin. Canker would never touch their trees unless there was a wound, which showed the importance of clean culture. The only thing to do to get rid of canker was to cut back to clean wood with a clean knife, and disinfect the wound. The woolly aphis, or American blight, was a terrible scourge which not only got into the tree but into the ground. If they wanted to get rid of many of these pests they could do so by keeping poultry in the orchards.

With the aid of a large number of lantern slides the lecturer showed many beautiful specimens of trees and varieties of dessert and cooking apples. In reply to questions, Mr. Hall said it was generally advisable to obtain their trees from local dealers, who knew, or should know, the ground and the conditions.

## East Anglian Horticultural Club.

At the November meeting of this club Mr. E. Peake gave a very interesting lantern lecture entitled, "Some Garden Memories." Besides being a lover of flowers Mr. E. Peake is a keen photographer, and when he visits a garden he usually brings away some memento in the way of a picture. It was most interesting to see the glories of a spring or summer display in Mr. So-and-so's garden depicted upon the screen upon a damp, chilly November night. Besides this Mr. Peake has a splendid store of anecdotes connected with many of his pictures, or interesting points of culture, all of which add charm to the lecture. It was amusing to many members to find themselves appearing upon the screen when least expecting it. A very hearty vote of thanks was accorded him.

There was a fine exhibit of fruits, flowers, and vegetables. In the former section the apples in a special prize class were very numerous, and splendid in size and colour. For flowers the most praise was due to the plants of Gloire de Lorraine begonia from Mr. E. F. Greene, gardener to E. Reeve, Esq., Catton, and to Mr. W. Shoesmith, gardener to F. W. Harmer, Esq., Cringleford, for his orchids. Potatoes and onions for special prizes given by Messrs. Daniels Bros., Lim., Norwich, made a bold display.

## GARDENING ENGAGEMENT.

Mr. J. L. Edginton, formerly nursery manager to Messrs. W. Artindale and Son, Sheffield, has now taken up the duties of managing director of the Sheffield Horticultural Company, Lim., Silver Hill Nurseries, Ecclesall, Sheffield.

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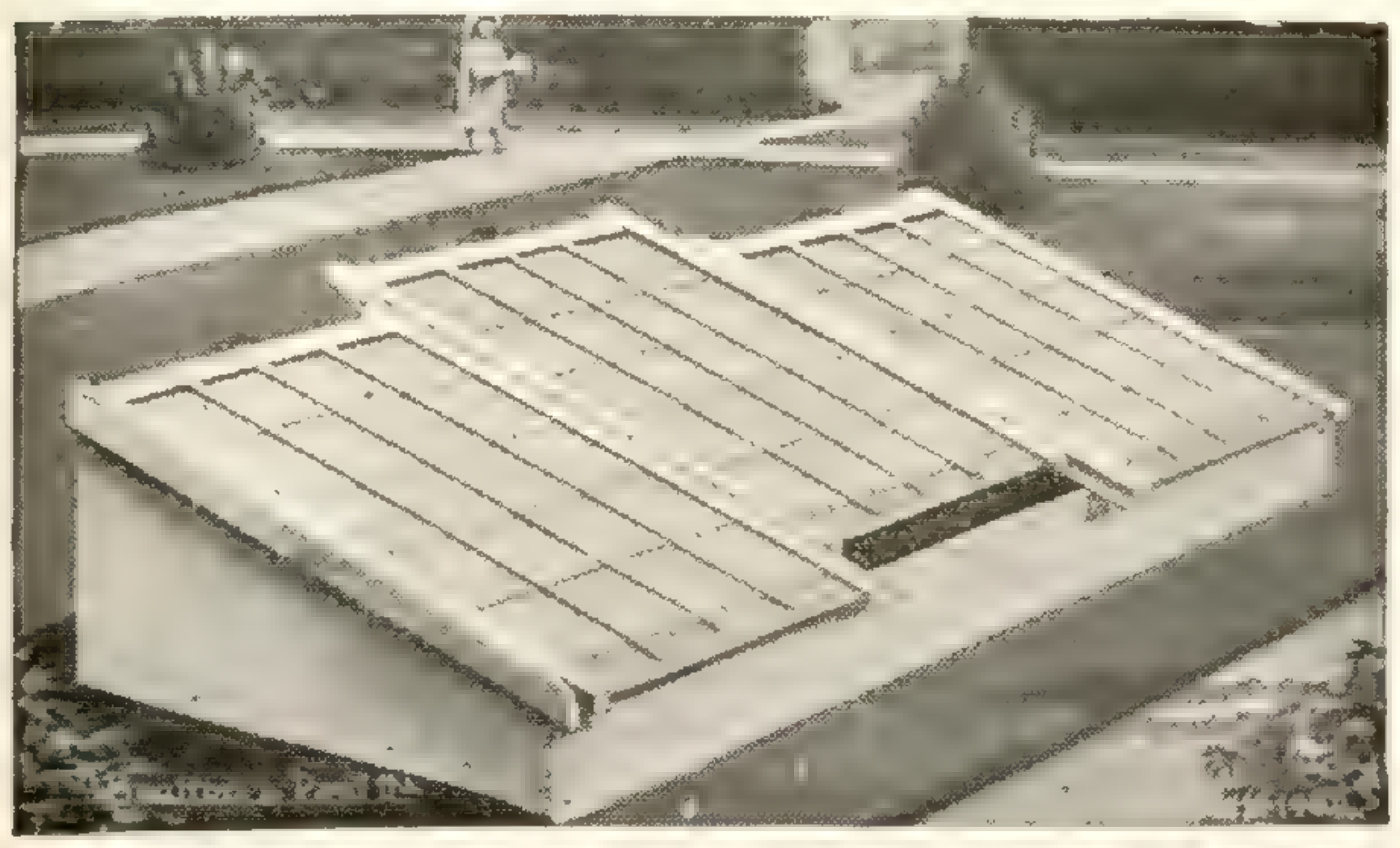

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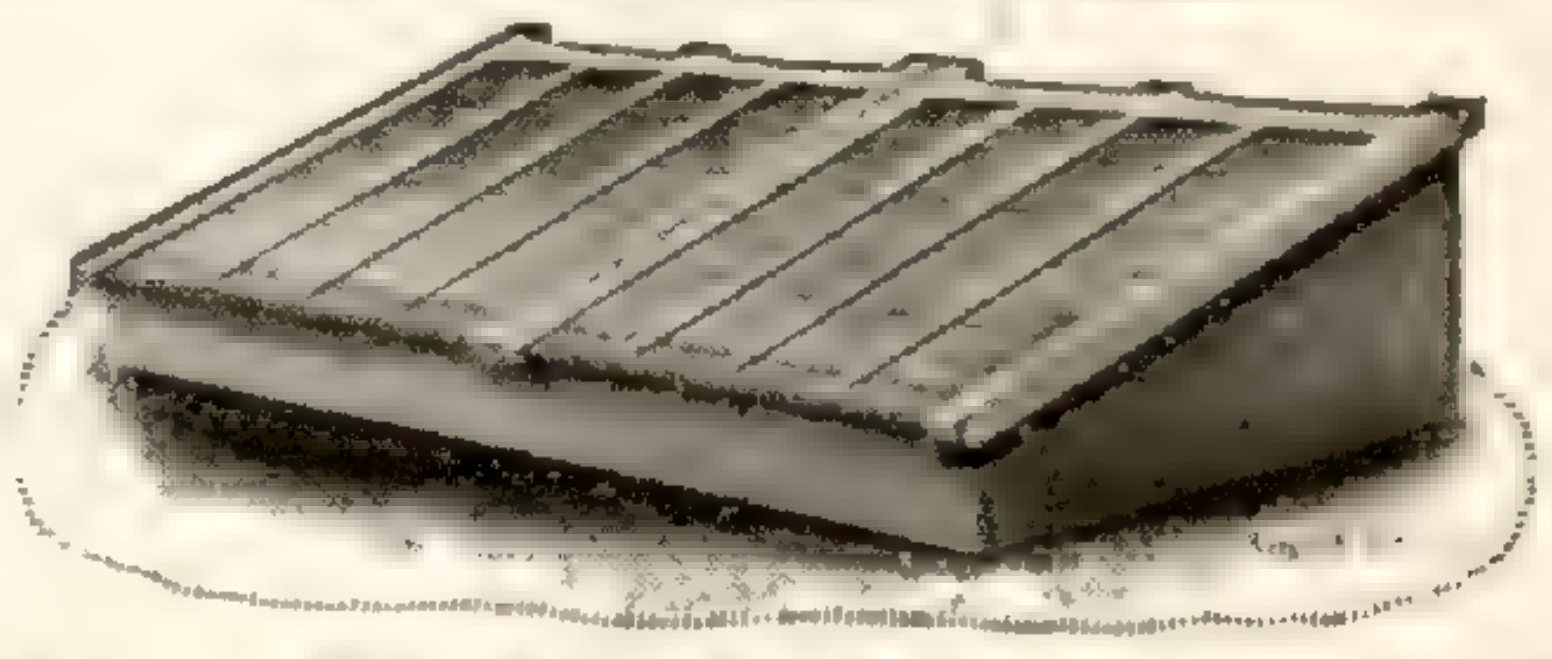

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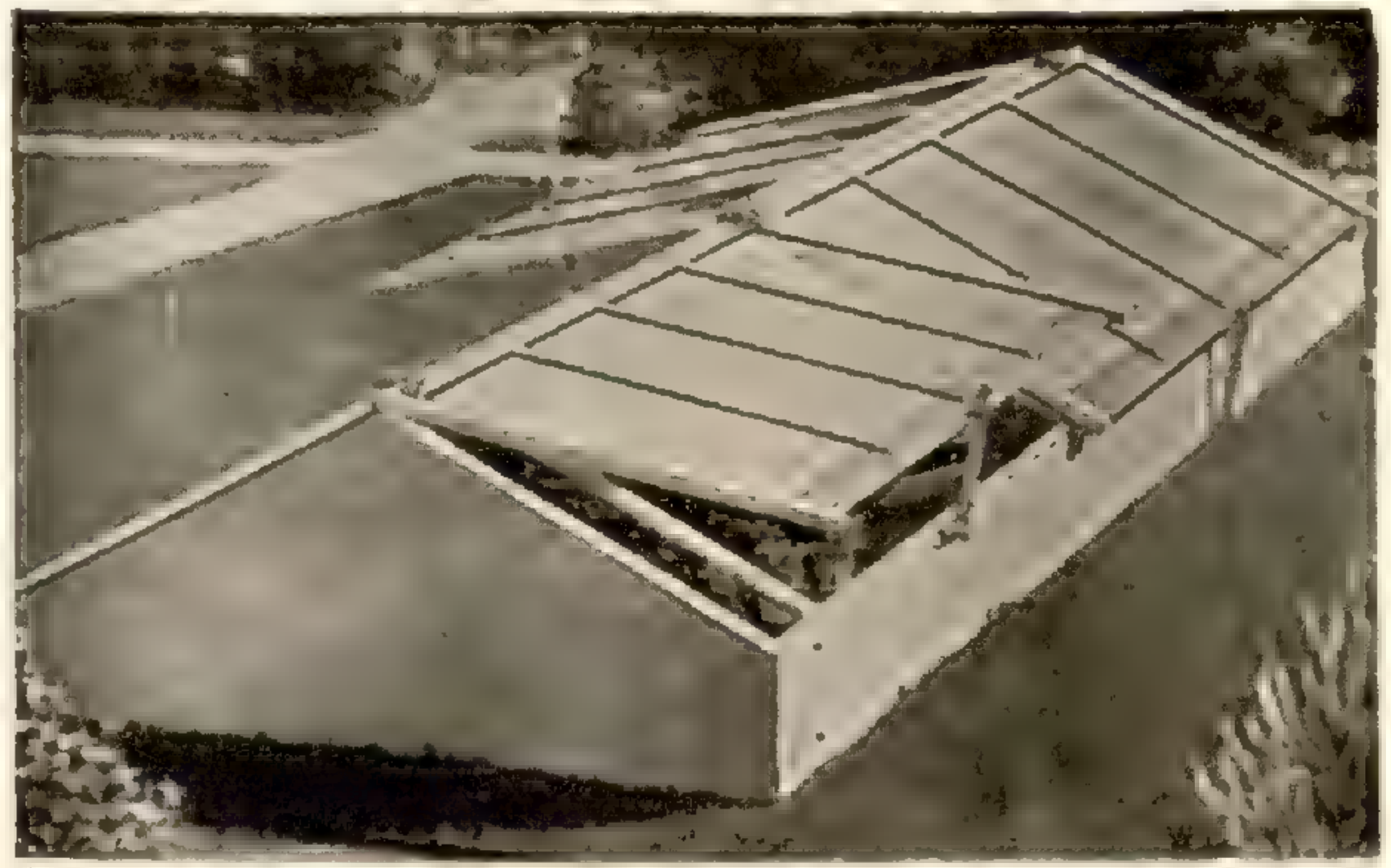

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## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

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CATTLEYA WALKERIANA.—M. E. W., Oxford: I shall be greatly obliged if you will give me some information concerning Cattleya Walkeriana, with special reference to its mode of flowering.—C. Walkeriana is a somewhat rare species in cultivation, but, as it produces its bright rose-purple, flattish flowers in the dull season, it is worthy of attention. It thrives best in baskets suspended in a warm, light position in the cattleya house. It requires little water, except when rooting freely, and is easily ruined by excess of moisture. The method of flowering followed by Cattleya Walkeriana is very interesting and distinct. Generally, cattleyas produce their flowers from the apex of a well-developed stem or pseudo-bulb, but in C. Walkeriana the process is reversed, an. the stem and leaves are developed after the flowers have faded. From the rhizome, near the base of a foliar stem, a slender shoot appears, and grows an inch or two high; from the apex of this shoot the peduncle extends, and carries one or two flowers. When the flowers have faded, a new bud is formed, and this develops into a true cattleya-like foliar stem. There are several varieties of C. Walkeriana, and all these, except dolosa, flower like the type, but dolosa flowers from between the leaves of a fully-developed stem.

DUMELOW'S SEEDLING, OR WELLINGTON, APPLE.—F. E. J., Ashby-de-la-Zouch: The apple popularly known as Wellington, but more correctly as Dumelow's Seedling, was, I believe, raised in this district. As I have noticed replies in your columns referring to the origin of fruits, I write to ask if you will kindly say how and when this useful apple originated.—Dr. Hogg records that this excellent apple was raised by a person of the name of Dumeller (probably Dumelow), a farmer at Shakerstone, a village in Leicestershire, six miles from Ashby-de-la-Zouch, and is extensively cultivated in that and the adjoining counties under the name of Dumelow's Crab. It was first introduced to the neighbourhood of London by Mr. Richard Williams, of the Turnham Green Nursery, who received it from Gopsal Hall, the seat of Earl Howe, and presented specimens of the fruit to the Horticultural Society in 1820. It was with him that the name of Wellington Apple originated, and by which it is now generally known in the London markets.

BOOKS ON GARDENING.—A. E. C., North Bucks: Our publisher is sending you a list of the books published at the office of the GARDENERS' MAGAZINE. The particular orchid book to which you refer is published at 2s. 6d. by Mr. John Lane, Bodley Head, E.C., and can be obtained through your newsagent.

SCALE INSECTS ON CURRANT BUSHES.—S. E. D., Bedale: Will you kindly inform me what the insect pest is which attacks currant trees; specimens herewith. In the summer I observed little white patches here and there on the trees (against walls), and now a scaly pest appears. These appear to be of the same nature as Mussel Scale on apple trees, but of different shape. —The pest is the White Woolly Currant Scale (Pulvinaria ribesiæ), and one that seems to have a decided preference for bushes trained against walls. High cultivation and abundance of moisture in due season are very material helps in any attemps to get rid of the pest. No doubt some of the insecticides on the market would provide an easy means of affecting a clearance, but it must be remembered that scale insects are not easily killed by spraying unless the mixture used is so strong that it might prove injurious to the trees. A somewhat old-fashioned remedy is that of painting the bushes with hot lime-wash made up of two pounds of lime to a gallon of water. This should be painted on carefully, so as not to break out the buds, but a good coating should be given. Presently, the lime-film will crack and fall away, bringing with it the loose bark and the scale insects.

BITTER ROT IN PEARS.—S. E. D., Bedale: We cannot verify your reference. Will you write us again, giving page and date of issue; we fancy you are under a slight misapprehension.

KEI OR KI APPLE.—W. D., Horeham Road: Some years since a friend presented us with a few fruits (and also jars of preserve), called the Ki-apple, and, though we have made numerous enquiries, we have been quite unable to find out what plant yields the fruit. Can you inform us? We should like to know the name of the plant and something about it. I may say that the fruit was about the size of an apricot and similar in colour, but more brisk and pungent in flavour.—Your rendering of the name is phonetic. The fruit in question is known as Kei-apple, Kai-apple, or Kau-apple, and Aberia Caffra is the plant that yields it. Aberia Caffra is a shrub belonging to the natural order Bixineæ; it is a native of South Africa. The fresh fruits are acid, and make a good pickle, while the ripe fruits are made into a preserve. If you are ever at Kew, you will find specimens in Case No. 46, in No. 1 Museum, and plants in the Economic Houses.

LOSS OF FLOWERS AND FOLIAGE FROM BEGONIAS AND CROTONS.—J. E. S., Otley: I am sending a plant of Begonia Gloire de Lorraine for your inspection. Can you tell me why the flowers and buds have dropped, as well as many leaves? I have about forty very fine plants, and these I fumigated a fortnight ago, and the next morning I found a lot of the bloom had fallen. Ten days later nearly all the blooms and buds had fallen, and lots of the leaves as well. Would fumigation with XL All cause the flowers to fall, or is there anything wrong with the roots? I have given weak soot water occasionally, but water has always been given at about 60 degrees. I am rather afraid some sulphur gets into the house as croton leaves have also fallen. The house has a lean-to roof, and the stoke-hole joins it. The stables are at the back of the house. Would they be likely to cause trouble? Any help you can give me I shall be grateful for.—Excessive fumigation, especially if the plants and flowers are moist at the time, will do a great deal of harm, flowers and leaves falling freely afterwards. If your plants were dry (not at the roots), and fumigation was conducted in accordance with instructions, little harm should have followed, although we believe plants in flower should not be fumigated except in case of special need. Ammonia fumes from the stables might do some harm, but the adjacent stoke-hole is probably the source of the trouble, and the sulphur fumes have no doubt worked destruction. Means must be taken to keep the fumes from the house.

---

### NAMES OF PLANTS.

W. D., Aylesbury.—1, Sequoia gigantea; 2, Cupressus macrocarpa lutea.

N. S. C., Ealing.—1, Cypripedium Leeanum (good variety); 2, Begonia Gloire de Sceaux.

N. J. N., Durham.—1, Asparagus verticillatus; 2, Libonia floribunda; 3, Centropogon Lucyanus; 4, Helxine Solieroli.

A. E. C., North Bucks.—1, probably Thuia gigantea; 2, Cupressus pisifera filifera; 3, Cupressus torulosa; 4, Cattleya Bowringiana.

N. D. D., Newport.—1, Piper porphyrophyllum; 2, Sarracenia Drummondi; 3, Anthurium Andreanum; 4, Sedum Anacampseros; 5, Polypodium vulgare cambricum.

## OBITUARY.

### REV. DAVID LANDSBOROUGH.

We regret to announce the death of the Rev. Dr. Landsborough, of Kilmarnock, a well-known observer of the botany of the West of Scotland, and one who took a warm interest in the horticulture of that district. The Rev. David Landsborough, the son of a man of scientific tastes, early gave up his leisure to the study of botany, geology, and kindred pursuits, and, in the course of a long and busy life, proved of great assistance to many in and beyond the town where his duties lay. Dr. Landsborough's services to botany and gardening were considerable. He loved flowers and plants, and made a special study of the effects of winter on tender plants in the Island of Arran, publishing, through the medium of the Edinburgh Botanical Society, a series of papers on the subject. These were followed by others in which he gave many useful and interesting particulars respecting the culture of such things as tree ferns, palms, etc., in Arran. He was one of the leading spirits in, and the first honorary president of, the Glenfield Ramblers, a natural history society which has done much good work in and around Kilmarnock. The late Dr. Landsborough did much to foster the taste for plants and flowers in his district, and his garden contained a number of interesting plants not often met with in gardens.

### MR. ALEXANDER FRASER.

Much regret was expressed among his large circle of friends in the North at the death, in Edinburgh, of Mr. Alexander Fraser, late gardener at Drumduan, Forres, N.B. Mr. Fraser was for many years in the employment of Mr. Campbell Macpherson-Grant, and of Miss Macpherson-Grant, of Drumduan, and by both of them he was held in the highest esteem and regard. A tasteful and skilful gardener, and one who took a great pride in his work, Mr. Fraser invariably gave an excellent account of himself at horticultural exhibitions. He took a very prominent part in the Forres Chrysanthemum Society, in the welfare of which he was deeply interested. He retired from the post he held so long and faithfully about twelve months ago, and went to reside in Edinburgh where several members of his family had been settled for some years.

## CATALOGUES RECEIVED.

R. C. NOTCUTT, WOODBRIDGE.—A thoroughly well-produced catalogue of general nursery stock. Descriptions and illustrations are alike good.

"BUCKS," TRESCO NURSERIES, IPSWICH.—A neat little catalogue of roses, fruits, shrubs, etc., and containing an announcement of an interesting competition among customers, to be held next July.

REVOIRE, PERE ET FILS, LYON.—A very interesting illustrated advance list of novelties in plants, flowers, vegetables, and fruits for 1913.

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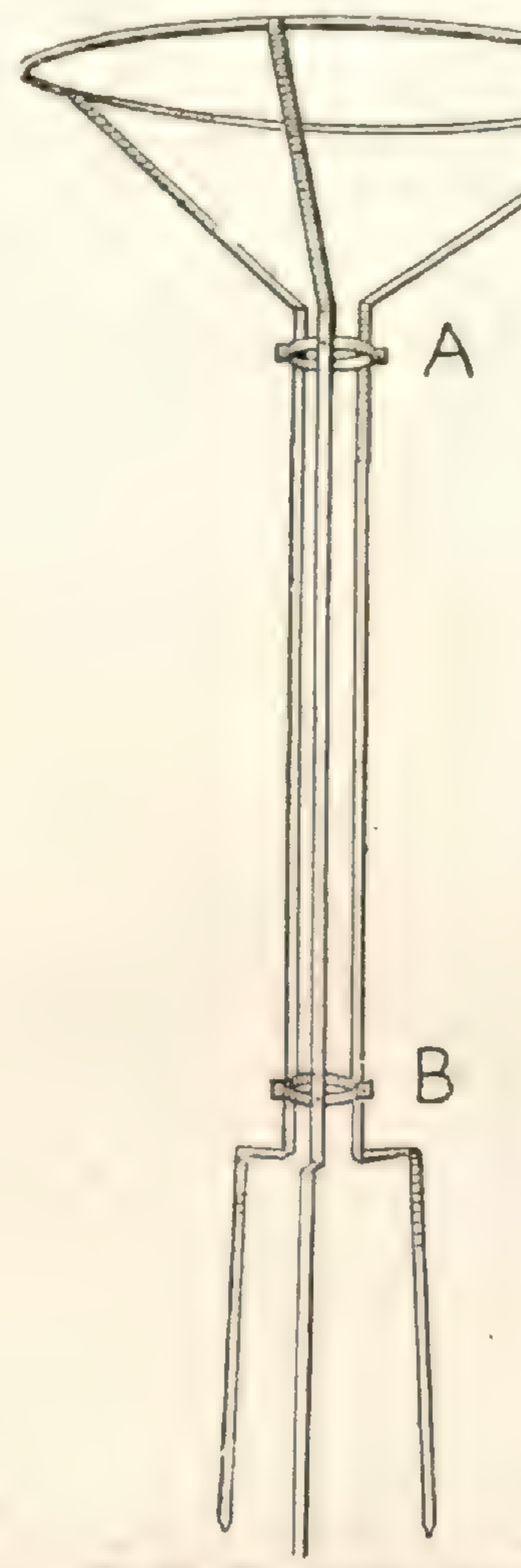
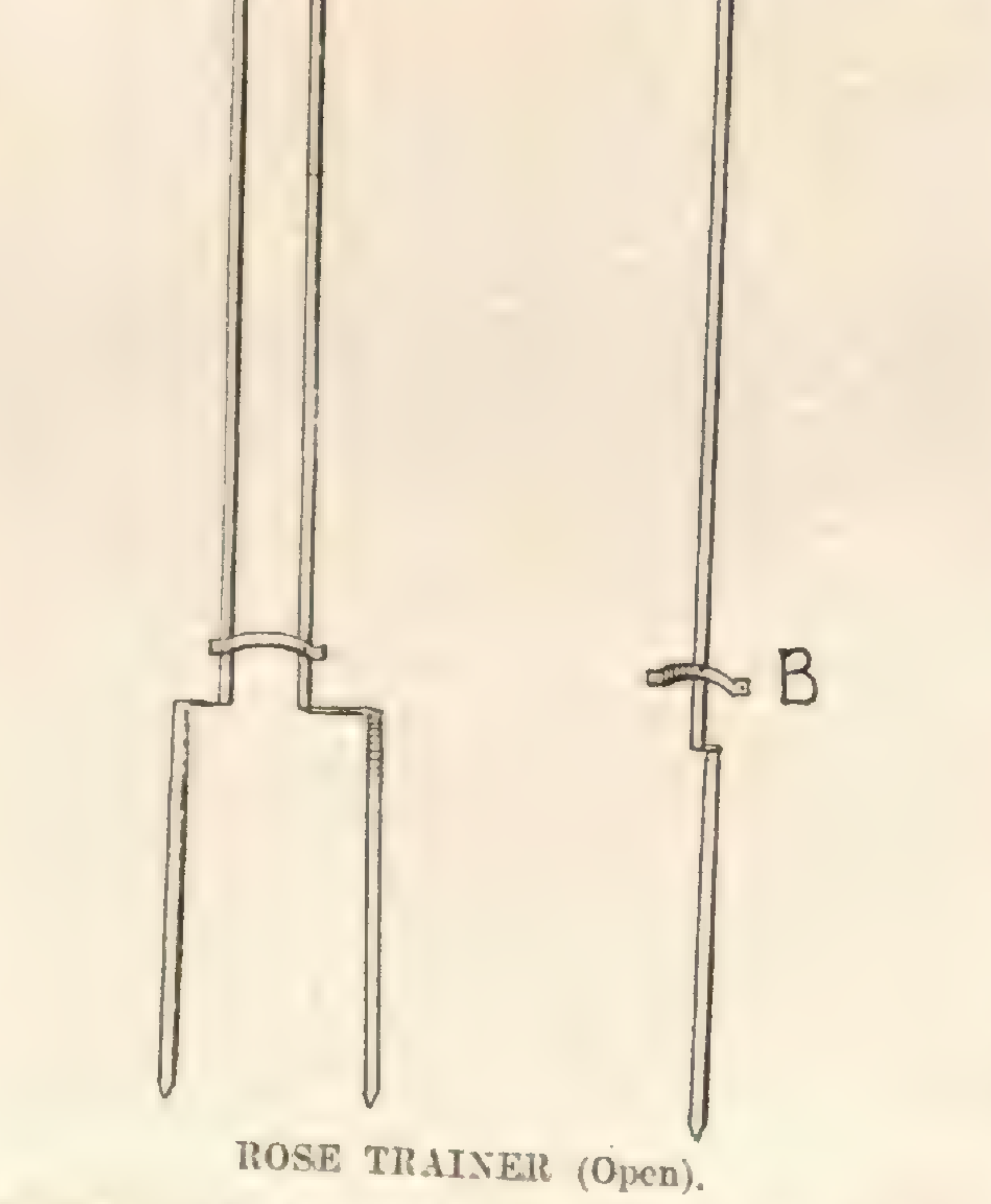
## A NEW ROSE TRAINER.

The increasing popularity of weeping standard roses of the Rambler and hybrid Wichuraiana types has given rise to a demand for an effective support and trainer, and we can confidently recommend to the notice of our readers the excellent support introduced by Messrs. Wm. Wood and Sons, Lim., Wood Green, London, N., and herewith illustrated. It will be seen that the columns are made of three separate lengths of iron, which are bent at the top (A) to form triangular arms to hold a hoop of iron, which is passed under the head of the rose tree, and is held in position by the clip-like ends of the iron arms; and at the bottom (B) to form holdfasts. The three legs are held together by two bands united by screws and nuts. Thus the standard is effectually supported without the slightest risk of injury, and the fact that the split ring slips under the head of the rose instead of the branches having to be dragged through the hoop, constitutes one of the chief advantages of this admirably designed appliance.



ROSE TRAINER (Closed).



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## FORTHCOMING ENGAGEMENTS.

TUESDAY, December 3.—Royal Horticultural Society; Committee meet at 12 o'clock; Lecture at 3 p.m. on "Vegetation of the Islands of Lake Maggiore," by Mdme. Tzikos St. Leger; Scientific Committee at 4 o'clock.

Horticultural Club.—Monthly dinner at the Hotel Windsor, Victoria Street, Westminster, at 6 p.m., to be followed by a lecture entitled "My Desert Camping Tour to Mount Sinai," by Mr. Arthur W. Sutton, F.L.S. The lecture will be illustrated by limelight views.

Scottish Horticultural Association.

Perpetual-flowering Carnation Society: Annual Dinner at the Holborn Restaurant at 6.30 p.m.; Annual Meeting at 8 o'clock.

WEDNESDAY, December 4.—Perpetual-flowering Carnation Society's Winter Exhibition at the Royal Exhibition Hall; Carnation Conference in the Lecture Hall at 3.30 p.m.

THURSDAY, December 5.—Linnean Society.

SATURDAY, December 7.—French Horticultural Society of London.

# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

CARPENTER and HANDYMAN; used to general nursery repairs; four years at Fraser's Nursery, South Woodford. S. NEWSON, 358, High Road, Leytonstone.

EXCELLENT GARDENER (34), eighteen years' references; sober and reliable. Apply, "R.," 60, St. Mary's Road, Lower Edmonton.

FOREMAN CARPENTER or Estate and House Situation required as above by experienced Man; thoroughly used to all branches of building trades and estate work generally; age 29; single; good references will be sent on application. W. PALIN, Pinvin Farm, Pershore, Worcestershire.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working, where three or four are kept); thoroughly experienced, Inside and Out; age 32; married; abstainer; excellent references. W. MANN, St. Hilary Gardens, Cowbridge.

GARDENER, age 17½, seeks SITUATION as Under Gardener; three years' experience, Inside and Out; good reference. G. DARBY, High Street, Witham, Essex.

GARDENER (Head or Single-handed), 29 years' experience, inside and out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head Working), and Wife, experienced Laundress, seeks SITUATION; 30 years' experience in all-round gardening; 12 years in present situation as above; no family; good references. Box 70, Office of this Paper.

GARDENER (Head Working), where three or more are kept; life experience in all branches; 7½ years as Head in last situation; highest references; age 36; married, two children. E. A. CLAYDON, 7, Middleton Road, Salisbury, Wilts.

GARDENER (Head, Single-handed, or with help given); 7 years' good experience Inside and Out; age 25; single; can be well recommended. W. BONNETT, Brogyntyn Gardens, Oswestry.

GARDENER.—A YOUNG MAN, age 35, seeks SITUATION as good all-round Gardener; good references; married when suited. V. HOLMAN, Junction Road, Burgess Hill, Sussex.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head of two, or good Single-handed); single; age 25; good experience in Vines, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places; leaving through no fault. J. STEPTOE, 59, Burlington Road, New Malden, Surrey. No circulars.

GARDENER (Head Working).—Major PITT, Pett Place, Charing, Kent, can highly recommend F. FOLKARD to any Lady or Gentleman requiring a practical man well up in Flowers and Fruit; age 31; married when suited.

**Read what our Advertisers write re "Gardeners' Magazine."**

October 28th.

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GARDENER and FLORIST seeks SITUATION, Private or Trade; experience, 8 years abroad; Table and House Decoration; first-class experience, Inside and Out; forcing, propagating; quick, intelligent, hard working; good appearance; age 29. BERGER, 42, Kensington Place, Notting Hill Gate, W.

GARDENER, aged 29, married, no family, seeks place as Single-handed; ten, two, and one years' references. H. WILLIAMSON, 8, Capron Road, Dunstable, Beds.

GARDENER (Single-handed or with help); 32; good all-round experience; 2½ years present situation; excellent character and reference. R. BEAGLEY, Hewshott Gardens, Liphook, Hants.

KEEN and reliable FOREMAN GROWER of all Market Produce seeks Situation in Market Nursery; life experience; age 35; married; good references. MOODY, 152, Victoria Road, East Leicester.

LAD seeks SITUATION in garden, inside or Out; age 15; good references; Bothy or otherwise. E. WOOLVEN, Lydhurst Gardens, Haywards Heath, Sussex.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Paddock Cottage, High Street, Orpington, Kent.

YOUNG MAN seeks SITUATION (Inside and Out); age 21; strong and willing; six years' experience; three years' nursery, last place; good references; abstainer. W. COWARD, Old Broughton Road, Melksham, Wilts.

YOUNG MAN, 24 years, seeks SITUATION on Lawns and Gardens; previous experience and good character. R. F. REDDING, Tysoe, Kineton, Warwick.

## Situations Vacant.

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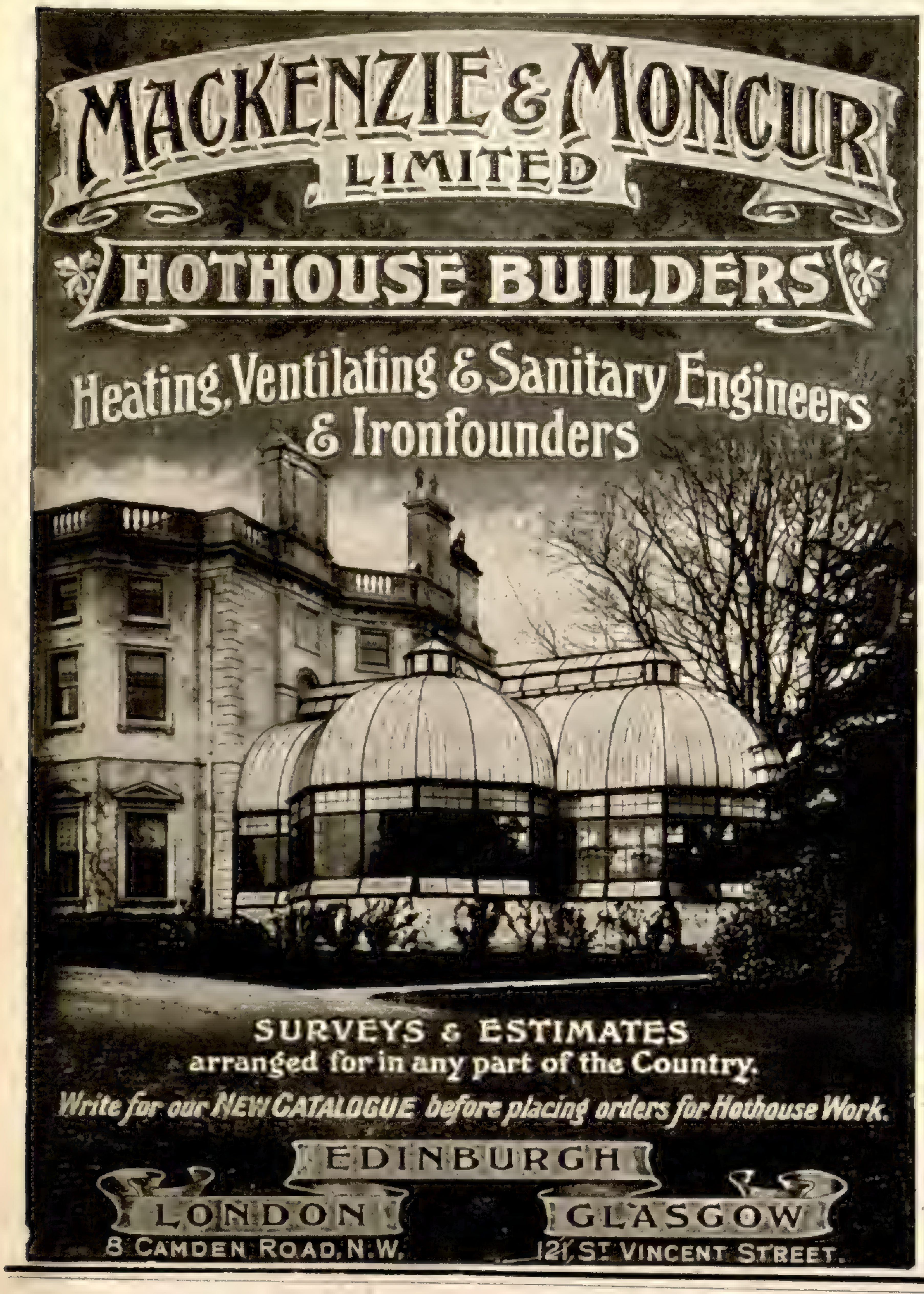

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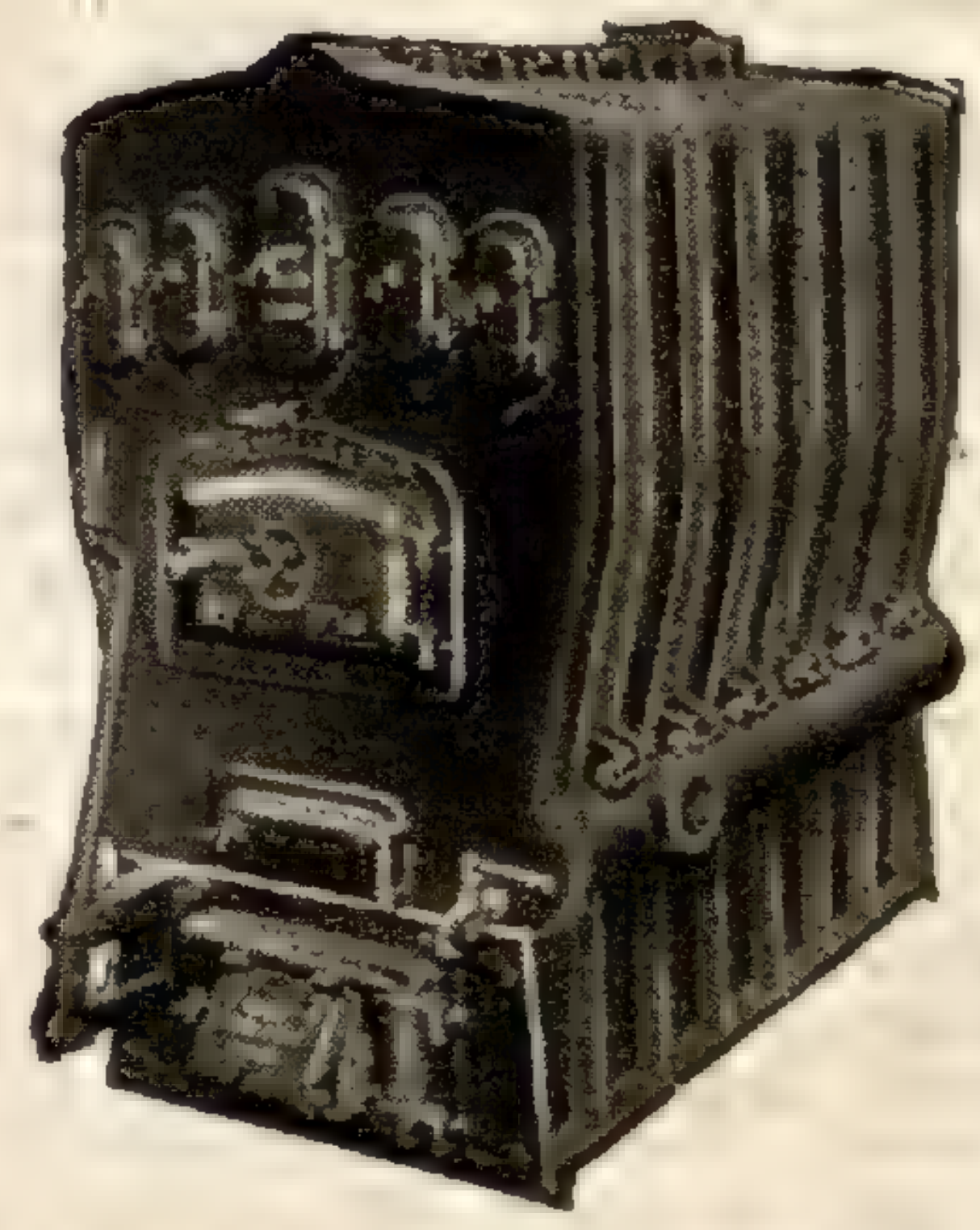

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# THE GARDENERS' MAGAZINE.

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VOL. LV.—No. 3,084. SATURDAY, DECEMBER 7, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Life of a Leaf.

Although in the microscopic domain of organic life the distinction between the animal and vegetable kingdoms is by no means quite definite in many cases, it becomes clear enough in the more highly-developed plants by the production of foliage, nothing akin to which is produced by animals. In the higher realm of plant life, as distinct from the fungi and other parasitic plants, which are leafless, and can consequently only derive their nourishment secondarily from vegetable matter already formed by the leaf-bearing plants, the leaf rather than the plant itself is really the individual, of which the plant is a colony. Thus from the smallest tuft of grass to the mighty sequoia, of a girth and height which implies many centuries of growth, in both and all forms between, we see growths which are entirely the outcome of leaf activity of shorter or longer duration, and of few or many successive generations of contributory leaves, precisely as we see towns and empires developed by the activity of successive generations of human beings. In both cases the individual, during its limited existence, whether as leaf or man, adds, or should add, something to the concrete accumulation in which, and by virtue of which, it is created. The life of a leaf in the vast majority of cases, is, compared with that of the associated plant community, a very short one, usually confined to a single growing season, during which period it performs its office of absorbing nutrition from the air and from the soil, and working this up by the aid of sunlight into all the varied materials which are needed for the community — i.e., the plant, shrub, or tree, with which it is associated. These materials are then distributed throughout the social system, so to speak, to form the wood, bark, flowers, and finally the fruits, plus the incipient buds, which really represent the leaf's offspring, or successors, in the season next following. These functions fulfilled, the leaf, as a rule, perishes, falls to the ground, and normally contributes by its decay to future vegetative growth. As usual, however, in Nature there are many exceptions to the general rule, and in some cases the life of a leaf extends over many seasons, instead of only one. This occurs particularly in those instances where the plant concerned takes an indefinitely long period in perfecting its life cycle by the production of flowers and seed. As an example, we may take such plants as the aloes, agaves, and similar fleshy-leaved plants, including the so-called century plant, which only flowers after a very long preparative interval, and then perishes. With such plants the leaves last throughout their existence, and are engaged the whole time in enlarging themselves, and fattening up, as it were, the axis of growth or heart of the plants, to form a mass of nutrition, upon which, when the time comes, a huge mass of flower and seed is developed with wonderful rapidity at the expense of the accumulated nourishment. In the cacti and euphorbias we have examples of the opposite character. In the case of the cacti, in order to adapt them to extremely dry conditions, the leaf proper is entirely suppressed, and its functions transferred to the stems, no leaves consequently appearing, even the so-called phyllocacti or leaf cacti owing their name to the somewhat leaf-like appearance due to flattened stems, upon the edges of which, as with the rest of the cactus tribe, the leaf-sites are indicated by small clusters of thorns. In some of the euphorbias we see probably a prior stage of evolution of such leafless plants, since the cluster of thorns are preceded by small leaves, which are shed as soon as formed, and hence have a very short life indeed. The more remarkable case of leaf longevity is seen, perhaps, in that curious plant, the unique Welwitschia, in which the two cotyledons or primary leaves produced from the seed persist for many years, and grow very large and woody, lying flatly on the ground, and constituting the only foliage the plant, really a tree, produces. In evergreen trees and shrubs, the longer life of the leaf is probably, as regards its active functions, more apparent than real, since, as a rule, they are shed the following season, and can, during the dormant period, do but little or nothing in the structural line. In annual plants the life of the leaves is but brief, and, as the next season's growth is confined entirely to the seed, they leave no successors behind them in the shape of buds. With biennials, the leaves live through two seasons, their functions in the first one being to store up nutrition, and in the second to use this for the manufacture of the flowers and seed, on similar, but brief and more regular lines than the agaves, etc., which we have mentioned above. The life of a leaf, in short, depends entirely upon the period required by the plants concerned for the fulfilment of Nature's command to increase and multiply; this done, the next step is to perish in order to make room for the next generation, and to return, as far as possible, its constituents to the general store.

MR. T. PATEMAN.

**Mr. T. Pateman,** whose portrait is given herewith, has fully justified the high position he occupies among the gardeners who pursue their avocations in the county of Hertfordshire, for while he has become best known as a cultivator and exhibitor of fruit, he has been not less successful in all other branches of his work. It is of interest to recall the fact that Mr. Pateman commenced his horticultural career in the gardens of The Node, Welwyn, the residence of C. A. Cain, Esq., of which he has now charge, and remained there five years. It is interesting also that during this period he served under three Scotch and two English gardeners, so that his training must have been somewhat varied. Subsequently, he occupied positions in several gardens of note in Hertfordshire, and in 1898 he returned to The Node as head gardener when the estate was purchased by his late employer. Mr. Pateman proved himself quite equal to his task. He proceeded to set the vineries in proper order, and in 1900 he obtained permission to grub up a portion of the hardy fruit trees each year, and to replant, and this work was proceeded with until the whole of the then existing trees had been replaced. The subsoil of The Node gardens is a strong gravelly clay, which previously had not been worked, and before replanting Mr. Pateman had the area trenched to a depth of three feet. The results have proved to demonstration the great value of the thorough preparation of the soil. Mr. Pateman tells us that he commenced exhibiting by staging a collection of eight dishes of ripe fruit and several single dishes at Harpenden. He obtained premier honours for the collection and five other first prizes in the single dish classes. In 1907 he entered into competition at the Royal Horticultural Society's fruit show, and obtained the second place for a collection of six dishes of ripe dessert fruit, which was by no means unsatisfactory, seeing that there were nine entries; and a first for pears. In the following year Mr. Pateman succeeded in obtaining the premier position in the same class, thereby winning his first cup for fruit, and some other awards, and in the fortnightly competitions, which were in 1909 substituted for the annual fruit show, Mr. Pateman was successful in taking a number of first prizes. This year his successes at Westminster included firsts for twenty-four dishes of apples, six dishes of cooking apples, and a dish of "any other" white grapes, and second for eighteen dishes of pears. At local exhibitions this year Mr. Pateman has won two challenge cups for fruit, one of which has become his property. The Node gardens, which have an area of about thirty acres, have had their interest and attractions greatly enhanced by the rock and water garden, which has an area of about two acres, an Italian garden, and an Old English garden, which were made last year.

**Royal International Horticultural Exhibition.**—The directors of the Royal International Horticultural Exhibition, 1912, met at the Royal Horticultural Hall, Westminster, on November 26, to consider a resolution for disposing of the property of the company, after payment off all debts and liabilities. The balance-sheet showed a net profit of £2,870 3s. 7d. Allowing for payments which have still to be made, the balance may be taken as approximately £2,500. It was decided to disburse the profits in the following manner: To the Irish Gardeners' Association and Benevolent Society, £100; towards the reprinting and bringing up-to-date of Dr. A. G. Pritzel's "Botanical Index," £250 (to this latter purpose the R.H.S. have already promised to give £1,000). The remainder of the profits (about £2,150) will be divided between the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund, in the proportion of two-thirds to the former institution, and one-third to the latter. A second resolution was passed, namely, that the company be voluntarily wound up, and that Mr. G. J. Ingram be appointed liquidator. These resolutions will be confirmed at a later meeting.

**National Rose Society.** — The thirty-sixth annual general meeting of the National Rose Society will take place in the ante-room to the Crown Room at the Holborn Restaurant, London, W.C. (corner of Kingsway, Holborn), on Tuesday, December 17, at three p.m., to receive the report of the Council; to pass the accounts; to elect the officers and Council for the ensuing year; and to award the Dean Hole medal. Numerous alterations in the rules and regulations will be submitted for the approval of the members, but none of the alterations are of a drastic character, and no great changes will be made in the clauses. The nominaton of officers are: C. E. Shea, Esq., president; G. W. Cook, Esq., hon. treasurer; E. Mawley, Esq., V.M.H., hon. secretary; and the acting vice-presidents, Rev. F. R. Burnside, H. R. Darlington, Esq., George Gordon, Esq., V.M.H., G. A. Hammond, Esq., E. J. Holland, Esq., H. E. Molyneux, Esq., O. G. Orpen, Esq., Rev. F. Page Roberts, Rev. J. H. Pemberton, Dr. Shackleton, J. T. Strange, Esq., and Dr. A. H. Williams. As nominations for officers and vice-presidents are only equal to the number of vacancies, the foregoing will presumably be elected. The nominations for the Council exceed the vacancies by four, and consequently there will be a contest for seats.

**Moving Pictures at the Royal Horticultural Hall.**—In the Orchid annexe of the R.H.S. Hall, Westminster, there was an additional attraction on Tuesday last. During the afternoon a representative of the Government of British Columbia gave a display of moving pictures showing the Timber, Mining, Fisheries, Agriculture, and Fruit Growing Industries of British Columbia. Many visitors took advantage of this exhibition to avoid the crush in the hall, and secure a brief rest, as well as instruction.

**The Cold Snap.**—The end of November and the beginning of December were notable for the cold weather that prevailed throughout the country. In Durham and Yorkshire skating was indulged in, and at Buxton the snow permitted tobogganning, as it did also at Wallasey, Cheshire. At Carlisle the temperature fell to zero on Sunday morning; at Hampton Court and in many parts of the Thames Valley ten or twelve degrees of frost were registered, and previous to the heavy rains of Sunday evening the ice was half an inch thick. Snow fell heavily in Berwickshire and the Lothians, and in some place 27 degrees of frost were registered. North Wales experienced a heavy snowfall, and in Dublin snow followed frost, but rain soon cleared both away.

**A Curious Orchid.** — It is now a well-known fact that if Zygopetalum Mackayi is crossed with pollen from Odontoglossum crispum, seed capsules and fertile seeds result, but the progeny is invariably Z. Mackayi, without the slightest suggestion of Odontoglossum influence. Messrs. J. Veitch and Sons have on two distinct occasions made this cross, and raised batches of seedlings, and on Tuesday last they exhibited about a dozen such seedlings, in bloom, and everyone was Zygopetalum Mackayi pure and simple.

**Frank Ashton Relief Fund.**—We have received the following appeal: A small committee of orchidists has been formed to assist Mr. Frank Ashton, who has unfortunately fallen into indigent circumstances, and who is no longer able to follow his employment as a traveller in orchids. He has been struggling against fate for the past two or three years, but has at last been compelled to give up owing to a very badly poisoned foot, to attacks of chronic rheumatism, and to an affection of the eyes. He is no longer able to travel, and his resources are practically at an end. An appeal is therefore made to all those who have been associated with Mr. Ashton in the orchid business to show their practical sympathy with him in his affliction by contributing towards a fund which will be utilised to establish him in some small home business. The committee of the Kew Guild (of which Mr. Ashton is a life member) have generously made a grant of £5 towards the fund. Further donations may be sent to the secretary of the Kew Guild (Mr. Herbert Cowley, South Side, Kew Green), or to me, and will be gratefully acknowledged on Mr. Ashton's behalf.—John Weathers, 7, Talbot Road, Isleworth, Middlesex (secretary).

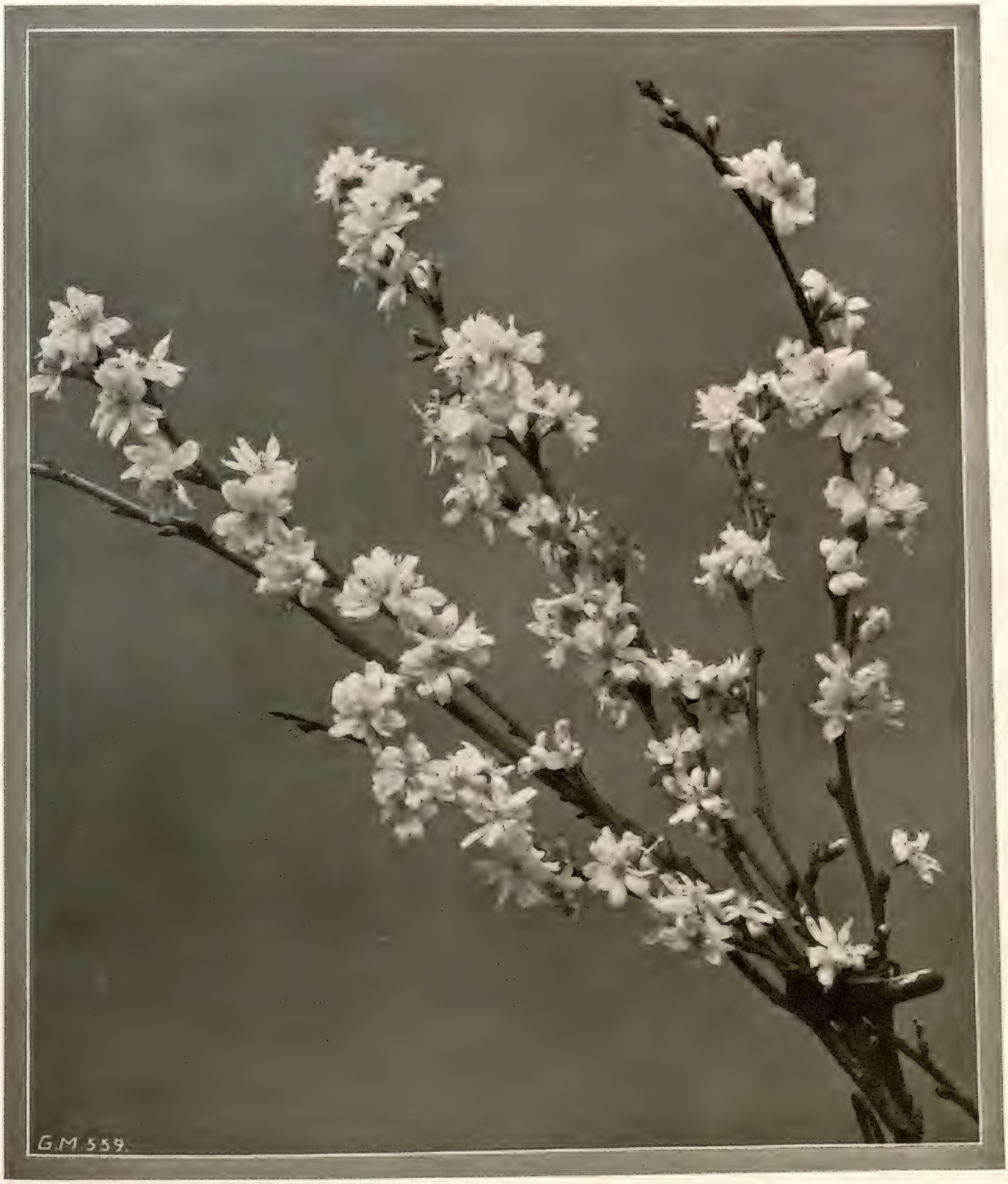
**A Christmas Number for Garden Lovers.**—We have received a copy of the Christmas Number of "Amateur Gardening," and at once congratulate all concerned upon the beauty and excellence of the production. The issue cannot fail to please, and, although it is, in the first instance, designed for garden-lovers, it is sure to appeal to an even wider circle of the reading public. A special feature is an eight-page supplement of beautifully coloured pictures, reproduced from direct colour photographs and water colour drawings, and representing plants, flowers, and garden scenes. Best of all, is the double-page illustration of the splendid herbaceous borders at Welbeck Abbey, Notts, the seat of the Duke of Portland, K.G., reproduced by permission from the water colour drawing by A. C. Wyatt, Esq. A key plan of the border adds to the value of the picture. Besides all these good things, the issue contains numerous beautiful half-tone illustrations, and an abundance of literary matter written in a less serious and technical manner than usual, and, for that reason, all the more welcome at the festive season.

**National Rose Society's Conversazione.**—The conversaziones that have within recent years been held by the National Rose Society, in conjunction with the annual meetings, have been so popular with the members that a similar function will be held this year in association with the annual gathering. As in the case of the latter, the conversazione will take place at the Holborn Restaurant, corner of Kingsway, Holborn, W.C., on December 17, and the time will be from 4.30 to 6 p.m. The President will deliver a short address, and Dr. George G. Hamilton will say a few words about "Roses and Some Bournemouth Gardens," illustrated by lantern slides in colour. For several years past Dr. Hamilton has devoted special attention to the photography of flowers in their natural colours, and, having seen the slides, which have been photographed direct from Nature, we can say that in their fidelity and effectiveness they are far superior to any coloured photographs that we have previously seen. There will also be light refreshments, and selections of music. Members should not overlook the fact that they are entitled to one ticket free, provided application be made to Mr. E. Mawley, V.M.H., Rosebank, Berkhamsted, Herts, not later than Thursday, the 12th inst. Tickets (2s. each) may be purchased for friends at the same time.

**Ontario's Apple Crop.**—Although complete figures respecting the apple crop have not been received, preliminary reports state that this year's crop in Ontario will be a good one. The province produces 70 per cent. of the total crop of apples in Canada; the bulk is sold within the province, but, at the same time, Ontario exports more apples to Great Britain than any other province. The shipment last year amounted to about 1,000,000 barrels or 3,000,000 bushels. Ontario apples are very much in demand in the Western Provinces, which annually take nearly 1,000,000 bushels. It is calculated that apple growers in the province receive from the export trade alone the sum of one million sterling. Where the growers have united to form co-operative shipping associations—as in Norfolk and other counties—their returns have been much higher than under the old system of selling in the orchard.

# ROYAL HORTICULTURAL SOCIETY.

During the afternoon of December 3 there was a great crowd of visitors at the Royal Horticultural Hall, Westminster, to see the last show of the year. From about 2.30 to 4.30 the hall was packed with people. The display was a good one, and there was plenty of variety, as begonias, orchids, carnations, fruits, bottled fruits, chrysanthemums, and paintings were all shown freely, so that the exhibition did not lack either variety or brilliance.



PRUNUS MIQUELIANA.
A beautiful white, autumn-flowering species. A.M., R.H.S., December 3. Colonel Stephen Clarke, C.B., Cuckfield.

FLORAL COMMITTEE.

Very gay were the winter-flowering begonias so well shown by Messrs. Jas. Veitch and Sons, Chelsea; we have many times referred to the varieties raised by this firm, but a special word of praise seems due to the variety Elatior, which carries its numerous bright salmon-pink or carmine flowers erect and in sturdy clusters; this should make a fine market plant, as it "carries" well. Of B. Julius we may say that at Feltham it has proved a capital basket plant. Bouvardias, azaleas, and single chrysanthemums in pots formed part of the display made by the Chelsea firm. Messrs. J. Peed and Sons, Norwood, also put up an exhibit of winter-flowering begonias.

Begonia Glory of Cincinnati, in the way of B. Gloire de Lorraine, was shown in quantity and in capital condition by Mr. G. Lange, Hampton. Mr. Lange also showed fifteen plants of hydrangeas in 48-sized pots, carrying enormous heads. The varieties were Mdme. Emile Mouillère, Mdlle. and Renee Gaillard, and of the former one head was a foot wide and ten inches deep. Mr. A. Shambrook, gardener to the Rev. H. Buckston, Sutton Hall, Derby, contributed a batch of cyclamens, in which the papilio or fringed varieties were in especially fine condition, large, and freely-flowered.

Poinsettias and cyclamens from Messrs. H. B. May and Sons, Edmonton, were very bright, and they were pleasingly associated with the graceful Plumbago rosea and the choicer nephrolepises, Adiantum Farleyense gloriosum and the bright Centropogon Lucyanum. Retarded liliums, notably L. auratum, L. longiflorum, and L. speciosum, were exhibited over a groundwork of dwarf polyantha roses by Messrs. Wm. Cutbush and Son, this firm also displaying winter-flowering begonias. Indian azaleas were submitted by Mr. L. Russell, Richmond, and the freely-flowered plants of Mdme. Petrick, J. B. Veronne, and Deutche Perle attracted a good deal of attention; ivies and a few anœctochilus, with their prettily veined leaves, were also contributed by Mr. Russell.

Very interesting were the alpine plants exhibited by Messrs. Thos. S. Ware, Lim., Feltham; these were staged in pans, and included a wide range of sedums, sempervivums, saxifragas, androsaces, dwarf shrubby veronicas, primulas, and the moisture-loving Sarracenia purpurea. Mr. Clarence Elliott, Stevenage, had a little rock garden, wherein Gentiana acaulis was flowering, and where saxifragas were grouped. A feature of the exhibit was the dwarf bushes of Abies excelsa Remonti, A. pygmæa, Retinospora obtusa nana, R. pisifera nana, and Juniperus tamariscifolia—all suitable for Mrs. Swinburne in the gardens under his rock gardens.

Chrysanthemums were again fairly well represented, and a quite large display was made by Messrs. W. Wells and Co., Merstham. The flowers were set up pleasingly in stands and vases, and associated with crotons, ferns, and other foliage subjects. The single and decorative varieties were fine features, and of the former Eric Wild (A.M.), pink; and Mrs. Wingfield Miller, deep rose, were very attractive, while Miss A. Brooker, a chestnut-scarlet decorative variety of incurved Japanese form, was a notably bright variety; an A.M. was granted to each of these three. Wells' Late Pink, Mensa, Merstham Jewel, Brightness, and Ethel Thorp were other fine varieties on view.

A particularly fine exhibit of chrysanthemums in pots, all in small 40's, and carrying from four to ten fine flowers apiece, was made by Mr. Cradduck, gardener to Colonel Mark Lockwood, C.V.O., M.P., Bishop's Hall, Romford. There were forty plants in all, and the group was greatly admired, and everyone was loud in praise of the splendid cultivation thus exhibited. The variety was considered by the Floral Committee to be Mrs. Swinburne, but a large number of experts were equally certain the variety was Maud Jefferies. Mr. Cradduck told us the variety appeared with Moneymaker, and to his knowledge he had never had the variety Mrs. Swinburne in the gardens under his charge.

From the Manor House Nurseries, Cardiff, was brought a selection of single chrysanthemums, and notable varieties were Daisy, Audrey, Idris, Sir G. Bullough, Strawberry, and Doris Chaplin. Godfrey's Perfection chrysanthemum, a very free decorative white anemone variety was shown in capital condition by Mr. W. J. Godfrey, Exmouth, Devon.

Very graceful was Asplenium divaricatum elegans, with finely divided fronds, shown by Messrs. J. Parker and Co., Whetstone; it deservedly gained an A.M.

Messrs. H. Cannell and Sons, Swanley, made up a bright exhibit of pelargoniums, showing several dozen bunches of brilliant trusses of flowers. Prunus Miqueliana, a twiggy shrub that produces an abundance of white flowers out of doors at this season of the year, caused some surprise; it is a pretty subject, and was quite well shown by Colonel Stephen Clarke, C.B., Cuckfield, and it gained an A.M.

Paintings of floral subjects and garden scenes were submitted by Miss Fanny Farrer, 38, Burlington Gardens, Acton, W.; Mrs. Malone, Cheyne Walk, Chelsea; Mr. R. Hughes, Potters Bar; and Miss di Guarda. Mr. W. R. Dykes, Charterhouse, Godalming, showed a fine series of coloured drawings of iris species, and this exhibit was greatly admired.

## CARNATIONS.

A very large exhibit of carnations staged across the end of the hall by Mr. C. Engelmann, Saffron Walden, was a great attraction, for not only were the flowers good, but they were well grouped and shown in quantity. Particularly good were the great sheaves of Lady Northcliffe, the crimson Triumph, White Enchantress, May Day, the new Rosette, the old Enchantress, Carola (bold as ever), the showy orange-apricot Elektra, the yellow Golden Ray, and Scarlet Carola, a bright scarlet form of the crimson Carola, and also a rose and crimson splashed sport from Carola. "A glorious exhibit," as some of the ladies suggested, and also a most interesting one. Mr. G. Lange, Hampton, had a small stand of carnations, and his best varieties were Mikado, May Day, Beacon, Wodenethe, and Scarlet Glow.

Messrs. Young and Co., Hatherley, Cheltenham, put up a quite attractive exhibit of carnations in about twenty varieties. The flowers were good and bright, and set up in vases of varying height, with sprays of asparagus. Outstanding varieties were Hon. John Boscawen, a new pink; Mrs. Brodie Henderson, deep crimson-red; Mrs. Greswolde Williams, Duchess of Devonshire, May Day, Superior, Mrs. C. W. Ward, and a good seedling from the popular Marmion. Messrs. Allwood Brothers, Haywards Heath, had a quite pretty exhibit of carnations, artistically arranged. They had baskets, vases, and bowls of blooms, and a few of their leading varieties were Salmon Enchantress, White Wonder, Mary Allwood, Geisha, May Day, Baroness de Brienen, Rosette, Empire Day, and Fairmount, the latter a soft heliotrope variety of large size and substance.

Very bold and well arranged was the exhibit of carnations set up by Messrs. Stuart Low and Co., Enfield. In the centre of a large contribution they had lovely bunches of the pink Baroness de Brienen, surrounded by Rosette, Marchioness of Linlithgow (white), and Mikado. At either side were fine sheaves of White Enchantress, Mrs. C. F. Raphael, Enchantress, Gloriosa, Carola, and Pink Enchantress. Ferns, palms, and green moss were freely used under and among the flowers, and added to the elegance of the display. Mr. W. Lawrenson, Yarm-on-Tees, Newcastle, was an exhibitor of finely-grown carnations, and of great excellence were the bunches of the lovely new white Snowstorm, Mrs. Burnett, Lady Meyer, May Day, and Pink Enchantress.

Mr. A. F. Dutton, Iver, Bucks, adopted a new method of showing his carnations, and set up three big baskets of lovely blooms of the pink variety Mrs. A. F. Dutton (A.M.), with a small vase of selected flowers in the foreground. The variety is of fine size and form, and slightly scented. Mr. H. Burnett, Guernsey, had a delightful exhibit charmingly arranged, and the flowers were large and very beautiful. Mrs. C. F. Raphael was grandly shown, and so were Rosette, R. F. Felton, Marmion, Sunstar, White Wonder, the lovely pink Empire Day, Sultan, the striped Benora, and White Chief—all first-rate varieties.

Messrs. Wm. Cutbush and Son, Highgate, had a large exhibit of perpetual carnations, and showed flowers and flowering plants, and arranged these in capital style. The vases of R. F. Felton, Mrs. L. Mackinnon (rich scarlet), White Perfection, Lady Meyer, Mikado, and Hon. R. James were fine, and so were the plants of Lady Coventry, Viscountess Goschen, and F. Galsworthy.

## ORCHID COMMITTEE.

Over a score of members attended this committee, and, though they had not such a busy time as usual, they had plenty to do for about three-quarters of an hour. The question of admitting a "disbudded" spike of an orchid for consideration was discussed; at present it would be disqualified, but there seems to be a feeling that the regulation should be relaxed.

An effective and interesting exhibit of orchids from Messrs. James Veitch and Sons, Chelsea, contained a number of well-flowered examples of Zygopetalum Mackayi, carrying a total of about three dozen spikes. Brasso-catt-lælia Morna, with large rosy flowers, the fringed lip having a buff centre, was another good thing; while among cypripediums the pick were C. insigne Sanderæ, C. Germaine Opoix, C. Edina—a bold, richly spotted flower, C. San-Actæus, and C. Tracyanum, the latter a cross between C. aureum Hyeanum and C. Leeanum giganteum. Cypripediums, chiefly insigne varieties, with a few Cattleya labiata, a plant of Vanda tricolor, and some odontoglossums were staged rather poorly by Messrs. Baylor, Hartland, and Sons, Cork.

A novel and rather high arrangement of orchids from Messrs. Sander and Sons, St. Albans, brought the flowers well up to the line of vision. Ferns and green moss were freely used to hide the pots and add finish to the group. A very important subject was Chondropetalum Fletcheri—a most interesting hybrid between Zygopetalum Mackayi and Chondrorhyncha Chestertoni, two very distinct plants. The hybrid has zygopetalum habit and general form of flower, but the lip is cream-coloured with fimbriated margins that show the influence of Chondrorhyncha Chestertoni. Lælio-cattleya Golden Oriole, Cattleya Sylvia, Cypripedium St. Andre, C. Actæus, C. Vandyck splendens, C. Arthurianum Sanderæ, and C. Troilus.

A small set of well-grown cypripediums was staged by Messrs. Hassall and Co., Southgate, including fine flowers of C. Mdme. Jules Hye, C. insigne Harefield Hall, C. i. Sanderæ, C. Fulshawense, and the bright C. Triumphans. Messrs. J. Cypher and Sons, Cheltenham, presented cypripediums in good form, together with the pure white Calanthe Harrisi, the fine Cymbidium Tracyanum, Zygopetalum crinitum, and the free-flowering Masdevallia Schröderiana. Messrs. J. and A. McBean, Cooksbridge, showed a few good odontoglossums, the pretty Cattleya aurensis, cymbidium, and some cypripediums.

In the little bank of orchids staged by Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Rosslyn, Stamford Hill, N., we noticed a plant of Chondropetalum Fletcheri with two spikes of its green and cream flowers; Miltonia Bleuana with two spikes, Cypripedium Sir Redvers Buller, C. Triumphans, C. Chapmani, the bright C. Baron Schröder, and the neat C. Niobe.

Messrs. Charlesworth and Co., Haywards Heath, showed a fine example of Angræcum sesquipedale, carrying eight of its ivory-white flowers; the pretty Brasso-cattleya Rutherfordi, Sophro-cattleya Heatonense, Odontioda Diana, some capital cypripediums, and the handsome Sophro-lælio-cattleya Carna (A.M.) with crimson petals. The beautiful rosy-tinted Vanda cærulea Sanderæ, carrying two fine spikes, was shown by Mr. Alexander, gardener to Sir George Holford, Westonbirt, Tetbury, Gloucester; with this came Cattleya Golden Oriole Ruby (F.C.C.), with brilliant ruby-crimson petals and lip; Cypripedium Viking (A.M.), a shapely cross between C. Buchanianum and C. illustre.

Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart., Dorking, gained an A.M. for Cypripedium Eurybiades, a handsome flower, with dark purple spots on the white and green dorsal sepal. Odontioda Latona Fowler's var. (F.C.C.), a very beautiful hybrid between Odontioda Bradshawæ and Odontoglossum crispo-Harryanum, caused some discussion, as a bud or flower had been removed recently from the apex, and there is a regulation aginst disbudding. The flowers have a rosy-blush ground, red margins, and large crimson blotches, and there is a yellow disc on the lip; this was shown by J. Gurney Fowler, Esq., Glebelands, South Woodford. Messrs. Stuart Low and Co., St. Albans, and Messrs. Swan and Price, Keyfield Nursery, St. Albans, each showed a few orchids.

(Continued on p. 947.)

# PERPETUAL FLOWERING CARNATIONS IN WINTER.

In the case of perpetual-flowering carnations the amount of heat must be governed by the amount of light. In short, heat and light work hand in hand. If you gave a high temperature with a poor light you would be forcing the plants. That is why it is a prime necessity to have a lower temperature at night than in the day. With the light of day, however, the plants benefit by the additional heat. On bright, sunny days the temperature of the greenhouse will rise very high, with an abundance of air upon the house, but this does no harm. On the contrary it does good, because you have increased light with the increased heat, and that is the root of the whole matter, as all good gardeners know.

In the case of an old-fashioned dark greenhouse, or one with a northern aspect, the light during the day cannot be so strong as in a modern house more favourably placed, so that more air, consequently a lower temperature, should be aimed at. This also applies to those who grow perpetual-flowering carnations near large towns where fog has to be contended with.

Man may cheat his fellow-man, but he cannot cheat Nature, and anyone who endeavours to force perpetual-flowering carnations in a high temperature will learn the truth of this. The recognised best temperatures are between 45 and 50 degrees at night, and between 55 and 60 degrees during the day, with a further advance in bright weather. But, as we all know, perpetual carnations can be grown in cold greenhouses, for while the frost will retard their flowering it will not kill the plants. MONTAGU C. ALLWOOD.

# THE GRASS LAWN.

## Its Place in the Garden.

In these days of plenitude in advertising, when almost every post brings an autumn catalogue of plants, roses, bulbs, or alpines, the amateur gardener—as a last resort after filling his every border is perhaps tempted to cut into his lawn and make beds for the accommodation of some desired purchase.

He remembers the noble Darwin tulips that graced a friend's garden last May, and the Polyanthus Miss Jekyll. He has no room in his rose beds for the brilliantly coloured Polyantha Rose Jessie that took his fancy when visiting a brother gardener lately. He must really find room for some of the old-fashioned, dwarf-growing, multi-flowered pompon chrysanthemums, or for border carnations and pinks in variety. But every available yard of his ground devoted to kitchen garden produce is required for its lawful use; and finally, he cannot enlarge his boundaries. There is only one thing he can do; he can reduce the size of the lawn, or, at any rate, cut some beds in it.

If he be a finnicky man he will be tempted to make beds, some pear-shaped, some oval, or, maybe, some lozenge-shaped. If he be a man of method and decision, he will probably make fewer beds and of one proportion. But if he be a really wise man he will leave his lawn alone and forego the pleasure of growing the desired plants, unless he can throw out from existing beds or borders some unimportant subjects, to be replaced by the coveted ones.

A lawn should possess one superlative attraction in the garden, that of restfulness and space. The borders of herbaceous plants rejoice the eye with colour and with varied growth and foliage; the rose garden has its own unchallenged charm, and the rock or water garden invite the plant-lover to investigate each individual saxifrage or water lily; but when all has been seen and admired, the visitor turns with delight and satisfaction to rest his eyes on the cool green lawn, where the dainty little wagtails dance in the sunshine, or the long evening shadows mark the rough outline of friendly trees. If possible, a good sized piece of ground should be reserved for the lawn, and if it can be easily seen from the lower windows of the house, so much the better. But where space is limited a long, wide strip may suffice in place of a more square one, and on either side may be herbaceous plants in borders.

One very restful garden comes to mind, in which occurs a rose garden with long central rose beds, and generous breadths of lawn on either side and at either end, while climbing roses mark the boundaries of this retreat. It is only entered by two slight openings in the fence of climbers, and the tired man can truly there find rest. One does not soon forget the soft shadows on this lawn, nor the light petals of the climbing roses scattered on the turf.

Beechwood, WALTER JESPER.
Menston-in-Wharfedale.

SUN AND SHADE ACROSS THE LAWN.

**Urceolina aurea.** — This pretty South American bulbous plant, whose introduction we owe to Richard Pearce, of tuberous begonia fame, flowers naturally during the autumn months. It is exceedingly pretty when in bloom, and is, in addition, totally distinct from any other occupant of our greenhouses. The leaves are much like those of a eucharis, and the flower scape, which well overtops the foliage, is terminated by an umbel of strictly drooping flowers, in shape like inverted urns, and in colour yellow and green. It is also known as Urceolina pendula.—W. T.

# THE EDUCATION OF A GARDENER.

I have followed with considerable interest the correspondence that has for some time past appeared in the Gardeners' Magazine respecting the education of the gardener. On such a topic there must necessarily be differences of opinion; but the tendency in discussing it, as in all discussions, is to become so deeply involved in detail that the general outlook is narrowed and the vital points obscured.

The two fundamental questions appear to me to be—(1) What are we out for? At what do we aim? (2) How can we best attain it? All other questions are subsidiary to these, and I would submit that these are just the questions which the rising generation of gardeners must put to themselves.

As bearing on the recent discussion, I believe the answer to the first is—Proper recognition and a fitting standard of remuneration. Gardeners are not the first to lay claim to either one or the other, so the horticultural profession is not peculiar in this respect. The next query—How can we best attain it?—is not so easily answered.

Mr. Donoghue suggests organisation. Agreed. But how, or on what lines? He cites the recent case of the medical profession as being testimony to the value of professional organisation. Yes; but we are not told anything of the basis of that organisation.

The apprenticeship system has been mooted as containing the solution of the difficulty. Apprenticeship in horticultural circles has been for many years a dead letter, and it does not appear probable that it will ever be revived. Even if it were, there dening were merely a craft the matter would not alone have the desired effect. If gardening wer merely a craft the matter would be more simple; but the case of the gardener is not analogous to that of a bricklayer or engine-fitter. The gardener is much more. An adequate training of the eye, the hand, and the mind of the young gardener can hardly be given by one man, however great may be the sense of responsibility. Further, the uncertainty of tenure frequently attaching to the office of a private gardener would rule out the apprenticeship system in the case of many good men. Apprenticeship, to be of any value, must mean personal obligation and personal supervision to some extent. In so far as I have seen the system at work in either private gardens or nurseries, it has not commended itself to me.

A PLEASING GRASS WALK IN A ROSE GARDEN.

Failing apprenticeship, we have to consider other means as a basis for the training, subsequent classification, and organisation of gardeners. For enlightenment we can hardly do better than consider the case of agriculture, and the training of the professional agriculturist. I am not putting this forward as being generally an ideal one; nor is there any necessity here to enter into the vexed question of the relative importance of horticulture and agriculture in the economy of the nation. There are, however, points in the agricultural training which, in their effect, make the horticultural man somewhat envious of the men who turn their attentions to agriculture as a profession. It has been said—perhaps at one time with considerable truth, though it is not by any means as true as formerly—that all higher agricultural education had only gone to create teachers. Presuming that we grant it has tended chiefly to the creation of teachers, it must be admitted, too, that, with higher education, the claims of agriculture have been pressed and (more satisfactory still) acknowledged, and in a way hardly probable in the case of horticulture.

It is useless lamenting the fact that the interests of horticulture are not properly represented on our public bodies, so long as the majority of our best men lack that kind of training which alone, in most instances, can give them either a hearing or a place. We must face the facts squarely. We complain that horticulture pays £10 to £12 per acre rent, as against £2 to £2 10s. of agriculture, and, in a case vouched for by a well-known grower to me, £6,000 in wages, annually, against an original £300 from agriculture. And yet horticultural interests are not considered in the same way as those of the sister science. It may not be out of place here to point out that, whatever may be the achievements of the trade to-day, the private gardener has been the pioneer in practically every side of trade development. The credit of initial creation of taste or demand belongs to him. The raising of the standard of cultivation began in the private garden, and yet——! There is much here that the horticultural profession may take to heart.

The effect of higher agricultural education is seen in the Development Act, and, equally, in its application. It gives us food for thought. I join hands with Mr. Donoghue when he says, "every young man ought to have a fixed determination to qualify for any post that horticulture may offer."

The lack of objective, and the policy of drift, are the bane of many young men. But in our efforts to raise our status let us have no narrow views embracing craftsmanship as the sum total of qualifications. Something more is requisite. After all, there is a fairly well-defined limit in the direction of craftsmanship; to intelligence there is none.

To the oft-repeated question—Is it worth while?—every young man must provide his own answer. At any rate, it can be said that horticulture has never offered more or better openings than it does to-day. There are indications that still better ones will come to those who will qualify for them. The young gardener who to-day strives to give breadth and depth to the educational foundation on which his technical knowledge and technical skill has to be built, and follows his profession with single-minded purpose, will assuredly come into his own.

Whatever may be done in the future in the way of "hall-marking" the best qualified men who follow horticulture, I am convinced that for the higher grades the bestowal of such marks must necessitate a higher standard of general education, together with a better training of the intelligence, than has been the rule in the past, if those bearing them are to command the respect, and be given that recognition which everyone connected with horticulture desires.

Reading. F. G. D.

# THE NEWER HYBRID TEA ROSES.

During the last few years new varieties of roses have been introduced in considerable numbers, especially in the hybrid tea section, so that it is most difficult for the ordinary grower to keep pace with the latest introductions. With a view of assisting the inexperienced during the planting season, I purpose noting some of those most desirable.

British Queen is a desirable variety; it flowered well at the end of summer when many other varieties were on the wane. The flowers are of full size, quite solid and shapely, with nicely imbricated petals of a dull white colour, with just a shade of lemon in the centre.

Sunburst.—There has been much criticism of this variety, but I think highly of it, especially for culture under glass, and for indoor decorations, and am under the impression that it will replace Lady Hillingdon for indoor culture, being so much stiffer in the stem, in addition to having good foliage. The colour is better under glass than out of doors, and it is yellow with orange centre. The buds are quite shapely and full.

Mrs. Edward Powel.—In colour this is a remarkable rose, bright crimson, with a velvety suffusion, and in bud or when fully expanded it is attractive. As a bedding rose this should be in great demand; it is free in flowering, and has deep green foliage, and a vigorous yet compact habit.

Gaston Bounier is a shapely flower of a silvery-flesh colour, with a rich golden-rose centre. In growth it is not vigorous, but free flowering.

Countess of Shaftesbury is one of the most promising, shapely roses sent out for some years; the colour is a rich rosy-pink.

Lady Greenall has a long, pointed bud, rich orange at the base, heavily toned with pink over creamy-white.

Leslie Holland is deep scarlet-crimson, heavily veined with velvet red; large, shapely blooms, deliciously perfumed, and a capital grower.

Auguste Rodrigues has a sweet perfume; the large loose petals are crimson, flushed with a velvety sheen.

Carine is well worth a place in any collection where cut blooms are appreciated. The flowers are small, pointed, most charming in the bud state, orange-carmine, suffused with buff; an excellent habit of growth.

Edward Mawley has surprised me by its manner of growth and freedom of flowering out of doors. I look upon it as one of the finest roses we have. The massive petals are sweetly perfumed, deep velvety crimson.

Lady Downe has buff-coloured flowers, shaded with deep yellow in the centre, paling with expansion, and is of great value.

Mabel Drew is quite one of the finest light-coloured roses we have. The flowers are at all times shapely; canary-yellow, passing to almost white, deliciously fragrant.

Lady Margaret Boscawen has a fawn base, flushed with pink.

Radium is a sport from Caroline Testout, deeper in colour and more shapely.

Pink Liberty is a sport from the well-known Liberty, but the colour is carmine rather than pink; a desirable variety, having all the good points of its parents in shape and fragrance.

Nerissa is a most shapely flower, creamy-yellow, shaded white, centre tinted with peach in its early stages of development; free flowering.

Ophelia is a beautiful rose; salmon-flesh, shaded with rose; a finely shaped flower, most promising as an exhibition variety.

Portia, as a pot rose, is not excelled; the large, pointed flowers open evenly out of doors, and it grows freely and blossoms profusely; in colour delicate pink, shaded white.

E. Molyneux.

# CHRYSANTHEMUMS.

## Early Propagation of Late Varieties.

It is very disappointing to the cultivator when a batch of plants representing some good late varieties fail to break in good time in spring. Of course, the only way out then is to pinch the shoots and cause a break.

If a late-flowering variety makes a natural break early in April, we will say, the probability is that the first crown bud on the plant will appear in good time in August. But if the same plant be pinched at the date in April the crown bud will, most likely, appear a week or ten days later in August. The difference in time does not seem to matter much, but there is a vast difference in the resultant blooms. Those from the plant which made the natural break will be full and deep, but those from the plant which was stopped will, probably, be thin and show an open centre full of seed florets. The propagation of the cuttings has much to do with the nice timing of breaks, and buds and early propagation of naturally late sorts is certainly advisable, independent of the propagation of them in spring, when the after treatment is different to that in the case of early rooted plants.

No bottom heat should be given to these early-rooted cuttings. They may be placed in a heated frame or in a propagating case in a warm greenhouse, but not in any position where the stems will be weakened by undue forcing. The cuttings will take a if they were subjected to a bottom heat, longer time to root than would be the case but the progress of the young plants will be more satisfactory.

THE LAWN AND BOUNDARY.

## A Few Leading Varieties to Propagate Early.

Mrs. Gilbert Drabble, white; Mrs. H. Thornton, blush-white; Master David, deep crimson; Hon. Mrs. Lopes, yellow; H. E. Converse, reddish bronze, with gold reverse; Fred Green, rich purple; F. Chandler, red, gold reverse; Madame J. Rivol, yellow, flushed rose; Madame P. Radaeli, white, tinted rose. Duchess of Fife, in the incurved section, should also be rooted early.

Geo. Garner.

## IMPORTANT POINTS IN PLANTING.

Too deep planting is the chief cause of failure in connection with the transplanting of trees and shrubs. Many planters, unfortunately, have few opportunities for acquiring experience in this branch of garden work, and as a consequence they do not trouble themselves about plant physiology, or the reason why certain results follow certain operations. In proof of this I am constantly coming across young trees with their stems buried; and recently, finding a plantation of birch and conifers with from 12 inches to 18 inches of their stems under the surface of the soil, I thought a note on the evils attending such a practice might afford some folks an opportunity of putting their trees right.

In much-exposed situations inexperienced planters put the roots well down to secure the trees in their places. Under such conditions, especially on heavy soils, very few of them live through the following summer. I once saw several acres of land which had been planted with Austrian pine in this manner, with not a single plant alive. The evils of deep planting, therefore, cannot be made too clear, to prevent disaster and avoid disappointment. If the stem of a conifer, or hardwood tree, is buried, the bark is killed on the portion below the surface, and the returning sap is unable to reach the roots. When this takes place root extension is stopped, and the tree dies of starvation. In some soft-wooded trees and shrubs the buried stems will throw out adventitious roots, and by this means save themselves. Those, however, which will do this are few in number, compared to plants in general, so that, when dealing with those we are not sure about, it is better to err on the safe side and keep their stems out of the ground. There is a space between the true stem and true root, which is so constructed that it will adapt itself to either being buried or left exposed. This is the space between the root and seed leaves, but except in melons, cucumbers, and other rapid-growing plants, the seed leaves (cotyledons) are gone before the plant reaches a size large enough for permanent planting.

In the absence of these defining marks (cotyledons), an allowance of from one to two inches of stem can be made for it, when the tree or shrub is being planted. Any trees or shrubs that were planted too deeply during the last planting season should be raised at once to the proper level. In exposed positions stakes should be provided for all the taller, and more bushy plants, to prevent them being swayed about by strong winds. At all seasons it is very important to successful planting that the roots of trees and shrubs should be moist when they are put in the soil, but more especially is this the case in the spring months. An excellent plan is to unpack a consignment immediately it arrives, and place the roots in water for a couple of hours, then plant. Even thoroughly moistening the roots in a bucket or tub of water just before planting will be found very beneficial. Roses and other deciduous shrubs that are shrivelled from long exposure should be wholly submerged in water for twenty-four hours before they are planted.

A common error among the uninitiated is that of putting farmyard manure directly upon the roots of trees and shrubs at planting. This is a pernicious practice and is usually followed by injurious results, especially if a large quantity of manure is employed, as it decomposes the existing roots, and kills any young rootlets that make their appearance. If the land is poor, and the plants will benefit from a richer medium, the roots should first be covered with soil, then a light layer of manure applied, finishing with soil on the top. Or the manure can be used entirely for a mulch, when its virtues will be washed down to the roots by rains, and the strawy matter serve to preserve moisture in the surface layer.

If these points were more carefully observed when trees and shrubs were planted there would be fewer failures to record than there usually are, and planters would derive more satisfaction and gratification from the results attained.

Planter.

## THE GARDEN OF NATURAL BEAUTY.

The garden-maker of to-day must face the fact that he has to provide for differing features, and for a greater diversity of artistic phases than his fore-runner of a few years back.

The garden of to-day has to be a garden that is singularly free from stereotyped ideas. The sameness which characterised stone-walled terrace gardens, which cropped up in every ornamental bedding-out design, has to be a thing of the past. The garden-maker must strive to produce a garden which shall be original in design, pleasing in its outlines, and ornamental in effect when planted up. To do this he must study both the ground at his disposal, and the possibility of using new ideas to produce the most pleasing effect.

The many aspects of natural gardening in vogue at the present day offer a ready mine of suggestion to the garden-maker. The rock garden, the water garden, the bog garden, the wild garden, the heath garden, the Japanese garden, and many other charming features, all give of the beauty and suggestion to the formation of a new garden. I do not advise anyone to study a garden, or a garden feature, with a view to repeating it in another. Study gardens as much as you like, but don't copy. Utilise existing ideas as a means of inspiration to new ideas, as stepping-stones to carry one over to new fields of beauty.

It is a wise policy to consider first what one's ideal garden would be, and then with a free hand, and a free use of the varying ideas, arising from the above-mentioned aspects of garden art, one should assuredly evolve a garden worthy of the name. Where rocks are utilised, one can easily give great diversity to the garden scene. A few outcropping layers, showing in a sloping bank or bold bluffs judiciously placed on rising mounds, nicely clothed on the crowns with low-spreading conifers, will ofttimes provide the key of the whole scene.

Flat stones for a permanent pathway are perhaps, the best medium for a footway in the natural garden. Smooth-faced stones are best for semi-formal direct paths, and for use under pergolas, etc., but for wandering through the low-valleyed depressions or up the slopes, or through the waterways, a natural stone, with roughish (though flattened) face will be found more suitable, as they not only harmonise freely with the landscape, but also ensure a firmer foothold.

In all gardens trees and shrubs must bear a part in the general scheme; and, indeed, during the spring months the beauty of flowering trees is really the most noticeable and charming feature of the landscape. But trees in the main are useful as backgrounds, giving tone and colour to the picture, and to break up the flatness of a landscape, which they do effectively.

Of slopes clad with beauty, and vistas of blossom seen between "breaks" of tree life, and through valleyed depressions, much might be written. Here is the colour dominant of the scene, life aglow with waving beauty, the finish of the picture, to which the backgrounds and broken landscape supplies the frame. It would be too great a task to specify typical flowers for these slopes and vistas, for so many are available and effective.

Where would one begin and end in the selection of species and varieties? Good for us that they are so many; one can obtain a wider choice and a greater display of beauty.

Tritomas (kniphofias, if you will), flaming their glowing spires of blossom in late summer, are an example. Intensity of colour, stately appearance, tell greatly, and for distance effects they are superb. Golden glowing solidagos gleam in the August sunshine. Drifts of montbretias running through the hollows and masses of Tiger lilies against grey stones and sloping banks, call for the attention of all beholders. Whatever is planted, let the area be planted for telling display. Dot planting is a dismal failure in the garden of natural beauty. Tiny plants are capable of great effects when used in large quantities. May I instance carpetings of mossy saxifrages, of banks with cloud-drifts of Viola gracilis, of aubrietias hanging in great masses from an old wall, of golden alyssums glowing on sunny slopes, and anemones or scillas on shady ones? These small plants certainly tell, and so do many other associated subjects. The great idea is to plant in colonies; winding drifts, broad masses, sweeps of colour must be brought into being. Bulb beauty must inevitably have its place, for among the bulbs we obtain some of our finest effects.

Tall flowers, particularly those of a graceful habit, including delphiniums, verbascums, eremurus, foxgloves, campanulas, etc., are of the utmost value; for the back of lower-growing plants, for coming up between the greenery of shrubs, and for making striking displays of beauty, these tall-growing plants are of the utmost service. A narrow, winding walk of grass or stone, flanked on either side by masses of these delphiniums, foxgloves, etc., which tower up to shut one off from the outer world, is usually one of the best-loved features of a garden.

But my topic is without ending, and missing many features; may I point out that the garden should have water in some shape or form, winding pool, mirrored well, rippling stream, or lily-clad lake; it should be existent in some form or other. The music of falling water, and the reflecting power of pools, are two strong reasons for its existence in gardens. The colourings of foliage and flowers mirrored in water gives two-fold beauty, and the many charming effects of light and shade, and the silvering glow at twilight, and in moonlight, must be personally known to be fully realised. Furthermore, the use of water brings much of interest in its train. The hosts of water-loving plants, the great additions to the bird and insect life, and the charm of fishes darting in rapid movement, add to the charm of a garden.

And, in conclusion, may I remark that "arbours clad with greenery and blossom," the free use of roses in the old-fashioned way, the garden of sweet-scented plants, great groups of white lilies, masses of tall May-flowering tulips, and an ample allowance of long-stemmed blossoms for cutting, gives the natural garden such a tremendous advantage over the formal garden as to defy any comparison.

P. S. Hayward.

# POT CULTURE OF PEACHES AND NECTARINES.

Probably more peaches and nectarines are grown in pots than any other of the kinds of dessert fruits. It is a most convenient method of cultivation, and has much to recommend it. We often hear of very large trained trees of both of these fruits with immense crops upon them, which, when ripe, provide an abundance of useful material for the dessert; but there is such a thing as having a glut, with little prospect of successional supplies in the immediate future. It is not of such moment, of course, when the surplus is disposed of upon the market. It is possible to grow a greater variety of both peaches and nectarines under the pot system of culture than can be reasonably expected from trained trees in the same amount of space. As with plums and cherries, so with the fruits now under notice, the longevity of the trees when grown in pots is most remarkable, and the average of life will compare favourably with trained trees. Pot culture is advantageous both for early forcing and for the latest of the supplies in the autumn.

## Early Forced Trees.

In making a comparison between the peach and the nectarine, I find that the latter is really the better of the two for early forcing. The fruit, as a rule, sets better, and certainly there is not the same amount of bud-dropping at the starting time. This failing with some of the first early peaches is, to say the least, somewhat disconcerting. There was more than usual of this failing last season—the result, no doubt, of the excessive heat and the over-ripened wood of the previous summer. I do not anticipate seeing so much bud-dropping this time. The trees are well ripened, the wood looks all that one could wish, and the buds are already somewhat prominent. Before these lines are in print our earliest house will be started.

## Nectarines to Force.

For first early uses there is no nectarine at present upon the market to equal Rivers' Cardinal. The tree is of good constitution and habit, and the set of fruit is almost invariably good, too. The flowers are of medium size, somewhat pale in colour, but strong. The colour of the fruit is indicated by its name. Though it belongs to the clingstone section to some extent, it is very juicy and rich. It should be used before it becomes at all over-ripe, for when in this stage it becomes somewhat woolly. There is a tendency to split when the fruits are taking their final swelling. To obviate this, it is not advisable to syringe so much during the sunless weather that may intervene. I do not recommend this variety for planting out. For that purpose Early Rivers is excellent, and some very fine fruits are so produced. This is also the case from pot trees when not overcropped. Early Rivers is about ten days later in ripening than Cardinal; hence it is a good plan to have some trees of each variety in the early house, and to repeat it in the second as well. The fruit of Early Rivers, I find, will remain in good condition somewhat longer than Cardinal when fully ripe. The tree is of equally good constitution, but not of such erect habit as the first-named—in fact, I find it has a tendency to assume a pendulous habit. The flowers are larger in this case, and it sets quite as freely. The next to ripen is Lord Napier, if we except one called Advance, which does not, with us at any rate, set freely. Lord Napier is a well-proved variety, and needs no further comment. After these we have such as Humboldt, Pine Apple, Dryden, and for the latest in pots Victoria.

The first three varieties now named are simply gorgeous when in flower, and are well worth growing from that standpoint alone. Victoria, on the other hand, belongs to the small-flowered section, like Crimson Galande peach; it sets freely, however, and is an excellent nectarine to grow for later forcing. It ripens with us towards the end of July in our third house of pot-grown trees.

## Peaches to Force.

Of the first early peaches I prefer Duchess of Cornwall and Duke of York to either Amsden June, Alexander, Waterloo, or Hale's Early—the last four are, I believe, American varieties. With us they are bad bud-droppers, and not nearly so good or dependable as the two first-named, both of which set well, on the whole, and swell up to quite large fruit. To follow these, in my opinion, there is but one choice, and that is Peregrine, one of the best varieties raised at Sawbridgeworth. It is an all-round, excellent peach. I am also fond of Crimson Galande for use a little later on; but Peregrine, if started at different times, will carry the season of forcing almost through. True, we grow both the Nectarine Peach and Sea Eagle. These, for July use, are excellent. They hang well, too.

NECTARINE CARDINAL.

An early-ripening nectarine raised by Messrs. T. Rivers and Son, and remarkable for its rich flavour and brilliant cardinal-red skin.

## General Treatment.

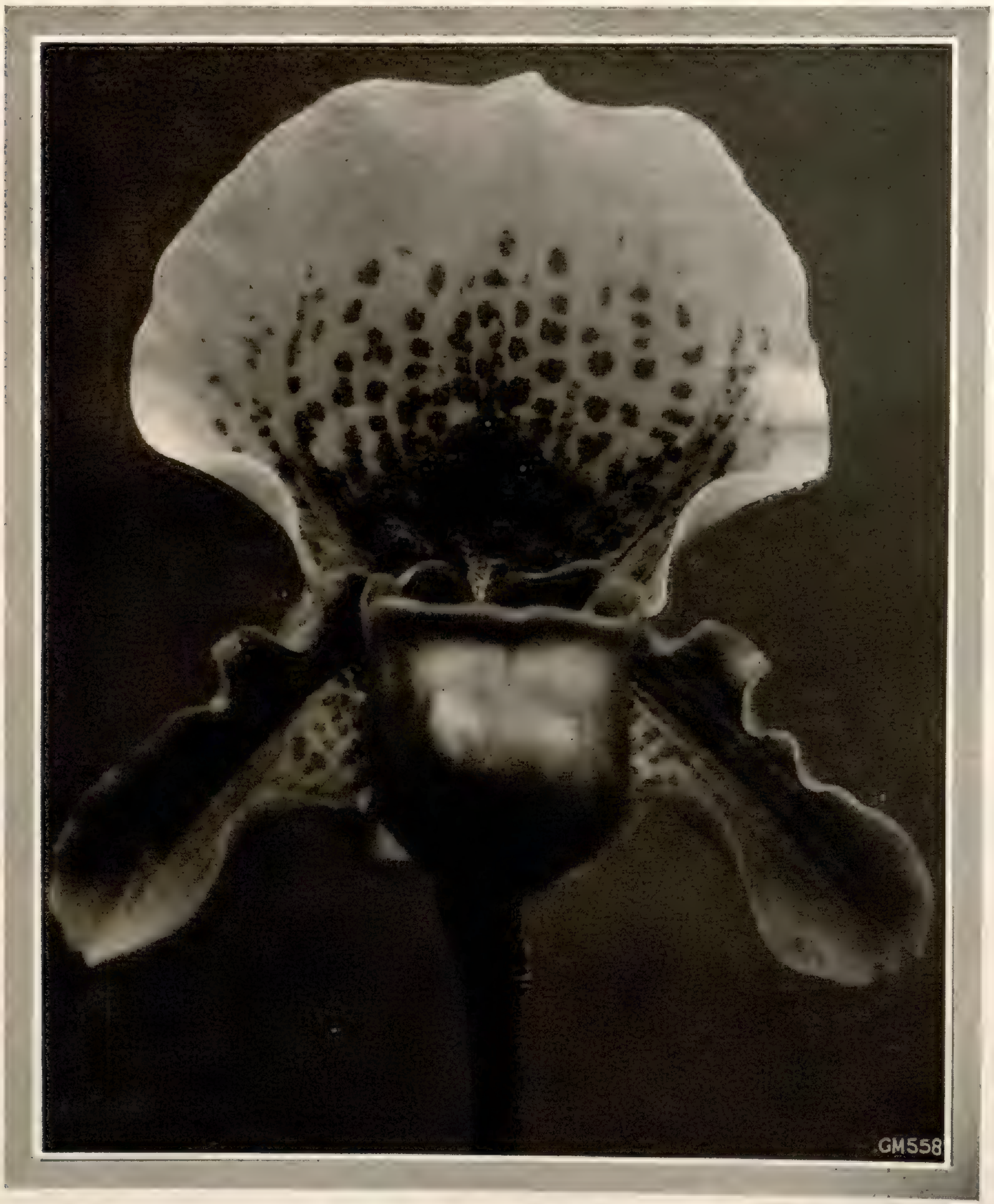
As regards temperatures, we make but slight variation from the orthodox routine in dealing with trained trees. The only alteration of any moment, in my opinion, is that the minimum temperature until the flowering period is reached is lower on the average. I do not mind even a temperature of 36 degrees being recorded in the early morning; this is better than too much fire heat at this early stage. As for cherries, so with peaches, nectarines, and plums, we depend upon our bees for fertilisation purposes. We do not prune our trees at the commencement, as pruning is generally understood, but depend more upon disbudding and pinching, with the object of forming short, spur-bearing wood. After the trees have set their fruit, we shorten the wood back wherever it is desirable to do so. As soon as a house is arranged in order for forcing, we always give one application of nicotine insecticide in the form of a vapour, and then again one more application just as the flowers are about to open.

JAS. HUDSON, V.M.H.

## NEW PLANTS AND FLOWERS.

### CYPRIPEDIUM LATONA.

A neat and shapely hybrid, with green and brown sepals, petals, and lip, and a wide white, green-based dorsal sepal, with rows of purple spots. The parents are C. Niobe and C. Alcibiades. A.M., R.H.S., November 21. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.



[Photo: J. Waldock.

CYPRIPEDIUM LATONA.

A very fine hybrid, with white, brown, and yellow-green markings, and purple spots. A.M., R.H.S., November 19. Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury.

### LÆLIO-CATTLEYA SCYLLA.

A charming hybrid derived from L.-c. Cappei and Cattleya Lord Rothschild. The flowers are of fair size, and several are carried on a spike. The sepals and petals are rich golden-buff, the lip being more yellow, with light rose markings. A.M., R.H.S., November 19. F. Menteith Ogilvie, Esq., Oxford.

### CARNATION MARY ALLWOOD.

A very fine perpetual-flowering carnation that has many good qualities. It has a very sweet clove-like fragrance, large salmon-red or rosy-cerise flowers, broad petals, and a stiff stem. We previously described this variety, when Messrs. Allwood Brothers, of Wivelsfield, Hayward's Heath, gained an Award of Merit for it from the Royal Horticultural Society, and we now have pleasure in illustrating it.

### CHRYSANTHEMUMS.

Audrey.—A showy, large-flowered single variety, with three rows of flat, deep yellow florets. A.M., R.H.S., November 19. The Manor House Nurseries, Cardiff.

Crimson Queen.—A showy single variety, medium-sized, and with regular, blunt-ended florets. The colour is vivid wine-crimson, with a very narrow yellow ring round the disk. Commendation, N.C.S., November 21. Messrs. Cragg, Harrison, and Cragg, Merivale Nurseries, Heston, Hounslow.

Snow Queen.—This beautiful anemone-centred pure white single variety was figured on page 871 of the Gardeners' Magazine of November 16. F.C.C., N.C.S., November 21. Messrs. Cragg, Harrison, and Cragg.

Elfrida.—A very pretty large-flowered single variety that appeared to lack something of substance. The deep apricot shade was very beautiful and effective. Commendation for colour N.C.S., November 21. Messrs. Cragg, Harrison, and Cragg.

Portia.—A very beautiful single variety of reddish terra-cotta hue, and yellow reverse. The flowers are large and elegant, the florets being somewhat pointed. As it has good substance, fine stems and foliage this is in every way a good variety. It gained the special award as the best new seedling single variety shown at Essex Hall on November 21. F.C.C., N.C.S., November 21. Messrs. Cragg, Harrison, and Cragg.

Thorp's December Pink. — A beautiful medium-sized Japanese variety that promises well as a market and decorative sort. The florets incurve a very little at the tips. The colour is warm pink, a lovely and effective shade. F.C.C., N.C.S., December 2. Mr. H. W. Thorp, Worthing.

Marion.—A large single variety with about four rows of florets. The flat florets lay out gracefully, and their colour is deep rich rose. Commendation, N.C.S., December 2. Mr. H. W. Thorp, Worthing.

Bronze Cheer.—A neat and solid flower of the Source d'Or class. The name was called into question, as it suggested the variety was a sport from Winter Cheer. The colour is golden-bronze, very warm and pleasing. Commendation, N.C.S., December 2. Mr. H. W. Thorp, Worthing.

W. Head.—A very pretty Japanese variety of good size, but not exceptionally large. The fairly broad florets droop gracefully, and curl and twist a little. The colour is rich golden-yellow, with paler yellow reverse. F.C.C., N.C.S., December 2. Mr. H. J. Jones, Ryecroft, Lewisham.

Arthur Pickard.—This handsome Japanese variety has large blooms, with flattish reflexing florets. The colour is light chestnut-crimson over a yellow ground, and there is a yellow reverse. F.C.C., N.C.S., December 2. Messrs. J. Stredwick and Son, St. Leonards.

Miss A. Brooker.—A useful and effective late-flowering variety belonging to the incurved Japanese section. It is of decorative size, and the colour is bright chestnut-red, with dull gold reverse; very showy. F.C.C., N.C.S., December 2. Messrs. W. Wells and Co., Merstham.

Autocrat.—A pearly white Japanese variety of excellent substance. It is of medium size, and probably of far more value for market and general decoration than for the exhibition table. Of refined appearance, and with slightly reflexing broad florets. F.C.C., N.C.S., November 21. Messrs. Low and Shawyer, Uxbridge.

Ruby.—A useful small Japanese variety of decorating style. The reflexing florets are rich ruby-crimson, with bronze reverse. A very effective flower with good stem and foliage. Commendation, December 2. Mr. Walter Jinks, Thames Ditton.

Eric Wild.—A charming single variety of fair size and excellent substance. It is of first-class form, the florets laying out regularly. The colour is soft satiny-pink with a narrow white zone round the deep yellow disc. The flowers have three rows of florets. F.C.C., N.C.S., December 2. Mr. G. W. Mileham, Leatherhead.

Marguerite de Quincey.—A large single variety of good form, and with regular, flat florets of a light blush colour. The disc is a trifle large. Commendation, N.C.S., December 2. Mr. E. W. Read, Avonhurst, Chislehurst.

## JASMINUM PRIMULINUS AS A STANDARD IN A POT.

This lovely large-flowered jasminum is not sufficiently hardy to plant in the open air, either as a wall or a pillar plant. In a glass-covered verandah or a greenhouse or conservatory it does remarkably well. There are, however, not always convenient and suitable spaces under glass for specimens trained on walls or trellises. As standards the species is charming during the months of March, April, and May. If a strong stem be made secure to a stake 5ft. long, a number of top branches will soon grow and form a pendulous head of great beauty. Plants so treated need only be placed under glass from November to June; the remainder of the season they should be grown in the open air, and this exposure is best for them, as the wood matures and flower buds form freely enough. Even one well-grown, weeping standard will be found a striking and beautiful object in a conservatory. G. B.

**Pernettyas.**—Not only are the various coloured berries of these neat evergreen shrubs much appreciated when in the open ground, but they are also very attractive and valuable for various decorative purposes when grown in pots. In the cool greenhouse they form a pleasing winter feature, and under such conditions retain their brightness for a considerable time. Having the dense, fibrous roots common to most ericaceæ, they can be lifted with but little check.—K.

## CATTLEYAS AND LÆLIO-CATTLEYAS.

### Autumn and Winter-flowering Kinds.

Those who were privileged to see the recent Orchid Show, held by the Royal Horticultural Society at Westminster could not help admiring the marvellous exhibition, and appreciating the enterprise of those who initiated the movement which led to a display which even the orchids at the Temple Show could only be favourably compared with. To those of us who can carry our experiences back 25 to 30 years, the display of hybrid cattleyas and allied genera was a revelation. It seems only a few years since the only autumn-flowering cattleyas consisted of C. Dowiana, C. D. aurea, C. Harrisoniæ, C. Boweringiana, and C. labiata, with Lælia crispa. Practically the only autumn-flowering hybrids were Lælio-cattleya Exoniensis, a few Lælia Perrini hybrids, and L.-c. Bella.

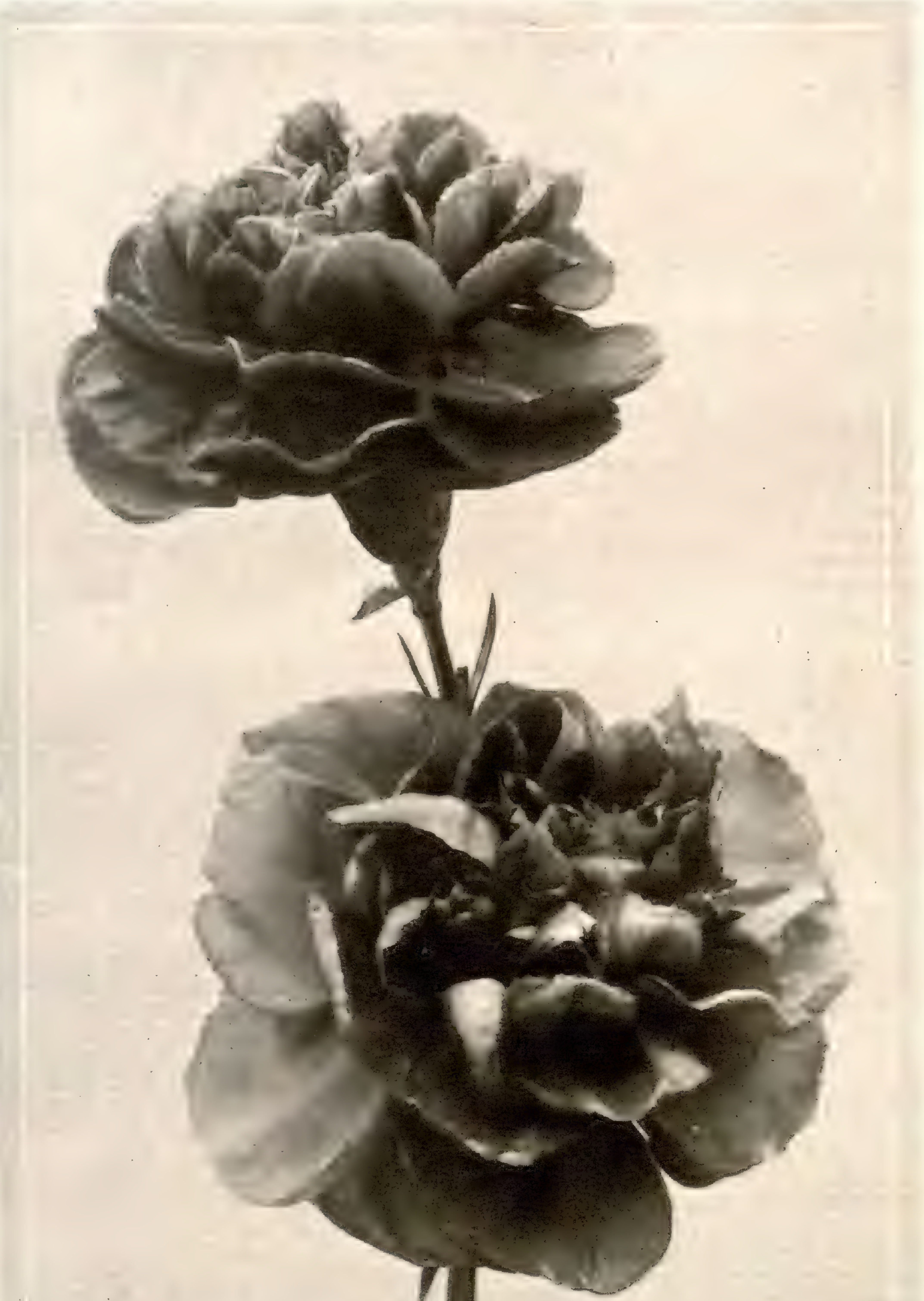
To the introduction of C. Boweringiana, the re-introduction of C. labiata, and the extensve importations of C. Dowiana aurea, may be traced the origin of nine-tenths of the hybrid cattleyas and lælio-cattleyas, which made such a glorious display in the group of Sir G. Holford and in those of other exhibitors.

It is more particularly to the cattleyas and allied genera that I am requested to confine these notes. It will perhaps be desirable to divide these into two sections, and to refer in a separate note to the bronzy and yellow-flowered forms, as it would be impossible to include these in the space at my command.

The first great development in the late-flowering cattleyas was due to the influence of C. Boweringiana, and for general utility and for decorative effect, finely-flowered plants of these hybrids are always appreciated. They are too numerous to list, and it must suffice for our purpose to mention only one or two of the most prominent. In C. Mantini we have one of the most beautiful and variable hybrids; C. Portia is one of the freest; C. Wendlandiana, C. Ariel, and C. Whiteleyæ are good subjects to deal with, and can be relied upon to give a good crop of flowers, where they are grown under favourable atmospheric conditions. Then there are the secondary hybrids, Lælio-cattleya Messina, L.-c. Milly, L.-c. Pero, and others which are always worthy of consideration.

The larger-flowering kinds, which include the natural hybrid C. Hardyana, are now a host in themselves. One of the finest of these for general use is L.-c. Bella (labiata x purpurata). The Lælia crispa hybrids, L.-c. Nysa, and others, are of good constitution, and are always useful, C. Armainvilliersense (Gigas x Mendeli), combines the good qualities of the parent species, and is most useful when flowering in November and December. Probably the finest of all the large-flowered group is C. Fabia (labiata x aurea). This hybrid is exceedingly variable, and no doubt this may be accounted for by the considerable variation in the forms of C. labiata, which range from pure white to intense purple. When grown vigorously they outclass altogether the forms of C. labiata, both in constitution and the fine character of their flowers. In C. Peetersi (labiata x Hardyana) we have the rival to C. Fabia, and the varieties of this hybrid that have been derived from the white forms of C. labiata are most remarkable. The beautiful crimson lip is a striking contrast to the almost pure white sepals and petals. It is certainly one of the most desirable of the more recent introductions. I can only refer briefly to the secondary crosses from L.-c. Clive, L.-c. Ingrami, and others, which are not generally so extensively grown as many of the larger-flowered section, but they are well worthy of every consideration. The Lælia Perrini crosses are easily procurable, and useful where small flowers are required. Some of the C. Trianæ hybrids are also serviceable for midwinter flowering. C. Chapmani (Hardyana x Trianæ) resembles some forms of C. Fabia, but flowers in December and January. The Lælia elegans section of hybrids, and others, derived from the influence of C. Forbesi, C. Harrisoniæ, and C. Loddigesi, are generally appreciated, and worthy of cultivation.

Oakwood Gardens. H. J. CHAPMAN.



CARNATION MARY ALLWOOD.

A new salmon-red perpetual variety; sweetly clove-scented. A.M., R.H.S., November 19. Messrs. Allwood Brothers, Haywards Heath.

## THE SCARLET PLUMBAGOS.

The plants of Plumbago rosea and its variety coccinea, which were exhibited at a recent meeting of the Royal Horticultural Society, illustrated a trait in the behaviour of these beautiful winter-flowering plants which is not generally studied. Neither of the two batches exhibited would induce anyone to take up their cultivation. The plants had a decidedly weedy appearance, the flowers appeared to be few in number, and thin in colour. Altogether, the specimens exhibited signally failed to do justice to themselves, and yet they were really well-grown examples, and carried good spikes of flowers, but they looked anæmic and too delicate for the present-day requirements of pot plants. Nowadays nearly everyone needs sturdy subjects, bearing flowers which boldly flaunt their charms, whereas the plumbagos under notice are of such retiring disposition that such a trifle as being moved from the houses in which they have been grown is quite sufficient to cause them to temporarily droop, and present the unhappy appearance manifested by the plants instanced.

It must not be inferred from these remarks that the plants have no decorative value outside the houses in which they have been grown, for such is far from being the case, but the plants or cut flowers must be allowed twenty-four hours to recover from the disturbance.

This type of plumbago is, in many respects, valuable for winter decorations. Personally, I do not favour large plants, except to provide cut flowers, or for growing Plumbago coccinea as pillar or low roof plants, in which latter case large examples are, of course, necessary. But I have found that the best decorative effects are obtained from plants growing in 3in. and 5in. pots, for these plumbagos are not suitable for the massing which is so popular at the present time, in order to produce broad colour effects. In many instances this style of arrangement is necessary and very harmonious, but the place of the plumbago is in the daintier and more artistic combinations. Their rose-coloured flowers require a foil and a setting, and when large plants are used it is somewhat difficult to conveniently hide the pots, which, as a rule, seem to be somewhat out of proportion. Nothing can exceed the beauty of small, well-grown plants of Plumbago rosea, when tastefully placed in jardinières, or similar receptacles, with suitable companions.

The commonest mistake made in the cultivation of the rosy-scarlet Plumbago rosea and its variety coccinea is that of growing them as stove plants. We are too apt to conclude that because a plant is a native of, as in this case, the West Indies, a tropical climate is the only one in which it will grow. So we place it in a house which has a tropical temperature, and, still worse, keep it in almost the same temperature all the year round, entirely overlooking the fact that, in spite of the alluring railway advertisements, Nature does not provide an equable temperature. The tropical climate, as well as ours, is capable of great variations.

The aim of the cultivator of such perennial winter-flowering plants as these plumbagos should be to grow them as short-jointed and sturdy as possible throughout the summer months, and this may best be done in a cool house or a light, airy pit. Cold rains are dangerous, but artificial fire-heat is not necessary until the middle of September, when the plants should be removed to a structure which has an intermediate temperature. Stove heat causes the flower-spikes to become spindly, and the petals lack substance. It will be found that plants grown under the conditions indicated will show very little signs of distress when moved from the house in which they are flowering.

CECIL AUBREY.

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**National Auricula Society.**—This society will hold its annual exhibition in 1913 at the Botanical Gardens, Edgbaston, Birmingham, on April 30 and May 1.

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# ESTATE FRUIT PLANTATIONS.

## Planting and Pruning.

(Continued from page 896.)

Autumn planting for preference is advised, and at this operation take out holes wide enough and deep enough to accommodate the roots; tread the soil firmly round as it is filled in; and, above all things, avoid deep planting. The soil mark on the stems will tell how far they should be put into the ground. Pruning is a very much debated point, and I have no wish to open up another controversy in respect of it, but simply to say that my own rule, which has answered very well in practice, is to remove any superfluous side shoots when planting that are not wanted in the formation of the tree, but not to shorten back leading shoots. I prefer to leave the latter until the trees have stood in their permanent positions for a year, and then shorten the leaders to about one-third their original length. The object of this pruning is to create growth, and the cutting back of leaders may go on for a few years until there are enough branches and the tree is formed.

Newly-planted gooseberries should be pruned hard to start them into growth, but afterwards judicious thinning of overcrowded shoots is all that is required, and to spur back young wood year after year, as is often done in private gardens, only leads to an overwhelming amount of useless shoots. Red currants, for which there is not so much demand as for blacks, or gooseberries, should be pruned hard after planting, and then be grown in cup-shaped form, with the main branches radiating from the central stem, and the side shoots on these main branches should be spur pruned. Cut black currants nearly to the ground after planting, and when the bushes are fruiting take out annually old wood that has done its work to make room for young shoots from the base.

## Varieties.

In arranging a fruit plantation avoid too many varieties, but select those of known market value, and endeavour to grow fruit of each in quantity. A commercial fruit show like that recently held at Maidstone is the place to see the apples that are best suited to market culture, and the names of them are household words.

In the way of dessert apples, the types to select are such apples as Worcester Pearmain (one of the best for market), Allington Pippin, Cox's Orange Pippin (on good land), King of the Pippin, Gascoyne's Scarlet, Rival, and Court Pendu Plat, a late-flowering variety of pleasing appearance that keeps well. Good commercial culinary apples are Lord Grosvenor, Pott's Seedling, Stirling Castle, Warner's King, Lord Derby, Bismarck, with Lane's Prince Albert, Bramley's Seedling, Newton Wonder, and Annie Elizabeth, the last four being good for late use. A few good pears are Hessle, Williams' Bon Chretien, Louise Bonne of Jersey, Clapp's Favourite, Fertility, Pitmaston Duchess, and Beurré Clairgeau, but in the selection of pears a good deal depends on the situation and nature of the soil. Early Prolific, Victoria, Czar, Pond's Seedling, and Belle de Louvain are amongst the pick of the plums, but in some districts there are local varieties, like the Pershore, which are prolific and profitable in their own localities. Keepsake, Whinham's Industry, Crown Bob, and Lancashire Lad are popular market gooseberries. Raby Castle is the leading red currant, and there are several large-fruited black currants of the Baldwin type, but the great thing in black currants is to get and keep them free from "big bud." If this can be done they are a very remunerative crop, particularly on strong, retentive land.

## Spraying.

It is not the object of this article to deal with insect pests, because the whole of the space at my disposal would be wanted to do this adequately, but let me say that the commercial fruit grower of to-day, like his neighbour abroad, cannot afford to ignore spraying and insecticides. It is the cleanest, brightest, and best fruit that brings the most money, and, in order to get this in abundance, not only must the cultivation be good and the manuring adequate, but a sprayer of some approved type must be part of the apparatus, and this must be used as part of the cultural routine; in the first place to prevent, so far as possible, and secondly to eradicate the fungus diseases and insect foes which not only spoil fruit and reduce crops, but cripple the energies of the trees. No more need be said here except to add that the establishment of an estate plantation should be accompanied by a study of the diseases to which fruit trees are liable and the insect pests that are capable of doing so much damage.

## Packing and Marketing.

The system of marketing fruit in this country is anything but perfect, and its faultiness is very frequently responsible for the gluts and low prices that prevail in some seasons, but until there is more co-operation amongst growers and better ways adopted for bringing the fruit from the producer to the consumer, these periodical disappointments will remain. And much more might be written on this subject. Let it be added, however, that the starting of an estate plantation should be accompanied by the provision of storage accommodation for apples that will keep, so that produce can be kept back if necessary until there is a better demand for it. I am convinced that the bad English apple trade which often prevails in the autumn is brought about by the desire of many growers to get their fruit into market with the least possible delay.

Much might be written about packing and the need of improved methods, but obviously the desire of the grower should be to place his fruit before the consumer in the best and most presentable condition. What will be the particular type of receptacle in general use for marketing fruit in the future is an open question at the moment, but it is not unlikely that boxes of standard sizes will prevail for the best apples and pears, and chip receptacles will be used for soft fruits. A splendid illustration of the use of light non-returnable boxes for apples was seen at the recent commercial fruit show at Maidstone, and it looks as if the day of the wicker-work basket or sieve is reaching its end.

Retailers do not want to be bothered with returning empties; to get them back is a source of trouble to growers, and very often a good market is lost because the producer has nothing to pack his fruit in. The non-returnable box for apples and pears does away with this, and in the present season many growers have used light chip baskets for sending away soft fruits, and are so pleased with the results that, though the annual outlay on chips is considerable, they will not go back to the old-fashioned sieve or basket. Whatever the receptacle is, however, honest packing is the only right method where the commercial grower is concerned, and, while in his own interest he should display his fruit to the best advantage, he must be honest to his customer—the public—by giving the same sample at the bottom as at the top.

H.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

SOPHRONITIS GRANDIFLORA. — This species, on account of the effectiveness of its brilliant scarlet flowers, is indispensable at this season of the year. It is now producing its flowering shoots from the partially developed growths, and will need plenty of water at the root till the flowers have lost their freshness, but none must be allowed to come in contact with them. Repotting may be performed immediately after flowering, or when growth commences, using a compost similar to that required by cattleyas. This plant succeeds best grown in shallow pans, suspended at the warmest end of the cool house.

SOPHRONITIS HYBRIDS. — There are between fifty and sixty beautiful and remarkable hybrids which have been obtained by crossing and inter-crossing the preceding species with cattleyas, lælias, lælio-cattleyas, and epidendrums. They flower at different seasons of the year, and a collection of hybrids will rarely be without one or more being in bloom nearly the whole year round. Amongst those in flower at the present time must be mentioned the lovely S.-c. Doris, S.-c. Saxa, Sophro-lælia Leda, S.-l. Gratrixæ, and numerous secondary hybrids, between this family and other lælio-cattleyas. With plants having such complex parentage there is a great diversity in the size of the bulbs, and general characteristics, but all are amenable to cultivation. They will succeed under the same conditions as cattleyas, both as regards temperature, compost, and moisture. Those plants which have recently bloomed, and are in need of new rooting material, may have it provided them whenever they are producing new roots. Great care is necessary in giving water at the roots, not only to newly-potted plants, but at all times. They should enjoy a light and airy position in the cattleya house at all seasons.

EPIPHRONITIS VEITCHI is a very fine hybrid, raised from sophronitis and epidendrum, and when grown well is nearly always in bloom. It is easily grown if a suitable temperature is provided, and will produce young plants from the old growths and flower stems. These, as soon as they begin to push forth new roots, should be removed with a portion of the old stem attached, and placed in shallow pans, in a similar compost to the preceding species and varieties.

ORNITHIDIUM SOPHRONITIS. — This dwarf-habited species, a fitting companion to the sophronitis on account of its effective scarlet flowers, is of easy cultivation if treated in the same manner as the preceding. On the completion of their growths they should be placed in a light position in a cool intermediate house, or at the warm end of the cool house, when an abundant crop of their brilliant flowers make it a most effective object.—J. T. Barker, The West Hill Gardens.

## STOVE PLANTS.

FERNS.—Adiantums that have done duty in the furnishing of the house and have become shabby should now be rested preparatory to restarting them into growth early next year. Provided the majority of the fronds are ripe, no harm will be done if the whole of them are cut off and the supply of water at the roots be gradually reduced. It should, however, be borne in mind that at no time do ferns require what is termed "drying off," although, like most plants, a partial rest is necessary. A good supply of fresh, green fern fronds is most useful in a variety of ways early in the year, and by resting a certain number of plants about this time, and after an interval of a few weeks, repotting them, using rich friable soil, this will be ensured. Other batches may be treated in like manner later on to form a successional supply of fronds.

NEPHROLEPIS. — Immense improvements have been made during recent years in the genus nephrolepis, many beautifully crested varieties having been raised. They are now unsurpassed by other warm-house ferns for decorative effect, or for the supply of fronds. These latter retain their freshness for a long time when cut and placed in water. Most of these new varieties may be readily increased at this season of the year, either by division or by the stolons. These should be carefully severed from the parent plant and put singly in quite small pots filled with open peaty soil. The pots should be plunged in the propagating frame until the young plants are well established, when they should be removed to a light position in a warm house and grown on freely.

SPECIMEN FERNS.—Large specimens of most kinds of ferns should now be kept quiet by reducing the water supply both at the roots and in the atmosphere of the house. Where a fern house exists now is a good time to thoroughly clean both the structure and the plants. Many species and varieties being of an evergreen character must not be cut down indiscriminately, but the decaying fronds only need be cut away; neither should these be kept so dry as is recommended for the deciduous kinds. Keep insects, such as thrips and the white fly, in check by occasional mild fumigation. Having regard to the extreme tenderness of fern fronds, it is very essential to prevent insect life spreading, as it is not safe to apply strong solutions to destroy them. The dull season is the best time to wage war with them.

BERTOLONIAS. — These dwarf-growing tropical plants are remarkable for their richly-marked foliage, and are exceedingly pretty when arranged as an edging to the stages where a close, moist atmosphere is maintained. The plants should be arranged at the warmest part of the plant stove for the winter months.—H. T. Martin, Warren Wood Gardens.

## FRUITS UNDER GLASS.

CUCUMBERS.—The mild weather which we have experienced here up to the present time has been favourable to the growth of the fruiting plants, and also to the young plants that have been recently planted out. Maintain a bottom heat of from 70 to 75 degrees, and the house temperature about the same, with artificial heat. It will not be necessary to admit air to the house, and though on bright, sunny days the temperature will rise, no harm will be done if the paths and walls are well damped down with tepid water several times. Give water to the roots when required, heated to a temperature of 75 degrees. Give the plants a light top-dressing occasionally, with equal parts of well-decayed manure and fibrous loam; avoid the use of a too stimulating manure at this season of the year, or an over-luxuriance of foliage will be the result; carefuly attend to the stopping of the laterals, but no hard-and-fast rule can be adopted at this season of the year. Exercise judgment, and allow a little more freedom of growth to assist the plants to become strong and vigorous; at the same time stopping must be done to promote an even growth, and also fruitfulness. Keep the glass clean, so as to admit as much light as possible. Bear in mind that daily attention and watchfulness will have to be exercised if the best results are to be obtained.

TOMATOES.—Seeds should be sown this month, for plants to supply ripe fruit early in the spring months. Sow the seeds thinly in shallow pans, in a light sandy compost, and place in a temperature of 65 degrees. When the seedlings have made their first pair of rough leaves, they should, without any delay, be transferred into thumb pots. When well established in these pots they will require another shift into a larger size, and to be grown on in a temperature of from 55 to 60 degrees. No attempt should be made to subject the plants to a high temperature in the winter months; allow the plants to develop in a fairly moderate temperature to secure stout-jointed growths. Allow plenty of ventilation when the weather permits.

FIGS.—Introduce a small batch of trees in pots, into heat; the pots should be plunged in a moderate bottom-heat, which can be supplied by means of a mixture of half beech or oak leaves and stable litter. Give the soil in the pots a good soaking with tepid water, and carefully examine the trees to ascertain if they are free from insect pests.

STRAWBERRIES.—Protect the pots from frost, and allow the crowns to be exposed to as much light as possible; introduce another batch of plants to a temperature of 45 degrees, and allow the earliest batch a temperature of 55 degrees at night and 60 degrees by day, with artificial heat. Exercise care in giving the plants stimulating manures, or otherwise there will be a tendency to produce leafage rather than fruit. —Henry R. Farmer, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

TRANSPLANTING SHRUBS.—The recent mild weather has been very favourable to planting operations, and every opportunity should be taken for carrying it out before there is a change in the condition of soil and weather. When moving shrubs of all sizes it is important to lift them with a good ball of soil about their roots, so that there may be only a slight check to growth the following season. It is necessary to take out a trench at a sufficient distance from the main stem to enable removal to be carried out without damage to the roots. When planting it is of the utmost importance to take out holes large enough to enable the roots to be spread out fully and evenly, as to cramp them into insufficient space is decidedly harmful. In dealing with delicate or tender subjects where the soil is heavy and retentive it is a decided advantage to place some specially prepared fine soil around the roots to give them a good start in their new positions.

PAMPAS GRASS.—This elegant subject is now seen to advantage, and the tall, erect plumes render it a striking object whether planted as isolated specimens on the lawn or near ornamental water. Pampas grass looks well associated with bamboos, but it should be given a fairly sheltered position, as strong winds do considerable damage to the feathery plumes. It is practically hardy, but in very cold districts it is well to provide it with some protection during severe weather.

HARDY BAMBOOS. — It is during the autumn and winter months that these are seen at their best, and this season they are especially fine. Although detrimental to so many subjects the wet summer suited bamboos admirably, and several varieties have made unusually tall growths, especially Arundinaria aristata, which has attained the record height for this species of 16ft. This is a distinct and handsome bamboo with purple branchlets that should always be planted, and it is perfectly hardy. The plants in these gardens thrive remarkably in the rich, calcareous loam. They are growing at a height of 800ft. above sea-level, and do not receive any protection. They are sheltered from all the cold winds by groups of evergreens and conifers, and there is no doubt those are the conditions most suited to their requirements. When seen at their best they are graceful, and impart quite a tropical aspect to the gardens. Cut out any dead canes in the spring, and apply a top-dressing of rich manure annually at that period until the plants are well established. The best time to plant is just before growth commences.

TRACHYCARPUS EXCELSUS. — This palm is quite hardy, and is invaluable for associating with bamboos, but, like them, requires a sheltered position. It has an attractive appearance on a terrace, and is greatly benefited by a liberal mulch of well-decayed manure in the spring.—J. Gardner, Batsford Park Gardens.

# EXHIBITIONS AND MEETINGS.

## Aberdeen Chrysanthemum Society.

NOVEMBER 22 and 23.

The annual show of this society, held in the Young Men's Christian Institute Hall, Aberdeen, on the above dates, proved, despite the untoward and sunless season, remarkably good. True, the hall in which it was held was rather small, compared with the magnificent proportions of the music hall, where in former years the show was wont to be held, but, nevertheless, the event turned out all right. The secretary, Mr. M. H. Sinclair, was at his post a of yore, and had all the arrangements properly carried out with his usual ability.

### POT PLANTS.

The entries in this section were certainly somewhat smaller than has been the case in former years, but the quality was well kept up. There were few entries for groups arranged for effect, chrysanthemums to be the leading feature, but those staged were really very good. Mr. Robert Begg, gardener to A. R. Gray, Esq., Garthdee, by Aberdeen, led the way here. His was a capital group, and, from the point of quality, it well deserved premier place. We would have liked, however, had the edging not gone so far up before meeting the blooms. The group was topped by a finely-grown Kentia palm, while fine examples of Cocos Weddelliana variety added considerably to the effect. Mr. Begg's blooms were undoubtedly far and away the best in quality, and included capitally-grown specimens of Hon. Mrs. Lopes, Mrs. A. T. Miller, the new white Master James, J. H. Silsbury, and several beautiful singles, such as E. Pagram and Dickson's Ruby. The ferns forming the foliage included some very fine specimens of Nephrolepis Whitmanni. Second place was taken by Mr. John E. Davies, gardener to Colonel Stuart Richardson, of Ballathie, Perthshire (an estate, it may here be noted, that changed hands on November 22). From the point of view of value, this group was a very fine one. Visitors to Aberdeen shows have not for a very long day seen a more admirable collection of crotons than formed part of Mr. Davies's group. Indeed, they were superb, being finely grown, and beautifully coloured. The wonder was often expressed that such valuable plants were taken so long a journey at this time of the year. That they must have deteriorated considerably before they reached Ballathie again goes without saying. White, yellow, crimson, and pink shades of chrysanthemums made up a very fine group. It was the quality, however, which gained for Mr. Begg his leading place. In this respect his blooms were unquestionably the best.

Mr. Begg was also first and second for specimen chrysanthemums in pots with grand entries. These included a magnificent pot of Nellie Pockett, and an entry which was universally admired. Mr. Begg also took leading honours for single and decorative chrysanthemums.

### CUT FLOWERS.

If somewhat thinner than we have seen it in former years, nevertheless, this proved a most delightful section, and one which reflected the greatest possible credit on the growers. For the best eighteen blooms of Japanese chrysanthemums, six varieties, Mr. John E. Davies won an easy first. His entry included exquisite specimens of Mdme. Paolo Radaelli, Mrs. F. W. Vallis, Mrs. Eric Crossley, Master David, Mrs. F. S. Vallis, and William Turner. Mr. John McRobbie, gardener to Sir Charles Forbes, Bart., of Newe, Strathdon, Aberdeenshire, made a very good second, his blooms also being very much admired. In the class for six blooms of yellow and white Japanese chrysanthemums, Mr. Duncan McLean, gardener to Mrs. Thornton, Thornton Castle, Kincardineshire, led the way, closely followed by that well-known grower, Mr. J. A. Grigor, gardener to Mrs. Dunbar-Dunbar, Seapark, Forres, N.B. Mr. Grigor secured first place for best twelve blooms with a really fine entry, which included capitally-grown specimens of Lady Talbot, Mrs. A. T. Miller, Pres. Viger, R. Vallis, Lady Conyers, Mrs. L. Thorn, Bessie Godfrey, J. H. Silsbury, and White Queen. Mr. John Day, gardener to Mr. J. C. O. Couper, of Craigiebuckler, by Aberdeen, made a really good second.

For the best three blooms of one variety, Mr. Duncan McLean, Thornton Castle, won grandly with exquisite specimens of Mrs. A. T. Miller. Mr. J. A. Grigor, Seapark, Forres, was second with much-admired specimens of Sir F. Crisp. A very fine display was made in the sections devoted to single and decorative chrysanthemums. For the best eighteen vases of decorative chrysanthemums, Mr. J. A. Grigor, Seapark, had matters pretty much his own way. Mr. John Petrie, gardener to Sir Thomas Burnett, Bart., of Leys, Crathes Castle, near Aberdeen, had a really fine win for the best nine vases of decorative chrysanthemums. His entry comprised beautifully-grown specimens of Bronze Triumphant, White Quintus, Le Friquet, La Triumphant, Soleil de Octobre, Chateau St. Victor, Mrs. A. Kirk, and Radium. Mr. Alex. Grigor, gardener, Duff House, Banffshire, was a very good second.

For the best twelve varieties of single-flowering chrysanthemums, the premier honour went to Mr. J. A. Grigor; Mr. W. Scorgie, gardener to the Misses McLennan, Springhill, Aberdeen, taking a very worthy second place. For the best six vases of single varieties, Mr. Robert Begg, Garthdee, had a very fine entry, which rightly earned for him premier place. No doubt the weather has been far from propitious of late, but the Christmas roses shown here were really very good, being large in size and of very good quality. For these, Mr. William Milne, gardener, Corsindae, Midmar, Aberdeenshire, had first and second places here, Mr. W. Scorgie, Springhill, taking third place.

The display of orchids was certainly small, but what they lacked in numbers they amply made up for in quality. Than the specimens shown by Mr. Andrew Reid, gardener to Mr. Baird, Durris House, by Aberdeen, nothing finer has been seen in Aberdeen for a long time. He had a very strong and worthy antagonist in Mr. Alexander Duncan, gardener to Lord Provost Maitland, Rubislaw Den House, Aberdeen. Chiefly of the cattleya and cypripedium families, they attracted great attention, and were much admired. For the best six varieties of cut flowers, Mr. John Petrie, Crathes Castle, took first and second places with exceedingly fine entries, Mr. Andrew Reid, Durris House, bringing up the rear.

Bouquets, if not numerous, were very chaste in design, leading places here being taken by Mr. Alexander Cummings, Granite Hill Nurseries, Aberdeen, and Mr. J. A. Smith, Union Grove, Aberdeen. Mr. Davies, Ballathie, had a very fine win for baskets, while Mr. John Petrie, Crathes Castle, and Mr. J. A. Grigor, Seapark, divided the honours for lady's sprays and buttonhole bouquets.

### FRUIT.

A very fine show was made in this section, and one that reflected the greatest possible credit on all concerned. The outstanding feature was the fine display of apples, and those who believe in the theory that an abundance of sunshine is essential for the development of rich colour in apples, had a surprise in store when they saw how beautifully coloured many of the entries were, despite the dull and sunless season through which we have just passed. Mr. C. Stuart, gardener to A. B. Innes, Esq., of Raemoir, near Aberdeen, had a fine win for the best collection of kitchen apples, his specimens of Belle de Pontoise, Blenheim Orange, Cellini, and Warner's King being greatly praised. Mr. Stuart also led for dessert apples, his entry comprising Allington Pippin, Blenheim Orange Pippin, Worcester Pearmain, and King of Pippins. Mr. C. A. Cumming, gardener to Captain Dunbar Brander, of Pitgaveny, Elgin, had a really fine win for baking apples, his entry comprising capitally-grown specimens of Peasgood Nonsuch. Mr. J. A. Grigor, Seapark, Forres, was second with Lord Derby. Dessert apples were not very numerous, but the plates of Charles Ross shown by Mr. John Coutts, Rosefield, Elgin, worthily earned for him premier place. Pears formed an admirable feature, the baking specimens—Grosse Calebasse—entered by Mr. C. A. Cumming, Pitgaveny, Elgin, well meriting first place. Mr. J. A. Grigor, Seapark, Forres, carried off leading honours for dessert pears.

Grapes were not very numerous, but those from Craigiebuckler, Aberdeen, worthily took first place. Mr. Andrew Reid, Durris House, and Mr. Davies, Ballathie, Perthshire, came next in order. Mr. John Petrie, Crathes Castle, had some very fine plates of tomatoes forward, which well deserved the honour awarded.

### VEGETABLES.

In this section the competition was keen. For the best collection, Mr. J. Gordon, Broomend, Inverurie, Aberdeenshire, had a really fine win, his entry comprising cauliflower, Autumn Mammoth; carrots, St. Valery; onions, Cranstone's Excelsior; leek, Dobbie's Prize; Brussels sprouts, Solidity; and Up-to-Date potatoes. Cabbages were not very much in evidence, but those sent in by Mr. John Paterson, gardener to Messrs. Pegler and Co. were really good. Mr. A. Gardiner, gardener to Colonel Stewart, of Drumduan, near Aberdeen, had a fine win for Brussels sprouts. Mr. W. Scorgie, Springhill, was first for cauliflowers, and Mr. Garden, Broomend, Inverurie, had the best celery. There was a capital show of turnips, the samples forward being clean, well-grown, and finely-shaped. Mr. Milne, Corsindae Gardens, Cluny, Aberdeenshire, led the way here, while for leeks, which were a very fine lot, Mr. Garden and Mr. Scorgie divided the honours.

Onions were a capital display, those sent by Mr. R. A. Grigor, Dalswinton, Dumfries, being much admired. Beetroot showed up very well, the quality and texture being very good. Mr. J. Coutts, Rosefield, Elgin, was first here, while for carrots Mr. John Paterson (of Messrs. Pegler and Co.) was first with admirable specimens. Ever a strong feature at this show, the potato section was, as usual, a fine display. That well-known and most successful grower, Mr. J. Ferguson, Linton House, Souchen, Cluny, Aberdeenshire, was, as is his wont, again well to the front, his entries comprising exquisitely-grown specimens.

### AMATEURS.

Very meritorious indeed, was the display made by the amateurs. It is evident the amateur finds the recreation of growing the chrysanthemum a fascinating one. He is constantly learning something, profiting by his errors, and finding ample scope for his ingenuity. And not least of the many allurements of "mum" growing is the gratification of the artistic sense. Leading places in this section were taken by Mr. John Davidson, 223, Hardgate, Aberdeen; Mr. John Milne, 357, Hardgate, Aberdeen; and Mr. John Thomson, Allan Street, Aberdeen, each of whom sent in entries that were a credit and honour to them.

## North of Scotland Horticultural and Arboricultural Association.

There was an exceedingly large attendance of members at the meeting of this association in the Botanical Class-room, Aberdeen University, on Wednesday evening, 20th inst. Mr. A. Robson (in the unavoidable absence of Mr. J. McKinnon, Haddo House), occupied the chair. Several new members having been admitted, making a membership now of nearly 300, the Chairman introduced Mr. A. Brown, of Messrs. Alexander and Brown, Perth, who gave a paper on "A Trip to Holland and the Bulb Fields."

Mr. Brown stated that, although he had been in the habit of visiting Holland annually for many years past, it was seldom he could find time in the spring, which, with him, was usually a busy period, to go to that country, but two years ago he had taken a week-end trip there, and it was that visit he proposed to describe that evening, and to show them how much could be seen in Holland in a comparatively limited period at a most interesting time of the year, so far as the bulb fields were concerned. Mr. Brown then proceeded to describe his journey from Perth to London, thence to Harwich, and across to the Hook of Holland by steamer, and then by rail to Leyden, and the country between there and Haarlem and Amsterdam, where the principal bulb fields were to be found. He described in racy language the scene of rich colour when the hyacinths, tulips, narcissi, and other bulbous plants were in flower, and showed with the aid of a lantern a large number of views of the principal places through which he had passed and also a capital selection of photographs of beautiful and popular varieties. Mr. Brown also gave some valuable and practical information on the culture of Dutch bulbs, described the way in which the sandy soil was rendered best adapted for cultivation, and the elaborate but simple system of irrigation prevailing in Holland.

It was altogether a delightful lecture, and, in the course of a short discussion which followed, Mr. Slorach, Aberdeen, who has been several times over the fields described by Mr. Brown, highly complimented the lecturer on his admirable address, as did also the chairman.

On the motion of Mr. W. B. Clark, gardener, Balgownie Lodge, Aberdeen, Mr. Brown was warmly thanked for his interesting and instructive paper.

### NOVELTIES OF THE YEAR.

The Chairman said the next business was to hear reports from the conveners of the various sections of the association as to the novelties which had come under their cognisance during the past season.

Mr. W. Ironside, gardener to Sir David Stewart, Banchory House, and convener of the vegetable section, in the course of a few remarks, stated that in his section one or two new peas had claimed a good deal of attention, and were likely to prove of some advantage as heavy croppers. Mr. A. Douglas, gardener to Mr. Thomas Ogilvie, of Kepplestone, Aberdeen, after referring to novelties in sweet peas, remarked that those which had done best with him during the past unpropitious season had been Lady Evelyn Eyre, Hercules, Dobbie's Cream, and Juliet. Referring to primulas, Mr. Douglas said that since the introduction of Primula obconica several fine varieties had been sent out with flowers of varying shades of rose and rosy-red, but the aim of many lovers of that plant had been to obtain a really bright red variety. That had now been secured. Queen Alexandra (or Snowdon) was a new giant white variety of Primula sinensis. The new Stellata, or Star primulas, were grand introductions, which should be grown by all. Mr. Douglas, in a most instructive manner, also referred to several new herbaceous plants, and very warmly commended to his hearers a lovely salmon-pink astilbe.

Mr. W. B. Clark, Balgownie Lodge, described in a very interesting manner experiments in which he had been successful with collarette dahlias. One of the finest varieties was Queen Mary, which bloomed freely, was of a fine shade of bright rose, with a white disc, and prettily tipped with white, while the collar was of a pleasing blush. Mr. Clark also commended pæony dahlias, and went on to speak of perpetual-flowering carnations and begonias. He especially mentioned, and showed, an improved Begonia Gloire de la Lorraine. He also emphasised the value of the beautiful Viola gracilis.

Mr. W. Smith, gardener to Lord Sempill, Fintray House, by Aberdeen, made some interesting remarks on a new tomato, the Laxton berry, and loganberry.

Mr. Robson, jun., a son of the chairman, dealt in a most intelligent manner with new varieties of trees and shrubs, particularly some lately introduced by Mr. Wilson, and sent out by the Messrs. Veitch.

Interesting discussions followed the various reports, at the close of which warm thanks were awarded the respective reporters, who had so ably fulfilled their tasks.

The Chairman then presented the association's certificate of merit to Mr. Ironside, Banchory House Gardens, by Aberdeen, for his admirable work in the cultivation of new varieties of onions and carrots, and a similar honour was awarded Messrs. Adam and Craigmile, Ferniclea Nurseries, Aberdeen, for their beautiful new rose Bon Accord, named after the motto on the City of Aberdeen's coat-of-arms.

The Chairman then intimated that at the next meeting Mr. Elder, Hursley Park Gardens, would give a paper on "Rock Gardens," and Mr. Whyte, Aberlour, would speak on "The Begonia."

Needless to say, after so very instructive an evening, the audience, which included several ladies, cordially thanked the chairman and all who had contributed, and retired highly delighted with a well-spent couple of hours.

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## Blackburn.

NOVEMBER 15 and 16.

The Town Hall was again used for the Blackburn Exhibition, but the entries were so numerous that an extra room was required to hold the exhibits.

As orchids are the predominant feature of the exhibition, it will be well to give them first consideration. For a table, 8ft. by 4ft., Mr. J. Lupton, gardener to Colonel J. Rutherford, M.P., was the only exhibitor, but he arranged a splendid bank in which oncidiums, cymbidiums, odontoglossums, cattleyas, and cypripediums were admirably blended with palms, ferns, etc. For a table of cypripediums, Mr. A. E. Strafford, gardener to William Thorn, Esq., led with a fine exhibit, which included many choice kinds and good flowers. Mr. T. Cass, gardener to Alfred Nuttall, Esq., was second, and Mr. C. Parker third. Mr. Strafford was successful for three cypripediums, with Mr. J. Pimplott, gardener to T. Mitchell Eccles, Esq., and Mr. J. Sumner, second and third. Mr. Strafford maintained his position for a single plant, staging Cypripedium insigne Sanderæ in good form with seven flowers.

The best three hybrid orchids came from Mr. J. Hardy, gardener to H. Bell, Esq., with Mr. Lupton second. For four orchids Mr. Lupton improved his position, and took the lead, which he continued for three oncidiums. For the single specimen, eleven competitors made an effort to win, and Mr. Price was successful with a fine Cymbidium Traceyanum, carrying seven good spikes.

Among other plants, the most prominent classes were the groups of chrysanthemums, two of large-flowering and two of single-flowering varieties being staged. In the former class Mr. Bradburn won with good-sized blooms, with Mr. J. Pimplott a strong second. For the singles Mr. Pimplott improved his position, having a fine half-circle, some ten feet in height, filled with pleasing and bright flowers; Mr. C. Samways, gardener to J. Thompson, Esq., was an excellent second. For a group of miscellaneous plants, Messrs. A. Lodge and Son, Beardwood, were adjudged the best exhibitors, Messrs. J. Battersby and Son, Blackburn, and Mr. Thos. Bury, Arley Nurseries, following. Six chrysanthemums found Mr. Bradburn with the premier lot, and he also won with a single specimen, but Mr. Pimplott had the best pair. Mr. Bradburn proved successful in the classes for three bouvardias and four salvias. Mr. J. McCullock proved the winner for six flowering plants, Mr. Barker for a like number of cyclamen, Mr. Samways for three begonias and two amaryllis, Mr. J. Bartlett for six solanums, and Mr. J. Pimplott for three ferns.

In the cut flowers section, for twenty-four incurved, not less than eighteen varieties, Mr. R. H. Jones, gardener to A. E. Troop, Esq., gained the premier position, having good blooms of Buttercup, Romance, W. H. Thorpe, etc.; second prize went to Mr. H. Boyd, gardener to Captain Fielden, and the third to Mr. J. Pimplott. For twelve blooms Messrs. H. Bradburn, J. W. Wells, and R. H. Jones were placed as named.

For twenty-four Japanese blooms, not less than eighteen varieties, Mr. H. Boyd secured top place, his leading flowers being Hon Mrs. Lopes, Countess of Granard, A. T. Miller, and White Queen; Messrs. H. Bradburn and R. H. Jones were second and third respectively. For twelve varieties Messrs. H. Boyd and J. Pimplott were placed first and second; and for three vases of blooms Mr. John Thompson proved the victor.

For a basket of chrysanthemums, Mrs. Pimplott won with a most effective exhibit, and Mrs. Edith Lodge was second. For a basket of autumn foliage, berries, etc., Mrs. Sharples and Miss Pimplott were placed as named, and for a centre-piece Miss Lupton and Mr. H. Arthur had pleasing designs.

Mr. J. Wright, gardener to Edmund Lord, Esq., Rawtenstall, scored for grapes with two bunches of Alicante, two of Muscat of Alexandria, and one of Muscat of Alexandria. Mr. C. Samways was second in the two-bunch classes. Mr. J. Barker scored for the collection of vegetables, his Brussels sprouts and leeks being excellent. Mr. H. J. Wells proved a good second; Mr. Wells staged extra fine onions, which secured the first prize.

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## Dundee.

The annual two days' exhibition of this society was held in the Kinnaird Hall, on November 22 and 23. Bailie Walter S. Melville, D.L., J.P., presided at the formal opening ceremony, gracefully performed by Mrs. W. D. Graham Menzies, of Hallyburton. The exhibits, although not so numerous as usual, were of a high order of merit, and pronounced by experts to be the best seen this season.

Our own opinion was that the thirty-six blooms (twelve vases in twelve varieties) staged by Mr. J. W. Robertson, Letham Grange Gardens, Arbroath, and the eighteen blooms (six vases) staged by Mr. D. Keillor, Seaborne Gardens, Broughty Ferry, and Mr. R. McNaughton, Battleby Gardens, Perth, would require a great deal of beating. The latter two lots were not easily decided between as named, containing as they did notable examples in every way, but the most outstanding flowers certainly were Hon. Mrs. Lopes, W. S. Thorn, Countess of Granard, Mary Poulton, J. H. Silsbury, Elsie Fulton, Eclipse, Mrs. A. T. Miller, and Lady Talbot. Mr. Robertson's collection was in the pink of condition in every detail, and only individual preference would account for noting the best; his Purity was the best we have yet seen, while his F. S. Vallis, Reg. Vallis, White Queen, and Victoria and Albert won universal admiration amongst grand flowers of W. S. Thorn, Hon. Mrs. Lopes, Mrs. A. T. Miller, Master David, and George Hemming. Mr. Keillor was also first for twenty-four blooms (eight vases), his lot containing Mary Poulton, W. S. Thorn, Lady Talbot, Hon. Mrs. Lopes, and Mrs. A. T. Miller; Mr. McNaughton was a good second, his Dorothy

Goldsmith and White Queen being leading flowers.

Mr. Keillor again led for twelve Japanese incurved (four vases); Mr. James Rae, Ethis Castle Gardens, Arbroath, being second. In the smaller classes Messrs. George Scott, James Beats, Alex. Duncan, J. W. Robertson, J. E. Davis, and T. C. Brown were winners, while for baskets, bouquets, sprays, etc., Messrs. Wm. Cooke, Beats, Scott, and Summers were successful. For a table of single chrysanthemums, 4ft. by 4ft., Messrs. Beats, Scott, and Duncan won, as named, with good collections, the following varieties being prominently set up in each lot: Pink, Bronze, White, and Yellow Pagrams, Sir Walter Scott, Metta, Mensa, Sylvia Slade, and Mary Richardson

For a decorated dinner-table three competitors were forward, Messrs. George Scott, James Beats, and John Fraser scoring as named. In the plant section the same three names appeared in similar order in most cases, except for winter-flowering begonias, when Messrs. Alex. Duncan, Wm. Grieve, and J. Beats were successful.

As on former occasions the amateurs upheld their traditions for quality, although their numbers were small. Messrs. John Denholm, J. Higgins, Anstruther, A. Guild, W. Davidson, Jas. Clark and Andrew Batchelor were prominent winners for cut blooms. Messrs. Davidson, Clark, and J. Keill were also exhibitors of pot plants, while Messrs. J. R. Butchart, D. Smith, and D. Orchiston were the only exhibitors of vegetables.

In the displays put up by the local nurserymen, none were so interesting as that of Messrs. Harley and Sons, who excelled in their choice of high-class and rare fruits, beautifully staged in an artistic floral scheme, where poinsettias were a leading feature. Messrs. Laird and Sinclair had a beautiful table of designs in floral art made up in the usual artistic fashion, for which the firm is famed.

Messrs. D. and W. Croll set up a table of beautiful cyclamen and other flowering and foliage plants, among which vases of large chrysanthemums were artistically arranged.

An excellent programme of music was admirably sustained during the two days, while a variety concert on Saturday night proved a success, and ought to help the funds of the society, which for some time have been dwindling.

## Perpetual-Flowering Carnation Society.

This society held the competitive part of its winter exhibition at the Royal Horticultural Hall, Westminster, on December 4, but the non-competitive portion was on view the day previous in conjunction with the R.H.S. meeting, and is dealt with by us in that connection.

The exhibition was a capital one, and we were pleased to see such a brisk competition in the amateurs' and small growers' sections. The blooms were of fine size and colour, as a whole, and the display was altogether interesting and attractive.

During the evening of December 3 the society held its annual dinner at the Holborn Restaurant, when Mr. J. S. Brunton presided over a fair attendance. The annual meeting followed this function, and the business was of a general routine character. There is a membership of 325, a net increase of 24 for the year. The turnover for the year was £275 5s. 3d., and there is a balance of £7 7s. 5d. to the good. Subscriptions amounted to £159 5s. 6d., and £112 14s. was paid away in prize-money, while postages amounted to £16 15s. 11d., printing and stationery to £42 9s. 11d., and the year book cost £25 10s.

Lord Howard de Walden was re-elected president, Mr. J. S. Brunton as chairman of committee, Mr. W. E. Wallace as vice-chairman, and Mr. Laurence Cook as treasurer, while Mr. T. A. Weston was elected hon. secretary in place of Mr. E. F. Hawes, whose business engagements prevent him from continuing in that office.

### OPEN CLASSES.

The gold medal offered as premier award for the best group of cut carnations arranged on a space 10ft. by 3ft. was worthily won by Mr. C. Engelmann, Saffron Walden, with a beautiful group of beautiful flowers set up gracefully in stands and vases, and the colour combination was excellent. Sunstar in the centre radiated its golden colouring and gave life to the whole; behind this were Lady Northcliffe, White Perfection, and White Enchantress, while in the foreground Harlequin, Rose Doré, Elektra, Enchantress, and Carola were presented in fine form. The second prize was won by Messrs. W. Wells and Co., Merstham, with flowers of equal quality, but not so well arranged and Colonel Rideout, Langley, Bucks, came third.

Mr. Brunton's challenge cup for the best three vases of British novelties was won by Mr. Engelmann, with good vases of Sunstar, Lady Northcliffe, and Carola.

The best three novelties raised in America were staged by Mr. H. F. Mason, Church Farm Nurseries, Hampton Hill, and his selection was Dorothy Gordon, White Wonder, and Gloriosa, all in fine form; Mr. W. E. Wallace, Eaton Bray, second; and Mr. C. Engelmann third, the latter having a fine vase of Rosette.

The series of classes for a vase of blooms of one variety of a given colour or group again proved a great attraction. For a vase of Enchantress or similar variety, Mr. C. Guile, The Gardens, Short Grove, Newport, led with Enchantress in grand style, Mr. W. E. Wallace following with the same variety, and Col. Rideout third; eight entries. In the Mrs. H. Burnett class there were seven entrants, and first place was won by Messrs. Stuart Low and Co., Enfield, with the prettily-fringed Baroness de Brienen; Mr. W. E. Wallace second, with Pink Delight, and Mr. Engelmann third.

Among varieties of the Rose Pink Enchantress class Mr. W. E. Wallace scored with Gloriosa, beautiful in form and colour. In the Lawson class Mr. W. E. Wallace was premier prize-winner with a fine vase of the bright cerise Una Wallace, a very attractive variety; Mr. Engelmann second with Mrs. C. W. Ward. The best vase of a scarlet variety was Scarlet Glow, of very dense and solid colouring, shown by Mr. W. E. Wallace; Mr. H. F. Mason second with Beacon, and Mr. H. J. Dudney, Erith, third.

Seven competitors came forward in the class for white flowers, and Mr. Mason led with a champion vase of White Perfection, followed in order by Mrs. Collins, who showed White Perfection, and Colonel Rideout, who staged White Enchantress. Only two competitors came forward in the crimson class, and here Mr. W. E. Wallace scored with fine examples of Carola, Mr. Engelmann coming second.

In the fancy class Mr. Wallace was successful with the white, scarlet-flaked Benora; Messrs. Stuart Low and Co., Enfield, second, with the same variety. In the class for selfs not eligible in other classes there were six competitors, and Mr. A. F. Dutton led with large blooms of Mikado; Col. Rideout second, and Mr. S. F. Jackson third.

Messrs. Allwood Bros., Haywards Heath, led for any registered variety not yet in commerce with Mary Allwood, figured in the present issue; Mr. W. E. Wallace second with Una Wallace.

Mrs. A. R. Bide, Highlands, Farnham, scored for a basket of carnations, and did so with blush and crimson flowers associated with asparagus fronds. Mr. S. F. Jackson, Danehurst, Epsom, had the best three ladies' sprays, and was followed in order by Mr. Guile and Mr. R. B. Leach, Wood Hall Gardens, Dulwich. Mrs. Bide led in the class for a table decoration with a very pretty arrangement of Mary Day carnations and asparagus; Mr. A. E. Usher, gardener to Sir Randolph Baker, Bart., Ranston, Blandford, second with a higher, bolder design, and Mr. Guile third; six entries.

### AMATEURS' AND GARDENERS' CLASSES.

In the amateurs' division Mr. Usher led for a table decoration, and his central feature was a high arch of pink flowers associated with asparagus fronds and croton leaves; Mr. Holder, Adair Place, Englefield Green, second. The best collection of cut carnations arranged on a circular table 4ft. in diameter was the one set up by Mr. A. E. Usher, who had a pleasing grouping of particularly fine blooms of popular sorts; Mr. H. Smith, Epping House, Little Berkhamstead, second with a rather flat arrangement. Captain Weimer was first for six gentlemen's buttonhole bouquets in a strong competition; and Mr. W. Heath, Hylands, Chelmsford, was first for a basket in the amateur's section with scarlet and white flowers and croton foliage; Mr. W. Holder second, and Mrs. A. R. Bide third.

Mr. Grubb, gardener to C. F. Raphael, Esq., Porter's Park, Shendley, put up a capital group of perpetual carnations, and easily secured Lord Howard de Walden's silver-gilt challenge vase with well-grown plants and beautiful blooms of Mrs. C. F. Raphael, Carola, Baroness de Brienen, Lady Northcliffe, and Triumph; Mrs. Bischoffshiem, Bute House, South Audley Street, second, and Mr. W. Holder, Englefield Green, third. Mr. Usher led for the best half-dozen flowering plants, and easily beat Mr. Holder; Mr. Usher was also first for a plant of Baroness de Brienen.

Mr. Usher scored for a vase of Messrs. S. Low and Co.'s novelties, and he had good blooms of Lady Alington, Mrs. T. M. Crook, and Rival. For a vase of Mr. Burnett's novelties Mr. Usher was also first, but the varieties were not labelled; for six blooms of Messrs. Wells and Co.'s novelties Mr. Usher was again to the front, but for six blooms of Mr. Burnett's novelties Captain Weimer came first. For a vase of twenty-five blooms, one or more varieties, wiring allowed, Mr. Usher won first place with May Day not wired; Mr. S. F. Jackson second, and Mrs. Fenwick, The Croft, Hillmorton, Rugby, third; five competitors.

Next followed a series of colour classes, five blooms in a vase being required. In the Enchantress class there were eleven entries, and the leading award fell to Mr. A. E. Usher for Enchantress, and this was the best vase of blooms in the small section; Mr. G. West, gardener to F. Ricardo, Esq., The Friary Gardens, Old Windsor, second; Lord Burnham third. In the Mrs. Burnett class Mr. Usher scored, beating Mr. Johnson, gardener to Lord Burnham, Hall Barn, Beaconsfield, and showing Lady Northcliffe. Mr. Usher for first in the rose-pink class with Rose Pink Enchantress, and Mr. Johnson was second; seven entries. Mr. Usher and Mr. Johnson were first and second in the Lawson class, the former scoring with Mrs. C. W. Ward. Mr. S. F. Jackson beat Mr. Usher for white flowers, but Mr. Usher was to the front again for scarlet flowers, and won with a nice vase of Scarlet Glow, Captain Weimer coming second. Mr. Jackson was first and Captain Weimer second for crimson flowers, each showing Carola. For any other self-colour Mr. G. West scored with Rose Doré in fine form, with Mr. Usher second with Mikado. In the fancy class Mr. Usher scored with the yellow-ground Orpheus.

In a special class provided by Mr. A. F. Dutton, Iver, Bucks, for a dozen blooms cut from plants obtained from him in 1912, Mr. Usher was placed first, winning the £10 prize with noble blooms of Carola, White Enchantress, R. F. Felton, Alma Ward, Enchantress, Rose Doré, Scarlet Glow, etc.; Mr. G. West second, and Mr. Johnson third.

### SMALL GROWERS' SECTION.

An interesting division was provided for amateurs who only employ a part-time gardener, or who grow their carnations themselves. Here only three flowers were required, and there was a quite good competition. Mr. T. C. Loosemore, Rodwell Station, Weymouth, was particularly successful, and we understand he is a railway clerk, with one small greenhouse. Mr. T. H. Plowright, Trinity Place, Windsor, was second to Mr. Loosemore in nearly every case. Mr. J. Mackenzie, Shooter's Hill, was first in a few classes, and Mrs. Alice Whitworth, The Avenue, Datchet, was also a first prize winner.

### NEW VARIETIES.

The Floral Committee granted an Award of Merit to each of the following varieties: Snowstorm (recently figured in our columns), from Mr. W. Lawrenson, Yarm-on-Tees; to Baroness de Brienen (a pink variety recently figured by us), from Messrs. Stuart Low and Co., Enfield; to Mary Allwood (illustrated in the present issue), from Messrs. Allwood Brothers, Hayward's Heath; and to Mrs. A. F. Dutton, a fine pink variety, from Mr. A. F. Dutton, Iver, Bucks.

### NON-COMPETITIVE.

Messrs. Felton and Son, Hanover Square, had a quite attractive exhibit of cut flowers, composed entirely of British-raised perpetual carnations; especially good were their vases of Lady Northcliffe, Mandarin, Baroness de Brienen, Una Wallace, Marmion, Snowstorm, R. F. Felton, and Mrs. C. F. Raphael. We refer our readers to the section of our R.H.S. report headed "Carnations" for description of the other non-competitive displays.

### MEDAL AWARDS.

Large Gold.—To Mr. C. Engelmann, Saffron Walden.

Gold.—To Messrs. Stuart Low and Co., Enfield.

Large Silver-gilt.—To Mr. H. Burnett, Guernsey.

Silver-gilt.—To Messrs. Felton and Sons, Hanover Square; to Messrs. Allwood Brothers, Hayward's Heath; to Messrs. Young and Co., Hatherley, Cheltenham; to Mr. Wm. Lawrenson, Yarm-on-Tees.

Silver.—To Messrs. Wm. Cutbush and Son, Highgate; to Mr. C. Lange, Hampton.

## National Chrysanthemum Society.

The annual dinner of this society, held on Wednesday, November 26, in the Venetian Chamber, Holborn Restaurant, London, was a most enjoyable function. In the unavoidable absence of the President, Sir Albert Rollit, Mr. Thos. Bevan presided. The attendance was excellent, about a hundred and three members, including many ladies, being present.

Mr. Bevan presented the challenge cup and shields, and extended congratulations to the winners. The room and tables were finely decorated with chrysanthemums and foliage plants, the speeches were interesting, and the musical part of the programme very enjoyable.

## Chelmsford Gardeners' Association.

At the second meeting of the winter session of this society, which was held at the Institute of Agriculture, Mr. E. H. Christy presided over a large attendance of members.

Mr. Montague Allwood, of Hayward's Heath, gave a very instructive lecture on Perpetual-flowering Carnations, and in his opening remarks directed attention to the high position these carnations hold, and observed that they were flowers within the reach of both rich and poor. As no great temperature was needed, their cultivation could be easily mastered by those who were able to grow chrysanthemums, air and light, and a temperature just above 50, being the chief requirements. Dealing with propagation, Mr. Allwood said the chief thing was to obtain good cuttings, and to select them from the centre of half-ripened shoots, as those taken from the base were too slow of growth, and those taken nearest the flower were too weak. Cuttings should be inserted in sand, and not loam, as the latter had a tendency to hold more moisture than was good for the cutting. A compost of loam with sand, a fifth of stable manure, and a little lime rubble would be quite suitable to use in potting off the rooted cuttings. The method of stopping was fully explained, and it was advised to stop fairly hard down into the mature wood, such as down to six leaves. Mr. Allwood made special mention of the perpetual carnations for summer budding, and felt certain that the border carnations would soon be a thing of the past, but care should be taken to give them a well-drained soil, as a water-logged bed or border was fatal to their welfare. A cordial vote of thanks was accorded the lecturer.

## Poole.

Under the auspices of the Borough of Poole (Dorset) Allotments Association, Limited, a lecture on "Vegetables for Home Use, Market, and Exhibition" was given by Mr. G. Garner, of Bournemouth, in the Guildhall, Poole, on Wednesday, November 20. The Mayor of Poole (Alderman Herbert S. Carter, J.P.) presided, and referred to the good work being done by the association, which now numbered about seven hundred members. He also referred to the great possibilities in the country in the matter of what he would term intensive culture. During a recent tour through the country he was much impressed by the great amount of uncultivated land that he saw in many counties.

The meeting was an open one, gardeners and the public also attending, also the senior scholars from the neighbouring schools with their teachers.

The lecturer dealt chiefly with the preparation of the soil at the present time, and in spring; also with the application of manure in autumn and spring, selection of crops for certain soils, selection of varieties, planting, summer treatment of growing crops, their gathering and storing, and the selection and preparation of produce for exhibition purposes.

A very free discussion took place at the close of the lecture, and many questions were answered by Mr. Garner. Votes of thanks were passed to the Mayor for presiding, and for granting the use of the Guildhall, and to the lecturer.

## Sanquhar Horticultural Society.

The annual meeting of this society was held in the Town Hall, Sanquhar, the other evening, Mr. James Thomson, Newark, vice-president, in the chair. The report submitted to the meeting of the society's operations for the past year was of a very satisfactory character, the financial statement showing that the debit balance from the previous year had been wiped out and a small balance to the credit of the society remained. The office-bearers were elected as follows: Prsident, Mr. James Moffat, Gateside; vice-president, Mr. James Thomson, Newark; hon. secretary and treasurer, Mr. John Milligan, Sanquhar; assistant secretary, Mr. R. M. Kendrick, jun. After consideration it was agreed to increase the number of classes in one of the sections.

## Royal Horticultural Society.

(Continued from p. 934.)

### FRUIT AND VEGETABLE COMMITTEE.

A number of new apples and pears were staged in the annexe by Messrs. J. Cheal and Sons, Crawley, and made up a very attractive and interesting exhibit. Crawley Beauty, a local raised apple, that flowers late in May, was well-shown, and gained an A.M.; it is a regular cropper, and the shaplely fruits are brilliantly shaded with crimson, and splashed with crimson-scarlet over the green ground; it is a solid cooking apple that will keep well till March. Encore is better known, and so is Rival and Chas. Ross, but Crawley Reinette and Buxted Favourite are less known, but of considerable merit, while Beurre de Naghan pear, a fine late variety, was shown in fine condition.

Mrs. V. Banks, Park Street, W., displayed a fine collection of bottled fruits and vegetables, representing a hundred and sixty-eight varieties; this was a splendid exhibit, and a much larger one than this clever lady has hitherto staged, and it gained the coveted Gold Medal. Miss Sewell, Harcourt Terrace, S.W.; Mrs. D. E. Jones, Pershore; Mrs. Miller, Marlow; and Messrs. Westmacott and Co., Leadenhall Street, all showed bottled fruits, preserves, or confections.

The Agent-General for British Columbia brought up a splendid exhibit of British Columbian apples. The fruits were, as usual, finely graded, of excellent size and beautiful colour, and packed in first-rate style. A variety named Winter Banana gained an A.M. An apple named Steyn's Seedling, from Lady Thornycroft, Isle of Wight, also gained an Award of Merit.

### CERTIFICATES AND AWARDS.

First Class Certificate.—To Lælio-cattleya Golden Oriole var. Ruby, from Sir G. Holford (grower, Mr. Alexander), Westonbirt, Tetbury; to Odontioda Latona Fowler's var., from J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.

Award of Merit.—To Cypripedium Eurybiades, from Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking; to Cypripedium Viking, from Sir Trevor Lawrence, Bart.; to Sophro-lælio-cattleya Carna, from Messrs. Charlesworth and Co., Hayward's Heath; to apple Crawley Beauty, from Messrs. J. Cheal and Sons, Crawley; to apple Steyn's Seedling, from Lady Thornycroft, Isle of Wight; to apple Winter Banana, from the British Columbian Government; to Chrysanthemums Miss A. Brooker, Eric Wild, and Mrs. Wingfield Miller, from Messrs. W. Wells and Co., Merstham; to Chrysanthemum Miss A. Brooker, from Messrs. J. Veitch and Sons, Chelsea; to Prunus Miqueliana, from Col. Stephen Clarke, C.B., Cuckfield; to Carnation Bonfire, from Messrs. W. Wells and Co., Merstham; to Carnation Mrs. A. F. Dutton, from Mr. A. F. Dutton, Iver, Bucks; and to Asplenium divaricatum elegans; from Messrs. J. J. Parker and Co., Whetstone.

### MEDALS.

Gold.—To the British Columbian Government, for fruit; to Mrs. V. Banks, Park Street, W., for bottled fruits and vegetables; to Mr. C. Engelmann, Saffron Walden, for carnations.

Silver-gilt Flora.—To Mr. H. Burnett, Guernsey, for carnations.

Silver-gilt Banksian.—To Messrs. W. Cutbush and Son, Highgate, for carnations, etc.

Silver Knightian.—To Mrs. Miller, Marlow, for fruit, preserves, and confections; to Messrs. Westmacott and Co., Leadenhall Street, E.C., for preserves.

Silver Flora.—To Mr. C. Lange, Hampton, for begonias and carnations; to Colonel M. Lockwood, M.P. (gardener, Mr. Cradduck), Bishop's Hall, Romford, for chrysanthemums; to Messrs. Stuart Low and Co., Enfield, for carnations; to Mr. L. Russell, Richmond, for azaleas, etc.; to Messrs. James Veitch and Sons, Chelsea, for begonias, etc.; to Messrs. Sander and Sons, St. Albans, for orchids; to Messrs. James Veitch and Sons, Chelsea, for orchids.

Silver Banksian.—To Messrs. J. Cypher and Sons, Cheltenham, for orchids; to H. T. Pitt, Esq. (gardener, Mr. Thurgood), Rosslyn, Stamford Hill, for orchids; to Messrs. Baylor, Hartland and Co., Cork, for orchids; to Messrs. J. Cheal and Sons, Crawley, for fruits; to Miss Sewell, Harcourt Terrace, S.W., for jams; to Messrs. Allwood Brothers, Hayward's Heath, for carnations; to Rev. H. Buckston, Derby, for cyclamen; to Messrs. Thos. S. Ware, Feltham, for alpines; to Messrs. W. Wells and Co., Merstham, for chrysanthemums and carnations; to Messrs. Young and Co., Hatherley, for carnations; Mr. W. Lawrenson, Yarm-on-Tees, for carnations.

Bronze Banksian.—To Messrs. H. B. May and Sons, Edmonton, for greenhouse flowers and ferns; to Mrs. D. E. Jones, Pershore, Worcester, for bottled fruits.

# NEW BOOKS.

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## THE CITY DIARY, 1913.

(Messrs. W. H. and L. Collingridge, 148 and 149, Aldersgate Street, London, E.C.) Price 1s.

The City Diary, which has been our constant companion for upwards of a quarter of a century, has again made its appearance upon our table, and is certainly not less welcome at the present time than in any previous year during the period over which we have had the advantage of the aid it is so well able to render, in entering up engagements and keeping a record of events of special importance. The present issue is of much interest from the fact that with its publication the City Diary celebrates its jubilee. For our own use we find it unsurpassed in usefulness, and to the City man it can hardly fail to be of immense value, as it not only has ample space for the insertion of daily records, but it contains a large amount of information respecting the City of London, and is a reliable guide to all its institutions. It gives lists alphabetically arranged, according to wards, of the members of the Corporation and its officers; of the City churches with the names of clergy, lecturers, and vestry clerks, and of the City Livery Companies with the names of the clerks and the situation of the halls. Details concerning the London County Council, the City Union, and other governing bodies are supplied, and an exhaustive table of social organisations, forming a singularly practical companion for every citizen. The diary portion, with three days to a page, is interleaved with blotting-paper of excellent quality, and cash columns are ruled on the several pages. It is certainly a remarkable shillingsworth.

## SOIL CONDITIONS AND PLANT GROWTH.

By Edward J. Russell, D.Sc. (Longmans, Green, and Co., 39, Paternoster Row, E.C.) Price 5s. net.

From the earliest period in the history of the world until the present day, the wonders of the soil and plant growth have been a constant source of interest to those who appreciate to the full their immense importance in relation to the prosperity of nations and to the health and enjoyment of the individual members of communities. There is consequently no occasion for surprise that the problems associated with the soil and the development of plants should in all ages have received the close attention of thoughtful men with a scientific turn of mind or that strenuous endeavour should have been made to effect their solution. In Roman times there was an extensive literature in agriculture, in which both the scientific aspects and the practical details of the art were dealt with in accordance with the views that were held at the time. Immense numbers of works have been written since then, and probably at no time have author and printing press been more actively engaged in adding to the literature of agriculture with which in this connection must be associated horticulture, than at the present. One of the most important of the books on the scientific aspects of the soil and plant development is that by Dr. E. J. Russell, the director of the Rothamstead Experimental Station, who has devoted much time to the investigation of the soil and its flora.

This book is of special importance because the information it contains is based on the results obtained from original investigations conducted on carefully devised lines, and it is of importance also because of the remarkable clearness with which the facts are stated. It is in no sense an elementary work, but the text is so remarkable for its lucidity that even the young gardener will not experience any difficulty in reading it or in clearly understanding what the author says with regard to the somewhat complex problems that are dealt with. The introductory chapter in which the search for knowledge of the soil by a large number of investigators is briefly described, is of much interest and of considerable educational value for the light it throws on the necessity for great care in carrying out investigations and in accepting as conclusive the results obtained therefrom.

The earlier investigators, we are told, sought for a "principle" of vegetation to account for the phenomena of soil fertility and plant growth, and Van Helmont considered he had found it in water. He made an experiment by filling an earthen vessel with soil weighing 200lbs., then well moistened it with rain water, and planted therein a shoot of a willow weighing 5lbs. At the end of five years the willow had grown into a tree of considerable dimensions, and weighed 169lb. and about 2oz., although it had not received any assistance other than from supplies of rain or distilled water. The soil was dried and weighed, the weight being the same as at first, less 2oz. Boyle repeated the experiment with "squash, a kind of Indian pomion," obtained similar results, and was satisfied. "Nevertheless," writes Dr. Russell, "the conclusion is incorrect, because two factors had escaped Van Helmont's notice—the parts played by the air and by the missing two ounces of soil."

About 1650 Glauber propounded the theory that saltpetre is the "principle" of vegetation, and this view was generally accepted by later writers. Boerhave taught that plants absorb the juices of the earth, and then convert them into food. Very little progress appears to have been made in the scientific aspects of cultural methods until the commencement of the second half of the eighteenth century, and excellent work was done on the effects of vegetation on air towards the end of the century, but its horticultural and agricultural significance was not recognised at the time. De Sanssure did good work in 1804, and was able to show that carbon dioxide in small quantities was a vital necessity for plants, and that the soil supplied only a small part of plant food, but, as Dr. Russell states, his views were not for some years accepted, or his methods followed.

Then followed experiments by Boussingault, who was the first to appreciate the importance of field experiments; Sprengel, who studied the ash constituents of plants, and others of lesser importance. For a long period it was held that plants derived their carbon from the humus in the soil, but this was demolished by the ridicule that was poured upon it in the report presented by Liebig to the meeting of the British Association in 1840. This great agricultural chemist, as in the case of some who had preceded him, and others who followed him, unfortunately made serious mistakes, for he propounded the "mineral theory," and introduced a patent manure prepared in accordance with his views but the theory was shown to be erroneous by Lawes, and his fertiliser was a failure. This failure was not, we are told by Dr. Russell, wholly the fault of the theory, but only affords a further proof of the numerous pitfalls of the subject. The potassic compounds and phosphates it contained were rendered insoluble by their admixture with lime for the purpose of preventing their nutrient properties being washed out of the soil, it not having been foreseen that in a state of insolubility they would not be able to supply the plants with food. Not until the second half of the last century was it recognised that bacteria were active agents in the process of decomposition in the soil, which had been regarded by Liebig as purely chemical.

The chapter on the requirements of plants, which may be regarded as the commencement of the more practical part of the work, is of much importance, and will be found of great value by those who are desirous of knowing something of the plant as a synthetic agent and accumulator of energy, taking up simple substances and manufacturing complex sugars, starch, proteins, essential oils, colouring matter, and other substances. This knowledge will add much to the interest associated with plant culture, and, coupled with a thorough acquaintance with the information that is given on the processes of assimilation, transcolation, metabolism, and respiration, will be of much assistance to cultivators in contending with the difficulties they are constantly meeting with. In referring to the formation of soils, the author points out that the plant in a natural state returns more to the soil than it takes away as a consequence of a considerable proportion of the complex and other substances manufactured in process of growth falling back to the soil when it is dead. This organic matter introduces a fundamental change, and the difference between the soil and the original heap of mineral matter is that the soil contains sources of energy while the mineral matter does not. The distinguishing characteristics of soil is that it contains part of the complex material synthesised by plants. This material, the author tells his readers, affords energy to numerous micro-organisms, and is gradually converted by them into simple substances that are utilised in the nutrition of plants. Its constituents are regarded as taking part in a perpetual cycle; in one stage nourishing the growing plant and storing up the energy of sunlight, in the other stage nourishing micro-organisms and liberating energy. These are all matters with which the cultivator should be acquainted, and it is of some importance that the author should have broken away from traditional methods and stated his facts and deductions with such clearness that no difficulty will be found by cultivators with a fairly good education in understanding them. The consideration of the biological conditions in the soil forms a chapter of immense interest, and because of this and the high degree of utility of the information it contains, we should have attempted a brief summary, but, having reached the limits of space, this is practically impossible. We therefore lay down the book with some degree of reluctance, and in doing so we strongly advise all who are engaged in the work of the garden to place it on their book-shelves, and take full advantage of their opportunities for mastering its contents.

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# ANSWERS TO CORRESPONDENTS.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

PEACHES UNDER GLASS.—S. W., Leicester: I have under my care a lean-to vinery, and my employer wishes to root out the vines and grow peaches instead. The glass roof is 18ft. from back to front, and the house is 24ft. long. The border is an outside one, the bottom of the border being at the ground level. There are 4in. flow and return pipes along the front and part of the end, with staging over them. Down the centre of the house is a staging 6ft. wide, and this is needed for housing plants during the winter. Ventilation can be given at the top of the back wall. Between the staging and the back wall there is an old flue, which we have not cared to move, but if we cleared it out there would be a wall 10ft. high available. Kindly tell me how best to deal with this matter, so as to make the best possible use of the house.—The house has a more lowly-pitched roof than is usually regarded as most suitable for peaches, but no doubt a fair amount of success can be obtained if reasonable care is taken. Several methods of dealing with the problem present themselves, but some of these would involve planting and eventually cutting out supernumerary trees, and so we suggest four fan-trained trees, two for the front of the house and two for the back wall. The long roof will allow ample head room for the front trees and still a fair share of light to reach the trees on the wall. Inside borders back and front will very largely make for success. There would still be room for a central staging for housing plants during the winter, but the old flue would have to be removed, as we understand it, to make room for the back border. The house is hardly long enough for three trees in a row, but if it seems desirable to cover the space as quickly as possible, long-stemmed standard fan-trained trees might be planted between the dwarfs, to be subsequently cut out to make room for the permanent trees. Probably the first method would be the best one, especially if a dozen good pot trees of peaches and nectarines were grown in the house to provide fruit until the planted-out trees are old enough to yield good crops. For the borders take out the soil to a depth of 3ft., and if the subsoil is clayey, it will be necessary to make a concrete base, and arrange so that there is an outlet for the drainage. If the subsoil is gravel, a layer of broken brickbats will suffice, over a system of four-inch drain-tiles, placed end to end in rows 4ft. apart, leading to the main drain and outlet. Turves, grass-side down, should be placed over the drainage. For soil use roughly chopped loam, adding a barrow-load of mortar rubble, a barrow-load of wood ashes, and a few pounds of quarter-inch bones to each cartload of loam. The borders should be 7ft. wide, but only a 4ft. width need be made up at first, using the rougher portions of loam or turves to make a retaining wall. Additions may be made to width of the border in subsequent years. Plant firmly, and get the work done immediately.

REMOVAL OF WEEPING WILLOW.—J. H. W., Riding-Mill-on-Tyne: We have a weeping willow tree, about 7ft. high, and, as far as one can judge, about nine or ten years old. Would it take any harm if moved, and when would be the right time to move it?—If the work is done carefully, there should be no difficulty in successfully moving the tree. Keep as large a body of soil and roots attached as possible; excavate around and under the roots, place stout planks under the root mass, and then, by means of rollers, convey the tree to its new site. Removal should take place at once. After replanting, spread some manure litter over the root area, and provide stakes and ties to keep the tree from harm during the winter.

CALANTHES.—Ignorance: Could you tell me the cause of the disease that has attacked my calanthe bulbs. The plants have been grown in a proper temperature, and, so far as I am aware, they have had no check.—The trouble is due to an excess of moisture during the flowering period, and, possibly, to a low temperature. There was ample evidence of an infestation of scale on the specimens sent. We cannot advise you fully because you have not sent your address, and the post-mark was not decipherable, but we may point out that, while calanthes may be successfully grown in a rich and substantial rooting medium right out in the country, where air is pure and light good, a much lighter compost is necessary in and near towns, and in these circumstances manurial aids are best omitted.

RUST ON CARNATION LEAVES.—Ignorance: Please tell me what is the cause of the disease appearing on the leaves of the perpetual carnation Lady E. James and the Malmaison varieties Princess of Wales and Old Blush.—The disease is popularly known as "Rust," and is due chiefly to excess of moisture. If over-potted, weakly plants are over-watered they soon fall a prey to rust, and it often happens that weak plants are subjected to some heat and a moist atmosphere for the purpose of inducing strong growth. Such a method is fatal, as it renders the plant still more open to the ravages of the disease. A free circulation of air is at all times essential for carnations, and the atmosphere should be fairly dry. Damp can be expelled by the use of a little extra fire-heat, coupled with increased ventilation. Malmaison carnations are especially susceptible to disease, and should be watered with the utmost care, especially at this season of the year; indeed, the soil should be allowed to become fairly dry before water is given.

## NAMES OF PLANTS.

F. F., Exeter.—1, Cupressus funebris; 2, Odontoglossum gloriosum; 3, Azara microphylla.

F. L. E., Horsham.—1, Abies Nordmanniana; 2, Juniperus chinensis; 3, Skimmia japonica.

O. P., Wolverton.—1, Selaginella Kraussiana aurea; 2, Cereus flagelliformis; 3, Tiarella cordifolia; 4 Primula Forbesi.

F. T. J., Dorking.—1, Pteris serrulata cristata; 2 and 3, hybrid cypripediums, rather poor ones; 4, C. Harri-Leeanum; 5, Dendrobium bigibbum; 6, Gymnogramma Matthewsi.

## NAMES OF FRUIT.

C. M., Earl's Colne.—1, Cornish Aromatic; 2, Duchess of Oldenburgh.

S. P., Carnforth.—1, Allington Pippin; 2, a fine example of Newton Wonder.

O. N. S., Chertsey: 1, Claygate Pearmain; 2, Margil; 3, Bismarck; 4, Winter Nelis.

B. J. A., King's Norton.—1, Blenheim Pippin; 2, not recognised; 3, a small Golden Noble.

J. G. H., Newcastle: 1, Lane's Prince Albert; 2, somewhat out of character, but appears to be Bramley's Seedling; 3, Kerry Pippin.

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148-9, Aldersgate Street,
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who will give the matter immediate attention.**

## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.

Height above Sea-level, 150 feet.

| DATE. 1912. NOVEMBER 24 TO NOVEMBER 30. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Nov. 24—Sunday ...... | 6 30 | 41 | 40 | 50 | 41 |
| ,, 25—Monday ...... | — | 50 | 47 | 53 | 41 |
| ,, 26—Tuesday...... | — | 51 | 50 | 52 | 41 |
| ,, 27—Wednesday.. | 1 24 | 36 | 35 | 41 | 35 |
| ,, 28—Thursday.... | 2 6 | 30 | 30 | 45 | 29 |
| ,, 29—Friday........ | — | 41 | 41 | 42 | 31 |
| ,, 30—Saturday..... | — | 32 | 32 | 43 | 29 |
| Means | (total) 10 0 | 40 | 39 | 46 | 35 |

| DATE. 1912. NOVEMBER 24 TO NOVEMBER 30. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Nov. 24—Sunday ...... | — | 46 | 46 | 48 | 37 |
| ,, 25—Monday ...... | 0·17 | 45 | 46 | 48 | 31 |
| ,, 26 Tuesday .... | 0·40 | 45 | 46 | 48 | 35 |
| ,, 27—Wednesday.. | — | 45 | 46 | 48 | 30 |
| ,, 28—Thursday.... | 0·48 | 41 | 44 | 48 | 19 |
| ,, 29 -Friday........ | 0·02 | 41 | 43 | 47 | 28 |
| ,, 30 - Saturday ... | — | 40 | 43 | 47 | 19 |
| Means ... | (total) 1·07 | 43 | 45 | 47 | 29 |

An unusually heavy rain storm, lasting about five minutes, occurred on Monday at 4.20 p.m.

## CATALOGUES RECEIVED.

ELISHA J. HICKS, HURST, TWYFORD, BERKS.—As Mr. Hicks specialises in roses his catalogue is devoted to descriptions of these flowers, and matters connected with their culture.

FISHER, SON, AND SIBRAY, HANDSWORTH, SHEFFIELD.—An unusually comprehensive catalogue of hardy trees and shrubs, with sections devoted to climbers, stove and greenhouse plants, herbaceous and alpine plants and fruits. The illustrations of this firm's groups at the Royal International Horticultural Exhibition are most interesting.

JAMES COCKER AND SONS, ABERDEEN.—The descriptive rose list from this firm is interesting because of the attention given to special selections of varieties for various purposes; such selected collection should appeal to small growers and beginners.

JONES AND ATTWOOD, STOURBRIDGE.—A most interesting and instructive catalogue relating to hot-water heating, and having special reference to the John Bull sectional boiler.

VILMORIN-ANDRIEUX AND CO., PARIS.—An extensive list of seeds of hardy trees and shrubs for ornamental and forest planting.

BERTRAND W. DEAL, BROOKLANDS, KELVEDON.—An interesting catalogue of sweet peas, including novelties for 1913, with coloured illustrations.

LAXTON BROTHERS, BEDFORD.—With the catalogue of fruit trees and roses, this firm issues hints on planting and spraying. Several fruit novelties are included.

C. F. A. VAN DER SLUYS, RAMEE, GUERNSEY.—A very neat catalogue of perpetual carnations, the varieties well described and grouped in their colours.

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## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

Chrysanthemums, carnations, and liliums are among the leading subjects on sale, and there is a ready demand at moderate prices

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Arums ......... | per doz. | 3 0 | to | 4 0 |
| Adiantum cuneatum ... | per doz. bun. | 4 0 | | 6 0 |
| Asparagus plumosus ... | per doz. bun. | 8 0 | | 16 0 |
| ,, Sprengeri ......... | per doz. bun. | 8 0 | | 12 0 |
| Azalea ......... | per doz. bun. | 4 0 | | 5 0 |
| Bouvardia ......... | per doz. bun. | 6 0 | | 7 0 |
| Camellias ......... | per doz. | 2 0 | | 2 6 |
| Carnations ......... | per doz. | 1 0 | | 2 6 |
| ,, ......... | per doz. bun. | 8 0 | | 15 0 |
| ,, Malmaison ......... | per doz. | 8 0 | | 15 0 |
| Cattleyas ......... | per doz. | 9 0 | | 15 0 |
| Chrysanthemums ......... | per doz. bun. | 4 0 | | 10 0 |
| ,, ......... | per doz. blooms | 1 0 | | 5 0 |
| ,, Singles ......... | per doz. bun. | 10 0 | | 21 0 |
| Croton leaves ......... | per bun. | 1 0 | | 1 6 |
| Cypripediums ......... | per doz. | 2 0 | | 3 0 |
| Eucharis ......... | per doz. | 2 0 | | 3 0 |
| French fern ......... | per doz. bun. | 2 6 | | 4 0 |
| Gardenias ......... | per doz. | 2 0 | | 2 6 |
| Lapageria ......... | per doz. | 2 0 | | 2 6 |
| Lilium auratum ......... | per bun. | 4 0 | | 5 0 |
| ,, speciosum ......... | per doz. | 1 0 | | 2 6 |
| ,, longiflorum ......... | per doz. | 2 0 | | 3 0 |
| Lily of the Valley ...... | per doz. bun. | 10 0 | | 18 0 |
| Marguerites ......... | per doz. bun. | 2 6 | | 4 0 |
| Mignonette ......... | per doz. bun. | 3 0 | | 5 0 |
| Odontoglossums ......... | per doz. blms. | 2 6 | | 4 0 |
| Pelargoniums ......... | per doz. bun. | 3 0 | | 6 0 |
| Roses ......... | per doz. | 1 6 | | 5 0 |
| Smilax ......... | per doz. trails | 2 0 | | 3 0 |
| Spiræa ......... | per doz. bun. | 4 0 | | 6 0 |
| Stephanotis ......... | per 6 doz. blms. | 3 0 | | 4 6 |
| Tuberoses ......... | per doz. | 0 6 | | 0 9 |
| Violets ......... | per doz. bun. | 1 6 | | 4 6 |

### Fruits.

Supplies are still quite large, and business is fairly brisk all round.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Apples, English ......... | per bush. | 2 6 | to | 5 0 |
| ,, Cox's ......... | per ½-sieve | 4 0 | | 7 0 |
| ,, Californian ......... | per box | 5 0 | | 10 0 |
| ,, Nova Scotian ......... | per bar. | 10 0 | | 18 0 |
| Bananas ......... | per bun. | 4 0 | | 12 0 |
| Cobnuts ......... | per doz. lbs. | 2 0 | | 2 3 |
| Cocoanuts ......... | per 100 | 18 0 | | 23 0 |
| Cranberries ......... | per case | 9 0 | | 12 0 |
| Figs ......... | per box | 0 9 | | 1 6 |
| Grapes, English ......... | per lb. | 1 0 | | 5 0 |
| ,, Almeria ......... | per barrel | 12 0 | | 18 0 |
| ,, Lisbon ......... | per case | 7 0 | | 8 0 |
| Lemons ......... | per case | 8 0 | | 30 0 |
| Medlars ......... | per crate | 4 0 | | 5 0 |
| Melons ......... | each | 1 9 | | 3 0 |
| Oranges ......... | per case | 10 0 | | 30 0 |
| ,, Jamaica ......... | per case | 10 0 | | 15 0 |
| Peaches, Canadian ......... | per doz. | 2 6 | | 3 6 |
| Pears ......... | per ½-bush. | 1 6 | | 4 0 |
| ,, French ......... | per box | 2 0 | | 5 0 |
| ,, Californian ......... | per case | 6 0 | | 12 0 |
| ,, Doyenne du Comice... | per doz. | 2 0 | | 4 0 |
| Pineapples ......... | | 2 0 | | 5 0 |
| Plums, Californian ......... | per case | 10 0 | | 15 0 |
| Pomegranates ......... | per case | 6 0 | | 10 0 |
| Walnuts ......... | per doz. lbs. | 2 6 | | 5 6 |

### Vegetables.

Large supplies continue to arrive, and business is brisk at steady prices.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Artichokes, Globe ......... | per doz. | 1 6 | to | 2 9 |
| ,, Ground ......... | per bush. | 3 0 | | 4 0 |
| Asparagus, Paris ......... | per bun. | 3 6 | | 4 3 |
| Beet ......... | per bush. | 2 0 | | 3 0 |
| Brussels Sprouts ......... | per ½-bush. | 1 0 | | 2 0 |
| Cabbage ......... | per tally | 2 6 | | 4 0 |
| Carrots ......... | per doz. bun. | 2 0 | | 2 6 |
| Cauliflowers ......... | per tally | 4 0 | | 10 0 |
| Celery ......... | per bun. | 1 0 | | 1 6 |
| Celeriac ......... | per doz. | 2 0 | | 3 0 |
| Cucumbers ......... | per doz. | 1 6 | | 2 6 |
| Endive ......... | per doz. | 0 6 | | 2 0 |
| Horseradish ......... | per doz. bun. | 10 0 | | 12 0 |
| Leeks ......... | per doz. | 2 0 | | 2 6 |
| Lettuce ......... | per doz. | 0 9 | | 1 3 |
| Mint ......... | per doz. bun. | 1 0 | | 2 6 |
| Mushrooms ......... | per doz. lbs. | 6 0 | | 10 0 |
| Onions ......... | per bush. | 2 0 | | 4 0 |
| ,, Spanish ......... | per case | 5 0 | | 7 0 |
| Parsley ......... | per doz. bun. | 2 0 | | 3 6 |
| Parsnips ......... | per bush. | 2 0 | | 3 0 |
| Radishes ......... | per doz. bun. | 0 8 | | 1 0 |
| Spinach ......... | per bush. | 1 6 | | 2 6 |
| Tomatoes, English ...... | per doz. lbs. | 2 0 | | 4 0 |
| ,, Guernsey ......... | per doz. lbs. | 2 6 | | 3 9 |
| ,, Canary ......... | per case | 10 0 | | 12 0 |
| Turnips ......... | per oz. bun | 1 3 | | 2 6 |
| Watercress ......... | per doz. bun. | 0 4 | | 0 7 |

### LONDON POTATO MARKETS.

Business shows practically no improvement, and there is only a moderate demand.

| | | s. d. | | s. d. |
|---|---|---|---|---|
| Bedfords ......... | per ton | 80 0 | to | 90 0 |
| Kents ......... | per ton | 80 0 | | 95 0 |
| Lincoln ......... | per ton | 80 0 | | 95 0 |
| Blacklands ......... | per ton | 70 0 | | 85 0 |

## FORTHCOMING ENGAGEMENTS.

MONDAY, December 9.—United Horticultural Benefit and Provident Society.

TUESDAY, December 10.—Weybridge Horticultural Society's Monthly Meeting.

National Dahlia Society.—Annual Meeting at the Hotel Windsor, Westminster, at 4 p.m.

WEDNESDAY, December 11.—East Anglian Horticultural Club.

North of England Horticultural Society, at Leeds.

MONDAY, December 16.—National Chrysanthemum Society's Executive Committee, 7 p.m., at Carr's Restaurant, Strand.

TUESDAY, December 17.—Royal Horticultural Society; Committee will meet at 12 o'clock, but there will be no general exhibition of plants and flowers.

National Rose Society: Annual Meeting at the Crown Room, Holborn Restaurant, corner of Kingsway, W.C., at 3 p.m.; to be followed by a Conversazione from 4.30 to 6 p.m.

THURSDAY, December 19.—Linnean Society.

WEDNESDAY, December 25.—Christmas Day.

THURSDAY, December 26.—Bank Holiday.

FROM HEADQUARTERS.

It is only to be expected that anything which has been steadily growing for seventy-five years should now have reached a high state of maturity.

It was in 1836 that the late Mr. James Carter published his first annual catalogue, which consisted of a single sheet, from 237, High Holborn. Ever since then the yearly catalogues have been steadily growing larger and larger, in a manner worthy of the seeds themselves, until now it has become the most wonderful and the largest catalogue devoted exclusively to seeds in the world.

About December 9th the new Carters Annual, entitled "Garden and Lawn," will be published. It is of nearly two pounds postal weight, and carries close upon 300 pages on art paper! It is profusely illustrated, chiefly with photographs taken by the firm's own staff of photographers, and completed in the Studios on the premises; but there are also photos. from all parts of the world.

The coveted volume opens fittingly with a page showing His Majesty King George inpecting our Japanese Garden Exhibit at the International Exhibition at Chelsea. The firm hold the Royal Warrant of His Majesty King George, Her Majesty Queen Alexandria, H.I.M. The German Emperor, also eleven other appointments to other Royal and Reigning Houses, which we believe to be a record in the industrial world.

An Art Supplement illustrates the unique Raynes Park establishment, justly regarded as one of the most perfect examples of what industrial buildings should be, and always open to visitors. We then have pages on the fascinating story of Testing, followed by beautiful pictures of Vegetables and Flowers.

The Annual is a masterpiece of printing, such as one would naturally expect from printers of the standing of Messrs. McCorquodale, one of the largest firms of printers in the Kingdom, whose resources and appliances for the printing of works of this nature are well known.

It is interesting to know that the requirements of the book include nearly 100 tons of art paper, printing ink, and type, a large number of the latest printing machines, about 80 miles of binders' thread, 350 engraved plates in duplicate, 100,000 embossed stamps; while 25 pair-horse parcel-post vans are required for the conveyance of the work, when completed, to the General Post Office.

JAMES CARTER & CO.,
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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

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**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

CARPENTER and HANDYMAN; used to general nursery repairs; four years at Fraser's Nursery, South Woodford. S. NEWSON, 358, High Road, Leytonstone.

EXCELLENT GARDENER (34), eighteen years' references; sober and reliable. Apply, "R.," 60, St. Mary's Road, Lower Edmonton.

FOREMAN CARPENTER or Estate and House Situation required as above by experienced Man; thoroughly used to all branches of building trades and estate work generally; age 29; single; good references will be sent on application. W. PALIN, Pinvin Farm, Pershore, Worcestershire.

FOREMAN.—Thoroughly practical and expert Man, well up in all branches of Gardening, Inside and Out; French and intensive culture. Excellent testimonials, and satisfaction guaranteed. Married, son 15 years of age. M. MULFORD, Wantage Road, Wallingford, Berks.

GARDENER (good Single-handed or Head where two are kept); thoroughly experienced in Kitchen and Flower Garden, also Lawns; 12 years' experience; 5½ present situation; age 26; can be highly recommended; married when suited. F. BARRETT, Ellisfield Manor Gardens, Basingstoke.

GARDENER, age 17½, seeks SITUATION as Under Gardener; three years' experience, Inside and Out; good reference. G. DARBY, High Street, Witham, Essex.

GARDENER (Head or Single-handed), 29 years' experience, inside and out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head Working), and Wife, experienced Laundress, seeks SITUATION; 30 years' experience in all-round gardening; 12 years in present situation as above; no family; good references. Box 70, Office of this Paper.

GARDENER.—A YOUNG MAN, age 35, seeks SITUATION as good all-round Gardener; good references; married when suited. V. HOLMAN, Junction Road, Burgess Hill, Sussex.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head of two, or good Single-handed); single; age 25; good experience in Vines, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places; leaving through no fault. J. STEPTOE, 59, Burlington Road, New Malden, Surrey. No circulars.

**Read what our Advertisers write re "Gardeners' Magazine."**

> November 27th.
>
> Dear Sir,
>
> I beg to say that my son has secured a situation through your paper; thanking you very much for the trouble you have taken,
>
> I am, etc.,
>
> B. L.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Single-handed or good Kitchen Gardener, or Pleasure Ground Man); age 28; married; eight years' experience in good places; good references. A. NEWTON, Knossington, near Oakham.

GARDENER (Head Working).—Major PITT, Pett Place, Charing, Kent, can highly recommend F. FOLKARD to any Lady or Gentleman requiring a practical man well up in Flowers and Fruit: age 31; married when suited.

GARDENER (Head) seeks RE-ENGAGEMENT; 17 years' practical experience; age 32; married; highest reference; can be recommended by late employer. MOUNSDON, Reading Road, Pangbourne.

GARDENER, aged 29, married, no family, seeks place as Single-handed; ten, two, and one years' references. H. WILLIAMSON, 8, Capron Road, Dunstable, Beds.

GARDENER (Head Working, where four or five are kept). Mr. J. PROWSE, late head gardener (20 years) to the Right Hon. Lord Burnham, can highly recommend W. MANN to any Lady or Gentleman requiring a thoroughly competent man as above; age 32; married; abstainer. W. MANN, St. Hilary Gardens, Cowbridge, Glam.

KEEN and reliable FOREMAN GROWER of all Market Produce seeks Situation in Market Nursery; life experience; age 35; married; good references. MOODY, 152, Victoria Road, East Leicester.

LAD seeks SITUATION in garden, inside or Out; age 15; good references; Bothy or otherwise. E. WOOLVEN, Lydhurst Gardens, Haywards Heath, Sussex.

LEDGER CLERK seeks Re-engagement; with previous employers 6 years and 10½ years; abstainer; highest references. Write, L. PIDGEON, 20, Oxford Road, Wokingham, Berks.

MRS. MURRAY IND highly recommends her Head Working GARDENER, where four or five under kept; thoroughly practical in all branches Inside and Out; life experience; age 38, married; leaving through place sold. C. PEARTREE, Coombe Lodge Gardens, Great Warley, Essex.

YOUNG MAN seeks SITUATION (Inside and Out); age 21; strong and willing; six years' experience; three years' nursery, last place; good references; abstainer. W. COWARD, Old Broughton Road, Melksham, Wilts.

THE EARL of CRANBROOK wishes to recommend HENRY ADAMS as GARDENER (Head); a thorough practical man, with good all-round experience; six years with the late Earl of Cranbrook; leaving through estates being sold. HENRY ADAMS, Hemsted Park Gardens, Cranbrook.

YOUNG MAN, 24 years, seeks SITUATION on Lawns and Gardens; previous experience and good character. R. F. REDDING, Tysoe, Kineton, Warwick.

## Situations Vacant.

GARDENERS (married and single) WANTED for ONTARIO (Canada) Fruit and Vegetable Farms in March; £4 to £8 monthly, with board guaranteed; pay own fare. Send envelope. Councillor RUMSEY, Shrewsbury.

## SITUATION COUPON

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London,* **E.C.**

**For DECEMBER 14, 1912.**

**Please Repeat my Advertisement.**

**Name**........................................

**Address**........................................

........................................

**Date**........................................

THIS COUPON, duly filled up, should be forwarded not later than Tuesday, for the next issue.

# W. RICHARDSON & Co., Darlington

W. RICHARDSON & CO.
DARLINGTON

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SHOULD YOU REQUIRE ANYTHING IN THE WAY OF GLASS HOUSES OR HEATING, OR WOULD BE INTERESTED IN HAVING A COPY, IF ONE HAS NOT ALREADY BEEN SENT TO YOU, WRITE US, AND ONE WILL BE SENT FREE BY RETURN OF POST.

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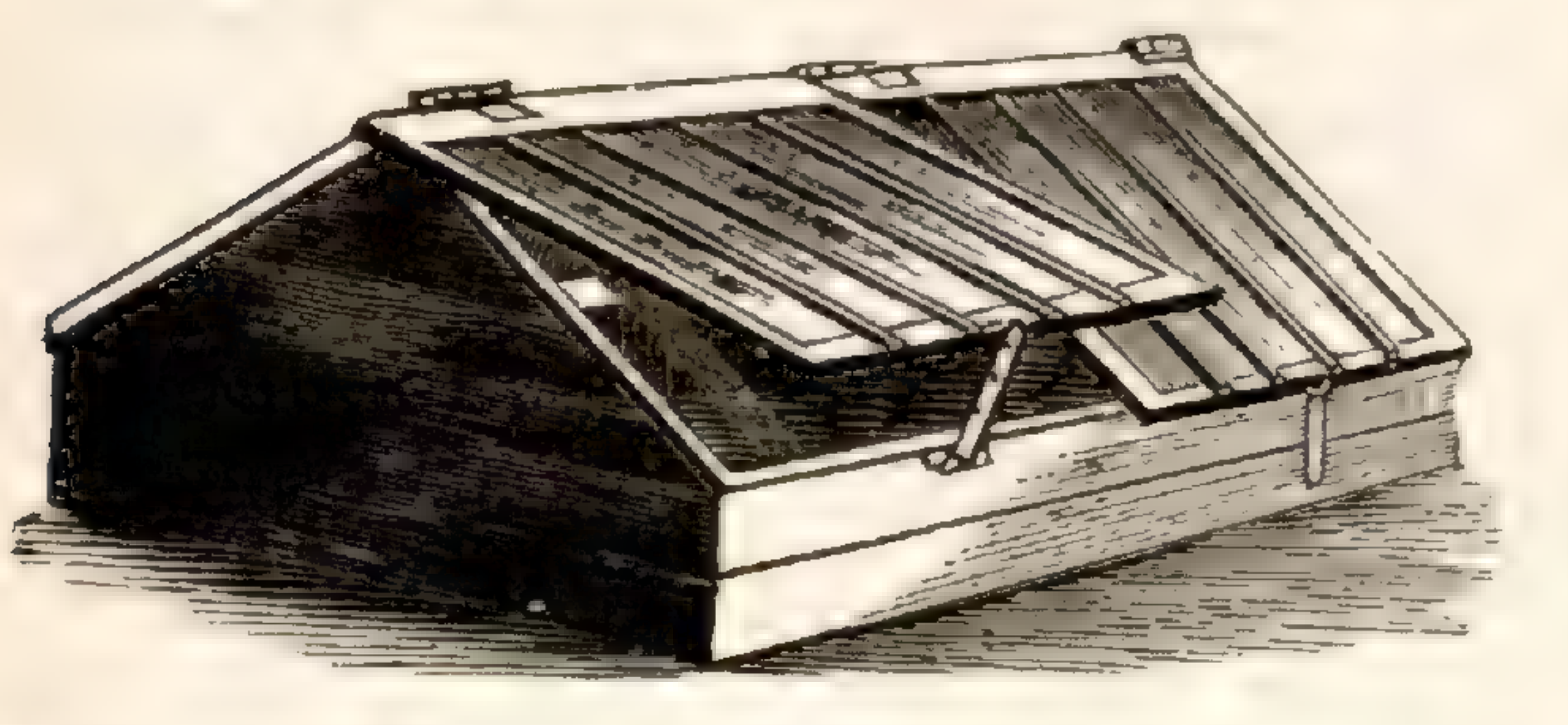

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ROYAL HORTICULTURAL WORKS,
**MIDDLETON, MANCHESTER.**

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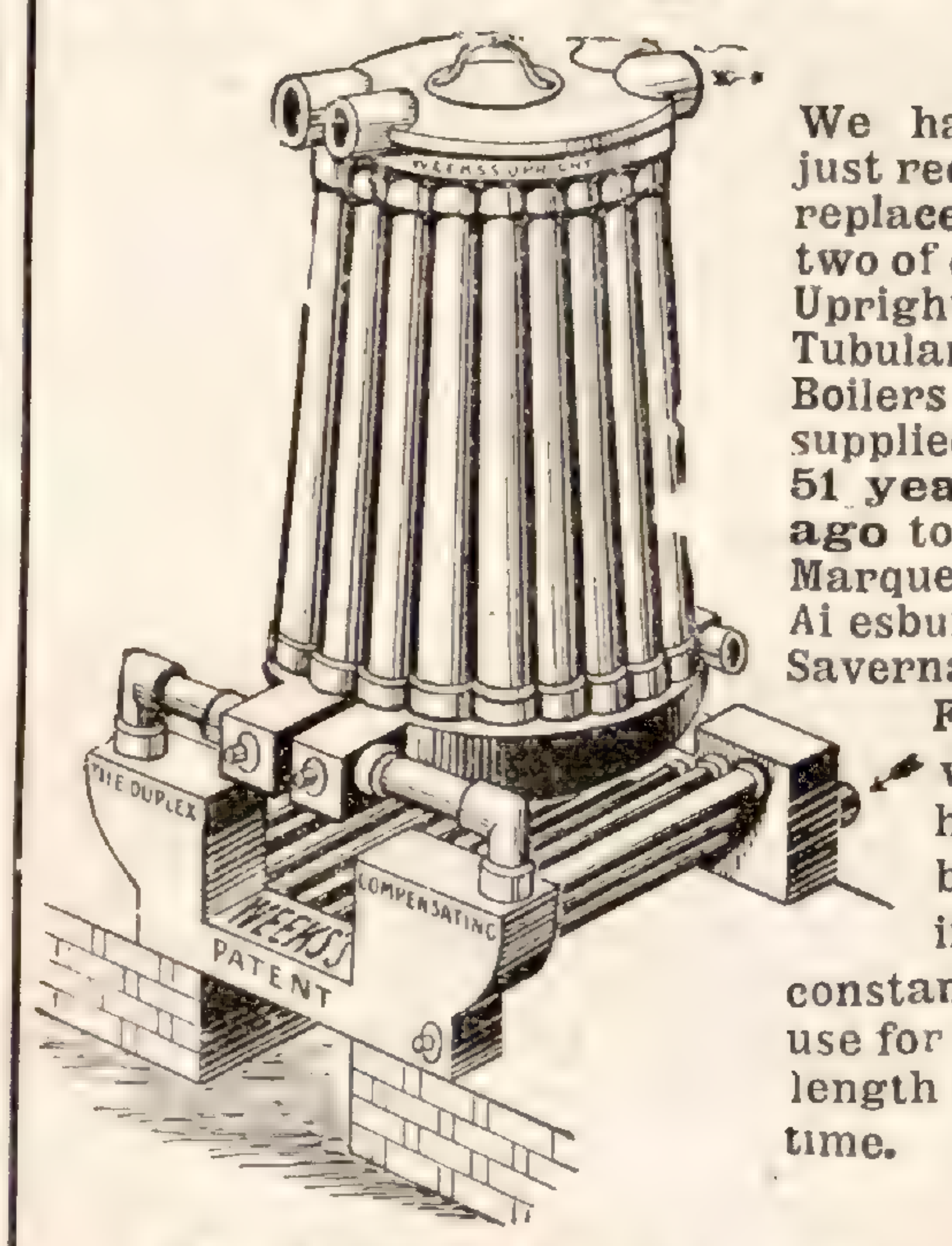

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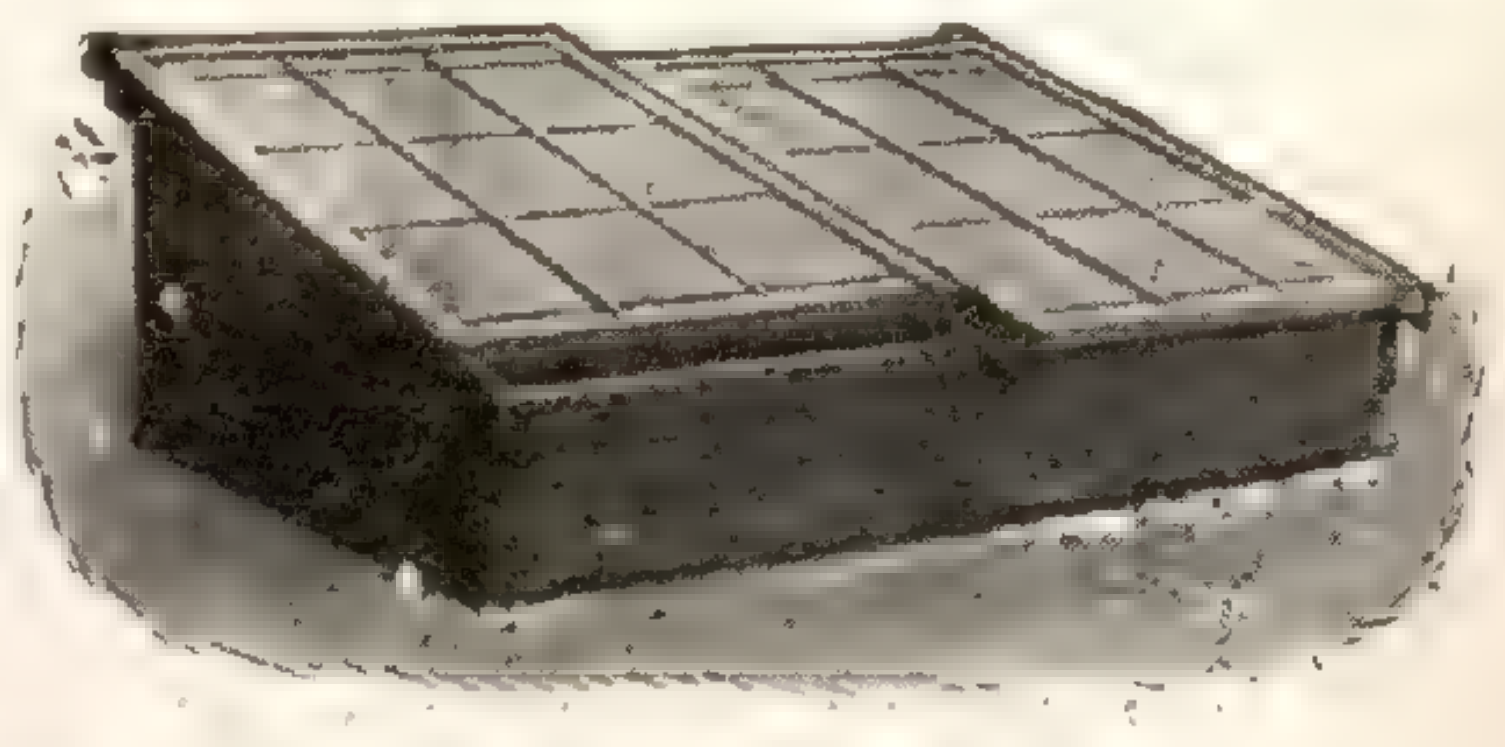

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All orders sent out Carriage Paid.
*Special Cash Prize Offer.*

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By JOHN F. BARTER, Price 1/-, post free 1 2.

***Use "Barter's" Spawn***

For price write **JOHN F. BARTER, Ltd.,**
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Please mention this paper.

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31000 IN USE
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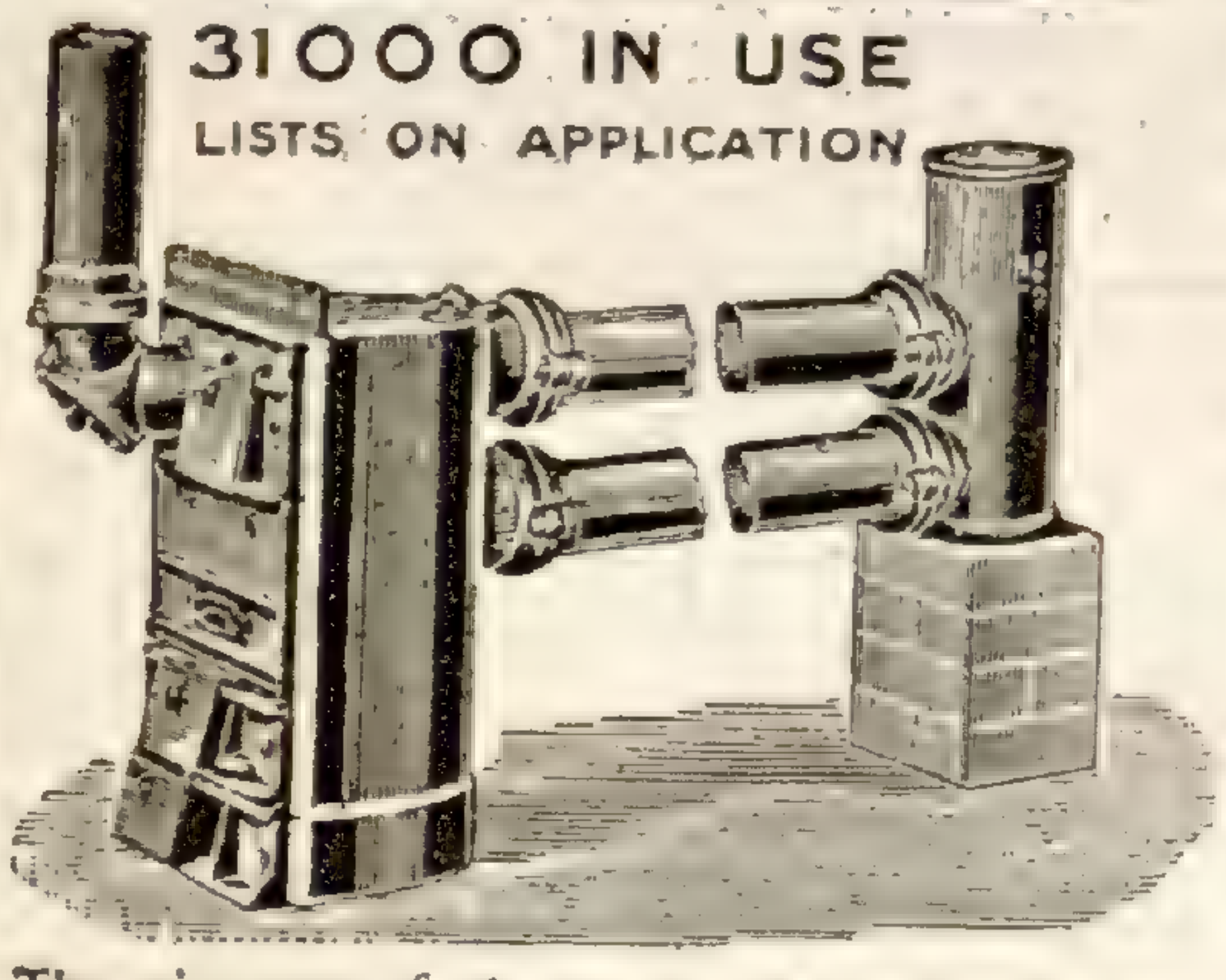

The pioneer of cheap, simple and effective heating for small greenhouses. Complete Apparatus from £3. 19. 6. The immense sale of this boiler, and its numerous imitations are the best testimony of its undoubted success

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PERPETUAL CARNATIONS.

# THE GARDENERS' MAGAZINE.

No. 3,085. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

SATURDAY, DEC. 14, 1912

(10/6 per Ann. Post Free. To Foreign Countries, 14/-.) Twopence.

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GISHURST COMPOUND is harmless in use; its soluble Sulphur, etc., has for 40 years cured blight and fungus on plants, and is good for washing unhealthy dogs. Gishurstine keeps boots dry in all weathers; they will polish. Good for harness. Wholesale from
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ORDER TRELLIS WORK NOW.—Write for our book, "'Trellis," showing Screens, Arches, Bowers, Arbours, Wall Panels, Window Surrounds, and other suggestions for the Artistic Treatment of the Home Grounds. BOULTON and PAUL, LTD., Manufacturers, Norwich.

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(See page v.)

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CONSIGNMENTS ARRIVE FORTNIGHTLY.
2s. 6d. per bushel; per bag, 8s. 6d.
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ESPALIERS FOR FRUIT TREES.—Wall Trainers, Tree Guards, Arches, Bowers, Pergolas, Fruit Tree Protectors, and Garden Ironwork of all kinds. Ask for Catalogue No. 153A, BOULTON and PAUL, LTD., Manufacturers, Norwich.

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"Your plants, bulbs, and roots which arrived two weeks ago were in a wonderfully good condition, and have almost without exception begun to show signs of growth.

I am especially pleased that the Pæonies have survived the journey, thanks to the excellent packing given them."

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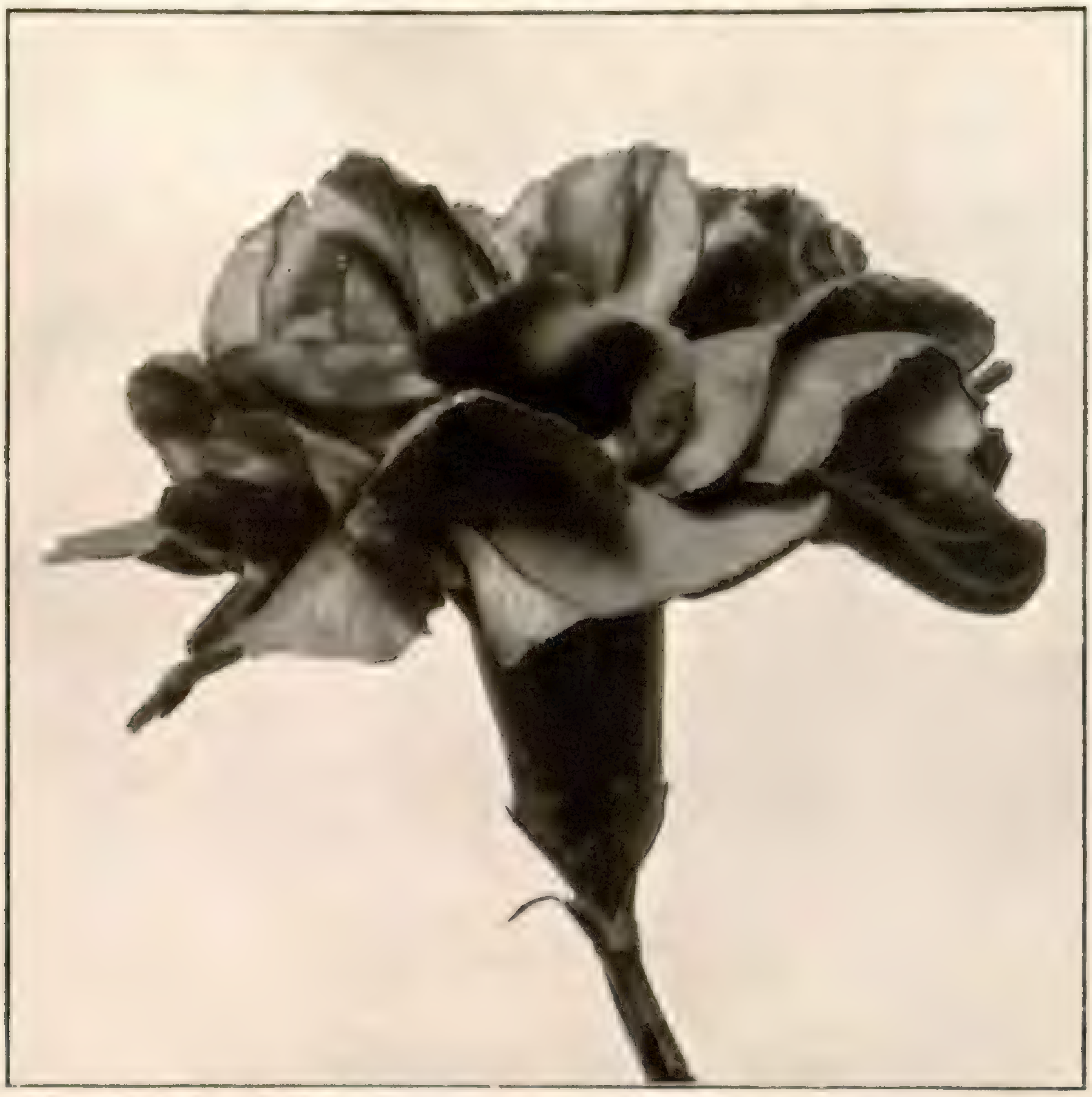

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A deep salmon sport of Enchantress identical in growth to its parent, A BRITISH SPORT.
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NONE TO BEAT IT.

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4 SIZES.
Heating Powers, 80 to 250 ft. of 4 in. pipe.
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PERFECT PLANT FOODS.

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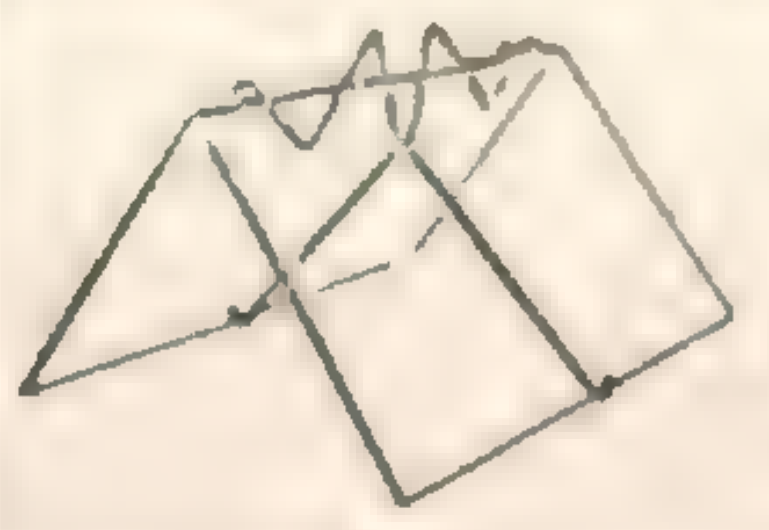
**CHASE CONTINUOUS CLOCHE**
Patent 46/11. Application 710, 2208, 10458/12
**Complete Glass Covering for Plants and Seeds.**



Does not burn the plants. Can be packed away in a very small space. Cheap, Simple, Effective. Thousands are already in use. Write for full particulars.

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Beware of Imitations.
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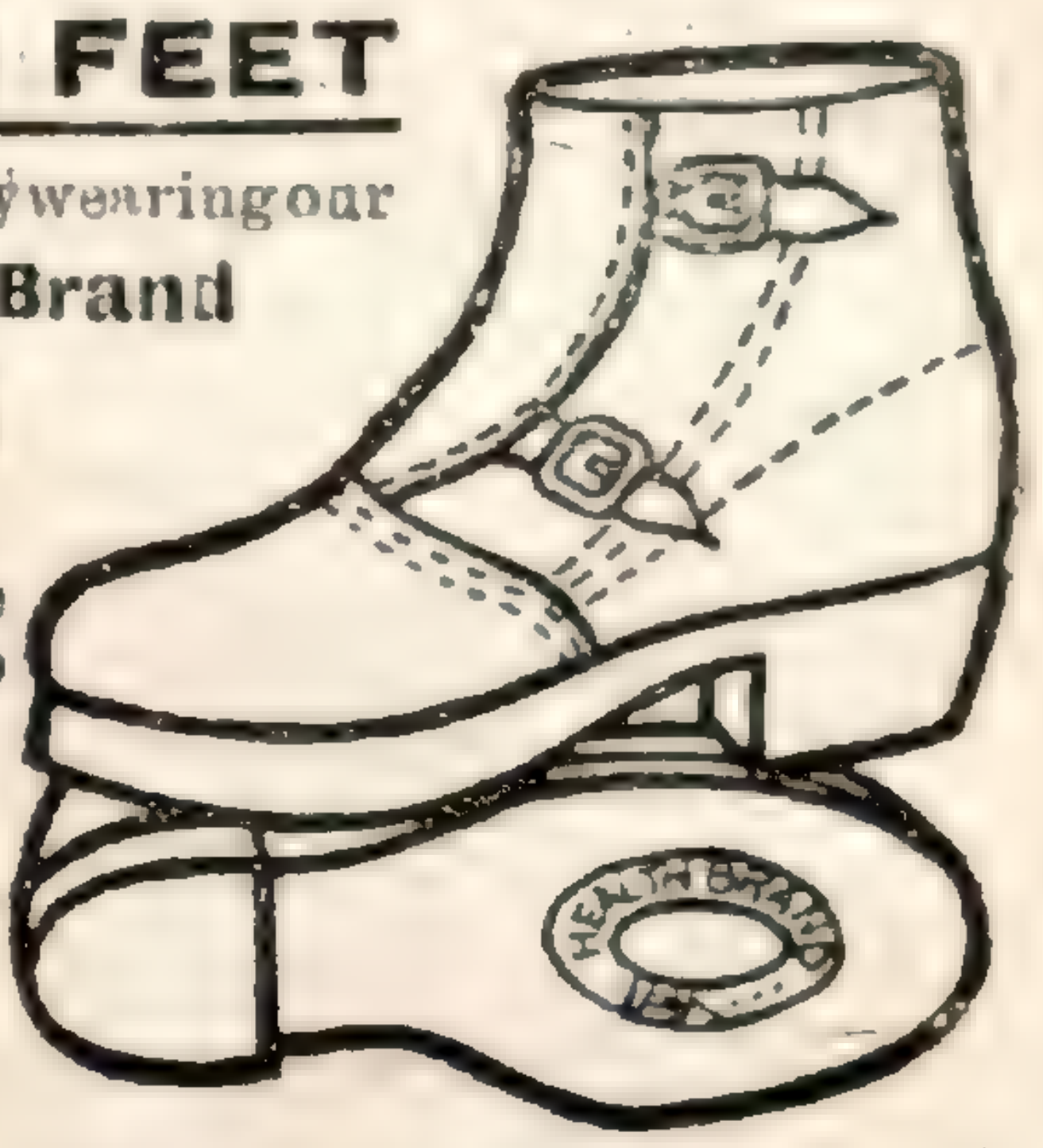

As sketch, only **3/3** per pair.
Post paid to your door.
Men's or Women's.

Our Motto.—"Small profits bring quick returns." So why pay more. 3 Buckles (higher) 4/6 (men's or women's) post paid. High Legged Wellingtons (12in. high), 6/6 post paid. Children's Cosy Lined Lacing School Clogs, "Look like Boots," only **2/9** (per pair post paid) sizes 7 to 2. Guaranteed to prevent Chilblains (all made in boot sizes). No waiting, all ready for posting, by the

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# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### Marketing Apples.

In entering upon the cultivation of apples for the supply of the home markets many points have to be carefully considered, and some deviations have to be made from the old methods of procedure before a high degree of success can be achieved. Chief among the matters of importance in the cultivation of apples for profit are the questions of soil and site, the accessibility of the orchards and plantations to suitable markets, the preparation of the soil, planting the trees, pruning and general cultivation, and marketing the fruit. If all these questions have the attention they so well merit, there will be found a remarkable concensus of opinion among those who have had experience in hardy fruit culture as to the lines that should be followed in all but the last detail. With regard to the manner in which fruit should be marketed, there is usually a sharp divergence of opinion, and why this should be so is difficult to understand, even by those who are fully acquainted with what is being done both at home and abroad. Fruit growers who have had some experience in the production of market supplies of apples will readily agree that the site and soil should be such as to meet the requirements of the trees; that the markets for the disposal of the fruit should be within a convenient distance of the markets, or the railway by which they can be conveyed to the place of sale; that the soil should be thoroughly prepared, the trees skilfully planted and pruned, and the varieties be selected with due regard to the climatic and soil conditions that obtain in the respective districts. But when we come to a consideration of the question of marketing the fruit it is found that there is a considerable difference of opinion as to whether any change is desirable. Some market growers will ask what occasion is there for a fuss about such a simple matter as packing apples. Others will tell you that long before boxes and cross-handled baskets were mentioned in connection with apples, and some other of the hardy fruits, half-bushel and bushel baskets were in use for sending fruit to the London and other markets. A few may go even further, and express the opinion that if such baskets were largely used in the past they should be sufficient for present-day requirements. It is surprising that men who are in no way deficient in intelligence, but are constantly alert upon most matters should so closely adhere to antiquated methods, and allow Colonial and foreign fruit growers to take from them annually a considerable proportion of their profits. There cannot well be any difference of opinion as to British apples being, as a whole, the finest apples in the world, provided, of course, the fruit is perfectly sound, and otherwise in the best condition. Not infrequently British apples are not perfectly sound or in the best condition when they reach the markets, and, in consequence, present a much less satisfactory appearance than do fruits received from the Colonial and foreign growers, although the distance they have had to travel has been considerably less. This difference in appearance and condition is largely due to the divergence in the views held with regard to the various methods of packing. The Colonial and foreign fruit growers pack their apples in boxes or barrels, chiefly the former, and as apples when carefully packed in boxes of moderate size can be sent some thousands of miles without injury, they present an attractive appearance when the boxes are opened and the fruits are exposed to view. On the other hand, fruit growers in this country have, with a few exceptions, an objection to boxes, chiefly on account of the additional expense involved, and, as a consequence thereof, they adhere to the baskets that have been in use from time well nigh immemorial. It being practically impossible to pack apples so tightly in sieves, half-sieves, and other baskets that have no lid to prevent movement, the fruits are more or less damaged by being rubbed against the sides of the basket. Not only are they rendered somewhat unsightly by the friction to which the skin is subjected in the course of transit, but the damage done is sufficient to greatly impair their keeping properties. It may, of course, be said that the length of time the fruits remain sound after they are marketed is of no concern of the grower, but so far from this being the case, it has a direct influence upon his returns. The consumer who possesses an ordinary degree of intelligence takes into account, not only the amount he pays for a certain quantity of apples, but carefully estimates the proportion that will remain sound long enough to be used for dessert or culinary purposes, as the case may be. This being so, he will not pay at the same rate for fruit packed in baskets as for that which is packed in boxes. There is a considerable advantage in the use of boxes for culinary apples, because of little injury being done to them in transit, but in the case of choice dessert varieties the advantage is very great. By the use of boxes for the latter the number or weight of fruit can be readily adapted to suit the requirements of the different classes of purchasers, who can not only buy exactly what they want, but they can feel that what they are buying has not been unduly handled or so injured as to have had their keeping properties appreciably impaired. With the much-desired change in packing by the substitution of light deal boxes for the sieves and other baskets there should be an improvement in the grading of fruit that the purchaser may be able to purchase exactly what they require. At the present time first and second-grade fruit is, in too many instances, sent to the market in the same receptacles, with the result that much

MR. ERNEST BALLARD.
(See next page.)

fruit of first-rate quality is sold at the price of "seconds." By some it is thought that a few fine fruits at the top will be sufficient to ensure the highest price for the package, but more often than not this method of packing has the effect of reducing the value of the whole quantity. We have on several occasions referred to the importance of fruit growers adopting the more modern methods of packing and marketing apples, and as much has yet to be accomplished to ensure the growers receiving a full return for their products we shall, in our next issue, deal with the subject in greater detail than is now possible.

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**Mr. Ernest Ballard,** of The Court, Colwall, near Malvern, has made a name for himself as a raiser of new Michaelmas daisies. It was with some hesitation he acceded to our request for his portrait, because, as he modestly puts it, "I really do not think the work I have done in raising new Michaelmas daisies is of sufficient importance to interest your readers; at any rate, I seem to have accomplished such a very small amount of what I believe can be done, and what I hope to do in the future." Mr. Ballard raised the first double Michaelmas daisy, named Beauty of Colwall, and he has now a series of double forms in varying shades of colour, as well as many promising seedlings of other sections. He believes there is a great future for these autumn flowers, but he is equally sure that about 75 per cent. of the varieties now listed will have to be turned out of gardens before the general public fully appreciate the value and beauty of Michaelmas daisies. Like many others who look into the future, and work unceasingly towards an ideal, Mr. Ballard has had to bear the criticism of his friends, who wonder why he has taken up the improvement of Michaelmas daisies so keenly. Mr. Ballard is an enthusiast, as are all florists and raisers, and he considers that those who regard perennial asters as "uninteresting," have never seen a collection of the newer varieties in flower, for he is persuaded "no real flower lover can fail to admire these glorious plants, which, by their hardiness, ease of culture, variety of colour, habit and wild profusion of bloom, can do so much to adorn the autumn garden, even into the chilly, damp days of November."

**Retirement of Messrs. Adnitt and Naunton.**—Everybody knows that Messrs. H. W. Adnitt and W. W. Naunton have been the secretaries of the famous Shrewsbury Floral Fête for thirty-eight years, and that the abundant success which has attended the annual exhibition has been due chiefly to their untiring efforts, enterprise, and urbanity. Messrs. Adnitt and Naunton were, to all intents and purposes, the originators of the Shropshire Horticultural Society, and they have seen the floral fête grow from a small beginning to a great national floricultural function. Not only so, but by means of the profits accruing the society has benefited the town of Shrewsbury enormously. The enlargement of The Quarry Grounds, the purchase and planting of the foreshore of the Severn, the handsome entrance gates and lodge at The Quarry, improvements on St. Chad's Terrace, a fine statue to Charles Darwin, who was born at Shrewsbury, and gifts to hospitals and the public library, have all been rendered possible by reason of surplus profits. The Gardeners' Royal Benevolent Institution has also received one or two contributions from the society, so that Messrs. Adnitt and Naunton have seen their great work prosper to the advantage of horticulture and the town of Shrewsbury. And now these gentlemen have resigned, and the committee of the Shrewsbury Fête have regretfully accepted their resignation, for Messrs. Adnitt and Naunton are no longer young, and the work is tremendously heavy. Everyone will wish them long years of healthful rest. Shrewsbury Fête is a monument to their industry and integrity, but it seems to us that there should be some fitting recognition of the service they have rendered to horticulture. What do our readers say?

**Market Gardeners' Compensation.**—At the meeting of the Standing Committee of the House of Commons, appointed to consider the Market Gardeners' Compensation Bills, the object of which was to guarantee to market gardeners the right to compensation, it was decided that both Bills should be withdrawn, and that an agreed Bill be introduced next year. Speaking on behalf of Mr. Runciman, who was absent at a Cabinet Council, Mr. Cecil Harmsworth stated that it was the desire of the President of the Board of Agriculture that the two Bills should be discharged from the committee. They were so obviously contentious that he saw no prospect of their being passed into law this season. His suggestion was that the Bills having been withdrawn, an agreed Bill should be introduced in the New Year. Mr. C. Bathurst said that the Market Gardeners' Committee of the Central Chamber of Agriculture had, at a meeting held on the previous day, decided that the course suggested was the best one to adopt. Motions that the Bills be not further proceeded with were submitted by the Chairman, and agreed to, and the committee adjourned.

**Kniphofias.**—Sir Herbert Maxwell writes: Mr. Thomas Smith is in error (p. 901) when he describes Kniphofia caulescens as an autumn-flowering species. It flowers in July, and the plants I have cannot be described as having "red and greenish-yellow" blossoms, for the yellow is clear sulphur colour, and very showy. The variety named nobilis is no use in the north; for, although perfectly hardy, it does not flower till October, when it is pretty sure to get cut by frost. A good substitute for it is K. Northi, not mentioned by Mr. Smith, which grows taller than K. nobilis, and has branching flower stems.

**"Sweet Pea Studies."**—Under this title two bulletins have recently been issued by the Cornell University, Itheca, N.Y., and in each case the bulletin is written by Mr. Alvin C. Beal, who has charge of the floricultural work of the Horticultural Department. One issue (No. 319) deals with winter-flowering sweet peas, discusses cultural methods, origin of the several groups, diseases and pests, and includes lengthy descriptions of the varieties, the "Répertoire de Couleurs" being used as a standard for colours. The other issue (No. 320) is devoted to "Culture of the Sweet Peas," and covers sixty-two octavo pages. This is a most interesting issue, as Mr. Beal gives the botany of the genus Lathyrus, and deals at length in a succeeding chapter with the botanical and horticultural history of the sweet pea, giving an illustration of Kniphof's illustration of a sweet pea (1757-1760), and of Caspar Commelin's drawing (1700). From the chapter dealing with cultivation we cull the following: "Many English growers practise sowing in pots under glass, hardening the plants in frames, and planting out. From the writer's experience with three varieties during the year under discussion, he is inclined to look on this method with favour, especially in growing high-priced novelties or varieties for exhibition. In fact, if the results of experience and observation at this station in 1910 are to be relied on, it would appear that the successful exhibitors of the future will obtain flowers from full-grown or pot-grown plants." The illustrations show in a marked degree the advantages of pot-sown sweet peas.

**A Park for Cheam.**—Seven acres of land, known as the Orchard Meadow, which he had laid out as a park, have been bequeathed to Cheam, Surrey, by the late Mr. John Seear, of The Quarry, Cheam. Mr. Seear was a chartered accountant, and, subject to the life interest of various legatees, he has bequeathed large sums to the Loriners' Company and the Institute of Chartered Accountants for charitable purposes.

**Mr. Ernest Hemming,** who succeeds the late Professor John Craig as editor of "The National Nurseryman," an American trade paper, issued monthly from Rochester, New York, is of English birth, and has been associated with the nursery business for the greater part of his life. Serving his apprenticeship in England, where it is necessary to begin at the bottom, so that first principles are thoroughly grounded in the young horticulturists, he acquired a thorough and broad knowledge of plant life. After leaving the Royal Botanic Gardens at Kew he went to the United States, and for the last fifteen years has been with the firm of Thomas Meehan and Sons. He has an extensive acquaintance with nurserymen and the horticultural trade in general, and with his ability as a writer makes him peculiarly fitted to carry on the work of Professor Craig. Mr. E. Hemming and Mr. Meehan were over here for the International Horticultural Exhibition, and visited numerous British and Continental establishments during their trip.

**Cold Weather in Newcastle.**—From Oakwood Gardens, Wylam-on-Tyne, Mr. H. J. Chapman writes, on December 8: "You will not be surprised to hear that nearly everyone is suffering from a severe cold after the recent weather experiences here. Last week we had snow, and 27, 26, 25, 19, and 18 degrees of frost respectively on successive nights. This was severe after the previous mild weather, and now, today, it is like April rather than December."

**The "Journal" of the R.H.S. Gardens Club** for 1912, which is the fifth of the series, has just reached us, and it is particularly interesting to those who have been, or still are, employed by the Royal Horticultural Society. But though it is primarily for old Chiswick men, and past and present Wisleyites, it is nevertheless of no small interest to all lovers of horticulture. The R.H.S. Gardens Club is somewhat on the same lines as the Kew Guild, and we believe there are no other similar institutions connected with horticulture in the United Kingdom. Quaint and not lacking in humour, is the reproduction of the front page of the first issue of "The Chiswick Bothy and R.H.S. Gardener," a halfpenny journal published by the Chiswick men in 1882 as a mild protest against the action of the Council in objecting to books and papers being removed from the Council Room to be read in the bothies. The educational side of gardening finds expression in "Horticultural Scholarships," by Mr. F. J. Chittenden, F.L.S.; "County Lecturing," by Mr. C. J. Gleed; "A Plea for the Education of Gardeners," by Mr. J. Fraser, F.L.S.; and "School Gardening," by Mr. B. P. Perry. There are cultural notes under such headings as "A Chat about Pinks," "Some

Plants for the Moraine," and "Michaelmas Daisies." The Flora and Fauna of Wisley are discussed, there is a suggestion for a Burbidgean Medal to be awarded to the most successful student of the year (Mr. F. W. Burbidge was an old Chiswick man), and there are some delightful letters from members far from home, the one entitled "Eastward Bound" being especially entertaining.

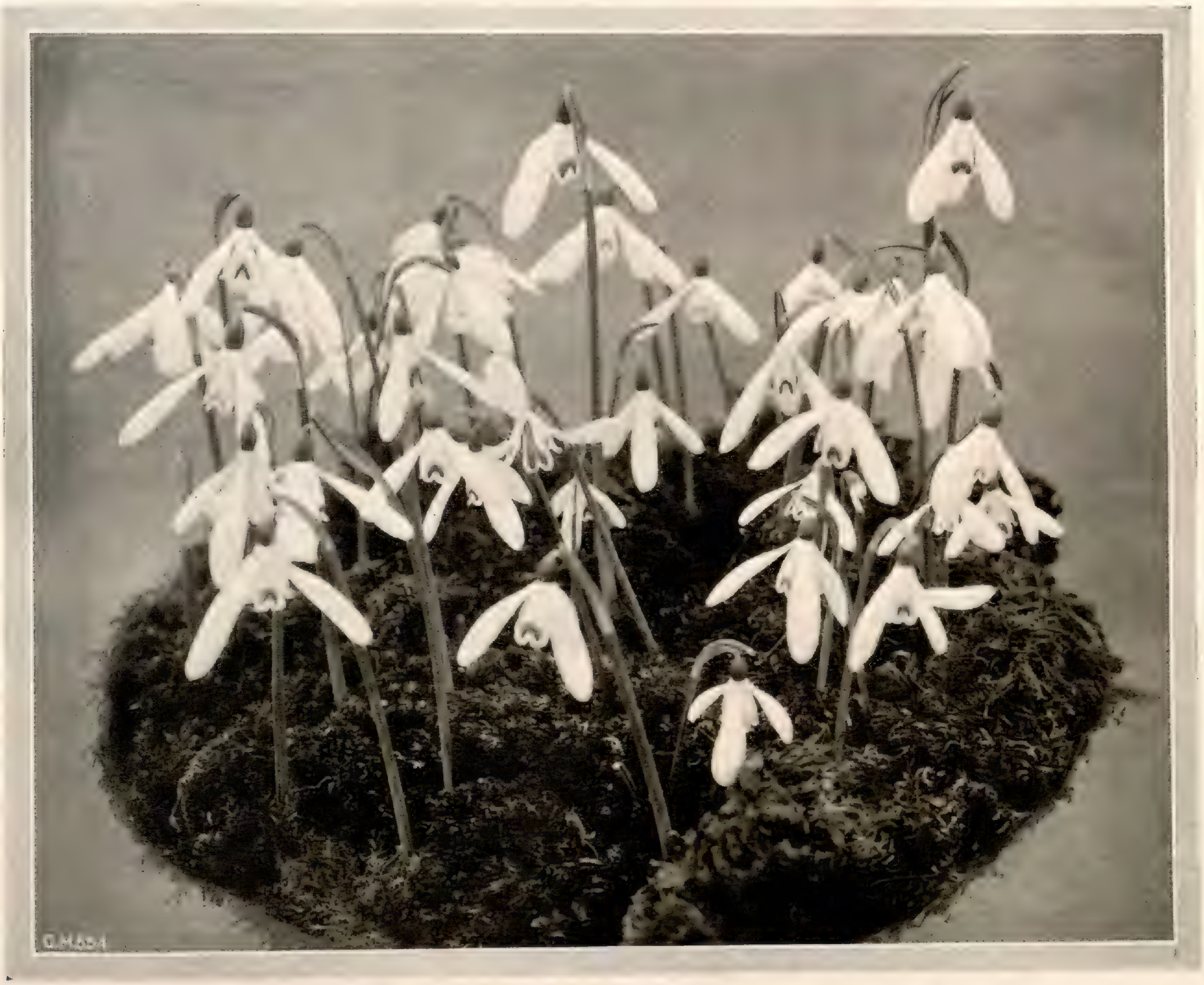
**New Open Spaces for Finchley.**—At the monthly meeting of the Middlesex County Council it was reported that in the whole of Finchley there was only one public pleasure ground, and the Council decided to provide one-fourth of the cost of purchasing two open spaces in the district. One of these is in North Finchley, and has an area of 28 acres; the other abuts on Long Lane, and comprises 15 acres. The cost of the land is £11,721 10s. 4d., and the local Council will contribute three-fourths of the total cost.

**A New Garden Village in Scotland.**—The Fife Coal Company, in providing housing accommodation for the colliers in connection with their new colliery at Valleyfield, near Culross, Fifeshire, have arranged for the construction of a village on "Garden City" lines. The site is a capital one, and practically surrounds the old mansion of Valleyfield, the historic home of the Preston family, and is in a part of Scotland noted for its mild climate for a shire on the east coast. The village is grouped beside the main road, which is to be laid out for business premises. Adjacent to these are to be a series of crescents of one-storey cottages, each having about a tenth of an acre behind, and a plot in front. The centre of the crescent is to be planted with shrubs. This garden village marks a new departure in Scottish colliery villages, and there are many colliers who have hitherto been unable to own a garden who will appreciate the arrangements being made by the Fife Coal Company. A number of colliers are keen gardeners, and these will be glad of an opportunity of indulging in their hobby.

## AN OCTOBER-FLOWERING SNOWDROP.

Although unknown to the vast majority of gardens, the autumnal-flowering snowdrop is well deserving of the consideration of those who admire the chaste Galanthus in all its forms. They are very beautiful flowers indeed, and, although some scorn these snowdrops as unseasonable, they are not so, as in their native haunts they bloom as early as here, if not earlier, and present a most charming appearance when at their best.

For some time the beautiful Galanthus Olgæ, discovered first by Orphanides on Mount Taygetus, in Greece, has been practically lost to cultivation, and could not be found by those searching for it on its native mountain. Lately, however, it has evidently been re-discovered and a somewhat plentiful supply has reached this country. From these bulbs flowers have been produced in several gardens this autumn.



THE OCTOBER-FLOWERING SNOWDROP (GALANTHUS OLGÆ).
As exhibited by Mr. G. Reuthe at the second of the two meetings held by the R.H.S. in November last.

The illustration shows how pretty a group of Galanthus Olgæ appears, either in the open or in a pot. It has done well in gardens in several parts of the country, and bloomed most satisfactorily in October and November last, and only the other day the writer had a letter from the owner of a Cheshire garden where Snowdrops are specialised, and where Galanthus Olgæ has been very beautiful.

This Snowdrop should be planted early, and it will give much pleasure with its charming flowers, which are practically replicas of our common snowdrop, Galanthus nivalis. Some of the plants of G. Olgæ, however, have the green delta-shaped mark at the base of the inner segments prolonged into a green blotch covering the greater part of the segment. This would point to its being possibly of hybrid origin.

An interesting point yet follows, and this is whether the plants of Galanthus Olgæ will retain their autumn-flowering habit when cultivated for some years in British gardens. The subject, though interesting, cannot be pursued at present, but it may be said that the Greek Snowdrops on the lower grounds do not bloom until spring, while those on the mountains flowers in autumn.

It is well worth while, however, to procure Galanthus Olgæ, if only for the benefit of one or more seasons of autumnal flowering. It is an exquisite little flower, and a gem of the purest water. It is described in Boissier's "Flora Orientalis."

S. Arnott.

## LILIUMS.—I.

Liliums are a very distinct and useful genus of bulbous plants, about sixty species being in cultivation. There are also a considerable number of botanical and garden varieties, and a few hybrids. Lilies are wild in almost every country in the Northern Hemisphere, from Japan in the East to California in the West. Explorations during recent years in Central and Western China point to that part of Asia as the headquarters of the genus, thirty-eight species, according to the "Botanical Magazine," being natives of China; North America comes next with seventeen, and Japan fifteen. It seems not improbable that several species regarded as natives of China and Japan have been introduced to Japan from China, where lilies appear to have been cultivated for centuries. The true L. Browni is said to be only found wild in China, though we obtain most of our bulbs from Japan. Several species grow in tropical countries, though at high altitudes, L. philippinense, for example, being found at an elevation of 7,000 feet in the Philippines.

The cultivation of liliums in this country dates back to Shakespeare's time. He frequently refers to them in his writings, and we know from old writers that L. candidum, L. martagon, and L. chalcedonicum were introduced into this country late in the sixteenth century. It is no doubt to the Madonna Lily, L. candidum, that Shakespeare alludes. L. martagon is naturalised in several parts of the country. In passing, it is interesting to note that in so large and widely distributed a genus there is not a single species that can reasonably be considered as unworthy of a place in our gardens. All are worthy of cultivation as decorative plants.

### Propagation.

The increase of liliums is possible by seeds, offsets, or division of the bulbs, scales, and bulbils. It is very probable that if lilies were raised extensively from seeds in this country many more of the beautiful species would become permanently established in our borders, and the necessity to import thousands of bulbs annually from Japan and Holland would be appreciably lessened. The chief drawback to raising lilies from seeds commercially is that it takes from two to six years to flower most of them from seeds. Obviously work for the amateur rather than those who grow for sale, as long as it is possible to purchase the Japanese article at such low prices, even though acknowledged inferior to the home-grown bulbs. While the seeds of some lilies may take six months or longer to germinate, L. giganteum is one of the greatest laggards in this respect, others come up quickly. Germination is hastened by sowing the seeds as soon as ripe.

Sow in well-drained pans of light, sandy soil, and stand in a cool greenhouse or unheated frame to germinate. In due course the seedlings will be large enough to prick out about an inch apart in pans or shallow boxes. The soil this time need not be quite so fine, and may consist of equal parts peat, sandy loam, leaf-mould, and coarse sand. The next move will be to nursery beds, where it will considerably help the more tender kinds if they are planted in such a position as will allow of their being covered in winter with lights as a protection against excessive moisture, and a little assistance during severe weather while the bulbs are in the seed beds.

Propagation by means of scales is somewhat like raising seedlings. A few of the outer scales are taken off the bulbs, or they may be pulled to pieces if large numbers are desired. These are spread thinly over the surface of pans filled with light, well-drained soil, and covered with a thin layer of sand. In due time a tiny bulb develops on each scale, these being, when large enough, transferred to nursery beds with the seedlings.

As the growth of the lily bulbs proceeds they throw up two or more stems, which indicates that the mother bulb is dividing up, or producing offsets. When an increase of stock is required, or the stems become unduly crowded, the bulbs may be lifted and divided.

Bulbils are formed in the axils of the leaves of several species, notably on L. tigrinum, L. sulphureum, L. bulbiferum, and L. Browni leucanthum. Remove these from the stem when they will detach fairly readily. Place in boxes of light sandy soil, and treat as advised for scales. Several lilies which produce stem roots, that is roots at the base of the stem above the bulb, as well as from beneath, develop tiny bulbs on the stem among these roots, these forming a ready means of increase. Instances are L. longiflorum and L. Henryi.

A. Osborn.

## SECLUSION IN GARDENS.

A garden should be at once overlooked and secluded. The house windows should have some of the fairest floral and foliage displays exposed to them, and passers-by should be allowed glimpses of those pleasure-grounds that are so well planted as to constitute triumphs; but nooks, whole portions, should remain shut away from all except those who penetrate them. Unless there is privacy here and there the home feeling of the garden will be lost, and it will have none of that soothing influence so grateful to the artist, the author, or man or woman burdened with many thoughts and cares.

In even a small villa back garden secluded seats can be arranged. If there is only one point from which a pleasant view can be obtained, that should be taken advantage of, and probably the best of all ways in which to make a miniature solitude is by setting up a wooden screen. If the back piece of this is twelve feet long and eight to ten feet high, and two side wings are of six feet width, a considerable area of ground will be shielded from observation. There need be no roofing, branches will supply a partial one in time, if that is considered desirable. An inner border may follow the walls, except where bench seats are set. One of these may be slanted across each corner, which will enable sunshine to be enjoyed or escaped from, according to pleasure, and a short ornamental seat can occupy the centre of the back wall. The flooring ought to be well slanted. If that is done, it can be merely of gravel, especially if foot-rests are given to the seats. In the middle of the gravel might be a miniature round bed containing a pillar rose or weeping standard, with violas beneath, a small rockery mound for delicate alpines, or, for utilitarian value, a rustic table. The screens themselves should be simply closely-fitted deal, the joints puttied over, and painted dull dark grey, a colour that will be found far better in keeping with the environs than would any other. Green paint, if used in gardens, must be of an exceedingly dull shade, as it infallibly clashes with the foliage greens. Brown is apt to prove too warm in tone, giving by contrast a half-dead appearance to the natural wood of shrub and tree branches.

Another way to form a thorough screen to a part of the pleasure-grounds is to plant a hedge of common laurel on the summit of a six-feet bank, either in a round, semicircle, oblong, or square shape, the first being the most ornamental. Shrub-lovers are wont to protest against the employment of the ordinary laurel where a variety of evergreens could be used, but the rapid and close growth is its great merit, and the glossy green is charming in all the months of the year, but especially when new shoots are visible. Laurels should not be clipped; all the pruning necessary should be carefully done by the removal of small branches. There is one method, however, by which additional beauty can be given to the laurel hedge; this is by planting common bracken fern between the shrubs. The fronds will struggle to the light somehow, even if they have to pierce a thicket, and will have a lovely appearance both in spring green and autumn crimson, orange, and gold hues.

Partial screens are a most satisfactory addition to gardens that lack shade or privacy in summer, but are damp in winter, and ought not, therefore, to have the shadow in them added to permanently, or the beneficial drying sunshine of the dull season obstructed. The best partial screen consists of a very tall wire-netting wall, supported by thin deal posts, and the whole painted a green so dark as to be almost black. When rambler roses are well trained over this, with plants of ipomœas, and purple Cobæa scandens, if the climate permits, the protection each year will be most efficient.

A permanent screen can be well made of wire netting, with green Japanese honeysuckle trained against it. If rather more colour is desired, the Flame Flower (Tropæolum speciosum), where it will thrive, may adorn the cool sides, and any of the large-blooming clematises, in mauve, rosy-peach, and purple, can be accompanied by yellow jasmine and the scarlet-copper climbing rose L'Ideale.

Other methods of obtaining secluded spots are by the planting of thickets of hollyhocks, giant sunflowers, delphiniums, mulleins, polygonums, or other extremely tall perennials, by making rose hedges, either on banks or levels, rockery walls, throwing up banks as high as small hills, or excavating dells. Summer-houses and ornamental sheds always make nooks and prevent vision from ranging at once over the garden. Their usefulness is added to immensely by building trellis-wood screens out from their sides, or porches of the painted trellis-work to their entrances.

M. H.

**Primula malacoides.**—Very few greenhouse plants have made their way so rapidly in popular favour as this Chinese species of primula, which has already become a favourite with market growers. It flowers continuously for a long time, and we shall no doubt ere long have a wider range of colour than at present exists, though the typical kind varies somewhat in tint, and there is now also a white-flowered variety. It is first-rate for windows.—T.

**Aconitum Wilsoni** has rapidly attained to a foremost position among our late-flowering perennials. A recent introduction from China, it is a strong, erect grower, attaining a height of some five to six feet, the spikes, which are of massive build, are crowded with large, hooded flowers of a rich, medium blue; the centre spike, as in the case of delphiniums, opens first during September, and the succession is maintained as the laterals flower in October. It succeeds best in soils that do not part too readily with their moisture, while soils of a light character, if liberally treated with farm-yard manure previous to planting, give excellent results, although the growth is not quite so tall. Aconitum Wilsoni is of such sterling merit in the autumn that it should be planted in various aspects, in order to ensure the maximum display.—Thomas Smith, Coombe Court Gardens.

## A FINE LATE CHRYSANTHEMUM.

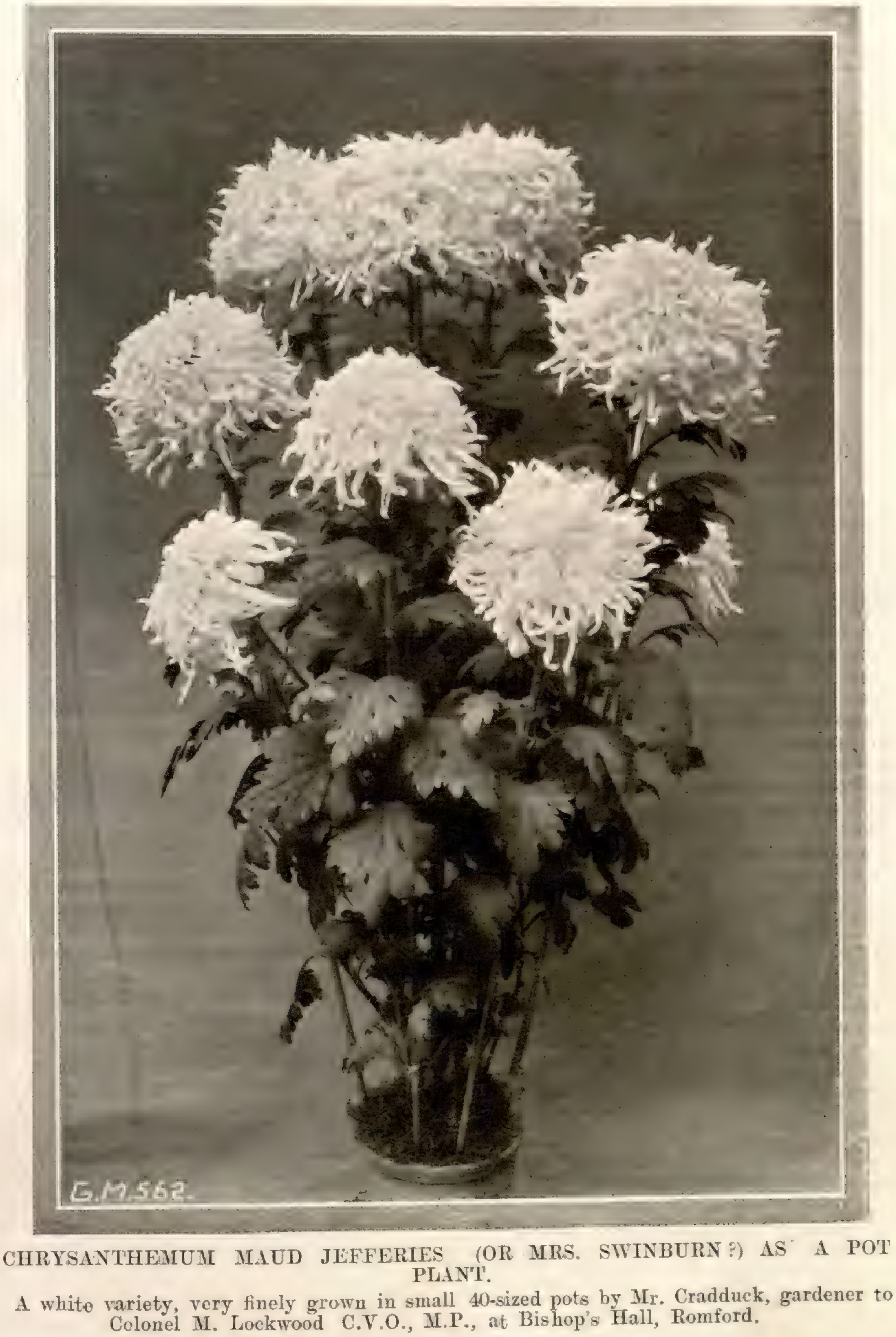
A white-flowered, free-growing chrysanthemum that blooms naturally in December, that finds sufficient accommodation in a small 48-sized pot, won't be hurried into bloom, and "keeps" well, is a treasure. Such a variety is the one exhibited so finely on Tuesday, December 4, at the Royal Horticultural Hall, Westminster, by Mr. G. Cradduck, gardener to Colonel M. Lockwood, C.V.O., M.P., Bishop's Hall, Romford. About forty plants were exhibited, and every one was as perfect a pot plant as could be wished. Mr. Cradduck, who has kindly promised to send us a few cultural notes, confesses that he is not sure what the variety is. The R.H.S. Floral Committee awarded a cultural commendation, and labelled the variety Mrs. Swinburn. This committee rarely makes a mistake, but on this occasion we "had oor doots," as to the correctness of the name. Mr. W. Wells, Mr. W. Wells, jun., Mr. W. J. Godfrey, Mr. J. B. Riding, and others expressed themselves as quite certain that the variety was Maud Jefferies. Mr. Cradduck told us that, to his knowledge, he had not had the variety Mrs. Swinburn at Bishop's Hall Gardens, and that his plants, whatever the name, were produced from one that appeared in a stock of Moneymaker. The variety is such a desirable one, especially as grown by Mr. Cradduck, that the correct name is very desirable.

## THE PYRACANTHAS.

Pyracantha, the "Buisson ardent" of Southern Europe, is familiar to garden-lovers by reason of its evergreen leaves, white flowers, and showy orange-scarlet fruit, for, in addition to being exceedingly useful for clothing walls, it grows into a good-sized bush in the open border, and fruits equally freely in either position. There are, however, two other species which are classed with it, on account of their structural peculiarities being similar, which are less well-known. The three plants have given a considerable amount of difficulty to botanists, for they appear to connect the two genera cratægus and cotoneaster, but do not agree entirely with either one. They have, therefore, been placed alternately in both families, whilst Linnæus included pyracantha under mespilus, and Roemer raised it to generic rank, making it Pyracantha coccinea. Amongst present-day botanists there appears to be a disposition to follow Roemer, for Schneider adopts the generic name of pyracantha for the group, and the species angustifolia appears in the "Botanical Magazine" under that name. All three species are evergreen, but the European one appears to be hardier than the other two, which are natives of the Himalaya and China respectively. P. crenulata, a Himalayan shrub or low tree, has much in common with the ordinary pyracantha, for its evergreen leaves are very similar in size and general appearance, whilst its fruits, though perhaps a little smaller, are the same shade of colour. It may be planted against a wall or in the open border in the southern counties.

P. coccinea, or Cratægus pyracantha as it has been called, may be expected to grow twelve or fifteen feet high in the open ground about London and taller against a wall. Its common name of Fire Thorn is well chosen, for the fiery colour of its berries suggest the first part, and its thorny branches the latter. A common tree or large bush in Southern Europe, it has been an occupant of our gardens for nearly three centuries. It may be easily increased by cuttings, but is difficult to transplant, except when small, therefore a permanent position should be provided early in life. Although not often chosen as a hedge plant it may be utilised for that purpose, and is very effective, especially when not clipped closely. There is a variety with white fruits, and another variety, Lelandi, which has larger fruits than the type. P. angustifolia is the third and most recent introduction. A native of China, it has been met with by several travellers, the Abbe Delavay being said to have been the first to collect it about thirty years ago. Franchet, who has named many of the French collectors' plants, called it Cotoneaster angustifolia, and under this name it was first cultivated at Les Barres by M. L. de Vilmorin, who is said to have received seeds from Eastern Tibet in 1895. Four years later seeds were received at Kew from Lieutenant Jones, and the plant is now fairly well known. It differs from the other pyracanthas by its longer and narrower leaves, which are up to two inches long and half an inch wide, green above and glaucous below, the under surface of the leaves and the young wood being densely pubescent. The white flowers appear about May, and are succeeded by orange-coloured fruits, which ripen during autumn. It is not sufficiently hardy for culture in the open ground about London, but thrives against a wall. Plants have been known to live through a winter or two fully exposed, but, as a rule, they are seriously injured, if not killed; therefore, it is as well to be on the safe side, and provide the protection of a wall when first planting. In the gardens of the south-west counties, however, it may be expected to thrive as a bush in the open or in a shrubbery.

W. D.



CHRYSANTHEMUM MAUD JEFFERIES (OR MRS. SWINBURN?) AS A POT PLANT.

A white variety, very finely grown in small 40-sized pots by Mr. Cradduck, gardener to Colonel M. Lockwood C.V.O., M.P., at Bishop's Hall, Romford.

**Berberis Wilsonæ.**—This must be regarded as the best of all the new Chinese barberries, as it forms a handsome, gracefully-disposed shrub, and the autumnal crop of berries and decaying leaves are both bright. It is of refined appearance, and worthy of ranking with the most select of outdoor shrubs.—W. T.

## HARDY SHRUBS FOR FORCING.

The use of some of the more beautiful of the hardy flowering shrubs in the decoration of conservatories during the latter part of the winter and early in the spring will add much to their attractions. At that season of the year forced shrubs, with their deliciously fragrant flowers, are of great value in those gardens where the maintenance of a continual display of flowers is a necessity. There are so many kinds and varieties suitable for forcing that it is possible to obtain most charming and varied colour effects, which could not be secured at such an early season from any other plants that are available. With the help of flowering shrubs it is an easy matter to keep the conservatory and corridors gay with colour, until the plants commence to flower naturally out of doors.

When the plants arrive from the nursery they should be potted up, and the pots plunged to the rim in ashes in the open, for after they have been exposed to the elements for a short time they start readily into growth when subjected to artificial heat. Most shrubs enjoy a liberal amount of root room, but when they are required for decorative purposes in the mansion it is often necessary to place them in fairly small pots for convenience of arrangement. It is essential, however, to success that the plants are well furnished with fibrous roots, and freely set with flower-buds.

In order to have them in bloom in the shortest possible time it is necessary to plunge the pots in a hotbed with a bottom heat of about 70 degrees, and to maintain in the structure a temperature of 65 degrees. Spray them with tepid water several times daily, and do not allow them to become dry at the roots. To have Azalea mollis in flower at Christmas it is necessary to start the plants in the manner described six or seven weeks before; but previous to the full expansion of the flowers it is desirable to remove them to a cooler house in which to open their flowers. They will then continue longer in perfection.

With the commencement of the New Year shrubs can easily be brought into bloom by starting them in some of the early fruit-houses. Several lilacs are of immense value for forcing, and of these Charles X., (a single blue variety), Marie Legraye (a large single white), and Madame Lemoine (a great favourite, with large, compact trusses of double white flowers), are some of the best. Azalea mollis and its varieties are always appreciated, one of the best of these being Anthony Koster, which has rich bright yellow flowers.

Of the cherries, the lovely blossoms of Cerasus pseudo-cerasus fl. pl., with large, pale rose flowers, and C. pseudo-cerasus J. H. Veitch, with brilliant rosy-pink flowers, are two of the most beautiful, and can be strongly recommended.

Prunus triloba has large, semi-double, rosy-pink flowers, and is very telling associated with white lilacs. Deutzia gracilis, and D. Lemoinei are both desirable. Pyrus floribunda, with rose-shaded flowers, is very popular; while P. Scheideckeri has semi-double flowers freely produced, and P. spectabilis, with large pink and white flowers, are especially suitable for forcing. There are some lovely varieties of philadelphus, and of these P. Lemoinei and P. Boule d'Argent are excellent forms, being neat in growth and profuse in flowering.

Several of the shrubby spiræas are very attractive, and the pretty S. confusa and S. arguta are especially so, and are very free flowering. Staphylea colchica presents a charming appearance, whether grown as a standard or dwarf bush, and its sweetly-scented, wax-like blossoms are always admired. Some of the viburnums are worthy of a place, and of these V. plicatum and V. opulus sterile are two of the most useful, and are especially free flowering. Magnolia conspicua and M. stellata (both pure white), and M. Soulangeana (with rosy-purple-tinted blossoms), are most handsome, but are not recommended for very early forcing. Wistaria sinensis is seen to advantage when grown in standard form, as its heads of bloom project over the dwarfer subjects in a very graceful and pleasing manner. The white form should also be grown.

Standard specimens of Hydrangea paniculata grandiflora, Laburnum Parkesi, and L. Watereri, with unusually fine racemes of blossom, are also highly effective when arranged among dwarf subjects, as they break the flatness of the arrangement. Xanthoceras sorbifolia is a beautiful shrub for the purpose, and produces its dense spikes of cream-white flowers with great freedom.

There are various other shrubs that can be utilised for forcing, including rhododendrons, some of which are very showy, but those mentioned include many of the best, and will be found sufficient to furnish a supply of blossom during the early months of the year, when they will be much appreciated.

J. Gardner.

Batsford Park Gardens.

## SUCCULENT PLANTS FOR GARDEN DECORATION.

One occasionally comes across a more or less representative collection of succulents growing in a greenhouse, but it is very rarely that one finds them used for garden decoration during summer. A collection so used, however, always attracts much attention, though possibly, if such use became common—which is very unlikely—the attraction of the uncommon, and, in many cases, weird and peculiar specimens would, to a great extent, wear off.

Very few kinds are hardy, but many may be safely grown out of doors from early in June to the end of September. The change from always seeing them in a greenhouse well repays the time and trouble involved in their transference, and it is possible to give them a far more decorative effect outside than can be obtained inside. Bearing in mind their dissimilarity to any other class of plants, the object should be to find a place in the garden in keeping with them; and, further, to get away from a stereotyped style of bed. A place suggestive of a rockery is suitable.

We have used a site where the bed can be mounded up in the form of a cone, and this was situated at one end of a subtropical garden. This seems to have answered admirably.

In most cases the plants were turned out of their pots, and we find they grow faster thus treated. Others, with few roots, are plunged in their pots below the rims, great care being taken to prevent them from becoming wet or sodden. Preparations must be made by giving ample drainage when potting, and mixing some old brick rubbish with the potting compost, which should consist of loam, peat, and sand. A piece of glass arranged to throw off excessive rains from rare specimens is sometimes necessary.

No attempt was made in our case to completely cover the soil with carpeting plants, though Sedum Sieboldi variegatum, Mesembryanthemum cordifolium variegatum, M. mutabile, and Crassula manifolia were freely used. A few stones were placed here and there, and, in some instances, shingle sprinkled around the plants gave a very natural appearance. About 300 plants were used in furnishing the bed.

Agave Americana is an ideal plant for giving a high and bold, yet not stiff effect. A. Victoria Regina always appeals, and reminds one strongly of a variegated Globe artichoke. Aloe arborescens is useful among the bolder section, and the partridge-breasted form is well named, and flowers freely. Sempervivums are indispensable for giving boldness and character to the group. S. arboreum and the variegated form are grand plants, as also is S. cuneatum, which sometimes grows with one huge rosette, others branching out in quaint candelabra fashion. Echeverias in variety are, perhaps, the most beautiful of all from a foliage point of view. Some of the best are: E. metallica, E. m. crispa, E. grandiflora, E. macrantha, a distinct type with green leaves, margined with reddish-brown; E. cærulescens, and E. pulverulenta, a compact-growing species, with silvery foliage, that contrasts finely with the lovely bronzy-red leaves of metallica. E. Hoveyi is a beautiful plant, with greyish-green leaves. E. Lenoides is another silvery-grey plant, which is very effective, and one must not forget old E. secunda and E. s. glauca. The echinocacti are commonly known by names which suggest themselves as the Hedgehog or Pincushion cactus; E. Grusoni simply compels attention, but keeps intruders at bay.

Many of the cereus are very useful, standing up like sentinels among their fellows. C. marginatus, C. flagelliformis cristata, C. columbrinus hirsuta, C. peruvianus, C. macrogonus, C. chilensis bevispinus, and C. atropurpurea are among the best of a large number. Euphorbia natalensis is a very tall and striking plant. Pilocereus senilis (Old Man cactus) is one of the first to be noticed, and brought forth the question from an observant youngster of four years—"Mamma, is that Father Christmas?" The numerous mamillarias are mostly quaint and interesting. M. nivea, M. Nicholsoni, M. centricircle, and M. rufocrocea are among the best. Mesembryanthemum tigrinum is quite distinct from the better-known trailing varieties, and is very suggestive of Tiger's Claws, hence its name.

A collection would not be complete without a few gasterias, the leaves of which are tongue-shaped; G. spinalis, G. glabra, and G. nigra maculata are good. Stapelias, especially when in bloom, always attract as curiosities, owing to a most disagreeable odour which they exhale, and they are, as a consequence, known as the Carrion Flowers. Opuntias, usually recognised by the abundance of spines, are interesting, and when in flower very beautiful. Phyllocactus are glorious when in bloom. P. Ptersdorfi and P. phyllanthoides var. German Empress, are among the best. Rochea falcata must on no account be left out, the lovely heads of scarlet blooms lasting a quite long time. This plant is worth growing in quantity for greenhouse or room decoration. A few haworthias, kleinias, rhipsalis, dasylirions, pereskias, and ceropegias would complete a representative collection, while many of the yuccas may form a useful addition, if necessary.

A. Cobb.

Duffryn Gardens, Cardiff.

**There is no Better Present** for a gardening friend than a practical book on some branch of Horticulture, and to aid in making a selection we refer you to our publisher's announcement on page vi. Better still, send a postcard for a complete catalogue; it will be posted, by return, with pleasure.

# POT CULTURE OF PEARS AND APPLES.

Of these fruits, possibly the pears are grown to a greater extent than the apples in pots or in tubs. It is quite an easy matter to understand the reason of this in some instances—viz., in districts where really high-class pears are not so easy to produce as in more favoured localities. If I had to give my choice, I should certainly recommend the pear in preference. Both are, however, very much improved in many districts when so grown.

## Why some grow them in Pots.

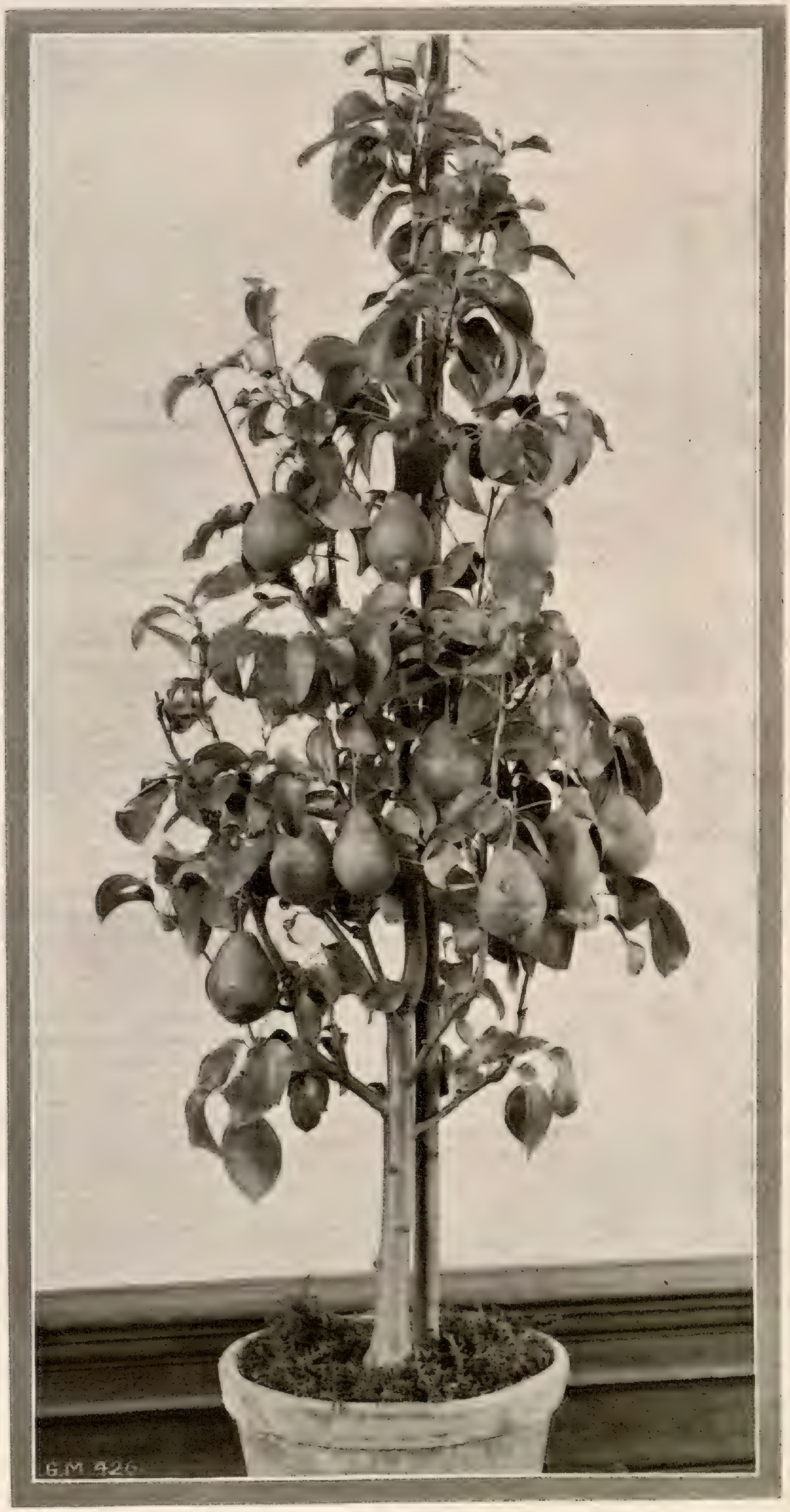
It is in this way that the very fine fruits are produced that one sees in collections of fruits at the best-known horticultural shows during the earlier part of the autumnal season. At Shrewsbury, as a case in point, many such are to be seen in the best exhibits. There I have noted on several occasions such pears as Doyenne du Comice, Souvenir du Congrès, Triomphe de Vienne, and Williams' Bon Chretien; and of apples such as Ribston Pippin, Cox's Orange Pippin, and Washington, which are recognised as dessert kinds (at least, the two first-named are at all times, and the latter when grown in pots or against a wall). But I take exception to such apples as Emperor Alexander and Gascoigne's Scarlet being shown as dessert fruits, even when they are grown in pots; this is misleading to the general public. Admittedly they are often remarkably well-grown fruits, and in every way attractive in appearance; and also very serviceable, because the same fruits will do duty several times over. Sometimes one also sees the stewing pear shown in pots, but surely this is not in any sense necessary.

## Their Culture.

Given a house with abundant means of ventilation, with the maximum of light, and no shade imparted from other plants, it is a comparatively easy matter to produce very fine fruits, and good crops also. Forcing, however, is not advisable, as forcing is generally understood. It has to be done with extreme caution. Every tree should be allowed to start of its own accord; and if, by a little coaxing afterwards, it can be induced to flower a fortnight or so in advance of the outside trees, that is all that should be aimed at. When the fruits are set and fairly well on the move, then a little encouragement may be given; but what should be aimed at, above all, is to see that the trees in pots do not become too cold at night. In other words, avoid the sudden chills that at times occur outside, and known by us all as spring frosts. It will be found that the fruits will, when thus treated, swell away freely, and will arrive at their full size quite early in the season. Then place the trees in the open, and in a warm position, where every advantage can be taken of the warmth from the summer sun. This will impart the colour that is so desirable, and what, in other words, is known as a perfect finish. Of course, every care must be taken of these fruits when put outside, as the birds will at once mark them as being desirable food. Thin-mesh netting strained over the trees is the best means to adopt; and, if possible, fix up a framework, so that easy means of access is at once available for watering and other purposes.

## Varieties to Grow.

I have already alluded to some of these in prefacing my remarks as to why some kinds are grown. All of the pears so named may be grown in pots with success, but I only recommend Doyenne du Comice and Triomphe de Vienne of those so named; but, in addition, I recommend Durondeau, Marie Louise, Emile d'Heyst, and Fondante de Thirriott. This makes half a dozen excellent kinds for any cultivator to make a start with. When cultivated in pots, Pitmaston Duchess is much improved in flavour. Of apples in pots I should only grow for private consumption Ribston and Cox's Orange Pippins. The best fruits I have ever tasted of the last-named were from pot-grown trees. The flesh was so sweet and the texture so granulated as to indicate perfect ripening. These fruits, too, be it noted, will keep sound and good when outside-grown fruits are passing off.



PEAR FONDANTE DE THIRRIOTT.

A finely fruited tree, exhibited by Messrs. G. Bunyard and Co., Maidstone, at a recent R.H.S. meeting.

Jas. Hudson, V.M.H.

Gunnersbury House Gardens.

## DESSERT APPLES FOR THE NORTH COUNTRY.

Following upon the list of dessert apples already recorded for culture in the open, it may be advisable to name a few others which should have a place wherever sufficient wall space exists, against which such could be trained, as the assistance thus afforded, apart from overhead covering, will usually be found sufficient to insure regular crops of very superior fruit.

### Ribston Pippin.

This popular variety is regarded by connoisseurs as the beau ideal of the apple family—a fact that few, perhaps, would be inclined to dispute when the produce is from a healthy tree, flourishing in a suitable soil and climate. Too often, however, the specimens produced are quite the reverse of this; lack of juice and flavour, and a tough and more or less wizened skin are most in evidence. This from trees growing entirely in the open, but given a wall having a south or west aspect, large, highly-coloured, and luscious fruits become almost a certainty.

### Cox's Orange Pippin.

This is more reliable than the foregoing, both for continuous cropping and for quality of its fruits, when grown in bush or pyramid form, and in favourable seasons faults of any kind are almost absent. To obtain it at its best the aid of a wall or other very similar support, and a sunny position, are requisite.

### Langley Pippin.

This being one of the newer apples, its merits and cropping propensities as a spreading tree in the open are as yet but slightly tested. Against a wall it crops very freely, and the fruits are very handsome, though not large, but sufficiently so for dessert. It ripens early in September, and the russet-coloured fruits make a welcome change from other early varieties which, for the most part, are more or less flushed with red.

### American Mother.

The exquisite form and high colour of this render it at once a favourite, while some are disposed to class it with the very richest-flavoured varieties. To be this, however, a good soil and a warm, sunny situation are essential. In the open it bears freely alternate seasons, the off ones being very light indeed. In bright, warm summers the fruits attain full colour in any position, but if the reverse of this, both appearances and flavour are deficient. This variety well repays for the wall space it would occupy, if only for the beauty displayed by the fruits upon the branches.

### Adams' Pearmain.

This is very distinct in form, and once fully recognised could hardly be mistaken for any other variety; its broad base and even slope to a much-contracted apex make it very conspicuous. Being one of the very best late-keeping apples, it requires to hang late, thereby well maturing upon the tree, when plumpness and the retention of its fine flavour is assured. I have known this apple thrive and crop with great freedom in the open, but much finer fruits are produced under still more genial conditions.

### Margil.

A small and rather angular-shaped fruit, firm in texture, juicy, and of exquisite flavour. The plant is slender in growth, and requires but slight pruning, as the fruit spurs are produced mainly towards the points of the branches.

### Paroquet.

When better known this variety will be much sought after, more especially by those who prize late-ripening apples. The tree bears freely when trained against a wall, for which purpose its moderate growth makes it most suitable. The fruits are slightly conical in shape, very even in outline, and become a brilliant scarlet late in autumn, and continue thus until May.

### Other Varieties.

Mabbot's Pearmain, Rosemary Russet, Pineapple Russet, Braddick's Nonpariel, Dr. Harvey, Brandy Pippin, and several of the newer varieties introduced in quite recent years, all prove very useful and highly interesting growing against a wall or other structure, while such as those requiring to remain long upon the trees are easily protected from the ravages of birds in such a position. J. Day.

Galloway House Gardens, Wigtonshire.

## GOOSEBERRIES.

Without doubt, the gooseberry is the most useful of all our bush fruits. It is the first in season, for often, after a warm spring, fruit in a green state may be gathered from bushes growing in sheltered places early in May, and from that time onwards until late in August its fruit may be had in a fresh state. The gooseberry is not so particular as to soil as the currant, for it will grow and thrive well in that of a light gravelly nature; in fact, the heaviest crops of finest berries that ever came under my observation were grown on a piece of poor thin gravelly soil that had been reclaimed from the wild forest.

Lancashire and the North are credited with growing the finest gooseberries, but I have never seen in any county north of the Trent such fine berries, and so abundant a crop as is grown in the neighbourhood of Chelwood Common, in Sussex. The varieties grown are by no means numerous, for some of the largest growers content themselves with not more than two or three varieties, and there is one which is regarded as of special merit; that is "Leveller." I visited one plantation last summer when the owner was gathering the fruit, and, though I had seen many large plantations in various parts of the kingdom, never before had I seen a crop like his. The bushes were not large, and, though some of them were about sixteen years old, not one would be more than three feet through. The whole secret of success was thorough cultivation, close pruning, and a sharp lookout that the birds did not destroy the buds during winter and spring. Whenever a bullfinch made its appearance it was shot, and the cultivator could reckon on almost every bud left at pruning time being saved to produce a cluster of flowers. In stating that the trees were closely pruned, it should be mentioned that very little growth is made. Few bushes made shoots long enough for a good cutting, but the fruits, though thinned in the early part of the season to provide green gooseberries, hung in such abundance as to somewhat resemble a large swarm of bees; they touched each other all over the bushes, like berries in a bunch of grapes. We weighed many of the largest berries, and found they ran from eighteen to twenty to the pound. Such fruit, when carefully packed, realised good prices in the market, and though there was such an abundance, the returns were from 6d. to 10d. per pound, according to the quality.

Gathering and packing are important operations, and these receive special attention by competent persons. The fruits are gathered into trays and taken to the packing shed, graded, and each pound weighed separately. Boxes are prepared by placing a layer of bracken fronds (which grow plentifully in the neighbourhood) over the bottom and round the sides, and as each pound is placed in the box a few fern fronds are added to keep the fruits in position. This process is repeated until the box is filled; each box contains a dozen pounds. Some tons of this variety are sent from this small village each August to the London markets, thus creating quite a trade in the district.

Private growers cannot confine themselves to one or two varieties, as they must have both early and late kinds, and some for dessert and others for culinary use. Neither can gardeners keep a man specially to protect their crops from the ravages of the birds during winter. Private gardens, too, are usually surrounded by shrubberies, which harbour birds of every description, so that the cultivator is labouring under great disadvantages, nevertheless some contrive to produce wonderful results considering the drawbacks. There are undoubtedly far finer flavoured gooseberries than Leveller, though none, to my knowledge, will realise such high prices.

In selecting shoots for cuttings, choose well-ripened ones from fifteen to eighteen inches in length. Be careful to remove every bud for at least a foot from the bottom, then insert in rows in a well-prepared piece of land. When the cuttings are well rooted, which they will be by the following autumn, they should be transplanted, unless they were given in the first instance ample room to grow for a couple of years. A small stake should be put to each plant to keep the stem perpendicular. The gooseberry is a bad plant to throw up suckers, therefore, if any buds are found below the soil, they should be removed when transplanting takes place. If intended for bushes the shoots should be shortened to within two or three eyes the first season, to induce them to push ample growth and form a good head. When grown as cordons as many shoots should be selected as are required, all others being removed close to the base. If it is desired to form a cordon having several stems. Two shoots only should be selected, and these should be brought down to a horizontal position, and young shoots taken up from them, about nine inches apart. To form a single cordon only one shoot should be left, and these, when planted against a wire trellis, soon fill their allotted space. When grown in this way, the fruit can be readily protected from birds, and, as there is only a single line, there is full exposure to the sun.

Gooseberries become highly flavoured when fully ripe, provided there is ample foliage to cause a good flow of sap. It is not always the large-growing varieties that are the best flavoured, for what could be better than Early Sulphur, Warrington, Langley Gage, Langley Beauty, Golden Gem, or Green Gage? Some prefer large varieties, such as Leveller and Gunner, and where such are in request there is no reason, as cordons take up so little room, why a collection should not be grown. A fence a hundred yards long would take as many triple cordons or three times the number of single ones. Whichever mode is adopted, it should always be borne in mind that the secret of success is to protect the buds during winter and spring from the ravages of birds. It is impossible to grow heavy crops and have shapely bushes when half the buds are destroyed. Liberal treatment is always essential, and on light, dry soils manure cannot be too bountifully applied to the land. The foliage must also be kept clean, and free from all pests. H. C. Prinsep.

## OLD FRUIT TREES ON WALLS.

Experienced cultivators never allow trees n walls to become overcrowded with long purs on which flowers appear in large numers but few fruits. I am referring to pears iore especially than to any other kinds. 3ut one often sees such specimens on walls; hey are pruned every year, surface dressed vith manure, and otherwise attended to, ut are not remunerative. I have seen nany trees growing several feet above the ops of rather low walls with great clusters f spurred-back branches varying in length rom 9in. to 18in. Now, of course, such a ondition obtains through wrong treatment while the trees were in a young state, nainly, though it is a fact that well-managed trees have come under the charge f incompetent persons, and then they are eglected, and have become unsightly obects in a very short time.

I have had to deal with such specimens nyself, and have removed them from walls o more open quarters, training the main ranches to the wires supporting other espalier-trained specimens. The roots found ow down in an almost dust-dry medium, ere pruned, and the long spurs were everely thinned out, only a few shorter purs bearing fruit buds being retained. he trees soon presented a better appearnce, and fruited satisfactorily after a parse showing of blossom.

It often happens that when a pear tree is most smothered with blossom very few uits set. This is mainly owing to two uses—over-dryness of soil round the roots nd lack of leaves which support the owers. A tree bearing a rather thin prinkling of flowers, with a fair number of aves developing, will have a better crop fruit than one laden with flowers, possessing few leaves, and dry at the roots at he same time.

It does not matter how well-managed a ear tree may be; if it is very freely owered much thinning of blooms will be ecessary if a satisfactory crop of pears is be secured. There is no time better than he present for lifting entirely, or partly, eglected trees which are growing near alls. G. B.

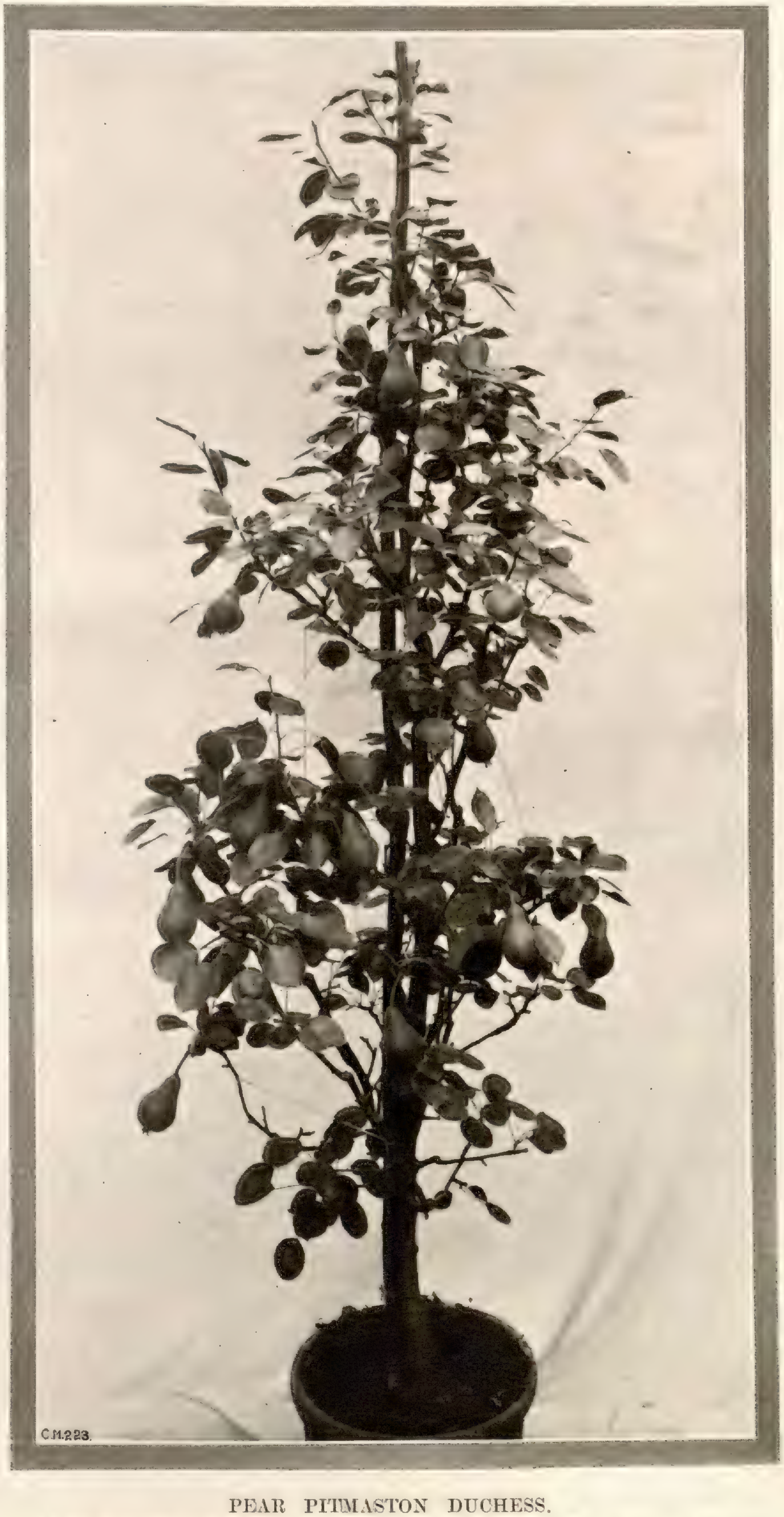
## BEGONIA IMPERIALIS.

There is a small group of begonias ith fine foliage, consisting of the Mexican egonia imperialis and two distinct forms ereof. One scarcely knows whether to write them in the past tense or not, but they are rtainly now far less plentiful than they ere twenty years ago. At the time of the egonia Conference in 1893 Mr. Watson, of ew, included B. imperialis in his selection the fifty best begonias, a position it was en at least fully entitled to. Compared th B. Rex, it may be described as of weak owth, the broad oblique leaves being from ur to six inches across, and so thickly vered with hairs as to present a quite velty appearance. The colour is brownish, th irregularly-shaped bands of bright een along the principal veins. This species s first introduced into Europe in 1859, and s given a second-class certificate by the yal Horticultural Society in the spring of 62. There is a very beautiful variety— aragdina, in which the entire velvety leaf of a vivid green, and a form known as to Forster, which is very distinct and ually charming. The last-named, which has ves of the same velvety appearance as the ers, has the principal portion of the leaf a bright silvery-green, while the spaces beeen the principal veins, except for some le distance on either side of the midrib, occupied by brownish blotches. S.W.

## EUCRYPHIAS.

In your valuable paper (page 839), your correspondent, "W. D.," gives some practical hints on the cultivation of these beautiful shrubs, but I am surprised to find him stating that eucryphias dislike root disturbance. I thought this old belief was quite forgotten. I have pointed out on more than one occasion that eucryphias are as easy to move as almost any other shrub; we move many annually without ever losing a specimen, or in any way stopping growth, and we have some dozens, in different positions, all of which flowered extra well this season. We find that seedling plants do very much better than those from layers; they grow better and quicker, and flower at a very early stage. It is a pity that erroneous ideas should be spread abroad, as they very often deter people from planting one of the best August-flowering shrubs we have in the country. As a general rule Eucryphia pinnatifolia sets seed very well; these germinate readily, and make quite useful plants in about three years. W. A. Cook.

Leonardslee Gardens, Horsham.



PEAR PITMASTON DUCHESS.

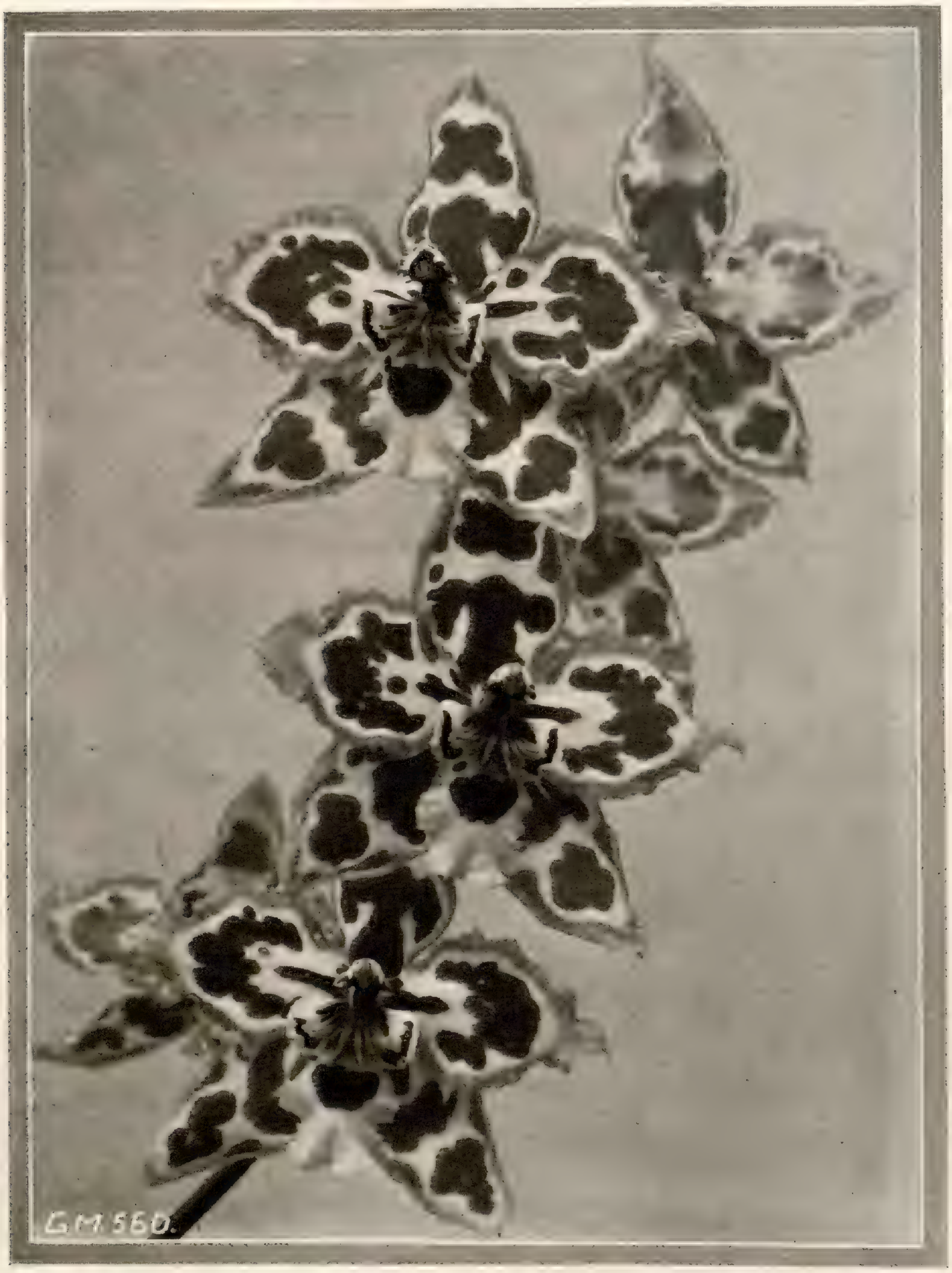
A well-cropped tree, grown by Messrs. T. Rivers and Son, Sawbridgeworth.

# NEW PLANTS, FLOWERS, AND FRUITS.

◆

### ODONTIODA LATONA, FOWLER'S VAR.

A very beautiful orchid with flowers of odontoglossum size. The shapely and attractive blooms have a pale blush ground colour, the margins are rosy-red, while over the central areas are large blotches of rich crimson. The parents of this fine hybrid are Odontioda Bradshawæ and Odontoglossum crispo-Harryanum. F.C.C., R.H.S., December 3. J. Gurney Fowler, Esq. (gardener, Mr. J. Davis), Glebelands, South Woodford.



ODONTIODA LATONA, FOWLER'S VAR.

Flowers blush, rose-red, and crimson. F.C.C., R.H.S., December 3.
J. Gurney Fowler, Esq., The Glebelands, South Woodford.

### LÆLIO-CATTLEYA GOLDEN ORIOLE VAR. RUBY.

Another beautiful orchid with brilliant colouring that is much appreciated during the dull season of the year. The flowers are of medium size, and several are produced on an elongated spike. The colour is bright ruby-red, with a ground colour of golden yellow showing through as veinings, and much more prominent in the sepals than the petals. F.C.C., R.H.S., December 3. Lieut.-Colonel Sir George Holford, Westonbirt, Tetbury, Gloucester.

### CYPRIPEDIUM EURYBIADES.

This hybrid between C. euryades and C. alcibiades bears most resemblance to the first-named parent, but is more shapely. The large, bold flowers have a broad white dorsal sepal with a green base, and an abundance of dark purple spots. The petals and lip are yellowish, heavily shaded with purple-brown. A.M., R.H.S., December 3. Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), Burford Lodge, Dorking.

### CYPRIPEDIUM VIKING.

A very striking hybrid derived from C. Buchanianum and C. illustre. The bright purple median band on the white dorsal sepal gives evidence of descent from C. Druryi. The broad petals and rounded lip are shaded with purple-brown over yellowish-green. A.M., R.H.S., December 3. Lieut.-Colonel Sir George Holford.

### SOPHRO-LÆLIO-CATTLEYA CARNA.

A neat plant that carried a large, showy, flattish flower of great beauty. The sepals and petals are rose-coloured, tinted with crimson, the lip of somewhat richer shade with a yellow throat and base. A.M., R.H.S., December 3. Messrs. Charlesworth and Co., Haywards Heath.

### PRUNUS MIQUELIANA.

Though not a new species, this is one little grown in gardens, and yet in sheltered positions it deserves cultivation. It makes a low, twiggy bush, and, in Sussex, blossoms freely in November and December. The pure white flowers are produced in little clusters of two, three, or four along the slender growth, and only a very severe frost spoils them. Each bloom is about three-quarters of an inch across, and composed of a dozen or fifteen narrow petals. See "G.M." of December 7, p. 933, for illustration. A.M., R.H.S., December 3. Colonel S. R. Clarke, C.B. (gardener, Mr. Conn). Borde Hill, Cuckfield, Sussex.

### ASPLENIUM DIVARICATUM ELEGANS.

A very elegant fern with finely divided but not plumose fronds. As shown it is about a foot high, and the regularity with which the fronds are produced all round the centre makes it a capital table plant. The fronds are light green, asd the stems are blackish. A.M., R.H.S., December 3. Messrs. J. J. Parker and Co., Whetstone.

### CARNATIONS.

Mrs. A. F. Dutton.—A large-flowered rose-pink variety of great beauty; it is a sport from White Perfection, and has the good qualities of its parent. A.M., R.H.S., December 3; F.C.C., P.F.C.S., December 4. Mr. A. F. Dutton, Iver, Bucks.

Bonfire.—A very bright scarlet perpetual variety, fringed, fine stem and calyx, but a trifle small. A.M., R.H.S., December 3. Messrs. Wells and Co., Merstham.

Mary Allwood.—Already described and figured in these columns. F.C.C., P.F.C.S., December 4. Messrs. Allwood Bros., Haywards Heath.

Baroness de Brienen.—A fine salmon-pink variety, already described and figured in our columns. F.C.C., P.F.C.S., December 4. Messrs. Stuart Low and Co., Enfield.

Snowstorm. A beautiful white variety that we have previously described and figured. F.C.C., P.F.C.S., December 4. Mr. W. Lawrenson, Yarm-on-Tees.

### CHRYSANTHEMUMS.

Miss A. Brooker.—Described on p. 940. A.M., R.H.S., December 4. Messrs. W. Wells and Co., Merstham, and Messrs. J. Veitch and Sons, Chelsea.

Eric Wild.—Described on p. 940. A.M., R.H.S., December 4. Messrs. W. Wells and Co., Merstham.

Mrs. Wingfield Miller.—A single variety, of good size and rich violet-rose colouring. A narrow white zone round the disk adds to the effectiveness of the variety. The flowers are a trifle cup-shaped, and so, while the variety will appeal to some, it will fail to please those who like a flat bloom. A.M., R.H.S., December 3. Messrs. W. Wells and Co., Merstham.

### APPLES.

Winter Banana.—A finely-flavoured dessert variety popular in many parts of Canada. The fruits are of fair size and rounded; yellow, flushed with red. A.M., R.H.S., December 3. The Agent-General for British Columbia.

Steyne Seedling.—A late dessert variety of first-rate quality. It bears considerable resemblance to Cox's Orange Pippin, and is probably a seedling from that well-known variety. A.M., R.H.S., December 3. Lady Thornycroft, Steyne, Bembridge, Isle of Wight.

Crawley Beauty.—A very fine culinary apple that will keep well to March. It is a local seedling, flowers very late, and hangs long on the tree if not gathered. The fruits are of good size, rounded, bright crimson, with red splashes on the green, shaded side. Solid, juicy, of capital flavour, and a very free and regular cropper. A.M., R.H.S., December 3. Messrs. J. Cheal and Sons, Crawley.

## GEUMS.

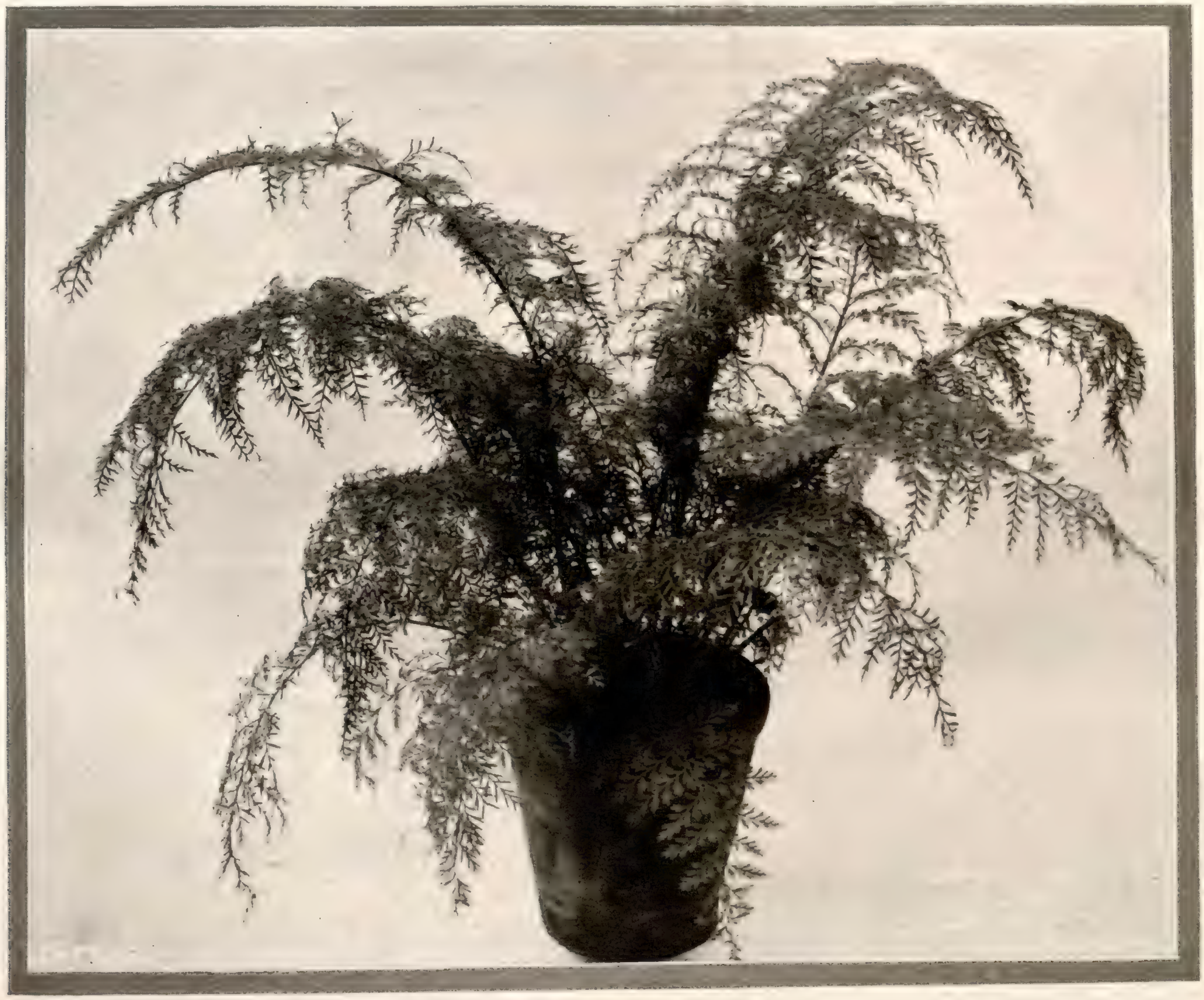
The geums includes a considerable number of species and varieties, all of which are of the easiest culture, succeeding in ordinary garden soil, and producing their gaily-coloured flowers over a more or less extended season. The positions wherein they lend themselves for decoration is either the rock garden, or in borders or beds devoted to perennials; they produce the best effect when planted in broad masses of each kind, and, being perfectly hardy, they may remain undisturbed for several years. After the third season some decrease in size of the flowers takes place in G. Heldreichi and G. coccineum and their varieties, so that it is advisable to replant these after every second year. Geums are readily propagated by division of the crowns, which may be safely carried out at planting time, in autumn or spring. They are also readily raised from seed, sown in nursery beds in April and May, or earlier under glass, and if transplanted when large enough to handle, strong plants are obtained by autumn.

Geums come practically true from seed, and the variety Mrs. Bradshaw being no exception. G. montanum is a handsome Alpine species, robust in growth, the foliage resting on the ground, and forming tufts from which arise stout stems, some nine inches in height, carrying large golden-yellow flowers; these are succeeded by seeds having a feathery attachment, after the manner of Anemone pulsatilla, which invests them with a certain beauty after the flowers fade. G. aurantiacum is a most attractive hybrid between the last-named and G. Heldreichi; the flowers are coppery-orange colour, on slender stems a foot high.

Geum Heldreichi resembles, and is said to be a form of, G. montanum; in habit of growth this is so, but the flowers are very large and coloured soft orange. In the variety splendens the flowers are of a shade of reddish-orange, on stems fifteen inches in height, and the variety magnificum attains a height of eighteen inches, with orange-coloured flowers that have generally two rows of petals, the others previously named being single.

Geum coccineum is one of the commonest, its bright crimson flowers being produced all through the summer and autumn. It succeeds under most indifferent conditions, and, being hardy and a vigorous grower, it has earned a full share of popular favour. This latter characteristic has all the appearance of having been transferred to its variety Mrs. Bradshaw, owing to the duplicating of the segments and their elegant frilling, which gives this variety the appearance of a perfectly double flower of more than ordinary attractiveness. The flowers are very large, rich crimson, and borne profusely during summer and autumn. G. miniatum is a slender-branched kind, allied to G. chiloense. The flowers are rich orange.

THOS. SMITH.



ASPLENIUM DIVARICATUM ELEGANS.

A graceful fern, with light green, black-stemmed fronds. A.M., R.H.S., December 3. Messrs. J. J. Parker and Co., Whetstone.

## OVERCROWDING HERBACEOUS BORDERS.

A herbaceous border, well arranged as regards the disposition of both the growth and the colour of the flowers, forms one of the most attractive features of a garden. There are now so many beautiful varieties of the different kinds that a border, judiciously treated, may look well for the greater part of a whole year.

Usually, one finds the different kinds of plants indiscriminately mixed so that many with a weak habit are smothered by the stronger, and, as a result, the border presents a weedy appearance. Every plant grown in a border should have ample space for development, and if more specimens of the smaller subjects were planted together at suitable intervals a bolder and yet more pleasing effect would be secured.

The formal, sloping bank of plants on a broad border finds favour with many cultivators, but greater variety should in my opinion be introduced. There are many kinds of dwarf growth that may be planted to form a groundwork to taller ones; the latter being disposed well apart so that they do not unduly interfere with the well-being of their dwarf neighbours. The latter need not be wholly confined to the front part of the border, neither should the tall ones be limited to the back portion.

G. B.

## THE ROSE SEASON OF 1912.

By the end of October we may consider the rose season finished with, so far as their blooming is concerned. But it was the severe snap early in that month which put such a sudden stoppage to growth this year. I have not in any season had roses more full of an extra late lot of flowers than was the case previous to that frost. From my annual notes I see that in 1894 we had just such an autumn after a very erratic season. It was in May of that year that we had the severe frost which played havoc with the extra early growth then existing.

But eighteen years ago we had not such a wonderful collection of late-flowering varieties. The hybrid tea class or section had not then indicated the remarkable developments which have been made within the past fifteen years. To mention a few of the best will show how much better off we are for varieties that are good in the autumn, and have proved themselves of immense value during such erratic and widely different seasons as those of last year and the present.

Taking the hybrid teas alphabetically reference must first be made to Antoine Rivoire, A. R. Goodwin, Betty, Chateau de Clos Vougeot, Duchess of Wellington, Ecarlate, Edu Meyer, General MacArthur, George C. Waud, Jacques Vincent, Joseph Hill, Killarney, Lady Ashtown, Lady Battersea, La Tosca, Lyon Rose, Madame Abel Chatenay, Madame Jules Grolez, Madame Ravary, Marquise de Sinety, Mrs. Aaron Ward, Mrs. Arthur Munt, Mrs. A. R. Waddell, Mrs. Harold Brocklebank, Mrs. Theodore Roosevelt, Pharisaer, Souvenir de Maria de Zayas, Theresa Bevan, and Theresa. If any reader wants really good decorative roses all through the season, and more especially in the autumn, he can scarcely do better than select from this list and the few to follow from the tea-scented and hybrid perpetual sections.

Some teas that have proved themselves exceptionally useful, and introduced since 1894, are Corallina, Enchantress, Harry Kirk, Lady Roberts, Molly Sharman Crawford, Peace, Madame Antoine Mari, and Souvenir de Pierre Notting. From the H.P.'s I would give preference to Ben Cant, Commandeur Jules Gravereaux, Frau Karl Druschki, Gloire de Chedane Guinoisseau, Hugh Dickson, and Rouge Angevine.

I did not intend to make any list of roses at the outset of these notes, but on reference thereto, I find them so frequently mentioned as extra good each autumn since their introduction that I felt compelled to name them now the planting season is upon us. The year 1912 has been one of the worst for mildew I have known. This refers only to gardens where no preventive measures were taken, and I am pleased to be able to write that this direful disease was of little or no trouble, even during such a mildew-producing season, where early and persistent measures had been adopted. The use of these, at very little cost and trouble compared to the pleasurable results, together with the elimination of varieties that have proved more than usually subject to mildew, has made this disease of far less terror than previously.

Some striking cases of this came before me during the past season. Many little gardens near me contain a considerable number of roses, and it was very noticeable how the mildew upon one or two (and these in exactly the same position) disfigured and quite spoilt both plant and flower, while the plants in others were quite healthy. Enquiries and observation proved that in every case of mildew the preventive measures had been omitted or not applied early enough.

It stands to reason that if our spraying or syringing is to make the foliage immune from the attack and spread of mildew—as it undoubtedly does—it is wise to keep it up; otherwise how can the young growing foliage be protected And it is this that is most severely attacked, as well as the earliest. I have rather harped upon this point for some time now, and am pleased to find so many of our most successful growers are of the same conviction.

I must hark back once more to 1894, when the class for hybrid teas alone, was, I believe, first started. It was for twelve varieties only, and seeing there were, at that date, no more than ten "exhibition" hybrid teas in the National Rose Society's official list, it did not surprise me to find it very indifferent. I think we may safely say that half of the largest class—viz., 72 varieties from all classes or sections—are now made up from the hybrid teas. And yet at that time many were of opinion there was no future before this section.

A. Piper.

## SOME POTTING REQUISITES

We all know how much more work we can get through in a given time if we have everything ready to our hand, and this is particularly true of potting work in the garden, where so many different things are required for doing the work really well. In an article on "Potting Composts," which appeared in the Gardeners' Magazine of June 4, 1910, I dealt with the materials which were most commonly wanted in making the various potting composts for different kinds of plants, and it seems to me these remarks might be usefully supplemented by a few notes on some other matters which simplify and expedite the work, especially when any considerable quantity has to be done. Amateurs who have not a great quantity of potting to do often use the most makeshift arrangements, and put up with all sorts of inconvenience, resulting in much discomfort and more or less unsatisfactory work. How far anyone will agree with the suggestions made will depend in part upon the amount of potting work he or his gardener has to do.

Having provided oneself with at least the most necessary materials for making potting composts, perhaps before having done this, the great essential is a supply of various sizes of pots adequate to anticipated future needs, always keeping those of the same size together, which is no small convenience in all potting work. For striking cuttings and growing young seedling plants, thumbs, with an inside diameter at the top of one or two inches, are very useful, though not so indispensable as a collection of small and large sixties, with a similar diameter of three to four inches, as these are the sizes of pots ordinarily used for rearing bedding-out plants. Forty-eights, with a diameter of four and a-half to five inches, can be used for flowering small plants as well as for an intermediate shift of larger plants, but they are not so generally useful as sixties and thirty-twos. The latter, together with the slightly larger twenty-fours, with inside diameters of about six and seven inches respectively, are the pots for flowering pelargoniums and numberless other plants of medium size, both in the open and under glass. It should always be borne in mind that plants of a given size need larger pots when grown in the open than under glass, not only because evaporation is so much more active, but to keep them from being blown over in a moderate wind. Before investing in the larger eight, ten, or twelve-inch pots, one should have some idea in mind as to the use to which it is intended to put them. In addition to a good supply of pots, it is very desirable to have a number of seed pans, both for sowing seeds and pricking them out, as well as for striking cuttings in quantity of such plants as violas, lobelias, and pentstemons. Shallow pans are the best for sowing most seeds, especially those which will soon be pricked out, but the deeper ones are necessary for pricking out seedlings and striking cuttings. The supply of pans for pricking out seedlings may be eked out by the use of shallow boxes, such as those in which many bedding plants are offered for sale.

Having considered the compost and the pots, the next question is the potting bench or table. Professionals, of course, have a potting shed and a massive bench, with every convenience at hand. Certainly some sort of cover is necessary for keeping composts from becoming wet after they have been made up, but those who have no such convenience may do a great deal with a stout table against a wall—in a corner by preference—with a shelter over it, or a movable protection of some sort, to keep the compost dry. If the table is not sufficiently substantial to stand the strain of firm potting, in addition to its other load, a stool some two or more feet high, should be handily placed by its side for the purpose. There is room in this matter for the ingenuity of the amateur, not only for making himself comfortable at his work, but for providing himself with the conveniences that are necessary for efficient potting. A shelf near the table or bench is almost indispensable for holding various small things which are constantly needed, among which should be included two or three different types of rammers, one very effective kind being made out of the handle of an old broom or spade, rounded at one end, and chisel-shaped at the other. Different sizes of round flat pieces of wood with a handle in the centre are also very useful for pressing the soil when sowing seeds, though this may be done with the base of another pan. Labels, too, in at least two sizes, should always be ready to hand, and an indelible pencil should be kept in the box with them. A small assortment of flower sticks of such sizes as are often wanted when potting plants should be included among these small things.

Trifling as it may seem, boxes of graded potsherds are one of the greatest conveniences and time-saving accessories at the potting bench. One size should be suitable for thumbs and sixties, another size for the general run of pot plants, while, if large plants are grown in pots, a stock of larger pieces should also be kept handy. Near akin to this there should always be some peat or fibrous turf for putting over the drainage, while a store of quarter-inch bones is useful for the same pupose, as well as for mixing with the soil of hard-wooded plants, and those which will occupy the pots for a lengthened period.

Alger Petts.

**Eupatorium petiolare.**—Most of the eupatoriums are of value for the supply of cut flowers, especially during the winter months. The blossoms of all of them last well in water. One that I like very much is that which was distributed under the name of Eupatorium petiolare, but which is now known as E. Purpusi monticola. It has an upright, freely-branched habit, and the flower heads, like little daisies, are pinkish at first, but become white after expansion. —T.

## EVERGREEN SHRUBS WITH SHOWY FLOWERS.

One is often appealed to for a selection of evergreen shrubs with showy flowers, the height being limited to six feet or thereabouts. Where rhododendrons and their allies thrive it is an easy matter to compile a long list of suitable subjects, but where these are not available the choice is far more limited than it is by the uninitiated considered to be. The chief subjects that, outside of rhododendrons and plants of that nature, can be confidently recommended for the purpose are: Berberis aquifolium and its several varieties, whose golden flowers are not only very showy in the spring, but in autumn the leaves acquire a more or less bronzy or reddish tint. B. Darwini is one of the most handsome evergreen shrubs we have, the rich orange blossoms being borne in the greatest profusion during the month of May, while in some cases a fair crop is borne again during early autumn. This will considerably exceed the height of six feet, but it may be readily kept down to about that height. B. stenophylla, which vies with B. Darwini in beauty, has deep golden-yellow flowers. Lastly among barberries comes B. Wallichiana, a pretty and distinct species. This is a spiny shrub, which, clothed with very dark green leathery leaves, has flowers of a much lighter yellow than any of the preceding.

Choisya ternata, also known as the Mexican Orange Flower, is a shrub with the reputation of being somewhat tender, but it is really as hardy as the common laurel. The white flowers borne in clusters late in spring or early in summer have a very pleasing fragrance.

Given a warm, dry situation, there are several forms of Cistus or Sun rose that can be depended upon to produce a charming effect. Among them may be especially mentioned C. laurifolius, with large, white flowers; C. ladaniferus, in which the blooms are white with a purple blotch at the base of each petal; C. cyprius, somewhat in the same way, and C. villosus, also known as C. undulatus, whose blossoms are of a reddish-purple colour. Their near allies, the helianthemums (rock roses) are beautiful, free-flowering evergreens, but from their lowly stature they must be regarded rather as subjects for the rockwork or sunny bank than for the open border.

Daphnes are not numerous, the principal ones that come under this heading being D. Blagayana, a small, spreading shrub with ivory-white flowers, the still smaller-growing D. cneorum, whose fragrant blossoms are of a delightful rose-pink shade, and D. neapolitana or Fioniana, a little upright-growing shrub, with clusters of pretty, rosy-purple coloured flowers.

The Rose of Sharon (Hypericum calycinum) is a pretty, dwarf evergreen for the edging of groups, clothing of banks, or even under trees. Considering its lowly stature the flowers are large, rich golden-yellow in colour, and borne in great profusion during the summer months. The lavender (Lavendula spica) is another well-known subject, whose blossoms are from their delightful fragrance admired by everyone, while the peculiar greyish tone of the foliage singles it out for notice at all seasons.

Of privets the most showy, from a floral point of view, is Ligustrum sinense floribundum, but this must be regarded as more of a sub-evergreen. L. japonicum, with dark green, leathery leaves, bears a profusion of upright panicles of creamy-white flowers towards the end of the summer. This is strictly an evergreen.

The New Zealand Olearia Haasti forms a somewhat box-like shrub, which about the end of July or in August is absolutely covered with clusters of small white daisy-like blooms. Ulex europæa flore plena (Double-flowered Furze) is a remarkably showy shrub, its brilliant golden-yellow flowers being borne in great profusion. Like the typical kind, it will hold its own even on dry, stony soils, indeed it is not seen at its best in rich soil.

The laurestinus (Viburnum tinus) is a well-known and valuable evergreen, not the least of its attractive features being the fact that, given a mild winter, its clusters of pretty, whitish flowers are borne throughout the entire season. The comparatively new Viburnum rhytidophyllum has large clusters of creamy flowers during the spring and often in the autumn months. The blossoms are certainly less showy than some of the others, but at the same time, they impart a distinct appearance to a specimen, while the bright-coloured berries and peculiar rugose leaves all command attention. The periwinkles (Vinca major and minor) are very pretty, but of a low, creeping nature, that they are suited rather as an edging to taller-growing subjects than in any other position.

In particularly favoured districts the choice is less limited, for beside those mentioned above may be noted the Chilian Berberidopsis corallina with drooping berberis-like flowers of a bright crimson colour; Carpenteria californica, with willow-like leaves and white flowers; camellias of sorts, which are hardier than many consider them to be; Desfontainea spinosa, which in foliage mimics a holly, but has tubular-shaped, scarlet and gold flowers; Fabiana imbricata, a heath-like shrub with pure white, tubular-shaped blossoms; Grevillea rosmarinifolia, and G. sulphurea, the two hardiest of the grevilleas; olearias of sorts, more tender than Olearia Haasti; Ozothamnus rosmarinifolius, with long shoots studded with small white flowers; and Tricuspidaria lanceolata, which is also known as Tricuspidaria hexapetala, T. dependens, and Crinodendron Hookerianum. This has bright red, globular flowers of a pendulous nature, suggesting cherries hanging on long stalks, and remarkable for their distinctness and beauty.

The different garden varieties of veronica are, in many districts, especially near the sea, delightful flowering evergreens, but in some localities they are very liable to be injured during the winter. The New Zealand Veronica Traversi is much hardier than the garden varieties of V. speciosa, and is largely grown as a hardy shrub over a considerable portion of the country. Good examples of this dense-growing and free-flowering species may often be seen in London and suburban gardens. S. W.

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## ALLAMANDA NERIIFOLIA.

Many people would like to grow an allamanda, so as to enjoy its rich yellow flowers, which have such a delicate fragrance, but are prevented from doing so by the lack of a tropical house. This is because the species generally seen are such stove kinds as A. Hendersoni, A. Schotti, etc., which not only require heat, but also a deal of headroom. Whilst the shrubby species, A. neriifolia, may be grown well in a warm greenhouse, it does not require an extravagant amount of room. The flowers are not so large as those of the other species, but they possess all their charm of form, colour, and fragrance, and are freely produced. The foliage is much smaller, and, as the specific name implies, is suggestive of that of the Oleander, or Nerium, as it is often called. CECIL AUBREY.

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## FILBERTS AND COBS.

Filberts and cobnuts are well worth attention as a garden crop, and, provided they are planted in a suitable soil and position, invariably prove remunerative. Experience goes to show that when grown in exceedingly rich soil, over-exuberance is produced at the expense of fertility; while, on the other hand, good crops are the order of the day when they are given, or are planted in, sandy loam, with only a small quantity of manure. Where the natural soil is very light and porous it is permissible to add manure in liberal quantities at the time of preparation, and this may be supplemented by mulching when the trees are in full bearing.

It is necessary to say a word as to clayey loams, which often rest upon pure clay, and in such cases special preparation should be made by placing a quantity of brick-bats, clinkers, cinders, etc., at a depth of two feet. This layer of drainage material should be at least eight inches in thickness, and further, if builders' rubble can be procured, it may be incorporated with the soil on its being filled in about the roots. Planting may be carried out at any time from October to February, and young trees or bushes with a clean stem of two and a-half feet should be selected. Care must be taken that they are not planted deeper than they were in their nursery quarters, the line of demarcation being plainly seen. They should be arranged at least ten feet apart, and an important point is to thoroughly solidify the soil around the roots, also to give a support until established, to prevent them being swayed by the wind. The time and labour involved in training and pruning the nut bushes will be well repaid, and the correct method is to train out about a dozen of the best growths eighteen inches apart, securing them to a wooden hoop fastened to a stake. This will lay the foundation of well-balanced specimens, while the thin disposition of the branches allows the free entry of sun and light.

Subsequently, growths that show signs of over-luxuriance, as also those which tend to crowd the central parts of the trees, should be removed, not forgetting that the small spray or lateral growths are responsible for the fruit, and should only be shortened to avoid density. A word as to the fertilisation of the female blossoms, which appear at a later date than the male flowers. In view of the fact that the nut plant is monœcious, it is very necessary that a sufficient quantity of the latter are left to supply pollen when the threadlike styles of the minute female flowers are protruded for its reception in early spring.

One often sees nuts being harvested long before they are properly matured, which results in shrivelling; in fact, they are rendered comparatively worthless. The proper time is clearly indicated by their dropping freely from the trees, and, with respect to varieties, some exceptionally fine kinds have been raised and placed in commerce in recent years. Amongst cobs Merveille de Bollwyller and Bergere are tremendous croppers, while the old Kentish Cob is of great merit. In filberts, Prolific, Red Exhibition and White ditto are fine indeed.

WALTER H. AGGETT.

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**Peristrophe speciosa.**—Though the flowers of this acanthaceous plant, which are magenta-purple, are not among the popular colours of the present day, it is for all that a very useful subject for flowering in the warm greenhouse, where it will maintain a succession of blossoms throughout the winter months. It is of very easy culture.—S. W.

# WORK FOR THE WEEK.

## THE ORCHID HOUSES.

ZYGOPETALUMS.—Most of these plants are now growing freely, and must receive water at the roots whenever the compost becomes dry. Z. Mackayi, perhaps the best-known species, produces its strong flower-spikes at this season, and must not be allowed to suffer from want of water. When flowering is over, the plants may be repotted should they require it. Owing to the large quantities of water they require when in full growth, it will probably be advisable to repot them, as the thick fleshy roots resent a sour and decomposed compost. The majority of the species are free-rooting and easily grown, and require a fair amount of pot room, with a good depth of compost and ample drainage. A suitable potting compost is the kind advised for green-leaved cypripediums. Z. Mackayi, Z. crinitum, Z. Lindeni, Z. Clayi, Z. Protheroeianum, and several others, grow well in a warm shady corner of the warm intermediate house, elevated at this season of the year near to the glass to receive as much light as possible. Z. Maxillare and Z. m. Gauteri will thrive under the same conditions, but instead of being grown in a pot, are found to thrive best on the pieces of tree fern they are usually imported upon. The rare Z. Balli, now in flower, requires a course of treatment identical with Z. Mackayi. Z. Gautieri is now at rest, and should be suspended from the root in the same house, and be kept moderately moist at all times. The intermediate house is also the best place to grow such bigeneric hybrids as Zygo-colax Veitchi Z.-c. Wiganianum, Z.-c. Amesianum, and Z.-c. Charlesworthi. Zygopetalum rostratum and Z. Roeblingianum should be grown in the warm, moist, plant stove, whilst Z. Burkei requires cool house treatment. The miniatures, Z. citrinum (Promenæa), Z. Rollisoni, and Z. stapeliodes also thrive when suspended from the roof of the cool house.

MILTONIA VEXILLARIA.—Plants of this and of M. Bleuana, now in full growth, should be in a light position, close up to the glass in the intermediate house. They should have water afforded them whenever they become dry, but care must be taken that they do not receive it in excess, as there is great danger of the plants losing their roots, the leaves turning black, and the whole plant decaying. Examine them from time to time and liberate any leaves which adhere to each other, and any sheaths at the base of the half-made bulbs, which prevent the new roots entering the compost may be removed.

CLEANING PLANTS AND HOUSES.—This work should be pushed on, and it is advisable to examine every plant, and wash the houses both inside and out. When doing this work every care should be taken to thoroughly cleanse the laps of the glass from all dirt and slimy matter. This not only admits more light, but allows atmospheric moisture that condenses to easily pass away between the panes of glass, and so prevent drip. During this cleaning we get to know exactly the condition of every plant, and, should any want repotting shortly they should be set on one side.—J. T. BARKER, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

PRIMULAS.—Probably at the present season the primulas are the most popular plants we have in bloom. They remind me of the lovely sweet peas, which have no respect for persons, for, whatever may be the status of the cultivator, they yield a bountiful harvest of their beautiful flowers in return for the labour bestowed on them. Primulas delight in a warm buoyant atmosphere with a fair amount of moisture. The roots being very fine, the plants are consequently good feeders, and need liquid manure for their sustenance. This should be given twice weekly, and sheep or deer droppings or fowls' manure, collected and placed in a tub makes a splendid liquid, as also does a bushel of soot placed in a bag and immersed in a tub of water. It is a safe proceeding for most plants to allow the tub to stand full of water for a fortnight before using, the liquid may then safely be used without further dilution, provided when one canful is taken out another of clean, soft water is added, whereby the tub will always be full. In the use of liquid manure, we presume the tub is always standing outside. Therefore the cans containing the liquid manure must be stood in a warm mushroom house, or in the house in which it is to be used, to bring it to the same temperature as the house. There are many varieties available for conservatory decoration, and, although differing greatly in habit and appearance, possess much beauty. We have Primula sinensis in its double and single forms. Then there are the Stellate, or Star primulas, which of late have been greatly improved; and we now have almost every colour imaginable.

PRIMULA OBCONICA, which also has been greatly improved, ranks next in merit. Groups consisting of separate colours are strikingly beautiful. It is unfortunate that this primula has the reputation of being poisonous to some who touch their leaves, and in case certain individuals who have handled them have had a bad attack of eczema, I must, however, say, in favour of the plant, that such cases have been few and far between. Primula Kewensis is another good form, its spikes of yellow, sweetly-scented flowers giving us the colour we so much need at this season.

CLARKIAS.—Although generally classed as half-hardy annuals, clarkias are splendid subjects for conservatory decoration. Seeds should be sown now in gentle heat, and when the plants are up they should be placed on a shelf near the light and encouraged to grow steadily. When large enough to handle they should be put into 3in. pots, and as the plants develop they should be shifted on until eventually they reach 24's. Clarkias like a rich compost, and must be grown cool with plenty of light and air. They should not be pinched, but allowed to grow naturally. The best varieties for pot culture are Sutton's Delicate Pink, Double Salmon, and Firefly.—LEWIS SMITH, Cadland Gardens.

## HARDY FRUITS.

THE APRICOT.—The pruning of apricot trees should be carried out at the earliest opportunity to allow ample time for the cuts to heal over before the sap commences to rise. Early pruning minimises to a certain extent the danger of gumming; further, if pruning is delayed severe weather may occur which may defer the work till the flower buds are swelling and ready to burst. The pruning of apricots is carried out on similar lines as that of the plum, and as the varieties of the latter vary considerably in their habit of growth and bud formation, so I find it with apricots; certain sorts make a compact growth, freely studded with short-jointed spurs; these may be pruned reasonably close back. Others, notably Large Early Montgamet, must be allowed more latitude, and not be pruned too close back, or a crop will not be realised. Healthy, established trees of free-flowering habit are liable to form masses of spurs which, if allowed to remain, flower so freely that a heavy strain is put upon the trees, with the general result that the embryo fruits fail to swell satisfactorily; it is therefore essential in cases of this description to substantially reduce the number of spurs, leaving, so far as possible, such spurs as are in close proximity to the wall. To take the place of faulty branches young growths from the base of the trees should be laid in. Young trees which have not filled their allotted wall space should have their centres kept well open until the wings are fully developed, it is then a comparatively easy matter to fill up the middle portion of the tree. When the operations of pruning, cleansing, and refastening the trees are completed, clear up all prunings and the remains of the summer mulch. If the trees are in need of a top-dressing, remove the soil to a depth of three or four inches, and apply some good rich loam and lime rubble, and to this may be added bone flour, if the trees are in an exhausted conditon. As the apricot is liable to loss of branches in the summer, it is advisable to keep a reserve stock of young trees to replace any losses which may occur.

THE PLUM.—As previously mentioned, the pruning, training, etc., of the plum is similar to that of the apricot, and should succeed that of last-named. Fan-training is the usual method practised, and to form a shapely, well-balanced tree the branches must be equally distributed over the wall space, and overcrowding must be strictly avoided. The lateral growth on young extension shoots may be slightly shortened back, say, to within two inches of the main growth. With some varieties it is not advisable to cut back too hard, otherwise, in many instances, no further growth takes place, and the branches are devoid of fruit spurs. When planted in congenial soil, growth may be too vigorous, and, although the young shoots may be left a reasonable length, a certain amount of shortening back must take place, both to encourage lateral growth at the lower portion of the shoot, and also to preserve the balance of growth on both wings of the tree. — W. MESSENGER, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

DIGGING AND TRENCHING.—The time has arrived when these operations should be pushed forward with all possible expedition. Whenever the weather and ground is favourable, advantage should be taken of the opportunity for proceeding with the work. When done early the soil will be greatly improved by the atmospheric influences to which it will be exposed throughout the winter. A portion of the ground should be trenched each year wherever possible, particularly for peas, beans, onions, and cauliflowers, relying on the deep-worked celery ground for the tap-rooting subjects, as parsnips, carrots, and beet. This latter area can, as the celery is cleared, be deeply dug over often through the winter to well pulverise it. During the later digging a dressing of soot, old lime rubble, and burnt garden refuse should be liberally applied, particularly on heavy soils.

TOMATOES.—The more forward of the young seedlings will now require shifting into 48-sized pots. The weaker plants in thumbs can safely be left without being repotted till the new year. Use a nice compost of two parts turfy loam, one part of leaf-soil and a dash of coarse grit. After repotting replace them on a shelf near the glass, where they will have the assistance of a temperature of 55 degrees or thereabouts; after watering in, keep on the dry side for a few weeks. Plants ripening their fruits should receive much the same treatment; once a week will be found quite often enough for applying water.

CUCUMBERS that are now fruiting must be cropped very lightly at this season to maintain healthy-bearing wood continuously. The air must contain a certain amount of humidity, the glass be kept quite clean to admit every ray of light possible, and the temperature be maintained between 60 and 65 degrees at all times.

MINT AND TARRAGON. — Introduce batches of these herbs at intervals into the forcing house or warm pits. Boxes are preferable for mint, where only small quantities are required, otherwise made-up beds are the most desirable. Mustard and cress should be sown at intervals according to requirements. Endive, seakale, chicory, and rhubarb should be introduced somewhat liberally into the forcing quarters for the approaching festive season and the New Year. It may also be very advisable to take up a quantity of the more forward-looking broccoli plants and place them in pits, or even fruit houses, for the time being, to have a good supply later on.—GEORGE ELLWOOD, Swanmore Park Gardens.

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# EXHIBITIONS AND MEETINGS.

## Royal Horticultural Society.

SCIENTIFIC COMMITTEE.—December 3.

Present: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the chair); Sir Harry Veitch, Messrs. A. Worsley, G. Wilson, J. O'Brien, J. Fraser, J. T. Bennett-Poë, C. E. Shea, A. W. Sutton, W. Hales, J. Odell, R. H. Pearson, and F. J. Chittenden (hon. secretary).

PRUNUS MIQUELIANA.—Mr. G. Wilson drew attention to this beautiful shrub which flowers in the open in December in Sussex and elsewhere. (See GARDENERS' MAGAZINE, December 7, 1912.) Its appearance suggests a garden origin, for the flowers are semi-double.

FERN IN BOTTLE.—Mr. J. Fraser showed a specimen of a fern, Cystopteris fragilis, growing in a bottle, in which it was found in a garden. Though this fern usually loses its leaves in July, the present specimen was still green.

ORANGE-FRUITED HOLLY.—Mr. E. A. Bowles showed orange fruits from a holly in his garden. The tree is probably identical with that referred to in Dallimore's "Holly, Yew, and Box," under the name Ilex aquifolium fructa-aurantiaco. It is there suggested that this is a seedling from the yellow-fruited variety, and the tree in Mr. Bowles's garden is apparently of similar origin.

LÆLIA PUMILA × LÆLIO-CATTLEYA OPHIR (LÆLIA XANTHINA × CATTLEYA AUREA).—Mr. G. Wilson said this hybrid with cream-white sepals and petals and purple labellum was raised by Mr. R. G. Thwaites, of Streatham Hill, and was shown by him in support of his hypothesis that white flowers are produced by a mixture of red, blue, and yellow.

The committee will not meet on December 17, there being no show on that day.

## National Dahlia Society.

The annual general meeting of this society was held in an "upper room" at the Hotel Windsor, Westminster, S.W., at four o'clock on Tuesday, December 10. The President, Mr. George Gordon, V.M.H., occupied the chair, and there were less than a score of members, chiefly officers and committee, present.

After the reading of minutes, etc., the Report of the Committee for 1912 was presented as follows:

The Society held one large exhibition at the Crystal Palace on Tuesday and Wednesday, September 17 and 18, 1912, and this proved to be successful, a large number of amateur exhibitors being present than in the previous year.

Your Committee offered a gold, a silver-gilt, and a silver medal for competition at the Royal International Horticultural Exhibition held at Chelsea, in May, 1912. There were two competitors, and Messrs. J. Stredwick and Son secured the gold medal.

Three joint committee meetings, consisting of members of the Royal Horticultural Society and the National Dahlia Society, were held at the Royal Horticultural Hall, for the purpose of making awards to new seedling dahlias. A large number of varieties were presented, and several certificates granted.

Continuing the policy adopted last season, a Conference on Dahlias was held at Carr's Restaurant, 264, Strand, on March 8, 1912, when papers were read by Mr. George Davidson on "The Cultivation of Cactus Dahlias in a Town Garden," and by Mr. J. B. Riding on "Collarette, Pæony-flowered, and Decorative Dahlias." The conference was well attended, and a useful discussion followed the papers.

Your Committee, believing the Society should continue to give attention to all types of the dahlia, and especially to dahlias suitable for garden decoration, recommend an exhibition, a conference, joint meetings of the R.H.S. and the Dahlia Society to consider new varieties, and a Year Book for the ensuing year.

It is with deep regret that we have to record the early demise of Mr. F. W. Seal, who has been for many years an ardent supporter of the Society, and who was well known as an exhibitor and raiser of new varieties.

The thanks of the Society are largely due to the Crystal Palace Company, the readers of papers at the conference, to the judges, and all others who have so kindly assisted in the work, and to the horticultural press for its willing and ready assistance.

CASH ACCOUNT, 1912.

| Dr. | | £ s. d. |
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| To Balance | | 8 6 7 |
| ,, Subscriptions, 1911 | £6 16 0 | |
| ,, Subscriptions, 1912 | 59 14 6 | |
| ,, Subscriptions, 1913 | 0 10 6 | |
| | | 67 1 0 |
| ,, Affiliation Fees | | 1 1 0 |
| ,, Donations and Special Prizes | | 5 0 0 |
| ,, Crystal Palace Grant | | 25 0 0 |
| ,, Advertisements | | 12 14 0 |
| ,, Purchase of Medals | | 0 18 0 |
| ,, Cheque recredited | | 1 1 0 |
| | | £121 1 7 |

| Cr. | | £ s. d. |
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| By Prizes, 1912 | | 63 16 0 |
| ,, Medals, 1912 | | 13 1 6 |
| ,, Printing Schedule | £9 17 6 | |
| ,, Printing Notices, etc. | 3 10 6 | |
| | | 13 8 0 |
| ,, Show Expenses | | 4 17 6 |
| ,, Hire of Rooms | | 2 12 0 |
| ,, Postage, etc. | | 5 16 6 |
| ,, Honorarium to Secretary | | 8 0 0 |
| ,, Cheque returned | | 1 1 0 |
| ,, Bank charges | | 0 0 4 |
| Balance | | 8 9 3 |
| | | £121 1 7 |

The President moved the adoption of the report and financial statement (the latter subject to audit), said the society had not made the progress it should have done, and he hoped that every officer and member would wake up and recognise their responsibilities, so that the membership might increase largely in the future. He advocated the claims of dahlias suitable for garden decoration because, while he had a great love for all exhibition flowers, he felt that unless the dahlia held a high position in the garden it failed in its usefulness. The society should appeal to all tastes in respect to dahlias, and so enlarge its membership, and also its usefulness; but to tie itself down to any particular type, or confine its attention to exhibition flowers only, would be fatal. He urged that the regular issue of a Year Book was not only expedient, but necessary, as being some return for membership in the case of non-exhibiting members. He referred to the offer of a 75-guinea challenge cup by Mr. R. Cory, for a display of dahlias for garden decoration by traders, and a possible 25-guinea cup for amateur exhibits on similar lines, and he hoped that the society would be able to so arrange matters as to accept this generous offer. Mr. Wyatt seconded the proposal formally, and expressed a hope for better times for the society.

Mr. J. S. Brunton moved thanks to officers and committee. Mr. George Gordon, V.M.H., was re-elected president, Mr. Joseph Cheal was re-elected chairman of committee; Mr. John Green as treasurer; Mr. J. S. Brunton was added to the list of vice-presidents; and Mr. J. B. Riding was unanimously elected hon. secretary in place of Mr. Hawes, who has been felt compelled to resign owing to pressure of business; and Mr. J. Harrison Dick was elected auditor of accounts. New members of committee elected were: Messrs. J. S. Brunton, H. Shoesmith, A. H. Farmer, E. F. Hawes, Vasey, W. G. Valentine. Mr. Caselton was appointed show superintendent at the Crystal Palace.

It was decided that in future the society's accounts be closed each year on October 31. The meeting closed with thanks to the president.

## Scottish Horticultural Association.

The monthly meeting of this association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 3rd inst. Mr. Massie, the president, was in the chair, and there was an attendance of 80 members.

The meeting was an "open" one, and was devoted to a discussion on the following questions: (1) Is galvanised wire and wire netting injurious to fruit trees? (2) In judging leeks "as grown for market," in what order should their relative merits be considered? (3) What are the advantages of sterilising soil? (4) Has the grass herbage any influence in intensifying the colour of the fruit in orchard-grown apples? (5) What causes luminosity when a light is applied to the inflorescence of Dictamnus fraxinella? (6) How is multiplicity in the flower spikes in the bulbs of some varieties of hyacinth brought about? (7) What is the "English" elm? and (8) What is a spray?

No one had observed any injury to fruit trees from the use of galvanised wire or wire netting. It was pointed out that market leeks could not be judged from the same standpoint as those produced by the private grower. The primary consideration should be weight, but freshness should be considered. The question of blanching did not count, as it would not pay the growers to put so much labour on the crop. The third question gave rise to considerable discussion, but beyond statements of the facts which have been published regarding sterilisation no new points were brought out. The influence of grass herbage on the heightening of the colour of orchard-grown fruit also gave rise to some discussion, but no definite conclusion was arrived at. The possibility of the formation of dew being facilitated by the grass covering, and of this having some effect on the fruit was suggested, as was also the fact that in a moist climate like that of Ireland apples coloured well, and that the moisture might have something to do with it. Their earlier ripening on grass land was attributed to the drier condition of the soil at the roots of the trees. It was agreed, however, that, from all points of view, it was inadvisable to have a grass covering over the roots of fruit trees. A note was read detailing some experiments by Sir Edward Thorpe in connection with the luminosity produced from Dictamnus fraxinella, from which it appeared that the glands with which the inflorescence is covered are really exceedingly brittle ducts, which are filled with an essential oil, and that when, for example, a burning match is brought into contact with them they take fire; the essential oil is ejected, and the flame is enlarged and made more luminous by its combustion. No satisfactory explanation could be given as to the production of more than one flower spike (which had been fairly common last season in such varieties as Gertrude, Grand Maitre, and Maximus, in hyacinths, but the opinion was expressed that the previous season had probably something to do with it. It was pointed out that besides the true English elm (Ulmus campestris) there was another small-leaved species, largely imported from Germany, which was being distributed through British and American nurserymen as the small-leaved elm, and that this had led to some confusion, the true English elm also being called the "small-leaved" elm in nurseries. Much diversity of opinion was expressed as to the correct definition of the term "spray" (as used in show schedules), but no satisfactory solution was arrived at.

It was stated that the profits on the recent chrysanthemum show was approximately £35, and it was agreed to hold a three-days' show in 1913, the dates to be November 12, 13, and 14. Mr. David King was nominated as president for 1913.

The annual business meeting will be held on January 14, 1913.

## Smithfield Show.

In general aspect the big exhibition held at the Agricultural Hall, Islington, from December 9 to 13, was very little different from those of former years. There were the bullocks, sheep, and pigs in their usual places, and the exhibits of implements, machinery, and all manner of farm requisites occupied just as much space as they have hitherto done, whilst in the Gallery the elaborate stands of the leading seedsmen appeared at first glance to contain just the same displays of roots and vegetables as last year.

On closer inspection, however, one soon found that there were a good many new things to be seen, and in many ways the exhibits revealed in a marked degree the great advance that has been and is still being made in the improvement of both farm and garden crops.

It has to a large extent been an unfavourable season for roots and vegetables, but, nevertheless, there was an abundance of produce of excellent quality. From the gardeners' point of view the potatoes constituted one of the principal features to be seen, and they are always seen in large quantities at Smithfield. There is not the feverish excitement that prevailed during the short-lived potato boom of a few years since, but there is much interest in the latest introductions, and during the whole course of the exhibition farmers and gardeners could be seen criticising and discussing the merits of the varieties upon the many stands.

The newest varieties of potatoes on the very attractive stand arranged by Messrs. Sutton and Sons, Reading, were Edinburgh Castle and Dover Castle, both of which are oval potatoes of fine appearance, the last-named being a lemon-coloured, and the former a white-skinned variety. Messrs. Sutton also showed Ailsa Craig onions, good mushrooms, tomatoes, and splendid turnips and mangolds, the front of the stand being nicely decorated with finely-flowered cyclamen.

Chief among many excellent potatoes staged by Messrs. E. Webb and Sons, Wordsley, were Stourbridge Glory, a long kidney with straw-coloured skin and very shallow eyes. Wordsley Pride, New Guardian, and Goldfinder, all of which possess individuality and merit.

Messrs. J. Carter and Co.'s exhibit was as attractive as ever, but probably the feature of greatest interest was the seed germinator, which was shown in full working order. This ingenious machine is really like an incubator. It has the merit of promoting germination at express speed, and the high percentage of fertility in the seeds handled by Messrs. Carter was demonstrated by the evenness with which the samples in the machine were germinating. Messrs. Harrison and Sons, Leicester, had, as usual, some good onions on their stand; and they also showed a fine kidney potato named Morning Star. Messrs. J. K. King and Sons, Coggeshall, had some splendidly-grown sugar beet and a grand lot of potatoes. Beauty of Essex was one that appealed to us, and Rentpayer was evidently named in consequence of its heavy cropping qualities.

Mr. A. J. Sole, Peterborough, showed several of the best-known varieties of potatoes; and Sir J. Llewelyn, Factor, Eldorado, and Dalmeny Beauty were just a few among the really good samples shown. A very distinct and fine-looking novelty in potatoes was Arran Chief, shown by Messrs. Kent and Brydon, Darlington. It is a round potato, with a beautiful skin. Other good varieties were The Brydon, Dalhousie Seedling, and Darlington. Mr. A. Findlay, of Auchtermuchty, exhibited on this occasion what he considers is the masterpiece of his long series of introductions. This is a late, long-keeping potato of real kidney shape and character. It is as distinctive as an ashleaf, and, being late, is a decided acquisition.

Messrs. Fidler and Son, Reading, who showed potatoes only, had a pile of King George V., which is a good serviceable kidney of splendid quality. It is a second early, rough-skinned, and shallow in eye. Dreadnought, another variety of the firm's own raising, is a good maincrop potato.

Messrs. Dicksons, Lim., Chester, showed both apples and potatoes, and also young forest trees. Messrs. Horne and Sons, Cliffe, Rochester, showed some excellent apples; as also did the King's Acre Nurseries, Lim., Hereford. The last-named firm had a fine lot of Rival, Charles Ross, Golden Spire, Bramley's Seedling, and other standard varieties. Messrs. W. Seabrook and Sons, Chelmsford, showed some excellent fruit, the colour in many of the dessert apples being very fine.

## Horticultural Club.

On Tuesday, the 4th inst., after the usual monthly dinner of this club, at which Sir Harry Veitch presided, and a large number of members and friends, including many ladies, were present, Mr. Arthur W. Sutton, V.M.H., F.L.S., gave a most interesting lecture entitled, "My Desert Camping Tour to Mount Sinai," illustrated by a hundred splendid photographs taken by him en route, and beautifully coloured.

Mr. Sutton, who takes a particular interest in the evidence afforded in favour of the accuracy of Biblical records by the actual localities to which they refer, explained at the outset that he was heavily handicapped in this direction by the shortness of the time at his disposal, and the difficulty he felt, on referring to the views he displayed, in not dwelling at too great a length on the many interesting points in this particular connection which, moreover, he felt were hardly adapted to a general audience. He commenced with a map of the region which he had traversed circuitously for some 200 miles in company with Dr. Mackinnon, the well-known medical missionary of the Edinburgh Mission in Damascus. The first visit made was to the traditional spot where the passage of the Red Sea was effected under apparently miraculous conditions by the Israelites. It would appear, however, that there are three places assigned to this, one of which, to the north, where the water is very narrow and shallow, is considered by some travellers as the most likely, as an exceptional state of tide and wind might have greatly facilitated the passage on practically normal lines; while the other two involve the traversing of deep water and a much greater distance, which only a colossal miraculous interposition could have rendered possible. The views of the desert were splendid, apparently limitless streaks of barren sand without a trace of vegetation, alternating with views of brilliantly green oases of palms, sometimes, thanks to a local supply of water and the generally warm climate, of such luxuriant growth as to be traversable with difficulty.

The general temperature varied, however, from 100 degrees in the shade during the day to very near the freezing point at night. The pervading conditions of sand and the consequent limitation to camels for transport of both travellers and their impedimenta, rendered the whole journey a most difficult one, camel riding being so uncomfortable as to compel frequent descents for a rest. Walking being in its turn equally exhausting, recourse to the camel's back for variety's sake involved no particular charm, and this, with short intervals of rest on the dry, heated plain, day after day, did but little to recommend the Sinai desert as a popular resort.

In time, however, Mount Hebron, and its associated hills of barren growth of brilliant red, interspersed with black and other coloured outcrops, everywhere devoid of even a blade of grass, began to indicate an approach to Mount Sinai, and here, of course, the Biblical records were brought home to the traveller most vividly by the character of the surroundings of these heights which are regarded as the scene of the most stupendous events. The intervening stretches of sand were here dotted with small bushes, and even one minute flower was discovered by the lecturer. At Sinai there is a monastery, at which both travellers and their cook, guide, and camel drivers had a well-earned and welcome rest prior to the return journey to Suez.

A very hearty vote of thanks to Mr. Sutton concluded a most interesting and instructive meeting.

## Beckenham Horticultural Society.

The lecture given before the above society by Mr. C. T. Watts, B.Sc., on "Lime and its Uses," was of great value. The lecturer strongly advised gardeners to attend a simple course of practical instruction in chemistry, so as to learn the nature and action of chemical compounds, whether for insecticides or fungicides, or for manurial purposes. Lime, he said, consisted of calcium and oxygen, and was also known to the chemist as a "base"; it is not easily altered by heat, and will stand 2,000 degrees Cent., while it melts at 3,000 degrees Cent., such heat being obtained only by the electric furnace. Sourness in soil was due to acidity, but lime neutralised this, and turned the acid into a salt. A good way to find whether the soil contained much lime was to pour hydrochloric acid on a small quantity of soil in a vessel, and the presence of lime would be notified by effervescence. It was of interest to learn the many uses lime is put to; it is used in the making of mortar and cement, in the manufacture of glass, and in preserving eggs by means of "waterglass," which seals the shell against air and decay. In the purification of gas we have a useful product in gas lime; in the manufacture of leather lime is used to clean hair off hides; and in the making of insecticides lime is used, while in horticulture and agriculture its value is well known.

## Bournemouth Gardeners' Association.

DECEMBER 3.

On the above date Walter Child Clark, Esq., F.R.H.S., of Michelgrove House, Bournemouth, gave a very interesting lecture on "Thirty-five Years amongst Roses" to a large attendance of members and the public.

There was added interest in this meeting, owing to the fact that many old and new varieties of roses were shown on the screen in their natural colours by Dr. George G. Hamilton. This gentleman has advanced very far in colour photography, and recently gave a lecture on the subject, and showed some beautiful coloured photographs at Vincent Square, Westminster.

At the Bournemouth meeting, Dr. Hamilton showed charming photographs in colours of Fremontia californica, Oriental poppies, kniphofias, rockeries, herbaceous borders, and cattleyas.

Mr. Clark said he commenced the cultivation of roses near Liverpool, thirty-five years ago, by growing six plants in pots, all teas. He then had some houses built, and planted roses in beds. At the end of June, after the first lot of flowers had appeared, the roof lights were taken off, and the plants fully exposed to the weather until the end of November when the lights were replaced. He came to Bournemouth about eleven years ago, and, as he did not wish to destroy the numerous pine trees in his garden, he trained many climbing varieties to their trunks and formed beds in various positions, the total numbering nearly seventy.

The lecturer dealt in detail with reference to many old and new varieties, and strongly recommended growers to give their trees two dressings in winter as a preventive of mildew, rust, and other diseases of the leaf. He also referred to the greatly improved methods of exhibiting roses in these days, and said it was a great advantage to would-be cultivators to be able to see, at exhibitions, the foliage as well as the flowers. He had found that those varieties possessing thick, smooth, glossy leaves were the least liable to the attacks of mildew.

A free discussion followed on budding roses, lifting, and transplanting old standards, training, and pruning. Numerous questions were ably answered by Mr. Clark, to whom, Dr. Hamilton, and the president (J. H. Ralph Smythe, Esq., J.P.), very hearty votes of thanks were passed. Begonias, ferns, calanthes, and primulas were exhibited by Messrs. Heath, Pearce, Evans, and Povey, and a lovely bowl of December roses by Mr. Clark.

## Reading Gardeners' Association.

There was an excellent attendance of members at the Abbey Hall on Monday evening. The President occupied the chair, and Mr. H. Costin, of the University College Fruit Station, Shinfield, gave an excellent address on "Small Fruits."

The lecturer first dealt with the preparation of soil for small fruits generally, advising double digging as a minimum preparation unless the site had previously been well prepared for the growing of some other crop. In the process of preparation in the case of heavy soils, as much road grit or opening material should be worked into the under layer in order to assist aeration and the percolation of water. He advised that stable and farm manure, particularly where the supply was limited, be kept as near the surface as possible, if not actually applied as a top dressing or mulch after planting, or a good deal of the manurial value might be wasted in the drainage long before the roots reached it. Heavy soils should be prepared early in the autumn or in spring while in a moderately dry condition.

Strawberries, raspberries, loganberries, currants, and gooseberries were respectively treated on, Mr. Costin giving his experience on the most important points in their cultivation. The life history of the more important pests was given and remedies calculated to control them named.

The discussion that followed was one of the best of the session, numerous questions being put to Mr. Costin with reference to methods of planting raspberries, the use of basic slag on light and heavy soils, the pruning of gooseberries, the applications of insecticides, etc. Mr Costin, who is to be congratulated on the way he emerged from the criticism in this, his maiden effort, received a hearty vote of thanks.

A fine exhibit of vegetables was staged by Mr. H. G. Cox, of Messrs. Sutton and Sons, and was of great educational value, the numerous enquiries relative to the growing of onions, beet, carrots, parsnips, etc., being readily replied to by Mr. Cox.

## GARDENING ENGAGEMENT.

Mr. H. T. Martin, for some years head gardener at Warren Wood, Hatfield, has been appointed head gardener to the Princess Frederick Leopold of Prussia, at Potsdam, Germany.

**Kleinia Galpini.**—This pretty South African composite was introduced about twenty years ago; but, despite its desirable qualities, it has always been an uncommon plant. It first flowered at Kew, and has been noted there many times since. It forms a freely-branched specimen that will reach a height of eighteen inches or thereabouts. The stems, as well as the pretty glaucous leaves, are of a succulent character. The flowers, which are borne in dense heads, about an inch across, are of a bright orange colour, and, being freely produced, a well-flowered specimen is very effective. It is a plant of easy propagation and culture, if care is taken to guard against an excess of moisture, especially during the summer months. The temperature of a greenhouse is essential to its well doing.—K.

## PERPETUAL CARNATIONS.

The following is the text of the paper on "Perpetual Carnations," read by Mr. J. Gardner at the Carnation Conference held under the auspices of the Perpetual Carnation Society on the 4th inst.:

The perpetual-flowering carnation, as we now know it, is essentially a modern plant, and is fast gaining the position of the premier winter-flowering subject for the production of cut blooms, for it is during the dull days of the year that it is most appreciated and valued. Its popularity is chiefly due to its especial beauty and utility for decorative purposes in a cut state, and to the persistent manner in which it has been so artistically displayed at exhibitions by nurserymen and others, who appreciate and know its manifold charms.

### Value for Decorations.

When used in a cut state for the purpose of adorning reception rooms, dinner tables, etc., the carnation is unsurpassed by any other flower, and but few blooms of other plants continue in a fresh condition when cut and placed in water for so long a period. These qualities alone are sufficient to render it popular, without taking into account its easy cultivation, for I maintain that when its requirements are understood, it is not a difficult plant to grow. For this reason I would especially recommend it to amateurs, as I feel sure that no plant would give better returns, and be conducive of greater pleasure.

It is truly called perpetual, for the same plants can be had in bloom for twelve months, and if they are well managed good flowers will be produced during the whole time, which fact alone ought to gain for the perpetual carnation a prominent position in gardens where the production of cut flowers in quantity is a necessity. As regards its improvement, I will say little, as the fact is self-evident to all who have followed it for a few years that there is every probability of its improvement continuing until the perpetual-flowering carnation becomes a model of all that is perfect and beautiful. Not only do modern varieties produce superior blossoms, but in many cases the habit of growth and the constitution of the plants are distinctly in advance of the old-time favourites.

Cross fertilisation for the purpose of obtaining new varieties would require a paper in itself, so I do not intend to discuss the matter here; but those who are engaged in it know the amount of patience and attention required, and the very small percentage of seedlings that are of any merit as improvements on the old varieties. A matter that might be taken into consideration is the production of varieties with sweet scent; for, although a bloom may be perfect in shape, and the plants possess every good characteristic, if the flowers are scentless they are destitute of a most delightful charm. Whether they possess smooth-edged petals like May Day, or serrated edges like Baroness de Brienen, is really not an important matter, as there is room for both types, each appealing to different tastes.

### Commencing their Culture.

When commencing to grow perpetual carnations, it is essential to devote a suitable house to them, for I believe there are more failures through attempting to grow them under unfavourable conditions than from any other cause. It is impossible to grow carnations well in an indifferent greenhouse among a miscellaneous collection of plants, for carnations love light and air, and it is necessary to provide these essentials if one is to excel in their cultivation. A good style of house for the private grower is a span roof one, provided with a centre stage, and a stage all round next to the outside. The house should face to the south so as to obtain the maximum amount of sunshine during the winter, and be fitted with a 4in. flow pipe under the outside stages, with the returns conducted under the centre stage to maintain the requisite temperature in winter. The stages should be covered with fine shingle, or small cinders with the ashes sifted out. Both top and bottom ventilators must be made to open outwards to the fullest extent.

The best way to make a start is to procure some strong plants in small pots, from a nurseryman who makes a speciality of the section. These can be obtained early in March, and if correctly treated will make fine bushy plants that will commence to flower in October. In subsequent years, with the exception of purchasing any novelties that are required, it is preferable to raise one's own stock. The best time to commence this work is during the latter part of December, and from then until March the process may continue. Cuttings rooted after March are not forward enough to make good plants to bloom early in the following winter.

It may be worth mentioning that we obtain good results by propagating in August, taking the cuttings from plants growing in the open garden. The growths are generally firm and well matured at that season of the year, and we have found them make better plants than those rooted in the winter. By propagating in August, strong plants in 60's are obtained by October; these are kept in a cool house during the winter, and after the turn of the year are potted on, and grow away rapidly.

### Propagation.

The method of propagation I advocate is intended for private growers who only require a few hundred plants, as market growers, who produce many thousands, have their own special methods. When taking cuttings, it is essential to obtain them from plants that are vigorous and free from disease, so as to ensure the continuance of a healthy stock. Those from the centre part of the stem are the best; they should be removed when about 3in. long, and prepared in the usual way. It is most important to take really good cuttings, as weak, thin growths fail to make good plants. We obtain good results by inserting them singly in small thumb pots filled with a fine compost consisting of loam, leaf-soil, and silver sand in equal parts. Plunge the pots in fibre in a propagating frame, with a bottom heat of 60 degrees and a overhead temperature of 55 degrees. Give them a thorough watering in with a can to which a fine rose is fitted, and keep the frame fairly close until they are rooted. Just admit a little air in the morning for an hour or two, and at the same time dry the glass to remove condensed moisture.

It is desirable to shade the cuttings lightly from bright sunshine, and give a gentle spray with the syringe if required. Under such conditions they root readily in from three weeks to a month, when they should be gradually exposed to more air. Of course, this treatment varies a little according to circumstances. Shift the young plants on into 60's, using more loam and less sand in the compost, but make sure that they are moist at the root before being potted, and grow them on in a temperature of from 50 degrees to 55 degrees.

Some growers prefer to root their cuttings

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in sand only, and by this means more can be propagated in a given space. When this method is followed, the frame has a 3in. layer of firm, moist sand in the bottom, and the cuttings are inserted in that until rooted; but taking into account the fact that they have to be put into very small pots before they can be moved into the 60 size, it is doubtful if there is any advantage. When they are rooted in pots they can be shifted on without the roots being disturbed at all, and in consequence there is practically no check to growth. When the young plants are 5in. or 6in. high, pinch out the tops to induce them to produce side shoots, and form a bushy habit. They may also be stopped again later, but not after the end of June.

### Repotting and Watering.

The next move will be into 48's. For this potting, a compost consisting of three parts good fibrous loam, one part flaky leaf-soil, with the addition of sufficient silver sand and broken charcoal to keep the compost sweet and open is recommended. Add a 32-sized pot full of some approved carnation manure to each bushel of the compost, and mix well together. When preparing the loam pull it to pieces by hand, as this enables heavy lumps to be removed, and also permits the operator to pick out any wireworm that may be in the soil. Pot firmly, but take care not to place the plants too deeply—they should be the same depth in the soil as before; deep potting is sometimes the cause of stem rot. Provide temporary support when required, and grow the plants on in the same house until the end of April, when they can be removed to a cold frame. Ventilate with care at first, but later on admit more air; finally remove the lights entirely, except during heavy rains.

Watering must always be carefully performed, especially after potting; allow the soil to become moderately dry, and then afford sufficient water to thoroughly moisten the whole of the compost. When nicely rooted, move the plants on into 24's, in which they will be allowed to flower, and use a similar compost as recommended before, only in a rather coarser condition.

When well established, stand them out in the open on a bed of ashes, so that they may enjoy the maximum amount of light and air; but it is advisable to erect a framework over them, on which to place lights in case of wet weather. The plants must receive support as required, and for this purpose the patent wire supports have superseded the old method of staking and tying. They enable the flowers to be cut more easily, and when affixed save a good deal of subsequent labour.

During bright weather the plants derive much benefit from being sprayed about twice a day, and this helps to keep insect pests in check, besides encouraging growth. Do not permit green fly to gain a footing, but upon the first sign of it spray the affected growths with quassia extract. As the plants become well rooted, weak soot water can be given with advantage at alternate waterings, and it may also be occasionally sprayed on the foliage.

(To be Continued.)

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**The Specific Name of the Common Hydrangea.**—A few years ago I thought there was no doubt whatever as to the correct specific name of the hydrangea, for we were told by different authorities that it was named in honour of Queen Hortense, and should consequently be Hortensia. In recently correcting an acquaintance, however, I had a rude awakening, for I was referred to the last edition of the hand list of trees and shrubs at Kew, where, sure enough, it was given as Hortensis, with Hortensia as a synonome. This list was published in 1902, and in that of Tender Dicotyledons issued two years previously Hortensia was adhered to, and also in the first Tree and Shrub list of 1894. Such confusion makes one lose faith in our botanical authorities, with whom it seems to be a case of pay your money and take your choice.—W.

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# ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the GARDENERS' MAGAZINE, 148 and 149, Aldersgate Street, E.C.

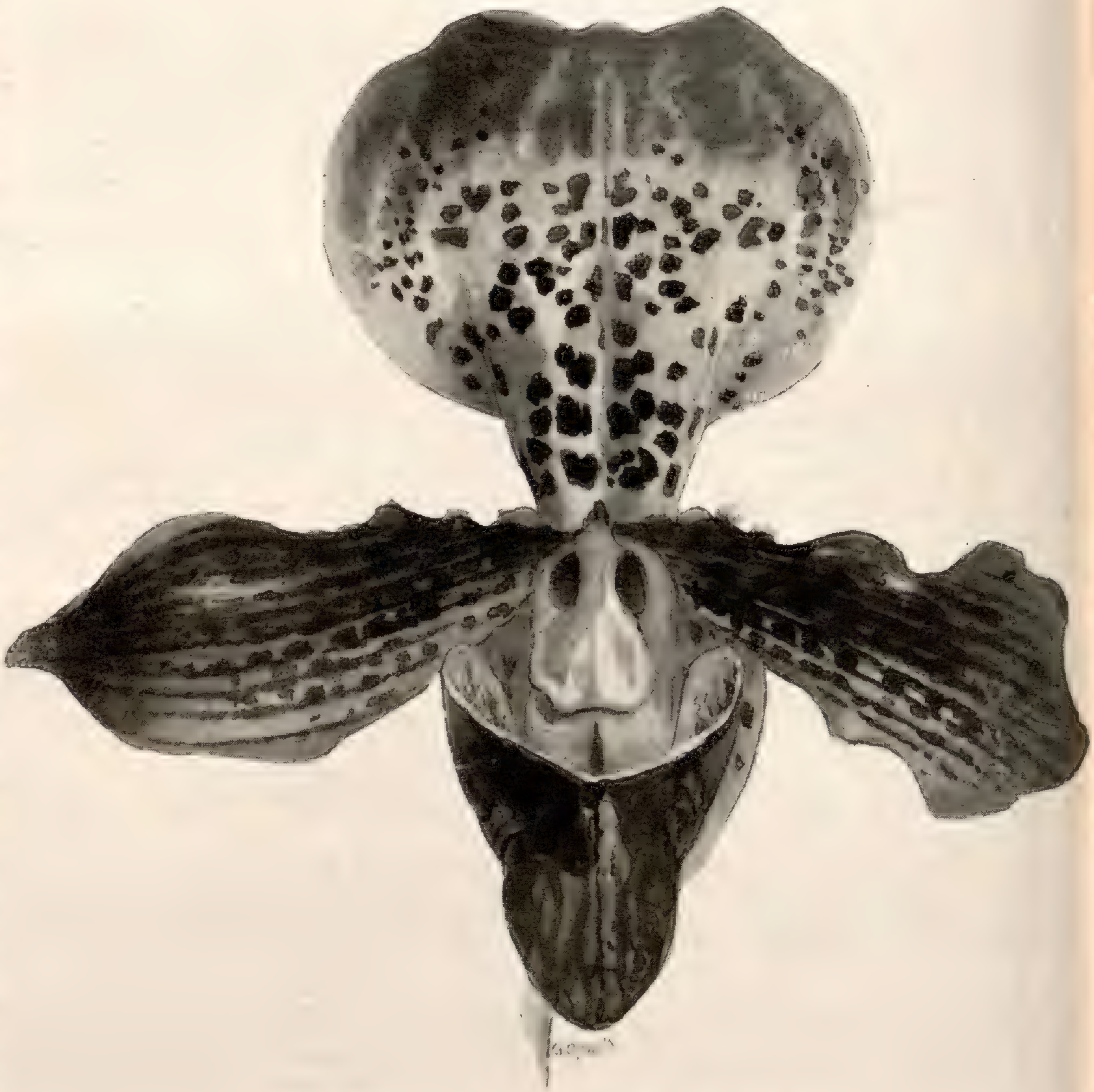
Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the GARDENERS' MAGAZINE, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the GARDENERS' MAGAZINE. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

---

CYPRIPEDIUM EURYADES.—N. E. J., Ipswich: I am just beginning to take an interest in winter-flowering cypripediums, and I gather from your reports of the R.H.S. and other meetings that C. Euryades is a fairly popular hybrid, and new varieties of it are frequently raised. I shall be glad if you will kindly tell a new reader how C. Euryades was raised.—S. Euryades is really a variety of C. Hera. C. Hera first flowered in 1892, and was raised by Messrs. Jas. Veitch and Sons, by crossing the fine old C. Boxalli with the hybrid C. Leeanum. About a year after C. Hera appeared, the varietal form named C. Euryades flowered, and, as a general rule, by the use of the finest forms of C. Leeanum, as parents most of the late seedlings have resembled C. Euryades more than the original C. Hera, hence the latter name is rarely used. The dorsal sepal is generally white, with a green base, spotted with purple, and sometimes blush-tinted; occasionally there is a medium purple band. The petals and lip are yellowish-green, shaded with brown, and usually brightly polished. The accompanying illustration represents a fairly good form of the hybrid, but in the very best varieties the dorsal sepal has been broadened and smoothed out right down to the base, instead of being pinched in at the base and having reflexing margins.



CYPRIPEDIUM HERA VAR. EURYADES.

CROWN GALL DISEASE IN ROSES.—W. R. G., Sevenoaks: Have you ever published an account of the Crown Gall Disease that attacks roses and some other plants? If you have, and will kindly give me the date of the issue I shall be very greatly obliged.—We published an illustrated account of the Crown Gall Disease on p. 959 of the GARDENERS' MAGAZINE of December 3, 1910.

GLADIOLUS COLVILLEI AND ITS VARIETIES.—O. B., Alfreton: Will you be good enough to tell me which are the best varieties of the early-flowering Gladiolus Colvillei for cultivation in pots, and when should they be potted?—Corms of these early-flowering gladioli should be obtained at once, and potted; use pots 4½ or 6in. in diameter, and place from six to twelve corms in each pot, according to size. A good compost consists of two parts good turfy loam, one part of leaf-soil, and a good sprinkling of sand. During the process of potting place a little sand under each corm. Good varieties are G. Colvillei, The Bride, Queen of Holland, Ne Plus Ultra, Pink Perfection, and Crimson Queen.

SOWING ASPARAGUS.—T. E., Tavistock: Please tell me the best time to sow asparagus seeds and the best method of sowing, as I am anxious to obtain crowns for planting new beds in 1914. Some of our beds are very old, and seem to have suffered from inattention, consequently we propose to purchase some planting crowns this coming spring, and make two new beds. Each following year we hope to make two new beds, and dig up two old ones, until we have an entirely new set.—The best time to sow asparagus seeds is in early April in

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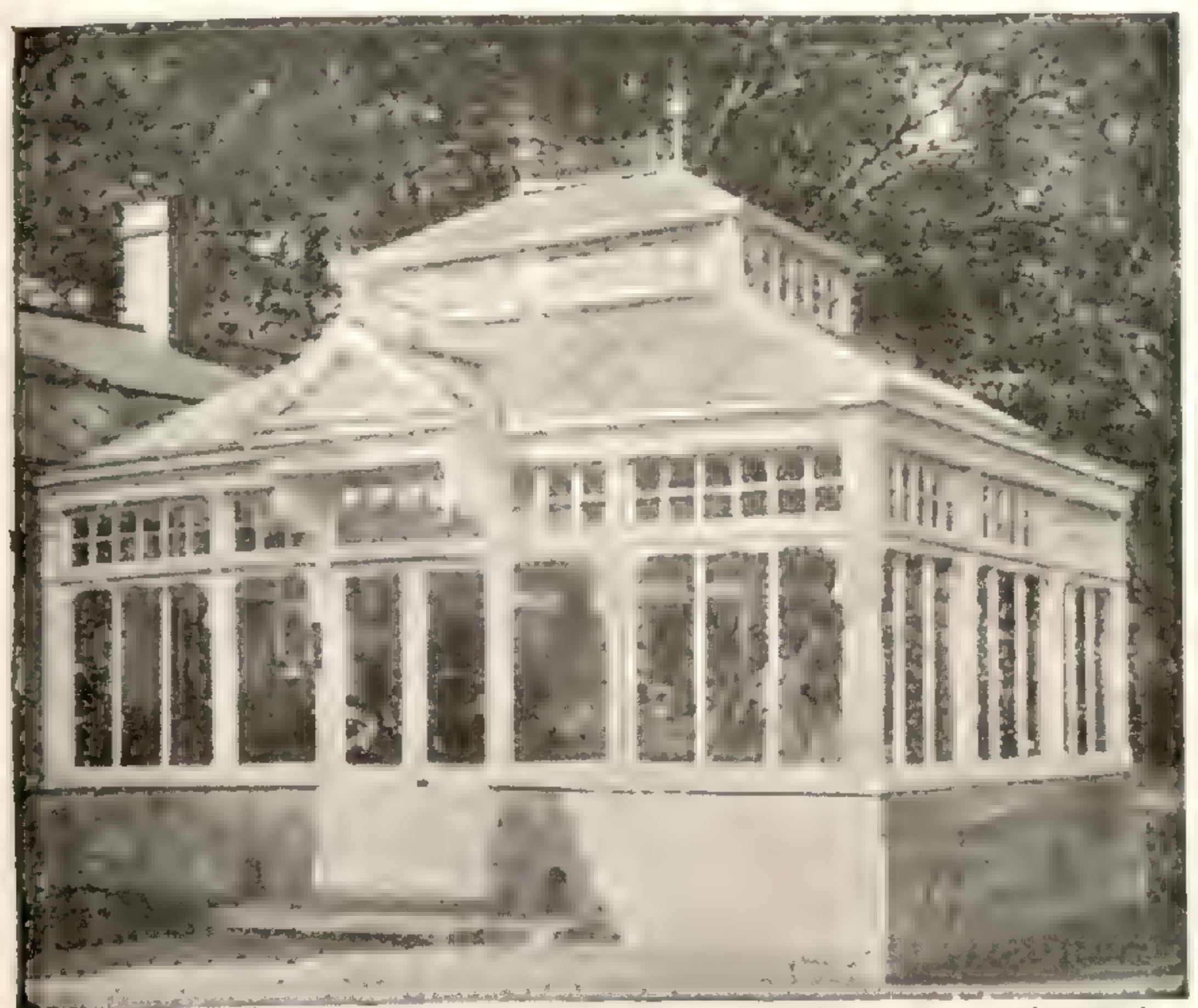

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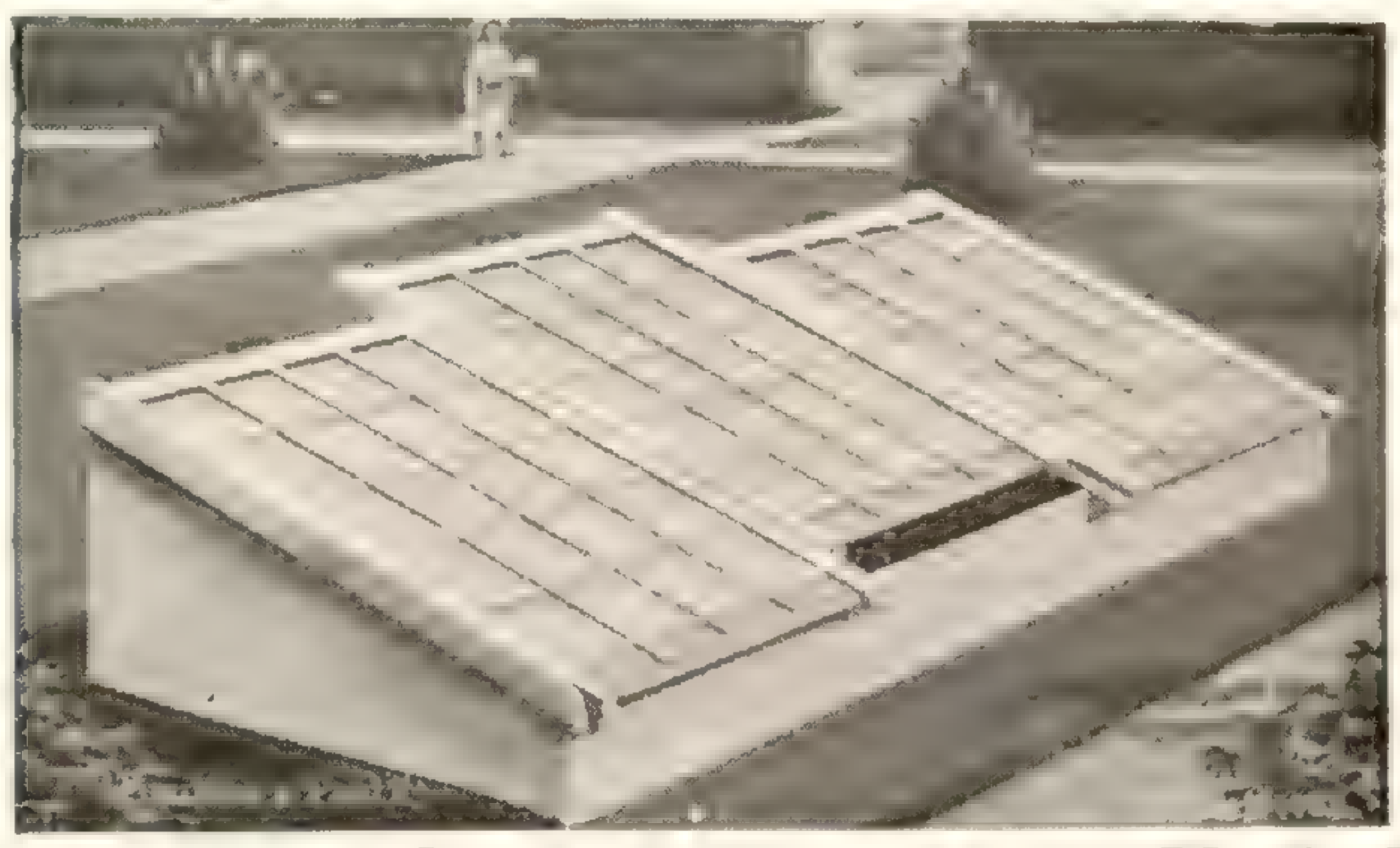

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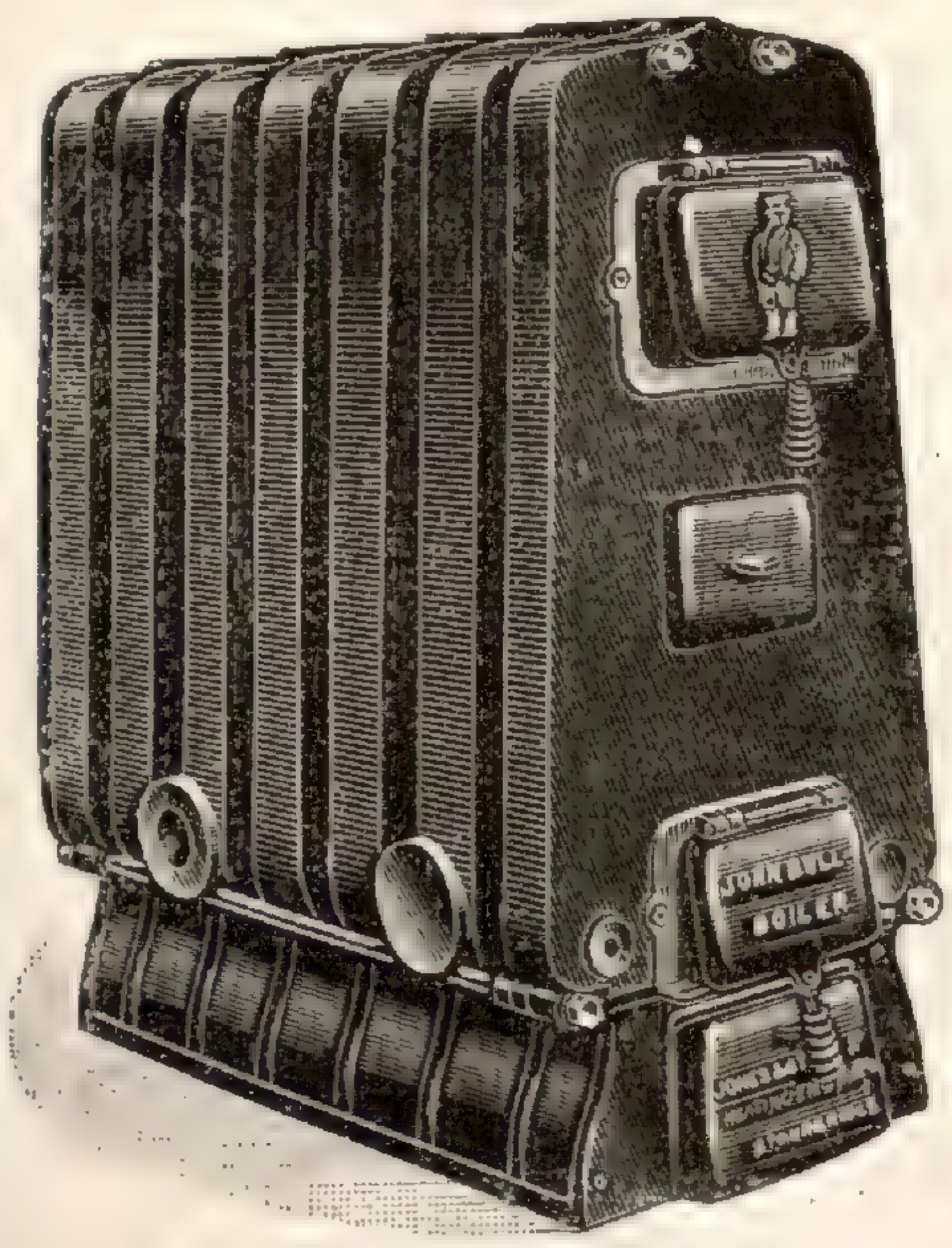

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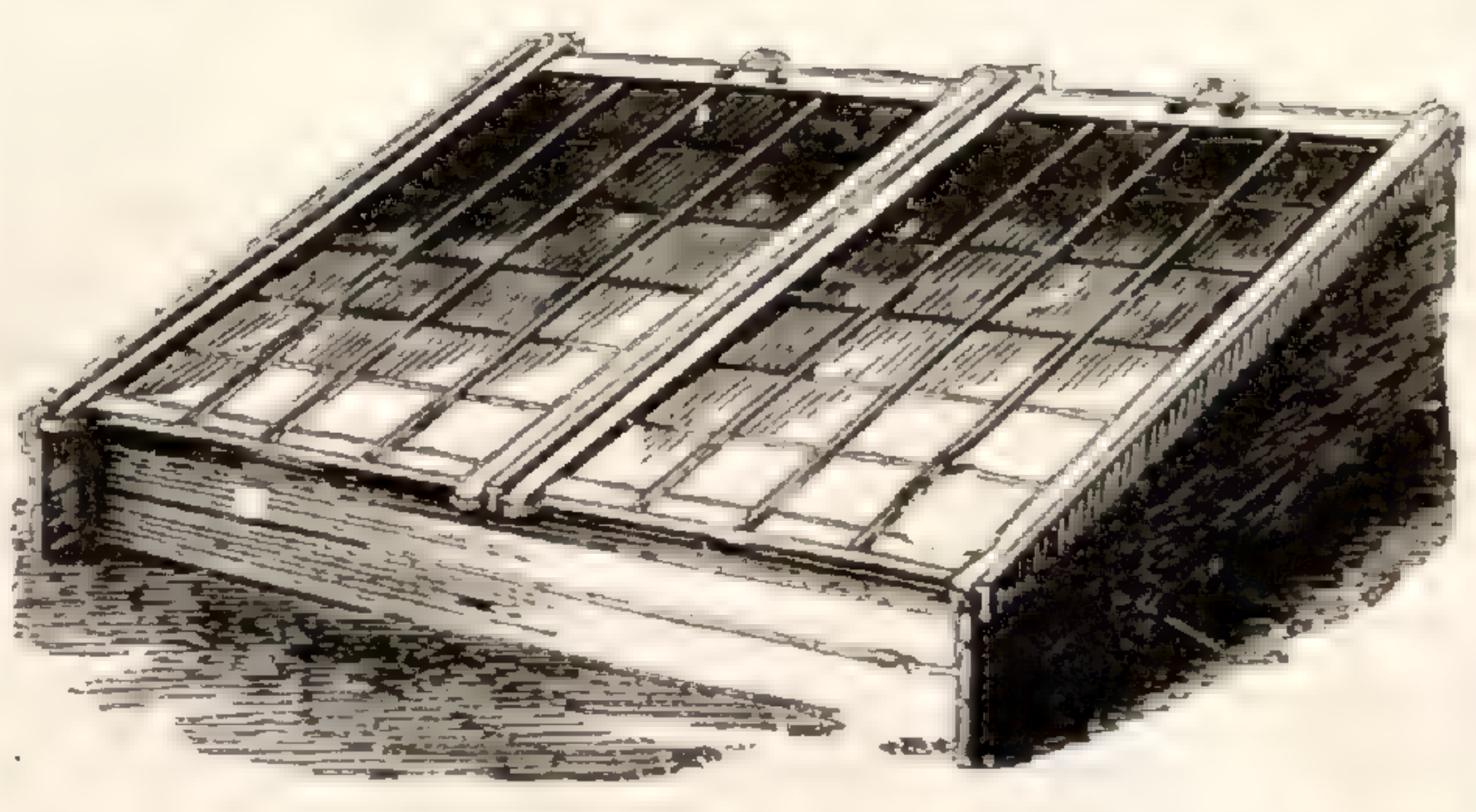

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thoroughly good and well-worked soil. Sow in shallow drills drawn a foot apart, and thin the seedlings early to one foot apart. If time and circumstances permit, the seedlings should be left until they have flowered and fruited, and those that fruit heavily should be rejected for permanent planting, as plants that fruit rarely or sparsely generally give the best yield of heads for cutting.

TEA-SCENTED AND HYBRID TEA ROSES.—H. W., Southwell: I shall be greatly obliged if you will, through the columns of your valuable paper, give me the names of about three dozen first-class hybrid tea and tea-scented roses, and also a few pillar roses.—Assuming that you require roses for garden decoration rather than for exhibition purposes, we give the following list of suitable varieties: H.T. roses: Antoine Rivoire, Camoens, Caroline Testout, Clara Watson, Dorothy Page Roberts, Duchess of Wellington, Ecarlate, Florence Pemberton, General McArthur, Grace Darling, Gustav Grunerwald, Irish Elegance (single), Joseph Hill, Jonkheer T. L. Mock, Kaiserin Augusta Victoria, Lady Ashtown, Mdme. Abel Chatenay, Mdme. Jules Grolez, Mdme. Leon Pain, Mdme. Melanie Soupert, Mdme. Ravary, Mrs. E. G. Hill, Mrs. Theodore Roosevelt, Pharisaer, Prince de Bulgarie, and Richmond. Tea Roses: Anna Olivier, Corallina, Mdme. Antoine Mari, Mdme. Jules Gravereaux, Harry Kirk, and Sulphurea. Roses for Pillars: American Pillar, Blush Rambler, Dorothy Perkins, Hiawatha, Mdme. Alfred Carriere, Gruss an Teplitz, Gustave Regis, and White Dorothy.

APPLE FARMING IN ONTARIO.—S. S., Worcester: Can you tell me where I can obtain information regarding apple cultivation in Ontario, as I feel inclined to start fruit farming in that province?—If you communicate with the Ontario Department of Agriculture, Fruit Branch, Toronto, Ontario, Canada, asking for bulletins on fruit culture in the province, we believe you will promptly receive the information you desire.

### NAMES OF PLANTS.

S. E. T., Chippenham.—Plumbago rosea.

C. D. W., Hertford.—1, Linum trigynum; 2, Plumbago rosea; 3, Centropogon Lucyanus; 5, Selaginella apoda.

L. E. W., Melton Mowbray.—1, Oncidium cheirophorum; 2, Masdevallia tovarensis; 3, Calanthe Veitchi—very poor colour.

F. E. B., Morton.—1, Abies Nordmanniana; 2, Ceterach officinalis; 3, Adiantum tenerum; 4, Cotoneaster horizontalis; 5, Hippeastrum aulicum.

R. C. H., Maldon.—1, Sequoia sempervirens; 2, Cupressus macrocarpa; 3, Selaginella Emileana; 4, Dracæna congesta; 5, D. Godseffiana; 6, not recognised, send when in flower.

### NAMES OF FRUITS.

F. B., Matlock.—A fine specimen of Bismarck.

S. F. E., Chichester.—1, Ribston Pippin; 2, Court Pendu Plât; 3, not recognised.

C. A., Minehead,—1, Dumelow's Seedling; 2, Egremont Russett; 3, King of the Pippins; 4, a very small fruit, probably Claygate Pearmain.

## NOTICE.

**READERS experiencing difficulty in obtaining "THE GARDENERS' MAGAZINE" at any bookstall or newsagent should write to the**

**PUBLISHING MANAGER,**
**148-9, Aldersgate Street,**
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**who will give the matter immediate attention.**

## NOTES OF OBSERVATION.

◆

**Correa cardinalis.**—The Australian fuchsias, as the correas are popularly termed, are a very pretty class of evergreen shrubs, and need the protection of a greenhouse in this country. The flowers, which are borne in great profusion, are tubular, and of a drooping fuchsia-like character. They will often bloom throughout the winter months. Some of them are rather dull in colour, the brightest of all being that at the head of this note.—K.

**Forms of Vitis inconstans.**—One cannot fail to be struck in the autumn with the great variation in the leaf tints of this vine, which is far better known as Ampelopsis Veitchi. The very strong-growing form does not as a rule colour nearly as well as the more slender type, which takes possession of a wall by covering it with a network of slender shoots clothed with small foliage. The comparatively new Ampelopisis Lowi also colours well.—T.

**Plant Groups at Shows.**—I do not think the building up of group of plants to a great height, as seen during the present autumn, is an improvement on the arrangements of past years, say, ten to twenty years ago. I will only refer to one group, which was awarded a first prize by the judges, the owner being thus encouraged to build, it may be, still higher groups in the future. The leaves of the central palm were about 15ft. or 17ft. from the ground; the pot being raised about 10ft. to 12ft., and at this height small pot plants were grouped on a stand, and its side wings supported by other pot plants down to the ground level almost. The only part of this group, to my mind, that was attractive, was the base, which was beautifully filled with smaller plants. The base, with a graceful palm and a few other light plants in the centre, but with the pots resting on, or near the floor, would have made the most pleasing group.—G. B.

## FORTHCOMING ENGAGEMENTS.

MONDAY, December 16.—National Chrysanthemum Society's Executive Committee, 7 p.m., at Carr's Restaurant, Strand.

TUESDAY, December 17.—Royal Horticultural Society; Committee will meet at 12 o'clock, but there will be no general exhibition of plants and flowers.

National Rose Society: Annual Meeting at the Crown Room, Holborn Restaurant, corner of Kingsway, W.C., at 3 p.m.; to be followed by a Conversazione from 4.30 to 6 p.m.

THURSDAY, December 19.—Linnean Society.

WEDNESDAY, December 25.—Christmas Day.

THURSDAY, December 26.—Bank Holiday.

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## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS at WISLEY, SURREY.
Height above Sea-level, 150 feet.

| Date. 1912. December 1 to December 7. | Sunshine. | Temperature of the Air. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Dec. 1—Sunday | 0 6 | 30 | 28 | 46 | 26 |
| ,, 2—Monday | 5 6 | 39 | 38 | 46 | 31 |
| ,, 3—Tuesday | 1 48 | 33 | 32 | 50 | 32 |
| ,, 4—Wednesday | — | 49 | 49 | 50 | 33 |
| ,, 5—Thursday | 0 6 | 37 | 36 | 50 | 35 |
| ,, 6—Friday | 0 12 | 49 | 48 | 51 | 37 |
| ,, 7—Saturday | — | 47 | 46 | 51 | 40 |
| Means | (total) 7 18 | 40 | 39 | 49 | 33 |

| Date. 1912. December 1 to December 7. | Rain. | Temperature of the Soil at 9 a.m. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | Lowest Temperature on Grass. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Dec. 1—Sunday | 0·20 | 39 | 42 | 47 | 17 |
| ,, 2—Monday | — | 38 | 41 | 46 | 19 |
| ,, 3—Tuesday | 0·05 | 39 | 41 | 46 | 21 |
| ,, 4—Wednesday | — | 42 | 41 | 46 | 29 |
| ,, 5—Thursday | trace | 41 | 42 | 45 | 26 |
| ,, 6—Friday | 0·05 | 42 | 42 | 45 | 33 |
| ,, 7—Saturday | 0·03 | 42 | 43 | 45 | 29 |
| Means | (total) 0·33 | 40 | 41 | 45 | 27 |

NEWS FROM HEADQUARTERS.

EFFICIENCY.

The continued prosperity and progression of the British Empire depend on the efficiency of all departments and individuals on whom the responsibility resolves. The diplomacy of ambassadors and the integrity of over-sea consuls is as important as the maintenance of a strong fleet, capable of immediate mobilisation, or a powerful army ready to take the field at a moment's notice. It is only by possessing departments and individuals of the highest efficiency that our heritage can be upheld.

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JAMES CARTER & CO.,
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# Employment THE GARDENERS' MAGAZINE Register.

**The charge for an Advertisement INCLUDES A FREE ENTRY ON THE REGISTER. Immediate Notice must be given when an engagement is secured.**

---

**A list of Gardeners on the Register will be supplied to employers only upon application to the Publishers if a stamped envelope is forwarded, addressed 148 and 149, Aldersgate Street, London, E.C.**

## Situations Wanted.

COLONEL STEWART RICHARDSON highly recommends JOHN E. DAVIS, who has been with him for the past ten years, as Head Gardener; highest credentials as to capabilities and integrity; leaving through estates being sold. Address, JOHN E. DAVIS, Ballathie Gardens, Stanley, Perthshire.

GARDENER (good Single-handed or Head where two are kept); thoroughly experienced in Kitchen and Flower Garden, also Lawns; 12 years' experience; 5½ present situation; age 26; can be highly recommended; married when suited. F. BARRETT, Ellisfield Manor Gardens, Basingstoke.

GARDENER (Head Working, where four or five are kept). Mr. J. PROWSE, late head gardener (20 years) to the Right Hon. Lord Burnham, can highly recommend W. MANN to any Lady or Gentleman requiring a thoroughly competent man as above; age 32; married; abstainer. W. MANN, St. Hilary Gardens, Cowbridge, Glam.

GARDENER (Head Working), and Wife, experienced Laundress, seeks SITUATION; 30 years' experience in all-round gardening; 12 years in present situation as above; no family; good references. Box 70, Office of this Paper.

GARDENER, good Single-handed, or Second; married; age 28; good experience in Vines, Melons, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places. W. GREEN, The Gardens, Goldicote, near Stratford-on-Avon, Worcestershire.

GARDENER, age 17½, seeks SITUATION as Under Gardener; three years' experience, Inside and Out; good reference. G. DARBY, High Street, Witham, Essex.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 59 Thorpe End, Melton Mowbray.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

**Read what our Advertisers write re "Gardeners' Magazine."**

November 27th.

Dear Sir,

I beg to say that my son has secured a situation through your paper; thanking you very much for the trouble you have taken,

I am, etc.,

B. L.

**The "GARDENERS' MAGAZINE" is the gardener's friend. Read it and recommend it to your friends.**

GARDENER (Single-handed or good Kitchen Gardener, or Pleasure Ground Man); age 28; married; eight years' experience in good places; good references. A. NEWTON, Knossington, near Oakham.

GARDENER (Head of two, or good Single-handed); single; age 25; good experience in Vines, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places; leaving through no fault. J. STEPTOE, 59, Burlington Road, New Malden, Surrey. No circulars.

MR. DAVIS, Ballathie Gardens, highly recommends HENRY PITMAN as Inside Foreman; thoroughly capable, conscientious, and very reliable; age 24; leaving through estates being sold. Address, HENRY PITMAN, Ballathie Gardens, Stanley, Perthshire.

MRS. MURRAY IND highly recommends her Head Working GARDENER, where four or five under kept; thoroughly practical in all branches Inside and Out; life experience; age 38, married; leaving through place sold. C. PEARTREE, Coombe Lodge Gardens, Great Warley, Essex.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Paddock Cottage, High Street, Orpington, Kent.

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*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London,* ***E.C.***

**For DECEMBER 21, 1912.**

**Please Repeat my Advertisement.**

**Name**........................................

**Address**........................................

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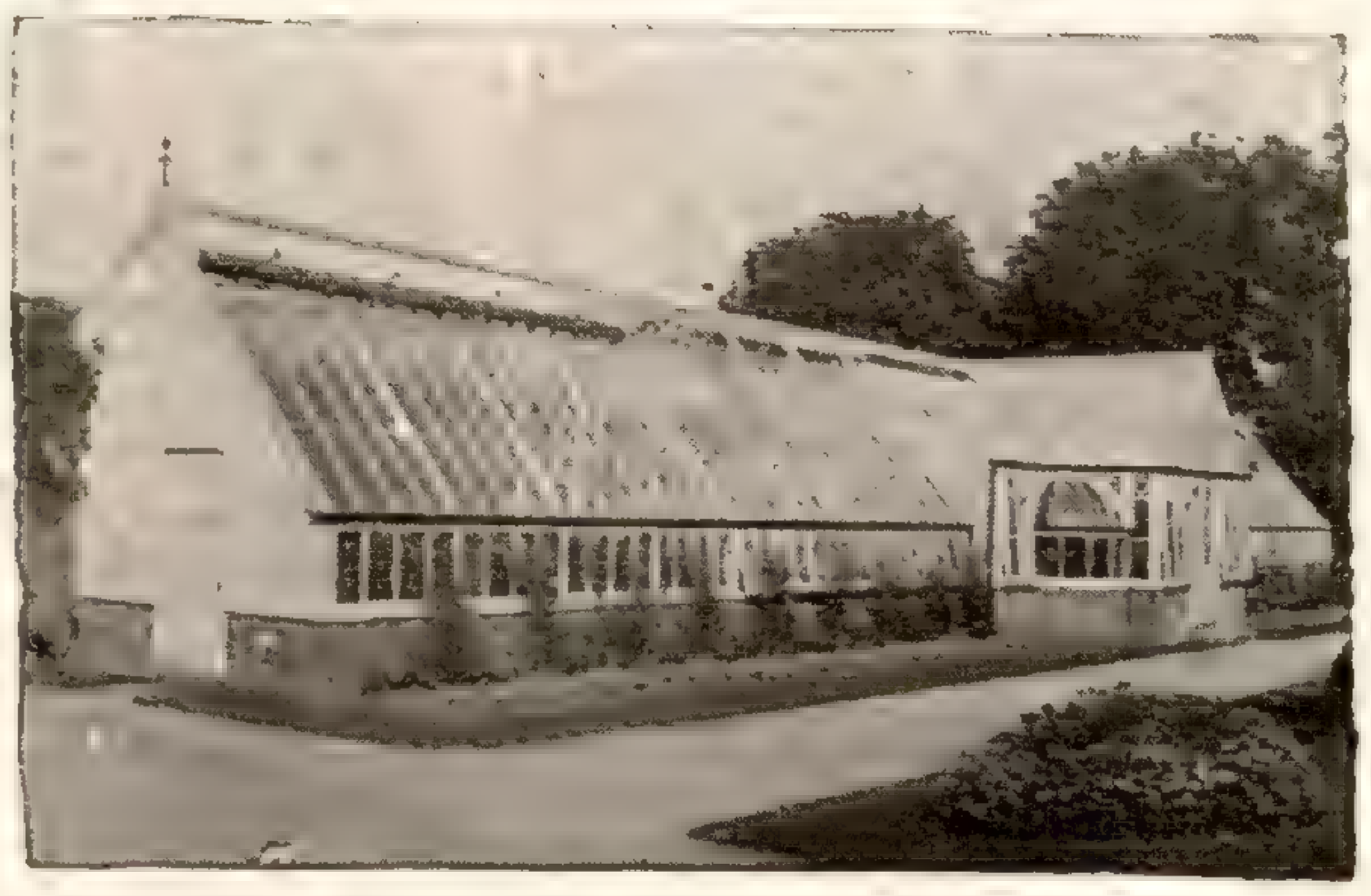
**Date**..............................

**THIS COUPON**, duly filled up, should be forwarded not later than Tuesday, for the next issue.



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# THE GARDENERS' MAGAZINE.

No. 3,086. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

SATURDAY, DEC. 21, 1912

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KELWAY AND SON, The Royal Horticulturists,
LANGPORT, SOMERSET.

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234, Borough High Street, London, S.E.

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ESTATE AGENT highly recommends HEAD GARDENER to Lady or Gentleman requiring an efficient and trustworthy Man, where several men are kept; thorough practical experience in all branches of gardening, gained in large establishments, including Wynyard Park, Leonardslee, and Ripley Castle; nine years present situation as Head; leaving through death; age 38; married, two boys, 6 and 8. DUNKLEY, The Gardens, Stokelake House, Chudleigh, Devon.

FOREMAN CARPENTER or Estate and House Situation required as above by experienced Man; thoroughly used to all branches of building trades and estate work generally; age 29; single; good references will be sent on application. W. PALIN, Pinvin Farm, Pershore, Worcestershire.

GARDENER (Head or Single-handed), 29 years' experience, Inside and Out; 5½ years' character; highly recommended; age 43; near London preferred. WELSTEAD, Woodvale, Woodvale Avenue, South Norwood.

GARDENER (Head Working), and Wife, experienced Laundress, seeks SITUATION; 30 years' experience in all-round gardening; 12 years in present situation as above; no family; good references. Box 70, Office of this Paper.

GARDENER (Head-Working); life experience in good establishments; highest references for Inside Fruit and Flowers; Flower and Kitchen Garden, Orchids, House and Table Decoration; Cricket and Golf Grounds; three years present, 12 years previous, as Head; small family. J. CLUTSOM, Llangibby Castle, Newport, Mon.

GARDENER, age 17½, seeks SITUATION as Under Gardener; three years' experience, Inside and Out; good reference. G. DARBY, High Street, Witham, Essex.

GARDENER, good Single-handed, or Second; married; age 28; good experience in Vines, Melons, Cucumbers, Chrysanthemums, and general routine; excellent references from previous places. W. GREEN, The Gardens, Goldicote, near Stratford-on-Avon, Worcestershire.

GARDENER (Head Working or Single-handed); thoroughly experienced in all garden work, Inside and Out; 5 years' character; married, two children, age 11 and 6; disengaged. SAUNDERS, South Warnborough, Winchfield, Hants.

GARDENER (Single-handed, or with help), 32; good all-round experience; 2½ years present situation; excellent character and reference. R. BEAGLEY, Hewshott Gardens, Liphook, Hants.

GARDENER (Head) seeks RE-ENGAGEMENT; 17 years' practical experience; age 32; married; highest reference; can be recommended by late employer. MOUNSDON, Reading Road, Pangbourne.

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November 27th.

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B. L.

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GARDENER (Head) seeks SITUATION, where one or two are kept, 14 years' experience in all branches, Inside and Out, in large establishments; excellent ref.; highly recommended. H. PAYNE, 39 Thorpe End, Melton Mowbray.

GARDENER (Single-handed or with help); life experience, Inside and Out; age 48; married, no family; disengaged; good references. C. CARPENTER, Little Downham, Isle of Ely.

GARDENER (Head Working); aged 38; nineteen years' all-round experience with plant and fruit houses, lawns and kitchen garden; good references. W. BOULTON, 92, Sumatra Road, West Hampstead, London, N.W.

GARDENER (Head Working), highly recommended by present employer (H. E. Reid, Esq.); capable and trustworthy; 13 years head in present place; thoroughly experienced in Fruit, Flowers, and Vegetables; age 47; one boy, 15; life abstainer; leaving for a change. G. MARLOW, The Oaks Gardens, Walton Heath, Surrey.

GARDENER (Head Working), experienced all branches, Inside and Out; early and late forcing, Fruit, Flowers, Vegetables, Decorating; abstainer; age 32; highly recommended. MALCOLM D. GORRIE, The Gardens, White Hall, Mealsgate, Carlisle.

GARDENER (Single-handed or good Kitchen Gardener, or Pleasure Ground Man); age 28; married; eight years' experience in good places; good references. A. NEWTON, Knossington, near Oakham.

MR. DAVIS, Ballathie Gardens, highly recommends HENRY PITMAN as Inside Foreman; thoroughly capable, conscientious, and very reliable; age 24; leaving through estates being sold. Address, HENRY PITMAN, Ballathie Gardens, Stanley, Perthshire.

MRS. MURRAY IND highly recommends her Head Working GARDENER, where four or five under kept; thoroughly practical in all branches Inside and Out; life experience; age 38, married; leaving through place sold. C. PEARTREE, Coombe Lodge Gardens, Great Warley, Essex.

MUSHROOM GROWER, ridge cultivation, seeks re-engagement; 20 years' experience; good reference. Apply F. HOCKLEY, 4, Cotton Mill Road, St. Stephen's, Canterbury.

STRONG LAD, age 17½, seeks SITUATION as IMPROVER; two years' experience in present place; anxious to learn; Bothy preferred. F. MOSS, Paddock Cottage, High Street, Orpington, Kent.

WORKING FOREMAN.—Thoroughly practical and expert Man, well up in all branches of Gardening, Inside and Out; French and intensive culture. Excellent testimonials, and satisfaction guaranteed. Married, son 15 years of age. M. MULFORD, Wantage Road, Wallingford, Berks.

## Situations Vacant.

GARDENERS (married and single) WANTED for ONTARIO (Canada) Fruit and Vegetable Farms in March; £4 to £8 monthly, with board guaranteed; pay own fare. Send envelope. Councillor RUMSEY, Shrewsbury.

## SITUATION COUPON

**For DECEMBER 28, 1912.**

*To the Advertisement Manager of* "THE GARDENERS' MAGAZINE,"
*148 & 149, Aldersgate Street, London, E.C.*

**Please Repeat my Advertisement.**

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**Address**..............................................

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**Date**..................................

THIS COUPON, duly filled up, should be forwarded not later than Tuesday, for the next issue.

VOL. LV.—No. 3,086. SATURDAY, DECEMBER 21, 1912.

THE GARDENERS' MAGAZINE

# NOTE OF THE WEEK.

## Lime.

Since the absence or presence of lime in the soil is often a determining factor as regards the successful growth or failure of the plants located therein, a little consideration of what it really is should be of interest. As a rule, its presence is beneficial, and in many cases essential, but there are many plants, such as rhododendrons and others, on which it practically acts as a poison, the reason of such sympathy and antipathy being quite unknown. Lime occurs geologically in several forms and many formations, such as the chalk and limestone, which cover enormous areas and are of great thickness, and found to consist almost entirely of lime (calcium) in combination with carbonic acid gas, thus forming carbonate of lime. In the chalk we find the deposit to consist entirely of the skeletons of mostly microscopic organisms which once lived in deep ocean water, whence we must assume they derived the lime which was built up into their shells or skeletons. This belief is justified by the fact that pure lime is so thoroughly soluble in water that a considerable quantity may be present in it without any detriment to its transparency, though immediately it becomes associated with carbonic acid gas, equally transparent and equally capable of permeating the water, it assumes a solid form. This we can prove by taking a vessel of clear lime water and blowing into it by means of a tube, thus introducing the carbonic acid gas which we exhale with every breath. The water at once becomes turbid and milky, and in a short time a deposit of carbonate of lime is seen at the bottom. In the formation of the chalk this association of the two elements must have been effected by the minute organisms aforesaid, the carbonic acid doubtless having been produced by vital action on the same principle as with ourselves. When, in this connection, we consider the thickness and extent of the chalk formation with which we are familiar along our southern coasts from Kent to Devon, and, passing beneath London, reappears a long way inland, and is hundreds of feet in thickness, and we are forced to attribute this immense mass to the slow deposition, at the bottom of a deep ocean, of the remains of microscopic organisms, the mind becomes paralysed in the attempt to compute the time required for the process. Still more are we incapable of grasping the extent of the changes involved in, and the time necessary for, the subsequent elevation of most of this mass from the depths of a deep ocean to some hundreds of feet in the upper air, and to remain there so long that probably a considerable part of it has been again dissolved and carried down to the ocean to be used again in like fashion. That it is so re-used is proved by the fact that new chalk formations on practically precisely similar lines are being deposited to-day in the ocean depths. The other great limestone deposits which crop up all over the world have more or less diverse origins and composition, but in most of them the evidence of organic origin is obvious in the shape of shells or skeletons, microscopic or large, though in many the process of change known as metamorphosis, due to immense pressure, heat, and molecular action, has obliterated all traces of such. Thus it is with many of the marbles, all of which are limestones proper. The pure white kinds are pure carbonate of lime in a crystalline form, the veined and coloured ones owe their tints to infiltration of iron and other oxides. In Asiatic Turkey there are ranges of mountains of considerable height of pure white marble from base to summit and of unknown depth, and, although a very varied and curious vegetation finds a footing in the hollows, to mount them on horseback is like climbing an enormous mass of pure loaf sugar. An incomprehensible fact in this connection is that every here and there in these hills, like plums in a pudding, pockets of some thousands of tons each of pure Corundum (emery) occur, as black as ink and quite sharply defined in the surrounding white. Owing to its solubility, lime formations exposed to the weather are constantly being eaten away, and thus, although the general contour of a chalk country, like the Weald of Kent, is superficially one of gentle undulation, immense caves are often formed by underground streams, and these are frequently rendered very beautiful by the stalactites and stalagmites formed within them by lime-laden droppings from the roofs, the stalactite being the overhead pendant spike-like formation, and the stalagmite the conical projection formed beneath where the drops fall. These, in course of time, connect together, forming columns and curtains and other curious associations of great beauty. Limestone formations also arise on the surface where hot springs, lime-laden, emerge, as in New Zealand, and these also form very curious and beautiful accumulations, devoid, of course, of any organic traces, and in this way showing us how other limestone strata may have originated indirectly from what may be termed organic limestone ones.

MR. C. E. SHEA.

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**Mr. Charles E. Shea,** whose portrait we have the pleasure of giving in this issue, is so well-known to our readers for the splendid services he has rendered in the cause of horticulture that there is no occasion to refer otherwise than briefly to the work he has accomplished in the course of the well-directed efforts he has made for the advancement of horticulture. For many years Mr. Shea devoted a considerable proportion of his leisure to chrysanthemums, and both as a cultivator and raiser he achieved a high degree of success, placing himself in the forefront of the large body of amateurs who gave attention to the Golden Flower. Concurrently with his work in connection with chrysanthemums, Mr. Shea evinced a warm interest in roses, and for some years he exhibited with much success in the amateurs' classes at the leading exhibitions. Not only did Mr. Shea cultivate and exhibit with much success both chrysanthemums and roses, but he devoted some share of his attention to the management of the two leading societies associated with these flowers, and, possessing administrative abilities of a high order, he soon obtained a prominent position in the respective executives. In due course he became president of the National Chrysanthemum Society, and so admirably did he perform the duties associated with the position that the National Rose Society, on the death of Dean Hole, unanimously elected him as his successor. At that time a rule to the effect that the president should not remain in office more than two consecutive years was adopted, and consequently, at the end of the second year of his occupancy of the presidential chair, Mr. Shea returned to his position among the vice-presidents. His excellent work was not, however, forgotten, and, when a vacancy occurred in the presidency this year, by the retirement of the Rev. J. H. Pemberton, a strong desire was felt by the members of Council and others that Mr. Shea should be invited to accept office as president a second time. Practical expression was given to this desire, and, as shown by our report, he was unanimously elected president, and in the interest of both Mr. Shea and the National Rose Society, we trust his second period of office may be not less successful than the first.

**Disbudded Orchids.**—Hitherto it has been the rule of the Royal Horticultural Society's Orchid Committee to ignore a plant which carried a disbudded spike when such plant was submitted for award, but, feeling that this rule might prove some hardship, and that the members should be allowed to use their judgment as to whether disbudding had unfairly enlarged or improved the flowers presented, the committee carried the following resolution at its meeting of December 17, on the motion of Mr. de Barri Crawshay and Mr. J. O'Brien: "Awards will not be recommended to any plants, the natural size and character of the flowers of which have been, in the opinion of the committee, improved through disbudding or dressing."

**Horticultural Representation on Scottish College Board.**—A movement, originating with the members of the Scottish Horticultural Association, to have a direct representative of horticulture on the board of the Edinburgh and East of Scotland College of Agriculture, has been laid before the governors of the latter by a letter from Mr. A. D. Richardson, secretary of the Scottish Horticultural Association, and is to be considered at the next meeting. It appears that co-option is the only means by which such a member could be appointed to the governing body, but horticulturists in general will agree that it is highly advisable that some one, representing either the Royal Caledonian Horticultural Society or the Scottish Horticultural Association should be on the College Board, which, through its highly competent staff, carries out courses of instruction, conduct an experimental garden, and in other ways further horticultural education. The governing body is now to receive from the Board of Agriculture a loan of £1,000 without interest to replace an overdraft on capital account incurred in connection with the Liberton Experimental Garden.

**Popularity of Garden Roses.**—The high degree of popularity that is now enjoyed by roses of special value for beautifying the garden was evidenced in no uncertain manner at the meeting of the Muswell Hill Horticultural Society the other evening, when Mr. George Gordon, V.M.H., gave a lecture on "Garden Roses," illustrated by lantern slides. The meeting, over which Alderman Cooper, Deputy Mayor of Hornsey, presided, was held in the Wesleyan Church Hall, and this building, which seats 500 persons, was so well filled that the audience must have numbered considerably over 400, and, judging from the discussion that followed the lecture, the liveliest interest was evinced in the subject.

**National Chrysanthemum Society.**—A long special meeting of this Society's Floral Committee was held at Essex Hall on Monday, December 16, to settle various matters that had arisen in the work of this committee during the present season. It was decided to grant special market certificates and commendations during the 1913 session, and judgment is to be recorded by pointing. For this particular purpose the general scale of points will be: Colour, 20; form, 20; fulness, 10; petal, 10; stem, 10; foliage, 10; habit of plant, 20; total, 100. For single varieties the code is slightly different: Form, 20; colour, 20; petal, 10; eye, 10; stem, 10; foliage, 10; habit of plant, 20; total, 100. This method of procedure was adopted unanimously. Another piece of business, also adopted unanimously, was a motion that the Floral Committee should not in future recognise a varietal name in which the raiser's or distributor's surname is used as a prefix. Yet one other matter was carried, and eventually accepted by the General Committee, and this was a proposal to charge a fee of one shilling for every variety entered for the consideration of the Floral Committee. About 250 varieties were considered this season, and very many were utter rubbish; the new regulation will probably impose a necessary check, and if it does not, then possibly a higher fee may be charged in subsequent years.

**Additional Public Park for Paisley.**—The late Sir William Dunn, Bart., late M.P. for the burgh, has left some valuable bequests to the town of Paisley. The principal amount is for charitable purposes, but his trustees are authorised to expend a sum of not more than £5,000 in the provision of a public park for the west end of the burgh—a part in which Sir William Dunn had special interests. Some legal difficulty has arisen with regard to the several wills made by the testator, but all these make the same provisions for the public legacies. The bequests were intimated by the Provost of Paisley at a meeting of the Town Council, and much pleasure was expressed by the members—a gratification shared in by the inhabitants, especially by those in the part of the town in which the park will be situated.

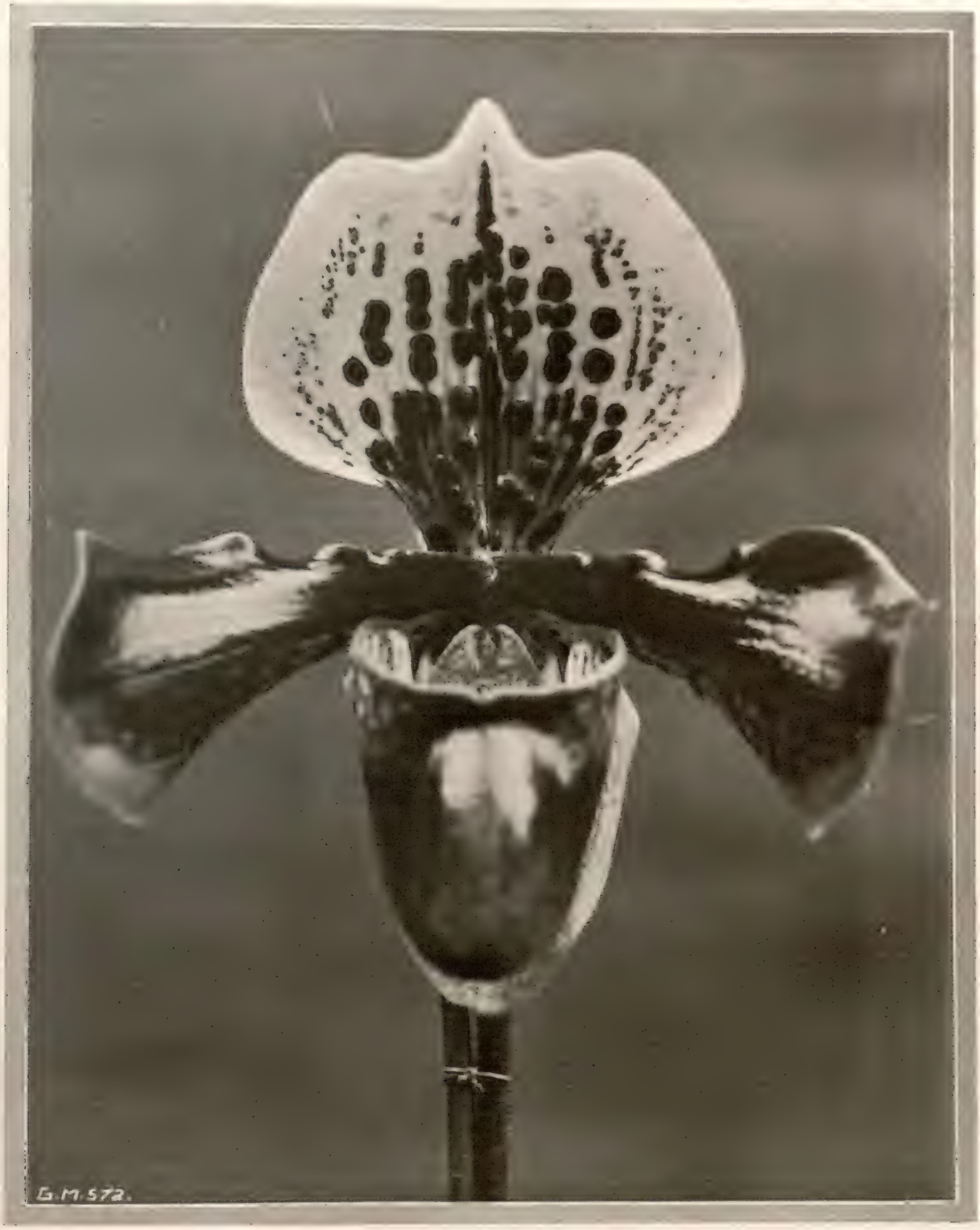
**Hedychium coronarium as a Source of Paper.**—Many of our readers will be familiar with Hedychium coronarium, a strong-growing member of the Ginger family, and one that produces large spikes of white fragrant flowers in a warm house, such as the Lily House at Kew. It appears that this species has become naturalised in Brazil, where, in some places, it grows spontaneously, spreads rapidly, and produces a dense jungle-like growth that completely ousts other vegetation. Experiments proved that the pulped stems had some value for paper-making, and later experiments by Messrs. Clayton, Beadle and Stevens, as recorded in the "Kew Bulletin," show that the paper so produced is of exceptionally good quality, for if the pith cells are retained in the paper, "they give it parchment-like properties to an extraordinary degree. They also render the paper ink-bearing without the addition of any sizing material."

**A New Monograph of the Ivy.**—Dr. F. Tobler has published an important monograph of the genus Hedera ("Die Gattung Hedera," Gustav Fischer, Jena). The author, we learn from "Nature," describes two new species of ivy (Hedera himalaica and H. japonica), making six species in all, which are well illustrated by reproductions from photographs. Besides detailed descriptions of the morphology of the genus, the work includes an interesting chapter on the biology and physiology of the ivy, followed by chapters on the history of the genus and the culture of the species as garden plants.

**The Perpetual-Flowering Carnation Society,** recognising the support which it receives from the provinces, and alive to the interests of its provincial members, has decided to hold its next spring show in the Midlands. Leamington, geographically the centre of England, has been chosen as a suitable venue for the event, and the show, for which arrangements are already well in hand, will be held on April 10 and 11, 1913. Schedules may be obtained from the hon. secretary, Mr. T. A. Weston, Floradale, Orpington. The society's London show of 1913 will be held at the Royal Horticultural Hall, on December 3.

**Feeding Value of Potato Haulm.**—We learn from the "Journal" of the Board of Agriculture that in the experiments conducted by Völtz, at the Institute of Fermentation Industries, Berlin, potato haulm harvested early in October was dried partially in the field, and later in drying kilns, and then chopped and fed to two sheep. The analysis of the dried tops was as follows: Water, 19.83 per cent.; crude protein, 10.13 per cent.; carbohydrates, 28.71 per cent.; crude fat, 3.58 per cent.; crude fibre, 27.03 per cent.; ash, 10.72 per cent. The following were the coefficients of digestibility: Crude protein, 61.2 per cent.; crude fat, 41.7 per cent.; crude fibre, 56.4 per cent.; carbohydrates, 76.9 per cent. The tops were found to have a greater digestibility when mixed with meadow hay. The tops were, it is stated, eaten with avidity by the animals, and no bad effects resulted, but nothing is said as to whether such food was beneficial to them.

**The "Botanical Magazine"** for 1912 is dedicated to Mr. John Medley Wood, A.L.S., "whose devotion to their interests, during the many years that he has held charge of the Durban Botanic Gardens, has been of signal benefit alike to horticulture and to botany." The issue for December opens with a double-page illustration of Pinus flexilis, a somewhat rare species from Colorado, and worth growing for its distinct appearance. This is followed by Primula Juliæ, a Transcaucasian species, with purple, yellow-throated flowers, and a species readily propagated by means of seeds or its stolon-like growths: Akania Hilli, a small Australian tree, with elegant pinnate leaves and panicles of white flowers—it recently flowered at Kew in the Mexican House, for the first time, after having been in cultivation there for forty years; Lissochilus Andersoni, a moisture-loving, tropical, terrestrial orchid from West Africa, with greenish-yellow sepals and petals and a purple-lined lip, and Rosa omeiensis, found in Szechuan about a quarter of a century ago, but more recently collected by Mr. E. H. Wilson, and introduced to cultivation by Messrs. J. Veitch and Sons. It is a hardy rose, with elegant, much-divided foliage, white flowers about an inch across, very spiny stems, and bright red, yellow-stalked fruits.



CYPRIPEDIUM DEMETER.

A very fine hybrid obtained by crossing Cypripedium G. F. Moore with C. Earl of Tankerville. The colouring is white, purple spots, purple, brown, and green, and the flowers have a brightly polished appearance. F.C.C., R.H.S., December 17. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

**Forestry at Cambridge.**—The Forestry Committee of the Cambridge University report that the course of instruction during the past year by the Reader and Lecturer has been supplemented by excursions to woods and plantations in Cambridgeshire and the adjoining counties. The average attendance has been fourteen during each term. The training of probationers for the Indian Forest Service began at Cambridge in the Michaelmas Term, 1911, when two of the five probationers selected in that year by the India Office entered on their studies at the Forestry School. During the past year the collection of specimens illustrative of timbers, forest botany, and diseases of trees has been largely increased. The two most important collections received each comprising about 100 specimens of North American woods, accurately named, were presented by the Director of the Forest Products Laboratory, Madison, Wisconsin, and by Professor Record, of the Yale University Forestry School. The University is also indebted to various Conservators of the Indian Forest Service for an exceptionally fine series of planks of the commoner Indian timbers. The provision of a forestry building containing laboratory, workshop, and museum accommodation for teaching and research is regarded as urgent. A site on the Downing Ground has been allotted by the University, and plans for the building have been approved. The building will be begun as soon as £5,500 is collected. Of this sum, £4,500 is now in hand. The Treasury has granted to the Forestry Committee, through the Board of Agriculture and Fisheries, a sum not exceeding £500 per annum for investigating the structure of timber. The committee have drawn up a scheme for research, and they propose to make a beginning with home-grown pine and spruce, and later to investigate foreign timbers of the same class

## SOME YELLOW AND BRONZE CATTLEYAS AND LÆLIO-CATTLEYAS.

In a previous note I referred to some of the most desirable of the purple or mauve coloured autumn-flowering hybrids of the Cattleya, Lælia, and Laelio-cattleya families; but what appears to me a greater development still is the number of yellow and bronze-tinted hybrids that have been introduced during the last few years. No one could fail to admire the striking contrast these afforded by comparison with the typically coloured cattleyas at the autumn show of the Royal Horticultural Society. In Sir George Holford's, Messrs. Charlesworth and Co.'s, and Messrs. Sander and Sons' groups there were many hybrids and secondary hybrids displaying yellow colouring, and giving brightness to each arrangement.

When we consider how few species have yellow colouring, there is all the greater reason for appreciating the good work of the hybridist in this direction. To name the principal species used in their production is not at all a difficult matter. These are Cattleya Dowiana, C. Druiana aurea, C. granulosa, C. Schofieldiana, C. Forbesi, and C. bicolor; while among the Lælias we have L. flava, L. cinnabarina, L. Cowani, and L. tenebrosa. Here we have practically the whole of the material from which this good work has been produced.

As the cattleyas afford very little foundation for this section of bronze and yellow flowers, there is a large field open for the hybridist in intercrossing the secondary and future generations. Among the best of those already in commerce may be included C. Aliciæ (bicolor and Hardyana). This is very variable, but the better forms have a pleasing range of tints that are always attractive and useful. C. Cardea (Iris and Fabia) possessing a strong strain of aurea from its ancestors, and remarkable for its good form, but it is variable in colour. C. Iris (bicolor and aurea) is one of the most attractive and useful of its class; it varies considerably, but being a good growing plant, when it is seen strong and in its superior forms, it is difficult to beat. It has proved one of the most successful among the hybrids as a parent, and its influence in secondary hybrids has been remarkable. C. Rhoda (Iris and Hardyana) is one of the finest of the more recent introductions; its bronzy flowers are most attractive, and those with the more distinctive yellow petals and sepals may be considered even more desirable. The rich crimson labellum in all these hybrids is a particularly desirable characteristic. C. Venus (Iris and aurea) has a distinctive bronzy-yellow tint in nearly all the plants, and is a most desirable kind.

The Lælio-cattleyas are naturally richer in bronze and yellow flowers, as the lælia parents available are more numerous. The primary crosses are too well known to require a reference here, but I must add that, where plants are required for decorative and cut flower purposes, there are none more useful than the primary crosses from Lælia Cowani, L. cinnabarina, L. flava, and L. tenebrosa. In this connection, however, my remark is not confined to those kinds which flower during the winter months.

In L.-c. Aureole (L.-c. Luminosa and C. Iris) we have a most attractive and desirable addition; flowers of medium size, variable to some extent in colour, but exceedingly useful. L.-c. Golden Oriol (L.-c. Charlesworthi and C. aurea) we have one of the most beautiful of the yellow-petalled hybrids, possessing a good constitution and clear colouring. It should prove one of the most useful for future developments. L.-c. Hera (L.-c. Issy and C. Hardyana) gives a distinct bronzy shade in the sepals and petals. L.-c. Iverna (L.-c. callistoglossa and L. tenebrosa) is good, and where the plants are strong they are very free flowering, and produce several blooms on long spikes. It varies in its season of flowering, but is always serviceable for cut flowers. L.-c. Lusitania (C. Iris and L.-c. Phryne) is worthy of every consideration. The constitution of C. Warscewiczi has been conveyed through the last-named parent. L.-c. Mikado (L.-c. Golden Fleece and L. cinnabarina), as seen in Sir G. Holford's group on November 5 last, at the R.H.S. Hall, is one of the most desirable of the more recent introductions, being not only decorative, but one of the most beautiful of the deep yellow-flowered hybrids yet introduced. L.-c. Neleus (L.-c. Iris and L.-c. Ophir) is one of the useful decorative kinds, with medium-sized flowers. L.-c. Olenus (L.-c. Bletchleyensis and C. Dowiana Rosita) is one of the largest of the section, variable, but forms with traces of yellow or bronze are among the finest of the autumn-flowering kinds. L.-c. Orion (L.-c. Haroldiana and C. Dowiana Rosita) is fine, especially where the Walton Grange variety of L. tenebrosa has been used in producing the first-named parent. It gives flowers with golden-yellow sepals and petals, and although not distinctly a late winter-flowering plant, we may have it as late as the end of October.

L.-c. Phœbus (L.-c. Cappei and L.-c. Iris) is not large, but useful for decorative effect. L.-c. Prospero (L.-c. Charlesworthi and C. Trianiæ), especially the variety L.-c. P. aurifera, produces distinctly yellow-bronze flowers of average size, and the plants possess a good constitution and free-flowering characteristics. L.-c. Sylvia (L.-c. Phœbe and L.-c. Ascania) is certainly one of the finest. The soft yellow of the sepals and petals, and the ground colour of the lip, are the same shade, while the dark purple front lobe renders it a most desirable addition.

Oakwood Gardens. H. J. CHAPMAN.

## SMILAX.

Smilax sprays containing leaves with browned points or edges are useless for decorative purposes in the dwelling-room. Such defects are, mostly, the result of bad management. If the plants are grown in shallow, narrow borders near hot-water pipes, very careful watering is necessary, or checks to growth and consequent yellow leaves or those with brown points are sure to be plentiful. Then there is also the danger from red spider. Usually these plants are kept dry, or nearly so, at the roots during the winter months; and if the soil is in close proximity to the pipes red spider will soon become troublesome. In a cool border the roots may be kept rather dry, but in one liable to be dried by the hot-water pipes they should not be allowed to suffer through lack of water.

As the sprays are so useful for various kinds of house decoration at all times of the year, but especially in the winter season, everything should be done to preserve the freshness of the leaves.

The plants usually do well grown on a wall facing north, north-east, or north-west; but the finest batch I have as yet seen was grown on a wall facing west, behind several rows of tall palms. Each spray was entwined round thin strings 4in. apart, and nearly 1ft. from the back wall. They received syringings when the palms did; and, being at a nice distance from the wall, were not very liable to attack from red spider, as would have been the case if grown in touch with it, on account of the wall becoming dry at times owing to its aspect. GEO. GARNER.

## SEASONABLE ROSE NOTES.

Up to the time of penning these few notes we have enjoyed a good and open planting season. In some cases, excessive wet has been a drawback, and I would be chary about planting upon any wet ground. When the soil clogs to boots, tools, or sets down too tightly, it will often be wiser to delay the planting. At present the ground is warmer than usual for the time of year. I would even wait until early spring rather than plant upon ground that is altogether too wet for the operation to be done satisfactorily. The use of broad boards is a great help upon some soils, and I feel they are not made sufficient use of. It is true that we want the soil firm about the roots, but it is not well to bind the whole down by heavy traffic and wheelbarrows of manure. More care in the spreading out of roots will be repaid in all cases.

Where the ground has not been prepared no time should be lost. I would do it now and wait for planting until the most favourable time at the end of January or February; it is better when the ground can have a little time to sink a bit. Upon no account will I ever trench or dig when the ground is hard frozen or covered with snow, having had so many unsatisfactory results that we can attribute to nothing but this.

If any protection is contemplated, the material should be made ready for use without further delay. Not only is there much less of this done now, but with the hardier class of roses now grown it is by no means so necessary, nor was it so essential before as many apparently deemed. I am strongly against anything of a wet or moisture-absorbing material as a protective agent, and would not place a quantity of rotted manure around the base of my plants. Rather would I draw up some of the surrounding earth well over the base of all dwarfs. This will keep away frost from the most vital part, and have a tendency to cast off all extra moisture; and I feel convinced from my own observations that our roses will stand many more degrees of frost if dry, than when the surroundings are wet, and this is why well-rotted manure is not placed around the plants here.

With earth around the base and a few branches of some twiggy trees or shrubs stuck among the rose growth or firmly stuck into the ground upon the most exposed side of the beds an efficient protection is afforded. Loose litter of any kind does not afford protection for long; it is either blown away or becomes a wet and undesirable mass around the bottom of the plants. Twigs and branches retain their position, do not retain moisture, and allow of free ventilation that cannot be the case when litter is secured around the plants. Given a little easily applied protection in this way is all that our roses can need.

No pot roses should be left in the open now; a very little shelter will answer their purpose, and we do not find frozen wood reply so satisfactorily to forcing. All should be carefully looked over, and any repotting done now. They can be brought from cool quarters to more heat in batches of convenient size, as needed, and will prolong the supply of cut flowers.

If pot plants for specimens are wanted, few are more useful than the Ramblers and Climbing Polyanthas as standards or pyramids; while for compact, showy plants, I would keep to the dwarf polyanthas as far as possible. Six with large individual blossoms that do well with me are Pharisaer, Mrs. Aaron Ward, Molly Sharman Crawford, Killarney, White Killarney, and Dr. O'Donel Browne.

ROSARIAN.

# PACKING APPLES FOR MARKET.

In our issue of the 14th inst. we referred at some length to the importance of fruit growers adopting more modern methods of packing apples for market than those which are regarded with favour by the majority of those who are engaged in the fruit industry. As we endeavoured to show, sieve and half-sieve and other baskets still enjoy a high degree of popularity for the conveyance of apples from the place of production to the markets, although far inferior to plain boxes of a moderate degree of strength for the purpose. Their inferiority consists in the difficulty, if not impossibility, of so packing the fruits as to prevent movement in course of transit, and thereby avoiding the injury caused by friction. We need not dwell at any length on the fact that apples which are packed in baskets that are not provided with closely-fitting lids suffer considerable damage in the course of a comparatively short railway journey, but it should be mentioned because of the importance of constantly keeping this point in view. When apples, or indeed any other fruits, are damaged in transit they are not only less attractive, but they quickly begin to show signs of decay, and are therefore of much less value to the consumer. On the other hand, apples properly packed in boxes can be sent long distances by railway and other means of conveyance without suffering appreciable injury. We have put the matter to a practical test on more than one occasion, and have found that the boxed fruit keep so much longer as to be worth at least 50 per cent. more than similar fruit packed in baskets.

It follows therefore that if undamaged fruits are worth fifty per cent. more to the consumer, the latter will assess the value according to the length of time over which the supplies remain in good condition, and that if the boxed fruit will remain sound longer than that packed in baskets, he will willingly give a higher price for his supplies. As duly recorded in these pages, the authorities of the Wye College have, during the past three years, been giving special attention to the packing of apples for transit, and the demonstrations of the usefulness of boxes, both at Wye College and the exhibition held in Maidstone in October last, have had a highly beneficial effect in creating additional interest in the subject. With reference to the exhibition, we have just been reading in a report that "sixpence for a non-returnable box is a severe handicap on profits, especially when time has to be paid for in grading and packing, but a real good, reliable, sound article will fetch its price in time." There is really no justification for the assumption that sixpence for a non-returnable box is a severe handicap on profits. The consumer who appreciates fruit that reaches him in a sound state without having been handled in the course of transit will readily pay an additional sixpence for the 40lb. or so of fruit that the box will contain, and the grower will have no occasion to trouble about returned empties, which, by the way, the railway companies do not return free, and usually suffer more or less from rough usage on the return journey. The inside measurement of the boxes that have been brought into prominence by the Wye authorities measure 20 inches in length, 11 inches in width, and 10 inches in depth, and contain, when properly packed, about 40lb. of apples. A box of this size will be found the most convenient for the majority of households.

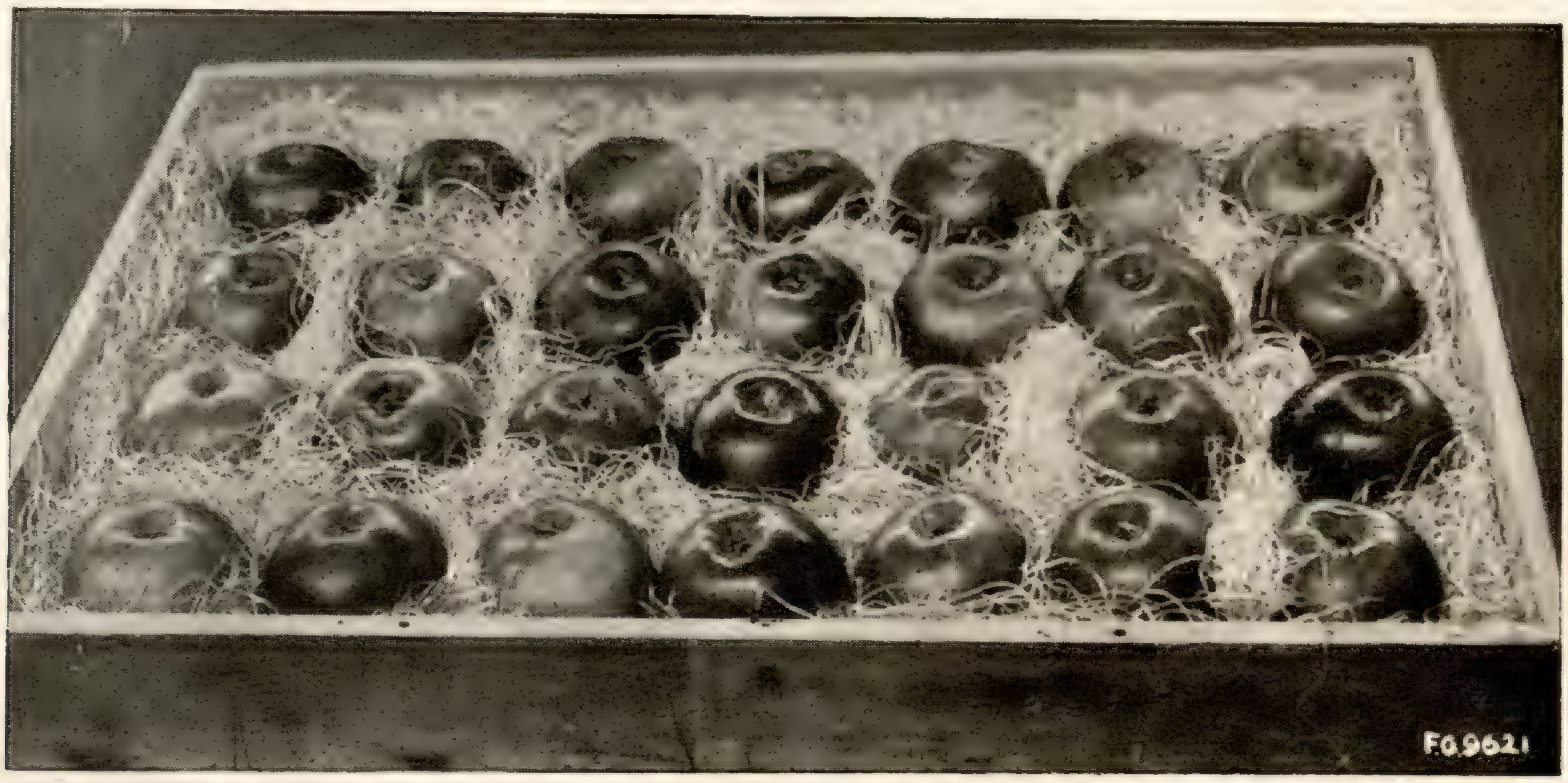
The packing and marketing of apples in Ontario have reached a high degree of development within recent years, and the bulletin recently issued by the Department of Agriculture for the Province on "Apple Orcharding" contains much useful information on the marketing of apples. It is stated by the writer of the bulletin that "Some of our apples are graded and packed in the orchard and shipped direct to market. The majority are roughly graded, packed in barrels, and sent to the storehouse where they are re-packed. The chief package is the barrel, which, for some years to come, will be the standard for our ordinary grades of such varieties as Greening, Baldwin, Russet, Stark, and Ben Davis." Barrels are superior to baskets, inasmuch as when the packing is done with care and the press judiciously used, the fruit can be conveyed long distances without injury. Proceeding, the writer states: "The box package, so much admired, is the standard for western growers, and where we come into competition with them it is likely that we shall have to adopt their style of packing for our fancy fruit. Undoubtedly apples present a much more beautiful appearance when properly packed in boxes, and it is quite certain they hold up longer and show fewer bruises. Our fancy grades should all be boxed, especially the early and tender kinds, such as Fameuse and McIntosh, and the better grades of Spy, King, etc.

"The packing of fruit in boxes by the Ontario growers is greatly on the increase. Local markets in Ontario and Quebec are using more boxes than before. The western markets are asking for their fancy fruit in this package, and if our growers are to participate in these markets for high-priced goods they must ship the greater percentage, if not all, of No. 1 fancy fruit in boxes. The demand for boxed fruit in Great Britain is increasing also, but that country, together with other European importers, will continue to take the bulk of their fruit in barrels. Box-packed apples may meet with poor returns at first, but once introduced to the trade, they should, and undoubtedly will, give better net prices to the grower. Any failure may be attributed largely to low quality and poor packing.

"All summer and early autumn apples should be sold in Canadian markets in boxes. The fruit carries better and finds a readier market, especially in the west. In the local markets, and to some extent in the western markets, there is a good demand for summer apples, such as Astrachan and Duchess, put up in baskets. The fancy and No. 1 grade of apples will always bring better prices in boxes and baskets than in the barrel. The fruit being soft suffers far less from bruising in the smaller package.

"The standard box is 10 inches deep, 11 inches wide, and 20 inches long, inside measurement. It should be made of good clear spruce lumber, the ends ⅞in. thick, sides ⅜, top ¼in.; cleats ⅜in. thick and ⅞in. wide. Good cleats will be a saving of both time and patience. Pine should not be used as the wood taints the fruit. In most cases the boxes are bought set up. Where they are to be shipped a long distance it will be a great saving in freight to buy them in the flat. It is not an expensive operation to nail them together, and they occupy much less space in the fruit house. Too many nails should not be used and only as many as are absolutely necessary to put the box strongly together. If the sides, tops, and bottoms are in two pieces, four nails in each end will be enough. If they are in one piece, three are all that will be necessary. The tops and bottoms should be nailed with the cleats. Inch and three-quarter gummed box nails for the sides and two-inch nails for the tops and bottoms will hold much better than ordinary nails. Before using, the cleats should be soaked for a couple of hours in water to avoid splitting.

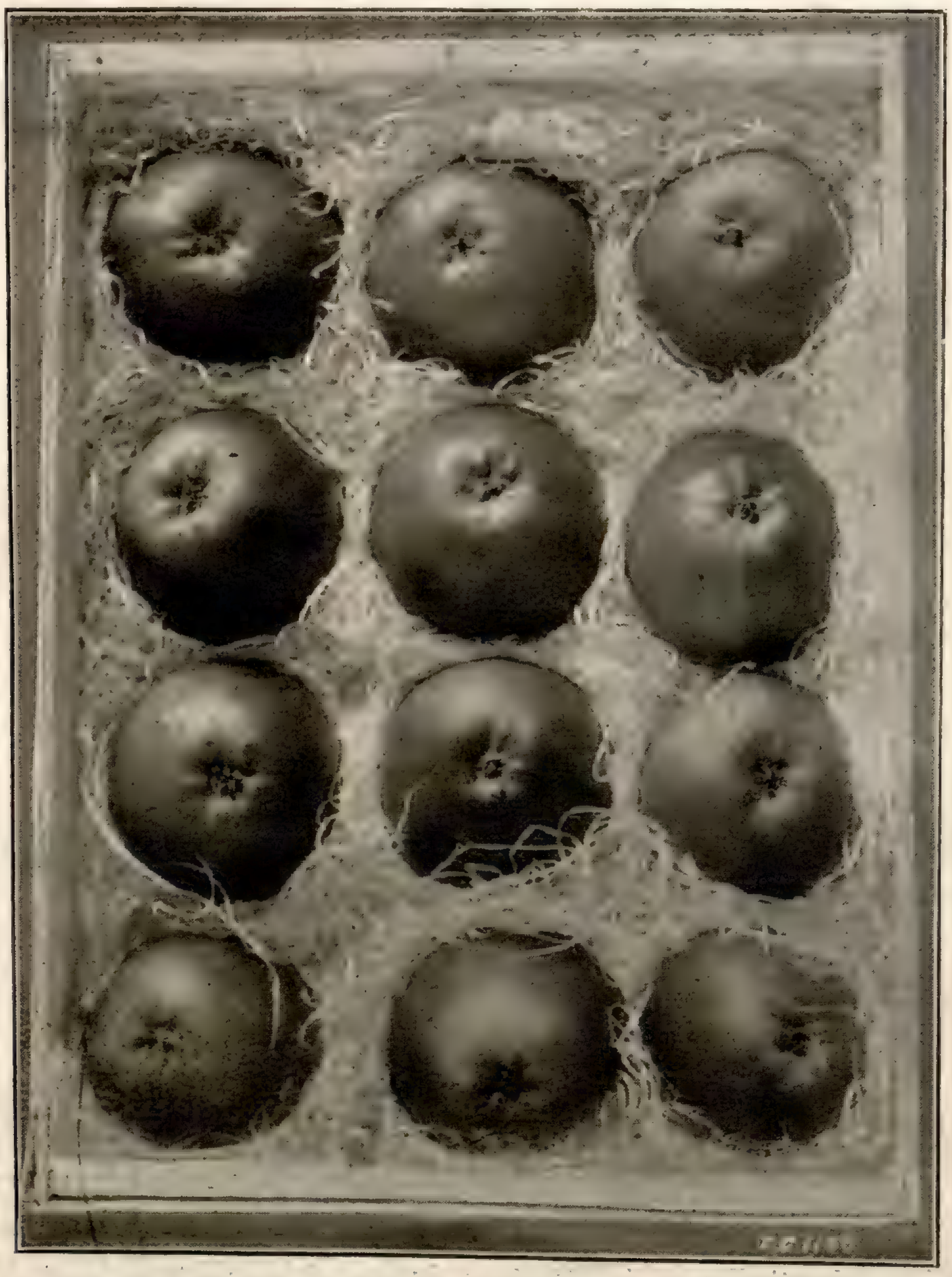
"A great many make-shifts can be used for packing tables. They must be so arranged that the stand for the box is close to the fruit so as to facilitate speed for packing. The small portable tables made on the principle of the folding cot with a position on each side for a box are useful for the individual grower. In large packing houses long stationary tables built of heavier material are best. The surface of a table for two should be about three feet wide and not more than five feet long, as anything larger would not allow two packers to reach all points of it without unnecessary stretching. The table should be high enough to



CULINARY APPLES PACKED IN A SINGLE LAYER.

allow a packer to work with comfort, avoiding back bending in all cases. Three feet is about right. The covering should be of strong canvas allowed to hang rather loosely. The edges of the table should be padded to prevent bruising of the fruit. Care should be taken to have the table cleared of fruit six or eight times a day, otherwise the fruit will be considerably bruised by continual handling.

"To make a success of box packing a great deal of time and patience at the start is necessary. Some growers have not suceeded sufficiently to make it worth while changing from the barrel pack. This is to be regretted, and it is safe to say, had they persevered very good results would have been shown. The most important point in box packing is to aim for the same standard of quality that has obtained for the western growers their markets and high prices. We have the flavour in Ontario, so our next concern is to have well-coloured, clean fruit. The apples should be graded closely, according to size. This not only facilitates packing, but also improves the appearance of the box when opened. Box packing requires considerable practice and skill to reduce the cost to a minimum.



CHOICE DESSERT APPLES PACKED IN A SINGLE LAYER.

"High-grade fruit should be wrapped; use a light Manilla paper. Much of the paper at present in use is too thin, and where the apples sweat it presents afterwards a very untidy appearance. No time is lost by wrapping, for while the packer is reaching for the apple with one hand he picks up the paper with the other. Then, too, a wrapped apple remains in place and the shifting so troublesome in unwrapped apples is overcome. The boxes should be paper lined as it insures keeping dirt and odours away from the fruit, and adds to the attractiveness of the package. Pads are sometimes used in the tops and bottoms of the boxes. The thick patent pads made with excelsior filling are clumsy and occupy too much space. Single and double corrugated cardboard or heavy soft cardboard or paper will answer the purpose, especially for export, and will prevent a good deal of bruising.

"The two ways of packing most used are the diagonal and square methods. The diagonal is preferable for the reason that it causes less bruising. One apple fits in between two in the form of a triangle and allows more pressure to be applied diagonally across the box instead of having to jam them as in the square pack."

In packing apples that are not wrapped in paper, the Canadian growers proceed in such manner that the bottom of the box, when being packed, is the top when opened; but if the fruits are wrapped the box is top side up, and the last layer is the face. If there are to be four tiers in the box, and a wrapped diagonal pack is used, the first tier is started with two apples across the second tier, two or three across the third, four, etc. This method of packing is to ensure the fourth tier or face opening up with an apple in each corner. If the fruits are not wrapped the face is started by placing an apple in each corner, the second tier is then started with two fruits.

We give three illustrations of the English methods of packing apples. In two of the boxes the fruits are packed in single layers, a method which is especially adapted to the requirements of those who make a speciality of supplying small quantities of the choice kinds. This method of packing is also a very good one for private gardens where culinary and dessert apples have to be sent in comparatively small quantities to the town houses, or as presents to friends resident at a distance. For commercial purposes it is preferable to pack the culinary apples and the commoner dessert fruits in boxes of a depth that will allow of about four layers or tiers in each box, as the cost of packing will then be considerably less.

It will be of interest to mention in this connection that the Inspection and Sale Act, which was passed a few years since by the Canadian Legislature, renders it necessary for the market growers in the Dominion to exercise considerable care in the packing of apples. Among other things it is enacted that—

> Every person who, by himself or through the agency of another person, packs fruit in a closed package, intended for sale, shall cause the package to be marked in a plain and indelible manner, in letters not less than half an inch in length, before it is taken from the premises where it is packed,—
>
> (a) with the initials of his Christian names, and his full surname and address, or, in the case of a firm or corporation, with the firm or corporate name and address;
> (b) with the name of the variety or varieties; and
> (c) with the designation of the grade of fruit, which shall include one of the following four marks, viz.: Fancy, No. 1, No. 2, No. 3.
>
> 2. Such mark may be accompanied by any other designation of grade or brand, if that designation or brand is not inconsistent with, or marked more conspicuously than, the one of the said four marks which is used on the said package.
>
> No person shall sell, or offer, expose, or have in his possession for sale, any fruit packed,—
>
> (a) in a closed package, and intended for sale, unless such package is marked as required by the provisions of this Act;
> (b) in a closed package, upon which package is marked any designation which represents such fruit as of
>   (i) Fancy quality, unless such fruit consists of well-grown specimens of one for the variety, of normal shape, free least normal size and of good colour for the variety, of normal shape, free from worm holes, bruises, scab, and other defects and properly packed.
>   (ii) No. 1 quality, unless such fruit consists of well-grown specimens of one variety, sound, of not less than medium size, and of good colour for the variety, of normal shape, and not less than 90 per centum free from scab, worm holes, bruises, and other defects, and properly packed.
>   (iii) No. 2 quality, unless such fruit includes no culls, and consists of specimens of not less than nearly medium size for the variety, and not less than 80 per centum free from worm holes and such other defects as cause material waste, and properly packed.
> (c) in any package in which the faced or shown surface gives a false representation of the contents of such package; and it shall be considered a false representation when more than 15 per centum of such fruit is substantially smaller in size than, or inferior in grade to, or different in variety from, the faced or shown surface of such package.
>
> When apples are packed in Canada for export or for sale by the box, they shall be packed in good and strong boxes of seasoned wood, the inside dimensions of which shall not be less than ten inches in depth, eleven inches in width, and twenty inches in length, representing as nearly as possible 2,200 cubic inches.

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**New Canadian Homesteads.**—During the first six months of 1912 homestead entries for the four western provinces of Canada, recorded by the officials of the Interior Department, numbered 18,524, as against 19,657 for the same period in 1911, a decrease of 1,133. These homesteads represent an area of 3 million acres which has been given away free of charge to new arrivals. For Manitoba the entries totalled 1,710 as against 1,459 in 1911, and for British Columbia they increased from 124 to 138. Both Saskatchewan and Alberta show decreases. The entries for Saskatchewan for the six months stood at 9,340 as against 10,409 for the first half of 1911; while the Alberta entries fell from 7,585 to 7,336. During the month of June 3,988 homesteads were entered by applicants whose countries of origin were as follows: Canada, 1,276; British Isles, 662; United States, 1,087; all other countries, 973.

## BLACK CURRANTS.

Bush fruits play an important part in all gardens both large and small, therefore it is well to consider the best means of keeping up an adequate supply. There are but few kitchen gardens that are equal in size to the requirements of the establishments they are intended to serve, and in these days, when a great portion of the space is taken up with herbaceous borders and the like, bush fruits have to be planted in the most unfavourable positions, such as under the shade of fruit trees, the consequence being the fruit produced is both small in quantity and inferior in quality to what it would be grown under more favourable conditions. There has been a great improvement in the various kinds of bush fruits of late years, but even with these superior varieties it is impossible to produce the finest results unless the conditions under which they are grown are favourable. There is a vast difference between growing bush fruits in an open field where there is ample room and a free circulation of air, than in a limited space in the kitchen garden, where they have to be crowded together.

If we take the black currant as an example, we shall find that in many instances the plants, after being planted four or five years, are so overcrowded that they have become one thicket of spindly shoots. Such bushes cannot produce either fine samples or fruit of good quality. There are now some very fine varieties of the black currant, which, if well grown, will produce fruit as large as an ordinary-sized black cherry, but there is an art in growing even so common a fruit as this. Old worn-out bushes are of but little or no use, and should be destroyed to make room for younger ones. It is from the stout growths on young trees that the finest crops are obtained, and these should not be closer together than a foot, otherwise the light and air cannot circulate freely amongst them to plump up the fruit buds. The wood which produces the best fruit is stout and short-jointed, the leaves should be large, with plump buds at their base. The season is now at hand when it is advisable to look over the plantations and see whether it is not possible to make some improvement. Where there are already such varieties as Boskoop Giant, Goliath, Coronation, Victoria, and Lee's Prolific grown, cuttings should be taken off them; but where none but the older varieties are in cultivation it would be well to procure young plants, which can be had for a few pence each. In selecting cuttings it is well to choose those from fifteen to eighteen inches in length, taking them off with a heel of the old wood attached. Do not remove any of the eyes, as the best shoots are those produced near the ground. The cuttings should be inserted in well-prepared ground in rows about two feet apart, allowing a foot between each cutting in the rows. This will give ample room to keep them free from weeds, and for the growths made to develop freely. The top of the cutting should be removed in order to induce several buds to push. The following autumn all growths made should be cut back to within about three buds of their base, and when the growths from these are three or four inches long, all but the best placed ones should be removed. If the plants have been well looked after in the way of watering in dry weather, and kept free from weeds, they should be strong, and have eight or ten shoots each.

The best time for transplanting black currants is as soon as the leaves are off, and if planted early they will become established before Christmas, and so produce a full crop of fruit the following year. Black currants do not last long on some soils even with the best cultivation, therefore it is advisable to root a few cuttings each year to keep up a stock of young plants, and as soon as there are any signs of exhaustion dig up the old ones and make a fresh plantation. If this is followed up, and a clean stock of cuttings taken, we should not hear much of the black currant bud mite. As the finest fruit is produced from the stout growths on young bushes, such shoots should be selected, removing all others. If pruning is done in the summer after the fruit is cleared off, this will allow the light and air to circulate freely in the centre of the trees, and so induce the young shoots to complete their development. It may be necessary to look over the bushes in winter just to remove the superfluous shoots, but, as a rule, if pruning is done judiciously in the summer, there will not be many growths to remove. There is an advantage in having young bushes, for they can be planted closer together than if they are intended to be allowed to remain for several years. Black currants prefer a deep, rich, well-tilled soil of close texture to that of a light, sandy nature. In that of the latter class fresh plantations should be made about every four years.

H. C. PRINSEP.

A SMALL CASE OF DESSERT APPLES.

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**Gooseberry Caterpillar.**—Where this pest has been troublesome during the past season it will be advisable to take the precaution of removing two or three inches of the surface soil, together with any leaves or rubbish there may be under the bushes, as it is here the pests are found during the winter. A dusting of fresh lime around the bushes, previous to adding fresh soil, will prove beneficial. The infested soil and rubbish should, if possible, be burnt; or, failing this, be deeply buried out of the way.

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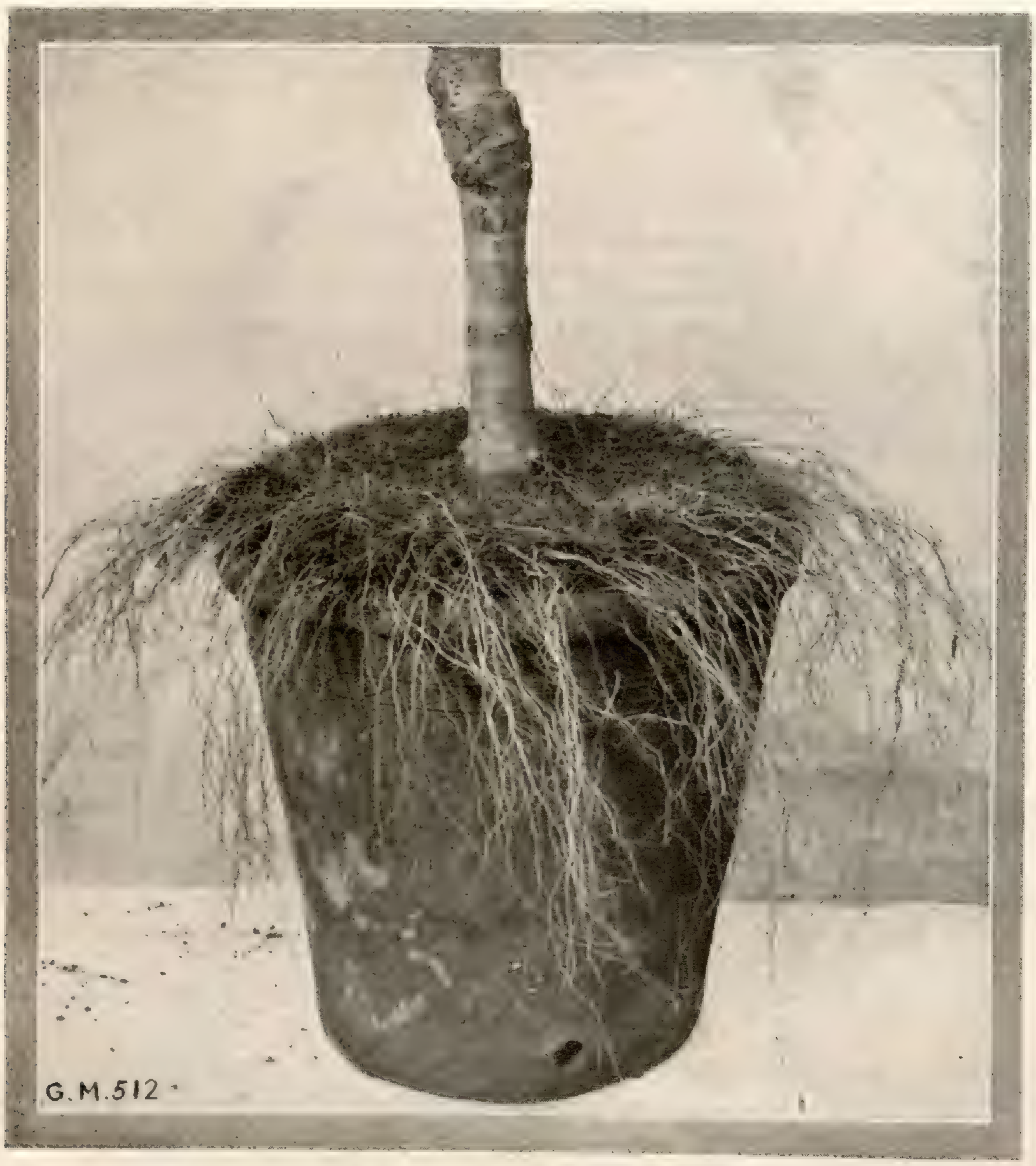
## FRUIT TREES IN POTS.

Too much importance cannot well be placed upon the selection of the very best possible soil for pot fruit trees. It is well known that good fruits of all kinds are produced upon the best land under ordinary cultivation, and it is equally as essential that the choice of the best loam should be made for fruit culture in pots. At the present time we are very fortunate here in being able to obtain some of the best loam we have ever handled for pot fruit tree culture. It should be the top spit of an old pasture, cut not more, at the most, than four inches in thickness. This should, if possible, have been stacked some six months or so prior to its being broken up for mixing and potting. A calcareous loam is most essential—i.e., one that has a good proportion of lime in its composition, and is full of fibre, which in the breaking up handles tough and firm, not close, soft, and spongy. It is not always possible to obtain this without the mixing of two kinds, and this we have repeatedly had to do ourselves. Such a loam as one would select as being the ideal soil for making a vine border is not far short of being the best to choose.

### Preparing the Soil.

There is frequently good loam to be found within easy reach upon the lands and purviews of an estate, but which, strange to say, is forbidden to the gardener to make use of for this object, and he has to go farther afield to obtain the needful soil for his fruit trees, not only in pots, but in the open as well. There should not be any waste in the soil when it has been obtained at, possibly, some considerable cost, and every handful should be made use of. This I like to be enabled to do for our pot fruit trees.

Unless there is evidence of the presence of an abundance of lime in the soil it is always advisable to add some lime rubble or old mortar in mixing or preparing the soil for potting purposes. We always add some ourselves, and look around to secure some old lime rubble from the debris when housebreaking is in process. This does not deteriorate by being stored, and it is always valuable in many ways in the potting-yard. This is broken down, so to speak, and is passed through a sieve of about half-inch mesh, the coarser rubble is laid aside to place upon the drainage, if this happens to be short. Some well-decomposed manure is added; for this we prefer such as one would use for the making up of a mushroom bed, but in a somewhat drier condition.



CHERRY TREE IN POT AS LIFTED FROM THE PLUNGE BED.

With such a soil of good quality it is not necessary to use any artificial ingredient at this stage. Should the soil, however, be not all that one could wish, a light addition of Clay's Fertilizer is most useful, but use it with caution, otherwise the object in view will be defeated. After the loam has been broken down to, say, the size of ducks' eggs—some will be smaller, of course—it is ready for mixing up, and some two or three turnings should then be given. After this is done the heap should be covered up as a safeguard against an excess of rain. We usually mix our soil early in September at the latest; it is then ready for potting operations by the end of the month, or by the first week in October, when we commence to do the potting. This we prefer to do under cover, as it is in every way preferable to working in the open.

### Pots and Potting.

It is well to have some pots in reserve at the start, so that the potting can proceed without delay. New pots should be well soaked before they are used; they will absorb a considerable quantity of water. The old pots, as the trees are turned out of them, should be well cleansed, and then aired for a time. Clean pots are, in my opinion, most essential. The crocks used for drainage should also be cleansed. Quite the average amount of drainage should be used, and a handful or two of coarse lime rubble will do no harm. Some rough pieces of turfy loam should then be beaten down firmly over the drainage.

Only under most exceptional circumstances should any trees stand over from year to year without being repotted. We have potted the same trees of peaches, nectarines, cherries, and plums every year, in nearly every case, for fully fourteen years past, and with the best results. It is a mistaken notion to think that potting cannot be thus done with advantage every year. Young fruiting trees are usually prepared by the nurserymen, who grow them in 10-inch pots, or thereabouts. I prefer to purchase trees in pots of this size rather than larger ones. It is better to grow them on under the somewhat altered conditions than to purchase in larger pots. These trees should be secured late in September in order to be able to pot them afresh in October. If purchased a month or so later than this, it will be better to let them stand over one season, supposing that they have not been repotted. When trees are purchased early, in 10-inch pots, it may be possible to put some of the most promising into 11-inch pots the same season. Experience must decide this in every case, and rather than err in using the larger pots, I would keep to the same size in which they have been received.

### Preparing the Trees for Repotting.

In this case, as in that of all the rest of the stock in pots, it is a question of reducing the ball so as to allow of a fair amount of soil as equally as possible all round, and both under and on the surface as well. A very good guide is to reduce sufficiently to allow the hands being passed easily down around the ball. In order to do this we use a claw-like scratcher, with two claws from two to three inches long; this, with the handle need not be more than one foot in length. It is an extremely useful little tool, and one that is easy to manipulate with a little practice. A sharp knife will be found useful for removing some of the coarser roots. Two or three rammers of varying thickness are advisable for ramming the soil down "firmly," and equally all around the roots. Guard against any hollow places being left during potting. When finished there should be about one inch, or a trifle less room, left for watering. I have emphasised "firmly," for this is most essential. Sometimes a pot gets broken during the ramming, but this only indicates that the potter is doing his work well. We have not a dozen trees at the present time in pots of more than fourteen inches diameter, although we are forcing some of the same trees now as we did fourteen years back, and they are in a robust state of health and bear abundantly.

### Notes on the Two Illustrations.

The two illustrations in this week's issue on this subject were from photographs taken by Mr. George Gordon, V.M.H., at Gunnersbury House Gardens in October last. The first is given to show the importance of plunging the trees after the fruit has been picked and the trees hardened off (of this more in next week's issue). This speaks volumes in favour of the system of plunging. Although comparatively little woody growth is then made, the fruit buds for another season are being developed, and this keeps the roots active. The second of these illustrations shows the same tree knocked out of its pot and prepared for repotting by the reduction of the ball of soil sufficiently to permit of its being repotted in the same size of pot. A glance at the former will indicate the amount of roots, and what I think may fairly be termed "fruit-bearing" roots. These, in the second illustration, are seen all carefully preserved, and will mingle in the potting with the other roots; a few roots were cut away at the base, and scarcely anything further needed to be done in this instance. The tree in question was one of the cherries that was staged in the non-competitive group at the recent Royal International Horticultural Exhibition held at Chelsea. It was also one of the group of cherries staged at the Temple Show some twelve years back. It is about fifteen years old.

### After Potting.

I much prefer to place the trees back under glass immediately they are potted. It is better than leaving them outside at that season of the year. Soon after potting one good watering is given, and enough is supplied to permeate the soil. Afterwards but little attention is needed, save that we keep the trees syringed every fine day. I attach considerable importance to this item of procedure. On one occasion I well remember, during a fine, dry, warm autumn, that the wood in some cases shrivelled in October; this taught me a lesson. The cherries we showed last May were syringed all the way through from repotting in October, 1911, until the flowering in February last.

JAS. HUDSON, V.M.H.
Gunnersbury House Gardens.

## CULTIVATION OF THE MIXED BORDER.

It is sometimes assumed that the mixed border, being planted mainly with hardy perennials, involves less work than was necessary for the same piece of ground in the old days when it was completely replanted every summer with bedding-out plants. However plausible this theory may seem to the uninitiated, few who have had experience of both will feel inclined to support it. When a border was planted ribbon-fashion with geraniums, calceolarias, and lobelias, at the end of May, there was little more to do to it until October, unless it needed watering in a dry summer. But the mixed border reminds one of woman's work, namely, that it is never done. The plants in the border are of such diverse character that when one kind does not need attention another kind does, while what is known as the problem of the mixed border—its maintenance in a moderate degree of order, with a fair display of blossom from April to October—is always demanding solution, and that very frequently in some new and unexpected form. Of the several aspects in which this feature of the modern garden is presented to us, the one it is proposed to deal with here is, perhaps, the most important, as it is the foundation of all, and that is, the cultivation of the soil, for it is only by practising the highest cultivation of which the circumstances permit that successional displays can be maintained throughout a lengthened season.

In old-fashioned country gardens it is still the practice to put on a man once or twice a year, usually in spring and autumn, to "do up" the borders, this being understood to consist in a general tidying up and digging or loosening the surface of the soil amongst the clumps of plants. For the purposes of general cultivation, a spade should never touch the mixed border, for it can only be used in a general way at the expense of the bulbs and the smaller and more delicate plants, while the roots of even the largest and strongest clumps of perennials will sustain damage, which will give them a check for the season if it is done in spring. No border can be wholly satisfactory unless once in seven years at least every plant and bulb is taken up in November, and the whole border dug two or three spits deep, some of the raw soil of the lowest spit being taken up and wheeled away to keep the border from getting too high, and as much good rotted manure incorporated with the soil as can conveniently be dug in, together with some lasting material, like bone-meal or basic slag, at the rate of ten to fifteen pounds to forty square yards. This is, of course, a most laborious business, especially when the spaces between the plants are filled with bulbs. The latter add no small part to the time taken by the work, whether they are taken up in summer or autumn. They suffer by being taken up in November, and it damages some of the perennials to take the bulbs up in June. The best solution of the difficulty is, perhaps, taking up the bulbs at the latter part of May and laying them in somewhere to ripen.

Apart from this great septennial operation there is the cultivation of the soil during the intervening months and years to be considered. To begin with the early spring. Apart from tidying up, it is not advisable to do anything to the soil until the spring-flowering bulbs are all showing. As soon as practicable, the whole of the surface should be lightly turned over with a trowel, or, if this was done in the autumn, loosened with a small handfork, at the same time working in a little superphosphate (5lb. to 40 sq. yards), and, if the soil is a light one, sulphate of potash as well at half this rate. This loosening of the surface will serve the double purpose of aerating the soil and preventing the conduction of moisture from below to be evaporated. Many of the perennials are very thirsty subjects, and we need to conserve all the moisture we can to carry them through the summer. This surface working should be repeated after every considerable shower—a piece of routine which can be disposed of very quickly after the first loosening of the surface in the early spring.

But, however much we may husband the water content of the soil, it will begin to get pretty dry before May is out, in a normal season. As soon as the growth of most of the bulbs can be cleared away the whole border should receive a liberal mulch of manure, preferably from a spent hotbed, the surface having previously been loosened and left as rough as possible. From this time surface cultivation must cease, but the mulch will prevent the soil running together again to any extent, and if the mulch is pretty thick, where it is not too visible, water may be poured on it, and will run straight in without causing the surface of the soil to cake. This treatment will carry us on till the autumn, by which time most of the mulch will have become reduced to the condition of leaf-mould if it was well-rotted stuff to start with. This should now be lightly turned in with a trowel, the working of the soil to the depth of half an inch or so not interfering with any of the bulbs if done carefully. At the same time bone-meal, or steamed bone-flour, should be applied at the rate of 5 or 6lb. to 40 sq. yards, or basic slag if the soil is a heavy one or of a rich, black character, the material, in any event, being lightly turned in with the mulch to be slowly rendered available for the plants in the coming spring.

POT CHERRY TREE PREPARED FOR REPOTTING.

Some plants will need dividing and replanting every autumn, sometimes a whole group of plants, and advantage can then be taken of such circumstances to dig up the plot thus occupied, taking out some of the impoverished soil and working in some well-rotted manure. Michaelmas daisies, most of the sunflowers, heleniums, Rudbeckia Golden Glow, and some others, will generally be the better for it, and in this way, not only those subjects replanted, but others in immediate proximity will have a renewed food supply. This is the time, too, to redress the balance between different subjects in the borders, to prevent some of the weaker ones being crowded out altogether. The summer is the time to settle the details of this important operation, and failure to attend to this means the rapid degeneration of the border into a piece of wild gardening.

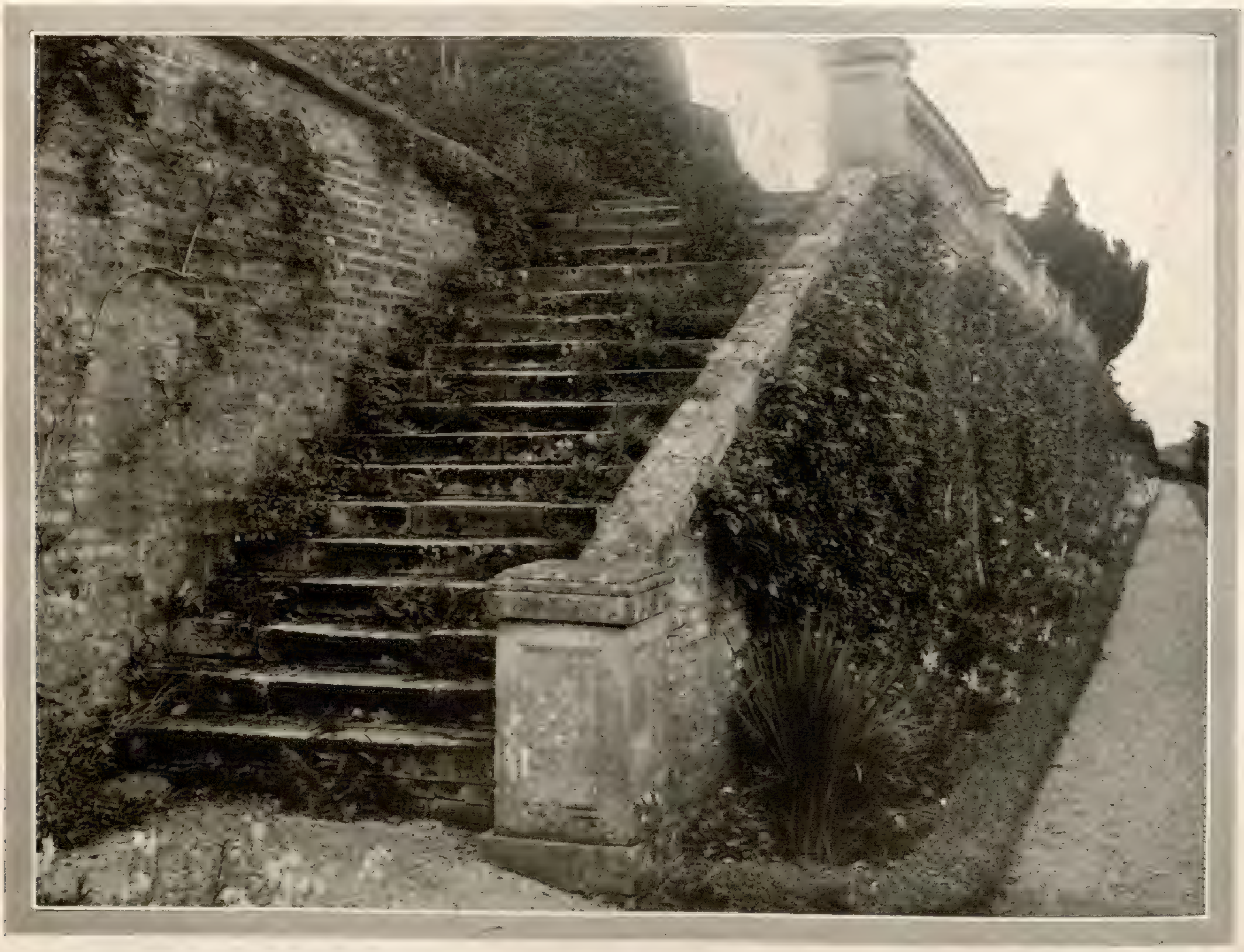
In the spring, when clumps of narcissus and tulips are seen to be getting crowded, they should be marked for removal, and they can be replanted in the autumn among the newly-planted perennials. Some keep the positions of bulbs always marked by short sticks, but this is rather a large order when a border is really well filled. The practice is certainly a commendable one, and it facilitates the piecemeal renovation of the border in the autumn.

**Alger Petts.**

## OLD TERRACE STEPS AT POWIS CASTLE.

Where gardens are terraced, and especially where the terraces are fairly deep owing to the sharp slope of the site, steps are very necessary for ascent and descent. Much money has been lavished on terrace walls, balustrading, and steps; and while in many cases the construction of these has been quite in keeping with the architecture of the house, there are many instances where the design and material have neither associated well with the dwelling or harmonise with the garden surroundings. In recent years it has become the fashion to make rough-flagged pathways in certain parts of the garden, and allow small-growing plants to grow between the stones. Wide steps, too, are often so arranged that even here vegetation may find a place, while it is a growing practice to allow small openings in retaining and terrace walls, wherein aubrietias, moss pinks, dianthuses, antirrhinums, etc., may be grown. Sometimes this intimate association of vegetation and bold architecture is incongruous, and in other cases the association is pleasing. On the face of things it does seem absurd to spend large sums of money in building and material, and then at once proceed to cover up the beauty of the design by means of vegetation; in such cases the money would have been better spent in the garden, and the architectural features have been simple and strong.

The accompanying illustration represents a quaint combination of lowly plants and bold terrace steps at Powis Castle, Welshpool, the residence of the Earl of Powis. A glance at the picture will show that the climate is fairly moist as ferns grow freely on the steps, and have as companions veronicas, ranunculuses, antirrhinums, thyme, and toad-flax, and possibly other things also. This is not a case of careless neglect, but one of "studied negligence." The beautiful work on the top of the terrace wall is open to view, but the wall itself is amply clothed with fruit trees, and the border and path show that the general upkeep of the place is good. K.



OLD TERRACE STEPS AT POWIS CASTLE. [Photo: H. N. King.

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## NOTES ON ALPINE FLOWERS.

### Erodium amanum.

The smaller Heronsbills are charming flowers, and deserve the utmost love and care of the alpine cultivator. I imagine they would be more highly thought of were they more difficult to cultivate, and we had to concoct and dispense to them complicated mixtures of certain soils, chips, and the other ingredients so dear to the faddist in the growing of alpine plants. But they are, as a whole, free from the least breath of suspicion (that is to say, if they have reasonable care, which they don't always receive), and the only one readily procurable which may be written down as really "dorty" is E. Reichardi, and that cannot be said of it everywhere. Now, I think that Erodium amanum, which is one of the most charming of the lot, is not to be overlooked, although as yet one which is little known. For a nice sunny spot on the rockery, either in a chink or on a level place with plenty of stones about it, this Heronsbill is a charming plant. Some three or four inches high, with beautiful grey foliage and dainty white flowers borne for months in succession, E. amanum has surely a future before it. May I just add a word in favour of the Erodiums as a whole? They want to be much tetter known, with their dainty loveliness.

### Geranium Traversi.

Every time I think of Geranium Traversi I am almost beside myself with vexation. It is one of the alpines to fall in love with at first sight, and once seen and grown is never to be forgotten. Hardly anybody can see the delightful silvery Geranium argenteum without feeling resolved that one must have it for our "very own." It is a gem, but Geranium Traversi is a more precious one still. We may best describe the rose-coloured form of it as a glorified G. argenteum, fashioned as the final handiwork of the Master Craftsman in the Cranesbill creation. I know of no more beautiful flower in the race. Its delightful silvery leaves and large rose or white flowers place it in the galaxy of the finest alpine flowers of earth. Taller than G. argenteum, it is yet not too tall for the alpine garden, and as we see it on some knoll open to the sun on some bright day, we realise and acclaim its commanding, yet gentle, beauty.

But the trouble is that it is, like so many other ethereal flowers, hardly suited for the rough-and-tumble ways of our climate in all parts of the three kingdoms. Rain, and snow, and sleet; frost and fog; gentle breezes and bitter winds—all and more are contained in these winters of ours, and they appear to play havoc with this plant from the Antipodes. Happily this is not so everywhere, and in places where the winter is mild and not too fickle in its moods there is room for the hope of succeeding with this exquisite Cranesbill. S. Arnott.

## WINTER GARDENS.

The more gardens are loved for their beauty, and appreciated for the opportunities they afford of healthful recreation, the more will the desire for lovely winter walks and nooks be fostered. It is so easy, and yet so rare, to plant beds and borders, rockeries and banks, slopes and valleys, so that with the passing of autumn leaves new attractions are revealed, and the coming of winter hastens other blossoms into bloom. Because there are few flowers that can be enjoyed out of doors in December and January, it is necessary to make the very fullest possible use of these: yet they are not the only adornments awaiting the hand of the artist-gardener. Where one man will tolerate sickly turf under trees, another will have an expanse of primrose roots, freshly green, or a low shrubbery of ever-pleasing Berberis aquifolium.

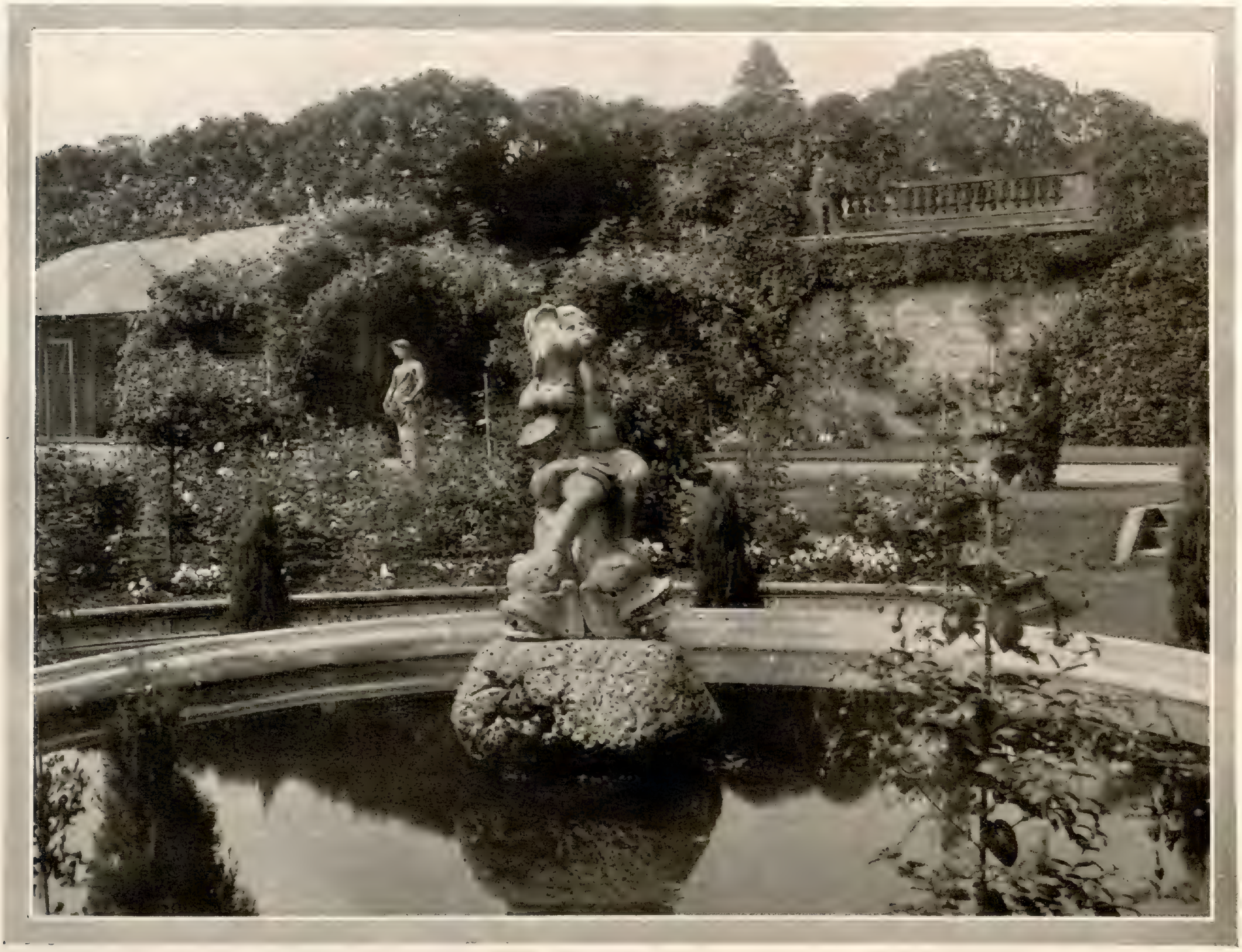
The whole planning of a garden should be arranged with a view to its effect when the year shall wane. It is an error to keep evergreen trees and shrubs in only one or two portions of the grounds. Belts of fine specimens, as distinct from hedges of one variety, are, of course, admirable here and there, but the scattering of specimens in all directions is also advisable. The rosery, a barren spot from November to June, should show pot shrubs sunk in the beds, a line of golden euonymus or of golden privet, since the place is no doubt sheltered, will permanently improve the scene if located behind white or crimson roses, far from the yellow varieties. As the rosery is generally screened off from the north, fine-leaved silver ivy can be used on a bright pea-green trellis, with red roses.

The rock garden often owes much of its winter fairness to the fact that so many alpines have permanent foliage; it is preeminently among the stones that the autumn, winter, and spring crocuses should be planted in profusion. No gardener who has not used Crocus Imperati thus has any idea of the glorious violet mass it will show from a distance.

Instead of growing Christmas roses under ugly handlights, as when cut blooms in perfection are required, let an abrupt slope of rich soil be given up to them, and behind the bank may tower up tamarisk, to make a screen, and bracken fern also. The feathery branches of the former, and the long-enduring autumn-coloured fronds of the latter, can be skilfully bent over, their ends tied to sticks, so as to form considerable protectors to the snowy blossoms of the hellebores. Against the house, in those narrow borders that have been gay with bedding plants, large pots of Tussilago fragrans, the Winter Heliotrope, should be sunk. There will then be delicate flowers, glossy leaves, and fragrance there. The pots can be kept at other seasons sunk in the shadiest places.

Rugosa roses and snowberry bushes well combined, make a screen of considerable charm during winter. They may have just in front, or on either side, borders in which summer's most tender bedding subjects have luxuriated. The edge to the border, if of London Pride, will be sightly at all times.

A remarkable display was made in one terrace garden, of formal style, by using different mossy saxifrages to form edgings, and mark out the patterns, by means of lines, in all the beds. M. H.



FOUNTAIN IN ROSE GARDEN AT HILLINGDON COURT.

[Photo: H. N. King.

## WATER IN THE ROSE GARDEN.

Where the soil is somewhat light, and there is gravel below it, most readers know full well that the rose garden will need an abundance of water and good feeding during a dry season. But this brief note has no reference to the direct supply of moisture to roses grouped more or less informally in a rose garden more or less formally designed. The idea now is to draw attention to the association of water and roses in an ornamental sense. In many instances the formal design of beds in the rose garden demands a formal pool of water. At Hillingdon Court, the residence of Lord Hillingdon, at Uxbridge, there is a circular pool in the rose garden, as illustrated, with a bold fountain. At Kew, the Dorothy Perkins roses hanging over the wall around the pond in front of the Palm House, attract far more attention than the roses in beds, and the water has not a little to do with this attractiveness. It is more than likely the near future will see roses and ornamental water more frequently associated in gardens than at present. Even on the sharply sloping banks of the stream, the trailing roses of the Wichuraiana group are quite at home. Circumstances must always be duly considered, but when rose gardens are being planned the desirability of including water in the design should be carefully considered, remembering the beautiful reflections, the cooling effect, and the peacefulness of placid water in summer time.

# CHRISTMAS FLOWERS IN THE GREENHOUSE AT KEW.

Flowers of various kinds are always in demand during the Christmas season, and complaints are by no means infrequent of the limited number at that time available. Still, a walk through the greenhouse at Kew reveals the fact that the choice is greater than one might think, for the following all combine to render an effective floral display.

## Begonias.

Of these there are among the true species B. Haageana, with massive drooping clusters of blush-coloured flowers; B. metallica, an old and well-known kind, with handsome bronzy leafage and smaller clusters of flowers than B. Haageana, but of much the same tint, and B. polyantha, a freely-branched, bushy growing plant, with small pink flowers.

Garden varieties include Gloire de Lorraine, both in pots and suspended baskets, and the larger and richer-coloured variety The King, as well as the white or pale blush tinted Turnford Hall. Others are B. Luzerna, a tall grower, with olive-green leaves and large clusters of pink flowers; B. Corbeille de Feu, a dwarf bushy plant, whose small bright red flowers are borne in great profusion; B. Gloire de Sceaux, handsome bronzy leaves and large pink flowers; B. semperflorens gigantea, an almost continuous flowering kind, with deep rose coloured blossoms; B. carminata, a pretty hybrid between B. coccinea and B. Dregei, now past its best; with B. Winter Cheer, a bright-coloured Socotrana hybrid.

## Hard-wooded Plants.

These contribute their share to the floral display, among them being Indian azaleas, Erica hyemalis, the pretty mauve-tinted and exceedingly floriferous Erica melanthera; the Bottle Brush Flower (Callistemon salignus), which is nearly always called Metrosideros floribunda; Crowea saligna, with its profusion of rich pink flowers; Polygala myrtifolia grandiflora, whose carmine-rose flowers mimic those of a leguminous plant; Barosma lanceolata, with a profusion of tiny white flowers; Tetratheca thymifolia, a little dense bush, thickly laden with deep lilac-mauve blossoms; and Phylica capensis, whose small white flowers are collected in terminal heads.

## Other Flowers.

Such well-known flowers as chrysanthemums, carnations, cyclamen, zonal pelargoniums, narcissi, Roman hyacinths, stocks, and primulas, are freely represented, while a batch of small plants of bouvardia is very bright and cheerful. Of the several varieties composing it, the rich scarlet-flowered President Cleveland stands out from its fellows as the finest in its colour. The large camellias planted out in one of the beds are also unfolding their earliest blossoms.

## Uncommon Plants.

Less common subjects, worthy of note, include Buddleia asiatica, with long, taperings spikes of creamy-white flowers centred with yellow; Buddleia officinalis, a mauve flower, also with a yellow eye; Salvia splendens pyramidalis, a good form of this showy autumn-flowering salvia; Impatiens Oliveri, a large growing member of the genus, whose mauve-coloured flowers are borne practically throughout the year; Sparmannia africana, so distinct from anything else, and much admired at this season; Tibouchina semi-decandra, whose salver-shaped, rich purple blossoms have been borne for the last three months, and still continue; Crassula lactea, a sturdy succulent, with loose clusters of starry white flowers; Statice brassicifolia, whose pleasing blue blossoms are now in many cases past their best; and Plumbago rosea, with good spikes of rosy-red flowers, a tone of colour unrepresented among its many associates.

The bright and pleasing effect produced by a number of small bushes of Aucuba japonica vera, absolutely laden with scarlet berries, also claims recognition, and so does the beauty of Centropogon Lucyanus when grown as a basket plant. In this way, the clusters of curved, tubular-shaped flowers of a carmine tint are seen to considerable advantage. Of the climbing plants the most notable just now are Abutilon Boule de Neige, white; A. Golden Fleece, yellow; and that distinct species, A. insigne, whose widely-expanded flowers are reddish, with deeper veins. Lantana salviæfolia is also a delightful climber for the greenhouse, being thickly studded with its rounded clusters of lilac flowers. This is the same kind as that which is so generally bedded out during the summer as Lantana delicatissima. K.

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# THE HOLLY FOR CHRISTMAS DECORATIONS.

Although many kinds of evergreens are used for decorative purposes at Christmas time, the holly is mostly in demand, and for a very long period it has been associated with the festive season. Early writers united in attributing its use to scenes of a joyous nature, whilst some other evergreens, more especially the yew, were referred to in connection with depressing conditions. Shakespeare appears to have followed the usual rule, for in "As You Like It," he says:

> "Heigh ho! sing heigh ho! unto the Green Holly;
> Most friendship is feigning, most loving mere folly:
> Then, heigh ho! the Holly,
> This life is most jolly!"

To the yew, he refers in "Titus Andronicus," as follows:

> "But straight they told me they would bind me here
> Unto the body of a dismal yew."

The earliest use of the holly for Christmas decorations appears to have taken place during the early years of the Christian era, for it was the custom of the Romans to use the branches in connection with the festival of the Saturnalia, which occurred about the same time of the year; and early Christians are thought to have used similar decorations in connection with their festivities, in order that they might not appear too conspicuous. That being the case, it is more than likely that the Romans introduced the custom to the British Isles, and there is plenty of proof that it has been used continuously for many centuries. That it was in use during the reign of Henry VI. is evidenced by the fact that it is freely mentioned in a carol which was written at that time. According to that carol, the proper place for the holly was the hall, while the ivy was relegated to the porch, for the lines occur:

> "Holy stond in the Halle, fayre to behold;
> Ivy stond without the dore; she ys full sore cold."

While, however, it has always been considered the right and proper thing for holly to be used for Christmas decorations, various restrictions were placed upon its use. Thus the superstitious would not upon any consideration introduce holly branches into the house before Christmas Eve, else they would be subjected to all sorts of disasters during the ensuing year. Neither would the judicious housewife remove the holly before Shrove Tuesday, on which day she would use it to fry pancakes over. Were anything else done with the Christmas holly she would be liable to various pains and injuries for a year.

These are not the only superstitious ideas connected with the holly, for one wise person has decreed that Candlemas Eve is the correct time to remove holly from a house, and if any is left after that time, the womenfolk who have neglected the work will be visited by ghosts and goblins for an indefinite period. It is also fatal to a husband's supremacy in the household if he allows holly with spineless leaves to be taken into the house at Christmas.

There is an old Border tale to the effect that if a maiden gathers nine holly leaves on a Friday night at midnight and ties them in a three-cornered handkerchief with nine knots, and places them under her pillow she will dream of her future husband. Another means is open to her of attaining the same object, for if she places three pails of water on her bedroom floor and pins three holly leaves to her night-dress, immediately over her heart, before retiring to bed on Christmas Eve, she will be aroused from sleep to see the form of her future husband glide through the room.

Whatever the superstitions are which attach themselves to it, the holly occupies a very important position in the commercial world, for very large quantities change hands about Christmas time, and growers and market salesmen make it a considerable source of profit. The fact of some trees producing berries freely and others failing to bear any is often a source of bewilderment to owners. But when the matter is carefully considered, there is a very good reason for it. It is very seldom that flowers containing perfect male and female organs are produced by the same tree, and usually the flowers on one tree have perfect male and rudimentary female organs, while on other trees the reverse is the case. Good fruiting years do not always occur, and even when fruits are most common, fertile seeds may not be abundant, especially when the fruit-bearing trees are some distance from the nearest male.

Anyone who contemplates planting hollies for the production of berries for Christmas decoration cannot do better than rely entirely upon the common kind, for it is much better suited for the purpose than the majority of the garden varieties, many of which never bear a fruit, and those which do, often fruit less freely than the type. Plants should be selected and planted at the rate of one male bush to ten or twelve female bushes to ensure the most satisfactory crop. A good place to plant hollies for the purpose is a thin plantation. Most kinds of soil suit the holly, but that which suits the oak is peculiarly adapted for holly.

Quite recently a fine lot of well-grown and well-fruited bushes, which had originated as natural seedlings, were noted in a thin oak wood in Berkshire, while the New Forest is a well-known place for well-developed trees. As a contrast to the red-fruited tree, that with yellow fruits might be grown, while for gardens the female form of the American Ilex opaca is well worth planting, for it fruits freely, its fruits art very brightly coloured, and the bush is neat in appearance. Several of the variegated kinds are sometimes considered in connection with the production of berries, but the varieties with large leaves command little respect for indoor decoration.

Kew. W. DALLIMORE.

# THE POSSIBILITIES OF A SCHOOL GARDEN.—V.

## Its Influence on Character.

It may seem like stretching the possibilities of a school garden to urge that it can have any influence in the above direction, but do not let us make any mistake in thinking that education begins and ends with the acquirement of so much knowledge. It is something more, for education also means the building up and moulding of character; and in this particular, perhaps, the future of the nation's manhood and womanhood is more in the hands of the elementary school teacher than anybody else. There can be no doubt that the school garden can, and does, have an influence on the character of the boy, for it teaches moral lessons in self-respect, self-control, self-reliance, patience, and unselfishness; and, besides, it brings out faculties of inventiveness and resource. School gardeners learn to respect other people's property through the mere fact that they have property of their own, in the shape of the plots and the crops growing on them.

Let me take the points I have mentioned one by one. The self-respecting boy in the school would never tolerate an untidy plot. His aim is to have it equal to or better than his father's garden at home; and more than once I have seen lads flush crimson and hang their heads in shame when they have admitted in low tones that their gardens were a disgrace to them. And I have seen the same lads hold up their heads in self-respect when I have paid a later visit, and congratulated them on the improvement in their plots. School gardening teaches habits of tidiness and order. The lad who is untidy in other ways is just the same in the garden; but his fault is more plainly seen. There he has to stand the criticism of the teacher, the inspector, and his fellow-pupils himself. This not infrequently prompts him to mend his ways in the garden, which is the first step towards improvement in other directions.

In regard to self-control, let me quote an extract from a letter recently received from a highly successful teacher of school gardening. He writes: "With the school garden we are aided in the problem of instilling into the minds of our pupils the value of self-control. The scholar in the garden sees the ripe strawberry, plum, or other fruit, but he controls his longing, and for the honour of himself and the school he does not yield to temptation. Of course we are occasionally troubled with 'finger blight,' but when this occurs we have a good opportunity of showing that the offender has lost his self-control." It is scarcely necessary to add a word to this testimony of a school teacher, who writes from practical experience.

In the garden the boy must exercise the virtue of patience. He puts the seeds into the ground, but has to wait for the germination of the same and the development of the plant. He has his losses and disappointments; and, to use the words of that well-known member of Parliament, Mr. Charles Bathurst, in a recent speech, "Gardening, to my mind, brings boys very closely to their Creator, and everyone who takes an active part in it realises that he has an unseen assistant in the task to which he puts his hand." Every word of this is true, and that contact with Nature which the boy has in the garden can hardly fail to be useful in teaching lessons of patience.

Where do sympathy and unselfishness come in? In many school garden classes there are boys who are strong and healthy, and boys also who are weakly and puny; but in the garden you find the strong helping the weak. Not long ago a boy was composing the story of his gardening lesson, and, looking over his shoulder, I read the following words: "I got on with my digging, and when I had finished my plot I went and helped Arthur Jones, because he is lame." This was not written in a spirit of boastfulness or self-praise, but was a mere statement of fact, and it displayed fellow-feeling and practical sympathy with the other boy, who was less able to perform the task. Just as adult gardeners, as a rule, are generous in sharing surplus plants with their neighbours, one sees the same thing on school plots, though the giver frequently knows that he is in competition with the receiver for a prize or some other award.

The school garden makes the boy self-reliant, because he gets into the way of taking initiative, and depending on himself. This is particularly noticeable when boys in their second year's course are given somewhat a free hand, and are not entirely dependent on the instructions of the teacher. Frequently I see boys at playtime walk almost unconsciously to the tool shed, take down some implement, and use it on the garden plot without being instructed, and entirely on their own initiative. That they prefer this to playing is obvious; it shows a fondness for the garden, and, further, a confidence in themselves in doing work that they knew wanted doing. Years ago no teacher would have thought of sending several boys out of school to perform a task without supervision; but since the establishment of gardens it is quite a common thing to see three or four boys working steadily away at some task or other, with no master in attendance. They feel the responsibility of having confidence placed in them; they are somebody; they are doing something "on their own"; and, in short, that faculty of self-reliance is appealed to with good effect.

The garden boy at school, like his father in the garden at home, is inventive; if he wants a thing he makes it; he gets into a habit of contriving, and that pocket-knife of his is used to better use than whittling away a piece of stick to no purpose. Very often the boy's contrivances are of a crude and rough-and-ready type; but they have the virtue of being his own. And if they serve the purpose, as they invariably do, that is the main point.

Lastly, one may consider the influence of the garden on the "dull boy" who everybody knows, and in respect of him the teacher referred to above writes as follows: "That dull boy in the school, how he worries the teacher! He has no self-reliance, and depends on anybody for help. But when he is put in charge of a garden plot he finds that his plants grow as well as those of his sharper school-fellows, and he discovers that he is capable of producing equally as good results. He then begins to have faith and confidence in himself, and there is no better method of encouraging such a lad than by giving him a garden plot."

There is abundant evidence to show that the school garden may be a useful factor in the education of a boy who is not much good at books and figures, but can use his hands. He may be low down in the class in school, but in the garden he comes up level with the brighter boys, can hold his own with them, and this gives him confidence. In fact, in the garden many a dull boy finds his vocation; and, realising that he excels somewhere, and is not altogether out of it, he is less tempted to get into that habit of thinking that because he is slow and dull, and cannot do things so well in the school, it is not worth while trying to do them at all.

H.

# PERPETUAL CARNATIONS.

(Continued from page 968.)

## Removal to Under Glass.

The plants should be housed at the end of August, and when placing them in their winter quarters remove any diseased leaves, also see that the pots are clean and free from weeds. It is important to give them all the air possible at this period, both by night and day, but when the outside conditions become cooler so regulate the ventilators and the hot water system as to maintain a minimum temperature of from 48 degrees to 50 degrees by night, with a rise of a few degrees in the day time. It is desirable to admit a little air throughout the night, when it can be done without lowering the temperature too much. It should be remembered that carnations must not be subjected to excessive fire heat; any attempt to force on the flowers will be disastrous, as it would create weak growth and flowers of poor quality and substance.

Occasionally light top-dressings of carnation manure are a great help to the opening buds, a really good manure produces large blooms of fine colour besides stimulating growth. During the winter, fertilisers should be applied sparingly, but after the turn of the year the plants will readily respond to judicious feeding. It is an advantage to spray between the pots during bright weather; but when it is damp and foggy endeavour to maintain a dry, buoyant atmosphere.

## Diseases.

Damp, close air in a carnation house is extremely hurtful, and one of the chief causes of disease. Keep the plants carefully disbudded, but in doing this remove the lateral buds gradually; to disbud too closely at one time is a check to growth, and sometimes causes the crown bud to turn blind. Give the plants a turn over several times during the winter, as this enables the cultivator to administer to their wants in various ways. Attention to apparently trifling details makes the difference between producing fine blooms of good quality and having to be satisfied with those which are second rate.

As regards rust, I have very little faith in any of the so-called remedies. Liquid applications to the foliage are not advisable during the winter; they only reach the developed spores, and do not materially check the disease. Much could be done to eradicate rust if growers would propagate from unaffected stock and maintain those conditions that are detrimental to its spreading. It is an advantage to cut off and burn any leaves that are attacked. Red spider ought not to trouble the grower if he pays attention to all cultural details. It can be destroyed, however, by spraying the plants with nicotine soap insecticide, applying it with force under the foliage. To prevent green fly, fumigate the house once a fortnight with nicotine compound. It is important to keep this pest in check, or it will do considerable damage to the young buds.

Another important point in the management of carnations is the way the flowers are cut. Plants often become very leggy when the flower stalks are only cut about half their length; but if the stems are removed close down, young growths are produced from near the base, which soon run up to flower, besides retaining the bushy habit of the plants.

## For Bedding.

As regards the use of perpetual-flowering carnations for bedding out, it may be said that they are likely to increase in popularity for this purpose as their value is more widely realised. They have already demonstrated their suitability for outdoor culture in many gardens, and we have had very encouraging results from them grown in this way. It is preferable to procure strong plants in 48's that are already set with flower buds. These should be hardened off before they are planted out at the end of May, when they will commence to flower at once, and continue to make a display of blossom until frost puts an end to growth in the autumn.

# WORK FOR THE WEEK.

## STOVE PLANTS.

GLOXINIAS.—A batch may now be placed in a warm house, selecting those corms that have been longest at rest. I do not advise shaking the corms out and repotting for early flowering, but prefer to prick over the surface soil with a pointed stick, and top-dress with sweet, rich compost. I find that new growth commences much quicker in the dull season under this treatment. Place the batch on a light shelf in a structure that is maintained at about 65 degrees, and water sparingly until new growth is well advanced. Examine at intervals the whole of the corms left in store, bring them out immediately they show signs of starting, and place on a shelf in an intermediate house until the time arrives for general repotting.

CYCLAMEN.—Although these flowers are not classed as stove plants, it is necessary to accord them a genial warmth from the time the seeds are sown until the plants are established in 60-sized pots. By the time these latter are well filled with roots, and each plant is carrying several stout leaves, the weather will allow of their transference to a heated pit, where they may remain until summer, when a cold frame will suit them well. I invariably sow the seeds early in the month of August, and as soon as the second leaf forms prick off the seedlings into pans of light, rich soil, afterwards putting them singly into thumb pots. To obtain the best results they should be grown on throughout the winter without a check, at the same time avoiding too much heat, or the leaf-stalks will become drawn and spindly. A shelf quite near the roof-glass will suit the young plants best. Allow a little top-ventilation when mild weather prevails.

CLOSING REMARKS.—We are now passing through the dullest time of the year, and until the days lengthen there is but little work in this department of a pressing nature, beyond keeping the plants and surroundings clean. With the advent of the New Year work will steadily increase.—H. T. MARTIN, Warren Wood Gardens.

## THE ORCHID HOUSES.

DENDROBIUMS.—As the deciduous and semi-deciduous dendrobiums are always a feature in good collections during the late winter and spring months, it is a wonder they are not more grown than at present. For some time they have appeared to lose favour with connoisseurs, but for amateurs and small growers they are indispensable. Besides the well-known species, such as D. Wardianum, D. crassinode, D. nobile, D. aureum, D. chrysanthum, D. Pierardi, D. tortile, D. transparens, D. crystallinum, D. lituiflorum, the lovely D. Devonianum, with D. superbum, and its varieties Burkei, Dearei, and Huttoni, and the late-flowering D. regium, there are many hybrids that are well worth growing, and in many cases these are improvements upon the species from which they were raised. Among them a few of the best for garden purposes may be enumerated, namely D. splendidissimum and its numerous varieties, D. micans, D. Cybele, D. Juno, D. melanodiscus, D. Venus, D. Dominianum, D. Chessingtonense, D. Thwaitesiæ, D. Wiganæ, D. Wiganianum, D. Melpomene, D. Ophir, D. Sibyl, D. Clio, and D. Kenneth. There is great variety in colour in an up-to-date collection of these interesting plants. Many of the plants, which have been resting, and have rested properly, will now be showing their flower buds, and when the buds are fairly developed, the plants may be given a slightly higher temperature, which will enable the flower to open more quickly, and be the means of prolonging the season of flowering.

EARLY FLOWERS. — Water must be afforded the plants with extreme care, as any undue disturbance will not only cause the new growths to break away prematurely, and thus prevent the flowers opening, but it will also damage the constitution of the plants. In pushing the earliest of these orchids into flower, it is the greatest mistake to unduly hurry them in the earlier stages. If the house in which they are placed is moist and warm, they may make sufficient progress without any water being afforded, but they must be examined from time to time, in order that the pseudo-bulbs may be prevented from shrivelling. I do not advocate syringing or spraying the plants which are developing their buds. D. Wardianum, D. crassinode, and all the hybrids which have been obtained from these species, have a tendency to produce new breaks from the base of the flowering growth, and require careful treatment, for if these growths are allowed to extend to any great length, the whole crop of flowers may be lost. Keep such plants in a moderately dry condition in the cool resting house, in order that the new growths may remain almost stationary for some time. When the flower buds have half-expanded, the plants may receive more genial treatment, and the flowers will develop vigorously and quickly. When the flowers are fully open, return the plants to cooler and more airy quarters, where they will last a considerable time in full beauty.

OTHER KINDS.—There are also a number of species, as D. Bensoniæ, D. albo-sanguineum, D. Parishi, D. rhodopterygium, D. nodatum, D. secundum, D. crepidatum, D. primulinum, D. aduncum, etc., that should be kept in a dry position in the cattleya house during their season of rest, and if their growths are properly matured they will require very little water at the roots, but they must not be allowed to shrivel or much harm will follow. Shrivelling from any cause is most detrimental to orchids, and is caused either by an insufficiency or an excess of water at the roots. Superabundance decays, and an insufficiency withers the roots of the plants.—J. T. BARKER, The West Hill Gardens.

## FRUITS UNDER GLASS.

PEACHES AND NECTARINES. — The early house that was closed up some few weeks ago will require a night temperature of from 40 to 45 degrees, allowing a day temperature of 40 to 50 degrees, and, with sun heat, it may be allowed to rise to 60 degrees. Give abundance of air when possible, but not in such a manner as to cause any cold draughts. The trees flower naturally outside when the temperature is low, consequently, when grown inside, they must not be subjected to a high temperature at this stage. Lightly syringe the trees on fine days, until the flowers begin to show colour, when it should be discontinued until the fruits have set. When the flowers are fully developed, keep a night temperature of 55 degrees, with a day temperature of about 60 degrees. Commence to disbud, very sparingly at first, removing the shoots that grow from the upper and lower parts of the branches. Keep a sharp look out for green or black fly, and fumigate immediately it is discovered.

EARLY VINES.—The buds of the vines in the earliest house are pushing into growth, and it will be necessary to gradually increase the night temperature to 60 degrees, with a day temperature of from 65 to 70 degrees. Admit air by means of the top ventilators on mild days, and keep the atmosphere fairly moist by damping down the paths and walls occasionally. Lightly syringe the rods with tepid water on fine days, at closing time; this operation, of course, must not be done if there is any likelihood of frost; the borders will not require water at the present time if they were thoroughly well soaked before the house was closed. Sufficient care and judgment must be exercised at this season of the year, so that water is not thrown on the borders in an indiscriminate manner, or they will become too wet, and the soil in all probability will become sour and stagnant, and under these conditions it is impossible for the roots to perform their proper functions. If the points of the rods were tied down to ensure an even "break," they should be now tied up in their proper places. As soon as this has been accomplished, commence to disbud, first of all by rubbing off the small growths, and lose no time in reducing them to two shoots on each spur, and finally one of these must be cut off when it can be seen which will produce the best bunch.

LATER VINES.—Close up another house to maintain a supply of ripe grapes in succession to the earliest crop; give the borders a good soaking with clean water, and proceed on the same lines as that recommended in a previous calendar. Ripe grapes hanging in the late houses should be carefully looked over, and all decayed berries removed at once. It is not a wise plan to allow ripe grapes to hang upon the vines far into the New Year, so preparations should be made forthwith to cut them and carefully place them in bottles in a cool room. It must be borne in mind that it is quite as essential that the late vines should have a proper period of rest, as the earlier forced ones, so everything should be done to attain this end. —HENRY R. FARMER, Cardiff Castle Gardens.

## THE FLOWER GARDEN.

SUMMER BEDDING PLANTS. — The various subjects that were rooted from cuttings in the autumn require very careful treatment during the winter months. Do not subject them to too high a temperature, but keep them close to the glass to promote sturdy growth. Pick off any decayed leaves, and water with great care. Plants like heliotropes and fuchsias, that were rooted several together in a pot, and are needed as standards, should be potted off into 60's, and grown in an intermediate temperature. Where a large number of bedding plants is required, a start should be made to propagate from the stock plants at once. Specimen plants being wintered in cool houses or pits should have sufficient water given them to prevent the soil from becoming dust-dry, but they must not be started into growth until February. Fumigate all bedding plants occasionally to keep down greenfly.

PERENNIAL ASTERS, or Michaelmas daisies as they are popularly called, should now have their tops removed and burned. These beautiful autumn flowers have been so greatly improved during recent years, and there are so many charming varieties, that especial care should be taken with their cultivation. When a border is devoted entirely to them it is beneficial to replant every year, after manuring the ground well and cultivating it deeply. With this object in view lift the plants and lay them in on a convenient piece of ground, so as to have the border in readiness to plant by the end of February. Three single crowns to each station are sufficient, as this will enable each stem to be staked out separately, and so show their beauty to advantage.

HIPPOPHÆ RHAMNOIDES, which is known as the Sea Buckthorn, is very effective during the autumn and winter, with its clusters of bright orange-coloured berries, and this year berries have been produced with unusual freedom. It is seen to advantage when planted in masses in a conspicuous position, but it is essential to include a few pollen-bearing (male) plants in addition to the female forms which carry the berries. The silvery-grey foliage is a source of attraction during the summer months.

SEASONABLE WORK.—Have all the shrubberies cleaned through, and remove all the leaves and decayed vegetation. The whole staff should be put on to this work, so that it may be completed speedily with the object of having the pleasure grounds smart and tidy before Christmas. Subsequently the digging of shrubberies and borders can be proceeded with during favourable weather. Repair and put in order all paths that need regravelling, and roll them well during damp weather. Have at hand material to protect tender subjects in case of frost. Prepare a supply of stakes, labels, and pegs for the coming season.—J. GARDNER, Batsford Park Gardens.

# RHODODENDRONS FOR PRESENT PLANTING.

The popularity of the various kinds of rhododendrons for garden and woodland planting has resulted in the family being one of the most valuable assets of the nurseryman, and several firms not only make a speciality of rhododendrons, but look on them as the mainstay of their businesses. In different parts of the country, however, the sorts cultivated vary to some considerable extent, and, although the kinds grown in the northern counties are quite suitable for culture in the mildest parts of the country, those which are most frequently seen in Cornish gardens would be of little use if planted out of doors in Derbyshire or Yorkshire. Therefore, when selecting plants, care must be taken to choose species and varieties that are suitable to the locality for which they are required.

Providing lime is not present in the soil in any appreciable quantity rhododendrons will thrive almost anywhere, for although they are popularly styled peat-loving plants, peat is not essential to their existence, for they thrive in both light and heavy loam to which no addition of peat has been made. The best position for rhododendrons is in a moist valley, where a little shade is provided from the midday sun, and where the ground is naturally well-drained but moist. They are also of use for planting as an undergrowth in a thin wood, whilst many are well suited for growing as specimens. The advantage of planting on undulating ground is very noticeable at flowering time, for then each plant can be seen separately, whereas when a large number of specimens occupy a wide tract of level ground, they are apt to interfere with each other, and the individual beauty of each one is not apparent. It is in such instances as this that standards are to be encouraged, for their tall stems allow the heads to stand clear of surrounding bushes; but too many standards are not desirable, for their appearance is less generally liked than naturally-grown bushes.

Rhododendrons may be planted any time between September and April, but it is advisable to obtain them before the latter date so that the roots may become settled in the new soil before growth commences, therefore people who contemplate planting should put the work in hand at the earliest possible date.

## Rhododendrons for Kind Climates.

The more tender kinds of rhododendrons which are suitable for the south-west counties of England and Wales, and for many parts of Ireland, and certain places about the West Coast of Scotland, are chiefly natives of the Himalayas, and hybrids from Himalayan species. Some are remarkable for their tall stature, as they grow into trees between 30 and 40ft. high, with goodly trunks. Others are conspicuous by their immense leaves, while the majority bear beautiful flowers. It is not so much winter cold from which they suffer as late spring frosts, for they start into growth early, and the young shoots fall a prey to frosty nights.

R. arboreum is the tallest-growing species, and many examples have been recorded between 20 and 35ft. in height. The trusses are shapely and compact, and they are made up of good-sized flowers, which vary to some considerable extent in colour. The best forms are a rich crimson; others are a paler shade of red, whilst there are varieties with pink and white flowers. Crossed with other species a set of showy hybrids has been obtained, but the majority are no more hardy than the parents.

R. Griffithianum, sometimes called R. Aucklandi, is another decorative kind suitable for the south. Forming a spreading bush, 12ft. or so high, it bears loose trusses of white flowers, which measure individually from 4 to 5in. across. Crossed with the blood-red R. Thomsoni, a number of very pretty hybrids have appeared, of which Gill's Triumph and Glory of Penjerrick, with red flowers, and Beauty of Tremough, with pink blooms, are worthy examples. There are also other hybrids, some of which claim a compact trussed kind for one parent. These bear enormous heads of flowers, as has been represented on several occasions by Dawn, a variety raised by the late Mr. Mangles.

R. barbatum is another species with bright red flowers. It may be easily detected amongst other kinds by reason of the stiff hairs on the petioles of the leaves. By crossing with R. Thompsoni, a hybrid with a compact truss of large, blood-red flowers was obtained. That is known as R. Shilsoni.

The blood-red flowers of R. Thomsoni are tubular, and 2 and 3in. long. They appear several together in loose trusses. Although often seen from 4 to 6ft. high, it sometimes attains a height of 15ft. R. campylocarpum is a choice species, growing from 5 to 8ft. high. Its principal characteristic is its canary-yellow flowers.

R. grande is a distinct large-growing Himalayan species with leaves from 9 to 12in. long and 3 to 4in. wide, silvery beneath, and green or greyish-green above. The cream-coloured flowers appear in large, shapely trusses, which are sometimes nearly 9in. in height, and the same in width. In some gardens plants may be observed 15ft. high, and as far through, which some years carry several hundred heads of bloom. R. Falconeri is quite as imposing, the leaves being even larger, for they are sometimes 15in. long, and more than 6in. wide. They are dark green above, and thickly covered on the under-surface with a dense reddish-brown felt. The white flowers are borne in large, shapely heads. R. Hodgsoni also has handsome foliage, but its purplish flowers are less showy than those of other kinds.

Quite different from any which have been mentioned is R. ciliatum. This grows into a compact bush, 4 to 6ft. high, and as far through. The leaves are very hairy, and the flowers white. When grown as a mass it is a most effective kind. Then there is R. glaucum, a bushy species, with small deep pink flowers, R. calophyllum, a tall-growing species, with white flowers, and several other kinds.

## Rhododendrons for General Cultivation.

Most of the hardier kinds of rhododendrons are of garden origin, for, with the exception of the common R. ponticum and a number of dwarf-growing species, the majority have been raised by the intercrossing of two or three very hardy species. The one which has exerted the most beneficial influence on these hybrids and varieties is the N. American R. catawbiense. This combines the qualities of a vigorous constitution, with good habit, handsome foliage, shapely heads of flowers, a late-flowering period, and extreme hardiness. Its flowers, however, offer no great range of colour, for they are generally a shade of lilac, therefore it was necessary to introduce other species for this purpose. One of the species used was R. arboreum, from which red was introduced. R. caucasicum has exerted its influence in the production of whites and pinks, while R. ponticum can be traced in purple-flowered kinds. Some of the earlier flowering hybrids have not descended from catawbiense, and are less generally useful than those which bloom from the middle of May onwards, for the flowers open at a time when frost is likely to occur; therefore, they may be crippled or destroyed before they have had a chance to show their best side. A case in point is R. Nobleana. This, although a beautiful and rich red, is rarely seen at its best, for the normal flowering time in the London district is late February and early March, and probably not more than one year in five do we see it in anything like good condition. Any variety, however, which exhibits the true catawbiense qualities, of late flowering, medium-sized, oval leaves, and conical trusses of flowers, may be depended on to give a good account of itself and to escape injury to flowers or shoots.

The following selection of varieties may be expected to grow and flower well: Album grandiflorum, white; Beauty of Bagshot, white with coloured eye; Broughtoni, red; Charlie Waterer, scarlet, light centre; Charles S. Sargent, scarlet; Countess of Clancarty, rosy-crimson; Cynthia, rosy-crimson; Everestianum, rosy-lilac; Doncaster, dwarf, scarlet; Frederick Waterer, bright crimson; Gower Waterer, white, flushed rose; John Waterer, crimson; Kate Waterer, rosy-crimson, yellow eye; Lady Clementina Mitford, peach; Lady Grey Egerton, pale lilac; Madame Carvalho, white, tinged blush; Michael Waterer, bright scarlet; Mrs. Anthony Waterer, white; Mrs. E. C. Stirling, white, tinged rose; Mrs. Holford, salmon-pink; Pink Pearl, pink; Prometheus, crimson; Purity, white, with yellow spots; Sappho, white, with dark spots; The Queen, white, tinged blush; The Warrior, rosy-crimson.

In addition to the groups already mentioned, there is a distinct set composed of hybrids with fragrant flowers. These are hybrids from the Chinese R. Fortunei. All are very floriferous, and the flowers are various shades of pink. A few good ones are Edith A. Boulton, Duke of York, Mrs. Thiselton-Dyer, and George Thiselton-Dyer.

The various hardy species which have not been generally used by the hybridist are also well worth consideration. R. racemosum is one of the most charming plants imaginable when covered with its small pinkish flowers. Unfortunately, it is seldom seen planted in large masses, which is the most effective arrangement. Then there are such showy and interesting sorts as R. cinnabarinum, Yunnanense, rubiginosum, punctatum, lepidotum, ferrugineum, and Smirnowi, all well-tried and hardy kinds, while among fifty or more new species, which have been introduced from China during the present century, we are bound to find many charming plants, although it is doubtful whether all will prove generally hardy.

The group represented by Smithi aureum and Broughtoni aureum is also worth consideration. This group is composed of hybrids raised between evergreen and deciduous species, and is sometimes called azaleodendron. The two kinds named have large heads of showy yellow flowers.

W. Dallimore.

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**Reinwardtia trigyna.**—The rich yellow flowers of this member of the flax family (in fact, it is often known as Linum trigynum), are very bright and attractive in winter. It is a native of India, and is seen at its best in an intermediate temperature. The allied R. tetragyne has pale yellow blossoms.—W.

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# EXHIBITIONS AND MEETINGS.

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## Royal Horticultural Society.

There was no exhibition at the Royal Horticultural Hall on Tuesday, December 17, but the various committees met. The Fruit and Vegetable Committee had no work to do, and the Floral Committee had only the perpetual-flowering carnation Benora, white, faintly flaked with red, before it. This was shown by Messrs. Stuart Low and Co., Bush Hill Park, Enfield, and gained an A.M. The Orchid Committee had a quite busy time, and granted two First-class Certificates and seven Awards of Merit. It also granted a Silver Lindley Medal to Mr. Dye, gardener to Lord Rothschild, Tring Park, Tring, for Phalænopsis intermedia Portea, which, after thirty-two years in cultivation at Tring, is this year carrying three spikes of bloom.

Messrs. Charlesworth and Co., Haywards Heath, exhibited Oncidioda cinnabarina (A.M.), a long-spiked, red hybrid between Cochlioda Noezliana and Oncidium monachicum; with this came Oncidium hybridum derived from O. tigrinum and O. lamelligerum, and bearing a good deal of likeness to the former; and a pretty little Restrepia striata. O. O. Wrigley, Esq., Bridge Hall, Bury, sent Cypripedium Mrs. Harry Bruce, a bold form of C. villosum origin. Mr. E. H. Davidson, Orchid Dene, Twyford, brought up a good form of Cattleya Maggie Raphael, a richly-coloured variety of Odontoglossum eximum named J. Lakin (A.M.), and Odontoglossum scintillans Orchid Dene var. (A.M.), a pretty purple and red-brown Rossi cross.

Cymbidium Gattonense, with a long spike of thirteen brown, green and white flowers, was exhibited by Mr. W. H. White, grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, who also sent a large specimen of Platyclinis uncata, and Eria Fletcheri, which was turned upside down so as to bring the inverted flowers into a position to be inspected. Francis Wellesley, Esq., Westfield, Woking, sent Cypripedium Sir William Chance (A.M.), a very attractive hybrid between C. Thompsonianum and C. Memoria Jerninghamæ; the white and purple dorsal sepal in this hybrid were very clear. Sophro-cattleya Westfieldiense (A.M.) with mauve sepals and petals, and a rosy-crimson lip, was another attraction from Westfield.

Very fine was Cypripedium Demeter (F.C.C.), obtained by crossing C. S. F. Moore with C. Earl of Tankerville. It has a white, dark purple-spotted, green-based dorsal sepal, and burnished purple and green edged petals and a purple-brown labellum; C. Artemis, a very pretty white and yellow-green hybrid from C. nitens and C. Farineanum was also shown. These two fine things were shown by Mr. H. Alexander, grower to Lieut.-Colonel Sir George Holford, Westonbirt, Tetbury, Gloucester. Messrs. Jas. Veitch and Sons, Chelsea, staged several good cypripediums, their C. Idina (A.M.), derived from C. insigne Harefield Hall and C. Countess of Carnarvon, being exceptionally bold and with a very broad white purple-spotted dorsal sepal possessed much beauty.

Mr. Day, gardener to H. S. Goodson, Esq., Fairlawn, Putney, set up Odontoglossum Prince Albert, O. St. Mirin, richly coloured, and O. Phœbus, rich red with a few white and blush markings; Cattleya Tytius (A.M.) from the same collection was a bold flower with a splendid purple lip and yellow throat.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford, exhibited a particularly lovely orchid named Sophro-catt.-lælia Thisbe (F.C.C.), ruby-crimson, with deeper crimson lip, a beautiful hybrid between Cattleya Iris and Sophro-lælia Heatonense.

## National Chrysanthemum Society.

A considerable number of members of the Executive Committee met at Carr's Restaurant, Strand, W.C., on Monday evening, December 16. Mr. T. Bevan presided.

Income to date was given as £521 8s. 3d., and expenditure £437 3s. 7d., leaving a balance of £84 4s. 8d. The Floral Committee reported progress, and the matters referred to on another page were agreed upon. The annual dinner of the Floral Committee was fixed for February 17 next, at Carr's Restaurant. The Secretary reported that the society's shows would be held at the Crystal Palace in 1913, on October 1 and 2, and November 5, 6, and 7. It was agreed that a conference be held on December 10, 1913, and that an effort be made to arrange for a small exhibition at Essex Hall, Strand, on that date. Six new members were elected.

## National Rose Society.

A large number of members of this flourishing society gathered at the Holborn Restaurant, at three o'clock on Tuesday, December 17, at the thirty-sixth annual meeting.

The minutes of the previous annual meeting were taken as read. Ballot papers had to be signed on this occasion, and Dr. A. H. Williams and Mr. Arthur Turner were appointed scrutineers of the ballot. While the papers were being collected, Mr. Edward Mawley, V.M.H., the hon. secretary, read the annual report, and Mr. G. W. Cook dealt with financial matters.

### REPORT OF THE COUNCIL FOR THE YEAR 1912.

The Council, in submitting their report for the past year, congratulate the members on the continued satisfactory position of the society. The number of members is now more than double what it was five years ago. For the first time in its history four shows have been held during the year, and for the first time, one of those in Ireland. They also record with pleasure the presence at the Rose Conference and dinner of the largest number of foreign rosarians that have ever attended any function of the society.

The Southern Show was held at Southampton, on June 26, in celebration of the Jubilee of the Southampton Royal Horticultural Society. The season being an exceptionally early one, greatly favoured that exhibition, which, taking into consideration its extent and the general high quality of the blooms, must be regarded as having been the finest rose show ever held in the Southern Counties. The very complete arrangements for that exhibition were admirably carried out under the direction of the experienced secretary of the local society, Mr. C. S. Fuidge. The Metropolitan exhibition again took place, by the kind permission of the president and Council of the Royal Botanic Society, in their beautiful gardens in Regent's Park, the date of the show being July 9. This proved also a fine show, but was not quite so extensive as in some recent years.

Her Majesty Queen Alexandra, the society's Royal Patroness, after an absence of two years, once more honoured the society, and marked her continued interest in its doings by paying a visit to the exhibition, a compliment keenly appreciated by everyone present on that occasion. The attendance of members and visitors was larger than at any previous show held by the society. The provincial exhibition took place on July 19, in the Botanic Park, Belfast, this being the first time that the society has held a show in Ireland. As might have been anticipated, from the near proximity of three extensive rose nurseries, there was a fine display of blooms. This new venture proved a great success, and, but for the early character of the season, would no doubt have been better supported than it was by our leading rose growers in the South of England. To Mr. H. P. Pinkerton, the hon. secretary of the Irish Rose and Floral Society, great credit is due for the excellent arrangements made by him for that exhibition. One of the great surprises of the year was the large display of beautiful roses which were to be seen at the society's autumn show, after one of the coldest and wettest Augusts ever known. This exhibition took place in the Royal Horticultural Hall, Vincent Square, on September 12.

The society's rose conference was held at the Holborn Restaurant on May 20, when the President delivered an admirable address on the "Modern Development of the Rose." Many of the foreign rosarians present joined in the discussion which followed, greatly to the satisfaction and delight of the large number of members present on that occasion. The dinner which followed was attended by a still larger number of foreign rosarians and their friends. Indeed, at no previous period in its history has such a large gathering of foreign rosarians been entertained by the society.

Two new publications have been issued to the members during the year—in April, the "Rose Annual for 1912," and in November a new edition of the "Hints on Planting Roses." The Publications Committee have also been busy revising and amending future issues, and their untiring efforts on behalf of this important branch of the society's work again claim the warmest thanks of the council and of the members generally.

The number of societies in affiliation with the National Rose Society is now fifty-six, one of which is in Australia, and three others in New Zealand.

The council record, with regret, the death on her 87th birthday of Mrs. D'ombrain, a vice-patroness of the society, and the wife of the late Rev. H. H. D'ombrain, who was greatly dependent upon her help in his secretarial and other duties, especially during the later years of his life. The society has also lost during the year Mr. R. L. Garnett, a keen and successful amateur exhibitor at the society's northern exhibitions, and one who was much respected by all who knew him.

The receipts from all sources during the past year, including a balance from the previous year of £488 15s. 10d., amounted to £4,076 18s. 9d., and the expenditure to £3,634 6s. 7d., leaving a balance at the bankers of £442 12s. 2d. after £250 had been placed to the reserve fund. The reserve fund now stands at £1,500.

During the past twelve months 810 new members have joined the society. Allowing for the losses by death and resignation, the total number of members is now 5,504. Taking the year as a whole, two new members a day have, on an average, been added to the list of membership.

| | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 |
|---|---|---|---|---|---|---|
| Number of Members ... | 2,484 | 3,150 | 3,797 | 4,584 | 5,125 | 5,504 |
| Net increase since previous year .... | 450 | 666 | 647 | 787 | 541 | 379 |

The first spring show the society has ever held will take place in the Royal Horticultural Hall, Vincent Square, on Thursday, May 1. The Metropolitan exhibition will be held in the Royal Botanic Gardens, Regent's Park, on Friday, July 4. The provincial show will take place at Gloucester, on Tuesday, July 15, in conjunction with the Gloucestershire Rose and Sweet Pea Society. The autumn exhibition will be held in the Royal Horticultural Hall on Thursday and Friday, September 11 and 12.

The "Rose Annual for 1913," which will contain, in addition to the usual helpful articles on rose culture, etc., a full report of the Rose Conference held at the Holborn Restaurant in May, will be issued to the members in March. In September will appear a new and revised edition of the "Official Catalogue of Roses," now in course of preparation, and early in December a new and amended edition of the "Enemies of the Rose."

To the donors of special prizes the Council after their grateful acknowledgments, and also to those hon. local secretaries who, by their zeal and activity, have assisted in promoting the interests of the society. They more particularly desire to mention the Rev. F. R. Burnside (Great Stambridge), Rev. R. Powley (Upton Scudamore), Mr. H. L. Wettern (Sanderstead), Dr. A. H. Williams (Harrow), and more especially Mr. R. E. West (Reigate), as having been the most successful in obtaining new members.

The Council feel they cannot close this report without tendering their warmest thanks to Miss Willmott, V.M.H., vice-patroness of the society, for her kind services during the past year.

SUMMARY OF RECEIPTS AND PAYMENTS FOR 1912.

| | | |
|---|---|---|
| December 1, 1911. | | |
| To Cash at Bankers | | £488 15 10 |
| November 30, 1912. | | |
| To Subscriptions | £2,717 8 8 | |
| ,, Do. Life Members | 36 15 0 | |
| | | 2,754 3 8 |
| ,, Proceeds of Shows—Summer, £266 2s.; Autumn, £23 15s. 6d.— | 289 17 6 | |
| ,, Contributions Provincial Shows—Irish Rose and Floral Society | 80 0 0 | |
| Southampton Royal Horticultural Society | 50 0 0 | |
| | | 419 17 6 |
| ,, Affiliated Societies | | 80 15 0 |
| ,, Advertisements in Society's Journals | | 147 14 9 |
| ,, Sale of Society's Publications | | 89 10 8 |
| ,, Special Prize Donations (exclusive of plate) | | 46 14 6 |
| ,, Interest—Consols | 35 12 4 | |
| Deposits | 8 5 6 | |
| | | 43 17 10 |
| ,, Conversazione Tickets | | 5 9 0 |
| | | £4.076 18 9 |
| Nov. 30.—To Cash at Bank | | £442 12 2 |

Reserve Fund—
Consols, 2½%, £1,845 0s. 2d.; cost £1,500; market value, November 30, 1912, £1,389 10s. 5d.

| | | |
|---|---|---|
| November 30, 1912. | | |
| By Publications | | £733 15 0 |
| ,, Printing, Stationery, and Advertising | | 380 5 3 |
| ,, Postages, Telegrams, and Sundry Expenses | | 378 1 8 |
| ,, Hire of Room for Meetings and Expenses of Conversazione | | 44 4 0 |
| ,, Honorarium to Hon. Secretary | | 100 0 0 |
| ,, Assistant Secretary (£92) and Assistant Treasurer (£65) | | 157 0 0 |
| ,, Auditor's Fee | | 15 15 0 |
| ,, Expenses at Shows— | | |
| Summer | £487 11 2 | |
| Autumn | 16 4 2 | |
| | | 503 15 4 |
| ,, Royal Botanic Society | | 50 0 0 |
| ,, Royal International Horticultural Exhibition | | 50 0 0 |
| ,, Entertainment of Foreign Rosarians | | 31 16 4 |
| ,, Prize Monies—Royal Botanic, Provincial, and Autumn Shows | | 786 1 0 |
| ,, Purchase of Plate, Medals, etc. | | 153 13 0 |
| ,, Purchase of Consols Reserve Fund | | 250 0 0 |
| ,, Cash at Bankers | | 442 12 2 |
| | | £4.076 18 9 |

I have compared the foregoing statement with the books and vouchers, and hereby certify the same to be correct.

The cash balances and the securities representing the investment of the Reserve Fund of the Society have been verified by me.

CHARLES BRANNAN, Chartered Accountant.

GEORGE W. COOK, Hon. Treasurer.

The adoption of the report and financial statement was moved by the Rev. J. H. Pemberton, the retiring president. Mr. Pemberton emphasised the fact that the society had double the membership it had five years ago, and spoke of the great encouragement the society receives from Her Majesty Queen Alexandra. The society's conference and dinner to foreign rosarians in May last was, he considered, one of the best functions the society had held, because of the friendly feeling it encouraged among French and other Continental rosarians, and those of the United Kingdom. Financially the society was in a fine condition, and he was glad that out of an income of over £4,000, only £750 had been expended on prizes, while an equal sum had been expended on publications which did so much to keep distant and Colonial members in touch with the society. Besides, the publications were of immense value to the members. The exhibitions were splendid advertisements for the society, and a fine opportunity for the display of new as well as old roses. Next year, the society proposed to hold an early show in May, and he believed that this would further extend the cultivation of roses under glass; further, he considered the proposal to make the autumn show a two-day meeting a good one, as it would enable rose-lovers of all classes to see the blooms.

Mr. H. A. Darlington seconded the motion at some length, and made a kindly references to the services of Mrs. D'ombrain to the society, and he suggested that some day the writings of the late Rev. H. H. D'ombrain might be gathered together and published by way of a memorial to the society's first secretary. He suggested the society should consider the publication of a Rose Stud Book, which would be of great service to hybridists and raisers.

The motion was carried without any comment. On the motion of the Treasurer, it was unanimously agreed to offer Mr. Mawley an honorarium of £100, as a slight token of appreciation of his invaluable services.

Several alterations of rules were proposed by Mr. C. E. Shea, but they were all verbal ones, and served to bring certain rules into order in their relation to other rules; Mr. J. Green seconded his proposals, and they were carried nem. con.

Mr. Walter Stevens proposed, and the Rev. R. Powley seconded, "That a committee of five be elected for each show held by the society, to be known as show superintendents, and they will be held responsible for the proper staging of exhibits at the respective shows." In answer to a question by the Rev. F. Page Roberts, the President stated that already seven stewards were appointed for the summer show The motion was lost by a large number of votes.

Mr. W. Stevens further proposed, and it was seconded by Mr. Coney, that: "In the event of any complaint or objection being lodged by a competitor at the committee tent the matter be referred to the secretary, who, together with two or more members of the Council, shall have power to then and there decide any questions raised."

Mr. Stevens said that a box of flowers was moved at the summer show and not returned, and this was a contravention of the society's regulations. This motion was also lost, only six voting for it. The President pointed out that Regulation 10 covered the points raised in this motion.

Mr. H. P. Landon moved "that the thanks of the society be given to the officers and other members of the Council for their services during the year"; these thanks were heartily accorded, and Mr. Mawley briefly responded, and in doing so made pleasing reference to the work of president, treasurer, and Publications Committee. The President then declared the result of the ballot. Mr. Chas. E. Shea was elected president; Mr. G. W. Cook, treasurer; and Mr. Edward Mawley, hon. secretary. Most of the old members of Council were re-elected, and the newly-proposed members elected were: Colonel Kilbee-Stuart, Messrs. W. E. Harkness, Elisha J. Hicks, Stuart Hogg, H. P. Landon, and F. Slaughter.

Mr. Frank Cant moved that the Dean Hole Memorial medal be awarded to Mr. George Dickson, of Newtownards, for his great services to the rose cult as a raiser of new roses. He said there was no greater honour the society could confer, and he hoped the meeting would pass the motion. The Rev. F. Page Roberts very pleasantly and humorously seconded the motion, and it was carried unanimously and with great heartiness.

Mr. E. J. Holland moved thanks to the president in a very capable speech, and Mr. Pemberton suitably responded.

The remaining business was the induction of the new president, Mr. Chas. E. Shea, who has served one period of two years in that office previously, in succession to the late Dean Hole.

Following the business meeting came the conversazione, at which Dr. Hamilton displayed a splendid series of coloured lantern slides representing Bournemouth gardens. Music and refreshments added to the pleasantness of these later proceedings.

## National Hardy Plant Society.

The annual meeting of the National Hardy Plant Society was held at the Hotel Windsor on Thursday, th 12th inst., Mr. A. J. Macself in the chair. Sir John Llewelyn, Messrs. J. W. Barr, F. Bouskell, J. Collingridge, H. Hemsley, E. H. Jenkins, R. Morton, R. Pinches, A. Weston, and others were present. The annual report for the year was, on the proposition of Sir John Llewellyn, seconded by Mr. Barr, received and adopted, and ordered to be printed. The statement of accounts and balance-sheet, which showed a balance in hand of £15 odd, was adopted, on the proposition of Mr. Barr, seconded by Mr. Weston. The following officers were elected: Chairman of Council, Mr. Frank Bouskell; treasurer, Mr. R. Morton; hon. secretary, Mr. A. J. Macself.

The Council was then elected. Sir John Llewelyn asked the society to co-operate in a Primula Conference to be held on April, 1913. He pointed out the good work which had resulted from the last Conference, and that, with the many important additions in the Himalayan and China Sections, the work required bringing up to date. The Chairman welcomed the idea, and assured Sir John of the hearty co-operation of the society, and that he was authorised to state that Dr. MacWatt and other primula experts would be pleased to assist. A long discussion ensued as to publishing a quarterly journal. Ultimately it was decided to issue the Year Book for the present year, and to defer the question of the quarterly journal until the finances of the society warranted them. The question of holding a show was considered, and, on the proposition of Mr. Barr, seconded by Mr. Morton, it was decided to hold a show, if possible, between June 2 and 9, the secretary to approach the Royal Horticultural Society, details to be left to the Executive.

The meeting closed with a vote of thanks to the chairman.

## East Anglian Horticultural Club.

This flourishing club held its annual meeting at the Boar's Head Hotel, Norwich, on Wednesday, December 11, when a large gathering of members assembled.

From the carefully-prepared annual report presented on behalf of the committee by Mr. W. L. Wallis, secretary, it was gathered that the membership now stood at 365, the highest ever known, placing it well in the front rank of any other such club or association in the kingdom. Its finances are thoroughly sound, and there is a sturdy balance of £133 14s. 3d.

Essays and lectures have been given each month, and from the subsequent discussions have proved themselves of great educational merit. The monthly exhibitions have been a continued success, and proved a great feature of interest and friendly rivalry, and of educational merit also.

The committee thank those nursery growers and others who from time to time have made special displays of seasonable flowers, and also the generous donors who have provided special classes during the year. The highest number of points for the year have been secured by Mr. S. Hunt, gardener to Mrs. Willis, Southwell Lodge, Norwich, and he holds for the first year the silver challenge cup. Mr. W. Shoesmith wins the Harmer Challenge Cup for a series of special exhibits. Thanks are accorded to the officers, committee, and honorary members, for their kind services and help, and special thanks are given to Mr. John Willis for so kindly sending such an interesting monthly weather report.

At the subsequent election of officers the presidential chair was taken by Mr. F. Williams, gardener to Louis Tillett, Esq., Catton, according to rule, he having served as acting vice-president during the past year. Mr. John Clayton (Messrs. Daniel Bros., Lim.), was voted to the vice-presidency, and by a unanimous vote and with acclamation Mr. W. L. Wallis was re-elected secretary. The retiring committee were re-elected, with

Mr. Percy Holmes, Tuckswood, in place of Mr. W. Laws, who has gone to British Columbia. A list of proposed alterations to rules and exhibition classes, which had been dealt with by the committee, was adopted. The Secretary also read the proposed list of essays and lectures for 1913 session, which indicated practical subjects by well known local experts.

At this meeting some of the members made very good exhibits, special mention being due to the dendrobium, from Mr. W. Shoesmith, the vase of cut cypripediums from Mr. J. W. Chapman, The Gardens, Ashwellthorpe Hall; and the bunch of Alicante grapes put up by Mr. W. Marjoram, gardener to W. T. F. Jarrold, Esq., Thorpe St. Andrew.

The annual dinner is fixed for Wednesday, Jan. 15, at the Criterion Restaurant, Norwich.

### Croydon Gardeners' Association.

The attendance of members of this society at their headquarters, the Sunflower Temperance Hotel, George Street, on the 3rd inst., was very good. Each member had in mind a very interesting lecture delivered to them in October last by Mr. H. H. B. Shepherd, F.I.C., F.C.S., on the uses of artificial fertilisers. At that meeting Mr. Shepherd promised to answer any questions the members wished information upon if they would write him giving details, and he would furnish replies in similar form. A good list of questions had been forwarded to him, and this evening was set apart for the replies and further discussion.

In framing the questions, it was borne in mind that to advise the use of chemical fertilisers one has first to study local conditions. Generally speaking, the local soils are rich in lime, and this being one of the essentials of plant food, study must be made as to what other substances should be added to produce the even balance necessary.

After each written answer from Mr. Shepherd had been read the members entered into brisk debate on their experiences, and by this means a consensus of opinion was obtained which will benefit all who heard it.

The meeting unanimously accorded a hearty vote of thanks to Mr. Shepherd for his lucid remarks, and the hon. secretary was requested to write him to this effect.

Considerable interest was displayed in the exhibits shown on this occasion, and it was freely commented upon how the increase of these exhibits by members helps to improve cultural methods. Mr. O. Jeal and Mr. H. Bridges contributed collections of vegetables. Three vases of single chrysanthemums were shown by Mr. M. E. Mills. Mr. W. Coles brought a dish each of globe beet and potatoes, and Mr. Mann three dishes of dessert apples and one of pears, the colour in the apples being splendid.

### Dundee Horticultural Association.

The ordinary monthly meeting was held in the Technical College on the 6th inst. Mr. Wm. Christeson presided, while Mr. J. D. Aimer, Wellington Street, Dundee, gave a very interesting and fascinating lecture on "Mendelism." In the course of an excellent address Mr. Aimer gave a graphic outline of the principles on which Mendel based his theory, which is now fully recognised as "law" in plant-breeding. By the aid of lantern slides and sketches on the blackboard, the lecturer made perfectly plain the full significance of a good knowledge of Mendelism to plant and animal breeders who wished to attain the best results on scientific lines. The lecture was thoroughly enjoyed, and evoked numerous questions. The lecturer was cordially thanked.

**Exacum macranthum.** — This may be had in bloom at different seasons, but at no time are its rich tyrian purple blossoms more appreciated than they are during the dull weather so often experienced towards the end of the year. The yellow anthers stand out very conspicuous against the purple background.—K.

## THE FLOWERS OF APPLES

### As an Aid in Identifying Varieties.

Chief among the contributions to the current issue of the "Journal" of the Royal Horticultural Society is a highly interesting paper by Mr. E. A. Bunyard on the flowers of apples as an aid in identifying varieties. As the subject is one of considerable practical importance as well as of much interest, we give, with permission, the following summary of the paper:

A casual inspection of a number of different varieties of apples in flower reveals many differences even to the unpractised eye, and a closer inspection shows that the flower presents many characters which may be of great aid in determining, in difficult cases, the correct nomenclature of the variety.

It may be asked, "Why is this minute detail required; cannot we rely upon the fruit alone for purposes of identification?" There are cases, however, where it is extremely difficult to separate two similar varieties, and others occur in which, though fruits are practically identical, two varieties may present certain well-marked differences which are valuable from the cultural point of view. As an example of this we may cite the case of the existence of two forms of the apple Borovitsky (Duchess of Oldenburgh), which are practically alike in fruit and leaf characters, but whilst one form thrives only in the southern parts of Russia, the other will grow in much more northern latitudes. Any small detail therefore of the flower in which they differ would enable the distinction to be made without an actual experiment. Furthermore, the importance of full and accurate descriptions cannot be overrated. Quite apart from the interest of deciding cases of doubtful nomenclature, a very considerable practical issue is often involved. Pomology is largely a matter of tradition, knowledge being handed on from one generation to the next, and whilst this actual practical knowledge is of the first importance, and without it the merely book-learned would fail dismally, the converse also holds some truth. The traditional pomologist cannot afford to dispense with records. As an instance of this danger we may mention the curious error in regard to the apple Mère de Ménage. This apple was introduced into England in the early part of last century, and bears no resemblance whatever to the true Mère de Ménage of the Continent, from whence it was imported. An error in orthography probably started the mistake, which has persisted in this country for nearly a hundred years. The apple is probably a sort much grown in Flanders formerly as Mère des Pommes, and the similarity of names doubtless caused the confusion. Unfortunately, though a coloured plate of the Mère des Pommes exists as well as a description, the latter is not detailed enough to decide the point with absolute certainty.

This case establishes the point which we are trying to make—namely, that a reliance on tradition without records is a dangerous practice, and, further, that records should be ample and systematic.

The botanist will not undertake the naming of specimens from one part of a plant alone as a general rule, and the pomologist, whose material is often fully as difficult, should, for the purposes of accuracy, be able to refer to the most fully detailed records. That all advance in science is due to greater accuracy is a truism, and pomological science is no exception to this rule.

The special points considered in this paper are: Flowering season; size and shape of flowers; colour of flowers; sepals; styles and stamens, comparative lengths; styles, various forms.

In regard to these characters as a whole we may say that they are less subject to variation than any characters of the fruit, leaf, or wood. Conditions of cultivation have much less effect upon the flower than upon other parts of the tree, and in all cases the observations have been made over a series of three years, and the facts do not therefore relate to one season only, but have been twice confirmed.

The writer does not wish it to be thought that these characters are in any way new to pomology (except in so far as bud colour is concerned), as Duhamel du Monceau has used most of them in his descriptions, and Englebrecht in "Deutschlands Apfelsorten" uses the various forms of styles as dried in the fruit as recognition characters.

### Season of Flowering.

It is not necessary to go into detail as to the relative flowering periods, as this matter has lately been dealt with in reference to pollination ("Journal" R.H.S., vol. xxxvii., p. 350), but it will be remembered that very considerable differences occur between the different varieties, and the relative positions of early, mid, and late flowering kinds are on the whole well kept in varying seasons.

It may be well, however, to direct attention to certain varieties which may be termed successional flowering varieties, in which the flowers expand in succession, thus ensuring that a better chance is given of avoiding a frosty period than with those varieties the flowers of which are nearly all open at the same time. Such successional varieties are Worcester Pearmain, Cox's Orange Pippin, and Annie Elizabeth.

### Size and Shape of Flowers.

This is an obvious distinction, and not of very much value in discriminating between two similar varieties, as, generally speaking, the size of the flower is correlated with that of the fruit. The shapes, however, of the petals afford a much better ground. The shape of the expanded flower is characteristic, and may be described as cupped or flat. Those that are cupped do not, even at their maturity, lose this form, and representatives are Lady Sudeley and Lane's Prince Albert. Others open flat, or even in some cases the petal is forced back at less than a right angle to the axis of the flower stem. Examples of the flat type are Peasgood's Nonsuch and Gravenstein. The various petal forms are to be found in all sizes.

### Colour.

The colour of the expanded petal is very characteristic, and is generally confined to the outside, but there are certain varieties in which a general suffusion is common to both sides. Such, for instance, is Golden Spire.

The difference of colour is most prominent when the flower is in bud, and it forms an excellent recognition mark, and one to which we believe attention has not hitherto been drawn. The flower buds should be examined when about the size of a pea, and it will then be found that the colours are most distinct, ranging from a light yellowish pink (Rép. des Couleurs, Hydrangea Pink $T_3$) to the darkest carmine (Rouge Cramoisi, 114 $T_1$).

The value of this differentiating mark will be appreciated in the case of such easily

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confused apples as Pott's Seedling and Grenadier, and Lane's Prince Albert and Striped Beefing. In each case the first-named of the two pairs has very dark flowers, and the second light. A further case may be mentioned in that of Williams' Favourite and Worcester Pearmain, apples of the same season and of often similar appearance. The widely different colours of the buds will make identification easy.

### Calyx.

The size, shape, and woolliness are, of course, well observed in the fruit, and we need not discuss them here, except to say that the differences are more easily seen in the flowering stage.

### Relative Length of Pistil and Stamens.

This is a character of some value, and is, so far as our observation has gone, one of the most constant. It should be observed that the stamens usually attain their maximum size first, and are generally dehiscing when the pistil has reached its full length. Examples of these variations are as follows:—Styles longer than stamens: Lane's Prince Albert, Hormead's Pearmain, Gravenstein. Styles and stamens equal: Baumann's Red Winter Reinette, Mother, Lord Derby, Golden Spire. Styles shorter than stamens: Bramley's Seedling, Sturmer Pippin, Coronation.

### Various Style Forms.

Two well-defined forms exist. In different varieties of the same type the column may be longer or shorter, but it preserves on the whole a very constant length, and a measurement of fifty flowers, in which the average length of column before division was 6½mm., gave 5½mm. as the shortest, and 7mm. the longest.

The second type has the styles divided to the base, and the constancy of the form is even better maintained. The amount of pubescence is also a guide, though not so constant. In some varieties the whole pistil is quite glabrous, as in White Transparent, in others small hairs are present at the junction. In a third case the styles are hairy almost to their summits.

So far in the form in which they are divided to the base, we have not yet found a glabrous variety. It will be seen that, taking the two types, columnar and separate, we have two very clear-cut differentiating characters. Examples of their utility are shown in the following cases, in which two similar fruits are compared:—Styles divided to base: Cox's Orange Pippin, Forfar Pippin. Styles forming column: The Houblon, Norman's Pippin.

### Correlation.

The fascinating but dangerous task of searching for some broad and general correlation between these varying characters of apples is one at which we can only permit ourselves a hasty and hesitating glance. That large flowers indicate large fruit is frequently true, but exceptions exist. The largest flower we have noted is that of Nelson Codlin, an apple of medium size. Colour in flower and fruit seems to go more by contrary rule, as the finest coloured flowers are generally those of pale yellow or green varieties, as in Lord Derby, Forfar Pippin, and Golden Spire.

Lateness in flowering has on the whole a correspondence with lateness in the fruit, but by no means in all varieties.

The writer hopes that any departures from the facts stated above may be brought to his notice, as he has not had the opportunity of studying the possible effect of any markedly different environments upon them.

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**Parsnips.**—These are far superior in flavour if left in the ground for the next eight weeks. If continuous frosts are expected, it is well to cover up a small portion with litter to prevent the ground being frozen hard. They will then be easy to dig as required; in open weather draw the litter off.—G. Ellwood.

## ANSWERS TO CORRESPONDENTS.

Editorial Communications should be addressed to the Editor of the Gardeners' Magazine, 148 and 149, Aldersgate Street, E.C.

Secretaries of horticultural societies are invited to send early notification of forthcoming exhibitions and meetings, and are requested to advise us concerning changes of dates.

Specimens of plants, flowers, and fruits for naming or opinion should be sent to the Editor of the Gardeners' Magazine, "Endsleigh," Priory Park, Kew, Surrey, and as early in the week as possible. All parcels must be sufficiently prepaid.

The Editor will be glad to receive photographs of gardens, plants, flowers, trees, fruits, etc., for reproduction in the Gardeners' Magazine. He will also be greatly obliged by correspondents sending early intimation of interesting local events relating to horticulture. In sending newspapers containing matter to which they wish to draw attention, correspondents are requested to distinctly mark the paragraph.

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FLOWERING EVERGREEN PLANTS FOR EDGINGS.—E. L. S., Saffron Walden: You will very greatly oblige me by suggesting a few subjects of perennial evergreen character that are suitable for the formation of edgings to flower borders. If the plants are also good flowering subjects, so much the better. By evergreen, I mean not deciduous. —Plants that are always presentable, of neat habit, and therefore suitable for edgings, and yet which flower well, are not numerous. Pinks, especially the variety Mrs. Sinkins, are especially good, while thrift, London Pride, arabis, violas (if planted early in the autumn), Saxifraga cæspitosa, S. hypnoides, S. muscosa, aubrietias, and either the green or yellow-leaved form of the Creeping Jenny (Lysimachia Nummuldria) may be used with success for edgings.

THE MORELLO CHERRY. — M. F., Cashel: The Morello cherry differs so largely from the sweet cherries that I have often wondered how it originated. Can you give any information upon this point? — The origin of the Morello cherry is "wrapped in mystery." It is a very old variety, and was mentioned by Parkinson in 1629. Dr. Hogg considers "The great bearing cherry of Master Miller," which Parkinson also refers to, as being identical with the Morello, a variety Switzer calls the Milan—"a reasonable great red cherry bearing plentifully, although it bee planted against a north wall, yet it will bee late ripe, but of indifferent, sweet, and good relish." This is about all we can tell you of the origin of one of our most useful fruits.

AUBERGINE OR EGG PLANT.—P. S., Harpenden: What is the best time to sow seeds of the Aubergine or Egg Plant. I should like to grow a few plants this coming year, and should like to have an idea of how to proceed.—Seeds should be sown in light soil, in a heated pit or stove, early in February, and the seedlings must be potted singly at an early date. Keep the young plants on a shelf near the glass in a quite warm house; pot again as necessary, and use rich substantial soil. Pots six inches in diameter should be large enough to fruit the plants in. An intermediate house will suffice in early summer, while an unheated pit will provide sufficient protection during the height of summer, provided the plants are well advanced. When the fruits have fully developed they may be either used for the table or the plants may add to the attractiveness of the conservatory.

AZOLLA CAROLINIANA.—C. H. T., Cranbrook: I enclose a few tiny plants of a very pretty little aquatic that is quite hardy and multiplies so rapidly here on still water that it becomes a nuisance. At the present moment it completely covers the pool, so that, from a little distance, no water is seen, but a surface that looks as solid and level as a pathway. What can be done to prevent the plant from spreading so rapidly, and what is its name?—The pretty miniature aquatic sent is Azolla caroliniana. In very still water it increases apace, but where there is considerable movement in the water it seems to increase less rapidly, while in running water it is soon carried away unless penned into a little bay by means of fine wire or a few strips of wood. Without doing damage to fish and to surrounding vegetation, we do not know of any means whereby Azolla caroliniana can be prevented from becoming a nuisance in still water, unless at regular intervals the stock is severely reduced by means of a skim-net.

HABROTHAMNUSES OR CESTRUMS.—G. H., Harrogate: Will you be good enough to let me know which are the best kinds of habrothamnus to grow as pillar plants in a warm conservatory?—The proper generic name for these plants is Cestrum, not Habrothamnus, though the latter title is still very popular in gardens. The best kinds to grow are C. aurantiacum, orange-yellow, summer-flowering; C. elegans, rosy-carmine, winter and spring-flowering; and C. Newelli, crimson, summer-flowering.

STAR ANISE.—M. A. R., Bristol: I have been given a few seeds of Star Anise; would it be possible to raise plants; and, if so, how should I proceed?—If the seeds are sound, they should be sown in moderate heat. Pot the seedlings singly when large enough, adding some peat to the soil. A warm greenhouse will suit them when once established. When you have a few plants a year or so old try one or two against a warm south wall. Your seeds may be either Illicium anisatum or I. verum.

MALMAISON AND PERPETUAL CARNATIONS.—Corunbian, Redruth: Will you kindly let me know if I am right in thinking that the treatment required for chrysanthemums will answer well for perpetual

NEWS FROM HEADQUARTERS.

WHAT THE SEED-BUYER OWES TO THE BIG SEED HOUSES.

When revelling in the delights of your garden, have you ever given a thought to what you owe to the big seed houses?

Did you know that a house like James Carter and Co. spends from £3,000 to £4,000 a year on arresting seed-degeneration, and on progressive researches?

In all cultivated plant life there is a perpetual tendency to revert to the original type. If, for example, you reproduce from seeds of your own growing, you will find your plants grow weaker and weaker each successive season.

That is exactly what would happen universally, but for the big seed houses. Only a visit to the great Exhibition Warehouse of James Carter and Co., at Raynes Park, can give you any adequate idea of the extraordinary measures taken—not merely to check the cultivated plant from running back to its original form, but to force it to a higher and yet higher form of development. Costly laboratories are maintained, where scientists pursue their horticultural researches all the year round, and the magnificent buildings are surrounded by extensive trial grounds where the plants undergo their final stage of examination.

After all, there is little difference between the development of plant life and the breeding of a racehorse. The parents of the seeds have to be selected with just as much regard to their strength, maturity, and fitness. The more thoroughly this great selective and cross-fertilising work is done the greater will be the reward. And it is precisely here that the seed-buyer gets value when coming to a big seed house.

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carnations, as regards potting, soil, and feeding? Will you also give me some information regarding the arrangement of Malmaison carnations?—The methods followed in the successful cultivation of perpetual-flowering carnations differ very considerably from those found necessary for chrysanthethemums. Both classes of flowers resent much artificial heat, they love good light and abundance of fresh air, and they both flower freely in autumn and early winter, if well managed, but there the similarity ends. We have published numerous articles dealing with the whole procedure for perpetual-flowering carnations during the present year, and, owing to the increased cultivation of these beautiful flowers and the many gardeners and amateurs who are newly devoting attention to them, we propose to deal with cultivation and varieties at some length during the coming year. Respecting Malmaison varieties, we have an illustrated article, from a clever grower, which we hope to publish in our second issue of the new year.

### NAMES OF PLANTS.

W. F., Witley.—1, Azara microphylla; 2, Zygopetalum Mackayi.

E. G. B., Bideford.—1, Escallonia macrantha; 2, Diospyros Kaki; 3, Abutilon insigne.

F. E. J., Chester.—1, Cypripedium Leeanum; 2, Selaginella amœna; 3, Cyperus papyrus.

### NAMES OF FRUITS.

S. C., Romsley.—Winter Greening.

J. T. T., Stowmarket.—1, Catshead; 2, Dumelow's Seedling; 3, not recognised.

E. G., Ottery St. Mary.—1, Cornish Aromatic; 2, probably Washington; 3, a seedling King of the Pippins; 4, not recognised, but evidently a good apple; can you tell us anything about it?

## OBITUARY.

### MR. J. D. ENYS.

We learn from the "Kew Bulletin" of the death of Mr. J. D. Enys, of Enys, Penryn, Cornwall. Mr. Enys died on November 7, at Leeds, where he had gone to undergo an operation. The gardens at Enys have been fully illustrated and described in the GARDENERS' MAGAZINE; they are remarkable for the many interesting Antipodean plants they contain, for the wonderful water gardening, masses of Primula japonica, the culture of Myosotidium nobile, the rhododendrons and gunneras. Mr. Enys resided in New Zealand for many years, and he was a valued correspondent of Kew.

**Horseradish.**—To secure good roots of horseradish a part of the plot should be taken up annually, the best roots being picked out and laid in soil for winter use. The ground should then be trenched and well cleaned, and good prepared thongs, not less than ten inches long, should be planted at once on the same site a foot apart, in rows eighteen inches asunder. — GEO. ELLWOOD.

## NOTICE.

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**148-9, Aldersgate Street,**
**London, E.C.,**

**who will give the matter immediate attention.**

## MARKETS.

## COVENT GARDEN.

### Flowers.

Business is good; carnations, chrysanthemums, lily of the valley, and orchids meet a ready sale.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Arums | per doz. | 3 | 0 | to | 5 | 0 |
| Adiantum cuneatum | per doz. bun. | 4 | 0 | | 6 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 16 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azalea | per doz. bun. | 4 | 0 | | 5 | 0 |
| Bouvardia | per doz. bun. | 6 | 0 | | 8 | 0 |
| Camellias | per doz. | 1 | 6 | | 2 | 6 |
| Carnations | per doz. | 2 | 0 | | 2 | 6 |
| ,, | per doz. bun. | 10 | 0 | | 18 | 0 |
| ,, Malmaison | per doz. | 8 | 0 | | 15 | 0 |
| Cattleyas | per doz. | 9 | 0 | | 15 | 0 |
| Chrysanthemums | per doz. bun. | 9 | 0 | | 15 | 0 |
| ,, | per doz. blooms | 1 | 6 | | 5 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Cypripediums | per doz. | 2 | 0 | | 3 | 0 |
| Daffodils | per doz. | 1 | 6 | | 1 | 9 |
| Eucharis | per doz. | 2 | 0 | | 3 | 0 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Gardenias | per doz. | 3 | 0 | | 6 | 0 |
| Lapageria | per doz. | 2 | 0 | | 2 | 6 |
| Lilium auratum | per bun. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 2 | 6 |
| ,, longiflorum | per doz. | 2 | 0 | | 3 | 0 |
| Lily of the Valley | per doz. bun. | 10 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 6 | | 4 | 0 |
| Mignonette | per doz. bun. | 3 | 0 | | 5 | 0 |
| Odontoglossums | per doz. blms. | 2 | 6 | | 4 | 0 |
| Pelargoniums | per doz. bun. | 4 | 0 | | 8 | 0 |
| Poinsettias | per doz. | 9 | 0 | | 10 | 0 |
| Roman Hyacinths | per doz. bun. | 14 | 0 | | 18 | 0 |
| Roses | per doz. | 1 | 6 | | 5 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 0 |
| Spiræa | per doz. bun. | 5 | 0 | | 8 | 0 |
| Tuberoses | per doz. | 0 | 6 | | 0 | 9 |
| Tulips | per doz. bun. | 12 | 0 | | 18 | 0 |
| Violets | per doz. bun. | 2 | 6 | | 6 | 0 |

### Fruits.

Large supplies are on offer and trade is brisk.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, English | per bush. | 3 | 0 | to | 6 | 0 |
| ,, Cox's | per ½-sieve | 4 | 0 | | 7 | 0 |
| ,, American | per bar. | 11 | 0 | | 25 | 0 |
| ,, Californian | per box | 4 | 6 | | 10 | 0 |
| ,, Nova Scotian | per bar. | 10 | 6 | | 20 | 0 |
| Bananas, Canary | per bar. | 7 | 0 | | 12 | 6 |
| ,, Jamaica | per bun. | 3 | 0 | | 5 | 6 |
| Cobnuts | per doz. lbs. | 3 | 0 | | 3 | 6 |
| Cocoanuts | per 100 | 18 | 0 | | 23 | 0 |
| Cranberries | per case | 9 | 0 | | 12 | 0 |
| Figs | per box | 0 | 9 | | 1 | 6 |
| Grapes, English | per lb. | 0 | 8 | | 7 | 0 |
| ,, Almeria | per barrel | 12 | 0 | | 20 | 0 |
| ,, Lisbon | per case | 7 | 0 | | 8 | 0 |
| Lemons | per case | 8 | 0 | | 30 | 0 |
| Medlars | per crate | 4 | 0 | | 5 | 0 |
| Melons | each | 1 | 9 | | 3 | 0 |
| Oranges | per case | 10 | 0 | | 30 | 0 |
| ,, Jamaica | per case | 10 | 0 | | 15 | 0 |
| Pears | per ½-bush. | 1 | 6 | | 4 | 0 |
| ,, French | per box | 2 | 0 | | 5 | 0 |
| ,, Californian | per case | 6 | 0 | | 12 | 0 |
| Pineapples | | 2 | 0 | | 5 | 0 |
| Pomegranates | per case | 6 | 0 | | 10 | 0 |
| Walnuts | per doz. lbs. | 2 | 6 | | 5 | 6 |

### Vegetables.

Supplies are somewhat large, and prices are easy.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 | 0 | to | 3 | 0 |
| ,, Ground | per bush. | 3 | 0 | | 4 | 0 |
| Asparagus, Paris | per bun. | 3 | 6 | | 4 | 6 |
| Beet | per bush. | 1 | 6 | | 3 | 0 |
| Brussels Sprouts | per ½-bush. | 1 | 0 | | 2 | 0 |
| Cabbage | per tally | 2 | 6 | | 4 | 0 |
| Carrots | per doz. bun. | 2 | 0 | | 2 | 6 |
| Cauliflowers | per tally | 6 | 0 | | 10 | 0 |
| Celery | per doz. bun. | 9 | 0 | | 15 | 0 |
| Celeriac | per doz. | 2 | 0 | | 3 | 0 |
| ,, Cornish | per crate | 3 | 0 | | 4 | 0 |
| Cucumbers | per doz. | 1 | 6 | | 3 | 6 |
| Endive | per doz. | 0 | 6 | | 2 | 0 |
| Horseradish | per doz. bun. | 10 | 0 | | 12 | 0 |
| Leeks | per doz. | 2 | 0 | | 2 | 6 |
| Lettuce | per doz. | 1 | 0 | | 2 | 0 |
| Mushrooms | per doz. lbs. | 6 | 0 | | 10 | 0 |
| Onions | per bush. | 2 | 0 | | 4 | 0 |
| ,, Spanish | per case | 4 | 6 | | 7 | 0 |
| Parsley | per doz. bun. | 2 | 0 | | 3 | 6 |
| Parsnips | per bush. | 2 | 0 | | 3 | 0 |
| Radishes | per doz. bun. | 0 | 8 | | 1 | 0 |
| Spinach | per ½-bush. | 1 | 6 | | 3 | 0 |
| Tomatoes, English | per doz. lbs. | 3 | 6 | | 4 | 6 |
| ,, Canary | per case | 10 | 0 | | 12 | 0 |
| Turnips | per doz. bun. | 1 | 3 | | 2 | 6 |
| Watercress | per doz. bun. | 0 | 4 | | 0 | 7 |

## LONDON POTATO MARKETS.

Prices alter but little, and foreign supplies have increased.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Bedfords | per ton | 80 | 0 | to | 90 | 0 |
| Kents | per ton | 80 | 0 | | 100 | 0 |
| Lincoln | per ton | 80 | 0 | | 95 | 0 |
| Blacklands | per ton | 70 | 0 | | 85 | 0 |
| Scotch | per ton | 80 | 0 | | 95 | 0 |
| Dunbars | per ton | 100 | 0 | | 120 | 0 |
| German | per ton | 75 | 0 | | 95 | 0 |
| Belgian | per ton | 60 | 0 | | 75 | 0 |
| Dutch | per ton | 55 | 0 | | 75 | 0 |

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## METEOROLOGICAL OBSERVATIONS.

TAKEN IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, AT WISLEY, SURREY.
Height above Sea-level, 150 feet.

| DATE. 1912. DECEMBER 8 TO DECEMBER 14. | SUNSHINE. | TEMPERATURE OF THE AIR. At 9 a.m. Dry Bulb. | At 9 a.m. Wet Bulb. | Day Highest. | Night Lowest. |
|---|---|---|---|---|---|
| | hr. m. | deg. | deg. | deg. | deg. |
| Dec. 8—Sunday | — | 50 | 49 | 51 | 47 |
| ,, 9—Monday | 0 12 | 48 | 48 | 51 | 45 |
| ,, 10—Tuesday | — | 49 | 49 | 50 | 49 |
| ,, 11—Wednesday | — | 47 | 45 | 52 | 44 |
| ,, 12—Thursday | 2 54 | 43 | 41 | 49 | 40 |
| ,, 13—Friday | — | 49 | 47 | 54 | 40 |
| ,, 14—Saturday | 0 6 | 54 | 51 | 56 | 45 |
| Means | (total) 3 12 | 49 | 47 | 52 | 44 |

| DATE. 1912. DECEMBER 8 TO DECEMBER 14. | RAIN. | TEMPERATURE OF THE SOIL AT 9 A.M. At 1 ft. deep. | At 2 ft. deep. | At 4 ft. deep. | LOWEST TEMPERATURE ON GRASS. |
|---|---|---|---|---|---|
| | ins. | deg. | deg. | deg. | deg. |
| Dec. 8—Sunday | trace | 44 | 43 | 46 | 46 |
| ,, 9—Monday | 0·16 | 45 | 44 | 46 | 34 |
| ,, 10—Tuesday | 0·24 | 46 | 44 | 46 | 47 |
| ,, 11—Wednesday | 0·21 | 46 | 45 | 46 | 40 |
| ,, 12—Thursday | — | 46 | 45 | 46 | 33 |
| ,, 13—Friday | 0·01 | 44 | 45 | 46 | 33 |
| ,, 14—Saturday | 0·02 | 46 | 45 | 46 | 46 |
| Means | (total) 0·64 | 45 | 44 | 46 | 40 |

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## THE ROCK SOAPWORT.

Saponaria ocymoides is a most delightful rock plant, and one which, while in flower, is universally admired as it trails over the rocks, and is literally covered with its sheets of pink flowers. It reminds one of a vastly improved and trailing S. calabrica. It is an old garden plant, but not one to be seen every day, even in rock gardens, where it should have a good place. Its hardiness is doubtful in certain districts, but if its requirements are considered there is little fear of its loss in the greater part of the United Kingdom.

The typical S. ocymoides forms a low trailing mass of small green leaves, which for a considerable time in summer are generally covered, or, at least, almost completely veiled with pleasing pink flowers. There is a white variety, which however, becomes pink with age, and ought to be planted in stony soil and in a north aspect, so that it may retain its whiteness for a longer time. There is a deep pink variety called splendens, and a very handsome form, with more fleshy foliage and larger, brighter, flowers, is named splendidissima.

These soapworts like a hard, dry soil, with plenty of stones about it, and put in such a position that they will hang over rockwork or a stone edging. In wet winters there is some danger of losing them unless there is perfect drainage, and the finest plants in the garden of the writer are fully exposed to all winds and in poor, hard, dry, stony soil.

S. ocymoides is increased by means of seeds or cuttings, the latter being the method to be adopted for the choicer varieties. Seeds are cheap, and can be sown in shallow drills in the open in April or May in beds of sandy soil, or in pots or boxes under glass in March or April. Whenever the seedlings can be handled properly they should be transplanted about three inches apart, and put in their permanent quarters in the course of the summer. If left until late in autumn they may be destroyed in winter.

Cuttings, either of young shoots or of the older ones taken off with a heel, may be inserted in sandy soil under glass in summer, and are best wintered under glass, to be planted out in early summer. These saponarias, though not expensive, are worthy of full consideration from owners of worthy of full consideration. S. A.

**Jerusalem Artichokes.**—Leave the roots in the ground for seven or eight weeks if the soil is light, but on heavy ground take up and store without frozen soil being attached to them, and also without slugs being located upon them.—G. Ellwood.

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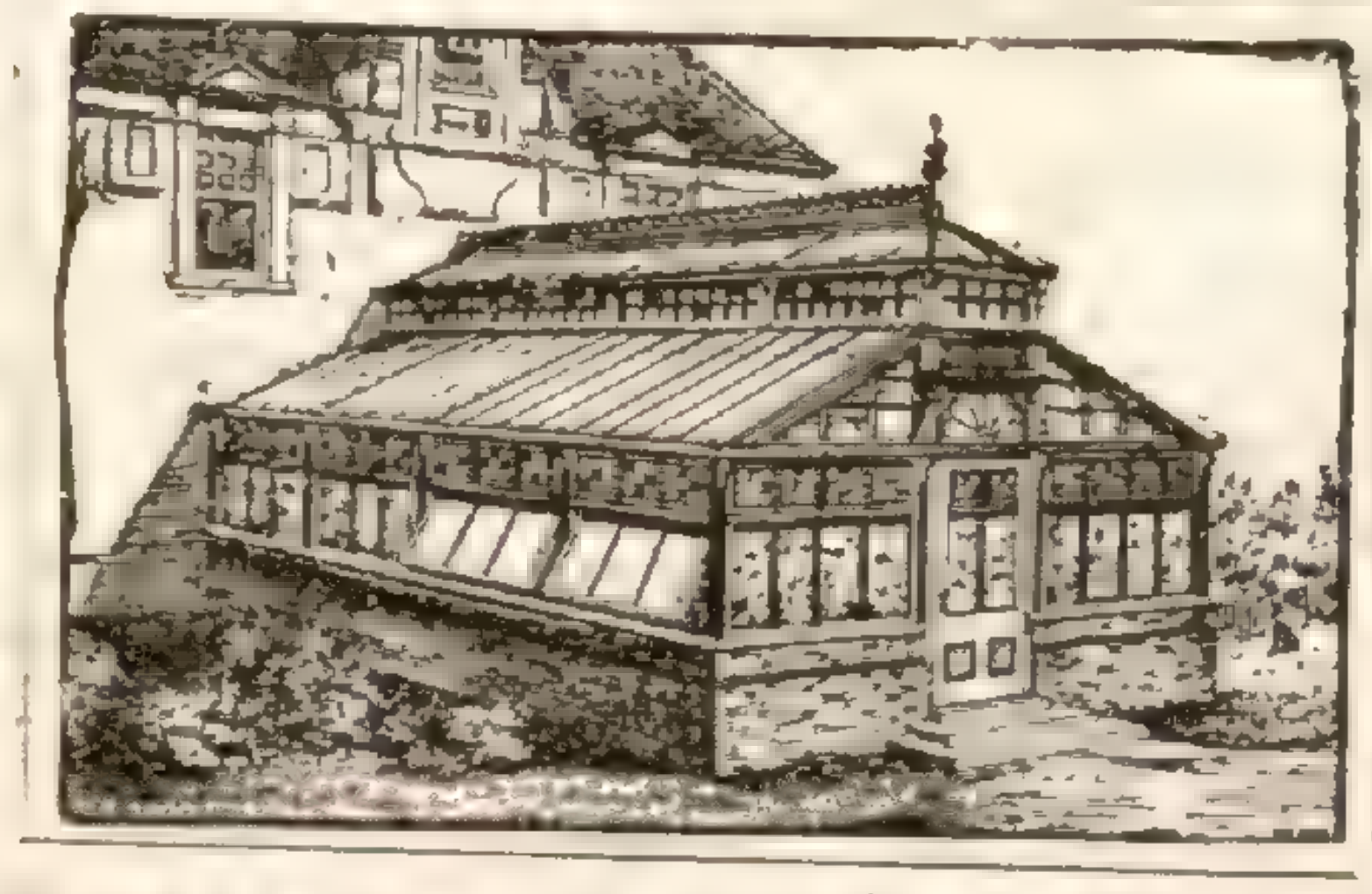

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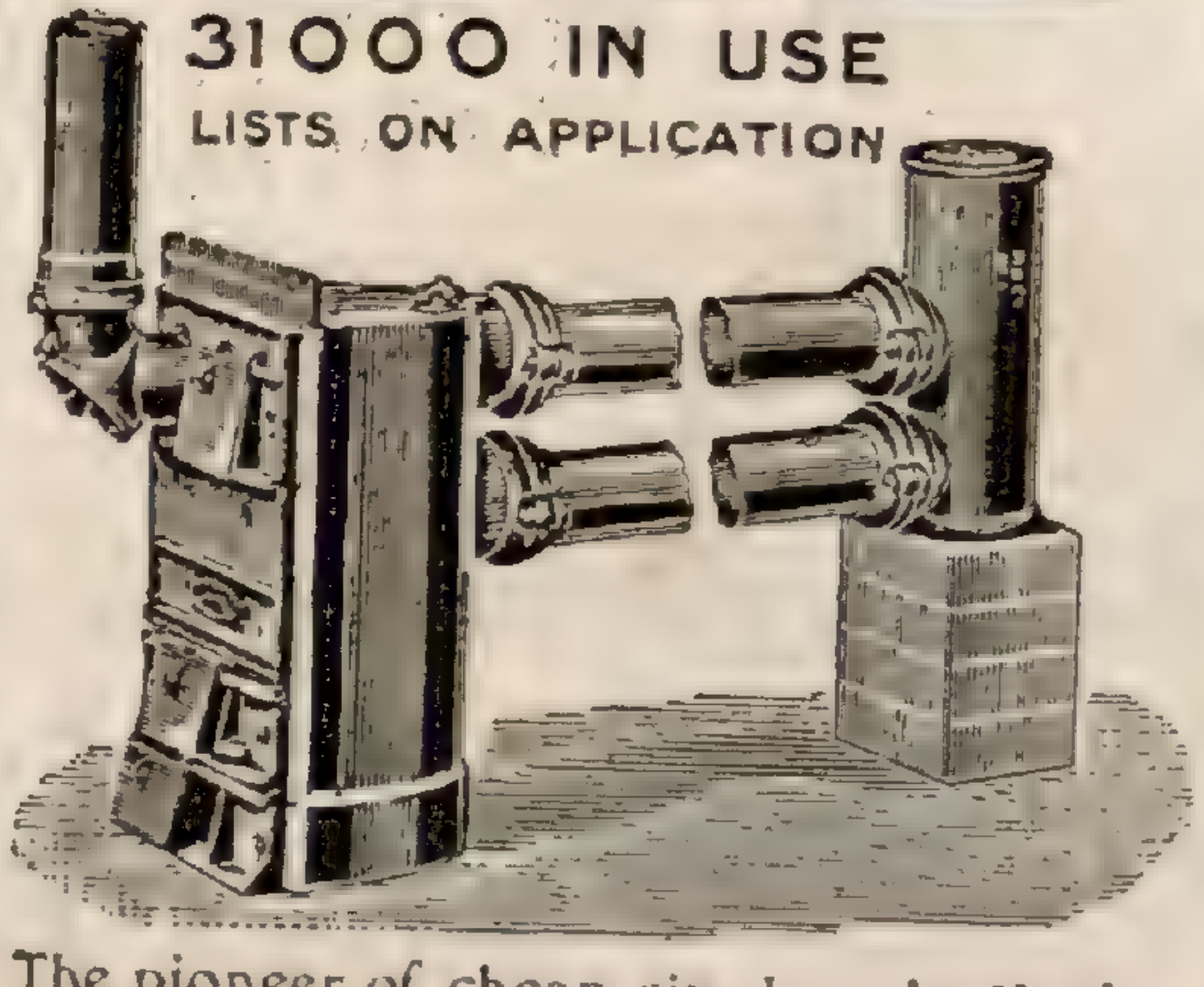

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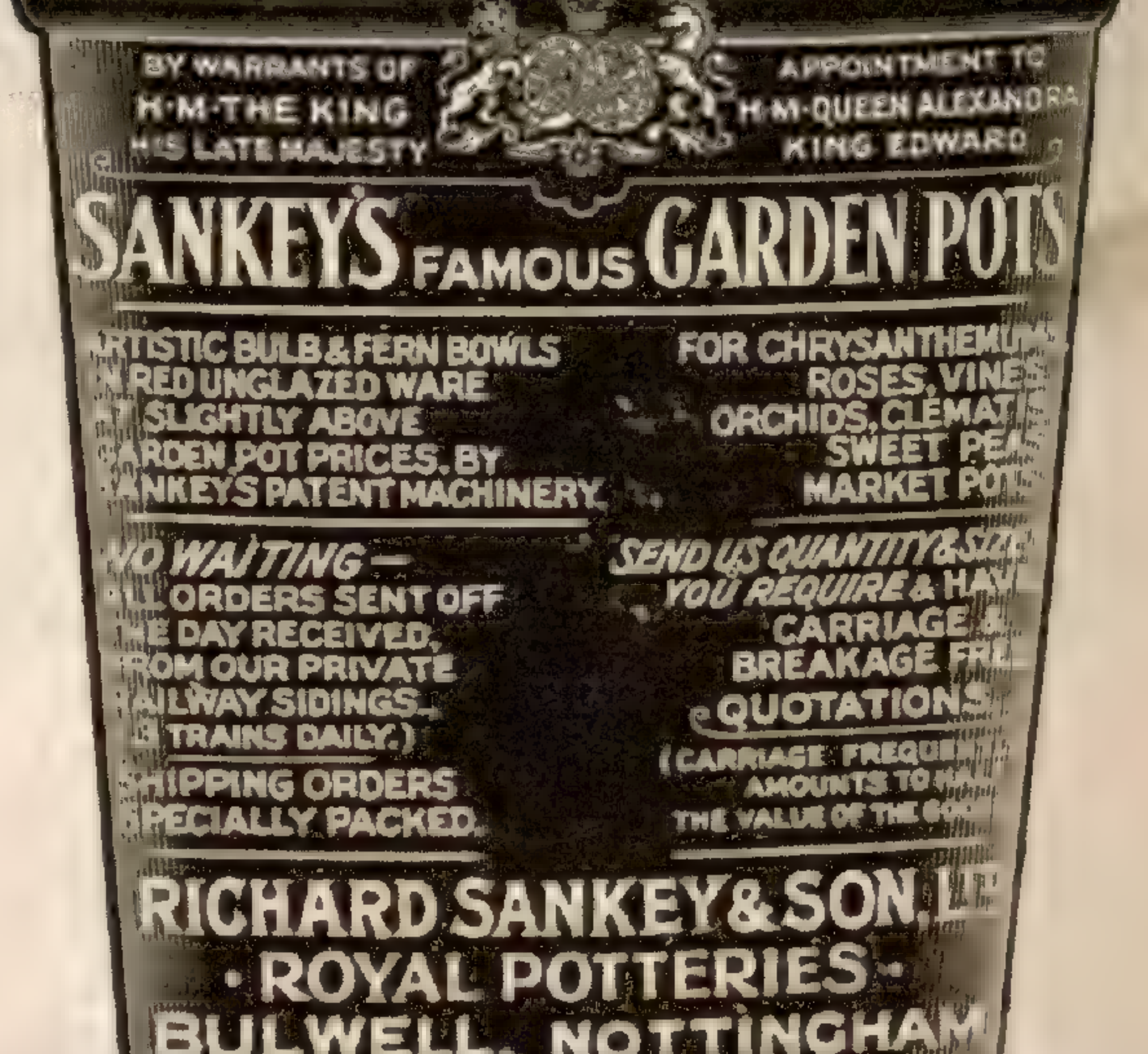

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# THE GARDENERS' MAGAZINE.

No. 3,087. Vol. LV. (Reg. at the G.P.O. as a Newspaper, and for Canadian Magazine Post.)

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VOL. LV.—No. 3,087. SATURDAY, DECEMBER 28, 1912.

# THE GARDENERS' MAGAZINE

## NOTE OF THE WEEK.

### The Past Year.

The year which is now within a few days of its close may, in its relation to the garden, be regarded as remarkable for its variability, and be described as one of the most eventful of recent times. The great divergence in the climatic conditions that obtained afforded considerable pleasure at one time, and gave rise to much disappointment at others, to those who are keenly interested in the outdoor aspects of the garden, and resulted in some loss to those who are engaged in horticulture as a source of profit. In the opening days of spring the weather was warm and genial, and vegetation generally made good progress. Trees and shrubs remarkable for the beauty of their flowers bloomed so profusely as to produce wondrous displays of colour, and to contribute more liberally to the attractions of the garden than they had done for some years previously. Hardy fruits also yielded freely of their flowers, and in the fruit-growing counties the orchards of apples, cherries, pears, and plums produced in their season of blossoming a series of effects of surpassing beauty. The early promise of the orchards was not, however, fully realised, for a spell of cold weather towards the end of the period of flowering did considerable damage, and materially reduced the crops of certain kinds. Briefly stated, there was a fair crop of apples, a good crop of pears, a moderate crop of plums, and an abundance of nuts. The low temperature and the heavy rains that were experienced during the greater part of the summer were fairly favourable to many kinds of vegetables, and very different were the supplies in the markets and private gardens to those available in the summer of 1911. Potatoes were the most injuriously affected by the unfavourable weather, and the crop was disappointing both in yield and quality. Indeed, to find a less satisfactory crop of tubers it would be necessary to go back many years. Turning from this brief reference to the crops to the events of an eventful year, we find much that cannot have failed to afford immense satisfaction to those who are jealous of the traditions of British horticulture. For a long series of years a strong desire had been felt by all classes of horticulturists that an exhibition of an international character should be held in London for the purpose of demonstrating to the world the position of horticulture in this country, and of affording an opportunity for returning the generous hospitality that British horticulturists had received from their friends abroad. The organisation of an International Horticultural Exhibition worthy of the name is no light matter, involving, as it does, an immense amount of work and the expenditure of a large sum of money. Hence it was not until some three years since that it was felt so gigantic an undertaking could be entered upon with the full assurance of a complete success. No sooner was it decided to hold the exhibition this year than the preparatory work was commenced, and it was carried on with so much vigour that on the opening day the exhibition was so complete in its various details as to obtain for the members of the executive the warmest expression of praise from those who were in a position to fully appreciate the task that had been accomplished. As we so fully informed our readers at the time, the exhibition far surpassed in extent any horticultural exhibition previously held at home or abroad, and was remarkable for its interest and varied attractions. Science and practice were happily combined in the programme, and of special importance was the remarkably successful Conference on the education of gardeners, and the regulations relating to the diseases and insect enemies of plant life. The social functions were numerous, and the large number of foreign horticulturists who were invited to take part in the exhibition and conference returned home much impressed by what they had seen, and immensely gratified by the hospitality they had enjoyed. An episode which gave an immense amount of gratification to horticulturists of all classes, and, indeed, of all countries, was the knighthood conferred by the King on Sir Harry Veitch, V.M.H. Not only was this distinguished horticulturist the only member of the Board of Directors who had served on the committee of the International Exhibition held in 1866, but he had throughout the long period that had intervened taken a prominent part in all movements that had for their object the advancement of horticulture, and the welfare of gardeners. The exhibition, as now so well known, was remarkable for the evidence it afforded of the great popularity of orchids, on the one hand, and of hardy flowers on the other. One effect of the International Exhibition at Chelsea was the suspension of the Temple Show, which was much missed, but there was a consensus of opinion that the Council of the Royal Horticultural Society, who gave the most generous support, financially and otherwise, to the movement, had acted with their characteristic wisdom, and thereby contributed still further to the success achieved. The Royal Horticultural Society has, in

MR. H. T. MARTIN.

cordance with custom, pursued its work with vigour and success during the year. The great summer exhibition at Holland House was considerably above the average, the glorious displays of stove and greenhouse plants, roses, sweet peas, and hardy flowers being especially noteworthy; and the exhibition of hardy fruits in October was also of a highly satisfactory character. The interest in the fortnightly meetings have been fully maintained, and the attendance on several occasions was so large as to render it no easy matter to see the plants and flowers that had been so liberally contributed. Two additions were made by the society to its usual programme, one being the Daffodil Show, in April, which was the first exhibition of daffodils in London, and a gratifying success. The second was the exhibition of autumn-flowering orchids in November, and this was even more successful. Apart from the object-lesson it gave on the value of orchids flowering late in the year, it was of special interest as illustrating the possibility of successfully breaking away from straight lines in the arrangements of plants and flowers in the hall. The National Rose Society was not less active and successful than the Royal Horticultural Society, as evidenced by the report presented to the annual meeting a few days since. It held four exhibitions during the year, all of which were more or less successful, and, as in the case of the last-named society, it dealt with many novelties, the awards to new roses being more numerous than in any previous year. The National Sweet Pea Society held a highly successful show, and did much useful work in its trial grounds at Sutton Green and Burbage. Indeed, the value of the society's trials in connection with novelties cannot be over-estimated, and is so highly appreciated by growers and raisers, as a whole, that probably some other societies might with advantage in dealing with novelties follow the lines that have been laid down by this enterprising society. The National Chrysanthemum Society, the Perpetual-flowering Carnation Society, the National Carnation Society, the Hardy Plant Society, the National Dahlia Society, and the National Vegetable Society have all done excellent work in their respective spheres of activity, and thereby contributed appreciably to the advancement of horticulture. The last-named society made the mistake of holding its first provincial show within too short a distance of London, and, in the matter of finance, suffered accordingly. It appears to us that the initiation of a bolder policy is essential to the welfare of this society. At the great provincial centres, such as Shrewsbury, York, Wolverhampton, and Leicester, there have been no signs of a waning interest in the several societies and their work. Some may have taken less money for admission owing to unfavourable weather, but in all cases the decrease has been practically negligible, seeing that the leading societies are careful to keep a good balance in hand. With the smaller societies the case is different, and a considerable number are faced with a serious deficit. One of the most noteworthy events associated with provincial societies is the retirement of Messrs. Adnitt and Naunton from the joint secretaryship of the Shropshire Horticultural Society, a retirement that we much regret, as, indeed, do all who have had an opportunity of becoming acquainted with their work in connection with the Shrewsbury Floral Fête, which enjoys a world-wide fame, and is regarded as a model horticultural gathering for the provinces. Another matter of interest, whatever may be the views held with regard to it, has been the coming into force of the Insurance Act, which has compelled nearly all gardeners to join a friendly society. One result has been the addition of 500 members to the United Horticultural Provident and Benefit Society, but if gardeners had the proper understanding of these matters the number would have been 5,000.

**Mr. H. T. Martin,** who has recently been appointed head gardener to Princess Frederick Leopold of Prussia, at Klein Gliencike, Potsdam, and will enter on the duties associated therewith on January 6 next, has for many years occupied a leading position among practical horticulturists of this country, a position fully justified by his cultural skill and administrative ability. Mr. Martin, who is a Kentish man and the son of a gardener, commenced his gardening career away from home in a Kentish garden of repute, and after a service of three years, followed by a similar service in another garden in Kent, he came to London and entered a London nursery, where he remained twelve months with the object of obtaining a varied experience. Later on he obtained the position of foreman in the garden at Weston House, Shipston-on-Stour, the residence of the Countess of Camperdown, where fruit was grown with much success; and subsequently he was engaged as foreman by Mr. E. Beckett, V.M.H., in the Aldenham House gardens, where he remained some four years. While occupying the last-named position, Mr. Martin was appointed head gardener to the late Lord Leigh, at Stoneleigh Abbey, Warwickshire, with whom he remained until his death. During the nine years he had charge of the Stoneleigh Abbey gardens Mr. Martin specially distinguished himself in the cultivation of fruits and vegetables, and in all other respects fully maintained the traditions of these famous gardens. Some years have elapsed since Mr. Martin entered on the charge of the Warren Wood gardens, near Hatfield, and in the fulfilment of his duties has proved to demonstration his qualifications for the important position to which he has been appointed at Potsdam.

**The Gardeners' Magazine Almanack,** 1913.—With our next issue (January 4, 1913) we shall publish a Floral Almanack for the coming year, which will be printed in colours. The subjects of the illustration will be two of the most useful of the hybrid tea roses that are specially adapted for beautifying the garden. The almanack will also contain the dates of all the important exhibitions and meetings that have been arranged at the time of going to press, and will therefore present a happy combination of beauty and usefulness.

**Retirement of Messrs. Adnitt and Naunton.**—With reference to our announcement of the retirement of Messrs. Adnitt and Naunton from the secretaryship of the Shropshire Horticultural Society, Mr. H. N. Ellison, of West Bromwich, writes: "In common with other members of the trade I have read with much regret your announcement of the retirement of Messrs. Adnitt and Naunton from the positions they have so long occupied on the executive of the Shropshire Horticultural Society. They have worked with such untiring zeal, and shown such remarkable enthusiasm, that it has been a pleasure and privilege to meet them year after year at the Shrewsbury Floral Fête, which undoubtedly owes much of its remarkable success to their rare judgment, enterprise, and geniality. Most certainly the occasion should not be allowed to pass without giving the many horticultural friends of Messrs. Adnitt and Naunton the opportunity of showing their appreciation of the splendid work they have done for the advancement of horticulture. Personally, I shall consider it a great privilege to contribute to any testimonial that may be raised."

**National Chrysanthemum Society's Arrangements for** 1913.—The dates of the exhibitions and meetings that will be held by the National Chrysanthemum Society during 1913 are as follows: Executive Committee, September 22, October 27, November 17, December 15. Floral Committee, September 8 and 22, Essex Hall; October 1, Crystal Palace; October 13 and 27, Essex Hall; November 5, Crystal Palace; November 17 and 24, and December 10, Essex Hall. Exhibitions, October 1 and 2, and November 5, 6, and 7, Crystal Palace; December 10, Essex Hall. Conference, December 10, Essex Hall. Annual meeting, February 3.

**Forestry at Oxford.**—Sir William Schlich, F.R.S., recently offered £690 18s. to the Oxford University towards a fund for the permanent endowment of the professorship of forestry. This offer has been accepted. It is proposed, in connection with the Oxford School of Forestry, to appoint a qualified person to investigate diseases of trees, at a salary of £400 per annum, for two years, plus travelling expenses. The appointed officer will commence work about February 1, 1913.

**British Orchids.**—At a recent meeting of the Linnean Society, Mr. E. J. Bedford contributed notes on rare native orchids, and upon two species new to East Sussex. We learn from "Nature" that Mr. Bedford is engaged in obtaining a series of photographs of the British wild orchids, his intention being to secure photographs of every possible species in situ, as well as at closer quarters at home, when arranged against a plain background. During the season of 1911 he was fortunate enough to obtain two species not hitherto recorded for East Sussex. The first of these was the brown-veined orchid, Orchis purpurea, found in the Ouse district, near Lewes, in the month of May, by Mr. Herbert Jenner, of Lewes. This interesting find was the prelude of another of perhaps even greater interest, for in the month of June the author found a specimen of the rare lizard orchid, Orchis hircina, in the Cuckmere district, near Eastbourne. The author's collection of photographs at present consists of thirty-three species and varieties, out of a possible forty-four.

**Messrs. Dobbie and Co.'s Social Meeting,** which invariably gives rise to much pleasurable anticipation among those who have an opportunity of taking part in it, was held on the 20th inst., and proved, as usual, a splendid success. The Edinburgh meeting was held in the Oak Hall, Prince's Street, where a party of 200 employees and their friends were entertained. The same evening the staff and their friends, to the number of fifty, were entertained at Marks Tey, Mr. A. Ireland presiding.

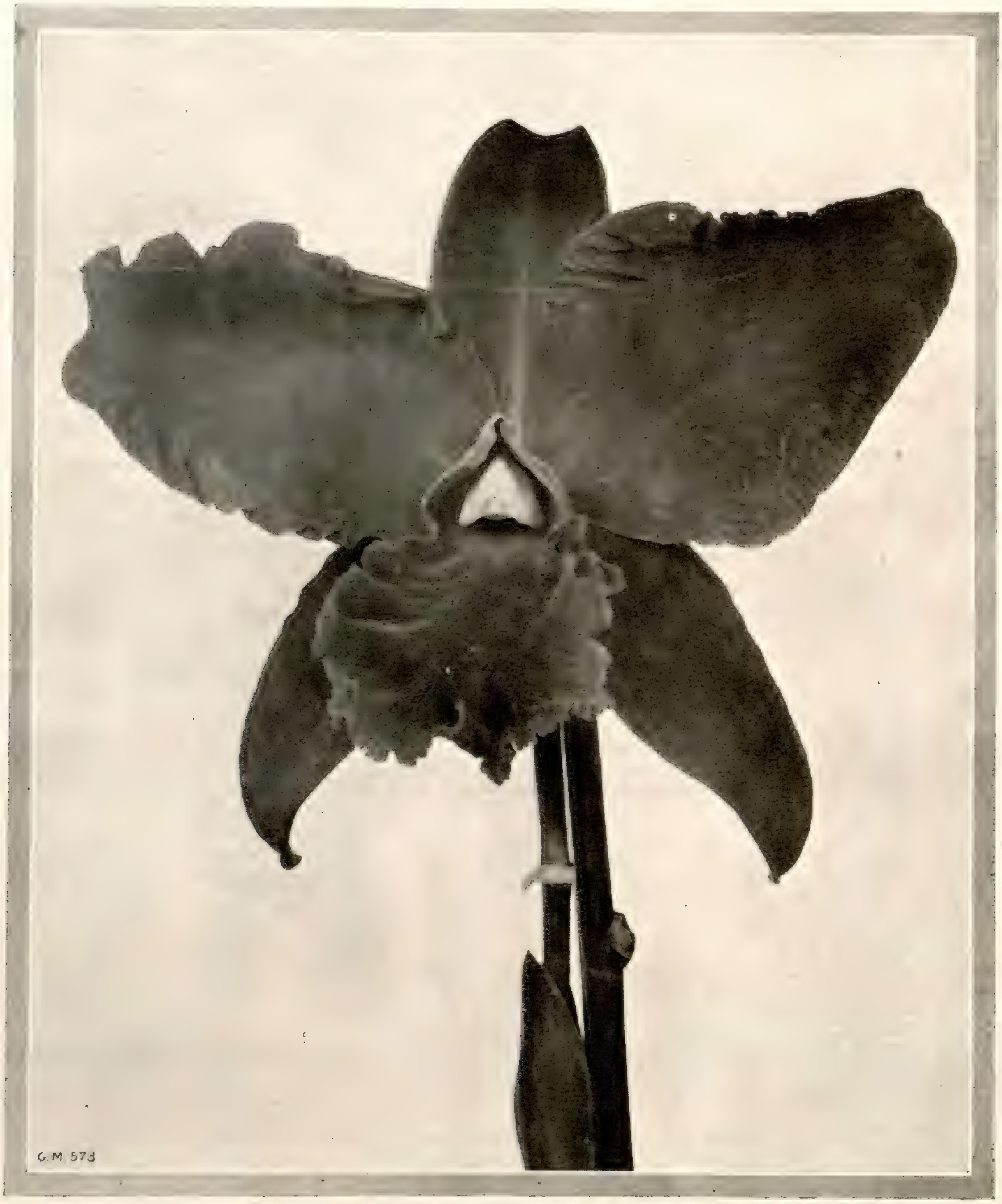
**Northern Counties Fruit Congress in** 1913.—The four northern counties will hold a Fruit Congress and Show at Kendal on September 24 and 25, 1913. The president is Lord Henry Bentinck, who will open the Congress; the treasurer is W. D. Crewdson, Esq. (High Sheriff); the chairman of the Executive Committee is F. W. Crewdson, Esq., Levens, Milnthorpe; and the joint secretaries are Alderman E. J. Abbott and Mr. Clarence Webb, Kendal. The Executive Committee is a thoroughly representative one, and includes many practical fruit growers. A ladies' hospitality committee has also been formed. At the first public meeting the dates determined upon were October 15 and 16, but, owing to representations made, and to meet the wishes of the damson growers, the dates were altered at the meeting of the Executive Committee to Wednesday and Thursday, September 24 and 25. The Executive also settled upon the following programme for the Congress: (1) Land Tenure and Fruit Culture; (2) Organisation of the Damson Industry; (3) Diseases of Potatoes; and (4) Winter Moths; with demonstrations of spraying machinery, fruit bottling, and pruning. It was originally thought that the large Market Hall would be suitable for the Congress, but, owing to the kind offices of Dr. Parker, chairman of the Kendal Education Committee, there are excellent prospects of the Museum, the large room, and the lecture theatre of the new technical schools being placed at the disposal of the Executive; in fact, it is hoped to open the technical schools with the Fruit Congress.

**Tree Planting in Canada.**—Twenty-five prizes, ranging from £10 to £120, are being offered by the Canadian Pacific Railway Company to encourage tree-planting by settlers who have bought or leased the company's land. The prizes will be awarded in the autumn of 1914 for plantations set out next spring or later. The chief points to be considered by the judges will be: Preparation of soil, 30 marks; cultivation and care of trees, 30 marks; growth and appearance of trees at time of judging, 30 marks; and bush fruits, shrubs, and flowers, 10 marks. A free supply of half the trees required, and free advice, are also offered by the company; while the other half of the trees will be furnished for £1 per 100 or £3 per 1,000 from their chief farm. Most of the prizes are for residents on the irrigation blocks, but eight of £10 each are reserved for settlers outside that area, and one of £120 is for the best plantation on any C.P.R. land south of Township 28, on the strip of Southern Alberta, 160 miles wide, next to the United States.

## NEW PLANTS.

### SOPHRO-LÆLIO-CATTLEYA THISBE.

For brilliant colouring it would be difficult to improve upon this beautiful hybrid, for, though the flowers are of but medium size, the splendid rich ruby-crimson of the sepals and petals, and the orange-crimson of the flattened lip attract attention at once. Probably, as it grows stronger, the spikes will carry several flowers, as the parents are Cattleya Iris and Sophro-lælia Heatonensis. F.C.C., R.H.S., December 17. F. Menteith Ogilvie, Esq. (gardener, Mr. W. Balmforth), The Shrubbery, Oxford.



SOPHRO-LÆLIO-CATTLEYA THISBE.

Flowers rich ruby-crimson with orange-crimson lip. F.C.C., R.H.S., December 17. F. Menteith Ogilvie, Esq., The Shrubbery, Oxford.

### SOPHRO-CATTLEYA WESTFIELDENSIS.

A strong-growing hybrid with fairly large flowers, in which the sepals and petals are deep mauve-purple, while the lip is rosy-crimson, veined with deep crimson. The parents are Cattleya labiata and Sophro-cattleya eximia. F.C.C., R.H.S., December 17. Francis Wellesley, Esq., Westfield, Woking.

### ONCIDIODA CINNABARINUM.

This is an interesting hybrid between Oncidium monachicum and Cochlioda Noezliana. The growth and inflorescence at once suggest the oncidium parent, as the arching spike, a yard or so long, with the flowers lightly set upon it, show the oncidium influence markedly. The medium-sized flowers have cinnabar-red sepals and petals, and a buff-coloured lip. A.M., R.H.S., December 17. Messrs. Charlesworth and Co., Hayward's Heath.

### CYPRIPEDIUM SIR WM. CHANCE.

Another fine cypripedium, and one of very distinct colouring and appearance. It has a very pure white, flattish dorsal sepal, with the base finely coloured with rich red-purple, this colour rising up the centre. The petals are purple-brown and yellow, and the lip green and brown. A.M., R.H.S., December 17. Francis Wellesley, Esq. (gardener, Mr. Hopkins), Westfield, Woking.

### CYPRIPEDIUM IDINA.

This hybrid seems to about hold the record for the breadth and roundness of its dorsal sepal, as that organ is especially fine and shapely. It is white, slightly concave, pale green at the base, and sprinkled with light mauve-purple spots. The petals and lip are green, shaded with brown. The influence of C. insigne Harefield Hall is most marked in C. Idina; the other parent is C. Countess of Carnarvon. A.M., R.H.S., December 17. Messrs. Jas. Veitch and Sons, Chelsea.

### CYPRIPEDIUM DEMETER.

A splendid hybrid, of large size and most effective. The parents are C. Earl of Tankerville and C. G. F. Moore. The large white dorsal sepal is broad, has a greenish base, and a large number of bold purple spots. The broad petals have a heavy shading of rich purple-brown, with edgings of bright green, and the lip is also purple-brown. One striking feature of the flower (figured on p. 973 of the GARDENERS' MAGAZINE) is the highly-polished or burnished appearance it presents. The base of the dorsal sepal is scarcely so broad as the connoisseur could wish, but that is the only criticism that can be offered. F.C.C., R.H.S., December 17. Lieut.-Colonel Sir George Holford (grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucester.

### ODONTOGLOSSUM SCINTILLANS ORCHID DENE VAR.

A small but pretty odontoglossum obtained by crossing O. Rossi with O. Wilckeanum. In habit and form of flower the hybrid bears a strong resemblance to O. Rossi. The flowers, borne on a small spike, are purplish, with dark red-brown spots and blotches; the lip is light purple, with a crimson basal area surrounded by a pink line; a yellow disk adds to the attractiveness of the flower. A.M., R.H.S., December 17. Mr. E. H. Davidson, Orchid Dene, Twyford.

### ODONTOGLOSSUM EXIMIUM VAR. J. LAKIN.

A bright form, with shapely flowers of good size and substance. The ground colour is blush, shaded with rose, and over this are numerous bars and blotches of deep chocolate-red. The white lip has red blotches and a yellow disk. A.M., R.H.S., December 17. Mr. E. H. Davidson, Orchid Dene, Twyford.

**Eucryphia pinnatifolia.** — This beautiful Chilian shrub, the subject of two or three recent notes in the GARDENERS' MAGAZINE, well merits all that has been said in its favour. In a visit paid to Coombe Wood Nursery at the end of the summer I was much impressed by its charming appearance. Several examples were then flowering freely, one specimen, about fifteen feet high, being a mass of blossoms. Apart from its beauty, this was of great interest as being one of the original plants raised from seed sent home by Richard Pearce, of tuberous begonia fame, by whom it was first introduced. —T.

## THE PAST CHRYSANTHEMUM SEASON.

The leader on this subject in a recent issue of the GARDENERS' MAGAZINE is interesting. My experience of shows in the South and the North induces me to say that the entries in the large bloom classes were not so numerous as usual, but that the shows were quite up to the average because greater interest was taken in other classes that go to make an exhibition. I think no one will deny that the cause of fewer exhibits in the Japanese classes is traceable to the fact that so many of the at one time regular exhibitors have ceased to be interested in this aspect of competitions at the chrysanthemum shows. It would not be difficult to name at least a dozen prominent growers who are now absent from the ranks of regular exhibitors, but it would be exceedingly difficult to name those who have taken their place or appear at all likely to do so. Such a fact as this is surely a reason for fewer exhibits. I noticed, also, that the competition in the Japanese classes was less keen, and that there was a much greater difference in the blooms in the first and second stands than was the case some years since.

Vase classes are not only fewer, but less well supported than formerly. There is no gainsaying the fact that vase classes reduced variety; instead of two or three dozen varieties being staged as in classes on boards vase classes require at the most a dozen, with perhaps one exception, Edinburgh—where fifteen is the maximum. Such a diminution of varieties cannot fail to reduce the interest in the Japanese section. I think perhaps the quality of new varieties of Japanese is of a higher standard than during the last five years. Such varieties as Queen Mary, His Majesty, W. Turner, and Thomas Lunt are great advances.

Where prizes were offered for a given number of blooms, say, twelve, of Japanese variety, arranged in one vase, with any kind of natural foliage, the effect produced was of the best, well illustrating the value of large Japanese blooms for hall decoration. Such a class is of infinitely more value than that for eighteen flowers arranged in a given space with foliage cut or growing.

To me it was very deplorable to see the poor quality manifest in the incurved section. I did not come across a single stand of a truly representative character. Many of the blooms show far too much of the Japanese character to be in any way typical of a true Chinese flower. In one instance I saw a bloom of G. F. Evans 8½in. in diameter, with florets resembling those in a typical Japanese incurved bloom! Mrs. J. Hygate is another of what I term a malformed flower, neither correctly a Japanese or an incurved specimen. I am aware also that cultivation has much to do with such undesirable blooms. In the hands of an expert such irregularities would be toned down. I fear that there is not a bright future in store for the incurved section, as they are not even appreciated for decoration, voted too formal, and I am equally positive they have few admirers in their present condition on the formal show board.

In the decorative section I noted stronger competition in the classes for undisbudded flowers, in sprays than in exhibits stipulating for so many flowers from disbudded plants. The former so much better displays the true character of the variety in a profusion of blossom which gives truly a more pleasing decorative effect. In groups of plants I noted this fact equally with cut blooms, especially in the case of single-flowered varieties. At no show that I visited could any comparison be made in this respect with the exhibits at Windsor. There the finest varieties were presented in a truly decorative manner, and, consequently, found many admirers. At Hull and at Norwich, too, classes were provided for both sections in vases; it was plain to be seen the preponderance was with the naturally-grown exhibits.

I think those societies who recognise the decorative aspect of the chrysanthemum as applied to dinner-table decoration, vases, and baskets with natural foliage, will score, especially if handsome prizes are given with a view of stimulating competition. It is not merely that increased competition will result, but such exhibits are more interesting to the general public, who are the means of rendering a show a financial success or otherwise.

When considering the financial aspect of societies, especially in maintaining the interest of the subscribers as apart from the ordinary visitor who attends, perhaps, quite casually, carnations could be made more use of, as they are a source of attraction to those who do not care wholly for chrysanthemums. Such visitors have to be considered, and many of them are apt to say, "Oh! it is no use going to that show; there is nothing else to see but chrysanthemums, and I don't care for them." Carnations, especially during the winter, are universal favourites, and help much to brighten up even a chrysanthemum show.

E. MOLYNEUX.

## LILIUM BROWNI.

We are continually told that Lilium Browni is a native of China, and on that point I would like to ask, Is that really so? By Lilium Browni, I do not mean any of the nearly allied forms which have been sent here from China within recent years, but the Lilium Browni which was grown in Europe when China and Japan were comparatively unknown lands. It is reported to have been named after Brown, a nurseryman of Windsor, somewhen about 1830, and has since then been grown by the Dutch. The lily principally cultivated by the Japanese and often sent to this country as Lilium Browni is L. japonicum Colchesteri or L. odorum, as it is often called.

That I am not alone in speaking thus of Lilium Browni is shown by the following extract from the "Book of Lilies" in the present-day gardening series. After saying that the habitat of L. Browni was not known with certainty till 1888, when Henry chanced upon it growing wild in some of the gorges of the Yangtse-Kiang, the writer goes on to say:

> "The lily usually grown in gardens as L. Browni is derived from the Dutch and Japanese nurserymen, who cultivate it in large quantities. Whether it was ever identical with the typical plant or whether, as sometimes happens, its characteristics have undergone some change under cultivation, is not clear; but it is evident that the Browni of gardens is not in all respects the same as the typical plant of Western China."

To this I may say that I have known L. Browni of the Dutch for nearly fifty years without it varying in the least, and cannot understand why this should not be regarded as the typical L. Browni. S. W.

**Escallonia exoniensis.**—This escallonia is of hybrid origin, but the parentage is, I believe, unknown. It flowers from the latter part of the summer well on to the end of the year, there being some clusters of flowers on it the week before Christmas. In August and early in September the flowers are particularly attractive to the showy butterflies of the Vanessa section.—W.

## ASTILBES IN POTS.

Under the generic name of astilbe is now included the plant so long popular in gardens and known generally as spiræa or Hoteia japonica. Well within the memory of many of us it stood out practically alone in its class, but now, thanks to more recent introductions, and the use that has been made of some of them by the hybridist, we have now a great many varieties, differing in habit, colour of the flower, and other particulars from each other.

The first great advance was the introduction of Spiræa astilboides, which was distributed by the late Mr. William Bull, of Chelsea, in 1884. It is altogether a larger and a bolder growing plant than A. japonica, while the inflorescence is of a creamy-white, and less feathery than in the older kind. This was followed in 1891 by Spiræa astilboides floribunda, announced by the Belgian nurseryman by whom it was distributed as having accidentally appeared as a seedling from S. astilboides, and apparently the result of the flower having been fertilised with the pollen of S. japonica growing in close proximity. This hybrid theory is probably the correct one, as S. astilboides floribunda is about midway between the two. It quickly became popular for pot culture and forcing purposes, and large numbers are still sent annually from Holland and Belgium.

This was after a time followed by others, of which astilboides longifolia, Lord Salisbury, and Gladstone are perhaps the best. New forms are, however continually being brought forward, one of the latest examples of which is that here figured—Avalanche, which was given an Award of Merit at the last Holland Park Show. It is a bold-growing variety, with stout, reddish stems, dark green, much serrated leaves, and white flowers. This was said to be the result of a cross between Astilbe chinensis and Spiræa compacta multiflora. At the mention of this last name, one may be pardoned a slight digression, for there was a very old variety of S. japonica with golden-veined leaves, which was given a First Class Certificate by the Royal Horticultural Society as long ago as 1869. This variety had the inflorescence arranged in a close, compact manner, exactly as in compacta multiflora, hence there is no doubt that this last-named resulted from the golden-veined form reverting to the normal green-leaved type. At all events, compacta multiflora was brought forward in the latter part of the eighties.

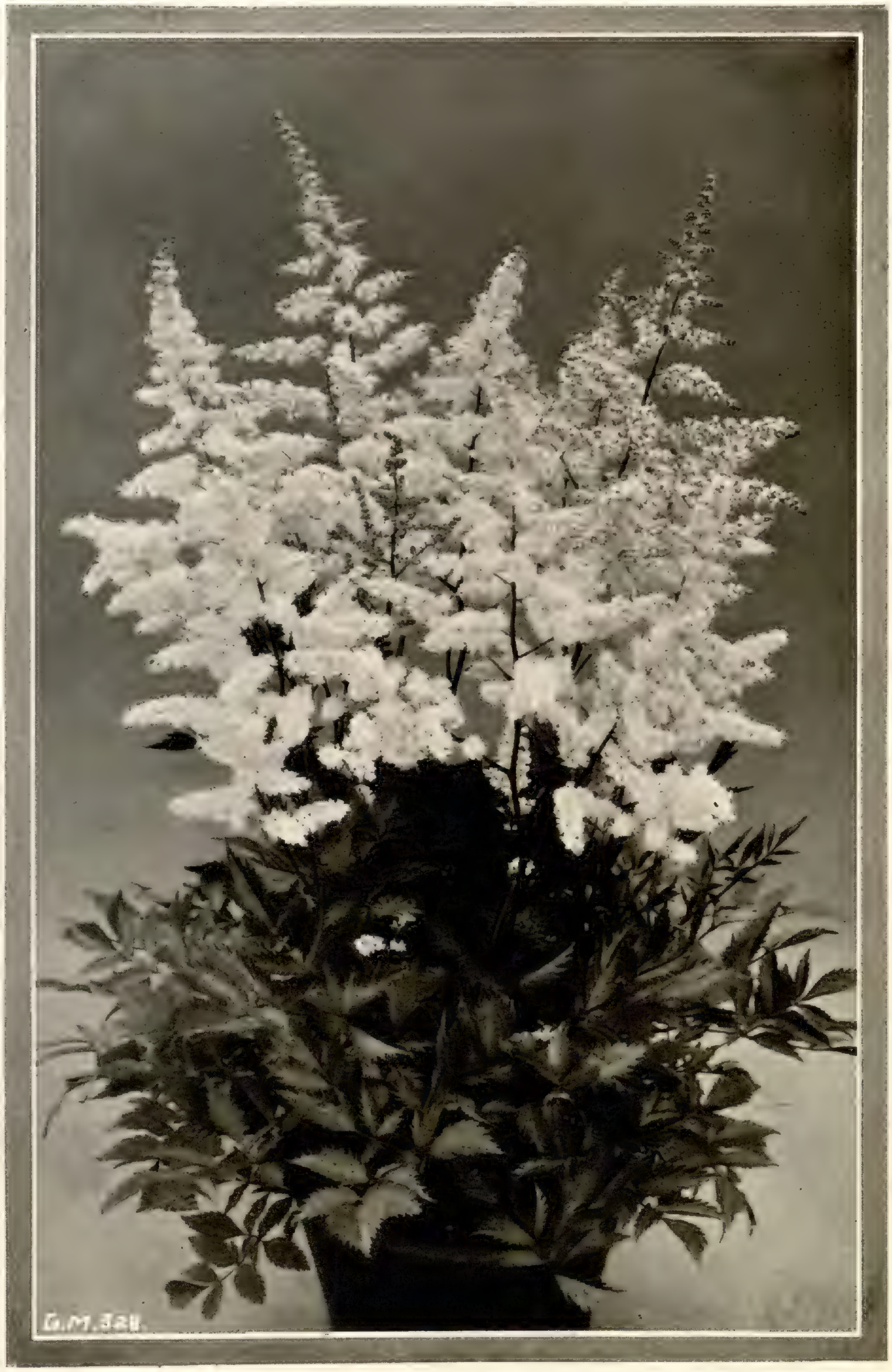
Two pink-flowered varieties, Queen Alexandra and Peach Blossom, created quite a furore because of the colour of their blossoms when they were first exhibited a few years ago. As the raisers were quickly able to offer them in quantity these pretty varieties were soon widely distributed, and are now almost as cheap as the older kinds. These have a good deal of the habit of Astilbe japonica, but now, with the introduction of the taller-growing A. chinensis, A. Davidi, A. grandis, and others, there is a larger race of these hybrid astilbes, usually of some shade of pink or rose, with, in a few cases, a lilac suffusion. They are exceedingly pretty, but are not so amenable to forcing as Queen Alexandra and Peach Blossom; in fact, they are more suited for planting out in a moist spot than for growing in pots.

Without these there is a wide choice available for pot culture, and of the best immense numbers are sent to this country every autumn from Holland. The price at which they are sometimes disposed of makes one wonder what the profit of the original growers can be.

The cultural requirements of these astilbes, or spiræas as they are so generally called, are so simple that little need be said on the matter. The clumps should, on receipt, be potted, and plunged out of doors till they are ready to be taken under cover, the time of which will depend upon when the flowers are required. In potting them it must be borne in mind that, as the leaves and flowers develop, they are very thirsty subjects, so that ample space must be left for a good supply of water. Owing to their cheapness, some obtain a fresh supply every year, but where they are kept over, two batches should be grown, so that they are forced only in alternate years.

They all stand hard forcing if it is required, or they may be brought on gradually. The pink kinds are of a far better colour when allowed to come on slowly and have plenty of light and air.

Some of the more popular astilbes (spiræas) are retarded in quite a wholesale manner, so that in this way it is possible to have flowers all the year round. Flowering examples of the ordinary japonica in the autumn months would at one time have been looked upon as a nine days' wonder, now they may at that season be often seen on the costermongers' barrows in the streets of London. No particular cultural requirements are necessary in the case of these retarded clumps, except to pot them when thawed, and allow them to come on very gradually at first. W. T.



ASTILBE AVALANCHE.

**Rhus cotinoides.**—Many of the sumachs are remarkable for the rich autumnal tints of their foliage, in which respect this species is second to none. The leaves are simple, as in the better-known Burning Bush, Wig Plant, Smoke Tree, or Venetian Sumach (Rhus cotinus), but R. cotinoides is altogether of larger growth. It is a native of the Southern United States, and has been known to botanists for a long time. K.

## SOILS FOR FERNS.

In the cultivation of ferns it is, of course, essential, as with other plants, that as far as possible the most congenial soil should be chosen, and this, of course, is best ascertained by a study of the soils in which under wild conditions they flourish best.

As a general rule, we shall find them, so far as regards the terrestrial species, as distinct from those which affect crevices on rocks and walls, in greatest luxuriance in an open, loose, leafy soil, with an admixture of rocky débris, such as we find in glens and woodlands. In such places the Lady Fern, Male Ferns, Broad Buckler Ferns, polystichums, and hartstongues grow in abundance, its long creeping rhizomes, peculiar to this lastrea among our native species, forming dense mats in the very mud itself.

Under glen conditions the spleenwort family is not thoroughly at home, though Asplenium trichomanes and A. adiantum nigrum may here and there find a habitat where rocks protrude enough to afford congenial chinks. All the members of this genus—A. trichomanes, A. adiantum nigrum, A. ruta murarum, Ceterach officinarum, A. lanceolatum, etc.—are, indeed, true rock or wall ferns, requiring thoroughly well-drained positions; thus we consequently find them, as a rule, assume their greatest size; while, as smaller-growing species associated with them, we find rampant colonies of the oak fern, beech fern, and common polypody where the rocky substratum comes to the surface and gives them a congenial foothold.

Where extra moist conditions prevail, Osmunda regalis, the Royal fern, if out of the reach of the vandal, may assume the aspect of a coppice man-high or higher; while here and there, in better-drained but still moist conditions, the mountain lastrea and the hard fern will thrive together, always provided that no lime is immediately present. In absolutely boggy ground the marsh buckler fern will in elevated sites, and some of them often in places where one wonders how they obtain sufficient water for their needs. Their roots, however, penetrate very deeply into the crevices they occupy; and their fronds, moreover, are so constituted that, though in times of drought they may shrivel up, they are capable of resuming their verdure when rain recurs.

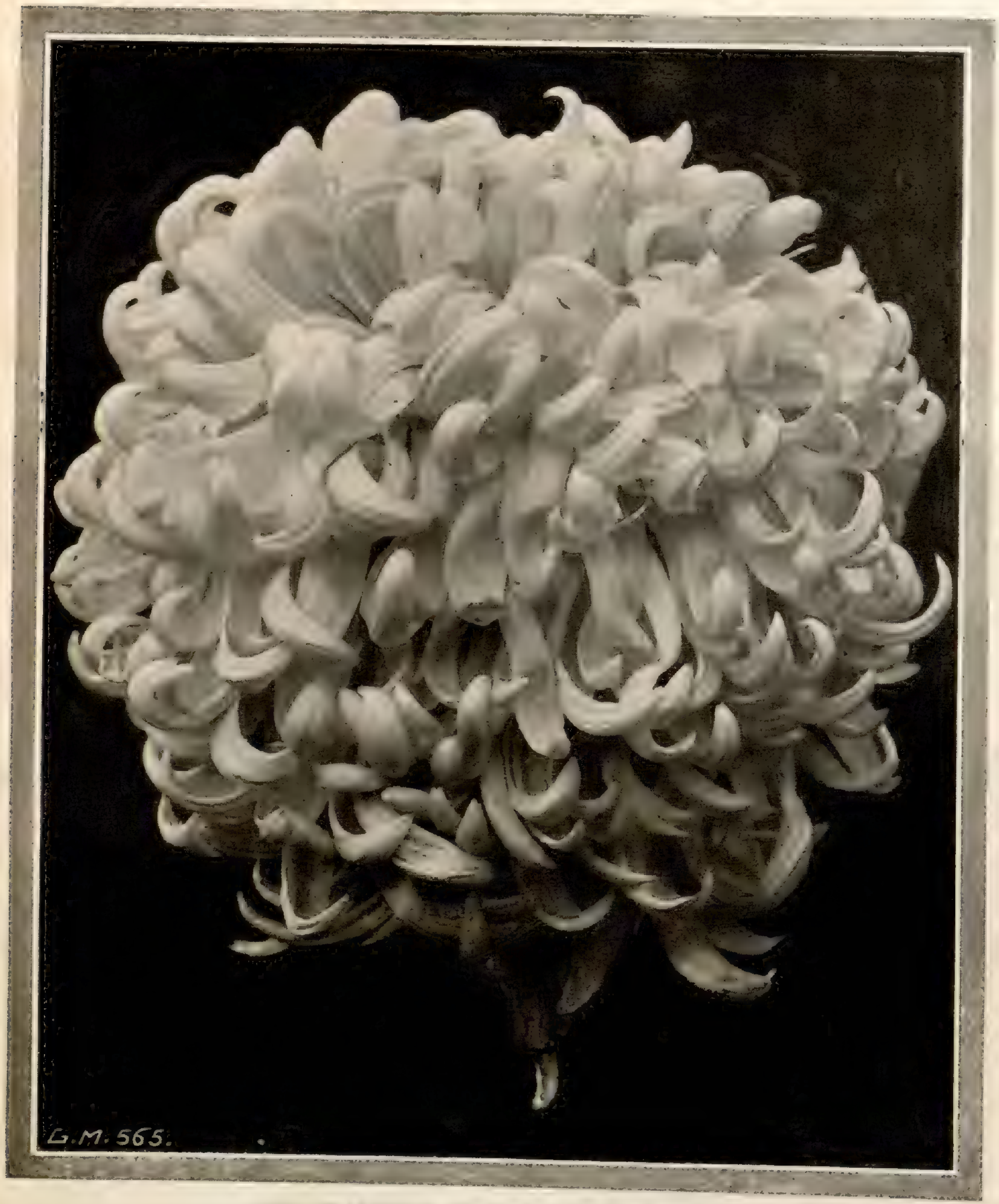
In humid parts of the country, and particularly where, as in Devon and Dorset, stone dykes are frequent, consisting practically of two rough stone walls with an earthern core between them, seedlings of nearly all species are found associated; but, of course, the larger growers normally are stunted and small. Under such conditions we find all the polypodies, and also the bladder ferns, associated with spleenworts, these being able to hold their own, owing to the more robust species being held in check for lack of soil and root room.

As a matter of fact, all the larger-growing hardy ferns will thrive in ordinary good open garden soil; but stiff clay is totally unsuited, and for pot culture it is well in any case to see that the openness of the soil is secured by a liberal admixture of leaf-mould, plus some coarse silver sand. It is not well to sift the compost fine, as a more or less lumpy condition facilitates the aeration of the soil, and prevents sourness by stagnation of the moisture. For the wall or rock species a good admixture of old lime rubbish or pieces of porous stone is advisable; and, above all, good drainage must be provided for.

For filmy ferns, the tenants of wet and even dripping caves or of ever-wet rocks, a coarse peaty, sandy compost is required, plus the protection of a glass shade or Wardian case, as these fronds are so susceptible to drought as, if once shrivelled, to be irrecoverable.

The limestone ferns—Polypodium calcareum and Lastrea rigida—require some lime to be mixed with the soil. P. vulgare attains its largest size in hedges or on accumulations of dead wood, in woods, and in both cases we shall find the rambling rootstocks to be anchored by their roots proper in very loose, leafy, sandy material, on the surface of which the rhizomes travel freely. The stiffer the soil under cultivation the less the plant thrives.

C. T. Druery, V.M.H.



CHRYSANTHEMUM MRS. W. T. SMITH.

A new pearly-white Japanese variety; F.C.C., N.C.S., November 11; A.M., R.H.S., November 21. Mr. A. Smith, Convent Gardens, Roehampton.

## CHRYSANTHEMUM MRS. W. T. SMITH.

The number of new seedling white chrysanthemums that come up each year for the consideration of the Floral Committee of the National Chrysanthemum Society or the Floral Committee of the Royal Horticultural Society is very large, and, though "many be called, few are chosen." Lately, however, exhibitors have had little to complain of in connection with white Japanese varieties. Mrs. A. T. Miller, Wm. Turner, and the two new sorts, Queen Mary (see p. 861), and Mrs. W. T. Smith, make up a splendid quartet. The last-named was raised by Mr. A. Smith, The Convent Gardens, Roehampton, and is a seedling from Mrs. A. T. Miller. It is a pleasing variety of refined appearance and pearly whiteness. Flowers of large size are made up of loosely incurving florets, but the blooms are firm to the touch, though quite graceful. If the variety takes after Mrs. A. T. Miller in being "an easy doer," then it should have a brilliant future. It was on November 11 that Mrs. W. T. Smith secured a First Class Certificate from the National Chrysanthemum Society, and it was ten days later that the Royal Horticultural Society granted it an Award of Merit. We understand that the stock of this new variety has passed into the hands of Mr. H. J. Jones, Ryecroft Nurseries, Lewisham.

**Oxalis Ortgiesi.**—Some of the oxalis— in foliage at least—closely mimic members of the clover family, but this species is widely removed therefrom. It is of a fibrous-rooted nature, and pushes up a stout branching stem to a height of eighteen inches or thereabouts. The shoots and also the petioles of the leaves are deep red. The leaves are trifoliate, and the leaflets, which are dark green above and purple beneath, are remarkable for a curious triangular notch in the apex of each. The flowers are yellow, and produced over a lengthened period.—K.

# AUTUMN EFFECTS AT GUNNERSBURY HOUSE.

We are told by Allingham in one of his charming poems that

> "October skies are misty, cool, and grey,"

and that the stubbles, being emptied of their latest sheaf and the meadows of its mounds, the woods assume a noble grief for these and other charms, of which the world has been bereft in the course of the passing of the days from the glories of the summer to the cold, sombre, and otherwise comfortless conditions that are associated with the winter season. Allingham's description of the October skies are unquestionably true of some, but not all, for in that month we usually have short periods of the most delightful weather in which it is possible to derive an immense amount of pleasure from the garden when provisions are made for plants that bloom in autumn. In these delightful reminders of the season of summer the sun and the flowers vie with each other in their efforts to beautify the face of the earth, and thus contribute to the happiness of those who have their abode thereon.

A BEAUTIFUL FLOWER BORDER IN OCTOBER AT GUNNERSBURY HOUSE.

It was on one of these glorious October days that the writer made a short visit to the Gunnersbury House gardens, and at its close, instead of taking a gloomy view of the month and its peculiarities, was inclined to join with Byrant in asking:

> "Is this a time to be cloudy and sad,
> When our mother Nature laughs around;
> When even the deep blue heavens look glad,
> And gladness breathes from the blossoming ground?"

Also to express full agreement with him when he sings:

> "The clouds are at play in the azure space,
> And their shadows at play on the bright green vale;
> And here they stretch to the frolic chase,
> And there they roll on the easy gale.
> There's a dance of leaves in that aspen bower;
> There's a titter of winds in the beechen tree;
> There's a smile on the fruit, and a smile on the flower,
> And a laugh on the brook that runs to the sea.
> And look at the broad-faced sun, how he smiles
> On the dewy earth, that smiles in his ray!
> On the leaping waters and gay young isles—
> Aye, look! and he'll smile thy gloom away!"

It was a truly delightful day, a little too brilliant perhaps for the production of perfect photographs, and the display of flowers was remarkable for the month of October. The magnificent roof garden of the mansion was aglow with the brilliantly-coloured flowers of Salvia Glory of Zurich and of Tropæolum Lobbianum; a considerable area of the lawn was bespangled with the exquisitely beautiful blue flowers of the autumn crocuses; huge specimens of yellow and orange-coloured chrysanthemums produced glorious colour effects on the lawn; great breadths of roses and tasteful mounds of heliotropiums rendered the air redolent with perfume, and in the broad border to the north-west of the mansion was a glorious display of hardy flowers. A richer floral feast in the garden after the middle of October cannot well be imagined, and to avoid any misapprehension with regard to the production of floral displays thus late in the season it should be mentioned that the family is in residence during the autumn, and that Mr. J. Hudson so shapes his procedure as to have the gardens as attractive as possible at that season. At the same time it should be stated that there is not a day in the whole year in which the gardens of Gunnersbury House are not as interesting and attractive as the generous owner and his talented gardener can make them.

The furnishing of the verandah was in its way a triumph of decorative art, and invariably evoked the warmest expression of praise from the many visitors to the gardens during the summer months. The variety of Tropæolum Lobbianum that is used by Mr. Hudson with so much success as a screen is that known as Fireball which is strong in growth and profuse in blooming. The flowers are brilliant orange-scarlet, and produce a striking contrast to the grey-green leaves. The plants are raised from cuttings struck early in the year, as also are the salvias which are associated with them in beautifying the verandah and furnishing the roof garden. Both are planted in the broad box fixed on the parapet, and the splendidly developed spikes of scarlet flowers of Salvia Glory of Zurich rising above the tropæolums produce, with the white walls of the mansion as a background, a brilliant effect. Pyramidal specimens of sweet-scented pelargoniums are used with singular success for clothing the columns supporting the verandah, and the tubs in which they are grown are hidden with the variegated ophiopogan and scarlet salvias. The salvias used in furnishing the roof garden are grown in a series of long boxes throughout the summer and autumn, and, judging from the brilliancy of the display, there must be many thousands of flower spikes fully developed at one time. Salvias are also successfully utilised in beautifying the bridge by which the water on the south-western side of the lake is crossed. Here they are grown in a receptacle of brickwork formed on either parapet, and, as elsewhere in the gardens, are enveloped in flowers, and produce an effect that is at once brilliant and pleasing.

The manner in which the early-flowering chrysanthemums are utilised in beautifying the gardens in autumn is especially deserving of attention. The whole of the specimens are grown in large tubs, and during the greater part of the season they are given a convenient position in the kitchen garden. They are made up with plants raised from spring-struck cuttings, and, as the tubs are of large size, the plants are grown to considerable dimensions before they are put into them. It need hardly be said that the tubs are efficiently drained, a rich compost used, and the watering carefully attended to, for such things follow as a matter of course. But it must be mentioned that when the specimens are full grown and coming into bloom they measure fully six feet in diameter. The varieties are selected with due regard to the colour of the leaves of the trees with which they will be associated when in bloom to ensure a perfect colour harmony in the scenes of which they form a part. Thus for flanking the Japanese tea house, which occupies a prominent position on the lawn, has a framework of brownish bamboos, and a background of Prunus Pissardi and Catalpa bignonioides, the variety is Abercorn Beauty, which has red-orange coloured flowers. When the photograph was taken the colour contrast was surprisingly beautiful. Then, for the six or seven specimen chrysanthemums that were arranged in front of the trees on the margin of the lake, the bright yellow-flowered Horace Martin was used. These, of which two only are shown in the illustration, had mulberry trees for a background, the leaves of which had then changed to a rich yellow hue. Thus the harmony of colour was perfect, and Mr. Hudson obtained full justification for the attention he has devoted to the study of colour contrasts in the garden for many years past. To grow chrysanthemums that are remarkable for the pleasing form and attractive colouring of their flowers is desirable, but it is not less so that the colour of the flowers should be in harmony with that of the leaves of the subjects with which they are associated when in bloom, more especially when they are grown for beautifying the garden.

In the arrangement of the broad border which skirts the carriage drive on the north-west side of the mansion, a high degree of success, as will be readily seen from the illustration, was achieved. A portion only of the border is shown, but the plants in the whole of the area are arranged in huge irregular masses. The charming Aster Amellus bessarabicus occupies a prominent position in the foreground, with Rudbeckia Neumanni behind to the left, and Solidago Shorti and a helianthus next to it on the left. Other plants that have a place in this part of the border include Aster Robert Parker nanus, Polygonum orientale, Anemone Queen Charlotte, and Sylphium perfoliatum, the last-named about ten feet high, and showing in the distance. The plant used for clothing the lamp-post is Convolvulus major, which soon hides the post with its handsome leaves and blooms freely throughout the season.

One might have written at length on the several autumn effects of the Gunnersbury House gardens in October, but the photographic reproductions will afford a far better idea of their characteristics than lengthy descriptions, and the brief reference to them will, in conjunction with the illustrations, be sufficient to indicate the possibilities in the embellishment of the garden late in the autumn season. G.

THE VERANDAH OF GUNNERSBURY HOUSE IN OCTOBER LAST.
The plants with which the verandah was embellished included Salvia Glory of Zurich, Tropæolum Lobbianum Fireball, and scented-leaved pelargoniums.

## THE SWEET OR DESSERT CHERRY IN COLD HOUSES.

The cherry may be cultivated most satisfactorily in cold houses where only sufficient piping is arranged for to exclude frost, and also in what are termed orchard houses, without any such provision. In the latter instance, however, no semblance of the slightest forcing should be attempted. The fruits, when fully ripe, will, on the average, be of finer flavour than from trees in the open, whilst they will also remain in good condition for nearly or quite a month, and there will not be any depreciation in the flavour.

By growing the sweet cherry in this way there is ample opportunity of adding to the varieties beyond what I included in the list as being suitable for forcing. I should certainly include Early Rivers in this instance, as a first early, also Frogmore Bigarreau; both of these hang well. These will be followed by Bigarreau Novide Guben, a fine black variety, and very prolific, and by Montstruese de Mezel, one of the very finest of all dark red or black cherries, and with fruits of enormous size. Bigarreau Napoleon is well worthy of cultivation under glass also; it is a good cropper and of excellent constitution, whereas it hangs well. Emperor Francis is rather later than the preceding, in other respects very similar to it, but with a little more colour. The best, in my opinion, of the late dessert cherries is Géante d'Hedelfinger; this will remain in good condition until the end of August. I have had no experience of Noble, but it is well spoken of as a fine cherry. I should have included Elton also to follow Frogmore; it is an excellent cropper, and has a handsome fruit.

Jas. Hudson, V.M.H.

## SOLDANELLAS.

Delightful alpines are the soldanellas, or blue alpine moonflowers, which are beloved of everyone who owns a rock garden, and can induce them to flower. But, alas! this latter condition is not easy to secure, and too many have reason to lament the fact that these delightful plants never deign to favour them with their exquisite blooms. These are lovely enough to send the spectator into the seventh heaven of delight, so perfect are these flowers in their form and colouring. These charms of theirs are combined with an almost perfect habit also, so that it is hardly possible to picture anything in the world of alpine flowers more beautiful. This is rare praise, yet it is amply deserved, and those who know the soldanellas best will agree with the writer in this assertion. Authors have given us glowing pictures of the charms of these daintiest of flowers, as they have seen them piercing the virgin snow with the approach of spring, and peering amid the snowy coverlet which has protected the plant so long.

Those of us who know the soldanellas in cultivation can seldom enjoy this picture in our gardens, but we have one little less fascinating in the appearance of our plants, with their bonnie tufts of rounded, glossy leaves, whence rise the delightful slender stems carrying their exquisite blue or purple bells, either fringed or notched in the most delightful way. How to obtain these flowers is a problem for many, yet with most cultivators they can be secured with a little consideration and trouble.

In our climate the soldanellas have not the protection of frost and snow in winter they have at home, where they are dry and snug until the lengthening days and the strengthening sunshine call them to wake from their winter's rest. On the contrary, with us they have to undergo many vicissitudes. One day the soldanellas are soaked with rain; the next, or even the same evening, they are frozen hard without any protecting snow; and so the tale continues, our many alternations of weather telling sorely upon them, and rendering them flowerless. The solution is not usually difficult to adopt, once it is known, and it lies in covering the plants with glass for the winter months, but not coddling them in heat or keeping them from the fresh air. A sheet of glass held over them by a wire support, or other contrivance having the same effect, will suffice, this being placed above the plants towards the end of September or the beginning of October, and allowed to remain until the flowering is over. This will supply all that is required in most gardens, provided that the soil and position are suitable.

With the writer they do best in a sheltered place, low down in the rock garden, and in a soil which has plenty of sand and grit, with leaf-soil or peat about it, with full drainage, yet where an ample supply of water can be given in times of drought. Here the soldanellas, with this glass roof, generally flower well, although they have still another enemy to encounter in certain gardens. This foe is to be found in the shape of the field mouse, which seems to take a delight in gnawing through the dainty stems, when the flowers are undeveloped, leaving our hearts saddened by the havoc they inflict upon these yearned-for flowers. It is always safe to set a trap or two near the soldanellas if mice are present in the garden.

Yet there are soldanellas and soldanellas, so far as flowering is concerned. The best, perhaps, is the variety of S. alpina which is called pyrolæflora, and is the most useful of all, sometimes flowering, indeed, without the aid of the glass, but more certainly with it. Then, S. montana, var. hungarica, usually sold as S. Clussi, comes next, and with these two one might almost feel content were it not for the presence of S. pusilla and S. minima, the smallest of the set, or the knowledge that there are white soldanellas, which have an innate fascination to the alpinist.

It seems needless to give a long description of these alpine moonflowers. They are well known through illustrations, but to those who know them not, no description will serve a really useful purpose, inasmuch as they are so full of charm that verbal description forms only a delusion and a snare. Dainty little bells of purple and white, beautifully fringed or notched, suspended over the leathery, glossy, rounded little leaves on slender stems, will serve as well as, or even better than, prolix statements of a botanical kind. The species in cultivation include S. alpina, with its varieties alba and pyrolæflora, already alluded to; S. minima, a very small species; S. montana, a vigorous one, with its variety hungarica or Clusi; and S. pusilla, with its variety alba. There is also one called hybrida, a hybrid between alpine and pusilla.

The soldanellas may still be planted, especially out of pots, and are increased by division or by seeds.

S. Arnott.

AN EFFECTIVE GROUPING OF SPECIMEN CHRYSANTHEMUMS AT GUNNERSBURY HOUSE.

The variety represented is the bright yellow October-flowering variety, Horace Martin, and the tree under whose shadow the specimens are placed is the mulberry tree, the leaves of which had assumed the rich golden hue characteristic of autumn.

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**The Pyracantha.**—As with most berried trees and shrubs, this has been particularly fine during the autumn of 1912, wet and dull as was the summer. It is more than probable that the sunny autumn of 1911 had something to do with the matter. Though so generally trained to a wall the value of the pyracantha for growing in open positions is worth more consideration than it usually receives.—W.

## RAISING APPLE TREES.

If the amateur makes a practice of raising his own trees to save buying them from a nurseryman, he will get very little reward for his trouble, besides which he will be giving up space and losing years of fruitfulness while his trees are growing into bearing condition. In addition, he will probably have some badly-shaped trees if he is raising just the number he wants, for it must be remembered that, when a nurseryman has, say, a hundred two-year-old trees of a given variety, he will choose those for espaliers which, by their manner of growth, are best adapted for that form, and those for cordons, pyramids, etc., in the same way, so that each tree is trained into that form for which, by its natural shape and manner of growth, it is best suited. The amateur, on the other hand, who wants a dozen bushes and buds or grafts as many stocks, will find some of them very ill-fitted for this form, but, not liking to waste them, will let them grow on and make badly-shaped trees. This will apply still more forcibly if, instead of bushes—perhaps the simplest form to raise—he is aiming at cordons, fan-trained trees, or other fancy forms. When, besides all this, we think of the bother of procuring suitable stocks, as well as buds and scions of the varieties desired, it will be seen what an unremunerative business the amateur undertakes when he sets about rearing his own fruit trees.

A JAPANESE TEA HOUSE AT GUNNERSBURY.
With specimens of Beauty of Abercorn chrysanthemum, and a background of crimson and gold foliage.

When, however, all has been said that can be said to show the advisability of letting the nurseryman raise our fruit trees for us, it is still sometimes worth while to raise two or three trees for ourselves when they are of a kind which we cannot be sure of being able to buy, especially as it takes a couple of years to find out whether we can buy them or not. Anyone going into an orchard or plantation where there are a number of trees of one kind of apple, even if it consists of only a dozen trees, will, on taking careful note of them, observe that the fruits are not of quite the same character on all the trees, and he will detect this more readily if it is a variety with which he is very familiar, say, King of the Pippins or Blenheim Orange, to instance two kinds which are rather notorious for their varying character. Though we generally speak as if by budding or grafting a variety we always kept that variety true, yet it is a fact that, owing to what is known as bud variation, it is possible to have different strains of the same named variety. And this is not the only point to be noticed when looking at a number of trees of the same variety, for we shall find that some of the trees are of a healthier and cleaner growth than others, more vigorous, or of a more fruitful nature, one desirable tree, perhaps, by a lucky chance, possessing all these good qualities.

Now, in buying trees from a nursery we cannot be sure what kind of a strain we may have, unless we are dealing with one of the more careful nurserymen who select stocks, scions, and buds very carefully, which is a very difficult matter where the work is on a vast scale, and has necessarily to be left to men who cannot be supervised in all the small details of the work throughout the day. It is in connection with this aspect of the subject that it will sometimes pay us to raise a tree or two for ourselves. When we come across a specially fine strain of a favourite apple, say a Ribston Pippin tree, which is of unusually vigorous and healthy growth, or a Wyken Pippin bearing fruit which is unusually large, or of an exceptionally deep bronzy-yellow, we can beg or buy a few buds in July, or scions in early February, and work them upon any stocks we happen to have in readiness for such an eventuality, or on the shoots of an old tree of an indifferent sort which has been beheaded for the purpose, or the young growths resulting therefrom. This kind of work is of the most absorbing interest, for there is not only the pleasure of watching the development of a tree of our own making, as it were, but the acquiring of a strain of a variety superior probably to that in general cultivation. If amateur fruit growers generally were on the watch for opportunities of this kind there is little doubt that improvements in some of our apples would result.

There is another aspect, too, of this occasional raising of trees for ourselves, and that is the field it gives us for experimenting with stocks. There is a considerable field here, not only for most interesting work, but for original research, which might possibly have valuable results. Little seems to have been done in the matter of the double grafting of apples by using an intermediate stock between the Paradise or crab stock, and the variety grown. Neither has much been done in this country in experimenting with different kinds of stocks to see if any give immunity from certain diseases. If a few hundred people each raised two or three trees with some such object in view, some valuable results might be obtained, while in the matter of interest there is no work in the garden more absorbing than trying some fresh device and watching the result. Alger Petts.

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**Stenanthium robustum.**—This is an exceedingly handsome perennial of comparatively recent introduction. Its attractive white plumes attain a height of quite six feet under good cultivation, and are especially effective, whether located in the hardy flower borders or in the wild garden. It prefers a moist rooting medium, such as that found near the stream-side.—J. Gardner.

## THE REMOVAL AND DESTRUCTION OF TREE BUTTS.

The felling and disposal of timber is often a more simple matter than the extraction and destruction of the stumps, or butts, and the owner of a garden sometimes finds a difficulty in accomplishing the work. Some people get over the difficulty by leaving the butts in the ground to rot. That, however, is usually out of the question where ornamental trees are concerned, and at the best of times it is not a wise plan, if it can be avoided.

It may be argued that butts are frequently left in the ground in forest areas which are to be replanted; therefore there is no reason why they should not be left in gardens. It is, however, almost solely a matter of expense in forestry operations; and were it possible, in felling, for the same expense or a little more, to remove the roots from the ground, they would undoubtedly be removed, except in places where they are absolutely necessary for the purpose of binding the soil. Decaying butts do a certain amount of good by adding humus to the soil; but they are often a source of danger to the succeeding crop from the presence of insect and fungus pests which infest them. Considerable areas of young plantations have at times been devastated by the pests which have had their origin in decayed stumps; and deaths amongst ornamental trees have been traced to the same source.

The familiar Collar Rot fungus (Armillaria mellea), which attacks most kinds of trees, often spreads from decaying roots to living trees. The presence of partly-buried butts is also a source of danger to people and animals, particularly when a heavy rainfall succeeds a period of drought, for the decayed parts give way, and a sudden subsidence of the surface soil is the result.

When tree butts are to be removed from the grounds, the trees ought always to be grubbed—that is, a trench made round the trunks, and the roots cut through. The leverage obtained by the trunks when the tree falls is usually sufficient to raise the butts well out of the ground, thus simplifying their removal to a considerable extent. Before the butt is severed from the trunk it should be cleaned by the removal of as much soil as possible. During the progress of the work a number of large roots and buttresses may be removed, which will substantially reduce the weight. The ground beneath the butt must then be made up, and a stout piece of timber placed so that the root cannot fall over when the trunk is removed. A heap of soil or log of wood placed on the margin of the hole in the direction in which the tree is to fall sometimes helps to lift the butt out of the hole. This is only the case, however, when the head is considerably heavier than the butt.

When trees have been sawn off a few inches above the ground it is often difficult to extract the butts, for there is no top leverage to assist in tearing away central roots which cannot be cut. The soil cannot be cleared away from the roots, and the whole mass is deep in the ground.

There are various ways of disposing of these butts. They may be used for facing informal terraces for the culture of plants like rambling roses; or be upturned and covered with ivy or some other trailing plant. In such cases disease does not appear as prevalent as when the butts are left in the ground. Where firewood is scarce and fuel dear, workmen will sometimes undertake to break them up in their own time, if they are given the wood. Usually, however, the best means of disposal is by burning. Theoretically, the lop and top of an ornamental tree is considered to be sufficient small material to burn the butt. This does not always hold good, though, and the thicker branches are too valuable to put to the purpose; therefore it is advisable to remove all to one centre, and allow them to dry for a few months, when they may be made to burn one another up. The writer has known over 100 butts, varying from 1½ to 4ft. in the diameter of the sawn surface, burnt in less than a fortnight by two men.

Small butts may be easily removed to a convenient burning centre by two men with a cart or trolley. By the aid of a horse, planks, rollers, and levers, the same number of men can load butts up to 15cwt.; while with another man, or two, greater weights may be dealt with. For large, heavy butts, a low, strong, broad-wheeled trolley is very necessary; while, where many have to be handled, Barron's tree-lifting machine will be found to be a great acquisition. With such a machine four or five men can remove butts two or three tons in weight from the holes in which they may be lying, providing they have sufficient planks to carry the machine over loose ground.

When the butts are in an open position, where there is little danger of anything being damaged by concussion or by flying pieces, blasting may be resorted to for reducing unwieldy butts to a size at which they may be conveniently handled. This is done by boring a hole at least one inch in diameter from the sawn surface to the point of union between trunk and roots. In the case of a perfectly sound butt, the hole should be as near the centre as possible; but with one which is partly decayed the soundest point should be chosen for the hole. Take from three to five ounces of blasting powder, according to the size of the butt, and place one-third of it in the bottom of the hole. Then insert a section of fuse, to extend at least 3 or 4in. beyond the surface of the hole, previously ascertaining the length of time per inch which is taken for fire to consume the fuse. Round the fuse the remainder of the powder must be placed, the hole being afterwards plugged tightly up with slightly damp paper, felt, or clay. Apply a light to the fuse, and seek a safe place immediately. Such a charge will blow a good-sized butt into several pieces. Should any pieces be too large to handle conveniently, they may be reduced in size by small charges of powder.

Blasting operations may also be carried out by means of dynamite cartridges, but unless the operator is expert in the use of that explosive, powder had better be relied on. Whichever is used, it is necessary to make a trench round the butts and cut the main roots before using the explosive.

Reference has previously been made to the removal of butts to a central burning place by the aid of a trolley or machine, but a few hints are necessary as to the removal of the roots from the holes ready for loading, for a machine cannot always be placed in the necessary position for lifting. There are several ways by which this may be accomplished, the following being a few of the simpler ones. For heavy work a steel rope attached to a windlass may be secured to one of the stronger roots; then, by winding the rope in, the butt is gradually removed from the hole. This, however, is only possible in places where plenty of tackle is available. Heavy butts may also be removed by means of blocks and tackle, chains such as are used for loading timber being substituted for ropes. A steady-pulling horse or two may be utilised for this work. A slower method is the removal by means of a lifting-jack. Small bottle-jacks are of little use for the purpose, an ordinary rack timber-jack with double purchase being much better. An improvement even on this is Trewhella's Australian Monkey Jack. This may be obtained with double or triple purchase, is easily manipulated, and will move weights up to ten tons. It is used largely for the extraction of butts on forest areas abroad, where the trees have been saw-felled. By cutting a few of the stronger roots, it is possible for a good workman to extract 30 or 40 butts a day, with a sawn surface up to 2ft. in diameter, by its aid. A German invention, known as a "forest-devil," is used extensively both on the Continent and in this country for the removal of roots and tree trunks. It consists of a long, strong shaft, with three chains attached to one end. A long chain on one side is made fast to the object to be moved. The other two chains, which are comparatively short, are furnished with hooks. A fourth chain is attached to a strong tree or other stationary object some distance away; and into the links of this chain the hooks of the small chains are secured. By moving the lever formed by the pole or shaft backwards and forwards, the butt or tree is gradually removed from its bed, and as the work proceeds, the hooks are gradually moved up the fourth chain, thus securing the weight as it is moved. A modification of the block and tackle system is that known as the "Hawkeye" machine. In this case blocks and tackle are used, but a windlass is substituted for horses for haulage. Throughout the whole of the time that the work is about nothing but perfectly sound tackle must be used, for an inferior plank or rope might easily cause a serious accident.

When the roots are dry enough for burning, a fire of the smaller ones, and pieces of heavy wood, should be started. When a good heat has been obtained, the larger butts should be jacked on to the fire. As the roots burn, work as much soil as possible out with the aid of a sharp iron bar, for soil prevents burning. It may be possible to reduce the size of some butts by means of steel wedges and a heavy beetle or mallet; or some may be reduced with an axe. The smaller they can be made the easier they will burn.

Another means is sometimes recommended for destroying butts. This is to bore one or more holes into the surface, according to the size of the butt, each hole being an inch or more in diameter, and extending to the greatest possible depth. The holes are then filled with saltpetre and a little water, and corked up. They are left for three or four months, and are then uncorked, the holes filled with paraffin, and set on fire. They ought then to gradually smoulder away. It is a long-drawn-out process, and something often goes wrong, so that the result is not very satisfactory. As a matter of fact, it is wiser to go to a little more trouble, and remove butts bodily to a burning ground, or place them where they can be covered by a trailing plant. W. Dallimore.

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**Potentilla Veitchi.** — This is a pretty shrubby species of potentilla, belonging to the same class as the well-known P. fruticosa. A native of China, Potentilla Veitchi is one of the many subjects we owe to Mr. E. H. Wilson, when travelling in the Far East on behalf of Messrs. J. Veitch and Sons. It forms a bush from three to four feet in height, and keeps up a succession of its snow-white blossoms from spring till autumn.—T.

# WORK FOR THE WEEK.

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## THE ORCHID HOUSES.

WINTER-FLOWERING CYPRIPEDIUMS.—These most useful plants are now in full beauty, and the many beautiful hybrids raised during recent years add charm and variety to our houses. Among the most useful are the finer varieties of C. Leeanum, C. Actæus, C. Thompsoni, C. Thalia, C. Germaine Opoix, C. Gaston Bulteel, C. Alcibiades, C. Earl of Tankerville, C. Beekmani, C. Lord Ossulston, C. Maudiæ (which, when strong, is always in flower), C. Prospero, C. Bianca, C. Euryades, and C. triumphans. As soon as possible after the flowering period is over, the plants should be carefully examined, and those that require repotting should receive attention. This is also much the best time to divide any that it is advisable to increase the stock of, but I do not recommend the division of the plants into the miserable scraps one often sees. There is more satisfaction in filling houses with good plants than with mere fragments. Even in the case of new and rare plants, I think it much the best practice to get a good plant before thinking of propagation. Care should be taken not to injure the roots, as these often run to considerable length, and are easily broken. All the old decomposed compost should be carefully picked out with a pointed stick, the plants placed in well-drained pots, and the new compost worked carefully between the roots nearly up to the top of the pots. Owing to the quantity of water cypripediums require when in full growth, it is advisable to leave a space for water, in the same way as for ordinary plants.

COMPOST.—To my mind, an excessive amount of loam is often recommended for cypripediums, as I find when this is used in excess the root action is not so free as when used in moderation. I would advise every grower to experiment a little in this matter, and find out for himself what answers his purpose the best. Many radical changes have been advocated during recent years in orchid composts, and many, I am afraid, are not to the good of the plants. I have given the compost we use with success in a previous number.

TEMPERATURE.—One often sees the cultivation of these plants attempted in too low a temperature. A temperature of 60 degrees at night, with a proportionate rise during the day should be provided for them. The atmosphere in which these plants are grown should at all times be kept humid, with a circulation of fresh air. If grown in a dry atmosphere, thrips attack the young leaves, and soon disfigure them.—J. T. Barker, The West Hill Gardens.

## CONSERVATORY AND GREENHOUSE.

LILIUMS.—Large quantities of bulbs are now being imported, and the present is a good time to procure them for next summer's display. It is advisable to obtain the best-grade bulbs. I have had bulbs of Lilium speciosum Melpomene which cost less than 1s. each produce three spikes, carrying from thirty to forty flowers altogether. The cultivation is quite simple when properly understood. Most of the bulbs are imported from Japan, but some come over from the Continent. I prefer the Japanese bulbs, as they are larger and weightier, and generally can be relied on to give stronger flower spikes. When the bulbs are received they should be potted at once. Liliums delight in a rich, porous compost, two parts good fibrous loam, one part peat or leaf-mould, and one part coarse sand. The most convenient way is to place two bulbs in each ten-inch pot. The pots should be clean and well crocked; place a layer of rotten manure over the crocks, and fill the pots with the prepared compost to two-thirds their depth; the bulbs should be just buried and the compost be made firm. After the potting operation the pots should be placed in the vineries, or any cool house. The bulbs soon become active, and, when well rooted, the growths appear from the centre; as the stems advance they will produce roots freely, above the bulbs, and when this occurs the pots should be filled up with rich soil. The most useful liliums for pots are: L. longiflorum, L. Harrisi, L. speciosum album, L. s. rubrum, and L. s. Melpomene; Lilium auratum is also very fine for pots, but it is not to be generally recommended, as the odour is too strong for drawing-rooms, etc.

ROSES IN POTS.—The present is a good time to overhaul the stock of pot roses. To keep the stock up to date the best way is to discard old, worn-out plants, and to fill their places with newer introductions. I find it a good practice to add half a dozen plants of a new variety, which, after a season's growth in the rose garden, has proved itself. The plants should be lifted at once, their roots trimmed with a sharp knife, and potted in 8in. pots, using a rich fibrous compost. The pots should then be plunged in a cold frame, with the lights removed, except in extreme cold weather or heavy rains; the roses will commence to make fibrous roots in a very short time. By February the plants will be ready for potting into 10in. pots, and will take their place to be pruned and treated with the older plants, which will then need top-dressing. Where large drawing-rooms, etc., have to be furnished, the climbing varieties, such as Dorothy Perkins, Hiawatha, Lady Gay, Excelsa, Coquina, and Tausendschon, are delightful subjects when grown to a height of 6ft. or 8ft. These should also be lifted as small plants, potted, and plunged in an ash-bed, and grown for a season to encourage them to make strong growth. Plants that were treated in this way last year will need top-dressing at once, as the ramblers commence to grow much earlier than the others.

FLOWERING SHRUBS. — Batches of these should be introduced to heat, and it will be found, with the turn of the days, they will respond readily to warmth. Azalea indica and A. mollis, Prunus triloba, Spiræa confusa and S. arguta, Viburnum opulus, rhododendrons, Staphylea colchica, Deutzia gracilis, lilacs Charles X. and Marie Legraye, should all play their part in the floral displays during the coming spring months.—Lewis Smith, Cadland Gardens.

## HARDY FRUITS.

CORDON APPLES AND PEARS. — Whether grown on walls or in open quarters, pruning and other details are carried out on much the same lines. Providing the trees have received the necessary attention in the way of pinching and late summer pruning, there remains very little to be done so far as the use of the knife is concerned, a slight reduction of the remaining growth may be required, cutting them back to two or three buds; many varieties both of apples and pears naturally form a great number of fruit buds in clusters. Where this occurs it is advisable to remove a large portion of them. Two or three fruit buds on a spur will invariably give better results than if eight or ten fruit buds are allowed to develop and ultimately flower in a dense mass, for under such circumstances the prospects of a good set are somewhat remote. The leading growths on maidens, or older trees where space permits of extension, should be shortened back according to the strength of the growth and habit of the particular variety. Some varieties form fruit spurs freely, others do not, and in the latter case it is necessary to cut back sufficiently hard to insure the lower buds breaking into growth and ultimately clothing the main stem with fruit spurs. Over-luxuriance of growth can be checked by root-pruning and the withholding of manures of a gross feeding character. Trees which are in good order and give promise of a good show of blossom will receive material benefit from an application of suitable artificial manures.

ORCHARD TREES.—Advantage should be taken to examine the trees in the orchard when the weather conditions will not allow the continuance of operations on wall trees, etc. In orchards where the trees are annually attended to, the amount of pruning required will be principally confined to thinning out superfluous growths arising from the main branches, the removal of branches which are awkwardly placed or inclined to grow crosswise, and the cutting out of all damaged or dead shoots or branches. After the removal of a large branch the cut should be made smooth and clean with a sharp knife. Should the trees have been neglected it will be necessary to use drastic means and boldly remove branches that interfere with due admission of light and air to all parts of the tree. The loose bark on the main branches and stem of the tree should be removed. For this purpose a piece of hoop iron or a small onion hand hoe will be found serviceable. It is under the old loose bark that insect pests find a refuge, and, unless removed, it is a difficult matter to eradicate them when spraying operations take place. Cases of canker should be treated by removing the dead bark, and using a sharp knife, so that a smooth, clean wound down to the live portion may be left.

THE MANURING OF ORCHARDS is an essential matter, and should on no account be neglected, particularly in the case of old-established trees on grass; a liberal application of liquid manure, supplemented by artificials, according to the nature and requirements of various kinds of soils, will have a marked effect for good on the growth and produce of the trees.—W. Messenger, Woolverstone Park Gardens.

## THE KITCHEN GARDEN.

ROOT CROPS.—During inclement weather the root stores should be examined, as some decay may have set in. This examination will aerate the whole, and naturally prolong their keeping qualities. If this sort of work was carried out more often at this season of the year roots would keep sounder than is usually the case. Onions, too, whether in trays or ropes, should be looked over, and those that show the least signs of growth should be consumed first; keep them dry and cool.

LEEKS that are still in trenches will need protection should severe weather set in; use a mulching of long stable litter, bracken, or similar material. Celery should be treated likewise, but in mild weather (even for a few hours) it is better to draw the straw off.

SEAKALE.—The crop retained for indoor forcing can now be lifted during open weather, the thongs trimmed off carefully, and the crowns laid in fine ashes or soil, thickly, under a hedge or wall facing north. The crowns can then be transferred quickly to the forcing quarters as desired. The thongs can be made into sets during rough weather, tying them into bundles of fifty, and straightway placing them in boxes of soil; when finished place the boxes in a cold house or frame, as this crop cannot be started too early so long as no undue haste is given the sets at this period.

RHUBARB can be taken up in plenty now with safety. It will then be on hand for immediate transference to the forcing quarters, thus saving valuable time when more pressing work is on hand early in the year. Cover such crowns over with old leaf-soil till required.

SPINACH.—Up till now the crop of this vegetable is in capital condition, the open weather having caused constant growth. Give regular hoeings, with dustings of soot, and keep any decayed leaves picked off. Should cold weather set in, particularly cold, cutting winds, place boughs of yew or spruce, hedge-like, on the north and east sides, as this helps wonderfully to maintain growth.

CABBAGE.—The early batches are looking well in this neighbourhood, and need hoeing and moulding up. This latter is very beneficial, as it keeps the stems from swaying in the wind, beside making them frost-proof.—George Ellwood, Swanmore Park Gardens.

## FRUIT TREES IN POTS.

I have advised (p. 978) that the trees, after potting, be placed under cover. That may not in every case be convenient. So as an alternative, as in the case of trees that are allowed to come into flower under natural conditions, I recommend that they be protected from frost at the roots by being covered well over the rims with either ashes or litter. I prefer the former, as it does not keep the roots quite so wet. If not in any way protected, there is a great risk of cracked pots during frost. All trees in pots should be brought under cover before they come into flower, and one good fumigation be given them. There should not be any exception to this rule. I have already alluded to, and advised, a hive of bees to ensure a good set of fruit, so no further remark on this is necessary.

### After the Fruit has Set.

When it is seen that a good set of fruit has been secured, the process of thinning should soon be commenced. First remove all the weakly and smaller fruits, then wait for a few days. Secondly, remove those badly placed, and thin the fruits that are too thickly studded on the branches. Afterwards proceed with caution, even to removing no more than one fruit at a time on the smaller trees. As previously alluded to in the case of the larger-fruited varieties, 10in. pots, it is a bad plan to attempt to carry a heavy crop of fruit. Of peaches, nectarines, pears, and apples from six to eight fruits are ample to be left at the final thinning. Of plums the same number in the case of the larger fruited varieties, and no more than a dozen of the smaller ones. Bear in mind that one well-developed fruit is better than two second-rate ones. In dealing with cherries I find it better to thin with a pair of grape scissors rather than by means of the hand or knife. Here again, do not attempt to ripen a very heavy crop of fruit. This will be safer, at times, when the trees gain age and experience has been arrived at. The final thinning should be when the fruits are seen to be fairly well over the stoning period in the case of stone fruits, and of pears and apples when a little larger. All trees should be fumigated as soon as the fruit is seen to be quite safely set.

### Plums and Cherries.

In the case of both cherries and plums small, dark-looking caterpillars oftentimes make their appearance. These must be most persistently hunted down, or considerable damage to the embryo fruits will ensue. In the case of cherries we also remove all outer scales that envelop the flower buds, for these we find are lurking places for this pest. This is done with a finely-pointed stick in preference to anything else. As soon as the cherry crop is seen to be fairly swelling away, which it will do very soon indeed after the fruit is set, we commence to shade the roof. For this purpose I prefer to use a sliding blind made of a thin material, which is known as No. 3 shading. This is the stock name of this material, though some purveyors of shading may attach another name to it. This we fix on a running wire, and the blind is thus easily run out, or drawn in, according to the state of the weather. We also find this same blind very useful when cold nights ensue in the spring, rather than employ too much fire-heat.

By why shade cherries, some cultivators may ask. My reply is in another question. Has anyone ever noticed that a good proportion of the fruits, after swelling rapidly for a few days, turn yellow and drop off? It is to remedy this that I advise shading. Oftentimes (we, at least, experience it), there may be some days of cloudy weather, then a bright clear day when the temperature is run up rapidly. This is the cause of cherries under glass turning yellow and dropping off. (If any cultivator of cherries in the open has ever experienced this annoying failing, I recommend the adoption of a thin blind.) This same blind we find to be extremely useful when the fruits are fully ripened.

### Top-dressing.

This we find to be a great assistance in the final swelling of the fruits, and it should be applied rather in advance of that stage, and when it can be easily discerned that the young rootlets are upon the surface. For this purpose we make up a mixture of about one-third each of turfy loam, short horse droppings (or some old mushroom bed manure), and Wakeley's Hop Manure. This is all well mixed, and then fairly well moistened, so that it may be built up around the outer edge of the surface, somewhat in the way of mortar, and in the form of a ring, the centre portion being left without any top-dressing. Into this the roots soon find their way, and can be clearly seen upon the exterior of the dressing.

### Other Manurial Aids.

We commence to feed somewhat earlier than this stage of top-dressing by giving occasional applications of liquid manure made from fresh horse-droppings that have been placed in a tub, or a tank, in which also some old scrap iron has been placed, this latter will give some aid in the final colouring. When the ripening stage is advancing no more of any stimulant is applied, for obvious reasons.

### Gathering the Fruits.

A few remarks on this point are perhaps necessary. We find that, with both peaches and nectarines it is better to sever the fruit with the stalk attached thereto rather than attempt to remove it by a twist, for however carefully this may be done there is always the risk of a slight bruise at the base. Early Rivers nectarine is a case in point to illustrate this method of taking the fruit; this variety, in pots particularly, swells its fruit up hard to the wood upon which it is attached. To remove it in the usual course would create a bruise at once. Never allow either peaches or nectarines to remain upon the trees until at all over-ripe, otherwise they will not keep so well. It is better to gather them and keep them in a cool place.

### After-treatment.

When the fruit is gathered, and the trees well hardened off, they should be placed outside to make room for the later crops. Ours are all plunged over the rims of the pots, the watering thence onwards through the summer being done with the hose, which also helps to cleanse the trees of any possible insects. Our cherries are plunged slightly under the shade of an apple tree, as, in my opinion, I think too much sunshine is not beneficial to them, even at this stage. The rest are all plunged, as much as possible, in the full sunshine. Thence onwards, until the leaves begin to fall, two or three applications of artificial manure is given them. That this treatment is favourable to the trees may be noted by referring to the cherry tree (as illustrated in the previous issue) before being turned out of its pot for repotting.

### Syringing and Other Routine Work.

In this there is no departure from that which obtains with planted-out trees, but it may be noted that in the case of trees in pots it is possible to reach the foliage from all directions with the syringe. Overluxuriant and sappy growth will rarely, if ever, occur with the trees in pots. Finally, do not think of growing trees in pots under the shade of other trees or plants. This is only to court failure.

Jas. Hudson, V.M.H.

Gunnersbury House Gardens.

## CASTILLEJA MINIATA.

A goodly number of attempts have been made to establish the effective Castillejas in our gardens, but, unfortunately, the efforts have generally been in vain. I suppose there can be no manner of doubt that several of the Castillejas (sometimes spelled Castilleias, by the way) are perennial, and that they ought to be hardy with us, or, at least, some of them. However, that is another story, and in actual practice we find them very difficult indeed to make anything of in our climate. This is a pretty general experience, yet the flowers, which bear in the New World the expressive name of "Painted Cups," are so brilliant that it must be with reluctance that we write them down as "uncertain, coy, and hard to please."

One most able writer who has succeeded with one of them, thinks that they may be parasitic or semi-parasitic. He is quite correct in his impressions, as we are informed on no less authority than Messrs. Britton and Brown that the Castillejas are "parasitic on the roots of other plants." Doubtless this accounts largely for many of our failures, and if these authorities had deigned to consider the wants of the gardener they would have informed us what plants they selected as their hosts, as it is quite probable that they have their own requirements in this respect. It is a hopeless thing, indeed, for us to set about finding out what plants will be hospitable enough to give the Castillejas board and lodgings free of cost. Amid the thousand-and-one plants of our gardens it would be mere chance which would enable us to hit upon the generous or simple ones which would serve the Painted Cups.

Then we are met with another trouble. The perennial Castellejas, and some of the annuals as well, evidently love a moist soil at home, while with us in some gardens this is anathema to them, and they forthwith sulk and die if given what we might assume to be their natural element.

Now, of the few Castillejas we have the chance of securing, that named C. miniata appears to be th emost obliging if we dare venture to use the term obliging with respect to a churlish, though beautiful, plant like this. I call it miniata, but I fancy that we have in our miniata the real C. acuminata of the botanist, and here, I see, the learned writer already referred to agrees. Well, I have seen it doing fairly well in a crevice well up on the rockery, and I hear of it thriving on a peat bed, well drained underneath; while from the Emerald Isle comes the news that it is flourishing with a south-east exposure on a sloping, well-drained bed.

As for myself, I am still in the throes of the experimental stage. So far, a moist climate and our winter wet seems not only hurtful, but even fatal, to the Painted Cups. Could we learn the host plants, we might be better off, and be able to write down the Painted Cups as a "joy for ever." I have now a feeling that a moraine, with water underneath, would be a good testing ground. In the meantime I counsel all who read this not to purchase a Castilleja in the confident expectation that they will succeed. That success for me lies still in the lap of the gods.

S. Arnott.

## EDUCATION OF GARDENERS.

While so many able articles have appeared in the Gardeners' Magazine of late on the education of gardeners, it may perhaps seem superfluous to add one more, were it not that few have appeared from the young men under consideration. While not making a claim to be young—having had 20 years' gardening experience—I feel that I may be able to add something of interest to what has already been written.

It seems to me the chief advice that has been given to young gardeners has been—Educate yourselves. With all due deference to your able correspondents, I should like to ask how many lads entering gardening at, say 14, feel the need for such education, and in how many cases do they begin with anything better than a Board School education? Admitting that they feel the need for such education, or have someone to point out to them that they need it, they probably take up botany as the science having the most direct bearing on their calling, and find, as one correspondent point out, their spelling is at fault, the terms meaningless symbols, and a great deal of it, to them, unintelligible. I hold that what is required before young gardeners begin their scientific education is a knowledge of geometry, elementary mathematics, physics, and chemistry. A knowledge of these things will stand a young man in better stead at the beginning of his career than the study of abstruse subjects. I would advise young men to see first of all that the foundations of general education are well and truly laid before attempting to rear the superstructure.

It would be interesting to know how many young men are hindered in taking up the theoretical side of their craft, by their fellow workers. How much good are you going to derive from an improved education is the question often asked; but such a question prevents a good many making the attempt to improve their education. A word in season, a kindly enquiry as to progress, and a little encouragement from their superiors, not necessarily always the head gardener, would do much to induce many to enter on useful studies.

As to the question—Does it pay? My answer to that would be—Yes. If, as many think, knowledge carries with it its own reward, the answer is obvious; but if enhanced positions or increased wages are expected as the reward, then the question becomes more difficult to answer; but I should say it does pay in most cases. Take my own case in point. In applying for my present position, I had the practical side of my work called into question as the result of stating that I held several certificates in botany and mathematics, and one each for chemistry and land surveying, and only the influence of a friend secured me an interview, which led to my appointment. A generous increase in the matter of wages before twelve months were up proved the satisfaction of both parties, and the remark, "He's not afraid of work, anyhow," made two years after to the aforesaid friend, showed that it was felt by some of those in authority that a liberal education was not favourable to a close application to the practical side of garden management. It was my experience to serve an apprenticeship of three years in a nursery, and though the slip-shod methods of some of the work took some time to eradicate, the knowledge of how to use tools, the names and characteristics of the various trees and shrubs, and their methods of propagation, has ever since stood me in good stead. I quite agree with "H. E." (p. 652) that the gardener should by all means be practical first, for after a few years the theoretical side becomes increasingly interesting, and the knowledge thereof is absorbed in one quarter the time. Like one or two of your previous correspondents, I question "J. C. W.'s" remarks on (p. 574) in regard to drawing the middle-classes into gardening. I contend that, until the working-man gardener obtains the recognition due to his services, he need not fear the competition of the middle-class.

One other point that acts as a deterrent to a good many young men in taking up science, is the amount of material they have to work up (other than what they require) before a certificate can be obtained showing they have passed such subject. Until some society such as the Royal Horticultural Society, for instance, adopts a syllabus more adapted to the needs of practical men; but little progress will be made in improving the education of gardeners. Above all things, let it be realised that the gardener's duties render it necessary for those engaged in garden management to study the theoretical side as well as to become proficient in the practical side, as not until this is done will gardeners take the most important step towards raising the status of the oldest profession.

J. M.

## IMPORTATION OF NURSERY STOCK INTO THE UNITED STATES.

The following regulations have been made by the Secretary of Agriculture of the United States with regard to the importation of nursery stock:

### Definition.

The term "nursery stock" includes all field-grown florist's stock, trees, shrubs, vines, cuttings, grafts, scions, buds, fruit pits, and other seeds of fruit and ornamental trees or shrubs, and other plants and plant products for propagation, but does not include field, vegetable, and flower seeds, bedding plants, and other herbaceous plants, bulbs, and roots. All woody plants and parts thereof for propagation or planting are included within the term "nursery stock."

### Permits for Importation.

Persons wishing to import nursery stock must apply to the Secretary of Agriculture for a permit, stating the general nature and quantity of the nursery stock, the district or locality where grown, the name and address of the exporter, together with the name and address of the importer in the United States and the proposed port of entry. Applications for permits should be made in advance of the shipment of the nursery stock, but if, through no fault of the importer, stock shall arrive before the issue of a permit, the stock will be held in customs custody at the risk and expense of the importer for a period not exceeding ten days, pending the issue of a permit.

On approval by the Secretary of Agriculture of an application for the importation of nursery stock from countries which maintain nursery stock inspection, a permit will be issued. Permits will expire on the 30th day of June of the year following the date of issue.

### Entry of Nursery Stock.

Entry of nursery stock will not be allowed unless accompanied by a certificate issued by a duly authorised official of the country from which it is shipped, stating that it has been thoroughly inspected by him or under his direction, and was found, or believed to be, free from injurious plant diseases and insect pests. In the case of stock to be shipped between October 1 and May 31 this inspection must be made on or after October 1, and for stock shipped during the growing season inspection must be made not more than 30 days prior to date of shipment. Until July 31, 1913, however, the usual inspection certificate covering the previous growing season will be accepted. When the country from which any nursery stock is shipped maintains no official inspection, articles for which a permit has been issued will be admitted only through the ports of New York, San Francisco, Seattle, Jacksonville, and New Orleans, after examination by inspectors of the Department of Agriculture at the port of arrival, if found to be free from plant diseases and insect pests.

Entry will not be allowed unless the case, box, etc., is plainly and correctly marked to show the number of permit, the general nature and quantity of the contents, the district or locality and country where grown the name and address of the exported, and the name and address of the importer.

Nursery stock offered for importation without compliance with these regulations will be refused admission. Nursery stock, inspected as provided, which is found to be carrying dangerous insects or plant diseases, may be treated or destroyed, as circumstances require.

### Foreign Certificate of Inspection.

Certificates of inspection will be accepted if countersigned by duly authorised officials of foreign countries or their agents. On and after July 1, 1913, certificates must give the date of inspection, name of the grower, the district or locality and country where grown, a statement that the stock has been inspected by a duly authorised official, and found, or believed to be, free from dangerous insects and plant diseases, and must bear the name of the responsible inspection official for the country of origin.

### Declaration.

All shipments of nursery stock to the United States from countries which maintain an official system of nursery stock inspection must be accompanied by a declaration of the shipper, produced before an American consular officer. The declaration must contain a statement by the shipper that he believes the nursery stock to contain no injurious plant diseases or insect pests, the district or locality and country where grown, the name of the grower, the port of origin, and destination of the consignment, the date of inspection of the stock, and the name of the inspector, and the number of the permit issued by the Secretary of Agriculture. Consular invoices covering shipments of nursery stock to the United States must bear the number of the permit issued by the Secretary of Agriculture, and have attached to them the shippers' declaration.

## GARDENING ENGAGEMENT.

Mr. E. Knowles, for five and a-half years gardener to the late Mr. Alderman R. Clough, at Buckcliffe House, Keighley, has been appointed gardener to Sir Prince Smith, Bart., Southburn, Driffield.

→ Spraying. ←

One of England's leading Fruit Growers says: "I consider the 'Four Oaks' Spraying Machine, 'Battle' Pattern, to be the only practical machine on the market."

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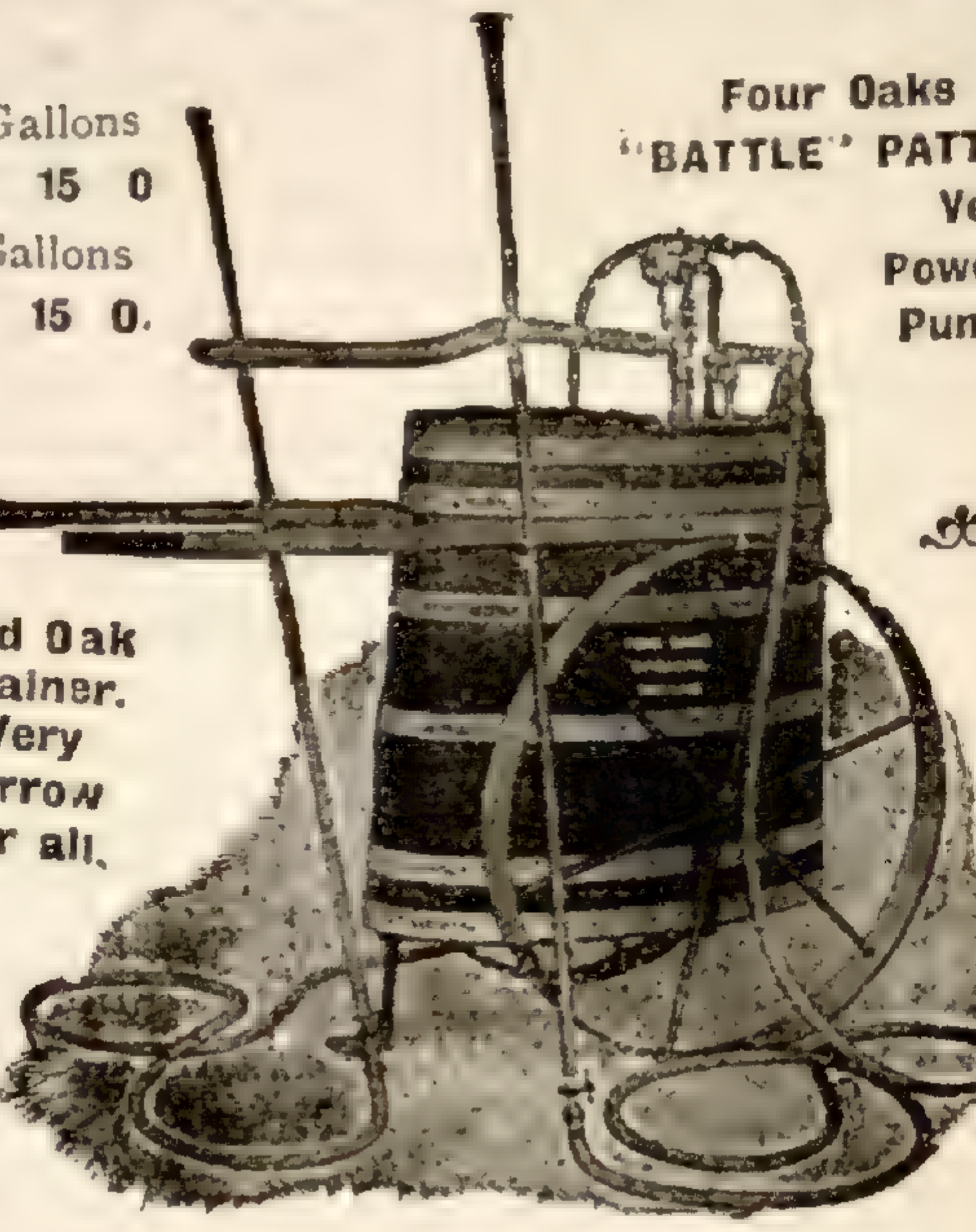

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# EXHIBITIONS AND MEETINGS.

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## Beckenham Horticultural Society.

An excellent lecture on "Perpetual Flowering Carnations" was given before this society by Mr. Leech, of Dulwich, a few days ago. Mr. Leech pointed out that the American varieties were responsible for the beginning of the present popularity of carnations. The plants required such simple treatment that it was in this very simplicity the stumbling block was so often found. Cuttings should only be taken from good healthy plants; they should be neither too hard or too soft, or from the bottom of plant, as these latter had a tendency to go to growth. The cuttings should be inserted in pure sand in a bottom heat of 50 or 60 degrees, while the house temperature should be a few degrees lower. When rooted they must be potted on in a mixture of loam and a little sand in small thumb pots, and as soon as established therein be given cooler conditions, for they must on no account be coddled. The next potting would be into 60's, and it is here they are first stopped, rather low down, to get a good number of growths on them, emphasised on account of its importance in providing a good foundation. The next shift should be into 32's, and here the plant is stopped again, and a good plan advised was to stop at intervals, to give a succession of bloom.

The ideal loam Mr. Leech recommended was from some good old pasture land, but where the soil was poor the addition of bone-meal, wood ashes, lime, and a sprinkling of soot would enrich it. The plants should be grown outside all the summer, preferably in frames, as they can then be covered over during wet periods. In the winter the carnation house must be kept dry by the aid of a little heat, about 50 degrees, as the flowers will then open much better, and be of good colour. In connection with the diseases of carnations, the lecturer strongly advised preventure by sprinkling the plants with lime and sulphur.

## Bournemouth Gardeners' Association.

Mr. J. Smith, gardener to Lady de Tabley, Berry Court, Bournemouth, gave a very interesting and instructive lecture, illustrated by lantern views, on "The Cultivation of Currants" on Tuesday, December 17.

Messrs. Evans, Pearce, and Heath staged some nice plants of crotons, dracænas, and Primula sinensis for the "points" prizes. The primulas were well grown, profusely-flowered plants.

Mr. Smith first dealt with the preparation of the soil and the planting of the young bushes. He advised deep trenching, then the application of a heavy dressing of manure placed on the surface and thoroughly mixed with the top soil only. He also advised cultivators to add a fair quantity of old lime rubble and salt. He would have the bushes planted 4ft. apart each way. Dealing with the young plants of red and white currants, he said it was a mistake to allow any young basal shoots to grow after sufficient had been secured to form the bush itself. All main branches should be so trained as to allow of a man's hat being freely passed between them after the winter pruning had been done. For standards, the lecturer advised the Red Dutch mainly. He described the method of forming a standard from the cutting stage. Mr. Smith showed on the screen standards growing alternately with bushes, with strawberries in front. He advocated early pruning.

Having referred in detail to the treatment of black currants, and named varieties that had succeeded well in the neighbourhood, Mr. Smith answered a number of questions, and a free discussion took place. Mr. King, gardener to W. W. Moore, Esq., presided, and hearty votes of thanks were accorded both the chairman and the lecturer.

# ANSWERS TO CORRESPONDENTS.

EXHIBITIONS FOR 1913.—S. B., Watford: Where can I obtain a good list of the principal horticultural exhibitions, etc., for 1913?—We shall present our annual Almanac with the issue of the GARDENERS' MAGAZINE of January 4, and this will contain the best available list of horticultural fixtures.

PRICES OF TIMBER.—J. G., Gloucester: I shall be glad if you will tell me what price good Austrian pine timber should fetch, and also the usual price of holly timber?—Austrian pine is not likely to fetch more than 4d. per foot, probably less. Holly is not quoted as it is so seldom offered, and there is no regular supply. If someone wanted holly timber for ebonising or other special purpose a fair price would be offered, but, with such exception, the wood has only a firewood value.

INCURVED CHRYSANTHEMUMS. — M. E. M., Lincoln: I gather from the reports given and remarks made in the GARDENERS' MAGAZINE, that fewer incurved chrysanthemums have been shown this season than in previous years, and the inference is that this section is experiencing a decline in public favour. I am loth to believe that this is so, but perhaps you could say what the position is.—As an exhibition flower on the show board there has been a decline in the popularity of incurved chrysanthemums during the last few years, and we much regret this is so, as we have a great admiration for finely-grown and finely-shown blooms of this type. Raisers are devoting less attention to the section, and, as competition lessens, societies reduce or withdraw prizes for incurved flowers. However, on the other hand, the market growers appreciate the value of incurved varieties, and grow many of them for the production of cut flowers; the blooms are, of course, not so solid and formal as those grown for show purposes. Mr. W. Higgs, of Fetcham Park Gardens, Leatherhead, our foremost exponent of the culture and exhibition of incurved chrysanthemums, drew attention to these matters at a Conference held by the National Chrysanthemum Society at Essex Hall, in the late autumn of 1910. In concluding a lecture given on that occasion, Mr. Higgs said: "I should like to remark that of late years fewer incurveds have been exhibited at our shows. The true cause of this is rather difficult to determine. It may be that they require more care and attention, more skill in staging and dressing than Japanese, or it may be that they are losing favour with the public. We have now reached a period when popular sympathy is with the Japanese, and the single is rapidly gaining the admiration of flower-lovers. A great many people prefer decoration to the formal incurved blooms on the showboard. But in spite of these drawbacks, I feel sure that if incurved chrysanthemums do gradually assume the fourth place, it will be due to lack of interest, not amongst the public, but amongst the growers. Personally, I should like to see many more entries in the incurved classes of our exhibitions. Interest in them would then revive, their culture would advance more rapidly, and raisers would be encouraged to produce more new sorts every season. At the present time the number of new varieties brought out each year is lamentably small. I believe I am right in saying that the Floral Committee of the N.C.S. has labelled only one new incurved F.C.C. this season—Ethel Thorp. If we go on at this rate, the progress of cultivation of incurveds will be much slower than that of Japanese and singles. Therefore, let us do all we can to further the advance of one of the most beautiful flowers it is possible to cultivate."

JUDGING SWEET PEAS.—F. F. C., Newcastle: Is there any recognised code of judging for sweet peas? If so, I shall be glad if you will publish it in your "Answers" column.—The Royal Horticultural Society deals with this matter, but we fancy their code is not generally adopted by sweet pea enthusiasts. Following its annual meeting a year ago, the National Sweet Pea Society held a conference, at which the question of judging sweet peas was discussed, and at the conclusion of the discussion, Mr. William Cuthbertson proposed, and Mr. R. Bolton seconded, that the following code of judging sweet peas be recommended for general use. The motion was carried unanimously: (a) When starting, count the exhibits in each class with the secretary's assistant, to make sure none is omitted. (b) Count the number of vases. (c) See that the exact number of varieties specified in the schedule are present in each exhibit. (d) Make a preliminary survey, an rule out those stands that are palpably defective, in order to be able to concentrate attention on the eligibles. (e) Look through the vases in the selected stands for mixed types. (f) Be prepared to make the awards on freshness, number of flowers per stem, size of flowers, disposition, and blending of colours. Compare vases of the same varieties side by side. (g) Give a maximum of 6 points per bunch. This maximum to be allocated to the best bunch, or bunches in the stands, and then point the other bunches, by half points if necessary, working

NEWS FROM HEADQUARTERS.
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Although unable to change the seasons, we can help to brighten the dull and often depressing days which occasionally occur during even the most favourable autumn and winter months, by creating an atmosphere reminiscent of those summer days when the honeyed fragrance of garden favourites was wafted through open windows.

The judicious use of our night-scented stock or sweet pea perfume will quickly dispel an atmosphere of pessimism, and suggest the sweetness of wind-borne fragrance from your summer garden, so true to the natural aroma are the perfumes we offer. These extractions from the natural blossoms are so subtle and delicate, that they convey to the mind the actual flowers rather than suggest a perfume. Instead of being overpowering and productive of langour, as is usual with so many perfumes, their fragrance is crisp and invigorating, and has an exhilarating effect upon the olfactory senses. To fully realise the delicate fragrance of these concentrated essences, they must be used sparingly, so that they suggest rather than define the flower they represent. Where a sweet perfume, without the exhilarating qualities of the above is preferred, we advise our Gardenia Extract, which possesses this quality without suggesting the heaviness characteristic of many Eastern scents and bouquets. For evening use it is particularly pleasing.

In the distillation of these perfumes, our foremost object is to produce the natural fragrance of the blossoms. They are, therefore, always suggestive of that refinement which is so important to those who are fond of delicate perfumes, but cannot tolerate the heaviness so prevalent in many kinds in frequent use.

Are you in a quandary concerning a Christmas or New Year Gift for members of your family or friends? The selection of suitable presents is always an anxious problem, and the fear that you may send a similar gift to one already received is always present. Save yourself this extra little worry by sending some Night-scented Stock, Sweet Pea, or Gardenia Perfume, which we particularly recommend.

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downwards from the maximum. In awarding these points due regard must be given to freshness, quality, and size of the flowers, as referred to above. (h) It is also recommended, where necessary (i.e., when the bunch pointing brings an equality, or nearly so) that 6 points extra be taken as a maximum for arrangement and blending of colours, the points so obtained being added to the total bunch points. (i) Double-standard flowers should not be discounted.

HISTORY OF KEW.—N. A., Chester: I should like to obtain some information concerning the history of the Royal Botanic Gardens, Kew, and if you can tell me where this is to be found in readily accessible fashion at a modest outlay, I shall be grateful.—Sixpence, plus a penny for postage, is certainly a modest outlay, and for this sum you can obtain the new "Popular Official Guide" to Kew, from Darling and Son, 34-40, Bacon Street, London, E., or from Kew itself. This contains an historic notice and descriptions of the collections in the Botanic Gardens proper, the glass houses, museums, and Arboretum. It will, we believe, give you all the information you require, and it has the advantage of including a capital index.

FAILURE WITH SPIRÆAS.—C. R., Manchester: I enclose spikes of Spiræa Queen Alexandra for your inspection. Will you kindly inform me what kind of disease has attacked them? The plants are very healthy up to the stage of producing spikes. No artificials have been given them and the plants have stood in a newly painted house, air being admitted night and day.—We cannot trace any signs of disease in the specimens sent, and can only conclude that some cultural mistake is answerable for the collapse of the plants just previous to flowering. Poorly-rooted specimens, errors in watering, excessive heat, new paint in the house—all these may have some bearing upon the failure. We are inclined to think that the cause of the trouble lies between the water-pot and the new paint.

### NAMES OF PLANTS.

J. G. B., Oswestry.—1, Pilea muscosa; 2, Phrynium variegatum; 3, Cedrus atlantica.

P. L., Leicester.—1, Cedrus Deodara; 2, Buxus sempervirens; 3, Thuia gigantea; 4, Pinus sylvestris.

A. M., Dorchester.—1, Lonicera Standishi; 2, Jasminum nudiflorum; 3, Viburnum Tinus; 4, Arbutus Unedo.

### NAMES OF FRUITS.

C. P. T., Enfield.—1, Cox's Orange Pippin; 2, Mère de Ménage.

F. S. J., Sandy.—1, Dumelow's Seedling; 2, Court Pendu Plat.

E. V. B., Brentwood: 1, Margil; 2, Allen's Everlasting; 3, Uvedale's St. Germain.

H. S., Gloucester.—1, London Pippin; 2, Bramley's Seedling; 3, Fearn's Pippin; 4, probably Cornish Aromatic.

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## MARKETS.

◆

### COVENT GARDEN.

### Flowers.

This has been a very short week, but there was a large amount of business done before Christmas Day. Almost all kinds of flowers found a ready sale.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Arums | per doz. | 3 | 0 | to | 5 | 0 |
| Adiantum cuneatum | per doz. bun. | 4 | 0 | | 6 | 0 |
| Asparagus plumosus | per doz. bun. | 8 | 0 | | 16 | 0 |
| ,, Sprengeri | per doz. bun. | 8 | 0 | | 12 | 0 |
| Azalea | per doz. bun. | 4 | 0 | | 5 | 0 |
| Bouvardia | per doz. bun. | 6 | 0 | | 8 | 0 |
| Camellias | per doz. | 1 | 6 | | 3 | 6 |
| Carnations | per doz. | 2 | 0 | | 3 | 0 |
| ,, | per doz. bun. | 10 | 0 | | 18 | 0 |
| ,, Malmaison | per doz. | 8 | 0 | | 15 | 0 |
| Cattleyas | per doz. | 9 | 0 | | 15 | 0 |
| Chrysanthemums | per doz. bun. | 9 | 0 | | 15 | 0 |
| ,, | per doz. blooms | 1 | 6 | | 5 | 0 |
| Croton leaves | per bun. | 1 | 0 | | 1 | 6 |
| Cypripediums | per doz. | 2 | 0 | | 3 | 0 |
| Daffodils | per doz. | 1 | 6 | | 2 | 0 |
| Eucharis | per doz. | 2 | 0 | | 3 | 0 |
| French fern | per doz. bun. | 2 | 6 | | 4 | 0 |
| Gardenias | per doz. | 3 | 0 | | 6 | 0 |
| Lapageria | per doz. | 2 | 0 | | 2 | 6 |
| Lilium auratum | per bun. | 4 | 0 | | 5 | 0 |
| ,, speciosum | per doz. | 2 | 0 | | 2 | 6 |
| ,, longiflorum | per doz. | 2 | 0 | | 3 | 0 |
| Lily of the Valley | per doz. bun. | 10 | 0 | | 18 | 0 |
| Marguerites | per doz. bun. | 2 | 6 | | 4 | 0 |
| Mignonette | per doz. bun. | 3 | 0 | | 5 | 0 |
| Odontoglossums | per doz. blms. | 2 | 6 | | 4 | 0 |
| Pelargoniums | per doz. bun. | 4 | 0 | | 8 | 0 |
| Poinsettias | per doz. | 9 | 0 | | 12 | 0 |
| Roman Hyacinths | per doz. bun. | 14 | 0 | | 18 | 0 |
| Roses | per doz. | 2 | 6 | | 8 | 0 |
| Smilax | per doz. trails | 2 | 0 | | 3 | 0 |
| Spiræa | per doz. bun. | 5 | 0 | | 8 | 0 |
| Tuberoses | per doz. | 0 | 6 | | 0 | 9 |
| Tulips | per doz. bun. | 9 | 0 | | 14 | 0 |
| Violets | per doz. bun. | 2 | 6 | | 6 | 0 |

### Fruits.

Large consignments have meet a good demand. There has been the usual brisk request for oranges, nuts, grapes, and the best apples. Almeria grapes have sold very well.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Apples, English | per bush. | 3 | 0 | to | 6 | 0 |
| ,, Cox's | per ½-sieve | 4 | 0 | | 7 | 0 |
| ,, American | per bar. | 11 | 0 | | 25 | 0 |
| ,, Californian | per box | 4 | 6 | | 10 | 0 |
| ,, Nova Scotian | per bar. | 10 | 6 | | 20 | 0 |
| Bananas, Canary | per bar. | 7 | 0 | | 12 | 6 |
| ,, Jamaica | per bun. | 3 | 0 | | 5 | 6 |
| Cobnuts | per doz. lbs. | 3 | 0 | | 3 | 6 |
| Cocoanuts | per 100 | 18 | 0 | | 23 | 0 |
| Cranberries | per case | 9 | 0 | | 14 | 0 |
| Dates | per doz. boxes | 2 | 9 | | 3 | 6 |
| Figs | per box | 0 | 9 | | 1 | 6 |
| Grapes, English | per lb. | 0 | 8 | | 7 | 0 |
| ,, Almeria | per barrel | 12 | 0 | | 20 | 0 |
| ,, Lisbon | per case | 7 | 0 | | 8 | 0 |
| Lemons | per case | 8 | 0 | | 30 | 0 |
| Medlars | per crate | 4 | 0 | | 5 | 0 |
| Melons | each | 1 | 9 | | 3 | 0 |
| Oranges | per case | 10 | 0 | | 30 | 0 |
| ,, California | per box | 11 | 0 | | 13 | 0 |
| ,, Jamaica | per case | 4 | 0 | | 8 | 0 |
| Pears | per ½-bush | 2 | 0 | | 4 | 0 |
| ,, French | per box | 2 | 0 | | 5 | 0 |
| ,, Californian | per case | 10 | 0 | | 14 | 0 |

### Vegetables.

There has been a good demand for general supplies and a keen demand for forced and special subjects; salading has been in great request.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Artichokes, Globe | per doz. | 2 | 0 | to | 3 | 0 |
| ,, Ground | per bush. | 3 | 0 | | 4 | 6 |
| Asparagus, Paris | per bun. | 3 | 6 | | 4 | 6 |
| Beet | per bush. | 1 | 6 | | 3 | 0 |
| Brussels Sprouts | per ½-bush. | 1 | 0 | | 2 | 0 |
| Cabbage | per tally | 2 | 6 | | 4 | 0 |
| Carrots | per doz. bun. | 2 | 0 | | 2 | 6 |
| Cauliflowers | per tally | 6 | 0 | | 10 | 0 |
| ,, Cornish | per crate | 3 | 0 | | 4 | 0 |
| Celery | per doz. bun. | 9 | 0 | | 15 | 0 |
| Celeriac | per doz. | 2 | 0 | | 3 | 0 |
| Cucumbers | per doz. | 1 | 6 | | 3 | 6 |
| Endive | per doz. | 0 | 6 | | 2 | 0 |
| Horseradish | per doz. bun. | 10 | 0 | | 12 | 0 |
| Leeks | per doz. | 2 | 0 | | 2 | 6 |
| Lettuce | per doz. | 1 | 0 | | 2 | 0 |
| ,, French | per crate | 3 | 0 | | 3 | 6 |
| Mushrooms | per doz. lbs. | 6 | 0 | | 10 | 0 |
| Onions | per bush. | 2 | 0 | | 4 | 0 |
| ,, Spanish | per case | 4 | 6 | | 7 | 0 |
| Parsley | per doz. bun. | 2 | 0 | | 3 | 6 |
| Parsnips | per bush. | 2 | 0 | | 3 | 0 |
| Radishes | per doz. bun. | 0 | 8 | | 1 | 0 |
| Rhubarb | per doz. bun. | 1 | 3 | | 2 | 0 |
| Savoys | per tally | 3 | 6 | | 4 | 0 |
| Seakale | per doz. pun. | 10 | 0 | | 16 | 0 |
| Spinach | per ½-bush. | 1 | 6 | | 3 | 0 |

## LONDON POTATO MARKETS.

Prices alter but little, and foreign supplies have increased.

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Bedfords | per ton | 80 | 0 | to | 90 | 0 |
| Kents | per ton | 80 | 0 | | 100 | 0 |
| Lincoln | per ton | 80 | 0 | | 95 | 0 |
| Blacklands | per ton | 70 | 0 | | 85 | 0 |
| Scotch | per ton | 80 | 0 | | 95 | 0 |
| Dunbars | per ton | 100 | 0 | | 120 | 0 |
| German | per ton | 75 | 0 | | 95 | 0 |
| Belgian | per ton | 60 | 0 | | 75 | 0 |
| Dutch | per ton | 55 | 0 | | 75 | 0 |

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KELWAY and SON, Langport, Somerset.—Kelway's Manual of Horticulture for 1913 is something more than a catalogue; it is a guide to hardy flowers and a work of reference for the flower garden. Capitally arranged, freely descriptive, finely illustrated (the coloured plates are especially good), and extending to 352 pages, it is a valuable production.

SUTTON and SONS, Reading.—Dressed in an attractive and yet simple cover of old-gold and silver colouring, the Reading firm's seed catalogue for 1913, is, as usual, got up in a most interesting and instructive fashion. Half-tone illustrations are abundant, and there are coloured plates of sweet peas; of the firm's group of cinerarias, begonias, etc., at the International Horticultural Exhibition; of lavateras; and of a border of Sutton's antirrhinums at Claremont, Esher. The catalogue covers a wide range in flowers and vegetables.

E. WEBB and SONS, Wordsley, Stourbridge.—A very freely illustrated catalogue of flower and vegetable seeds. The firm's specialities in potatoes, tomatoes, peas, stocks, asters, etc., etc., are very well represented. Fifty-two gold medals and silver cups have been awarded to Webb's vegetables and flowers in four years.

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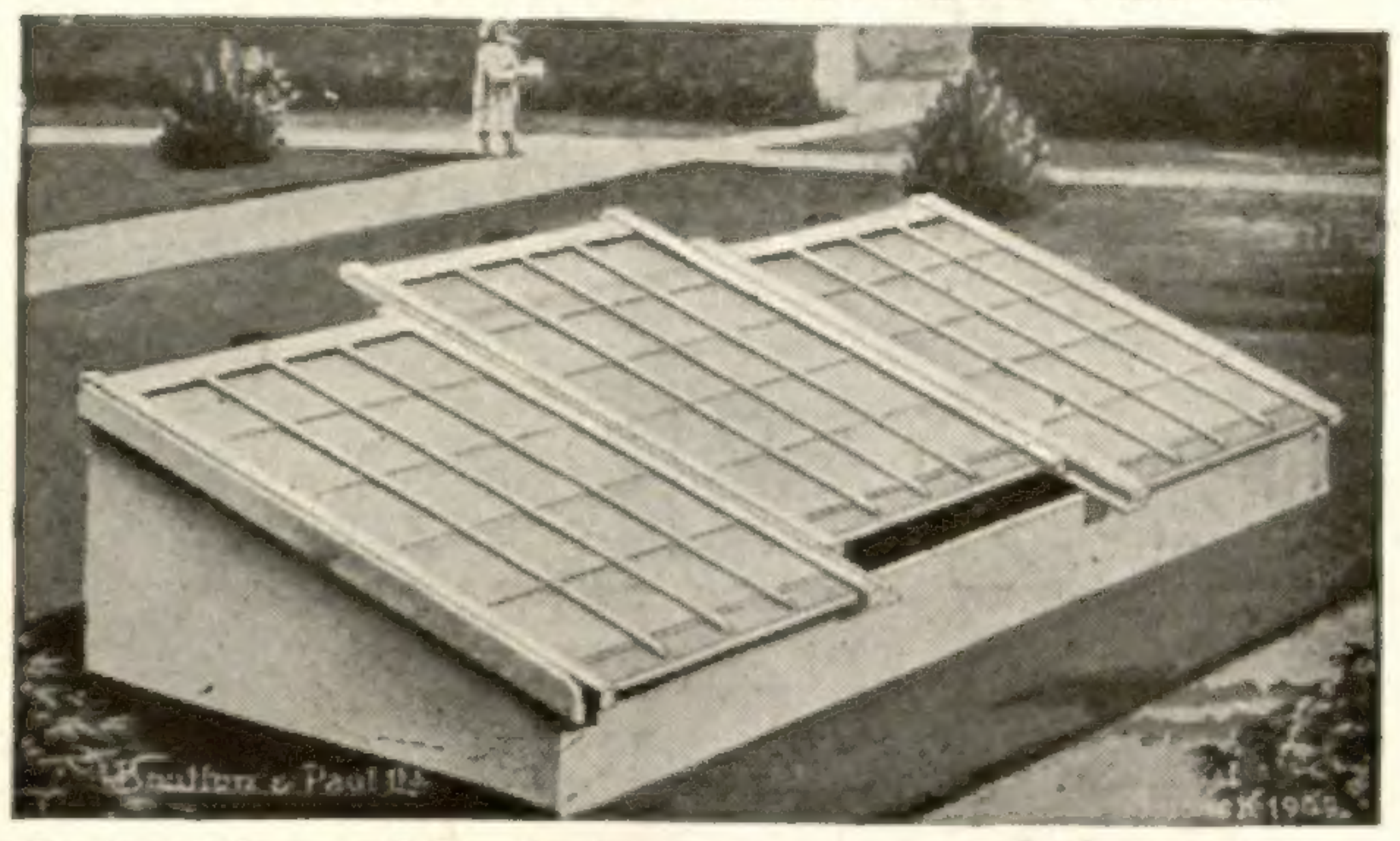

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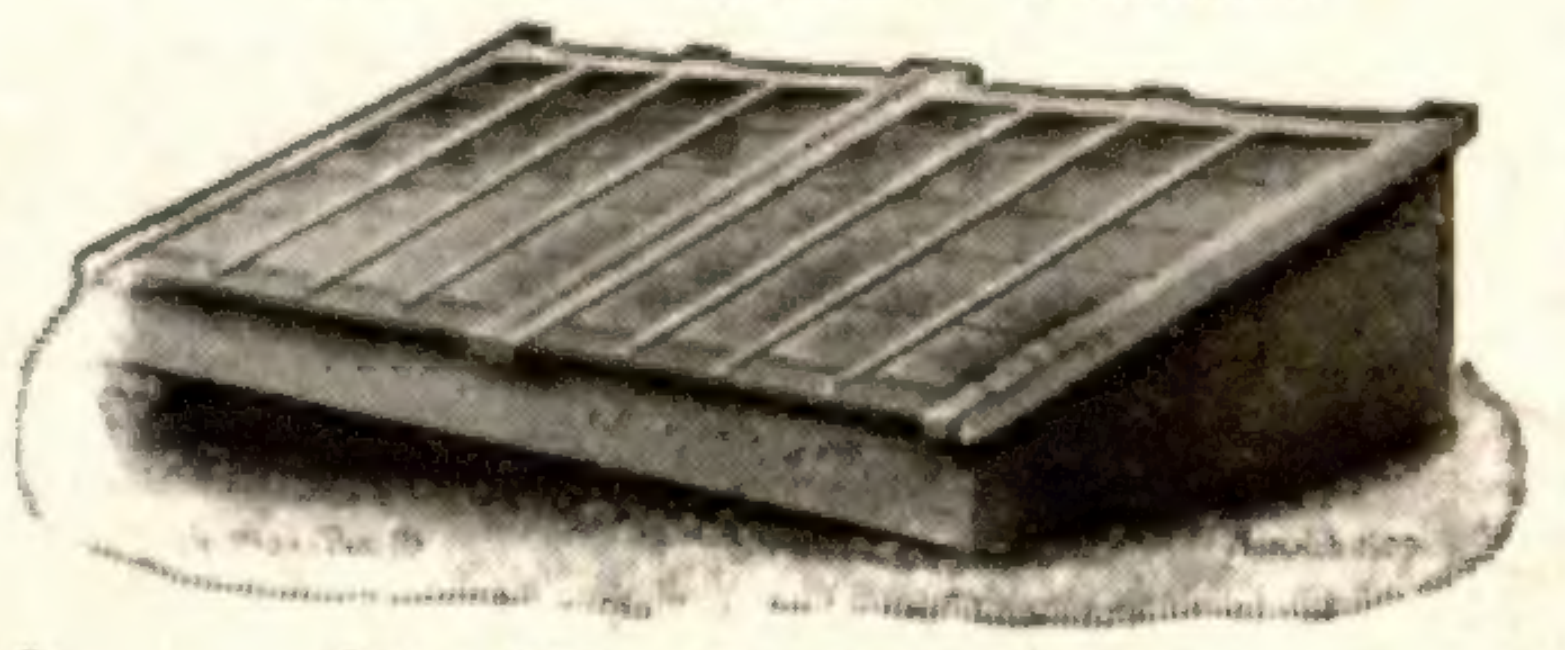

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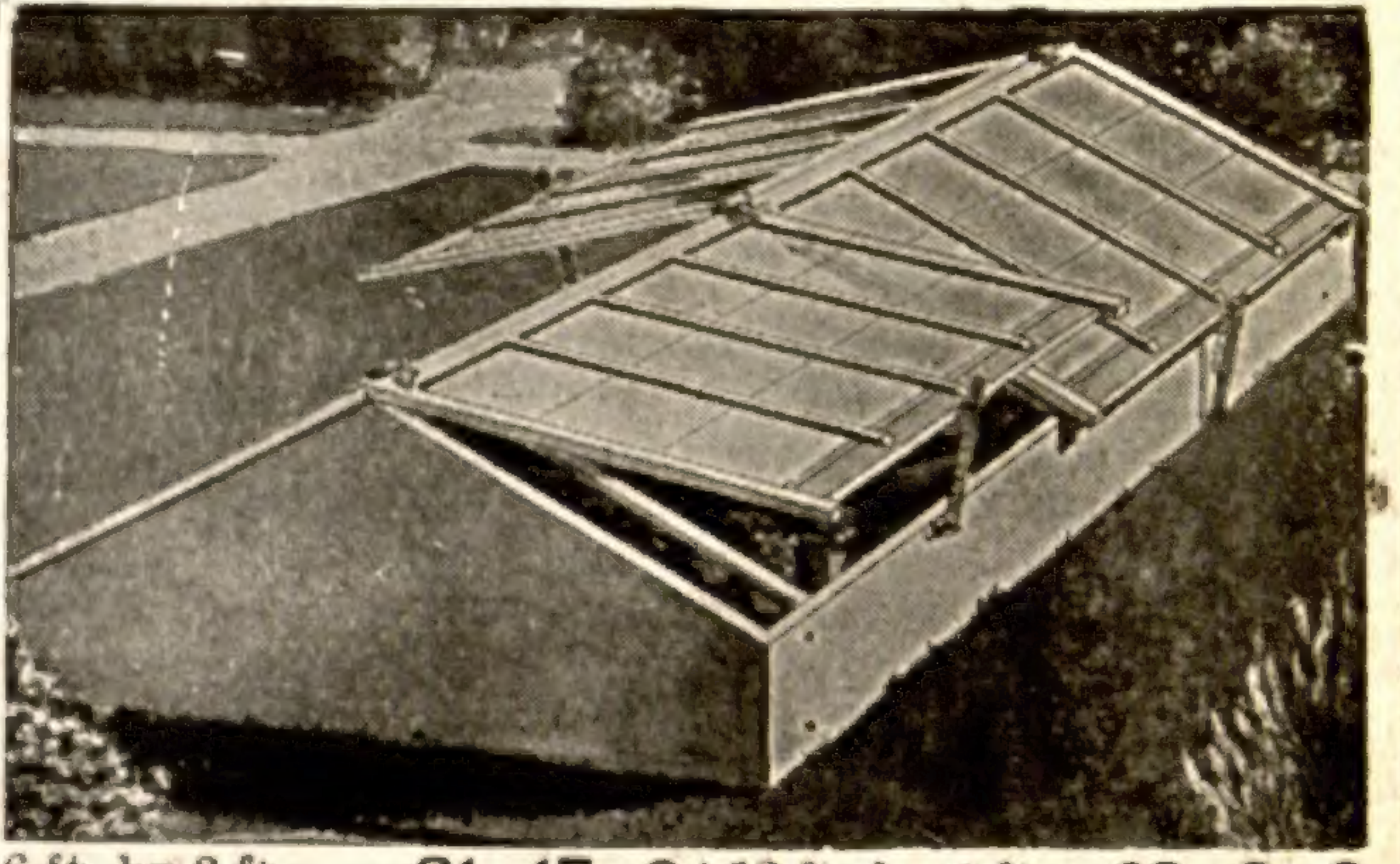

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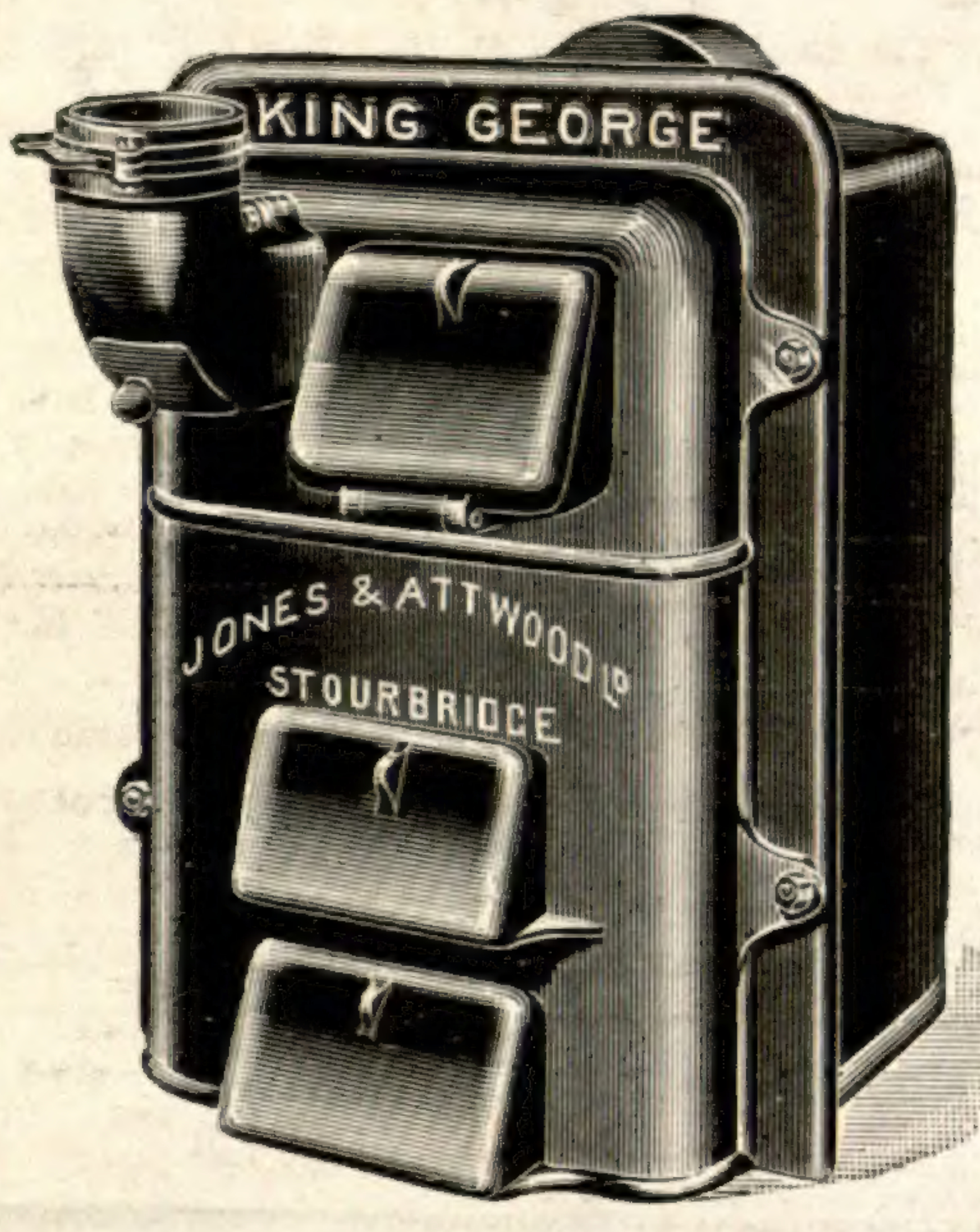

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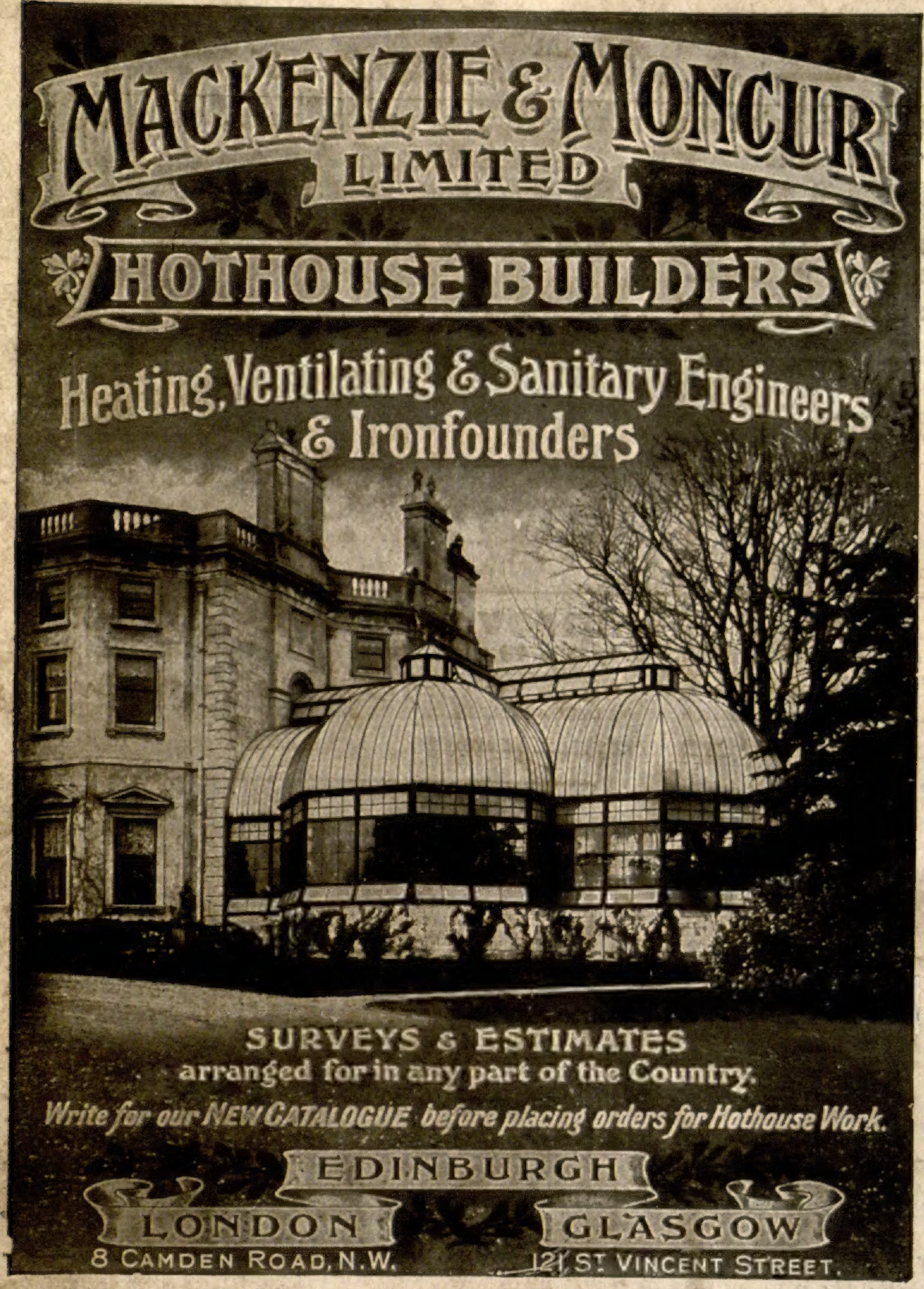

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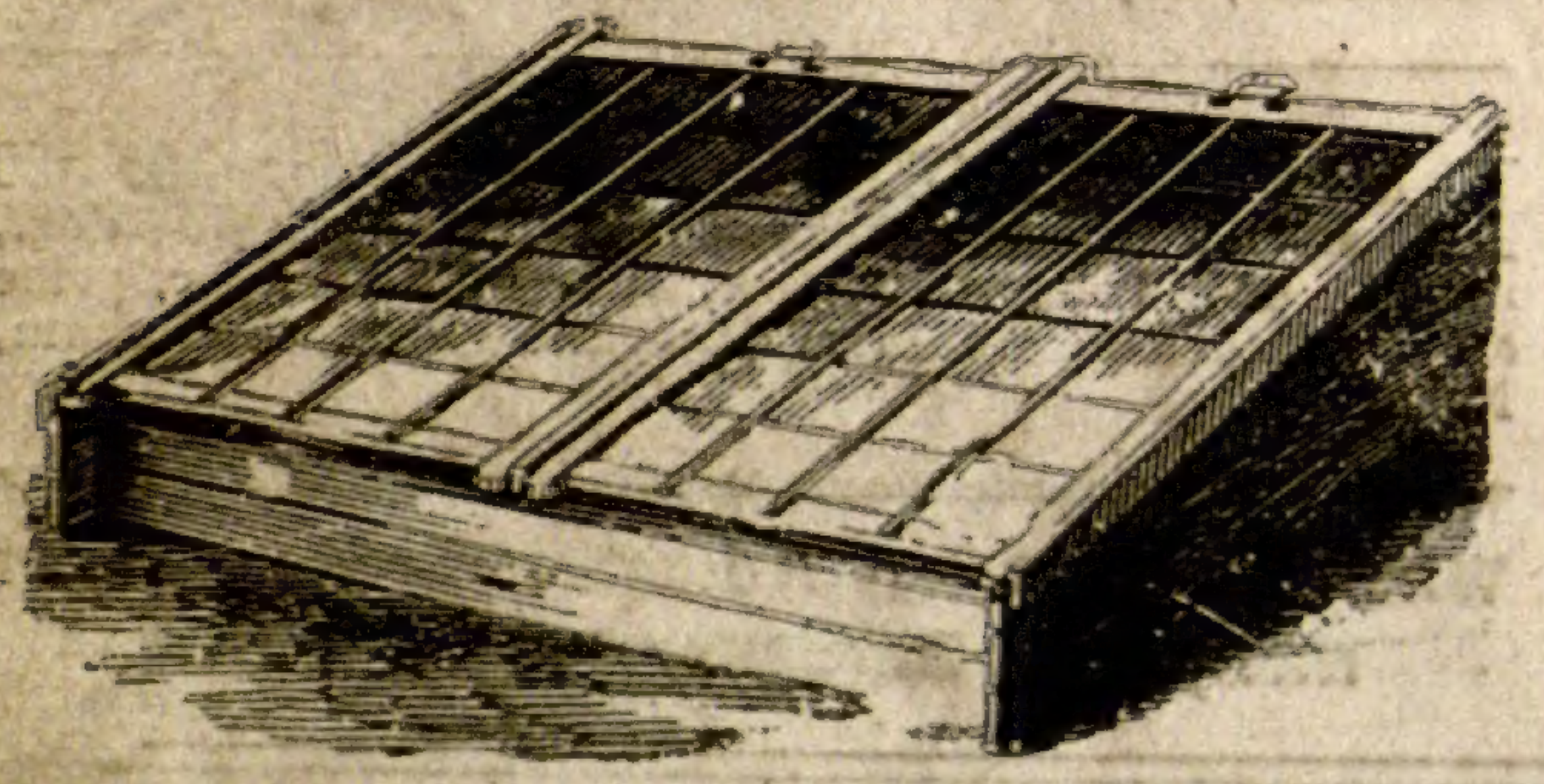

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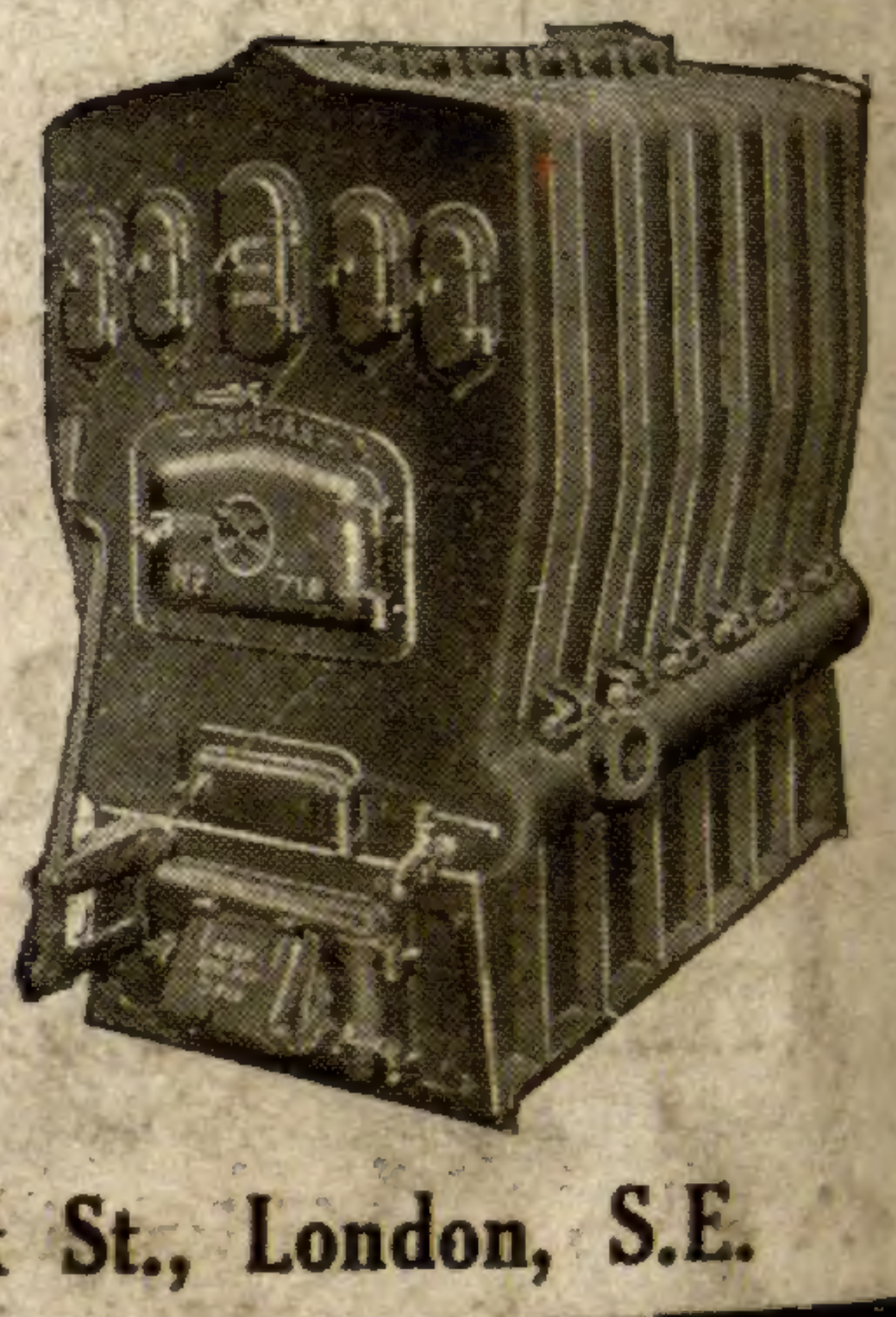

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